



AGENDA

FOR COUNCIL ASSESSMENT PANEL MEETING TO BE HELD ON

27 FEBRUARY 2018 AT 6:00 PM

IN THE COUNCIL CHAMBER, 12 JAMES STREET, SALISBURY

MEMBERS

Mr D Wallace (Presiding Member)
Mr R Bateup
Ms L Caruso
Ms S Johnston
Mr J Watson

REQUIRED STAFF

General Manager City Development, Mr T Sutcliffe
Manager Development Services, Mr C Zafirooulos (Assessment
Manager)
Team Leader – Planning, Mr A Curtis

APOLOGIES

LEAVE OF ABSENCE

ENDORSED MINUTES FROM PREVIOUS MEETING

Copy of the Endorsed Minutes of the Council Assessment Panel Meeting held on 23 January 2018.

DECLARATIONS OF CONFLICTS OF INTEREST

REPORTS

Development Applications

5.1.1 361/1589/2017/2B 9

Demolition of existing dwelling and associated structures and outbuildings, removal of 40 Regulated Trees (8 being Significant Trees), transplanting of 13 Regulated Trees, the construction of a mixed use retail and entertainment complex comprising major retail shops (2), speciality retail shops (13), cafe (1), bulky goods tenancies (4), entertainment venues (3), indoor recreation centre (gymnasium), fencing and screening structures, 3 fast food restaurants (with associated drive through facility) together with associated siteworks, access/egress to Kings Road, Main North Road and Mengel Court, at-grade car parking and manoeuvring areas, loading docks, pedestrian paths, waste storage areas, outdoor seating and landscaping at 1460 Main North Road, Salisbury South for GIC Kings Road Pty Ltd.

OTHER BUSINESS

- 5.2.1 Status of Current Appeal Matters and Deferred Items
- 5.2.2 Policy Issues is Arising from Consideration of Development Applications
- 5.2.3 Future Meetings & Agenda Items

CLOSE

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**MINUTES OF COUNCIL ASSESSMENT PANEL MEETING HELD IN COUNCIL
CHAMBER, 12 JAMES STREET, SALISBURY ON**

23 JANUARY 2018

MEMBERS PRESENT

Mr D Wallace (Presiding Member)
Mr R Bateup
Ms L Caruso
Ms S Johnston
Mr J Watson

STAFF

Manager Development Services, Mr C Zafirooulos (Assessment Manager)
Team Leader – Planning, Mr A Curtis
Planning Consultant, Mr B Green

The meeting commenced at 6:00pm

The Presiding Member welcomed the members, staff and the gallery to the meeting.

APOLOGIES

Nil

LEAVE OF ABSENCE

Nil

DECLARATIONS OF CONFLICTS OF INTEREST

Ms L Caruso declared a conflict of interest because of her role as Elected Member on Council in relation to Item 5.1.1 and left the meeting at 6:02pm.

REPORTS

Development Applications

5.1.1 361/2379/2017/1B

Demolition of existing council building, retail building, car parking and structures on civic square, and construction of a four storey civic building (Community Hub) with café, LED screen and associated car parking, pedestrian links and public spaces. at Salisbury Civic Square, 62-66 John Street, Salisbury; Parabanks Shopping Centre, 68-84 John Street, Salisbury; & Salisbury Council Offices, 12 James Street, Salisbury, SA 5108 for Hassell Studio

The Presiding Member invited Mr Liam Short, Hassell Studio to answer questions of the Panel.

Mr J Watson moved and the Council Assessment Panel resolved by consensus that:

- A. The proposed development is not considered to be seriously at variance with the Salisbury Council Development Plan consolidated 15 December 2016.
- B. Pursuant to Section 33 of the *Development Act 1993*, Development Plan Consent is **GRANTED** to application number 361/2379/2017/1B for the demolition of existing council building, retail building, car parking and structures on civic square, and construction of a four storey civic building (Community Hub) with café, LED screen and associated car parking, pedestrian links and public spaces in accordance with the plans and details submitted with the application and subject to the following conditions:

Development Plan Consent Conditions

1. The development shall be carried out in accordance with the details submitted with the application including the Salisbury Community Hub – Planning Report (and Appendices) prepared by Future Urban Group for Hassell Studios dated 19 December 2017, and the following approved plans and documents, except where otherwise varied by the conditions herein:

Drawing No.	Plan Type	Date	Prepared By
SK-01	Location Plan	1 December 2017	Hassell
SK-02	Car Park Plan	1 December 2017	Hassell
SK-03	Site Plan	1 December 2017	Hassell
SK-04	Ground Level Plan	1 December 2017	Hassell
SK-05	Mezzanine Level Plan	1 December 2017	Hassell
SK-06	Level 1 Plan	1 December 2017	Hassell
SK-07	Level 2 Plan	1 December 2017	Hassell

SK-08	Level 3 Plan	1 December 2017	Hassell
SK-09	Level 4 (Roof) Plan	1 December 2017	Hassell
SK-10	Northern (James St) Elevation	1 December 2017	Hassell
SK-11	Eastern (Laneway) Elevation	1 December 2017	Hassell
SK-12	Southern (John St) Elevation	1 December 2017	Hassell
SK-13	Western (Church St) Elevation	1 December 2017	Hassell
SK-14	Longitudinal Section	1 December 2017	Hassell
SK-15	Shading Diagram: Summer Solstice	1 December 2017	Hassell
SK-16	Shading Diagram: March Equinox	1 December 2017	Hassell
SK-17	Shading Diagram: Winter Solstice	1 December 2017	Hassell
SK-18	Shading Diagram: September Equinox	1 December 2017	Hassell
SK-19	Materials and Finishes Palette	1 December 2017	Hassell
SK-20	External Perspective (Elevated)	1 December 2017	Hassell
SK-21	External Perspective: Ground Level Entry	1 December 2017	Hassell
SK-22	External Perspective: Level 1 Terrace	1 December 2017	Hassell
SK-02	Car Park Plan with landscape mark-ups	1 December 2017	Hassell
SK-34	Landscape – Surface Treatment Plan	19 January 2018	Hassell
SK-35	Landscape – Planting Plan	19 January 2018	Hassell

* *The approved documents referred to above may be subject to change by minor variations permitted through the Building Rules Consent process.*

* *Except where otherwise stated, the development shall be completed prior to the commencement of use.*

Reason: To ensure the proposal is established in accordance with the submitted plans.

- All landscaping identified on the Approved Plans shall be completed within three (3) months of commencement of use and shall be maintained at all times thereafter (including the replacement of diseased or dying plants and the removal of weeds and pest plants).

Reason: To ensure the subject land is landscaped so as to enhance the visual and environmental amenity of the locality.

3. All driveways and carparking areas shall be constructed with brick paving, concrete or bitumen to a standard appropriate for the intended traffic volumes and vehicle types. Individual carparking bays shall be clearly linemarked. Driveways and carparking areas shall be established prior to the approved use commencing and maintained at all times to the satisfaction of Council.

Reason: To ensure access and carparking is provided on the site in a manner that maintains and enhances the amenity of the locality.

4. All goods and materials placed in the areas designed for outdoor storage purposes shall be kept in a tidy manner at all times.

Reason: To improve the site appearance and amenity of the locality.

5. Stormwater from paved areas is to undergo water quality treatment prior to discharge using the principles of Water Sensitive Urban Design, consisting of grassed or vegetated swale drains, sedimentation basins and bio-retention/filtration swales and basins.

Reason: To ensure water quality is suitable for discharge.

6. The carparking layout including car park spaces and aisle widths are to be designed and constructed to comply with AS 2890.1 – Off-street Parking Part 1 and Austroads “Guide to Traffic Engineering Practice Part 11 – Parking” and AS 2890.2 – Facilities for Commercial Vehicles.

Reason: To ensure that the development complies with Standards and Best Engineering Practice.

7. The advertisement and advertising display shall be maintained in good repair at all times.

Reason: To maintain the visual amenity of the locality.

8. Demolition works in the vicinity of Tree 15 shall be undertaken from within the existing building footprint working away from the tree; in a manner that will not impact the tree, and; in accordance with the Arborman Tree Solutions ‘Demolition Methodology’.

Reason: To minimise impact on the identified significant tree.

9. Carpark and footpath construction outside of the building envelope and within the Tree Protection Zone of Tree 15 shall be constructed using permeable pavement laid on a non compacting cellular confinement system (Geoweb or similar) over the original grade i.e.: no excavation for the sub base.

Reason: To ensure the root system is intact when the car parks are no longer required and thereby minimise the impact on the identified significant tree.

Advice Notes

1. The applicant is reminded of its general environmental duty, as required by Section 25 of the *Environment Protection Act 1993*, to take all reasonable and practicable measures to ensure that the activities on the whole site, including during construction, do not pollute the environment in a way which causes or may cause environmental harm.
2. EPA information sheets, guidelines documents, codes of practice, technical bulletins etc. can be accessed on the following web site:
<http://www.epa.sa.gov.au>.

Ms Caruso entered the meeting at 6:27pm

OTHER BUSINESS

5.2.1 Status of Current Appeal Matters and Deferred Items

The Panel was provided the following information in relation to the status of current appeals:

Sikh Community Centre at 701- 709 Port Wakefield Road, Globe Derby (361/1144/2016)

The applicant (United Sikhs of SA Inc) has lodged an appeal to the Environment, Resources and Development Court against the Panel's decision to refuse the mixed use development comprising prayer hall and associated facilities at 701 – 709 Pt Wakefield Rd, Bolivar. The application was considered by the Panel on the 24th October 2017.

Three representors in relation to the proposal applied to the Court to join the appeal. The representors are Mr Robert and Ms Rosa Frezza of 719-727 Port Wakefield Road, Globe Derby Park; Mr John Chuong Tran, owner of 713A Port Wakefield Road, Globe Derby Park; and Mr Des Nolan of 9 Alabar Crescent, Globe Derby Park. The Court considered the joinder applications on the 15th January 2018. Mr Nolan and Mr & Mrs Frezza withdrew their applications to join as parties to the appeal. They agreed to support John Tran's submission. The Court allowed the joining of John Tran to the Appeal.

The preliminary Conference immediately followed the joinder applications to the Court. At the request of the applicant, the Appeal was left pending till the 15th May 2018 when the conference will resume. The applicant has indicated that they wish to present an amended plan for consideration of the parties, which will be presented to the Panel at a future meeting.

Shia Community of South Australia at 256-258 Bridge Road, Pooraka (361/1549/2016)

The Environment, Resources and Development Court has heard the third party appeals in relation to the Panel's approval of a Place of Worship with Associated Activities and Cemetery, Carparking, Landscaping and Stormwater Arrangements at 256-258 Bridge Road, Pooraka for the Shia Community of South Australia. The appeals were heard by the Court in June and August 2017 and is pending a decision.

5.2.2 Policy Issues is Arising from Consideration of Development Applications

Nil

5.2.3 Future Meetings & Agenda Items

Next meeting scheduled for Tuesday 27 February 2018.

ADOPTION OF MINUTES

Ms S Johnston moved, and the Council Assessment Panel resolved that the Minutes of the Council Assessment Panel Meeting be taken and read as confirmed.

The meeting closed at 6:36pm.

PRESIDING MEMBER: Mr Doug Wallace

DATE: 23 January 2018
(refer to email approving minutes registered in Dataworks
Document Number 4698806)

ITEM	5.1.1
	COUNCIL ASSESSMENT PANEL
DATE	27 February 2018
APPLICATION NO.	361/1589/2017/2B
APPLICANT	GIC Kings Road Pty Ltd
PROPOSAL	Demolition of existing dwelling and associated structures and outbuildings, removal of 40 Regulated Trees (8 being Significant Trees), transplanting of 13 Regulated Trees, the construction of a mixed use retail and entertainment complex comprising major retail shops (2), speciality retail shops (13), cafe (1), bulky goods tenancies (4), entertainment venues (3), indoor recreation centre (gymnasium), fencing and screening structures, 3 fast food restaurants (with associated drive through facility) together with associated siteworks, access/egress to Kings Road, Main North Road and Mengel Court, at-grade car parking and manoeuvring areas, loading docks, pedestrian paths, waste storage areas, outdoor seating and landscaping
LOCATION	1460 Main North Road, Salisbury South
CERTIFICATE OF TITLE	Volume 5068 Folio 957, Volume 5067 Folio 646, Volume 5067 Folio 646, Volume 5067 Folio 648
AUTHOR	Aaron Curtis, Team Leader - Planning, City Development

1. DEVELOPMENT APPLICATION DETAILS

Zone/Policy Area	Mixed Use (Bulky Goods, Entertainment and Leisure) Zone
Application Type	On-Merit
Public Notification Category	2
Representations Received	3 valid (3 invalid), 1 wishes to be heard
Referrals – Statutory	<ul style="list-style-type: none"> - Commissioner of Highways – Schedule 8(3) of the <i>Development Regulations 2008</i> - Commonwealth Secretary for the Department of Transport and Regional Services – Schedule 8(9) of the <i>Development Regulations 2008</i>
Referrals – Internal	<ul style="list-style-type: none"> - Access and Inclusion - Development Engineering (including Traffic, Stormwater and Water Quality) - Environmental Health - Property Services - Landscape Design - Tree Services - Urban Policy

Development Plan Version	Consolidated 15 th December 2016 (Subject to Gazette Notice 19 th January 2017 incorporating authorised amendment to the Development Plan under Section 29(2)(b)(ii) of the <i>Development Act 1993</i> – not relevant to this application)
Assessing Officer	Aaron Curtis, Team Leader – Planning
Recommendation	Grant Development Plan Consent subject to Reserved Matters and conditions
Meeting Date	23 January 2018

2. REPORT CONTENTS

Assessment Report

Attachment 1:	Plans, Correspondence, Reports and Property Information
Attachment 2:	Copy of Representations and Applicant's Response to Valid Representations
Attachment 3:	Invalid submissions made by persons not notified of development
Attachment 4:	Schedule 8 referral responses
Attachment 5:	Internal referral responses
Attachment 6:	Development Plan extracts

3. EXECUTIVE SUMMARY

The applicant seeks approval for a mixed use retail and entertainment complex at 1460 Main North Road, Salisbury South.

The 'site' as defined by cadastral boundaries comprises four allotments, bounded by Main North Road to the south-east, Kings Road to the south-west, Rundle Road to the north-west and Mengel Court to the north, having a total area of 20.63ha. The area occupied by the 'development' is limited to the portion of the site south-east of Horrie Miller Drive having an area of 9.5ha (approx.).

The site is located within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone. Development of the kind proposed is assessed "on-merit" and was a Category 2 form of development for the purposes of public notification. Three valid representations were received during the public notification period.

One of the representors wishes to make a verbal submission to the Panel.

This report provides a detailed assessment of the application against the relevant provisions of the Salisbury Development Plan. Notwithstanding some non-compliance with some elements of the Development Plan, the assessment found that:

- The mix of land uses and quantum of floor areas proposed is supported by the Zone;
- The single architectural design theme and style is supported by the Zone and the buildings heights, bulk and mass is compatible with development in the locality;
- Adequate car parking and bicycle parking is provided;
- The development will not result in any unreasonable interference with aircraft operations associated with the adjacent Parafield Airport;

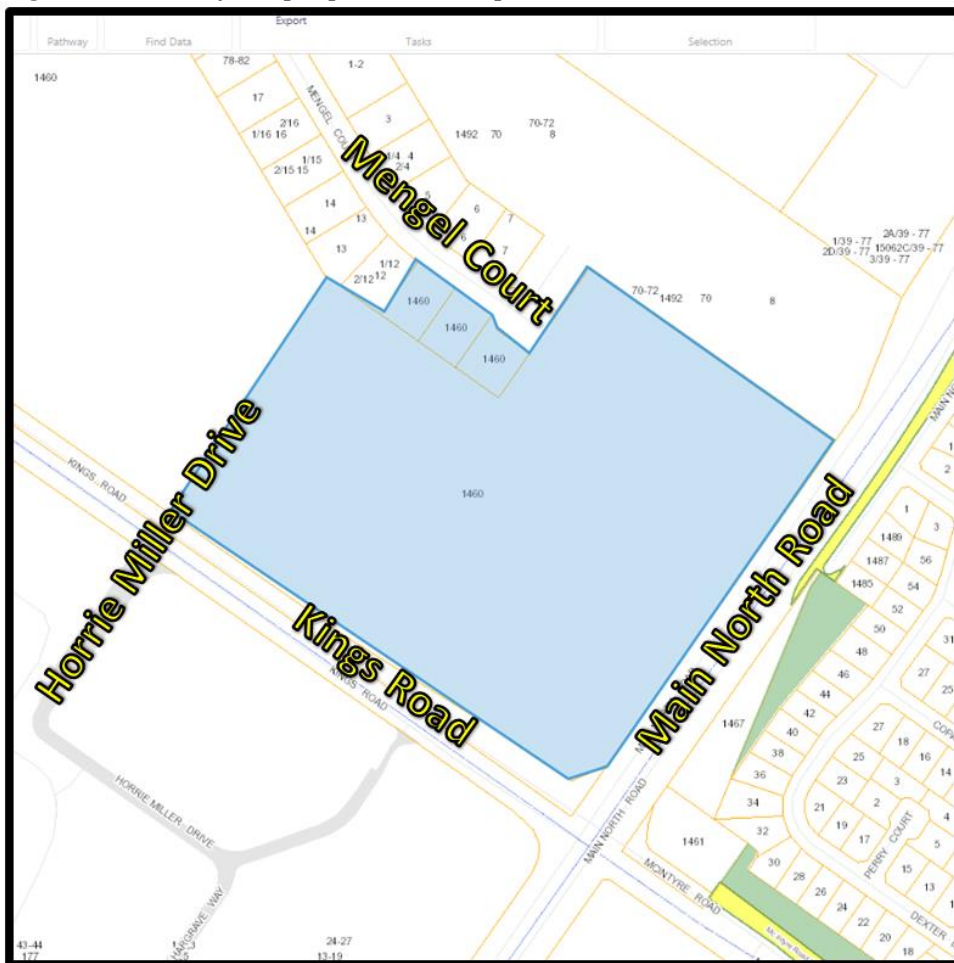
- Removal of 40 Regulated Trees is supported by a consulting arborist, removal is subject to transplanting of 13 Regulated Trees and offset replacement plantings;
- A comprehensive landscaping strategy has been developed which is supported by the Development Plan;
- Arrangements for access and egress to the site is supported by the Commissioner of Highways, but is subject to final design;
- Arrangements for internal vehicular access and stormwater design are satisfactory but subject to final design;
- Principles of safety/surveillance, sustainability and access inclusion are incorporated;
- The site is suitable for the intended use from a site contamination perspective;
- A comprehensive waste management strategy is proposed.

Accordingly, this report recommends that Development Plan Consent be granted, subject to Reserved Matters and conditions.

4. SUBJECT SITE

The 'site' as defined by cadastral boundaries comprises four allotments, bounded by Main North Road to the south-east, Kings Road to the south-west, Rundle Road to the north-west and Mengel Court to the north, having a total area of 20.63ha. The area occupied by the 'development' (hereafter the 'site') is limited to the portion of the site south-east of Horrie Miller Drive (9.5ha approx.). The 'site' is shown below in figure 1:

Figure 1. Site of the proposed development



The largest parcel is lot 120 and is of 20.20ha, while the remaining three land parcels (lots 20, 21 and 22) have a combined total area of 4,300m² and have a direct frontage only to Mengel Court. The frontages of the combined allotments are 277m to Main North Road, 773.42m to Kings Road, 179.89m to Rundle Road and 133.21m to Mengel Court.

The allotments are subject to easements as follows:

Lot 120, CT Volume 5068 Folio 957

- Subject to easement(s) over the land marked A to the Commonwealth of Australia (AQ 1515594)
- Subject to easement(s) over the land marked B to the Minister of Water Resources (T2970787)
- Subject to service easement(s) over the land marked D for sewerage purposes to South Australian Water Corporation (223LG RPA).

Lot 20, CT Volume 5067 Folio 646

- Nil easements.

Lot 21, CT Volume 5067 Folio 647 and Lot 22, CT Volume 5067 Folio 648

- Subject to service easements over the land marked F(T/F) for Electricity Supply purposes to Distribution Lessor Corporation (Subject to lease 8890000)(223LG RPA).

Easement A enables Parafield Airport to enter the property and lop any tree interfering with aviation safety. Easements B and D relate to powers of maintenance of an existing sewer main through the property. Easement F relates to existing pad mount transformers adjacent to Mengel Court. All easements will be preserved. The applicant is negotiating with SA Water in relation to proposed works within easements B and D.

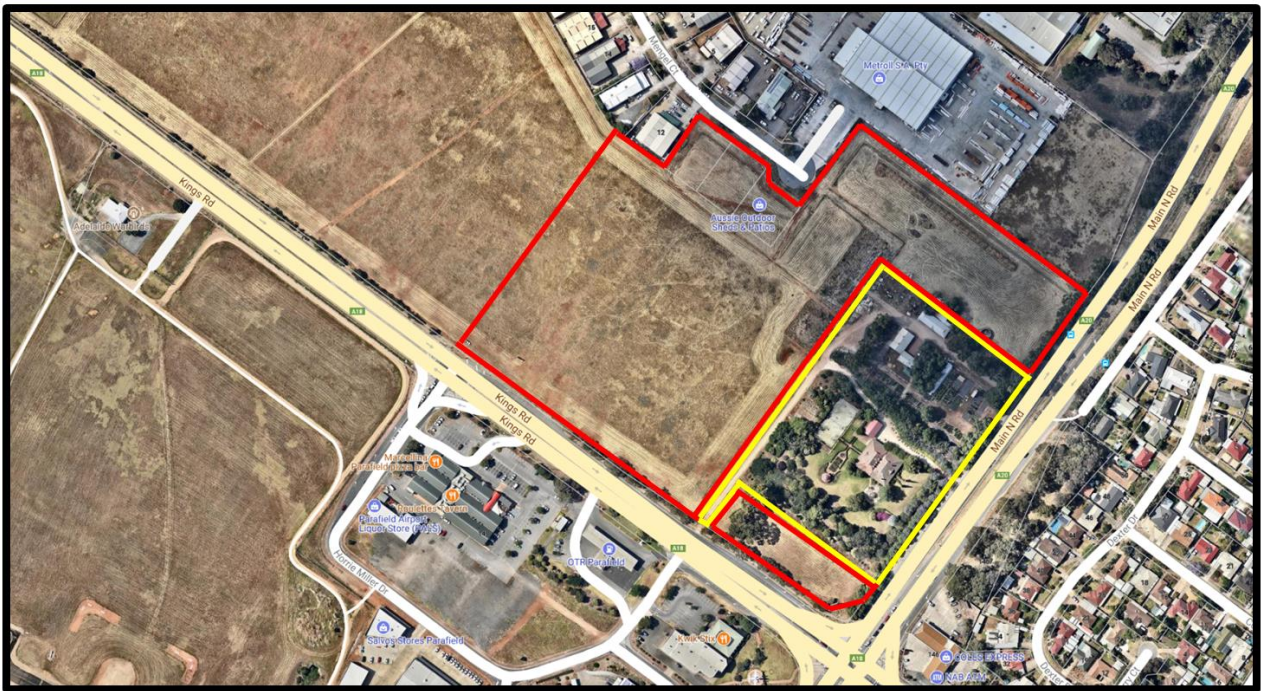
The portion of the site nearest the corner of Main North and Kings Road is developed and comprises a rectangular area of less than 4ha (yellow area in figure 2 below). This area contains a single storey dwelling and associated ancillary structures including outbuildings, former tennis court, water storage tank and private gardens. This part of the site has been used historically as a retail plant nursery. Access is gained to this part of the site via a gated unsealed access point to Kings Road and two gated access points to Main North Road, one paved and one unsealed.

The private gardens are well established and largely screen views of the dwelling and associated structures from Main North Road and Kings Road. This part of the site contains some 40 Regulated Trees, majority of which have been planted and include 25 "Sugar Gums", 12 Canary Island Date Palms, 1 Aleppo Pine, 1 Carob Bean and 1 Queensland Bottle Tree. The strip of land adjacent Main North Road also contains numerous Pepper Trees.

The remaining portion of the site (red area in figure 2 below) comprises undeveloped and cleared land, used infrequently for grazing of sheep. The cleared area is devoid of buildings, other than a row of fill stockpiles adjacent the northern boundary and two signs, one at the junction of Kings Road/Horrie Miller Drive and the other at the Main North Road/Kings Road corner.

The cleared part of the site is accessible via an unsealed access track established at the end of the Mengel Court cul-de-sac head. An access gate also exists to Kings Road (near the Kings Road/Horrie Miller Drive intersection) but does not appear to be utilised as a means of frequent access.

Figure 2. Aerial view with 'developed' (yellow) and 'undeveloped' (red) areas shown



The site is relatively level with a minor fall across the site from north-east down to south-west. The highest point of the site is in the north-eastern corner adjacent to Main North Road at a level of 22.2m Australian Height Datum (AHD). The lowest level of the site is near the Kings Road/Horrie Miller junction at a level of about 19.8m AHD. Therefore, the total fall is in the order of about 2.4m, over a distance of more than 460m.

Adjacent the Kings Road boundary is a separate land parcel owned by the Department of Planning, Transport and Infrastructure, described as lot 121, Kings Road. The road verge, including associated footpath, street trees and portion of the constructed road sits within this land parcel. Approximately 100m of the site frontage to Kings Road, nearest to Horrie Miller Drive, contains a slip lane and absence of a footpath and street trees.

Site photos are provided on the following pages:



Photo 1: *Looking north-west along Kings Road toward Horrie Miller Drive junction*



Photo 2: *Looking south-east along Kings Road toward Main North Road*



Photo 3: Looking north-east from Kings Road toward access track



Photo 4: Looking north-west from Main North Road toward existing dwelling



Photo 5: Looking north-west along Main North Road toward bus stop 43



Photo 6: Looking north-west from Main North Road toward access track



Photo 7: Looking south-east from Mengel Court toward the dwelling and outbuildings



Photo 8: Looking north-west along Mengel Court

5. LOCALITY

The locality is defined primarily by visual reference but also in terms of anticipated vehicular movements along Mengel Court and in and out of the site via Kings Road and Main North Road. Long range views of the site will be visible from Elder Smith Road, due to the undeveloped nature of the Parafield Airport land. Views will also be achieved from approaches toward the site from McIntyre Road, Main North Road and Kings Road.

The development is expected to draw visitors from a broad catchment, however, for the purposes of a determining a locality for this development, the broad catchment is not considered.

The locality includes the following:

North:

Properties fronting Mengel Court and Rundle Road, generally small scale single storey industrial buildings, used predominantly for general industrial, light industrial and warehousing but also including several motor repair stations, an Australia post business hub, fitness studio and animal day care facility. The large land parcel immediately north of the site (at the end of Mengel Court) is occupied by Bondor and Metroll for warehousing. Further north of this site is the Michell Wool processing facility. On the opposite side of Rundle Road is Rundle Park, a large grassed athletics field with running track and clubroom. North-west of Rundle Park is a concrete batching plant.

North-West

Properties west of Rundle Road and fronting Kings Road. These land parcels are larger than in Mengel Court and contain several large building footprints occupied by Bickfords and PMP Limited which front Cross Keys Road. Several land parcels fronting Rundle Road are vacant. The site at the corner of 103-109 Kings Road is used for warehousing and is approved for alterations and additions which are under construction.

South

Parafield Airport is located on the opposite side of Kings Road. The land is owned by the Federal Government under long term lease to Adelaide Airport Ltd. Parafield Airport is a major general aviation and pilot training airport in South Australia. The principal aviation-related facilities include:

- Four-runway system comprising the main (illuminated) 03L/21R runway (1350m), 03R/21L runway (1279m), 26L/08R runway (992m) and 26R/08L runway (958m) together with associated aprons and the sealed and unsealed taxiway system;
- On-airport car parking facilities;
- Aircraft maintenance hangars and associated facilities;
- Helicopter facilities;
- Air traffic control facilities;
- Public transport access; and
- Aviation fuel facilities.

The nearest runway 03L/21R is 350m south-west of the Kings Road/Horrie Miller Drive junction and the runway approach is directly over the north-western portion of lot 120. The

primary aviation precinct comprising the aircraft maintenance hangars, air traffic control facilities and apron area are accessible via Dakota and Anderson Drive which connect to Kings Road, more than 500m north-west from the Kings Road/Horrie Miller Drive junction.

The north-eastern corner of the Parafield Airport site is developed in the form of a non-aviation commercial precinct. Access to the precinct is achieved via the signalised Kings Road/Horrie Miller Drive junction and left in/left-out slip lanes to Main North Road. Lawrence Hargrave Way provides means of internal vehicular connection between Main North Road and Horrie Miller Drive.

The commercial precinct includes the following land uses:

- Roulettes Hotel, Parafield Airport drive-through liquor store and take-away pizza shop, located adjacent the Kings Road/Horrie Miller Drive junction, with at-grade parking in front;
- South of Roulettes Hotel fronting Horrie Miller Drive, a gravel car park;
- South of Horrie Miller Drive (adjacent the gravel car park), four freestanding buildings comprising a mix of retail and bulky goods tenancies and associated at-grade car parking;
- East of the Roulettes Hotel, an OTR petrol filling station, associated hardstand and entry/exit to Kings Road;
- At the corner of Kings Road and Main North Road (across Lawrence Hargrave Way), a restaurant, two retail tenancies and Parafield Airport entry signage;
- South of the restaurant and retail tenancies, a car wash, Bunnings Warehouse, Airport City (comprising multiple tenancies used primarily for shops and bulky goods) and at-grade parking adjacent to Main North Road.

East

Land east of Main North Road and north of McIntyre Road is located within the Residential Zone. A Shell petrol filling station is located at the corner of Main North Road and McIntyre Road. Remaining land comprises predominantly single storey dwellings on large residential sized allotments, having frontage to an internal road network. Reserve buffers planted with mature trees separate the rear yards of houses from Main North Road and Kings Road.




South-East

Land east of Main North Road and south of McIntyre Road is located within the Industry Zone. The Peter Kittle Toyota dealership is located at the corner of Main North Road and McIntyre Road. Uses further south and south-east comprise small-scale general industries, motor repair stations, service trade premises and car wreckers.

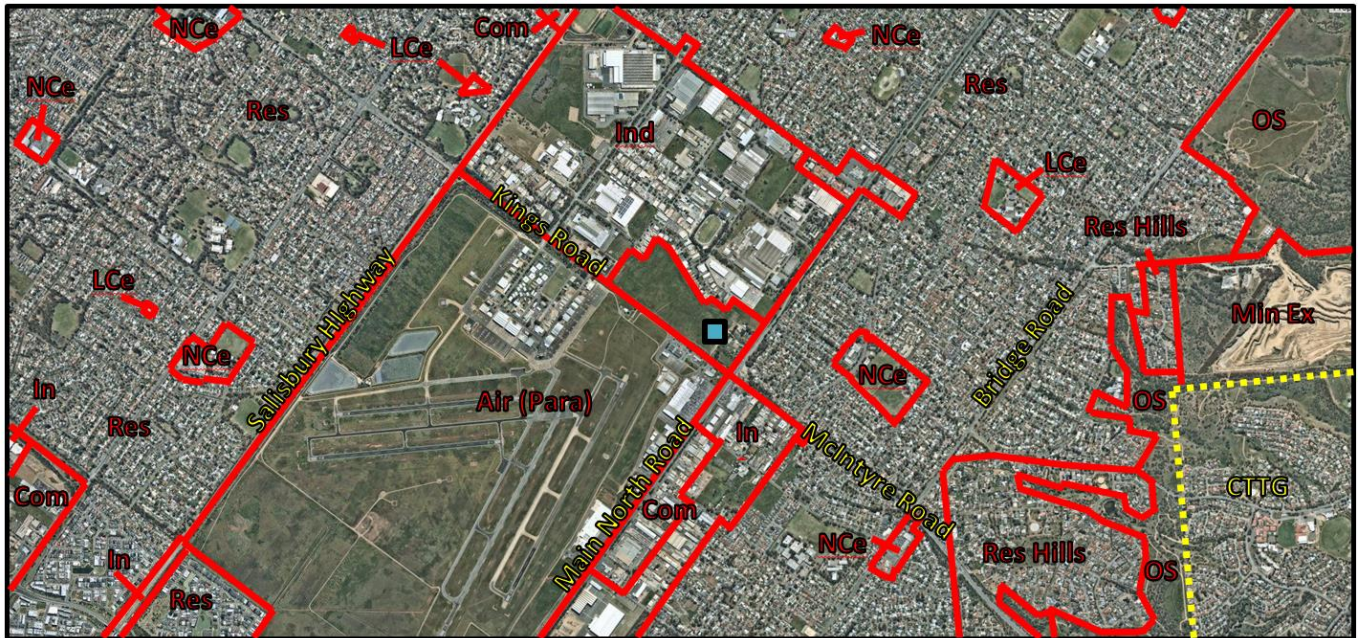
A locality plan and contextual plan are provided on the following pages which define the site boundary and the general boundary of the locality.



Locality Plan - Aerial



Legend (Source: Dekho)	
	Subject site
	Site boundary
	Locality boundary

Contextual Plan:



Legend (Source: Nearmap)	
	Subject site
	Zone boundary

6. DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development incorporates the following elements:

- Demolition of existing dwelling, associated structures and outbuildings;
- Removal of 40 Regulated Trees (including 8 Significant Trees);
- Transplanting of 13 Regulated Trees (12 Canary Island Date Palms and 1 Queensland Bottle Tree);
- Construction of a mixed use retail and entertainment complex comprising:
 - Major retail shops (2) at the northern end of the site, major retail tenancy 1 of 3,910m² selling predominantly foodstuffs and major retail tenancy 2 of 6,205m² selling predominantly non-foodstuffs;
 - Specialty retail shops (13);
 - Café (1);
 - Bulky Goods tenancies (4);
 - Entertainment venues comprising an indoor bowling facility, cinema and children's active playspace at the southern end of the site;
 - Indoor recreation centre (gymnasium) at upper floor level above the entertainment venues;
 - Three fast food restaurants (with associated drive through facility) clustered adjacent to the Main North Road/Kings Road corner;
- Ancillary development including siteworks, access/egress to Kings Road, Main North Road and Mengel Court, at-grade parking and manoeuvring areas, loading docks, pedestrian paths, waste storage areas, outdoor seating and landscaping.

A detailed description of the various components of the development is discussed under the "Assessment" section of this report.

A copy of the proposal plans, correspondence, reports and property information is contained in Attachment 1.

7. CLASSIFICATION

The site is located within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone (hereafter referred to as the 'Zone'), under the Salisbury Development Plan, Gazetted 19th January 2017. The proposed development is neither listed as a complying or non-complying form of development in the Zone and shall therefore be assessed 'on-merit'.

8. PUBLIC NOTIFICATION

Under Section 38 of the *Development Act 1993*, development may be assigned to either Category 1 or Category 2 by the Development Plan or the *Development Regulations 2008*.

In the Zone, public consultation is dealt with in the following way:

Categories of public notification are prescribed in Schedule 9 of the Development Regulations 2008.

Further, the following forms of development (except where the development is non-complying) are designated:

Category 1	Category 2
<p>Any development which consists of any of the following:</p> <p>(a) Bulky goods outlet (b) Café (c) Entertainment venue (d) Indoor recreation centre (e) Petrol filling station (f) Restaurant (g) Service trade premises (h) <u>Shops with a gross leaseable floor area greater than 200 square metres</u> (i) <u>Take away food shop (my underlining)</u></p>	<p>All forms of development not listed as Category 1</p>

The proposed café tenancy and tenancy 8B will have a gross leaseable floor area of 190m². Given that these tenancies will have a gross leaseable floor area of not greater than 200m², the application cannot be a Category 1 form of development. This aspect of the development therefore falls as Category 2 and means the application as a whole is subject to a Category 2 public notification process.

The Category 2 public notification process took place between 11th and 22nd December 2017. In total, three valid representations were received as follows:

Representations Received		
Representations received	Wish to be heard	Support or Oppose
<i>Brenton Burman, AECOM Australia Pty Ltd on behalf of Parafield Airport</i>	<i>Yes</i>	<i>Oppose</i>
<i>Peter Kittle Toyota</i>	<i>No</i>	<i>Support</i>
<i>L Leondiou, M Leondiou</i>	<i>No</i>	<i>Support</i>

A copy of the representations and the applicant's response are contained in Attachment 2.

The following is a summary of the matters raised by the representors:

Summary of Representations
<p><i>Brenton Burman, AECOM Australia Pty Ltd on behalf of Parafield Airport</i></p> <ul style="list-style-type: none"> - <i>There is a lack of technical information provided in relation to potential impacts of the development on the ongoing aviation and safety operations of Parafield Airport.</i> - <i>Overlay Map Sal/41 Development Constraints within the Development Plan triggers a referral for 'all development' on the subject land to the Department of Infrastructure and Regional Development (DIRD) for consideration in relation to the height of buildings proposed and their impact on aircraft operations. Pursuant to Schedule 8 of the Development Regulations 2008, DIRD has power of direction over the decision of the relevant planning authority. DIRD has raised numerous concerns in relation to airport safeguarding issues, which do not appear to have been adequately addressed with the additional application information that has been provided.</i> - <i>The proposed development represents 46% of the Zone, and the remainder of the zone is severely compromised by airport safety issues, with any potential development of this land likely to have significant long-term operational and safety impacts to Parafield Airport. The connection of this development with the remainder of the zone should be clarified.</i> - <i>Consideration needs to be given to the proposed construction techniques, as temporary structures such as cranes can intrude into protected airspace.</i>

- *The windshear and turbulence assessment does not incorporate any specific modelling or experimental validation to support the conclusion that the current design is appropriate from a windshear and turbulence risk perspective. Modelling should be undertaken to ensure the development does not result in any adverse impacts in relation to windshear and turbulence.*
- *The application does not provide any information or measures to deter birds (both through design and management practices).*
- *The application does not provide any information in relation to signage or advertising structures which may impact on airport operations due to the location, height and luminosity.*
- *The Salisbury Development Plan incorporates an ‘Airport Runway Control Policy Area’ at the south-western end of Parafield Airport’s two main runways. While this does not impact on the site, it demonstrates how the National Airports Safeguarding Framework (NASF) guidelines, including the concept of ‘Public Safety Zones’, has been further embedded into the Development Plan. Following the recent air crash at Essendon Airport, the National Airports Safeguarding Advisory Group (NASAG) is seeking to encourage the introduction of airport ‘Public Safety Zones’ to all State and Territory planning systems in Australia, which may impose further limitations on the development potential of the site.*
- *A detailed assessment of the proposed development in relation to the Airports (Protection of Airspace) Regulations 1996 has not been provided.*
- *The projected volume of traffic, intersection upgrades, queuing and conflict issues and provision of pick-up and set down areas require further consideration.*

Peter Kittle Toyota

- *Supports local development and believes it will be good for the area.*

L Leondiou, M Leondiou

- *No objection, will be good for the area.*

Council has also received a number of submissions from persons not entitled to be notified of the development, in opposition to the development, both prior to and during the Category 2 period. These submissions may be described as ‘invalid’ submissions and are not required to be taken into account by the Panel in accordance with Section 38(17) of the *Development Act 1993* as follows:

- (17) *Where a relevant authority is acting under this section in relation to a Category 2A or Category 2 development, a representation made by a person who is not entitled to be given notice of the relevant application under this section is not required to be taken into account under this section and will not have effect for any relevant purpose under this section.*

The invalid submissions were provided to the applicant for their consideration. The applicant has not responded to issues raised in the invalid representations and advised that they should not be presented to the CAP, considered by the CAP or be given permission to appear before the CAP as such an action is considered to be a “fundamental breach” of the requirements of the *Development Act 1993*.

While section 38(17) provides that invalid representations are not required to be taken into account and have no legal effect, the Act does not expressly prohibit the Panel from having regard to them if, for example, they contain relevant information that would assist the Panel’s decision-making on the planning merits.

Given the above, the invalid representations have not been individually addressed but issues that are relevant to the development are addressed under the assessment section of this report. A copy of the representations are contained in Attachment 3 for information.

A summary of the applicant’s response to the valid submissions is contained within the table below.

Applicant's Response to valid representations*Anthony Gatti, Intro on behalf of GIC Kings Road Pty Ltd*

- *The balance of the land is not proposed to be developed. Development of this site will be subject to a new application and shall be subject to referral to the airports authority.*
- *A windshear and turbulence analysis has been prepared which demonstrates that the development will not adversely affect the operations of Parafield Airport.*
- *The proponent has previously developed land on the Parafield Airport Commercial precinct land and is aware of the issues of development next to an airfield.*
- *The proponent shall work with Parafield Airport Ltd in a collaborative manner including developing management procedures to address bird flocking.*
- *Advertising signage is not proposed under this application. All advertising shall be subject to a fresh application and subject to referral to the airports authority.*
- *An assessment of the development against the Airports Act 1996 and Airports (Protection of Airspace) Regulation 1996 is not required under the Development Act 1993.*
- *The proponent is working with the Department of Transport to ensure that all road based traffic issues are resolved.*
- *The zone permits retailing and supports the quantum and type of retailing proposed.*

9. REFERRALS – STATUTORY

The application was subject to the following referrals in accordance with Schedule 8 of the *Development Regulations 2008*:

- Commissioner of Highways – Schedule 8(3) of the *Development Regulations 2008* on the basis that new access points are proposed to a Primary Arterial (Main North Road) and Secondary Arterial Road (Kings Road) as shown on Overlay Maps (Transport) Sal/41 and 42 of the Salisbury Development Plan. The development will also encroach within a road widening setback under the *Metropolitan Adelaide Road Widening Plan Act 1972*, insofar as a 20m reserve is provided for adjacent to the Main North Road frontage;
- Commonwealth Secretary for the Department of Transport and Regional Services – Schedule 8(9) of the *Development Regulations 2008* on the basis that the development will involve building work within Zone A (all structures) as shown on Overlay Maps (Development Constraints) Sal/34, 41 and 42.

A copy of the referral responses are contained in Attachment 4.

The following is a summary of the responses received:

Commissioner of Highways

- *DPTI does not object in-principle to the intent of the proposed development (ie. the mix of land uses, the scale of the proposed development – subject to additional traffic analysis and the provision of access to/from the arterial road network in some form). However, there are a number of aspects of the Road Infrastructure Design and Delivery Deed over the subject land that remain outstanding. In particular, the principles and performance criteria mentioned above. Detailed Road/Traffic Analysis for the whole site, the agreed Traffic Intervention Plan and the Final Deed will need to be resolved to the satisfaction of DPTI prior to full development approval.*

Commonwealth Secretary for the Department of Transport and Regional Services

- *The Department does not support this application as it appears to be incompatible with the ongoing safe operation of the airport and inconsistent with a number of National Airports Safeguarding Framework (NASF) Guidelines.*
- *The Department recommends a detailed wind assessment is conducted and advice is sought from the Civil Aviation Safety Authority to confirm any windshear/turbulence assessment.*
- *Parafield Airport should be advised of the planned height of the building as well as any associated crane activities to ensure that any approvals required under the Airports (Protection of Airspace) Regulations 1996 are obtained.*
- *The site falls largely within the Parafield Airport ANEF 30 contour, however, there is a significant portion of the site within the ANEF 35 contour. Any commercial development within the 30 contour should be designed such that internal noise levels inside commercial buildings (shops, supermarkets, showrooms) remain below 75 decibels during aircraft overflight, in accordance with Table 3.3 of AS 2021:2015. SA 2021:2015 prescribes that commercial-use buildings are unacceptable within the ANEF 35 contour.*
- *Accidents on take-off and landing are most likely to occur within one kilometer of runway ends. The National Airports Safeguarding Advisory Group is currently developing a new NASF Guideline on 'Public Safety Zones' (PSZ) immediately beyond runway ends. The proximity of the proposed site to the northern ends of the runways at Parafield Airport would appear likely to place it within a 'PSZ. Based on the current draft Guideline, it would be inappropriate to develop a commercial and leisure complex within the site, as such a development would significantly increase the number of people present within the PSZ.*

The reference in the Department's response to the Public Safety Zone is fundamentally inconsistent with the zoning of the land under the Development Plan which supports a mixed use development. It is noted that the NASF Guideline on 'Public Safety Zones' is a draft Guideline and carries no weight for the purposes of assessment of this application against the Salisbury Development Plan.

10. REFERRALS – INTERNAL

Internal consultation has taken place with the following stakeholders:

- Access and Inclusion;
- Development Engineering (including Traffic, Stormwater and Water Quality);
- Environmental Health;
- Landscape Design;
- Property Services;
- Tree Services;
- Urban Policy.

The applicant has responded to the internal comments as part of their information request response. Conditions and advice notes are included to address any other matters identified through the internal consultation process. The referral responses can be viewed in Attachment 5.

11. ASSESSMENT

Background to the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone

The current provisions of the Zone came into effect under a Ministerial Development Plan Amendment (DPA), Gazetted on 21st April 2016. While not relevant to the assessment of this application, the background to the current Zone provisions is important in providing context for consideration of this proposal.

A key goal of the Ministerial DPA was “...to consider matters that can have a negative influence on the decision to invest and develop in centres from the outset due to a lack of certainty and control”. The DPA sought to respond to a Productivity Commission report which “acknowledged a need to establish land use zoning and practices that are more conducive to business activity by broadened zoning, reduced prescription, simplified planning requirements, facilitating more ‘as of right’ development and to address third party appeal processes”.

The Ministerial DPA made a number of significant changes to the Zone. The most significant changes can be summarised as follows:

- Removing reference in the Zone to all statements excluding supermarkets;
- Replacing prescriptive terms in the Zone with more flexible terms (ie. removing ‘should not exceed’ and replacing with terms like ‘or thereabouts’, ‘will generally’ and ‘in the order of’);
- Removing non-complying triggers applicable to a shop and supermarket.

These changes are particularly notable to the extent it may be suggested the Zone actively discourages the establishment of a supermarket; while that may have been the case previously, the policy has been watered down to some extent by the Ministerial DPA in that supermarkets are now no longer actively discouraged in the Zone.

Having said that, the proposal must nevertheless be considered on its merits against all relevant provisions of the Development Plan, and it cannot be said that the removal of a “prohibition” against supermarkets automatically makes a supermarket an acceptable form of development.

Seriously at Variance

The Panel must resolve whether the development is seriously at variance with the Development Plan. Section 35(2) of the *Development Act 1993* provides that:

- (2) *Subject to subsection (1), a development that is assessed by a relevant authority as being seriously at variance with the relevant Development Plan must not be granted consent.*

“Serious” is defined in *The Macquarie English Dictionary*, to mean “weighty or important”. Thus, the expression “seriously at variance with the Development Plan” refers to that which is an important or grave departure in either quantity or degree from the Development Plan. It denotes something which is plainly not slight or trifling. It is not enough that the proposal might conflict with the Development Plan; it must be seriously at variance with it: *Courtney Hill Pty Ltd v South Australian Planning Commission (1990)*.

To ascertain whether a development is seriously at variance with the Development Plan “requires an examination on what is the essential thrust and objective of the Development Plan...so far as they apply to the land the subject of the intended development and its locality.” (*Mar Mina (SA) Pty Ltd v City of Marion & Anor (2008) SASC 120*).

It is also important to note that in determining whether a proposal is seriously at variance, it is not to the point that the objective of the Plan cannot be or is unlikely to be achieved. If for some reason the essential thrust and objective of the Plan is not achievable, then the appropriate remedy is for the Development Plan to be amended, rather than to allow development that is seriously at variance to occur: *Alexandrina Council v Strath Hub Pty Ltd (2003) SASC 382*.

Turning to consider the Development Plan, the Zone expresses broad objectives in terms of the envisaged land uses. The Principles of Development Control support these Objectives. Objective 1 of the Zone seeks:

- 1* *A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises. (my underlining)*

Principle of Development Control 1 of the Zone further states that the following forms of development are envisaged:

- *Leisure and entertainment venues*, including indoor recreation with a maximum total floor area in the order of 20,000 square metres across the zone;
- *Bulky goods outlet* and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18,000 square metres across the zone;
- *Shops* (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15,000 square metres per tenancy with a maximum total floor area across the zone in the order of 46,000 square metres;

- Restaurants with a maximum total floor area in the order of 1,200 square metres across the zone. (my underlining)

The proposed land uses are consistent with Objective 1 and the quantum of floor area for the respective uses is also consistent with Principle of Development Control 1. In this respect, the proposed land uses and quantum of floor areas are clearly consistent with the Zone.

Furthermore, the proposed development is consistent with the following explicit references in the Desired Character Statement which relate to the envisaged land uses:

The Zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

The Zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets.

The Zone also makes a series of statements in respect of the anticipated "style" of retailing being somewhat different from a traditional shopping centre.

Examples in the Desired Character Statement include:

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

...There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10,000 square metres and 15,000 square metres or thereabouts. Up to 45% of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative model to smaller tenancies found within other centres.

These elements are considered to be important and should be considered as part of the overall assessment of whether the application is seriously at variance.

In this regard, arguments that the proposed development is seriously at variance with the Development Plan include that:

- The proposal does not constitute a "unique specialist centre";
- There is an absence of a single large floor plate tenancy;
- The tenancies labelled "Major Retail 1" and "Major Retail 2" may be occupied by a supermarket, which is not an envisaged land use;

- There is an absence of “*an alternative retail model for small and medium businesses and individuals to purchase products in bulk*”;

In response to this, the applicant has advised that:

- The major retail tenancy 1 (3,910m²) will be used for the sale of predominantly foodstuffs and major retail tenancy 2 (6,205m²) will be used for the sale of predominately non-food stuffs, consistent with the objective of the zone.
- The proposal provides for entertainment land uses, bulky goods outlets and large floorplate retail (selling predominately non-food stuffs) which represents the majority of the requirements for it to satisfy the unique specialist centre test.
- The alternative retail model is that each tenancy will generally be 200m² or more, with the exception of one of the tenancies, allowing the desired alternative retail model.
- While Objective 1 sets out uses which should primarily be found in the zone, this does not mean that other uses are not permitted in the zone.
- The subject land represents approximately 46% of the total land in the zone and there is ample opportunity on the balance of the land to construct a single large floorplate shop with a floor area between 10,000m² and 15,000m².

Furthermore, consideration has been given to:

- The phrase “predominantly non-food stuffs” anticipates some retailing of food stuffs;
- Retailing of foodstuffs is expressly limited to major tenancy 1 (supermarket).
- The fact that a supermarket is not an expressly envisaged land use does not mean there is variance; the zone clearly contemplates a diversity of retail shops of different sizes and types;
- The Desired Character statement contemplates “retail outlets” and “a diverse range of tenancies”; a supermarket and discount department store are part of that diversity;
- The absence of a “larger single floor plate tenancy” for small and medium businesses to purchase products in bulk (Cost Co) is noted; however, it is one of many envisaged elements of the zone. If the zone as fully developed does not include it, then the zone as a whole may be seriously at variance; but that conclusion is premature given that over 50% of the zone remains available for it;
- The larger specialty shops will provide an alternative retail model to traditional specialty shops which are generally much smaller;
- “Uniqueness” is derived from integration with the leisure and entertainment precinct, as well as a mix of larger specialty tenancies and bulky goods; with potential for further uniqueness in the future when the balance of the zone is developed;
- The role of the Development Plan is not to inhibit or provide a road block to development that is sufficiently in accordance with the overall thrust of the plan.

While, in one sense, the absence of a larger floor plate tenancy may be considered to be at variance with the Development Plan (in the context of the zone in its entirety), on balance, it is considered that the proposal is not “seriously at variance” given the high degree of consistency of the elements proposed in the development, and the potential for the full range of envisaged retail and non-retail uses (including a Cost Co style offering) to be achieved in the zone in the fullness of time.

It is also not considered that the proposal is seriously at variance with the General Section “Centres and Retail Development” provisions of the Development Plan (see further below).

In conclusion, the proposed mix of land uses and quantum of floor area for the uses is consistent with Objective 1, Principle of Development Control 1 and the parts of the Desired Character Statement which express the desired land uses. On this basis, it is recommended that the Panel resolve that the proposed development is not seriously at variance with the Development Plan.

Assessment

A detailed assessment of the application has taken place against the relevant provisions of the Salisbury Development Plan and is described below under headings.

An extract of the relevant Development Plan, Consolidated 15th December 2016 (but subject to Gazette Notice 19th January 2017) is contained in Attachment 6. The relevant provisions are also highlighted in the Attachment.

The Development Plan version Gazetted 19th January 2017 incorporates amendments to the Development Plan under Section 29(2)(b)(ii) of the *Development Act 1993*, which are not reflected in the attachment but are not relevant to this application.

Centres and Retail Development

The Salisbury Development Plan supports integrated centres. Under the General Section, “*Centres and Retail Development*” module, Objectives 1, 5 and 6 state that:

- 1 *Shopping, administrative, cultural, community, entertainment, educational, religious and recreational facilities located in integrated centres.*
- 5 *Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.*
- 6 *Development of centres outside of Greater Adelaide in accordance with the following hierarchy:*
 - (a) *Regional Centre;*
 - (b) *District Centre;*
 - (c) *Town Centre (for smaller towns with a single centre zone);*
 - (d) *Local Centre (subsidiary centres for towns with a regional or district centre).*

The Zone is akin to a large District Centre Zone in terms of the anticipated retail floor area of up to 46,000m² but is unique in that it seeks a combined leisure and entertainment offering. The Zone envisages uses that are referenced under Objective 1, albeit on a more limited basis (i.e. primarily shopping, entertainment and leisure/recreational facilities). While the title of the Zone does not include the word “centre”, the Desired Character statement makes various references which suggest that the Zone will function as a “centre” of a different kind: see for example references to a “unique specialist **centre**”, a “premium outlet **centre**” and as an alternative to “traditional **centres**” and “other **centres**”.

As such, it is evident that the Zone is a form of “alternative” centre zone as it will be an integrated centre incorporating a selection of uses as anticipated within centre zones.

It is also clear that the Zone contemplates retail development of a substantial size and order, and that it picks up many of the themes that appear in the General Section, “Centres and Retail Development” module including for example the creation of a pedestrian-friendly environment, integration of utility spaces, integrated signage and so on.

As such, it is considered that the general provisions of the Plan appearing under the “*Centres and Retail Development*” module apply equally to the Zone as to other forms of centre zones. Further, it would be erroneous to conclude that the Zone sits outside, or that it would somehow be at odds with, the hierarchy of centres referred to in the “*Centres and Retail Development*” module. As discussed further below, it would also be incorrect to say the proposed development was for a retail development being undertaken “outside of zones that allow for retail development”; see PDC 10 and 12, “*Centres and Retail Development*” module (see below).

Objective 5 seeks that centres are developed in accordance with a hierarchy based on function. The Zone expresses what the intended function of the Zone is in terms of the broad range of uses that are anticipated and the anticipated size of the development based on expressed floor areas, contained under Principle of Development Control 1 of the Zone.

Principle of Development Control 6 is not relevant to this proposal in that the site is not located outside of Greater Adelaide.

Principles of Development Control 10 and 12 under the “*Centres and Retail Development*” module further state that:

- 10** *A shop or group of shops with a gross leaseable area of greater than 250 square metres should be located within a centre zone.*
- 12** *A shop or group of shops located outside of zones that allow for retail development should:*
- (a) Be of a size and type that will not hinder the development, function or viability of any centre zone;*
 - (b) Not demonstrably lead to the physical deterioration of any designated centre;*
 - (c) Be developed taking into consideration its effect on adjacent development*

The proposed development incorporates shops having a gross leaseable area in excess of 250 square metres. As discussed above, it is considered that the proposed development will occur within a “centre zone”, and conversely, that it will not be located outside of zones that allow for retail development. When considering the clearly expressed policy in the Zone, the Zone provisions allow for retail development within a “centre” type environment, albeit one that is differentiated from a traditional centre. As stated above, the Zone is considered to be in essence that of a ‘centre zone’ in that it anticipates a selection of uses encouraged within a centre zone and the floor area limits are akin to that of a large ‘District Centre’.

Principle of Development Control 12 seeks to avoid development outside of designated zones which may hinder the development, function or viability of any centre zone. The Zone broadly contemplates retailing up to a prescribed limit and the development is consistent with those expressed limits.

Land Use and Form of Development

The proposed mix of land uses is consistent with the envisaged land uses for the Zone. As stated earlier, there are total floor area guidelines that apply to the envisaged land uses under Principle of Development Control 1 and there is also a guideline in terms of the maximum total floor area for combined uses anticipated in the Zone.

The total floor area and respective percentages of the total area that are expressed in the Zone are as follows:

- Leisure and entertainment venues (including indoor recreation) – 20,000m² (23%);
- Bulky goods outlet and service trade premise – 18,000m² (21%);
- Shops (excluding bulky goods outlets and restaurants) – 46,000m² (54%);
- Restaurants – 1,200m² (1.4%);
- **TOTAL** – 85,200m² (gross leaseable floor area of 77,900m² – ie. Excluding malls, common areas etc.).

The proposed floor areas are as follows:

- Leisure and entertainment venues (including indoor recreation) – 8,205m² (29.29% of proposed gross leaseable floor area);
- Bulky goods – 2,920m² (10.42% of proposed gross leaseable floor area);
- Shops – 16,126m² (57.57% of proposed gross leaseable floor area);
- Fast food restaurants – 760m² (2.71% of proposed gross leaseable floor area);
- **TOTAL** – 28,011m² of gross leaseable floor area or 30,136m² of total floor area (35.95% of gross leaseable floor area and 35.37% of total floor area).

The proposal has been considered against Principle of Development Control 1 in terms of the proportion (ie. mix) of uses and the total capacity that is remaining for future development on the balance of the land. This detail is summarised in table 1 below.

Table 1. Proposed floor area by use measured against maximum gross leaseable area (GLA) permitted in Zone

<i>Land use</i>	Maximum GLA in Zone (m ²)	% of Total GLA in Zone	Proposed GLA in Development	% of GLA of Development	Remaining GLA Capacity (m ²)
Leisure and entertainment venues (including indoor recreation)	20,000m ²	25.67%	8,205m ²	29.29%	11,795m ²
Bulky goods outlet/Service trade premise	18,000m ²	23.10%	2,920m ²	10.42%	15,080m ²
Shops	46,000m ²	59.05%	16,126m ²	57.57%	29,874m ²
Restaurant	1,200m ²	1.50%	760m ²	2.71%	440m ²
Total	77,900m²	100%	28,011m²	100%	49,889m²

The proposed total floor area will consume some 36% of the total gross leaseable floor area anticipated in the Zone. None of the proposed uses will exceed the maximum area anticipated for the respective uses and it is further noted that a substantive amount of remaining capacity is available for further development upon the balance of the land in the Zone.

In terms of the mix of uses, these are considered in balance with the desired mix for the zone. The proposed development provides for a higher proportion of take away food restaurants, a slightly greater balance of leisure and entertainment and a lower balance of bulky goods. The overall mix is considered to be acceptable, noting that:

- a) The proportion of leisure and entertainment will achieve a percentage of the total gross leaseable area mix of 29.29%, which is greater than that anticipated under Principle of Development Control 3 of 25%;
- b) The corner address of Main North Road and Kings Road is clearly the most appealing location for fast food restaurants and it is therefore accepted that a higher proportion of take away food restaurants would be developed in this location.

Size of tenancies and style of retailing

The Desired Character Statement provides further description in terms of the style and size of envisaged tenancies. The following extracts are particularly relevant:

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages. There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10,000 square metres and 15,000 square metres or thereabouts. Up to 45% of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

The Zone envisages a single large floorplate shop in the model of a Costco or similar retail format. The proposed retail format comprises a major retail tenancy selling predominantly foodstuffs of 3,910m² and a major retail tenancy selling predominantly non-foodstuffs of 6,205m², of which their combined footprint exceeds the 10,000m² but when considered individually are below this guideline. It is noted the proportion of food and non-food will achieve the balance of 45% intended for the single large floor plate shop (noting however that this balance is not expressed as applying to retailing generally in the Zone).

The major retail shops are based on a more conventional retail model than envisaged by the Desired Character statement and is therefore non-compliant with this part of the Desired

Character statement. However, when considered against the whole of the Development Plan, the degree of non-compliance is not considered to be significant given that:

- Principle of Development Control 1 envisages shops having a minimum floor area in the order of 200m² and a maximum floor area in the order of 15,000m²;
- The major retail tenancies will contribute to the overall diversity of retail tenancies to be established in the zone
- Overall, the proposal will offer an alternative retail model on account of the larger floor area of individual tenancies (compared with more traditional specialty shops) which will lend themselves to retail outlets for leading brands.
- The Zone clearly anticipates up to 46,000m² of retail floor area, of which this proposal will consume some 16,000m². This leaves a further 29,874m² of gross leaseable floor area that can be developed for retailing and can include a single retail floor plate of between 10,000m² and 15,000m².

In terms of the types of individual shops, all tenancies other than shop 8B and the café will achieve a floor plate size of more than 200m² as anticipated in the Zone and the individual restaurants will have a maximum floor area of not greater than 450m² per tenancy. This part of the proposal accords with the part of the Desired Character statement which seeks an “*alternative model to smaller tenancies found within other centres*”, recognising that the individual brands of tenancies are not yet determined.

The applicant has not identified the individual tenancies for the specialty retail but has identified the tenancies that will be used for the sale and display of foodstuffs. These specialty retail tenancies will have a combined floor area of 1750m². When this floor space is combined with Major Retail Tenancy 1, a total of 5660m² of the retail floor space will be used for the display and sale of foodstuffs. As a proportion of the total retail floor area, this is 35% of the floor space. As discussed above, the proportion of food and non-food is not explicitly prescribed in the Zone but the proposal does not exceed the balance of 45% intended for the single large floor plate shop (noting however that this balance is not expressed as applying to retailing generally in the Zone). The development is considered to satisfy the requirement for predominantly selling non-foodstuffs.

It is noted that in the matter of *Parabanks Shopping Centre Pty Ltd v The City of Salisbury & Anor* (2013) SASC 168, the Supreme Court made the following remarks:

“The Council had no obligation to make further inquiries about specific types of personal services establishments or restaurants or bulky goods outlets proposed or about specific tenants. It is unlikely such information could have been provided in any event given the lead time between application for approval and completion of construction.”

In summary, the retail format is at odds with the part of the Desired Character statement which seeks a single large floor plate envisaged of between 10,000m² and 15,000m² in that two smaller retail tenancies (major retail shops 1 and 2) are proposed. However, it is noted that Principle of Development Control 1 envisages retail tenancies of between 200m² and 15,000m² meaning that a retail model as proposed is not precluded. It is also considered that sufficient retail capacity will be available to establish a retail tenancy of between 10,000m² and 15,000m² on the balance of the land. The remaining shops, other than shop 8B and the café, will achieve a floor plate size of “*more than 200m² to provide an alternative model to*

smaller tenancies found within other centres” and the predominant retail uses will be for the display and sale of non-foodstuffs.

Staging

The proposed development will occupy approximately 46% of the total land area of the Zone, thus leaving some 54% of zoned land available for further development. As confirmed above, there is some 49,889m² of gross leaseable area available for future entertainment, bulky goods, retail and take-away food shop development on the balance of the land in the Zone.

It is noted that the Zone discourages staging of development but the emphasis is principally on ensuring the desired mix of land uses is achieved concurrently, in order to avoid standalone retail or bulky goods uses that do not incorporate an entertainment component, as opposed to staging of development upon the entire zoned land.

The following emphasis is contained within the Desired Character statement:

Development should occur so that expected land uses are developed concurrently to avoid the establishment of standalone land uses. Particularly the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses in order to ensure the mixed-use activities for the zone are achieved.

The proposed development will achieve the desired mixed-use activities concurrently.

The total zoned land is in excess of 20ha and the proposed staging of the development in the manner proposed is considered to be orderly and in accord with the Objectives of the Zone. The remaining vacant land can be developed in a manner consistent with the Zone objectives but subject to ensuring the ongoing operational requirements of Parafield Airport are met, given that:

- a) There is remaining floor area capacity available to develop on the vacant land in all envisaged forms of land use;
- b) The upgraded junction with Horrie Miller Drive will facilitate access to Kings Road that will service all parts of the zoned land and it is noted that the Commissioner of Highways have requested that the Road/Traffic Analysis cater for development of the whole site;
- c) Further access is capable of being achieved via Rundle Road for service vehicles in accordance with the Desired Character statement for the Zone;
- d) Internal vehicular and pedestrian connections can be achieved between the developed and vacant land.

The staging of the development of the broader site in the manner proposed is therefore considered to be acceptable.

Land use conflict

Principle of Development Control 16 of the Zone states that:

16 *Development adjacent the Industry Zone should incorporate:*

- (a) *A minimum 3 metre building setback from the zone boundary;*

- (b) *Visual and acoustic buffer treatments;*
- (c) *Screened or obscured building openings.*

The proposed development achieves a satisfactory interface design with the adjacent Industry Zone in that it incorporates a building setback in excess of 3m from the Industry Zone boundary and fencing to act as a screen in the form of a 1.8m high solid fence. The design of the loading docks adjacent the Industry Zone boundary is an appropriate design response.

Under the General Section, “Interface between land uses” module, Principle of Development Control 6 further states that:

- 6** *Non-residential development on land abutting a residential zone should be designed to minimise noise impacts to achieve adequate levels of compatibility between existing and proposed land uses.*

The applicant has provided hours of operation for the centre which are as follows:

- *Major tenants 1 and 2 – Monday – Friday, 6:00am – 9:00pm, Saturday, 6:00am – 5:00pm and Sunday 11:00am – 5:00pm;*
- *Cinema, leisure tenancies and specialty tenancies 1, 7, 8 and 9 – 9:00am – midnight;*
- *Fast food restaurants – 24 hours, 7 days per week;*
- *Specialty tenancies (northern side) – Monday – Wednesday and Friday, 9:00am – 5:30pm, Thursday, 9:00am – 9:00pm, Saturday, 9:00am – 5:00pm, Sunday, 11:00am – 5:00pm.*

The zone provisions do not limit operating hours of the facility. The proposed operating hours are broadly consistent with the operating hours of the Parafield Airport precinct and are compatible with the locality in which it is situated, which is largely non-residential, noting the site is isolated from the Residential Zone by Main North Road and associated reserve buffer.

The development layout and proposed hours of operation are compatible with existing development in the locality and achieve an appropriate interface with the Industry Zone.

Appearance of Development

The following extracts of the Desired Character statement for the Zone state that:

Buildings will be well designed, sited and developed to complement each other. Buildings should be visually attractive and incorporate articulation, high quality materials, texture and colour, and finished in materials with a low reflective index.

Buildings facing onto public roads or thoroughfares should avoid large expanses of solid unarticulated walling or blank facades and incorporate landscaping or detailed design enhancements to soften their appearance. Buildings should be placed as close as possible to street boundaries with frontage car parking and landscaping.

The building design and architectural style incorporates the following elements:

- Entertainment building and major retail tenancy 2 built close to the Kings Road and Main North Road boundaries respectively, but incorporating articulation and stepping together with landscaping in front;

- Active shop frontages facing internal to the site, having clearly articulated entry points for customers and shade structures overhanging footpaths and including landscaping;
- Modulated design of the entertainment building to break up the mass and bulk, including stepping of the wall plane and surface features;
- Contemporary architectural style using a single theme incorporating high proportions of glass to the shop fronts, variations in the parapet heights, blade walls, projecting corner elements and varied materials and colours;
- Maximum height of the entertainment building at 15m, consistent with the maximum allowance Obstacle Limitation Surface height for this site;
- Fast food precinct located at the corner of Main North Road/Kings Road. Design incorporates some back of house elements, but is proposed to be landscaped;
- Designated signage zones integrated into the building facades and located below the parapet height;
- Landscaped screen to the loading dock facing Kings Road, planted out with creeper vine or similar and mature plantings in front.

The architectural style, form and height of buildings is compatible with existing development in the locality which comprises a range of building styles and forms, and which is variable in terms of setback from the street.

The development utilises a consistent design theme in terms of form, setback and architectural style, consistent with the Desired Character statement. The buildings incorporate articulation and variation in the materials and colours used and use materials of low reflectivity.

The entertainment building and Major Retail Tenancy 2 are sited close to the road boundary as envisaged by the Zone, however, they incorporate lengths of wall which are non-activated. This element of the development is a shortcoming in the design and is considered to be at odds with the character of development in the locality which comprises buildings generally designed to front the main road frontage with car parking set in front. Attempt has been made to reduce the visual impact of the non-activated walls by incorporating articulation techniques to break-up the appearance including stepping of the wall plane, variation in the parapet height, materials and colours. Landscaping is further proposed to enhance these elevations to Main North Road and Kings Road, in an effort to improve the appearance and reduce the visual impact of these facades and service areas to adjacent public roads.

In response to road widening requirements of the Commissioner of Highways, the applicant has amended the treatment of the eastern wall elevation of the Major Retail Tenancy 2 to incorporate colouring and also introduced trellis structures as a growing medium to soften the visual impact of this wall, in the event the road widening is required. (Refer to discussion under *Road Widening* and *Landscaping*).

The corner address to Main North Road/Kings Road also incorporates some back of house elements. The rationale for a fast food precinct in this location is understood and with the inclusion of positive landscape design elements, this part of the proposal can provide a high quality address to this corner, consistent with the Desired Character statement. It is further noted that the corner contains existing billboard signage which is proposed to be removed.

Overall, the appearance of the development is considered to be acceptable.

Plant and Equipment

Under the General Section, “Design and Appearance” module, Principle of Development Control 26 states that:

- 8 *Structures located on the roofs of buildings to house plant and equipment should form an integral part of the building design in relation to external finishes, shaping and colours.*

Roof plant is identified on the roof plan SK09 and is designed to be screened from view. Ground level plant and equipment may include fire services boosters and pad mount transformers. The applicant has advised that the final design of these elements is yet to be determined as it is subject to detailed design. Some elements such as the water storage tanks and infrastructure associated with back of house loading docks will not be visible to view, other than from the Industry Zone which is considered to be an appropriate design outcome as mentioned earlier.

It is proposed that all final design for plant and equipment and associated screening be submitted for approval as a Reserved Matter, to ensure that these elements are an integral part of the building design as per Principle of Development Control 8 above.

Impact on Road Networks

An extract of the Desired Character statement for the Zone states that:

Main North Road and Kings Road function as major traffic and freight routes. These roads have also been proclaimed controlled-access roads to protect their role and function. The role of these roads is to provide safe, efficient and reliable movement throughout the day for all vehicles, including heavy freight. Subsequently, access points will be limited along Main North Road and Kings Road in order to ensure the operation and safety of these roads is maintained.

The development site has frontages to Main North Road, Kings Road and Mengel Court. Main North Road and Kings Road are arterial roads under the care, control and management of the Department of Planning, Transport and Infrastructure (DPTI) while Mengel Court is a local road under Council control. Main North Road carries in the order of 47,700 vehicles per day and has a posted speed limit of 80km/h while Kings Road carries in the order of 26,100 vehicles per day and has a posted speed limit of 60km/h adjacent to the site.

The applicant has submitted a transport impact assessment, prepared by GTA Consultants. Based on the floor areas for the proposed development by use, using the *Road Transport Authority document “Guide to Traffic Generating Developments (2002)”* the proposed development is expected to generate in the order of 2,300 trips during the weekday peak hour. The consultant suggests a number of these trips will be linked/passing trade trips that are already present on the road network, thus a 20% discount is allowed for in the modelling. A further 30% of trips are expected to occur between the on-site uses and thus a further reduction is accounted for in the modelling. The consultant suggests the site could generate up to 1,275 new vehicle trips during the weekday peak hour period and up to 1,652 trips on a Saturday.

The consultant estimates the distribution and directional split of projected trips will be 25% from all directions (north, south, east and west) which the consultant concludes can be accommodated by the road network. In terms of the impact upon the adjacent signalised intersections, which are the Main North Road/Kings Road intersection and Kings Road/Horrie Miller Drive intersection, the consultant concluded that:

Main North Road/Kings Road

- The intersection is already at a saturation level above 1 (ie. at capacity);
- The degree of saturation will increase from 1.133 to 1.198 and the average delay for motorists will increase from 125.6 seconds to 133.5 seconds;
- To hold the intersection at pre-development conditions, an additional right turn lane from Main North Road to Kings Road will be required as well as an additional left turn lane from Main North Road to McIntyre Road;
- The increase in saturation upon this intersection is considered to be minor and upgrade to this intersection is not required.

Kings Road/Horrie Miller Drive

- The addition of a fourth leg to the intersection of Kings Road/ Horrie Miller Drive will maintain an appropriate level of operation of the intersection;
- To manage queue lengths at the intersection of Kings Road/Horrie Miller Drive, sequencing and coordination of this intersection with the Main North Road/Kings Road intersection will be required.

The Commissioner of Highways have reviewed the transport impact assessment and advised the report does not provide sufficient basis upon which DPTI can assess the direct impact of the proposed development on the surrounding arterial road network. DPTI has referred to a Road Infrastructure Design and Delivery Deed between Engel Holdings Pty Ltd (the owner) and Minister for Transport and Infrastructure and Commissioner of Highways, signed prior to the current application being lodged. The Deed sets out requirements for upgrades to the arterial road network and contains the following clauses:

4.2 *The Owner acknowledges and agrees that (without limiting the obligation set out in clause 4.1) the owner may make an application:*

4.2.1 *to enable the deposit of a Plan of Division creating allotments in relation to any portion of the Land; or*

4.2.2 *for development authorization from the relevant authority under the Development Act 1993 for a development (other than land division), that involves construction of buildings and structures and requires building rules consent (as those terms are defined in the Development Act) on any portion of the Land;*

Provided that the Owner does not seek determination of any such applications in isolation to this Deed until:

4.2.3 *the Owner completes the Detailed Road Analysis;*

4.2.4 *the parties agree to the Traffic Intervention Plan; and*

4.2.5 *the parties have executed the Final Deed.*

DPTI have advised that they do not object in-principle to the intent of the proposed development, however, they have advised there are a number of aspects of the Road Infrastructure Design and Delivery Deed over the site that remain outstanding. In particular, the principles and performance criteria, Detailed Road/Traffic Analysis for the whole site, agreed Traffic Intervention Plan and Final Deed, which they have advised must be resolved prior to full development approval.

DPTI have advised that a condition should be included, requesting that the Traffic assessment, Traffic Intervention Plan and final Deed be finalised, prior to Development Approval. A condition of this kind is not considered to be workable as Council is not a party to the negotiations and final approval. A condition is also not considered to be necessary given the established Deed provides assurance to DPTI that impacts of the development upon the traffic network and in particular the signalised intersections are acceptable and to the satisfaction of DPTI. It is also incumbent upon the applicant to obtain permits for all designated access points to Main North Road and Kings Road which are proclaimed access roads, pursuant to Part 2A of the *Highways Act 1926* before works can commence.

The applicant has advised that it is committed to working through the final details with DPTI which shall take place if Development Plan Consent is granted and this process can sit outside of the Development Approval.

Design of Access Points

An extract of the Desired Character statement for the Zone states that:

Access/egress points will be located to maximize road safety and efficiency whilst facilitating staged development and with consideration to the ultimate development across the site. Additional access to land within the zone north of Kings Road will be via Rundle Road. Traffic control devices, including a fully integrated signalised four-way intersection at Kings Road and Horrie Miller Drive, may be required to ensure safe and convenient access which avoids unreasonable interference with flow of traffic on adjoining roads. Service vehicles will use Rundle Road and Mengel Court.

Vehicle access to the site is proposed at the following locations:

- New two-way signalised access from the western side of the proposed development along Kings Road aligning with Horrie Miller Drive;
- New two-way customer vehicle access to Main North Road restricted to left in and left out movements;
- Service vehicle access from Mengel Court for the specialty retail and bulky goods;
- Heavy vehicle access at the end of the Mengel Court cul-de-sac, servicing major retail tenant loading/refuse.

An emergency exit to Main North Road is also proposed at the northern end of the site, which shall be closed except in emergency situations.

A preliminary concept for the access design for Main North Road and Horrie Miller Drive has been prepared by GTA Traffic Consultants, based on preliminary discussions with DPTI. The preliminary design incorporates the following elements:

Main North Road

- Left turn lane in designed for a 90km/h design speed;
- Deceleration into the site, designed to enable vehicles to stop prior to the first access point into the car park;
- Design includes a right turn lane into the northern parking area to prevent queuing;
- Exit to main North Road designed as separated acceleration lane of appropriate length (340m) to allow merge into the existing through lanes, in excess of Austroads Guide;
- Relocation of the bus stop further to the south, immediately north of the left hand in taper with a sheltered holding area for buses adjacent to a modified footpath.

Kings Road/Horrie Miller Drive intersection

- New sheltered right turn lane for vehicles approaching Horrie Miller Drive from the east (ie. travelling westbound on Kings Road);
- Left hand deceleration lane for vehicles approaching Horrie Miller Drive from the west (ie. travelling eastbound on Kings Road);
- Single lane entry into the site;
- Two right hand lanes for vehicles exiting the site turning right westbound onto Kings Road (exclusive of the left hand turn lane out);
- Single lane for vehicles exiting the site turning left eastbound onto Kings Road under give way conditions.

The access design is consistent with the Desired Character statement for the Zone which seeks upgrade of the Horrie Miller intersection and service access via Mengel Court. The left hand in and left hand out to Main North Road is designed to minimise impact upon the through movement of vehicles and is designed based upon preliminary advice from DPTI. It is further noted that this arrangement is not precluded under the Zone statement and will ensure that the design and function of Main North Road is maintained.

The final design for the access points and upgrades to the intersections are part of the Deed between the land owner and DPTI and must be to the satisfaction of DPTI.

Road Widening

Under the General Section, “Design and Appearance” module, Principle of Development Control 26 states that:

- 26** *Development likely to encroach within a road widening setback under the Metropolitan Adelaide Road Widening Plan Act 1972 should be setback sufficiently from the boundary required for road widening.*

The Metropolitan Adelaide Road Widening Plan shows a possible requirement for a strip of land up to 20m in width from the Main North Road frontage of the site for possible future road purposes together with a strip of land of up to 4.5m in width at the Main North Road/Kings Road corner for future upgrading of the intersection.

The proposed building works will be setback in the order of 10m from the Main North Road boundary. The development also incorporates car parking and landscaping within 10m of the Main North Road boundary and Kings Road intersection.

The Commissioner of Highways have advised that they in-principle agree to this arrangement, provided that no works other than car parking and low level landscaping occur within 9.5m of the Main North Road boundary. It is therefore concluded that the proposed development can allow for future road widening, consistent with Principle of Development Control 26.

The implication for the landscape treatment for this section of the site as a result of this future road widening requirement is discussed under the *Landscaping* section of the report below.

The Commissioner of Highways must consent to all works within the road widening setback and within 6m of the road widening setback under the *Metropolitan Adelaide Road Widening Plan Act 1972*. An advice note is included in the recommendation for this.

Vehicular Manoeuvring

Principle of Development Control 13 of the Zone states that:

13 *Vehicle loading areas should be provided to enable customers to collect large items from a dedicated and easily accessible customer collection area(s).*

The transport impact assessment, prepared by GTA Consultants has also considered the internal design of the access to service both heavy delivery and passenger vehicles. The development incorporates the following key elements:

Internal Circulation

- Central access spine with designated central access points to facilitate vehicular movement between the central access and car parking areas to the south and north;
- Provision of designated raised wombat crossings at regular intervals to correspond with the pedestrian connections and designed to slow through vehicles;
- Raised median to be incorporated into the left in/left out approach adjacent to Main North Road to prevent collision of vehicles travelling in opposing directions;
- Internal traffic control devices (ie. signs) to govern internal traffic movements, in particular, at internal intersections.

Deliveries

- Back of house loading for major retail tenancies 1 and 2 with ingress and egress via Mengel Court, designed to support a 19m long semi-trailer;
- Back of house loading to service specialty retail tenancies 1, 3, 10-13 inclusive and bulky goods tenancy 1 with ingress and egress via Mengel Court, designed to support a 12.5m heavy rigid vehicle (HRV);
- Loading and waste dock to service the entertainment/leisure tenancies, specialty tenancies 7, 8B, 9, café and bulky goods 2 and 3, with access via the internal circulation network, designed to support a 8.8m long medium rigid vehicle (MRV);

- Deliveries to service bulky goods tenancy 4 via separate loading area for an MRV, using the internal circulation network;
- Deliveries to service the fast food restaurants via Main North Road, using the internal circulation network, designed to support an 8.8m long MRV.

Consideration was given to the central access road being used as a 'rat run' for traffic turning left from Kings Road to Main North Road. To discourage this movement, speed limiting devices will be incorporated in the form of raised wombat crossings at the key pedestrian crossings and implementation of speed restrictions to achieve a safe pedestrian environment.

A number of changes to the internal design have also been made in response to input from Council's Senior Traffic Engineer to ensure safe and convenient access and movement arrangements. The design is generally workable and in accordance with Australian Standard 2890 but subject to final design which is recommended by way of Reserved Matter.

In respect of customer delivery vehicles, the applicant has advised that the bulky goods tenancies have potential to accommodate side or rear loading for large items, however, it is their view that the majority of tenants will not have specific requirements for loading of large items and therefore arrangements to accommodate this are not proposed.

Car Parking

Under the General Section, "Transportation and Access" module, Principle of Development Control 32 states that:

- 32** *Development should provide off-street vehicle parking and specifically marked disabled car parking places to meet anticipated demand in accordance with Table Sal/2A – Off Street Vehicle Parking Requirements for Designated Areas.*

The site is located within a "designated area" as contained in Table Sal/2A which refers to a development site located "within 200 metres of any section of road reserve along which a bus service operates as a high frequency public transit service". Adelaide Metro bus services operate along Main North Road. There are 11 public transport bus services operating along Main North Road which service bus stop 43 adjacent the site frontage at the northern end of the site. As mentioned earlier, this bus stop is proposed to be relocated further south. The frequency and range of services qualify as a 'high frequency public transit service'.

Table 2A assigns a minimum parking rate of 3 spaces per 100m² and a maximum rate of 6 spaces per 100m². The development will include a total gross leaseable floor space of 28,011m² which equates to a minimum parking requirement of 837 spaces. The maximum number of spaces required would therefore be 1,674 spaces. The proposed development will be served by 1,332 spaces, which is clearly in excess of the minimum standard but less than the maximum standard. This aspect of the development satisfies Principle of Development Control 32 above.

The Development Plan does not specify a minimum number of disabled car parking spaces. In the absence of a relevant standard in the Development Plan, the GTA Consultants report has referenced the Building Code of Australia which specifies the following rate:

<i>Class 6 (retail)</i>	<i>1 space for every 50 car parking spaces or part thereof up to 1000 car parking spaces</i>
	<i>1 space per 100 car parking spaces or part thereof in excess of 1000 car parking spaces</i>

Based on provision of 1,332 spaces, the proposed development will require 24 disabled car parking spaces. The proposed development will provide 21 disabled car parking spaces which is three short of the relevant standard. The traffic consultant has concluded that the number of disabled parking spaces is reasonable, given the relatively 'high' number of total parking spaces provided in reference to the Development Plan Table Sal/2A. The traffic consultant also notes the disabled spaces are well located, adjacent to key entrances.

The total number of disabled parking spaces is slightly below the minimum guideline set under the Australian Standard. When considering that the development provides in excess of the minimum number of total parking spaces required to service the amount of total floor area, the ratio of disabled parking spaces is considered to be acceptable.

In terms of the design of the car parking, under the General Section, "Transportation and Access" module, Principle of Development Control 33 states that:

33 *Development should be consistent with Australian Standard AS 2890 Parking facilities.*

The traffic consultant has confirmed that the car parking layout is designed in accordance with AS 2890 in respect of the car parking dimensions, layout and aisle widths. Council's traffic engineer has further reviewed the car parking layout and has concluded that the design is acceptable, subject to condition that compliance is achieved with the Australian Standard.

In summary, the proposed number of car parking spaces is in excess of the Development Plan minimum requirements, provision is made for an appropriate number of disabled car parking spaces and the design of the car parking spaces and layout will conform to the relevant Australian Standard.

Bicycle Parking

Table Sal/3 of the Development Plan states that bicycle parking should be provided in accordance with the following table:

Form of development	Employee/resident (bicycle parking spaces)	Visitor/shopper (bicycle parking spaces)
Shop	1 for every 300 square metres of gross leasable floor area	1 for every 600 square metres of gross leaseable floor area

The Development Plan does not provide a bicycle parking rate for bulky goods or entertainment uses. Applying the rate above to the combined gross leaseable floor area of 28,011m², this equates to a total bicycle parking demand of 140 spaces, 93 for employees and 47 for visitors.

The development incorporates 45 bicycle parking spaces which are shown in racks of five at various locations on the site plan. The GTA Consultants report advises that employee bicycle parking is generally low for these types of developments and has therefore concluded that the level of bicycle parking provided is acceptable to service the development.

The conclusions drawn by the traffic consultant are considered to be acceptable and the overall rates of bicycle parking are adequate, having regard to Table Sa1/3.

Stormwater Management

An extract of the Desired Character statement for the Zone states that “*Landscaping and development should be designed to incorporate Water Sensitive Urban Design and provide for on-site stormwater retention and detention*”.

The following Principles of Development Control, General Section, Natural Resources module are also relevant:

- 8 *Water discharged from a development site should:*
 - (a) *Be of a physical, chemical and biological condition equivalent to or better than its pre-developed state; and*
 - (b) *Not exceed the rate of discharge from the site as it existed in pre-development conditions.*
- 9 *Development should include stormwater management systems to protect it from damage during a minimum of a 1-in-100 year average return interval flood.*

The applicant has provided a preliminary stormwater management design, prepared by Southfront and FMG Consulting to service the development measured against the above-mentioned Principles of Development Control. The stormwater management design incorporates the following elements in response to these design provisions:

- Development of catchments for the site which are to drain into the Kings Road drain and Main North Road drain based on existing site contours and modelled flows;
- Management of peak flows to not exceed pre-development conditions and to ensure off-site flows are catered for by existing external drains;
- Internal underground trunk drainage system designed to cater for a five year average recurrence internal performance standard;
- Overland flows entering the site from Main North Road during major storm events, to be catered for based on catchment modelling undertaken by Council;
- Setting of finished floor levels of buildings to avoid flooding under a 1 in 100 year average return interval flood event;
- Incorporation of primary treatment using a gross pollutant trap system and secondary treatment, using swales and vegetated systems.

The preliminary stormwater design has been reviewed by Council's Principal Development Engineer. The conceptual design broadly works based upon the catchment modelling, site contours and size of existing external drains. However, the design is subject to further refinement but this can be worked through in greater detail if Development Plan Consent is granted.

The Landscape – Details 1 and 2 Plans, prepared by Intro, incorporates landscaped swales. As a result of redesign of the stormwater system during the assessment stage, some swales have been removed. The Desired Character statement seeks inclusion of water sensitive urban design measures and these features should be incorporated into the final design.

In summary, the stormwater design satisfies the key Principles of Development Control quoted above, but is subject to further detailed design. Two Reserved Matters are included in the recommendation, requesting a final stormwater management plan, accompanying design calculations and detailed civil plans which shall be subject to further review.

Aviation matters

The Zone highlights the importance of development that ensures the ongoing operational and safety requirements of Parafield Airport are met. An extract of the Desired Character statement for the Zone states that "*Development will incorporate design and layout that minimises adverse operational impacts on the Parafield Airport in terms of building heights, lighting glare, turbulence, windshear and bird attraction*". More specifically, the following Principles of Development Control in the Zone apply:

- 9 *Buildings, advertising signs and structures should not adversely affect by way of their height, form and location, the operational, safety and commercial requirements of Parafield Airport.*
- 10 *Buildings and structures should not penetrate the prescribed Obstacle Limitation Surface shown in Concept Plan Map Sal/30 – Airport Building Heights and Lighting Plan.*
- 11 *Development and associated lighting (including signage) should be designed in accordance with the lighting plan detailed on Concept Plan Map Sal/30 – Airport Building Heights and Lighting Plan which requires:*

Zone	Maximum intensity of light permitted at 3 degrees above the horizontal
Zone A	Maximum intensity at a light source is 0 candela
Zone B	Maximum intensity of a light source is 50 candela
Zone C	Maximum intensity of a light source is 150 candela
Zone D	Maximum intensity of a light source is 450 candela

The proposed development may adversely impact upon the safety of aircraft operations in terms of building obstructions, altered wind characteristics, lighting and bird attraction. Similarly, the aircraft operations may also impact upon the operations of the proposed development in terms of noise from aircraft operations.

These issues are further discussed under headings below:

Building Heights

Concept Plan Map Sal/30 identifies Obstacle Limitation Surface (OLS) contours across the site. OLS refers to a series of surfaces that set the height limits of objects around an aerodrome. Objects that project through the OLS become obstacles and may be a hazard for aircraft. Such objects require approval from the Civil Aviation Safety Authority (CASA).

The OLS values shown on Concept Map Sal/30 are graduated in contours which correspond to the approach path of the respective runways. They increase in height as one moves away from the approach. The OLS values at their lowest point relative to the development site are 35m AHD and they increase to in excess of 57.5m AHD moving east into the site.

The proposed building heights have been designed to fall below the OLS heights. The highest point of the roof of the entertainment complex is set at 35.54m AHD which is less than the OLS height set of 50m AHD for this area. The roof of bulky goods tenancy 1 similarly has a roof height of 29.85m AHD in comparison to the OLS height set of 35m AHD.

The proposed building heights will fall below the OLS heights shown on Concept Plan Map Sal/30, thus ensuring the building works do not become obstacles as desired by Concept Plan Map Sal/30.

Noise

Under the General Section, “Building near Airfields” module, Principle of Development Control 6 states that:

- 6 *Development within areas affected by aircraft noise should be consistent with Australian Standard AS 2021: - Acoustics – Aircraft Noise Intrusion – Building Siting and Construction.*

Australian Noise Exposure Forecast (ANEF) limits have been modelled for Parafield Airport under the 2012 Masterplan. The ANEF modelling for the site sits largely within the 20-25 ANEF contour, other than a small portion of the site nearest to Horrie Miller Drive which is between the 25-30 ANEF contour.

Australian Standard 2021 is used for building treatments and land use planning in the vicinity of airports to provide guidance on the siting and construction of new buildings against aircraft noise intrusion. Table 2.1 of AS 2021 permits commercial buildings between the 25 to 35 ANEF contour, subject to design treatments but lists them as unacceptable above 35 ANEF.

Any commercial development within the 25-35 contour should be designed such that internal noise levels inside commercial buildings (ie. shops, supermarkets, showrooms) remain below 75 decibels during aircraft overflight, in accordance with Table 3.3 of AS 2021:2015.

In summary, the modelled level of noise affecting this site (ie. 25-35 ANEF) under the 2012 masterplan is compatible with a commercial landuse, subject to achieving the 75 decibel internal design level. The applicant has committed to achieving the design standard and has advised this can be achieved. This is addressed as a condition.

Wind Shear

Building generated turbulence windshear may become a critical safety issue when a significant obstacle, such as a building, is located in the path of a cross-wind to an operational runway. The wind flow may be diverted around and over the buildings, causing the cross-wind speed to vary along the runway, thus affecting flight characteristics.

The applicant has engaged a consultant to prepare an Airport Turbulence and Wind Shear Wind Impact Assessment. The consultant has concluded that the proposed development would not generate windshear and turbulence in excess of the criterion for safety by NASAG guidelines and has made no recommendations to alter the building form design.

Parafield Airport have suggested the report is inadequate as it does not incorporate modelling or experimental validation to support the conclusion that the current design is appropriate. The author of the report is qualified and experienced and in the absence of any evidence to suggest otherwise, the conclusions made by the authors are considered reasonable.

Lighting

Concept Plan Sal/30 also designates lighting zones. The development site falls within Zone B, C and D. These zones limit lighting at 3 degrees above the horizontal. The light intensity is limited to 50 candela in Zone B, 150 candela in Zone C and 450 candela in Zone D.

The applicant has submitted a preliminary lighting concept design and compliance report, prepared by Lucid Consulting Australia. Light modelling has been undertaken against Concept Plan Sal/30 based on the following:

- Use of industry standard software;
- Guidelines for modelling and assessment as outlined within Australian Standard 1158 and 4282-1997;
- Lighting design based on Pierlite Quantum 300W IP66 Trunnion optic A5 (12m pole), S8 (12m pole) and S8 (6m fixed to building).

The authors concluded that the lighting concept design will achieve the maximum luminous intensity output from the selected luminaire types of 0 candela at 3 degrees above the horizontal, consistent with Concept Plan Sal/30. In addition, the lighting design will:

- a) Comply with the maximum allowable luminous intensity levels along the boundaries of Main North Road, Mengel Road and Kings Road, consistent with pre and post-curfew, commercial and residential boundary requirements as per AS 4282-1997;
- b) Maximum allowable threshold increment value is consistent within commercial areas to traffic on Main North Road and Kings Road as outlined within AS 4282-1997.

Overall, this aspect of the development is considered to be acceptable.

Bird Attraction

Bird attraction has the potential to interfere with the safe operation of aircraft as a result of collision. The proposed form of development presents some risks associated with bird attraction if management practices are not implemented to manage waste. Standing water may also attract birds, however, it is noted that on-site detention measures are not proposed. Isolated components of buildings which are inaccessible such as behind parapets may also encourage bird nesting.

The applicant has confirmed that a range of procedures will be implemented to manage birds and this can form part of a comprehensive waste management plan (see Reserved Matter 4). Covered waste refuse bins will prevent attraction of birds and common public bins and regular litter control can prevent food waste in open areas. Anti-roosting and nesting measures are also recommended.

Subject to management measures being incorporated into the waste management plan and anti-roosting/nesting measures being incorporated into the building design, this aspect of the development is considered to be acceptable.

Regulated and Significant Trees

An extract of the Desired Character Statement for the Zone states that “*The retention, removal or relocation of Regulated or Significant Trees should enhance the amenity and safety of the zone and augment landscaping features across the zone*”.

Principle of Development Control 14 of the Zone further states that:

14 Development should contribute to the creation of an attractive precinct through extensive tree planting, landscaping and retention of existing trees and other significant vegetation subject to having regard for aircraft safety considerations.

As mentioned earlier, the site contains some 40 Regulated Trees, majority of which have been planted and include 25 “Sugar Gums”, 12 Canary Island Date Palms, 1 Aleppo Pine, 1 Carob Bean and 1 Queensland Bottle Tree. The trees are clustered in the south-eastern corner of the site and planted in distinct rows parallel to the entry roads and adjacent Main North Road.

The site also contains numerous Pepper Trees adjacent to the Main North Road boundary. These species are exempt trees under Regulation 6A of the *Development Regulations 2008* meaning their removal does not require approval. These trees will be removed as part of the development.

The applicant has submitted a report by a qualified consulting arborist who has assessed the individual trees and the impact of the development upon those trees. The arborist has concluded that all of the identified trees must be removed due to the proposed development having a substantial impact on all the trees within the site.

The point of conflict is various for each tree and is a combination of conflict with the car park/driveways (both physical and new risk profile), buildings, stormwater/swale and the acceleration lane taper to Main North Road. The fixed design of elements of the proposal such as the location of the acceleration lane taper means that conflict cannot be avoided.

The need to allow for appropriate discharge of stormwater from the site is also a point of conflict for retention of some trees. Underground infrastructure and site filling is necessary to facilitate the stormwater drainage system and to cater for overland flows. The arborist has considered these impacts to inform the recommendation.

The arborist was also requested to consider retention of the row of trees R17-R22 and R24-25 as these trees align with the car park area and would appear capable of being retained. The arborist has concluded that retention is not workable because of the need for site filling and drainage. The retention rating of these trees was also assessed as being low.

The arborist has concluded there are no reasonable alternative design solutions available to ensure tree sustainability. The following remarks are particularly important:

All the Eucalyptus cladocalyx (Sugar Gum) ie. trees 1-14, 17-21 and 26-31 have been lopped with their crowns now consisting entirely of epicormics growth with resultant compromised attachment. Trees with this structure are not suited to retention where occupancy of the areas below their crown is increased as this could lead to an unacceptable level of risk.

There are two trees on the site, Trees 2 and 3, considered to have a High Retention Rating, however, they are substantially impacted by the stormwater and acceleration lane to the point where they will be unsustainable. To reduce the impact to an acceptable level, the stormwater system would have to be relocated and the acceleration lane removed completely, due to both areas individually representing a Major Encroachment.

The remaining trees on-site have a Moderate or Low Retention Rating and as such are not considered to achieve criteria under the Development Act 1993 that indicate they should be retained at the expense of an otherwise reasonable and expected development.

The Phoenix canariensis (Canary Island Date Palm) ie. trees 22-25, 32-33, 35-40 and the Brachychiton rupestris (Queensland Bottle Tree) ie. tree 34 are all suitable for transplanting and could be relocated within the local area if an appropriate site is available.

The Desired Character statement seeks retention of existing trees. The proposed development will not achieve retention of existing trees but having gone through an extensive assessment of individual trees, retention is not warranted. It is noted that 13 established trees will be relocated to complement landscaping. All these trees have been proposed for transplanting have been identified by the arborist as a species are readily transplanted.

The applicant is required to offset the removal of all Regulated Trees under Regulation 117(2) of the *Development Regulations 2008*. It is recommended that tree replacements be recommended in this instance. In this regard, a condition is recommended, requesting planting of semi-mature native tree species (1m > height at planting) using species indigenous to the local area on a two for one basis for each Regulated Tree and a three for one basis for each Significant Tree. This should form part of the final landscaping plan.

Landscaping

Principles of Development Control 14 and 15 of the Zone state that:

- 14 Development should contribute to the creation of an attractive precinct through extensive tree planting, landscaping and retention of existing trees and other significant vegetation subject to having regard for airport safety considerations.*
- 15 Development should provide landscaped areas comprising at least 10 percent of the site area, incorporating a minimum width of 3 metres.*

The applicant has submitted a preliminary landscape area plan for the development which creates designated landscape zones. The preliminary landscape area plan incorporates:

- Major tree plantings to border the main central access spine at 15-20m intervals;
- Feature planting to the key site entry points (Horrie Miller Drive, Main North Road and Main North Road/Kings Road intersection);
- Street tree plantings in Kings Road as an extension to the established street trees and screen plantings to border the eastern wall of major retail tenancy 2;
- Planting to the car park buffer (ie. shop fronts) in the form of climbing vegetation bordering shop fronts and outdoor eating areas;
- Small trees and planter boxes to the major entry points of the major retail tenancies;
- Medium sized shade trees to the middle and end of car parking aisles and key footpaths, planting to occur at a rate of every 4 car parking spaces;
- Steel structure planted out with climbing vegetation to the loading dock adjacent to Kings Road up to 5.5m in height;
- Transplanting of 13 Regulated Trees (12 Canary Island Date Palms and 1 Queensland Bottle Tree), the final location to be determined.

The applicant's planning consultant has confirmed that the proposed landscaped areas, inclusive of the perimeter landscaping and central boulevard landscaping comprises an approximate area of 8,000m² which equates to 8.5% of the site area. This excludes tree plantings within the car parking areas, which if added would increase the figure. This represents a departure from Principle of Development Control 15 of 1.5%, however, the depths of perimeter landscaping beds exceed the minimum 3 metres width as sought in this Principle of Development Control.

The landscaped areas are focused principally on the street frontages and will provide an attractive presentation to the main road frontages. This will include an extension of the mature tree plantings in Kings Road which shall enhance the streetscape character in this location, noting that this will be in addition to the loading dock screen. The internal access spine will be an attractive boulevard lined with mature tree plantings and the car park will be planted out with medium sized trees to provide shade and amenity relief.

As the future road widening requirements of the Commissioner of Highways will require low level planning within 9.5 metres of Main North Road, the applicant has amended the treatment of the eastern wall elevation of the major retail tenancy 2 to incorporate colouring and also introduced trellis structures as a growing medium. These measures are intended to reduce the visual mass of this wall, in the event the road widening is required.

The landscape design is broadly consistent with the Desired Character statement and key Principles of Development Control 14 and 15.

The landscape design will be subject to final design due to changes that may occur as a result of detailed engineering and development design. It is therefore recommended that a final landscape design plan, together with an elevation plan demonstrating greater articulation of the eastern wall of major retail tenancy 2, be submitted as a Reserved Matter. It is noted that final design must include consideration of maintenance methods, height of species that might impact upon internal freight movements, potential interference with aircraft movements and need for low level landscaping within the 9.5m road widening area.

Signage

An extract of the Desired Character statement for the Zone states “*Advertising displays and advertisements throughout the zone will be uniform, consistent and integrated into building design. The use of well-designed integrated signage is encouraged at main access points, to present a positive statement on Kings Road, Main North Road and the intersection of Kings Road and Main North Road*” (my underlining). Principle of Development Control 19 further states that:

19 Advertisements attached to buildings should:

- (a) Not cover more than 15 percent of a single wall face;*
- (b) Where the building contains more than one tenancy, a maximum of one wall mounted advertisement per tenancy;*
- (c) Integration of innovative advertising in architectural designs is required. (my underlining)*

Advertisements do not form part of the application, however, the elevation plans have been revised to include signage zones and these zones are generally integrated into the building design and do not cover more than 15% of a single wall face.

The proponent is in the process of preparing a comprehensive signage strategy which is to incorporate a branding theme. The applicant acknowledges that a separate application will be lodged for all signage at a later stage to ensure that signage is integrated and complementary to building design.

Signage will be subject to referral to the airports authority under Schedule 8 and will be subject to satisfying the relevant Principles of Development Control in respect of height and illuminance value.

Safety and Surveillance

Under the General Section, “Crime Prevention” module, Objective 1 seeks:

- 1 A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.*

The development minimises entrapment points by designing pedestrian pathways to correspond with active shop fronts. While shop fronts are internalised, the frontages are activated by the shop fronts having an outlook toward the internal footpath and car parking areas. This results in the rear walls of the entertainment precinct and side wall of major retail tenancy 2 having a non-active frontage to Kings Road and Main North Road. The volume of traffic on both Kings Road and Main North Road will mean the level of surveillance of the public realm remains quite high. The fast food precinct will also provide surveillance to the corner intersection of Main North Road/Kings Road.

The development incorporates a legible entry and pathways of movement for pedestrians. In addition, the car parking areas and footpaths will be well lit to maximise sense of safety at night and the internal loading bays and waste storage areas will be fenced off to prevent access. The landscaping is balanced to maintain a degree of line of sight but at the same time to soften the appearance of the hardstand areas. The applicant has also advised the site will be under surveillance 24 hours a day and supported by CCTV throughout common areas.

The development incorporates design elements which respond to principles of environmental design and safety and additional safety and security measures are proposed to discourage and deter antisocial behavior and crime. This aspect of the development satisfies Principle of Development Control 1 above.

Sustainability

Under the General Section, “Energy Efficiency” module, Objective 1 seeks “*Development designed and sited to conserve energy*”.

The applicant has submitted a Sustainability Report, prepared by Lucid Consulting Australia. The following environmental initiatives are proposed:

- High performance insulation, glazing and air conditioning units;
- High levels of internal light to all common corridors using translucent roof sheeting and sky lights;
- Timber screening devices with climbing vegetation to reduce heat loading onto west facing windows but to encourage entry of light during winter;
- Economy cycle to all air conditioning units;
- LED lighting throughout;
- Lighting controlled via time schedule to reduce energy consumption;
- Motion sensors to control lighting in transient spaces such as amenities;
- Water efficient fittings and fixtures;
- Irrigation and toilet flushing system using recycled water network;
- Use of paints having a low volatile organic compound content;
- Exhaust ventilation systems in accordance with Australian Standard 1668.2 – 2012.

These initiatives are extensive and will assist in conserving energy post construction. It is further noted that the building must satisfy the relevant parts of the National Construction Code applicable to energy efficient design as part of the Building Rules assessment. This is largely outside the scope of the Development Plan assessment.

Access and Inclusion

The following extracts of the Desired Character statement for the Zone relate specifically to pedestrian movement:

Pedestrian pathways will be well lit and designed to be visually prominent. Safe pedestrian crossing points will be established at the Kings Road/Horrie Miller Drive intersection and Main North Road/Kings Road intersection.

Generously dimensioned designated pedestrian routes will be developed between car parking areas and buildings. They will be clearly defined by appropriately designed landscaping, pavement treatment, lighting and street furniture.

The development will generate demand for a significant number of non-vehicle related trips. Such modes of transport include pedestrian access, bicycle, passenger transport and taxi. These modes of transport are important to maximise equity of access for all persons and to also encourage sustainable modes of transport.

The proposed development incorporates the following key elements in respect of access and inclusion, informed by a Disability Access Report, lighting design by a consulting engineer and input from a qualified and experienced traffic engineer:

- Internal footpath network integrated between all buildings linking the southern and northern precincts and incorporating dedicated paths and raised wombat crossings where intersecting internal roads;
- Integration between the internal and external footpaths with connections to the signalised intersections at Main North Road/Kings Road and Kings Road/Horrie Miller Drive and with the relocated bus stop 43 in Main North Road;
- Surface treatments to all footpath crossings and inclusion of tactile ground surface indicators to assist pedestrians who are blind or vision impaired;
- Inclusion of street furniture in accordance with Australian Standard 1428 Part 2;
- Extension of the external footpath network in Kings Road;
- Inclusion of two dedicated taxi pick-up/drop off zones, one located next to the mall entrances of major retail tenancies 1 and 2 and the other adjacent the entertainment precinct;
- Provision of 45 bicycle parks;
- Lighting design which incorporates 300w LED luminaire lights to 12m high poles to all car parking areas and key pedestrian routes.

The pedestrian pathways are integrated into the external network, are legible and designed to be grade separated wherever possible from the car parking and circulation areas. They are well defined and accompanied by landscaping, pavement treatment and lighting. Street furniture is also incorporated and provision is made for two designated taxi pick up and drop off points with shelter provided adjacent.

This aspect of the development is consistent with the key Desired Character statement which seeks prominent and well connected pedestrian routes.

Site Contamination

An extract of the Desired Character statement for the Zone states that “*Parts of the zone are known to be contaminated and should not be developed until it is demonstrated that the land is suitable for its intended use*”.

The applicant has submitted a preliminary site investigation for the site. The consultant completed an intrusive soil investigation, involving 11 soil boreholes and six hand auger samples at selected locations to target potentially contaminating activities, identified within the Environmental Site History produced for the site.

A total of 20 soil samples were submitted for a range of analysis including heavy metals. The results of the preliminary site investigation indicate that no concentrations within the soil samples tested were elevated above screening criteria protective of human health in a commercial land use setting. The consultant has concluded that:

There is no evidence of contamination within the upper 1m of the soil profile that would present an unacceptable risk to human health and/or the environment in a commercial land use setting.

In short, the applicant has demonstrated that the land is suitable for its intended use. Development upon the balance of the land will be subject to further site investigations which is beyond the scope of this application.

Waste Management

Under the General Section, “Waste” module, Principle of Development Control 1 states that:

1 Development should be sited and designed to prevent or minimize the generation of waste (including wastewater) by applying the following waste management hierarchy in the order of priority as shown below:

- (a) Avoiding the production of waste;*
- (b) Minimising waste production;*
- (c) Reusing waste;*
- (d) Recycling waste;*
- (e) Recovering part of the waste for re-use;*
- (f) Treating waste to reduce the potentially degrading impacts;*
- (g) Disposing of waste in an environmentally sound manner.*

The applicant has advised that an expert waste consultant has been engaged to develop a waste management plan for the development, in order to achieve compliance with Principle of Development Control 1 above. The plan is in the process of being developed and shall include recommendations in respect to:

- Expected waste profile (including maximum volumes anticipated) of commercial tenancies and other site use activities;
- Services for waste management of commercial tenancies and other site activities which are practical and (where appropriate) encourage recycling;
- Public place waste management (including types and location of bins);

- Waste management arrangements, equipment and bin storage areas for the site, including major tenants and shared areas for smaller tenants;
- Arrangements for collection, including types of trucks, collection frequencies and access arrangements;
- Design and site management of disposal and waste storage areas including measures to manage and mitigate odour and post/vermin issues and to discourage litter.

Waste storage areas are shown on the proposal plans, incorporated into loading bays and are sited (or otherwise screened) from public view. The final sizes of storage areas are yet to be determined, however, the general locations are considered to be in-principle appropriate and the loading areas are dimensioned to allow a garbage truck to enter and leave in a forward motion. The above details can be incorporated into the final waste management plan and can be submitted as a Reserved Matter, if the Panel grants Development Plan Consent.

12. CONCLUSION

The applicant seeks approval for a mixed use retail and entertainment complex at 1460 Main North Road, Salisbury South.

The site is located within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone. Development of the kind proposed is assessed “on-merit” and Category 2.

This report has provided a detailed assessment of the application against the relevant provisions of the Salisbury Development Plan. Notwithstanding some non-compliance with some elements of the Development Plan, the assessment found that:

- The mix of land uses and quantum of floor areas proposed is supported by the Zone;
- The single architectural design theme and style is supported by the Zone and the buildings heights, bulk and mass is compatible with development in the locality;
- Adequate car parking and bicycle parking is provided;
- The development will not result in any unreasonable interference with aircraft operations associated with the adjacent Parafield Airport;
- Removal of 40 Regulated Trees is supported by a consulting arborist, removal is subject to transplanting of 13 Regulated Trees and offset replacement plantings;
- A comprehensive landscaping strategy has been developed which is supported by the Development Plan;
- Arrangements for access and egress to the site is supported by the Commissioner of Highways, but is subject to final design;
- Arrangements for internal vehicular access and stormwater design are workable but subject to final design;
- Principles of safety/surveillance, sustainability and access inclusion are incorporated;
- The site is suitable for the intended use from a site contamination perspective;
- A comprehensive waste management strategy is proposed.

Accordingly, this report recommends that Development Plan Consent be granted, subject to Reserved Matters and conditions.

13. STAFF RECOMMENDATION

That the Development Assessment Panel resolve that:

- A. The proposed development is not considered to be seriously at variance with the Salisbury Development Plan – Consolidated 15th December 2016 (subject to Gazette Notice 19th January 2017)
- B. Pursuant to Section 33 of the *Development Act 1993*, Development Plan Consent is **GRANTED** to application number 361/1589/2017/2B for Demolition of existing dwelling and associated structures and outbuildings, removal of 40 Regulated Trees (8 being Significant Trees), transplanting of 13 Regulated Trees, the construction of a mixed use retail and entertainment complex comprising major retail shops (2), speciality retail shops (13), cafe (1), bulky goods tenancies (4), entertainment venues (3), indoor recreation centre (gymnasium), fencing and screening structures, 3 fast food restaurants (with associated drive through facility) together with associated siteworks, access/egress to Kings Road, Main North Road and Mengel Court, at-grade car parking and manoeuvring areas, loading docks, pedestrian paths, waste storage areas, outdoor seating and landscaping in accordance with the plans and details submitted with the application and subject to the following Reserved Matters and conditions:

Reserved Matters:

The following matters shall be submitted for further assessment and approval by the Manager – Development Services, as delegate of the Development Assessment Panel, as Reserved Matters under Section 33(3) of the *Development Act 1993*:

1. A Construction Environmental Management Plan (CEMP) which shall include all of the following:
 - a) Hours of operation;
 - b) Arrangements for management of stormwater, noise and dust; and
 - c) Measures to eliminate drag-out from the site during wet weather events.
2. Final stormwater management plan and accompanying stormwater design calculations, prepared by a qualified and experienced stormwater engineer, which shall be designed to address the following:
 - a) Design of all finished floor levels of buildings above the 1:100 year average return interval flood;
 - b) Water quality measures to ensure water discharged from the site is of a physical, chemical and biological condition that is equivalent to or better than its pre-developed state;
 - c) The post-development rate of discharge from the site shall not exceed the rate of discharge as it existed in pre-development conditions;
 - d) Final underground trunk drainage system design and overland flow design to cater for overland flow and stormwater generated on-site; and
 - e) Final connection details in to the external stormwater network designed to cater for the modelled stormwater flows.

3. Civil Plan, prepared by a qualified and experienced civil engineer which shall include all of the following:
 - a) Finished floor levels for all buildings, driveways and impervious surfaces;
 - b) Cut/fill details;
 - c) Retaining walls (if required);
 - d) Kerbing and driveway crossovers;
 - e) Pavement design details and gradients;
 - f) Car parking dimensions and aisle widths;
 - g) Water quality treatment systems including primary treatment (ie. gross pollutant traps) and secondary treatment using water sensitive design elements;
 - h) Pedestrian paths, widths, surface treatments and grades (both internal to the site and external);
 - i) Footpath connections between the internal network and external footpath network;
 - j) Inclusion of two dedicated taxi drop-off/pick up facilities (as per the Able Access Design report, dated 31st October 2017) and associated signage and covered seating; and
 - k) Stormwater management system including all sumps, drains, pipes etc., their sizes and fall to ensure appropriate management and discharge of stormwater from the site.
4. Waste Management Plan prepared by an experienced waste management consultant which incorporates all of the following:
 - a) Provision of public bins in convenient locations for collection of customer recyclable and non-recyclable waste to discourage litter and minimise waste to landfill;
 - b) Arrangements for collection and recycling of waste generated by commercial tenancies such as cardboard, plastics, food waste etc.;
 - c) Provision of an adequate number of bulk waste receptacles to cater for maximum anticipated levels of waste for all tenancies;
 - d) Odour, hygiene management and pest management (ie. birds and rats);
 - e) Management measures to prevent flocking of birds which may pose a hazard to aircraft movements; and
 - f) Private waste contractor arrangements for periodic collection, including consideration of hours of collection and manoeuvring arrangements.
5. Final landscaping plan, prepared by a qualified and experienced landscape architect or horticulturalist, which shall include all of the following:
 - a) Final locations for all landscaped areas, including designated areas for trees, shrubs and groundcovers (including replacement trees as required by Development Plan Consent Condition 11);
 - b) Inclusion of advanced growth street tree plantings at regular intervals to the portion of Kings Road identified as “11” on the “Landscape Area Plan” to complement existing street trees in Kings Road;
 - c) Selection of species shall consider:
 - i) Adjacent internal road networks shall achieve appropriate clearance for heavy vehicles;
 - ii) Height of trees and locations in reference to obstacle limitation surfaces to avoid conflict with aircraft movements;
 - iii) Need for low level landscaping only within 9.5m of the Main North Road

- boundary (ie. as per DPTI letter dated 12th December 2017);
- d) Final locations for all transplanted trees;
 - e) Species to be used, which should predominantly comprise native species;
 - f) Screening trees within the car parking areas; and
 - g) Maintenance methods including irrigation, barriers and protection from vehicles and pedestrians.
6. An Elevation Plan for the eastern wall on Major Tenancy 2 that incorporates design treatments to articulate and soften the appearance of the wall.
 7. A final Traffic Control Layout, prepared by a qualified and experienced traffic engineer, which shall include all of the following:
 - a) Internal circulating road network;
 - b) All traffic control devices including signs, line marking etc.;
 - c) Car park and aisle widths;
 - d) Final loading/delivery arrangements including turning templates; and
 - e) Design detail for all access points to Mengel Court;
 8. Final plans and details for all screening devices of roof and ground level plant and equipment including fire hydrant boosters and pad mount transformers.

Development Plan Consent Conditions

1. The development shall be carried out in accordance with the details submitted with the application and the following stamped approved plans and documents, except where otherwise varied by the conditions herein:

Drawing No.	Plan Type	Date	Prepared By
<i>Planning Report</i>			
Dated August 2017	Planning Statement	Received by Council dated 28.08.17	Intro Design Pty Ltd
<i>Correspondence</i>			
Letter dated 02.11.17	Letter to Council – Response to RFI	Received by Council dated 02.11.17	Intro Design Pty Ltd
Letter dated 21.11.17	Letter to Council – Proposed Re-categorisation	Received by Council dated 22.11.17	Intro Design Pty Ltd
Letter dated 08.12.17	Response to RFI	Received by Council dated 08.12.17	Intro Design Pty Ltd
Letter dated 28.12.17	Response to Valid Representations	Received by Council dated 28.12.17	Intro Design Pty Ltd
Letter dated 05.02.18	Response to RFI and Invalid Representations	Received by Council dated 05.02.18	Intro Design Pty Ltd
Letters dated 05.02.18	Response to RFI and Invalid Representations	Received by Council dated 05.02.18	Mellor Olsson Lawyers
Letter dated 05.02.18	Addendum to Tree Report AYTS4703-MaiNorRdKinRdDIR	Received by Council dated 05.02.18	Arborman Tree Solutions
<i>Architectural Plans</i>			
DWG No. SK01 Revision I dated	Site Context	Received by Council dated 02.11.17	Intro Design Pty Ltd

26.10.17			
DWG No. SK02 Revision H dated 26.10.17	Site Land Area Plan	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK03 Revision I dated 26.10.17	Airport Building Heights	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK04 Revision B dated 26.10.17	Demolition Plan	Received by Council dated 08.12.17	Intro Design Pty Ltd
DWG No. SK05 Revision U dated 20.12.17	Site Plan 1	Received by Council dated 20.12.17	Intro Design Pty Ltd
DWG No. SK05 Revision R dated 26.10.17	Site Plan – Foodstuffs Tenancies	Received by Council dated 16.02.18	Intro Design Pty Ltd
DWG No. SK08 Revision H dated 26.10.17	Site Movement Plan	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK09 Revision H dated 26.10.17	Roof Plan	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK10 Revision I dated 06.02.18	Landscape Area Plan	Received by Council dated 06.02.18	Intro Design Pty Ltd
DWG No. SK11 Revision E dated 26.10.17	Landscape – Details 1	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK12 Revision F dated 26.08.17	Landscape – Details 2	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK13 Revision B dated 22.08.17	Landscape – Details 3	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK14 Revision B dated 22.08.17	Landscape – Details 4	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK50 Revision G dated 22.08.17	Elevations – Site	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK51 Revision G dated 06.02.18	Elevations – North Side	Received by Council dated 06.02.18	Intro Design Pty Ltd
DWG No. SK52 Revision H dated 06.02.18	Elevations – South Side	Received by Council dated 06.02.18	Intro Design Pty Ltd
DWG No. SK100 Revision J dated 26.10.17	Perspective 1 – Aerial 1	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK101 Revision I dated 26.10.17	Perspective 2 – Aerial 2	Received by Council dated 02.11.17	Intro Design Pty Ltd

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DWG No. SK103 Revision H dated 26.10.17	Perspective 3 – North 1	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK104 Revision B dated 22.08.17	Perspective 4 – North 2	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK105 Revision C dated 26.10.17	Perspective 5 – South 1	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK106 Revision C dated 26.10.17	Perspective 6 – South 2	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK107 Revision C dated 26.10.17	Perspective 7 – Main Road 1	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK108 Revision B dated 26.10.17	Perspective 8 – Main Road 2	Received by Council dated 02.11.17	Intro Design Pty Ltd
Not stated	Perspective – Main North Road, Major Tenancy 2 Eastern Wall.	Received by Council dated 06.02.2018	Intro Design Pty Ltd
DWG No. SK300 Revision E dated 26.10.17	Material Schedule Plan	Received by Council dated 02.11.17	Intro Design Pty Ltd
DWG No. SK04.1 Revision A dated 20.12.17	Site Plan – Significant and Regulated Trees	Received by Council dated 20.12.17	Intro Design Pty Ltd
DWG No. SK04.2 Revision A dated 20.12.17	Site Plan – Significant Tree Protection Zone	Received by Council dated 20.12.17	Intro Design Pty Ltd
DWG No. SK04.3 Revision – dated 06.11.17	Site Plan – Northern Tree Locations	Received by Council dated 05.11.17	Intro Design Pty Ltd
DWG No. SK02 Issue 02 dated 22.08.17	Fast Food Restaurant 1	Received by Council dated 28.08.17	MCA Studio
DWG No. SK03 Issue 02	Fast Food Restaurant 2	Received by Council dated 28.08.17	MCA Studio
DWG No. SK04 Issue 02	Fast Food Restaurant 4	Received by Council dated 28.08.17	MCA Studio
<i>Reports and Technical Details</i>			
Reference S114920 dated 29.08.17	Traffic Impact Assessment	Received by Council dated 28.08.17	GTA Consultants
Reference S114920	Letter to Council – Response to Council comments RE: Traffic	Received by Council dated 07.11.17	GTA Consultants
Not Stated	Bus Stop Design Detail	Received by Council dated 02.11.17	Intro Design Pty Ltd
Reference 17033-2-C	Site Based Stormwater Management Plan	Received by Council dated 28.08.17	Southfront
24 August 2017	Concept Stormwater Drainage Plan	Received by Council dated 28.08.17	Southfront
DWG No. SK03 Revision B dated 06.11.17	Main North Road Cross Sections – Conceptual	Received by Council dated 08.12.17	FMG Consulting Engineers

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DWG No. SK02 Revision B dated 06.11.17	Conceptual Drainage Layout	Received by Council dated 08.12.17	FMG Consulting Engineers
Reference LCE13136 August 2017	Sustainability Report	Received by Council dated 28.08.17	Lucid Consulting Australia
Reference LCE13136- 003a	Town Planning Authority Services Infrastructure Report	Received by Council dated 28.08.17	Lucid Consulting Australia
Reference LCE13136- 005a	Lighting Concept Design and Compliance Report	Received by Council dated 28.08.17	Lucid Consulting Australia
Reference LCE13136- ESK01	Concept Design and Obtrusive Lighting Assessment	Received by Council dated 28.08.17	Lucid Consulting Australia
Not Stated	Pierlite Quantum LED Floodlight	Received by Council dated 28.08.17	Gerard Lighting
Reference S35706 – 255881 dated 18 August 2017	Preliminary Site Investigation – Stage 1 Environmental Site Assessment Report	Received by Council dated 28.08.17	FMG Engineering
ATS4703- MaiNorRdKinRdDIR dated 08.12.17	Arboricultural Impact Assessment	Received by Council dated 08.12.17	Arborman Tree Solutions
Map 1 of 4 – 08.12.17	Tree Protection Zones and Encroachment	Received by Council dated 08.12.17	Arborman Tree Solutions
Map 2 of 4 – 08.12.17	Tree Protection Zones and Encroachment – Zoom 1	Received by Council dated 08.12.17	Arborman Tree Solutions
Map 3 of 4 – 08.12.17	Tree Protection Zones and Encroachment – Zoom 2	Received by Council dated 08.12.17	Arborman Tree Solutions
Map 4 of 4 – 08.12.17	Tree Protection Zones and Encroachment – Zoom 3	Received by Council dated 08.12.17	Arborman Tree Solutions
Dated 08.12.17	Tree Assessment Summary	Received by Council dated 08.12.17	Arborman Tree Solutions
Reference 4-1352_1	Disability Access Advice	Received by Council dated 02.11.17	Able Access Design
Reference 30N-17- 0206-TNT-634465-1 dated 06.11.17	Wind Impact Assessment	Received by Council dated 07.11.17	Vipac Engineers & Scientists

- * All plans and details approved by Council under Reserved Matters 1-7 inclusive form part of this Consent and are in addition to those plans and details listed in the table above.
- * The approved documents referred to above may be subject to change by minor variations permitted through the Building Rules Consent process.
- * Except where otherwise stated, the development shall be completed prior to the commencement of use.

Reason: To ensure the proposal is established in accordance with the submitted plans.

2. Staging of construction and commencement of use of the entertainment precinct (comprising the indoor bowling facility, cinema, children's active playspace and gymnasium) is not

permitted (ie. the commencement of construction and use of the entertainment precinct shall take place prior to or concurrently with other uses approved under the application).

Reason: To ensure compliance with the Development Plan by ensuring that the entertainment precinct is established.

3. Except where otherwise approved, no materials, goods or containers shall be stored in the designated car parking area or driveways at any time.

Reason: To ensure the car parking areas are always available for the purpose they are designed. Further, that the site be maintained in a clean and tidy state.

4. Except where otherwise approved, the external finishes of all approved building works shall:

- a) Be of new non-reflective materials;
- b) Be finished in colours as specified on the Approved Plans; and
- c) Be maintained in good condition at all times.

Reason: To ensure the building appears as one and maintains the amenity of the locality.

5. All mechanical services to the building and in conjunction with the proposed use shall be designed, installed and operated in such a manner that any person or persons working within or adjacent to the site should not be subjected to any nuisance or inconvenience from noise or fumes.

Reason: To limit the effect of the mechanical services for activities on the subject land within the site, thereby maintaining the amenity of the locality.

6. All loading and unloading of vehicles and manoeuvring of vehicles shall be carried out entirely within the subject land.

Reason: To ensure that vehicles associated with the land use do not cause disruption or danger to vehicles on adjoining public roads.

7. All car parking and internal manoeuvring areas be designed and constructed in accordance with AS 2890.1 – Off-street parking, Part 1, AS 2890.6 – Parking for people with disabilities and Austroads “Guide to Traffic Engineering Practice Part 11 – Parking”.

Reason: To ensure access and car parking is provided on the site in a manner that is safe and convenient.

8. All areas subject to use by commercial vehicles shall be designed in accordance with AS 2890.2-2002.

Reason: To ensure access and manoeuvring for commercial vehicles is provided on the site in a manner that is safe and convenient.

9. All landscaping identified on the Landscaping Plan, Approved by Council under Reserved Matter 5, shall be completed prior to commencement of use and shall be maintained at all

times thereafter (including the replacement of diseased or dying plants and the removal of weeds and pest plants).

Reason: To ensure the site is landscaped so as to enhance the visual and environmental amenity of the locality.

10. The buildings shall be constructed in accordance with Australian Standard AS2022: - *Acoustics - Aircraft Noise Intrusion – Building Siting and Construction.*

Reason: To manage aircraft noise intrusion in the approved buildings.

11. Anti roosting and nesting measures shall be incorporated into the building design (ie. netting, spikes etc.) to discourage the attraction and congregation of birds.

Reason: To discourage attraction and congregation of birds which may increase risk of conflict with aircraft movements.

12. Excluding Regulated Trees to be transplanted, semi-mature native tree species (1m > height at planting) indigenous to the local area shall be planted on a two for one basis to compensate for the removal of each Regulated Tree and on a three to one basis to compensate for the removal of each Significant Tree. The replacement plantings shall form part of the landscaping works, completed under Development Plan Consent Condition 9. The replacement tree planting shall occur prior to the commencement of use (of any stage) and shall be maintained in good health and condition at all times thereafter. Any diseased or dead trees shall be replaced immediately.

Reason: To comply with the requirements of Regulation 117(2) of the Development Regulations 2008.

13. All Gross Pollutant Traps shall be maintained in good working order at all times and shall be maintained in accordance with the manufacturers recommended schedule.

Reason: To ensure that the development complies with best engineering practice.

Commissioner of Highways conditions

14. The development shall have a single left-in, left-out access point on Main North Road. The access shall be provided with channelised turning treatments (left turn deceleration lane and acceleration lane) to the satisfaction of the Commissioner of Highways. No additional access (other than emergency access) to Main North Road shall be permitted).

15. The development shall have a single point of access to Kings Road, which shall be fully integrated into the existing Kings Road/Horrie Miller Drive signalised junction, thus converting the junction to a four-way signalised intersection.

16. The required roadworks to provide safe access to Main North Road and Kings Road shall be completed to the satisfaction of the Commissioner of Highways, with all costs being borne by the applicant. These works shall be completed prior to the operation of the development.

17. All development (other than car parking and low level landscaping) shall be set back clear of a strip of land 9.5 metres in width along the Main North Road frontage and Main North Road/Kings Road corner cut-off.
18. All obsolete crossovers (and/or any portion thereof) shall be reinstated to upright kerb and gutter at the applicant's expense prior to operation of the development.
19. The obsolete access to Kings Road and associated left turn deceleration lane located just to the east of the existing Kings Road/Horrie Miller Drive junction shall be removed and remediated to the satisfaction of the Commissioner of Highways.
20. All vehicles shall enter and exit the site in a forward direction.

Advice Notes

1. The conditions imposed herein shall be in addition to conditions that apply to the subject property from previous approvals that remain active.
2. The applicant is reminded of its general environmental duty, as required by Section 25 of the *Environment Protection Act 1993*, to take all reasonable and practicable measures to ensure that the activities on the whole site, including during construction, do not pollute the environment in a way which causes or may cause environmental harm.
3. EPA information sheets, guidelines documents, codes of practice, technical bulletins etc. can be accessed on the following web site: <http://www.epa.sa.gov.au>.
4. Council's Tree Services Committee have given approval for removal of two street trees in the Mengel Court verge adjacent to the new access point adjacent allotment 22 at cost (ie. The applicant meeting costs for removal and replacement). Tree Services will formalise the tree removal consent by sending a letter of cost for removal of the two trees to the applicant.
5. This approval does not incorporate any advertising of any kind. A future application shall be lodged and approved under the *Development Act 1993*. A comprehensive and integrated signage strategy shall be submitted for approval.
6. Should any works be required on Council land that fall outside of the DPTI work, footpath connections and street tree planting, for example, structures affixed to or overhanging Council road reserve, approval must be obtained from Council under the *Local Government Act 1993* and will be subject to an annual agreement.
7. In the application documentation, it states that connection will be sought to Council's recycled water network. This process will require a separate agreement with Salisbury Water. Should you wish to pursue this matter further, please contact Council's Manager – Salisbury Water, on (08) 8406 8575 or bnaumann@salisbury.sa.gov.au.
8. Tenancy fit-out applications will be required for all individual tenancies and shall be approved under the *Development Act 1993*. In addition, any use not consistent with that proposed under this application shall be subject to a further application. In addition to the above, the following requirements will apply to premises from an environmental health perspective:

- The structure and design of any food premises must be constructed in accordance with the *Food Act 2001* and Food Safety Standard 3.2.3;
 - Any high risk manufactured water systems which may include cooling water systems be installed and maintained in accordance with the *South Australian Public Health (Legionella) Regulations 2013*;
 - If any swimming or spa pool is installed as part of the entertainment venue, ensure it is installed and maintained in accordance with the *South Australian Public Health (General) Regulations 2013*.
9. Council's records suggest the site may be subject to Aboriginal objects or remains within the meaning of the *Aboriginal Heritage Act 1988*. To determine if this Act applies to this site, it is recommended that you contact the Department of State Development, Aboriginal Affairs and Reconciliation on 8226 8900.
10. The applicant is reminded that demolition and construction is required to be carried out so that it complies with the mandatory construction noise provisions of Part 6, Division 1 of the *Environment Protection (Noise) Policy 2007* and the provisions of the *Local Nuisance and Litter Control Act 2016*. Under the *Local Nuisance and Litter Control Act 2016*, construction noise is declared to constitute a local nuisance as follows:
- The noise has travelled from the location of the construction activity to neighbouring premises –*
- *On any Sunday or public holiday; or*
 - *After 7pm or before 7am on any other day.*
11. The applicant shall notify Parafield Airport Ltd fourteen (14) days prior to the commencement of any crane operations associated with the development.
- Note: Crane assessment may also have to be conducted by the Civil Aviation Safety Authority (CASA).
12. The site falls within the Parafield Obstacle Limitation Surface (OLS) airspace protected for aircraft operations. As a result, restrictions apply to heights of structures including buildings, masts, towers, plume emissions and lighting illumination.
13. Any development within this area may be subject to noise emanating from overflying aircraft.
14. Any further proposed buildings and/or structures constructed upon this site must be subject to a separate assessment.
15. If plumes emissions exceed 4.3m² from the top of any ventilation stack, a separate assessment will be required.

Commissioner of Highways

The Commissioner of Highways have requested the following advice notes be included:

16. Prior to Development Approval being granted, the applicant shall undertake the following to the satisfaction of the Commissioner of Highways:
 - a) Traffic assessment, including modelling of the traffic impacts on the adjacent arterial road network caused by the subject development and the development of the whole site;
 - b) A Traffic Intervention Plan to mitigate the traffic impacts of the proposed development (Stage 1) and the development of the whole site. The applicant will be required to fund the traffic interventions required as a direct result of the traffic impacts of the proposed development.
 - c) A final Deed with DPTI for the delivery of traffic interventions required as a direct result of the traffic impacts of the development of the site.
17. A final concept design of the access arrangements, including the traffic interventions identified as a direct result of the proposed development (Stage 1) and any land that will need to be vested to road associated with the interventions associated with Stages 1 and 2, to ensure existing verge widths are maintained following the interventions for both Stages 1 and 2. All land required for the interventions shall be dedicated to road at no cost to the Commissioner of Highways or Council.
18. A Traffic Management Plan for the construction period of the development shall be produced to the satisfaction of the Commissioner of Highways and Council prior to the commencement of construction. This plan shall detail the types, volumes and distributions of traffic and how they will be managed. All traffic movements shall be in accordance with this plan.
19. The site abuts sections of Main North Road and Kings Road that were proclaimed controlled-access roads pursuant to Part 2A of the *Highways Act 1926* on 22 December 1960 and 19 September 1991 respectively.

Upon the construction of the access points to the site, the applicant must contact Mr Daniel Sladic, Traffic Access Officer, Traffic Operations on (08) 8226 8277 or via email at daniel.sladic@sa.gov.au to apply for the issue of permits for the approved access points associated with this development. The existing four authorized access points will be revoked.
20. The Metropolitan Adelaide Road Widening Plan shows a possible requirement for a strip of land up to 20.0 metres in width from the Main North Road frontage of this site for possible future road purposes. Additionally, the Plan makes provision for a strip of land up to 4.5 metres in width from portion of the Main North Road frontage, together with additional land from the Main North Road/Kings Road corner, for the possible future upgrading of the Main North Road/Kings Road intersection. The consent of the Commissioner of Highways under the Metropolitan Adelaide Road Widening Plan Act is therefore required to all new building works located on or within 6.0 metres of the possible requirements.

Should the final design of the development result in encroachments within the above areas, the attached form and three copies of the approved plans should be submitted to DPTI for consent purposes.

21. The site is subject to a Road Infrastructure Design and Delivery Deed (*the Deed*) between Engel Holdings Pty Ltd (the owner) and the Minister for Transport and Infrastructure and Commissioner of Highways, as well as a Land Management Agreement (*the LMA*) between the Minister for Planning, the Minister for Transport and Infrastructure and Engel Holdings Pty Ltd. Although the applicant (GIC Kings Road Pty Ltd) is not a signatory to the Deed or LMA, the LMA stipulates that it is incumbent on the owner to ensure that occupiers and persons having enjoyment of the site also comply with the terms of the Deed. Consequently, in accordance with the terms of the above agreements, the applicant must not seek Development Approval until all of the requirements of the Deed are met to the satisfaction of the Commissioner of Highways and Minister for Transport.

CO-ORDINATION

Officer: A/GMCiD MDS
Date: 14.02.18 15.02.18

ATTACHMENTS

This document should be read in conjunction with the following attachments:

1. Plans, Correspondence, Reports and Property Information
2. Copy of Representations and Applicant's Response to Valid Representations
3. Invalid submissions made by persons not notified of development
4. Schedule 8 referral responses
5. Internal referral responses
6. Development Plan extracts

ATTACHMENT 1

Plans, Correspondence, Reports and Property Information

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Letter to Council – Proposed Re-categorisation dated 21.11.17	Intro Design Pty Ltd	105
Response to RFI dated 08.12.17	Intro Design Pty Ltd	107
Response to Valid Representations dated 28.12.17	Intro Design Pty Ltd	109
Response to RFI and Invalid Representations / Addendum to Tree Report AYTS4703-MaiNorRdKinRdDIR, dated 05.02.18	Intro Design Pty Ltd / Mellor Olsson Lawyers / Arborman Tree Solutions	112
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Demolition Plan	Intro Design Pty Ltd	139
Site Plan 1	Intro Design Pty Ltd	141
Site Plan –Foodstuffs tenancies	Intro Design Pty Ltd	143
Site Movement Plan	Intro Design Pty Ltd	145
Roof Plan	Intro Design Pty Ltd	147
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Site Plan – Significant and Regulated Trees	Intro Design Pty Ltd	185
Site Plan – Significant Tree Protection Zone	Intro Design Pty Ltd	187
Site Plan – Northern Tree Locations	Intro Design Pty Ltd	189
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<i>Reports and Technical Details</i>		
Traffic Impact Assessment	GTA Consultants	198
Letter to Council – Response to Council comments RE: Traffic	GTA Consultants	228

Plan Type	Prepared By	Page No.
Bus Stop Design Detail	Intro Design Pty Ltd	231
Site Based Stormwater Management Plan	Southfront	233
Concept Stormwater Drainage Plan	Southfront	247
Main North Road Cross Sections – Conceptual	FMG Consulting Engineers	249
Conceptual Drainage Layout	FMG Consulting Engineers	251
Sustainability Report	Lucid Consulting Australia	253
Town Planning Authority Services Infrastructure Report	Lucid Consulting Australia	259
Lighting Concept Design and Compliance Report	Lucid Consulting Australia	271
Concept Design and Obtrusive Lighting Assessment	Lucid Consulting Australia	273
Pierlite Quantum LED Floodlight	Gerard Lighting	278
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Planning Report



Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

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01 INTRODUCTION

Intro has been engaged by GIC Kings Road Pty Ltd, the Applicant, to provide planning advice pertaining to the proposed mixed use development at Salisbury South.

In undertaking the project design, the Applicant has commissioned the following sub-consultants to provide specialist advice:

Project Management:	Turner & Townsend, Thinc
Architecture:	Intro
Town Planning:	Intro
Legal Opinion:	Mellor Olsson
Traffic Engineering:	GTA Traffic Consultants
Stormwater Engineering:	Southfront
Services Engineering / ESD	Lucid
Lighting Design	Lucid

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In forming my opinions herein, I confirm that I have viewed the proposal plans prepared by Intro, I have attended the subject land and locality and considered the relevant provisions of the Salisbury Council Development Plan (consolidated – 15 December 2016). I note a Section 29(2)(b)(ii) amendment was published as of 19 January 2017 and is not consolidated into the Development Plan. I have reviewed the Government Gazette and the change to the Development Plan does not impact on the incumbent Zoning or the proposed development.

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02 SUBJECT LAND AND LOCALITY

02.1 SUBJECT LAND

The street address for the subject land is 1460 Main North Road, Salisbury South. Currently a residential dwelling with ancillary outbuildings is located on the subject land. The subject land is bounded by allotments and Mengel Court to the North, Main North Road to the east, Kings Road to the south, and the balance of the allotment at 1460 Main North Road to the west. The subject land forms an area of approximately 95,406sqm of the broader land holding at 1460 Main North Road, Salisbury South, with the development line bisecting the site approximately 40% along the Kings Road frontage.

The subject land is legally described with the following Certificates of Title:

ALLOTMENT	DEPOSITED PLAN	VOLUME/FOLIO	HUNDRED
120	30240	5068/957	Yatala
20	27205	5067/646	Yatala
21	27205	5067/647	Yatala
22	27205	5067/648	Yatala

The subject land represents a portion of this title. The Certificate of Title forms Appendix 01 of this Planning Statement.

The subject land comprises an approximate site area of 95,406 sqm. The subject land is graphically represented within Figure 01 below. The development site displays a fall of approximately two metres from eastern corner of the allotment westwards. A level survey has been provided in Appendix 02.

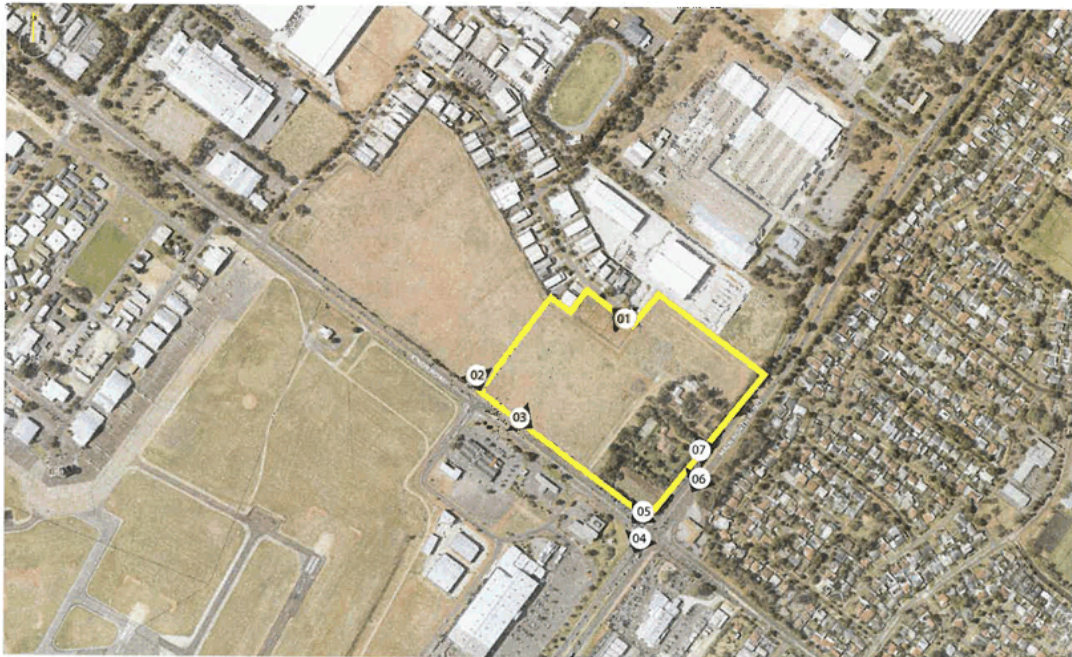


FIGURE 02.1: SUBJECT SITE

The subject land is located entirely within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone of the authorised Development Plan.

02.2 LOCALITY

The following land uses and built form surrounds the broader land holding.

- North:** Along Mengel Court and Rundle Road is light industry including: industrial suppliers, wholesalers, warehousing and the Salisbury South Australia Post Business Hub. Businesses are accommodated within single-storey warehouses along Mengel Court and Rundle Road. Approximately 200 metres north of the site is Rundle Park, a large grassed athletics field with running track and club room.
- West:** Warehousing and vacant allotments are adjacent to the broader land holding along Rundle Road.
- South:** On the opposite side of Kings Road exists Parafield Airport, a general aviation airport and training airport.
- Moving west to east on Parafield Airport site along King's Road and accessed via Horrie Miller Drive and Lawrence Hargrave Way is:
- a take-away pizza shop;
 - a hotel with gaming and drive through liquor store set behind at-grade car parking;
 - a petrol-filling station with ancillary retail and car parking;
 - a restaurant across Lawrence Hargrave Way; and
 - an entrance statement to Parafield airport on the south-western corner of Kings Road and Main North Road.
- Further to the south on Parafield Airport land with access gained via Horrie Miller Drive and Lawrence Hargrave Way are:
- a car wash;
 - Bunnings Warehouse Parafield, a retail outlet facing Main North Road and set behind at-grade parking; and
 - Airport City - a group of strip shops fronting Main North Road and set behind at grade car parking.
- In addition to the Parafield Airport, the locality is generally one of light industry and large-scale commercial premises. The area is car-centric and pedestrian amenity lacks footpaths at many locations. Little in the way of shade is provided.
- East:** On the opposite side of Main North Road at the north-eastern corner of the McIntyre Road junction (the continuation of Kings Road) is a petrol filling station and ancillary retail with access from both Kings Road and Main North Road.
- To the north of the petrol-filling station is a residential area comprising single-storey dwellings fronting Dexter Drive and Statham Avenue. An 18-35 metre wide vegetated buffer planted with eucalypts separates the rear of the residential allotments from Main North Road.
- South East:** A car dealership occupies the south-eastern corner of Main North Road and McIntyre Road with access solely from McIntyre Road.

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PHOTOGRAPH 05: PARAFIELD AIRPORT ENTRANCE STATEMENT WITH RESTAURANT AND RETAIL TO THE REAR



PHOTOGRAPH 06: SHELL PETROL-FILLING STATION ACROSS MAIN NORTH ROAD FROM THE SUBJECT SITE



PHOTOGRAPH 07: RESIDENTIAL AREA SET BEHIND TREES ACROSS MAIN NORTH ROAD FROM SUBJECT SITE

Main North Road is a Primary Arterial Road and Kings Road is a Secondary Arterial Road under the care of the Commissioner of Highways as designated by the authorised Salisbury Council Development Plan.

A footpath is provided adjacent the site for the first 250 metres of Kings Road where it terminates across from the hotel. There is no paved footpath provided along the Main North Road frontage.

The informal landscaping in the locality is typified by native trees and shrubs or peppercorn trees. Some verges are underplanted with turf and other areas left as bare earth.

The subject site is serviced with public transport. A bus stop is adjacent the subject site, just south of the northern boundary on Main North Road. Bus routes link the subject site with the Smithfield Interchange and Railway Station to the north and Adelaide CBD via Mawson Lakes, Gepps Cross, Prospect and North Adelaide.



PHOTOGRAPH 01: MENGEL COURT LIGHT INDUSTRY AND WHOLESALE WAREHOUSING



PHOTOGRAPH 02: SUBJECT SITE AND PARAFIELD AIRPORT HOTEL ON KINGS ROAD



PHOTOGRAPH 03: TERMINATION OF THE FOOTPATH ON KINGS ROAD



PHOTOGRAPH 04: CAR DEALERSHIP AND BUNNINGS WAREHOUSE HARDWARE STORE EITHER SIDE OF MAIN NORTH ROAD

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03 THE PROPOSED DEVELOPMENT

The particular elements of the proposal are detailed within the plans prepared by Intro dated August 2017, which form Appendix 03 of this planning statement.

The proposed development comprises:

- Stage 1: the demolition of the existing structures on site and bulk earth works;
 Stage 2: construction of substructure and superstructure comprising shops, restaurants, bulky goods and leisure with ancillary car parking, vehicular loading, landscaping and stormwater management; and
 Stage 3: architectural facade.

The particular details are described below:

retail anchors of:

- 6,205sqm;
- 3,910sqm;

9

specialty tenancies comprising areas of:

- 1,400sqm;
- 4x300sqm;
- 700sqm;
- 600sqm;
- 317sqm;
- 500sqm;
- 441sqm;
- 200sqm;
- 378sqm; and
- 200sqm.

bulky goods tenancies of:

- 800sqm;
- 900sqm;
- 900sqm; and
- 300sqm

Leisure tenancies of:

- 2,500sqm;
- 1,800sqm; and
- 3,300sqm.

three pad sites comprising restaurant tenancies of:

- 215sqm;
- 259sqm; and
- 275sqm.

03.1 LANDSCAPING

A landscaping plan has been provided as part of Appendix 03 which demonstrates the landscape approach for the site.

Tree planting is included to aid in wayfinding and shading to both offset the urban heat island effect and to

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improve the pedestrian amenity of the site. A hierarchy of tree sizes mark entries, the main circulation routes and pedestrian paths, whilst further landscaping is provided around alfresco eating area and major shop entries. Loading bays are additionally screened with vegetation. Plant selection has regard to *Salisbury City Landscape Plan - 2008* as well as Crime Prevention through Urban Design principles.

03.2 TRANSPORT AND ACCESS

The Traffic Impact Statement has been prepared for the proposed development. Cognisant of the proposed gross floor areas, the scheme provides for 1,332 car parking spaces.

The grades within the parking area will conform to the following requirements (as per AS/NZS2890.6 and AS2890.2) and addressed in the detailed design:

- maximum grade of 1 in 20 (5%) across nature strip;
- maximum grade of 1 in 40 (2.5%) across any footpath;
- maximum grade of 1 in 20 (5%) for 15 metres into the site (where commercial vehicles use the driveway, i.e. northern driveway);
- a maximum grade of 1 in 6.5 (15.4%) along commercial vehicles circulation roads, the maximum grade shall be 1 in 8 (12.5%) where reverse manoeuvres are required
- a maximum grade of 1 in 20 (5%) measured parallel to the angle of parking;
- maximum grade of 1 in 16 (6.25%) measured in any other direction to the angle of parking.

Vehicle access to the site is proposed at the following locations:

- a new two-way signalised access from the western side of the proposed development along Kings Road aligning with Horrie Miller Drive.
- a new two-way customer vehicle access to Main North Road restricted to left in and left out movements.
- a service vehicle access from Mengel Court for the specialty retail and bulky goods.
- a heavy vehicle access at the end of the Mengel Court cul-de-sac, servicing Major Retail tenant loading/refuse.

03.3 STORMWATER

Southfront have prepared a Stormwater Management Plan which details:

- flood protection;
- pre and post-development peak flow generation; and
- DRAINS modelling.

An indicative layout has been prepared for the proposed underground drainage system that will service the new development (refer attached Concept Stormwater Drainage Plan). This layout assumes that the internal roadway and carpark surfaces of the development will grade in a predominantly south-westerly direction, facilitating a gravity drainage system with a single connection to the existing drain in Kings Road (a 1950mm diameter RCP). The catchment that will be serviced by this drainage system includes a majority of the subject land (approximately 8.5 hectares).

Preliminary sizing of the proposed underground drainage system has also been undertaken using the DRAINS model, to achieve a 0.2 EY (5 year ARI) performance standard. The drain sizing assumes that the Hydraulic Grade Line (HGL) at the connection to the existing Kings Road drain is a constant 19mAHD (ie. assumed top of pipe level) during the course of the 0.2 EY rainfall event. The internal roadway and carpark shall be designed to safely convey major flows to the discharge point at the south-western corner of the subject land, such that the combined capacity of the underground and overland flow route achieves a 1% AEP (100 year ARI) performance standard.

A comparatively small catchment at the south-eastern corner of the subject land (approximately 1 hectare), comprising pad sites and associated carparking, shall discharge to the proposed swale along the southern

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boundary of the site.

The Stormwater Management Plan forms Appendix 05 of this report.

03.4 WASTE MANAGEMENT

The proposed development will be serviced entirely by private contractors.

03.5 ENVIRONMENTALLY SUSTAINABLE DESIGN

A range of Environmentally Sustainable Design (ESD) features are being investigated as part of the proposed development. The ESD statement forms Appendix 06 of this report.

03.6 SITE SERVICES

Lucid Consulting Engineers have been engaged to undertake a review of the existing infrastructure surrounding the broader land holding. The report finds that the subject land is serviced by adequate infrastructure.

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The site services report forms Appendix 07 of this report.

03.7 LIGHTING DESIGN

Lucid Consulting Engineers have prepared a lighting report and plan. The lighting report finds the following:

- Maximum allowable luminous intensity levels along the boundaries of Main North Road, Mengal Road and Kings Road residential properties are consistent with Pre-and Post-Curfew, Commercial and Residential boundary requirements outlined within AS4282-1997.
- Maximum allowable threshold increment value is consistent within commercial areas to traffic on Main North Road and Kings Road as outlined within AS4282-1997.
- Maximum luminous intensity output from the selected luminaire types is 0 candela at 30 above the horizontal in accordance with the Salisbury Council Overlay Map Sal/41 Development Constraints. I.e. this complies with all zone lighting requirements.

The lighting design statement and plan forms Appendix 08 of this report.

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03.8 ENVIRONMENTAL INVESTIGATIONS

A Phase 1 environmental investigation report has been prepared and finds:

FMG completed a PSI comprising an intrusive investigation for Stage 1 of the proposed development site located at 1460 Main North Road, Salisbury South, South Australia.

The site currently comprises vacant agricultural land with a residential dwelling on the southern portion of the site. FMG understands that the client proposes to redevelop the site for commercial land use, namely a shopping centre comprising two department stores, a cinema, as well as various specialty stores and car parking spaces and therefore requires a PSI report to progress development approval.

The PSI was undertaken to provide an assessment of the potential contaminants of concern in soil that may pose an unacceptable risk to the future users of the site.

FMG advanced a total of eleven soil boreholes, to a maximum depth of 6.0 m bgl and six soil hand auger samples were taken to a maximum depth of 0.3m bgl. Soil boreholes and hand auger locations were targeted to assess the potentially contaminating activities identified within the Environmental Site History Report completed for the site.

A total of 20 soil samples were collected as a part of the environmental assessment to a maximum depth of 1 m bgl and were submitted for a range of analysis, including but not limited to OCP /OPP, TRH, BTEX, PAH, herbicides, heavy metals and analytes contained within the ASC NEPM Screen. Specific analytes were selected based on FMGs experience on similar sites and field observations during sampling.

The analytical results of the PSI indicate that no analyte concentrations within the soil samples tested were elevated above the ASC NEPM screening criteria protective of human health in a commercial (HIL D) land use setting.

FMG therefore conclude that there is no evidence of contamination within the upper 1 m of the soil profile at the locations tested that would present an unacceptable risk to human health and/or the environment, or that would preclude the proposed commercial development of the site .

The Environmental Investigations are provided as part of Appendix 09 of this report.

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04 PLANNING ASSESSMENT

This planning assessment will consider the relevant provisions determined to be most pertinent to the proposed development.

04.1 NATURE OF DEVELOPMENT

For the purposes of the planning assessment, the nature of development should be described as:

- Stage 1: *the demolition of the existing structures on site and bulk earth works;*
 Stage 2: *construction of substructure and superstructure comprising shops, restaurants, bulky goods and leisure with ancillary car parking, vehicular loading, landscaping and stormwater management; and*
 Stage 3: *architectural facade.*

The proposed development is not prescribed as complying, nor as non-complying by the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone of the Salisbury Council Development Plan, and will therefore be assessed on its merits.

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04.2 PUBLIC NOTIFICATION

The Public Notification section of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone prescribes the following development to the Category 1 public notification process:

Any development which consists of any of the following:

- (a) *bulky goods outlet*
- (b) *cafe*
- (c) *entertainment venue*
- (d) *indoor recreation centre*
- (e) *petrol filling station*
- (f) *restaurant*
- (g) *service trade premises*
- (h) *shops with a gross leasable floor area greater than 200 square metres*
- (i) *take away food shop.*

All elements of the proposed development are identified within this list, and as such the proposal will navigate the Category 1 public notification process. The Category 1 public notification procedures are detailed with Section 38 of the Development Act 1993. Section 38 (3) states:

the relevant authority must not, on its own initiative seek the views of the owners or occupiers of adjacent land or other land in relation to the granting or refusal of development plan consent.

04.3 AGENCY REFERRALS

I have reviewed Schedule 8 of the Development Regulations 2008, and have determined that the following referrals are required:

- Commissioner of Highways.

I provide a legal opinion which determines that the proposed development does not need a referral to the Commonwealth Secretary for the Department of Transport and Regional Services. This opinion is provided in Appendix 10.

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04.4 ASSESSMENT

The following provisions are considered to be relevant to the assessment of the proposed development

04.4.1 LAND USE

MIXED USE (BULKY GOODS, ENTERTAINMENT AND LEISURE) ZONE

Objective 1: A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

Objective 2: Development that contributes to the desired character and objectives of the zone.

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

The proposal represents a mixed use development comprising large format retail, bulky goods, entertainment and leisure facilities. The anchor retail development is large format and split into two tenancies. On a floor area ratio, the larger format retail predominantly provides the sale of non-food stuff. The remainder of uses are split between specialty retail, leisure, restaurant and bulky goods offerings.

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages. There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

The proposal provides for bulky good outlets and retail stores. Restaurants/take away food shops have been provided in key locations. Two locations are provided within the centre adjacent to the leisure facility and the retail anchor which provides opportunities for outdoor dining. A different restaurant offering is provided at the Kings Road and Main North Road intersection. These restaurants will complement the leisure, entertainment and retail offerings proposed for the site. The proposal provides for a diverse range of tenancies and presents a unique mix of uses.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

I am of the understanding that this portion of the Policy was written into the Zone to facilitate the establishment of a specific tenant in its inception in 2014. Cognisant of market forces, this is no longer a feasible option. As opposed to one tenancy, the proposal is for two discreet tenancies which comprise a floor area of some 10,115sqm. A tenancy displaying and selling predominantly foodstuffs represents a floor area of 3,910sqm the remaining 6,205sqm is for a tenancy displaying other types of retail goods. This split accords with the provision insofar as 38% of the footprint is provided for the sale of foodstuffs.

The specialty retail component is envisaged to comprise a diverse retail offering providing a mix of types of tenant. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

Retail, in the form of specialty tenancies, will be diverse and provide for a range of different tenancies. The proposed tenancies are all greater than 200sqm in size.

The entertainment, leisure and recreation component is anticipated to include a range of indoor uses including cinema, rock climbing, health and fitness club, ten pin bowling, day spa, skate park and potentially a wave pool facility.

The proposed leisure component of the development envisages a cinema, a bowling facility, and a children's active play space with uses such as trampolines and rock climbing. A health and fitness club is also proposed within a mezzanine space.

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Development should occur so that expected land uses are developed concurrently to avoid the establishment of standalone land uses. Particularly the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses in order to ensure the mixed-use activities for the zone are achieved.

The centre is proposed to be developed at the same time, such that all construction work occurs concurrently. Various land uses will require distinct fit-out times however, the construction programme will be developed such that all land uses are open at the same time.

PDC 1: The following forms of development are envisaged in the zone:

leisure and entertainment venues, including indoor recreation with a maximum total floor area in the order of 20 000 square metres across the zone

bulky goods outlet and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18 000 square metres across the zone

shops (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15 000 square metres per tenancy with a maximum total floor area across the zone in the order of 46 000 square metres

restaurants with a maximum total floor area in the order of 1200 square metres across the zone.

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In response to PDC 1 I provide a breakdown for each land use below:

- Leisure and entertainment 7,600sqm;
- Bulky goods 2,900sqm;
- Shops 16,051sqm;
- Restaurants 760sqm; and
- Indoor recreation centre 605sqm.

All of the land uses fit within the parameters set within PDC 1.

PDC 2: The total maximum gross leasable floor area across the zone should be in the order of 77 900 square metres and a maximum total floor area in the order of 85 200 square metres.

In total, the proposed development represents a gross leasable floor area of 30,145sqm which represents an area smaller than the identified parameters of the provision.

PDC 3: A minimum of 25 per cent of the total floor area should comprise entertainment, leisure and recreation land uses at any time across the zone, until such time that 20,000 square metres total floor area of leisure and entertainment land uses has been developed.

The total floor area of the leisure and entertainment spaces equates to 7,600sqm. This represents a percentage of 25.2% of the total gross floor area for the centre.

PDC 4: Restaurants should complement the zone and each tenancy should have a maximum floor area in the order of 450 square metres with the exception of standalone restaurants.

Restaurants have been strategically located and display a range of sizes, though all are greater than 200sqm.

PDC 5: Cafes and take away food premises should:

- (a) be ancillary to other land uses across the zone
- (b) complement the zone as an integrated establishment
- (c) have a maximum floor area in the order of 450 square metres per tenancy with the exception of standalone premises that have a main road frontage.

The proposal provides for takeaway food premises (identified as restaurants within the plan) which:

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- are ancillary to other uses within the zone both through siting and sizes;
- complement other uses in the zone through their location; and
- do not have a floor space exceeding 450sqm per tenancy.

While these tenancies have a takeaway drive through component it is anticipated that the majority of business will occur through the dine in component.

04.4.2 BUILT FORM

MIXED USE (BULKY GOODS, ENTERTAINMENT AND LEISURE) ZONE

Objective 3: Built form that exhibits a high standard of design and the use of quality materials and finishes.

PDC 12: Development should be consistent with the desired character for the zone.

Buildings will be well designed, sited and developed to complement each other. Buildings should be visually attractive and incorporate articulation, high quality materials, texture and colour, and finished in materials with a low reflective index. Building access points will be visually prominent from car parking areas.

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The centre has been designed as an integrated development ensuring that an architectural theme carries across all buildings. Each anchor tenant has a brand aesthetic which has informed a specific design response at the entrance to each store, however, the overall centre has been developed with a contemporary modern aesthetic in mind. Building access points are clearly identified through architecture and wayfinding.

Buildings facing onto public roads or thoroughfares should avoid large expanses of solid unarticulated walling or blank facades and incorporate landscaping or detailed design enhancements to soften their appearance. Buildings should be placed as close as possible to street boundaries with frontage car parking and landscaping subject to setback requirements by the Commissioner of Highways and prescribed Obstacle Limitation Surfaces which inform building height allowances and siting of buildings.

Where buildings face onto public roads the proposal minimises the use of blank walls. On all walls facing a public road, detailed design elements, colouring and materiality soften the visual appearance of the walls. Further, a generous landscaping buffer is used where buildings face public roads. Finally, signage (which will form part of a separate application) is earmarked for areas along these walls. The proposal employs a range of design and landscaping techniques to minimise the visual impacts of walls on public roads.

Development will incorporate design and layout that minimises adverse operational impacts on the Parafield Airport in terms of building heights, lighting glare, turbulence, windshear and bird attraction.

The proposed development has been highly cognisant of its proximity to the Parafield Airport. Buildings have been limited in height to ensure that they do not impact on obstacle limitation surfaces identified within Concept Plan Map Sal/30 - Mixed Use (Bulky Goods, Entertainment and Leisure) Zone and Airport Building Heights and Lighting Plan.

Service areas and loading bays will be positioned to the rear or side of tenancies and should incorporate separate vehicle access. These areas will be screened from general public view.

Service areas have been located to the rear or side of tenancies. The users with the most frequent delivery requirements contain a discrete vehicle entrance and exit from Mengel Court. The users to the south of the centre typically display less frequent deliveries, with commercial vehicles accessing the loading dock through Kings Road or Main North Road. All loading bays/service areas are screened from general public view.

PDC 16: Development adjacent the Industry Zone should incorporate:

- a minimum 3 metre building setback from the zone boundary
- visual and acoustic buffer treatments
- screened or obscured building openings.

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Where the subject land interfaces with the Industry Zone, the proposal:

- is setback a minimum of 3m from the Zone boundary;
- utilises the built form as a visual and acoustic buffer; and
- screens building openings through the use of loading dock doors.

COUNCIL WIDE – CENTRES AND RETAIL DEVELOPMENT

PDC 5: A single architectural theme should be established within centres through:

- constructing additions or other buildings in a style complementary to the existing shopping complex
- renovating the existing shopping complex to complement new additions and other buildings within the centre
- employing a signage theme.

The proposed development employs a single architectural theme which establishes an aesthetic for the new centre. The built form utilises a simple architectural design and robust palette of materials. These two methodologies allow for future buildings to be established in a complementary style.

No signage is proposed as part of this application. A branding theme is being developed which will provide specific types and locations for signage. This will form part of a separate application.

PDC 8: Centres should develop on one side of an arterial road or in one quadrant of an arterial road intersection.

The subject land is located at the corner of Main North Road and Kings Road Salisbury South. Main North Road and Kings Road are identified as a Primary Arterial Road and Secondary Arterial Road within the Development Plan respectively. The subject land proposes a centre in one quadrant of an arterial road intersection.

COUNCIL WIDE – DESIGN AND APPEARANCE

Objective 1: Development of a high architectural standard that responds to and reinforces positive aspects of the local environment and built form.

PDC 1: The design of a building may be of a contemporary nature and exhibit an innovative style provided the overall form is sympathetic to the scale of development in the locality and with the context of its setting with regard to shape, size, materials and colour.

The subject land is located at a significant road junction, wherein the road network is the most predominant building feature. Main North Road, where it interfaces with the subject land displays six vehicular lanes for the majority of its length, widening to eight lanes at the intersection. Further, dedicated bike lanes and pedestrian paths are provided on either side of the intersection. Kings Road displays four lanes for the majority of its length, however, it widens to eight lanes at the intersection.

The immediate locality surrounding the subject land is identified as being:

- in the north-eastern corner, a petrol station and landscape buffer;
- in the south-eastern corner, a car dealership;
- in the south-western corner, a series of single and double storey commercial buildings with ancillary car parking and landscaping;
- a variety of industrial buildings to the north and north-west.

I am of the opinion that the built form elements surrounding the subject land is nondescript and does not display any meritorious qualities which must influence the design of any future built form on the land. The proposal displays a new centre with a simple contemporary design thematic. The style employs a robust selection of materials which will enhance the visual appearance of the locality.

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The scale of the surrounding locality is large and open and the proposed centre reinforces this by providing long and low clusters of buildings, with a visual break separating the clusters and a generous provision of landscaping interfacing with the surrounding road network.

PDC 7: The external walls and roofs of buildings should not incorporate highly reflective materials which will result in glare to neighbouring properties or drivers.

The external walls and roofs of buildings will not incorporate highly reflective materials. A range of materials such as precast, prefinished metal panelling and glazing are the predominant building materials used. These materials will be softened by landscaping and other materials where appropriate.

PDC 9: Building design should emphasise pedestrian entry points to provide perceptible and direct access from public street frontages and vehicle parking areas.

The building centre employs a wayfinding strategy where building entrances are clearly delineated through architecture, lighting and signage (to form part of a separate application).

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PDC 10: Development should provide clearly recognisable links to adjoining areas and facilities.

Strong pedestrian links are provided through the centre linking the southern side cluster of uses, to the northern cluster of uses. Pedestrian connections are also provided to the extremities of the site.

PDC 13: Where applicable, development should incorporate verandas over footpaths to enhance the quality of the pedestrian environment.

The proposed development provides for a canopy where there are footpaths adjoining to the building. The canopy is of a sufficient depth to allow people with trolleys to pass at simultaneously.

04.4.3 ENVIRONMENTAL

COUNCIL WIDE - CRIME PREVENTION THROUGH URBAN DESIGN

- Objective 1:** A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.
- PDC 1:** Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable.
- PDC 2:** Buildings should be designed to overlook public and communal streets and public open space to allow casual surveillance.
- PDC 3:** Development should provide a robust environment that is resistant to vandalism and graffiti.
- PDC 4:** Development should provide lighting in frequently used public spaces including those:
- a) along dedicated cyclist and pedestrian pathways, laneways and access routes
 - b) around public facilities such as toilets, telephones, bus stops, seating, litter bins, automatic teller machines, taxi ranks and car parks.
- PDC 5:** Development, including car park facilities should incorporate signage and lighting that indicate the entrances and pathways to, from and within sites.
- PDC 6:** Landscaping should be used to assist in discouraging crime by:
- a) screen planting areas susceptible to vandalism
 - b) planting trees or ground covers, rather than shrubs, alongside footpaths
 - c) planting vegetation other than ground covers a minimum distance of two metres from footpaths to reduce concealment opportunities.

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- PDC 7:** Site planning, buildings, fences, landscaping and other features should clearly differentiate public, communal and private areas.
- PDC 9:** Public toilets should be located, sited and designed:
- a) to promote the visibility of people entering and exiting the facility (eg by avoiding recessed entrances and dense shrubbery that obstructs passive surveillance)
 - b) near public and community transport links and pedestrian and cyclist networks to maximise visibility.
- PDC 10:** Development should avoid pedestrian entrapment spots and movement predictors (eg routes or paths that are predictable or unchangeable and offer no choice to pedestrians).

The proposed development will incorporate a comprehensive range of active and passive surveillance strategies. The entire site and buildings will be surveilled 24 hours per day/seven days per week and will be subject to scheduled checks by security personnel. This will be supported by monitored CCTV throughout the common areas. All public areas will be well lit to enable facial recognition so that people can see and interact with one another.

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The buildings have been designed to maximise the visual connections between the internal spaces with outdoor areas. For instance, all tenancies have external views and the proposed food based tenancies provide active surveillance to the public realm. The building design eliminates isolated external nooks, eliminating opportunities for hiding. All entry points to the building will be clearly identified by the architecture, lighting and signage.

The proposal will create a 'legible environment', by integrating the architecture, landscaping, interior design, lighting, signage, printed and digital information. This will provide clear paths of travel to ensure that wayfinding is made simple.

Providing clearly defined paths of travel to and from all entrances has been a central component of the proposal. The primary entrances are directly accessible from public spaces. No forced paths of movement are created ensuring that movement predictors are minimised.

The building and associated exterior works have been designed with safety and well-being as a paramount objective. These objectives have been achieved through careful planning and design of clear movement pathways within the building and throughout the site. Clear lines of sight ensure an awareness of location are achieved through careful choice of landscaping and lighting. Sharp corners, solid barriers and unexpected changes in grade have been eliminated.

Public toilets have been located centrally to ensure that people entering and exiting the facility are visible. The corridor leading to the facility will be covered by active surveillance techniques such as CCTV. Toilets have been located at the central point between two anchor tenants.

A robust and simple material palette has been expressed throughout the design language. This along with measures such as CCTV and security patrols will ensure vandalism is discouraged.

Having regard to the commentary above, it is considered that the proposal achieves the intent of the Crime Prevention through Urban Design provisions of the Development Plan.

MIXED USE (BULKY GOODS, ENTERTAINMENT AND LEISURE) ZONE - LANDSCAPING

- PDC 14:** Development should contribute to the creation of an attractive precinct through extensive tree planting, landscaping and retention of existing trees and other significant vegetation subject to having regard for airport safety considerations.

The proposed development incorporates a range of landscaping at the perimeter of the subject land, at the interface with Main North Road and Kings Road. Additional landscaping treatments are provided at the vehicular entrances, along the principle east-west boulevard and within the car park.

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PDC 15: Development should provide landscaped areas comprising at least 10 per cent of the site area, incorporating a minimum width of 3 metres.

The proposed development incorporates a generous quantum of landscaped areas. For ease of calculation, all landscape areas within the car park have been excluded, as well as smaller plantar beds. The areas classified within this calculation represent the landscaped swale, and areas surrounding the site and the main boulevard in the centre. The identified landscaped areas comprises an approximate size of 8,000sqm. Cognisant of the site area being 95,406sqm, the landscaped open space represents 8.5% percent of the site area. The proposed departure from the provision represents an insignificant quantum of 1.5%.

COUNCIL WIDE - HAZARDS

PDC 4: Development should not occur on land where the risk of flooding is likely to be harmful to safety or damage property.

PDC 5: Development should not be undertaken in areas liable to inundation by tidal, drainage or flood waters unless the development can achieve all of the following:

- a) it is developed with a public stormwater system capable of catering for a 1-in-100 year average return interval flood event
- b) buildings are designed and constructed to prevent the entry of floodwaters in a 1-in-100 year average return interval flood event.

The built form solution proposes a range of finished floor levels across the site to ensure that a 1-in-100 year average return interval flood event will not inundate property. Typically buildings are sited 300mm above the top of kerb level of adjacent road reserves, or, above an identified level.

The proposal redirects stormwater to a system capable of catering for the 1-in-100 year event, and, provides for the adequate movement of stormwater upstream to that system.

Objective 1: Development located and designed to minimise adverse impact and conflict between land uses.

PDC 2: Development should be sited and designed to minimise negative impacts on existing and potential future land uses desired in the locality.

The subject land is bounded on all sides, by land uses or activities which are not sensitive. To the north and west exist industrial land and to the south exists the Parafeld Airport. The proposed development will not have a deleterious effect on these land uses. To the east of the subject land exists a Residential Zone, however, cognisant of the impact that Main North Road has on the locality and the proximity of the Residential Zone to the Industrial Zone, the proposed development will have minimal additional amenity based impacts.

COUNCIL WIDE – NATURAL RESOURCES

Objective 5: Development consistent with the principles of water sensitive design.

PDC 5: Development should be designed to maximise conservation, minimise consumption and encourage re-use of water resources.

The proposed development utilises a swale and two gross pollutant traps to ensure to manage and improve the quality of stormwater discharged from the site.

The proposal will discharge stormwater to the broader Salisbury Aquifer Recharge and Reuse scheme. The proposal will investigate the use of recycled stormwater throughout the site through the use of the purple pipe system.

PDC 15: Where it is not practicable to detain or dispose of stormwater on site, only clean stormwater runoff should enter the public stormwater drainage system.

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A gross pollutant trap will be utilized to treat stormwater prior to it exiting the site. The trap will be sized at a sufficient scale to appropriately manage flows from the site.

04.4.4 BUILDING NEAR AIRFIELDS

- Objective 1:** Development that ensures the long-term operational, safety, commercial and military aviation requirements of airfields (airports, airstrips and helicopter landing sites) continue to be met.
- PDC 3:** Development in the vicinity of airfields should not create a risk to public safety, in particular through any of the following:
- a) lighting glare
 - b) smoke, dust and exhaust emissions
 - c) air turbulence
 - d) storage of flammable liquids
 - e) attraction of birds
 - f) reflective surfaces (eg roofs of buildings, large windows)
 - g) materials that affect aircraft navigational aids.
- PDC 4:** Outdoor lighting within 6 kilometres of an airport should be designed so that it does not pose a hazard to aircraft operations.

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The proposed development is located in close proximity to the Parafield Airport. Cognisant of this separation distance, maintaining the operational safety of the airport has been a paramount component of the proposed design.

Building heights have been developed with specific reference to Concept Map Sal/30 Mixed Use (Bulky Goods, Entertainment and Leisure) Zone and Airport Building Heights and Lighting Plan.

A lighting plan has been provided as part of Appendix 08.

04.4.5 TRANSPORT AND ACCESS

SAFE AND CONVENIENT MOVEMENT

- PDC 2:** Development should be integrated with existing transport networks, particularly major rail and road corridors as shown on Location Maps and Overlay Maps - Transport, and designed to minimise its potential impact on the functional performance of the transport networks.

CYCLING AND WALKING

- PDC 17:** New developments should give priority to and not compromise existing designated bicycle routes.

ACCESS FOR PEOPLE WITH DISABILITIES

- PDC 30:** Development should be sited and designed to provide convenient access for people with a disability.

The proposed development has been designed to accord with all requirements of the NCC and Australian Standards for accessibility.

CAR PARKING

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PDC 32: Development should provide off-street vehicle parking and specifically marked disabled car parking places to meet anticipated demand in accordance with Table Sal/2 - Off Street Vehicle Parking Requirements or Table Sal/2A - Off Street Vehicle Parking Requirements for Designated Areas (whichever applies) unless an agreement is reached between the Council and the applicant for a reduced number of parking spaces where one of the following applies:

- a) financial contribution is paid into the Council Car Parking Funds specified by the Council, in accordance with the gazetted rate per car park associated with the 'Car Park Fund Areas' identified on Concept Plan Map Sal/27 - Salisbury District Centre Car Park Fund Area, Concept Plan Map Sal/29 - Ingle Farm District Centre Car Park Fund Area and Concept Plan Map Sal/32 - Mawson Lakes Town Centre Car Parking Fund Area
- b) it can be demonstrated that fewer car parks would be required to meet the car parking needs associated with the development.

PDC 33: Development should be consistent with Australian Standard AS 2890 Parking facilities.

The Traffic Impact Assessment concludes:

- The proposed development will include 27,915sq.m Gross Leasable Floor Area for a Mixed Use development comprising commercial, retail and leisure uses with access to and from Main North Road, Kings Road and Mengel Court and includes 1,332 parking spaces within the site.
- The proposed development generates a statutory parking requirement of 837 spaces. The proposed supply exceeds the requirement of the Salisbury Development Plan.
- The proposed parking layout is consistent with the dimensional requirements as set out in the Australian/New Zealand Standards for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009).
- The proposed provision of 21 disabled spaces will be consistent with the Building Code of Australia requirements and will be distributed around the car park adjacent key entrances of the various land uses.
- The proposed development will provide 45 bicycle parking spaces located in public areas which will meet the requirements for visitor parking in the Salisbury Development Plan.
- The proposed loading arrangements will provide access for the various types of vehicles required for the retail, commercial and leisure uses.
- Analysis of the existing Main North Road, Kings Road and McIntyre Road intersection indicates it is operating over-capacity with a Degree of Saturation over 1.
- The site is expected to generate up to 1275 and 1652 vehicle movements during the weekday and weekend peak periods respectively.
- The proposed development will include a main access point on Main North Road with associated deceleration and acceleration facilities given the 80km/h speed limit on this section of Main North Road.
- A new northern leg will be added to the Kings Road and Horrie Miller Drive intersection for access to the proposed development, and will maintain a suitable level of operation and minor impact to Kings Road.
- A review of the traffic impact of the proposed development on the Main North Road, Kings Road and McIntyre Road intersection indicates a minor increase in Degree of Saturation and associated queues/delays. Given the minor nature of the impact for the proposed development, no upgrades are recommended as part of this development.
- The traffic modelling provided in this report is based on preliminary analysis to guide the progress of the proposed development and will require further discussion with DPTI to confirm the identified traffic impacts and agreed arterial road infrastructure requirements.

The Traffic Impact Assessment has been provided as Appendix 04.

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05 CONCLUSIONS

It is concluded that the proposal is an appropriate development within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone for the following reasons:

- the proposed land uses reflect the advocated land use direction and the floorspace proportions desired within the Desired Character Statement and provisions of the Zone;
- the building form reflects the advocated policy direction within the Zone and Policy Area;
- the height is appropriate in the Zone and will not impact on the operations of the Parafield Airport;
- the proposal has developed an appropriate visual style, improving the appearance of the area;
- the material palette and design provides for an integrated centre appearance;
- the proposal presents an appropriate level of landscaping to the locality;
- the proposed buildings provide for a suitable response to the adjoining industrial zone;
- the proposal will not impact on the safe operation of the adjoining road network;
- the proposal incorporates a suitable quantum of vehicular parking;
- the proposed development utilises passive design features and a range of active surveillance techniques; and
- the proposal incorporates an appropriate stormwater management response.

23

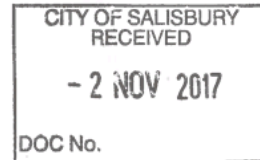
It is for the reasons discussed herein that the proposal is considered to display sufficient merit and warrants Development Plan consent being granted.

INTRO

Intro Correspondence

INTRO

2 November 2017



Aaron Curtis
Team Leader - Planning
Development Services
City of Salisbury

Via email: ACurtis@salisbury.sa.gov.au

[Intro Design Pty Ltd](mailto:info@intro.com.au)
1/144 Waymouth Street
PO Box 707 Rundle Mall
Adelaide SA 5000
T +61 08 8410 0455
info@intro.com.au
intro.com.au

Dear Aaron,

RE: Kings Junction Shopping Centre – Response to RFI

Intro act on behalf of GIC Kings Road Pty Ltd (the applicant) with respect to the proposed development at the corner of Kings Road and Main North Road, Salisbury South.

Further to our conversation on 30 October, I would like to take this opportunity to reaffirm that the proposed development satisfies the intent, quantitative and qualitative outcomes of the Zone, in terms of land use mix, land use ratios and built form outcomes.

The Zone states the following:

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

There are a range of tests within this statement. I paraphrase each below:

1. Development of a single large floorplate shop;
2. Floor area between 10,000 and 15,000 square metres;
3. Up to 45 percent for the display and sale of foodstuffs; and
4. Alternative retail model to purchase products in bulk.

The Zone calls for the development of a single large floorplate shop, despite this the Zone does not stipulate that this must occur in the form of a single tenant. The floorspace proposed is between 10,000 sqm and 15,000 sqm, and exhibits ratios which are envisaged.

Cognisant of these facts, I am of the view, that there is no material difference as to whether the floorspace achieved is provided by one tenant or two tenants. While not provided in a single tenancy, there is no material difference to the scheme if both buildings were contiguous through the provision of an internal link or if the scheme remains as per the proposal plans.

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[Intro-Design-Fly Ltd](http://Intro-Design-Fly-Ltd)
L11 44 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.au

intro.com.au

In response to point four, it is outside the ambit of the planning system to provide for a commercial competitive advantage to a particular user, or type of user over another.

While the proposed development satisfies the intent and qualitative and quantitative aspects of what the Zone requests, only a portion of the subject land is being developed. The proposal does not preclude a single large format shop being established on the balance of the allotment.

In response to the request for information dated 13 October 2017, I provide a response to each of the matters raised below:

ITEM 1: NATURE OF PROPOSED DEVELOPMENT

I confirm that the proposed development should be described as the following:

Demolition of existing dwelling and associated structures and outbuildings, removal of 25 Regulated Trees and 4 Significant Trees, the construction of a mixed use retail and entertainment complex comprising major retail shops (2), specialty retail shops (13), bulky goods tenancies (4), entertainment venues (3), indoor recreation centre (gymnasium), fencing and screening structures, 3 fast food restaurants (with associated drive through facility), associated siteworks, access/egress to Kings Road, Main North Road and Mengel Court, at-grade car parking and manoeuvring areas, loading docks, pedestrian paths, waste storage areas, outdoor seating, external lighting and landscaping

ITEM 2: PUBLIC NOTIFICATION

In response to specific queries regarding the nature of particular elements of the proposal I provide the following response:

- Specialty tenancies 7 and 9 do have a gross leasable area of greater than 200sqm. There was an error in the rounding of the computer program used to design the building. These tenancies are in fact 201sqm. The planning set has been updated to reflect this change;
- Specialty tenancies 1-13 are not proposed to be a Personal Services Establishment. The identified specialty tenancies are proposed to be a 'shop'; and
- Greater detail has been provided surrounding the Gym space, and its ancillary uses. Previous plans had indicated an amenity area adjacent to the gym. Further detail has been provided surrounding the use of this space, with change rooms, showers, and toilets delineated.

A revised planning set is provided as Appendix 01.

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ITEM 3: REGULATED TREES

A tree identification report has been prepared and is provided as Appendix 02.

The proposed development will result in the removal of 25 regulated trees, and 4 regulated significant trees. The proposal seeks to retain a range of regulated and significant trees along the eastern site boundary.

The Mixed Use (Bulky Goods, Entertainment and Leisure) Zone Desired Character Statement desires the following:

The retention, removal or relocation of Regulated or Significant Trees should enhance the amenity and safety of the zone and augment landscaping features across the zone.

The proposed development results in the removal of a range of regulated and significant trees. As is demonstrated on the tree removal plan in Appendix 01, these trees are required to be removed to enhance the safety of the Zone. To compensate for the loss of trees within the Zone, a range of advanced trees are proposed to be planted in their place.

Access to the site is difficult, cognisant of the role and function of both Main North Road and Kings Road. Difficult access from Main North Road, particularly, has resulted in the requirement for a slip lane, and exit speeds from Main North Road result in the requirement to create an elongated path of travel for access into the site.

This path of access affects critical car parking layouts adjoin both Major Tenants 1 and 2, who have strict guidelines as to the quantum of car parks and associated travel distances adjoining their property. A range of trees conflict either with circulation routes or car parking spaces and the Regulated Trees are proposed to be removed pursuant to Council Wide Section – Regulated Trees PDC 2(d). I note that the proposed development seeks to retain the two trees which demonstrate a retention rating of High.

Four significant trees are proposed to be removed. These trees are proposed for removal as they directly conflict with the location of buildings. It is not possible to maintain these trees and protect their critical root zone and provide a setback for fire vehicle access while achieving a similar built form outcome. The significant trees identified for removal have a moderate retention rating. It is proposed to remove these trees pursuant to Council Wide Section – Significant Trees PDC 3(d).

The proposed development provides a range of replacement trees. Trees within the site along the main access road, or around the perimeter of the site are proposed to be planted as advanced species at a height of 2m. The remainder of the replacement trees are proposed to be planted at a height of 1-1.5m.

The proponent is currently undertaking detailed design with regards to the movement of stormwater surrounding the site. The intent of this design is to ensure

Intro Design Pty Ltd
 Unit 44 Waymouth Street
 PO Box 207 Rundle Mall
 Adelaide SA 5000

Tel: (08) 840 6657
 info@introdesign.com.au

introdesign.com.au

INTRO

Intro Design Pty Ltd
171 44 Waymouth Street
PO Box 707 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.au

intro.com.au

that works in regards to the stormwater solution minimise potential affects on the trees.

ITEM 4: AFFECTED STREET TREES

The majority of trees which sit external to the site, are located within an allotment owned by the Commissioner of Highways, and do not sit within a road reserve. Two peppercorn trees, located at the corner of Kings Road, and Main North Road, are located within the Main North Road corridor and are proposed for removal. This species of tree is exempt from classification as a significant or regulated tree.

The proponent is currently undertaking detailed design with regards to the movement of stormwater surrounding the site. The intent of this design is to ensure that works in regards to the stormwater solution minimise potential affects on trees upon Commissioner of Highways allotment.

A survey of trees surrounding the site has been provided in Appendix 03 for your information.

ITEM 5: SIGNAGE

No signage is proposed as part of this application. The proponent is in the process of preparing a comprehensive signage strategy with distinct Zones proposed for signage. The amended planning set indicates proposed signage locations.

The proponent acknowledges the requirement to provide a separate signage application.

ITEM 6: DEMOLITION

The demolition plan has been updated to display the removal of all built form elements upon the subject land.

ITEM 7: DEPARTMENT OF INFRASTRUCTURE AND REGIONAL DEVELOPMENT RESPONSE

A Wind Shear and Turbulence analysis is currently being prepared and this information will be forthcoming.

The proponent acknowledges the Parafield Airports request regarding airspace, building heights and construction cranes and will enter into an open dialogue regarding this matter.

The proponent acknowledges the noise level requirements and will ensure that all buildings achieve a noise level which accords with the Australian Standard requirements.

The proponent acknowledges the Departments position regarding the proximity of buildings to the end of the runway. I note that there are a range of scenarios within

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Adelaide and more broadly in Australia which would not satisfy this requirement, including development on Parafield Airports land.

ITEM 8: DEPARTMENT OF TRANSPORT

There is a Land Management Agreement with the Department of Transport to ensure that the application pays regard to the access against both Main North Road and Kings Road.

The proponent is working with the Department of Transport to resolve appropriate outcomes regarding access to the site and the detail within the Land Management Agreement.

The proponent is comfortable with a reserved matter being placed on the application to resolve the outcome with the Department of Transport.

A letter indicating the approach to assessment of this application is currently being prepared by the Department of Transport and will be furnished to council as soon as it is available.

ITEM 9: FOOTPATHS ALONG KINGS ROAD NEAR HORRIE MILLER DRIVE

The proponent is currently working through the detailed design of this space with the Department of Transport. It is the intent that the development is a catalyst for the provision of additional footpaths in and around the centre.

Bus stop 43 will be relocated further north of its current location as is depicted within revised plans in Appendix 04. The bus stop will also been serviced with new pedestrian links, following further consultation with the Department of Transport.

ITEM 10: LANDSCAPING ALONG KINGS ROAD NEAR HORRIE MILLER DRIVE

The proponent reaffirms their position for landscaping to be provided along this frontage. Further details will be resolved in consultation with Department of Transport and Council.

ITEM 11: OTHER WORKS ON COUNCIL LAND

The proponent acknowledges that consent from Council is required for any works on or hanging over a council reserve.

ITEM 12: HOURS OF OPERATION

The proposed hours of operation are as follows:

Majors Tenants 1 and 2:

- Monday - Friday -6.00 am to 9.00 pm

Intro Design Pty Ltd
 1741 Woodward Street
 PO Box 907 Rundle Mall
 Adelaide SA 5000

T: (08) 8410 0643
 info@intro.com.au

www.intro.com.au

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- Saturday - 6.00 am to 5.00 pm
- Sunday -11.00 am to 5.00 pm

Cinema and Specialty Tenancies 1, 7, 8 and 9

- Typical hours of Operation 9.00 am to midnight

Restaurants (Fast food)

- 24 hours per day, 7 days per week

Speciality Tenancies (northern side)

- Monday - Wednesday - 9.00 am - 5.30 pm
- Thursday - 9.00 am - 9.00 pm
- Friday - 9.00 am - 5.30 pm
- Saturday - 9.00 am -5.00 pm
- Sunday-11.00 am - 5.00 pm

Leisure Tenancies

- All days – 9.00 am to midnight

ITEM 13: VEHICLE LOADING TO BULKY GOODS TENANCIES

All proposed bulky goods tenancies have the potential to side or rear loading for large items. The tenants envisaged that will take up these bulky goods stores do not have specific requirements for large items and as such no such loading is proposed as part of this application.

ITEM 14: SHADE STRUCTURES

No such shade structures are envisaged, and do not form part of the application.

ITEM 15: REFERENCE TO PAD SITES

The reference to pad sites was an error in the report. The report has been updated and is provided.

ITEM 16: TRAFFIC REPORT

The following response has been provided by GTA Traffic Consultants:

CREATING A LOW SPEED ENVIRONMENT

The pedestrian crossings will be raised wombat crossings (refer Page 9 of TIA) which will provide effective speed control through this area, along with pedestrian priority for connectivity across the car park.

Intro Design Pty Ltd
1/142 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 849 0453
info@intro.com.au

intro.com.au

INTRO

[Intro Design Pty Ltd](http://www.intro.co.nz)
171 & Wymouth Street
P.O. Box 207 Ruridale Mail
Adelaide SA 5060
T +61 (0)8 840 0453
info@intro.com.au
intro.com.au

INTERNAL ROADWAY JUNCTION ADJACENT BULKY GOODS TENANCY 4

There is clear sight distance for the intended speed environment to facilitate safe access into and out of this access point for the southern car park area. This access point will have lower traffic volumes than to the other central access points due to destinations sought by customers on the site.

DESIGN OF 'T-JUNCTIONS' AT ROADWAY CONNECTIONS

A raised median can be added to further delineate the junctions. The most appropriate treatment will be confirmed with BRC detailed design.

BUS STOP 43

A bus stop layout has been prepared to relocate the stop in a more convenient location for access at the site. This will be part of the design to be agreed with DPTI for the LMA.

REMOVAL OF TWO CAR PARKING SPACES

These spaces have been deleted.

LINEMARKING REQUIRED AT THREE-WAY INTERSECTION

The north-south road will be the priority, with give-way holding lines to be provided on the east-east approaches. The traffic controls will be confirmed with the BRC plans.

TURNING TEMPLATE CONFLICT

The diagram on Page 20 indicates the parking layout required to enable a delivery vehicles into the tenancy adjacent. The plans will be updated to reflect this layout.

VEHICLE MOVEMENTS CLOSED OFF TO REAR OF 'BULKY GOODS 1'

These areas will maintain physical vehicle access to emergency services requirements. There will be signage and linemarking (as indicated) to deter use by unauthorised vehicles.

TRAFFIC CONTROL LAYOUT

This would normally be developed for BRC once Planning Consent has been obtained. The proponent requests the provision of this information as a condition of consent.

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DELIVERIES FOR BULKY GOODS TENANCY 4

A loading dock has been provided adjoining the tenancy.

FINAL DESIGN OF ACCESS POINTS TO MENGEL COURT

This would normally be developed for BRC once Planning Consent has been granted.

ITEM 17: STORMWATER REPORT

The proponent is comfortable with providing the requested information as a reserved matter.

ITEM 18: THREE ADDITIONAL CERTIFICATES OF TITLE

Copies of the additional Certificates of Titles are provided in Appendix 05.

ITEM 19: EASEMENTS

Certificate of Title Volume 5068 Folio 957 is subject to three easements being:

- Easement A to the Commonwealth of Australia;
- Easement B to the Minister for Water Resources; and
- Easement D to the SA Water Corporation.

Easement A allows the Parafield airport to enter into the property and lop any tree that has the potential to disrupt aviation safety. The easement does not preclude the establishment of any structure on the land. The details surrounding Easement A are provided within Appendix 06.

Easement B and D are both to the SA Water Corporation and are for the maintenance of a sewer main within the easement. The proponent is currently negotiating an outcome with the SA Water Corporation which will be subject to detail design. Details surrounding Easement B are provided in Appendix 07.

ITEM 20: BUILDING DESIGN – RESTAURANT 1

The proponent has specific tenants in mind for this building who have imposed stringent design criteria on the building. As opposed to reconfiguring the building design, additional landscaping is proposed at this corner to assist screening this aspect of the development.

ITEM 21: BUILDING DESIGN – FACING ONTO PUBLIC ROADS

The following building aspects of the development have been earmarked for design review:

[Intro Design Pty Ltd](#)
L11 44 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61(0)8 8490 0453
info@intro.com.au

intro.com.au

INTRO

[Intro Design Pty Ltd](http://www.introdesign.co.uk)
111-114 Weymouth Street
PO Box 797 Rundle Mall
Adelaide SA 5000
1 +61 (0)8 460 0493
info@intro.com.au
www.intro.com.au

SOUTHERN WALL OF TENANCIES 1 AND 3

The proponent has revisited the design, and has sought to break up the southern wall through the use of different colour treatments, reducing the extent of solid mass in black, and indicated future signage zones. The treatment of this façade is considered appropriate in reducing its visual mass.

EASTERN SIDE WALL OF 'MAJOR RETAIL' TENANCY 2

The retention of the vegetation along this boundary, as well as the addition of additional variation in colour will minimise the visual bulk of this wall. Signage Zones have also been indicated along this wall.

REAR WALL OF BULKY GOODS TENANCY 4

Landscaping is proposed to screen the rear wall of this tenancy. Information surrounding the provided to indicate landscaping areas.

ITEM 22: LANDSCAPING AND CONNECTIONS

CAR PARK BUFFER TO WESTERN SIDE OF BULKY GOODS TENANCIES 2 AND 3

The proposal has been amended to incorporate the car park buffer to the western side of Bulky Goods Tenancies 2 and 3.

ACCESS ALONG EASTERN SIDE OF LEISURE TENANCY 1

The footpath indicated is an error within the drawings. A nominal setback is required for fire vehicle access. The footpath has been deleted from the plans, and a bitumen surface replaces this. Pedestrians are encouraged to take the existing and new footpaths surrounding the site to access the centre.

ITEM 23: ACCESS AND INCLUSION

The proposal has been reviewed from a DDA compliance perspective by BuildSurv the response is provided in Appendix 08. The plans have been updated to reflect the taxi drop off zone recommendation.

ITEM 24: PEDESTRIAN ROUTES

MAIN NORTH ROAD PEDESTRIAN FOOTPATH

A reconfigured footpath is provided adjacent to Restaurant 1. This footpath links into the centre and connects to the broader movement network within the centre.

FOOTPATH CROSSINGS ALONG SOUTHERN BOUNDARY

The proposal plans extend these connections to the existing footpath network to the south.

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Intro Design Pty Ltd
 L11 44 Waymouth Street
 PO Box 207 Rundle Mall
 Adelaide SA 5000
 T +61(0)8 8410 0453
 info@intro.com.au
intro.com.au

ITEM 25: WASTE MANAGEMENT

An expert waste consultant, Dr Chris Colby of Colby Industries, has been engaged. He will develop a comprehensive waste management plan and strategy for the proposed development. This waste plan and strategy will take several weeks to prepare. It will address all of the points, a) – e), in the information that is required (or has been requested). This will include (among other things):

- Expected waste profile (including maximum volumes anticipated) of commercial tenancies and other site use activities.
- Recommended services for waste management of commercial tenancies and other site activities, which are practical and (where appropriate) encourage recycling to help minimize landfill disposal.
- Recommended public place waste management (including types and locations of bins).
- Recommended waste management, equipment and bin storage areas for the site, including for major tenants, shared areas for smaller tenants, and to manage public place and other waste.
- Recommended arrangements for collection, including types of trucks, collection frequencies, and access arrangements.
- Recommended design and site management of disposal and waste storage areas, including measures to:
 - Effectively manage and mitigate odour, hygiene and/or pest/vermin issues; and
 - Discourage litter.

Cognisant of the work currently being undertaken by the Waste Management Consultant, the proponent is comfortable with the information being provided as a Reserved Matter.

ITEM 26: RECYCLED WATER CONNECTION

Contact has been made with Salisbury Water regarding the provision of recycled water to the site. The proponent is evaluating this option and will pursue this outside of the planning process.

ITEM 27: FIT-OUT APPLICATIONS

The proponent acknowledges the requirement to provide tenancy fit-out applications, and the subsequent approvals required from other authorities.

ITEM 28: CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

The proponent acknowledges that the provision of a construction environment management plan will be required as part of the approval and is comfortable with a condition of consent.

INTRO

Intro-Design Pty Ltd
11141 Wymour Street
PO Box 201 Rundle Mall
Adelaide SA 5000
T +6108 840 0453
info@intro.com.au
intro.com.au

ITEM 29: SERVICES

The final location of transformers and boosters is subject to detail design. The proponent is comfortable with the provision of final information to form a reserved matter.

The premise of the plant design has been predicated upon providing this material such that it cannot be viewed from adjoining roads and land. Where possible the plant has been sited in close proximity to existing parapets, taller elements, centrally upon the larger boxes and at low points on the roof. Where existing design features are not sufficient to screen the roof plant from view, additional screening will be proposed. This will be resolved in the detailed design phase, when the exact nature, quantum and model of plant equipment is determined.

ITEM 30: LANDSCAPING

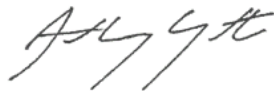
The proponent acknowledges that detail is required to finalise the landscaping design and is comfortable with this information forming a reserved matter.

ITEM 31: ABORIGINAL OBJECTS OR REMAINS

The proponent acknowledges the note from Council with regards to the Aboriginal Heritage Act 1988.

Should you require further information, please do not hesitate to contact the undersigned on 0402 424 403.

Yours sincerely



Anthony Gatti
Senior Planning Advisor

INTRO

21 November 2017

Mr Aaron Curtis
Team Leader – Planning Development Services
City of Salisbury

Via email: acurtis@salisbury.sa.gov.au



Dear Aaron

Re: Kings Junction Shopping Centre – Proposed re-categorisation

As you are aware, on 02 November 2017 our client's application was amended to address a range of issues raised by Council in its letter dated 13 October 2017.

Our client has been further considering its application and now seeks to further refine the proposal.

Pursuant to section 39(4) of the *Development Act 1993*, our client requests that Council permit our client to vary the application and the associated plans on the basis that the essential nature of the proposed development is not changed.

As part of its consideration of an appropriate tenancy mix, our client has determined that it would provide a better mix of tenancies to divide the tenancy marked as Specialty 8. It is proposed to divide Specialty 8 into two tenancies so as to enable it to incorporate a café use in this location.

Given the existence of the three leisure facilities and the area for outdoor seating, this location is ideally suited to a café use. Our client considers that the inclusion of the café in this location will create a more viable offering than a further specialty shop. The second tenancy will remain as a shop use.

Accordingly, please find enclosed* with this letter amended plans. You will note from the plans that the size of the proposed tenancies are as follows:

- Café 190 square metres;
- Shop 190 square metres.

Our client acknowledges that the size of the shop is now less than the 200 square metres and, as such, will trigger a Category 2 Public Notification as stipulated within the Mixed Use (Bulky Goods, Entertainment and Leisure Zone).

In line with the comments in Council's letter dated 13 October 2017 that the size of the shop tenancies is relevant to categorisation, our client accepts that the proposed changes to Specialty 8 will have the effect of rendering the development application as a whole a Category 2 form of development for public notification purposes.

Intro Design Pty Ltd
111/44 Weymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0452
info@intro.com.au

intro.com.au

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We invite Council to consider the amended application and determine that it should be processed on the basis that the essential nature of the proposed development has not changed and it is a Category 2 form of development for public notification purposes.

The Category 2 public notification procedures are detailed within section 38 of the *Development Act*. Section 38 (4) states:

Where a person applies for a consent in respect of the Development Plan for a Category 2 development, notice of the application must be given, in accordance with the regulations, to—

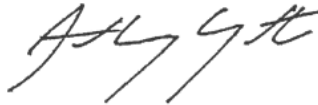
- a) *an owner or occupier of each piece of adjacent land; and*
- b) *any other person of a prescribed class.*

We will pay the required fee for the Category 2 public notification as requested in your letter of 13 October 2017. We further request that public notification commences immediately.

Furthermore, we request that Council consider the amended application and determine that, in accordance with Regulation 20(4) of the *Development Regulations 2008*, the proposed variation is not substantial and, accordingly, there is no need to undertake the referral process again.

Should you wish to discuss any matter further, please contact the undersigned on 8410 0453 or 0402 424 403.

Yours sincerely



Anthony Gatti
Senior Planning Advisor

Intro Design Pty Ltd
111 44 Woymouth Street
PO Box 707 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.co

intro.com.co

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8 December 2017

Aaron Curtis
Team Leader - Planning
Development Services
City of Salisbury

Via email: ACurtis@salisbury.sa.gov.au

[Intro Design Pty Ltd](#)
L11 44 Waymouth Street
PO Box 20 / Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0483
info@intro.com.au

intro.com.au

Dear Aaron,

RE: Kings Junction Shopping Centre – Response to RFI

Intro act on behalf of GIC Kings Road Pty Ltd (the applicant) with respect to the proposed development at the corner of Kings Road and Main North Road, Salisbury South.

In response to the supplementary request for information dated 22 November 2017, I provide a response to each of the matters raised below:

ITEM 1: REGULATED TREES

Supplementary arboricultural information has been prepared. The findings of this report are that the earthworks, road works and stormwater works all result in a deleterious impact on the long term health of the trees. The proposal therefore is to remove all trees on-site.

To compensate for the loss of these trees, a range of the trees previously identified for removal, namely trees 22, 23, 24, 25, 32, 33, 34, 35, 36, 37, 38, 39 and 40, will be transplanted for re-use on site. An additional 17 mature species of non-regulated vegetation will also be transplanted as part of the proposal.

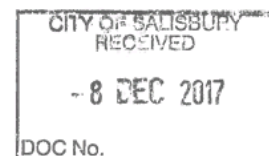
The proposal requires the removal of trees 2 and 3 which are considered to have a high retention rating. These trees are impacted by the proposed building, the stormwater solution and the acceleration lane onto Main North Road. In order to retain those trees, no access could be provided onto Main North Road. The proposal is therefore considered to accord with Council Wide Provisions – Significant Trees Principle of Development Control 3 (d).

The replanting of trees is considered sufficient to accord with the relevant Zone Desired Character Statement and Council Wide provisions.

An additional arboricultural report is provided in Appendix 01.

A revised landscaping plan indicates the intent for where the regulated trees will be provided. The intent is to provide these trees at the entrance into the development and to assist in screening loading areas. A revised landscaping plan is provided in Appendix 02.

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Intro Design Pty Ltd
LT1 44 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8430 0453
info@intro.com.au

intro.com.au

ITEM 2: DEMOLITION PLAN

A revised demolition plan is provided in Appendix 03.

ITEM 3: STORMWATER MATTERS

A revised stormwater concept has been prepared and is provided in Appendix 04. This plan removes the requirement for a swale along Main North Road and provides for a stormwater pipe within its place.

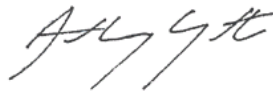
ITEM 4: COMMISSIONER OF HIGHWAYS

The proponent acknowledges the Department of Transport's position, however, the provision of an emergency vehicle access is a requirement of the Metropolitan Fire Service, and further a requirement to achieve Building Rules Consent.

The purpose of this access point is not for consistent vehicle access, rather, it is to be used in emergency situations where a fire is specifically occurring to the rear of a building.

Should you require further information, please do not hesitate to contact the undersigned on 0402 424 403.

Yours sincerely



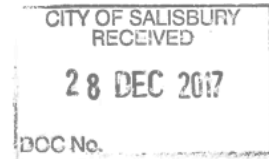
Anthony Gatti
Senior Planning Advisor

INTRO

28 December 2017

Aaron Curtis
Team Leader - Planning
Development Services
City of Salisbury

Via email: ACurtis@salisbury.sa.gov.au



Intro Design Pty Ltd
L11 44 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.co

intro.com.co

Dear Aaron,

RE: Kings Junction Shopping Centre – Response to Representations

Intro act on behalf of GIC Kings Road Pty Ltd (the applicant) with respect to the proposed development at the corner of Kings Road and Main North Road, Salisbury South.

This correspondence has been prepared in response to the Category 2 representations received on 28 December 2017. In total five submissions were received, namely:

- Parafield Airport Ltd;
- PKMC Properties - Peter Kittle;
- M Leondiou; and
- L Leondiou (x2).

I note that the applications by PKMC properties, M Leondiou and L Leondiou are in support of the application. To this end, I respond to the remaining representation below:

PARAFIELD AIRPORT LTD

ISSUE: DEVELOPMENT ON THE BALANCE ON THE LAND

The proponent is not proposing any development on the balance of the land at this stage. Any future development would be the subject of a new application and Parafield Airport Ltd would maintain their ability to review and comment upon the future plans.

ISSUE: NO SPECIFIC MODELLING OR EXPERIMENTAL VALIDATION FOR WINDSHEAR AND TURBULENCE

A windshear and turbulence analysis has been provided to give council comfort that the proposed development will not have a deleterious effect on the operation of the Parafield Airport site.

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Intro Design Pty Ltd
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PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
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The proponent has developed on the Parafield Airport Commercial Precinct land and is acutely aware of the issues of developing in proximity to an airfield.

The proponent and their technical advisors, will resolve the technical issues with Parafield Airport Ltd in a collaborative manner and recommends this becomes a condition of consent.

ISSUE: BIRD DETRACTION MEASURES

The proponent will investigate a range of management procedures to detract from birds flocking to the area. This will be done in consultation with Parafield Airport Ltd.

ISSUE: ADVERTISING STRUCTURES

The proponent is not proposing any advertising signage as part of this application. Any future development for advertising signage would be the subject of a new application and Parafield Airport Ltd would maintain their ability to review and comment upon the future plans. The proponent is cognisant of the issues surrounding light interference and will ensure that advertising signage satisfies the legislative criteria.

ISSUE: COMMONWEALTH REGULATORY PROVISIONS

Any assessment of the proposed development against the *Airports Act 1996* and the *Airports (protection of Airspace) Regulations 1996* does not form part of the legislative requirements within the *Development Act 1993*. The Department of Infrastructure and Regional Development will undertake a separate assessment concurrently.

ISSUE: NASF GUIDELINE ASSESSMENT

We acknowledge the NASF Guidelines. The proponent and their technical advisors will resolve the technical issues with Parafield Airport Ltd in a collaborative manner and recommends this becomes a condition of consent.

ISSUE: GROUND TRANSPORT, TRAFFIC VOLUMES, QUEING AND CONFLICT ISSUES

We thank Parafield Airport Ltd for their concerns regarding the surrounding road network. We will work with the Department of Transport to ensure that all road based traffic issues are resolved.

ISSUE: IMPACTS ON RETAIL HIERARCHIES

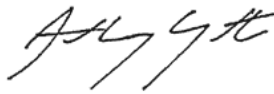
We thank Parafield Airport Ltd for their concerns regarding retail hierarchies. I note the Zoning is appropriate for the proposed development and supports the quantum and type of retailing envisaged.

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I trust that the response to the representations received is sufficient for you to continue your assessment.

Should you require further information, please do not hesitate to contact the undersigned on 0402 424 403.

Yours sincerely



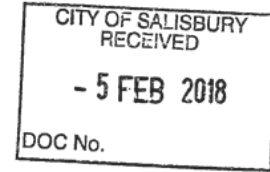
Anthony Gatti
Senior Planning Advisor

Intro Design Pty Ltd
L11 44 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.co

intro.com.co

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5 February 2018

Aaron Curtis
Team Leader - Planning
Development Services
City of Salisbury

Via email: ACurtis@salisbury.sa.gov.au

[Brand Design Pty Ltd](#)
177 Wymouth Street
100 Kings Road Adelaide SA 5000
Tel: 08 8344 1154
info@branddesign.com.au
branddesign.com.au

Dear Aaron,

RE: Kings Junction Shopping Centre – Response to RFI and Invalid Representations

Intro act on behalf of GIC Kings Road Pty Ltd (the applicant) with respect to the proposed development at the corner of Kings Road and Main North Road, Salisbury South.

This correspondence has been prepared in response to the supplementary request for information dated 8 January 2018. I provide a response to each of the key matters raised below:

ITEM 1: DESIRED CHARACTER STATEMENT

Council has asked us to address two particular elements of the Desired Character Statement, namely (my underlining):

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

...

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

It is important not to isolate elements of the Desired Character Statement from their broader context.

The Desired Character Statement is explicit in what it considers is a *unique specialist centre* and what comprises an *alternative retail model*.

A unique specialist centre is expressed as being comprised of a mix of:

- Entertainment and leisure activities;
- Bulky goods outlets;

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- Large floorplate retail (selling predominantly non-food stuffs); and
- service trade premises.

The proposed development provides for large floorplate retail tenancies which equate to approximately 10,115sqm of area. Within this gross floor area, Major Retail 1, which provides a GFA of 3,910sqm, will be used for the sale of predominantly foodstuffs and Major Retail 2, which provides a GFA of 6,205sqm, provides for the sale of predominantly non-food stuffs. Cognisant of this I am of the opinion that the proposed development provides for large floorplate retail which sells predominantly non-foodstuffs.

Intro Design Pty Ltd
13144 Waymouth Street
PO Box 707 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 6451
info@intro.com.au

intro.com.au

The proposed development provides for entertainment land uses, bulky goods outlets and large floorplate retail (selling predominantly non-food stuffs) which represents the majority of the requirements for it to satisfy the 'unique specialist centre' test. I note service trade premises could be accommodated upon the balance of the land.

The test to satisfy whether the centre provides for an alternative retail model is that each tenancy will generally be 200sqm or more in size. As is demonstrated within the proposal plans, all but one of the retail tenancies are greater than the 200sqm size, allowing the proponent to facilitate the desired alternative retail model.

We also provide an opinion from Mellor Olsson lawyers in relation to the above matters and the issue of whether the proposal is seriously at variance as Appendix 01.

ITEM 2: LANDSCAPING AND EASTERN BOUNDARY TREATMENT

The proposal has addressed the eastern wall of Major Tenancy 2 to provide a revised design which uses colouring to break down the visual mass of this wall. This building cluster cannot shift as it would mean commercial vehicles would not be able to manoeuvre into and out of the property.

I acknowledge the context in which this request is being made, that is, if and when the Department of Transport acquire the land for road widening purposes. There are no plans to acquire this portion of road and undertake road widening. Cognisant of the unknown timeframes associated with this, I am of the view that the proposed solution is appropriate.

Revised plans indicating wall treatments and landscaping are provided in Appendix 02.

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intro-design.com.au
114 44 Weymouth Street
PO Box 107 Runcote Mail
Adelaide SA 5000

T +61 8 8416 6453
info@intro.com.au

intro.com.au

ITEM 3: REGULATED TREE REMOVAL R17-22, 24, 25

A bulk earthworks plan has been provided to the arborist for review. The bulk earthworks needs to be undertaken irrespective of whether the trees are located within a pedestrian area or reserve, as they fundamentally dictate car park grading for stormwater purposes.

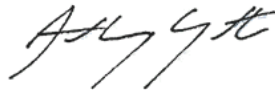
The arborist opinion is provided in Appendix 03.

ITEM 4: TRANSPLANTING OF TREES 22-25, 32-40

A letter indicating the trees are suitable for transplanting is provided in Appendix 03.

Should you require further information, please do not hesitate to contact the undersigned on 0402 424 403.

Yours sincerely



Anthony Gatti
Senior Planning Advisor

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APPENDIX 01

Intro Design Pty Ltd
1144 Weymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61(0)8 8410 0455
info@intro.com.au

intro.com.au



Our Ref: AK:M171882

5 February 2018

Mr Anthony Gatti
Senior Planning Advisor
Intro
Level 11, 44 Waymouth Street
ADELAIDE SA 5000

Dear Anthony

**GIC KINGS ROAD PTY LTD
DEVELOPMENT APPLICATION NUMBER 361/1589/2017**

You have sought our advice on a number of matters raised by the Council in respect of the above development application.

By development application number 361/1589/2017, GIC Kings Road Pty Ltd sought approval from the Council to develop the land at 1460 Main North Road, being a portion of lot 120 in DP30240 (**‘the subject land’**), for a mixed used development comprising retail, bulky goods, leisure and restaurants (**‘the proposed development’**).

You have sought our advice as to the following matters raised by Council:

1. The references in the Desired Character Statement for the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone (**‘the Zone’**) that:
 - a. The zone will be developed as a unique specialist centre;
 - b. The retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.
2. Whether the proposal is seriously at variance to the Development Plan.

We set out our advice below.

The Zone provisions

Objective 1 for the Zone sets out the what is sought in the Zone, namely a zone which primarily accommodates:

- Entertainment and leisure activities;

Adelaide
Level 5 80 King William Street Adelaide SA 5000
GPO Box 74 Adelaide SA 5001 DX 543
Phone: +61 8 8414 3400
Fax: +61 8 8414 3444

Port Lincoln
11 Mortlock Terrace Port Lincoln SA 5606
PO Box 411 Port Lincoln SA 5606 DX 51050
Phone: (08) 8682 3133
Fax: (08) 8682 6030

Clare
165 Main North Road Clare SA 5453
PO Box 671 Clare SA 5453
Phone: (08) 8842 1833
Fax: (08) 8842 1811

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Regional Offices (By Appointment Only)
Bordertown Kadina Keith
McLaren Vale Nuriootpa
Phone: 1300 414 414
Fax: (08) 8414 3444

Web: www.mellorolsson.com.au Email: lawyers@mellorolsson.com.au Mellor Olsson (incorporating Jenkins Anderson) ABN 44 157 825 957

- Bulky goods outlets;
- Larger floorplate retail (selling predominantly non-foodstuffs); and
- Service trade premises.

Objective 2 specifies that development should contribute to the desired character and objectives of the zone.

We do not understand that there are any issues in respect of compliance with Objectives 3, 4 and 5.

The Desired Character Statement furthers the Objectives of the Zone, with the intent for the Zone set out as including as follows:

- A unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.
- The zone will accommodate:
 - Some larger format bulky goods and 'bulky retail' and retail outlets;
 - Standalone restaurants; and
 - An integrated petrol filling station.
- The retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.
- There will be a single large floorplate shop with a floor area between 10,000 square metres and 15,000 square metres or thereabouts, with up to 45% of the total floor area of this tenancy including the display and sale of foodstuffs. This shop is intended to provide an alternative retail model for small and medium businesses and individuals to purchase items in bulk.
- The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands, with each tenancy generally being 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.
- The entertainment, leisure and recreation component is anticipated to provide a range of indoor uses.
- The entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses to ensure the mixed-use activities for the Zone are achieved.

Principle of Development Control 1 is the most relevant to the current issues. This sets out that the envisaged uses are:

- leisure and entertainment venues;
- bulky goods and service trade premises;

- shops; and
- restaurants.

In respect of the shops, it is noted that shops should have a minimum floor area of 200 square metres and a maximum floor area in the order of 15,000 square metres per tenancy.

It is important to note the following in respect of the Objectives, Desired Character Statement and the Principles of Development Control:

1. In relation to Objective 1, the uses set out are the uses which should primarily be found in the Zone.

This does not mean that other uses are not permitted in the Zone.

In *Wakefield Regional Council v Evans*¹ the Supreme Court considered this issue in the context of a Primary Industry Zone, for which the relevant development plan provision sought that uses of land 'primarily' involve a farming purpose. His Honour Justice White, at paragraph 88, commented that:

"The Development Plan makes it reasonably plain, in my opinion, that developments within the Primary Industry Zone should primarily be those associated with farming purposes. That does not mean that they must be only for farming purposes but, ordinarily, developments within the Zone are intended to be those which have an association with such purposes. I agree with the Judge that the Development Plan is not to be construed as permitting only those developments which by themselves make a direct and substantial contribution to agricultural production. Instead what the Development Plan requires is that developments be primarily (ie, principally or chiefly) those with a direct association with agricultural production and livestock raising, or be required for the proper and efficient management of farming activities. That association is to be determined by a consideration of matters going beyond the likely effect of the development on agricultural output."

It is clear, therefore, that the use of the word 'primarily' does not preclude other uses being established in the Zone, including other forms of retail such as a supermarket. This is particularly so in the context of this Development Plan where the Zone provisions seek a broad range of uses. Furthermore, in this regard we also note that no types of retail are non-complying uses within the Zone.

In considering this provision one also has to bear in mind what has been stated repeatedly by the Courts, namely that the provisions of the Development Plan are not to be construed like a statute as a Development Plan is a planning document couched in the language of planning objectives and principles, rather than that of legal obligations. It uses language appropriate to the expressions of goals and guiding principles, rather than the expression of legal mandates.²

¹ [2010] SASC 68.

² See *Telstra Corporation Ltd v Corporation of the City of Mitcham* [2001] SASC 166 at [25].

2. In terms of the centre being 'unique', it is clear from the Desired Character Statement that the centre will be unique as a result of a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

In terms of what is meant by large floorplate retail, this is given meaning by Principle of Development Control 1, which refers to retail in excess of 200 square metres.

3. In terms of the retail elements being unique, this is dictated by the Desired Character Statement, which indicates that these elements will be an alternative retail model by virtue of both their larger floor area and the retail model. That is, the retail will be an alternative model by virtue of the size of the retail outlets and the type of goods being offered for sale.

The retail component then focuses on two particular elements of retail which will provide this 'alternative retail model'.

The first is the stand-alone large floorplate shop, which will be an alternative retail model.

The second is the retail outlet component, which will offer an alternative model by virtue of the size of those retail outlets (generally being 200 square metres or more) and the type of goods being offered for sale (a premium outlet centre offering leading brands).

In the context of the proposed development, that which is sought by the Development Plan is achieved.

The proposed development currently incorporates the following:

- Major retail- two tenancies, both over 3,000 square metres (total area of 10,115 square metres);
- Specialty Retail- thirteen tenancies, all but one of which is over 200 square metres (total area of 5,821 square metres);
- Bulky goods- four tenancies, ranging from 300 square metres to 900 square metres (total area of 2,920 square metres);
- Leisure- four tenancies, ranging from 605 square metres (gym) to 3,300 square metres (total area of 8,205 square metres);
- Restaurant/cafe- four tenancies, ranging from 190 square metres to 286 square metres (total area of 950 square metres)

The above uses satisfy the desire of Objective 1 for the primary uses within the Zone to be:

- Entertainment and leisure activities;
- Bulky goods outlets;
- Larger floorplate retail (selling predominantly non-foodstuffs); and
- Service trade premises.

The only element listed above which is not provided as part of the proposed development is the service trade premises component. All the other elements are provided, noting that 'larger floorplate retail' in the context of the Development Plan provisions for the Zone means floorplates of in excess of 200 square metres.

The other element not provided is the single large floorplate shop with a floor area of between 10,000 square metres and 15,000 square metres. This element needs to be considered in the context of the Zone as a whole.

The Zone encompasses all of the land contained in lot 120 in DP30240. The subject land is only part of lot 120. The subject land is 96,278.83 square metres. The balance of lot 120 is 110,140.41 square metres. The subject land therefore represents only approximately 46.64% of the total land in the Zone.

The consequence of this is that not every element sought in the Zone needs to be achieved as part of this development. There is ample opportunity on the balance of lot 120 to construct a single large floorplate shop with a floor area between 10,000 square metres and 15,000 square metres.

The Development Plan does not require the development of every element immediately. The only reference in this regard is in the Desired Character Statement, which indicates that the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses to ensure the mixed-use activities for the Zone are achieved. This is precisely what is occurring with the proposed development- there will be a mix of:

- retail (approximately 35% of the maximum 46,000 square metres sought in the Zone);
- leisure and entertainment (approximately 41% of the maximum 20,000 square metres sought in the Zone); and
- bulky goods (approximately 16% of the maximum 18,000 square metres sought in the Zone).

This aspect of the Development Plan is therefore satisfied.

In terms of the Zone being developed as a unique specialist centre and the retail components offering an alternative model, the Development Plan sets out how this is to be achieved. It is not an independent assessment of whether it is unique or an alternative model compared to other zones or policy areas. It is as set out in the Zone provisions of the Development Plan.

The "unique specialist centre" and "retail components offering an alternative model" will be achieved by having the mix of the tenancies sought by the Development Plan and having retail tenancies in excess of 200 square metres with a focus on premium outlet shopping.

The mix of tenancies is clearly achieved, as is the requirement for retail tenancies of in excess of 200 square metres. It is also intended that the retail offering will primarily be outlet shopping.

Seriously at variance

Section 35(2) of the *Development Act 1993* ('the Act') requires the body assessing a development application (in this case Council's Assessment Panel) to have regard to and

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determine whether a proposal is seriously at variance with the relevant Development Plan.

The Act does not define what is meant by 'seriously at variance'.

There have been a number of decisions which deal with the notion of seriously at variance.

Seriously at variance is not something which is trifling- it is a high threshold and requires more than a proposed development to not meet some of the provisions of a Development Plan or for a proposed development to be likely to be refused development plan consent.

As stated by his Honour Justice DeBelle in *Mar Mina (SA) Pty Ltd v City of Marion & Anor* (2008) SASC 120, for a development to be seriously at variance with the Development Plan it requires an important or grave departure, in either quantity or degree, from the Development Plan- it is not something which is slight or trifling.

In *Mar Mina* the Court was considering an application which sought the development of a school in a Neighbourhood Zone. The Court found that the Council had erred in its decision to grant consent to the proposal because it failed to address the question of whether the development was seriously at variance with the Development Plan. In commenting on the matter, the Court also found that the proposal was seriously at variance to the Development Plan. The Court determined that the intent of the zone, being the Neighbourhood Centre Zone, was that the zone be developed primarily for retail use, as well as other facilities to service the commercial and communal needs of the neighbourhood. The Court stated that those provisions and goals for the zone should not be ignored, and that the proposed use as a school did not achieve those goals.

In *Alexandrina Council v Strath Hub Pty Limited* (2003) 129 LGERA 318, the Court was dealing with an application for a land division for residential dwellings in an area zoned for a golf course with associated residential dwellings. The Court determined that the proposal did not satisfy the requirements of the Development Plan as the proposed division and associated dwellings were not being created 'in association with' a golf course.

The Court indicated that in order to determine whether something is seriously at variance, one must look at the essential thrust and objectives of the Development Plan as they apply, in this instance, to the particular parcel of land. It is not, therefore, something that can be determined without an assessment against the requirements of the Development Plan for the particular parcel of land.

The issue of seriously at variance was touched upon in the recent decision of the ERD Court in *Bates v City of Holdfast Bay & Anor* [2017] SAERDC 40. In the decision, her Honour Judge Cole helpfully summarised matters relating to the issue of seriously at variance:

39. In John Weeks case the Full Court of the Supreme Court dealt with an application for the judicial review of a decision in relation to a proposed shopping complex. The relevant Development Plan set out a hierarchy of zones which provided for the development of a shopping complex of the magnitude of the proposed development in Zone E, and a small portion of the shops proposed, together with some carparking, were to be sited in Zone E. However, the shopping complex proposed was to be sited predominantly in Zone F, which the Development Plan designated as a zone for major wholesaling, warehousing and non-retailing services. The shopping complex, in fact, was proposed to occupy most of Zone F, so that little remained of that zone for the accommodation of the purposes

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provided for it in the Development Plan. In deciding that the proposed development was seriously at variance with the relevant provisions of the Development Plan pursuant to s 47(9) of the Planning Act 1982, King CJ said:

It is therefore necessary to consider whether the consent under review is seriously at variance with the provisions of the Development Plan. I think that it must be so regarded. I do not take that view merely because retail shopping is not included as one of the objectives of the zone F in which the proposed development is mainly located. Retail activities are not a prohibited use for zone F; and, even if they were, the Act provides in s 47(6) machinery for consent to a development involving a prohibited use. There may be minor retail developments, or developments of which retailing is a minor or incidental part, in a zone not intended for retailing, which, although at variance with the plan, could not be regarded as seriously at variance with it. The seriousness of the departure from the plan in the present case, to my mind, arises largely from the magnitude of the proposed shopping centre. It is a major retail shopping centre, and the proposal is that it be located in a zone whose objectives consist of commercial and service activities and do not include retail activities. The proposed development is a departure from the plan of such magnitude, in my opinion, that observance of the planning regime imposed by the Act requires that, to accommodate it, there be an amendment to the plan. Such an amendment would be subject to the scrutiny and procedures prescribed by the Act for such an amendment. I think that consent to such a proposal is at serious variance with the provisions of the Development Plan and therefore invalid.

White J said:

It will always be a question of fact and degree as a matter of practical judgment (cf Corporation of City of Noarlunga v Fraser (1986) 42 SASR 450, per White J) whether a particular development falls one side of the line or the other...

40. White J undertook a thorough analysis of the reports before the Council and said:

In my opinion, it is clear as a matter of fact and degree and as a matter of practical judgment that Shopping City's proposed development is seriously at variance with the Development Plan's objectives for zone F. There is more. Shopping City's proposal is quite independently seriously at variance with the plan's objectives for zone E. Before stating the variance, I refer again to the plan (on page 410). It will be seen that only a little over one-third of the combined proposed store-and-parking-area is in zone E. More significantly, only one-sixth or less of the main building is located in zone E. Objective 1 for zone E is to create "a zone accommodating major retailing activities which are closely integrated with development in zone D". It can be seen that the emphasis in objective 1 is integration between zones E and D, not between zones F and E. Indeed zone F's objectives state that development in zone F need not be integrated with zones E and D. It follows from the above that the location of Shopping City's major building departs seriously in two respects from the objectives. The effect is cumulative. The large building has only one-sixth of its bulk within zone E while four-fifths of it spreads down into zone F. Zone F is compressed into one-fifth of its intended size. The carparking area encroaches down south until it takes up four-fifths of the area of zone F. Further, the development

faces Main North Road and not, as was expected of Bevton and one would expect from the plan itself, towards zone D.

....

42. I acknowledge that the judgments cited above relate to the Planning Act 1982, however, I consider that they have application to matters under s 35(2) and s 86(1)(f) of the Development Act 1993. The question of whether the proposed development in this case is seriously at variance with the Development Plan is to be decided on the basis of an assessment of the application of the provisions of the Development Plan to the proposed development having regard to the circumstances of the proposal as a matter of practical reality.

[our emphasis]

As stated by Justice White in *John Weeks*, one should not view something as seriously at variance merely on the basis that it is not listed as one of the objectives for the Zone. What is required is something more.

In the matters before the Courts referred to above, the land in question was proposed to be put to a use which was entirely at odds with the intended use of the relevant zone and called into question the ability to achieve the intended purpose for the zone as set out in the Development Plan.

In *Mar Mina* the Development Plan sought that the land be used primarily for retail purposes. The proposed development was for a school.

In *Strath Hub* the Development Plan sought that the land be used for residential dwellings in association with a golf course. There was no golf course proposed as part of the development.

In *John Weeks* the Development Plan sought that the land be used for major wholesaling, warehousing and non-retailing services. The proposed development was a shopping complex.

This contrasts with the proposed development, which achieves the clear thrust and intent of the Development Plan, as set out in more detail above. Consequently, it is evident that the proposed development is not seriously at variance to the Development Plan.

The only 'shortcoming' which might be said to exist with the proposed development is that it provides retail in the form of a supermarket (noting that the other 'major retail' will not be selling foodstuffs), which is not specifically envisaged in the Zone, and it does not provide single large floorplate shop with a floor area between 10,000 square metres and 15,000 square metres.

Neither of these 'shortcomings' constitute something which is seriously at variance with the Development Plan. They are not important or grave departures from the provisions of the Development Plan.

Firstly, the Zone provisions do not preclude a supermarket or similar use. A retail use of this nature has not been made non-complying.

A supermarket of this size also achieves the desire to have floorplates of in excess of 200 square metres for retail.

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Additionally, there is nothing in the Zone provisions which suggest that a retail outlet selling foodstuffs is not desirable in the Zone. The only reference is that the retail as a whole should sell predominantly non-foodstuffs. One supermarket selling foodstuffs will be a small proportion of the overall quantity of retail use both for the subject land and the balance of the Zone as a whole.

Furthermore, the inclusion of a supermarket has not prevented the proposed development providing the mix of uses sought and the type of retail uses as a whole as envisaged in the Zone provisions.

In relation to the single large floorplate shop with a floor area between 10,000 square metres and 15,000 square metres, there is more than ample land available to achieve this in the ongoing development of the balance of the land in the Zone. The Development Plan will not be frustrated by virtue of this component not being included.

It is clear that the inclusion of a supermarket or similar type of use will not prevent the land from being used for the desired purpose of a zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate (i.e. over 200 square metres) and service trade premises.

If you would like to discuss any of the above, please do not hesitate to contact me.

Yours faithfully
MELLOR OLSSON



ANTHONY KELLY
Partner
Direct Email: akelly@mellorolsson.com.au
Phone: 8414 3449 (Adelaide)

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APPENDIX 02

- updated plan has been included
in Architectural Plans -

[Intro Design Pty Ltd](#)
1/144 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61(0)8 8410 0453
info@intro.com.au

intro.com.au

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APPENDIX 03

Intro Design Pty Ltd
1144 Waymouth Street
PO Box 201 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0663
info@intro.com.au

intro.com.au

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6



Reference Number:
ATS4703-MaiNorRdKinRdDIRAdd

Monday, 5 February 2018

Turner and Townsend Thinc
Attn: Lewis Coulls, Project Manager
Level 1, 333 King William Street
Adelaide SA 5000

Dear Lewis

Re: Addendum to Tree Report ATS4703-MaiNorRdKinRdDIR

I have considered the request for further information in relation to the soil level changes and the impact these will have on Tree 17-22 and 24-25 and the suitability of Trees 22-25 and 32-40 for transplanting. The following information is provided in relation to these matters.

Soil Level Changes

The soil levels throughout the site require adjustment to allow for the installation and effective use of the new storm management system for the site. Soil levels require altering over the site variously from a cut of two metres to a fill of two metres.

In the case of Trees 17-22 the area around the trees is subject to a fill of 0.4 metres to achieve the required falls for the stormwater. Fill of this level will prevent water and oxygen reaching the roots and lead to the gradual decline of the trees. The use of fill over the root system of trees is a common cause of tree decline and death. Additionally, this is only the fill required to achieve the stormwater requirements the construction of the car park surface will add additional material over this layer and become impervious further reducing any remaining water and oxygen movement. Given the level of the required works alternative design options that could protect these trees are not available and the condition of the trees is such that they would not be warranted even if they were available.

Trees 24 and 25 are in an area that requires a cut of 0.4 metres which will result in the removal of their roots. This will not only affect their health, effectively kill them, but also their stability as root loss of this volume will destabilise the tree. Given these trees are suitable for transplanting this is seen as a reasonable suitable option.

***Note:** the suggestion that Trees 17-21 could be incorporated into the footpath area whilst having aesthetic merit is not recommended as this would encourage use of the area below trees which have known and obvious structural flaws.*

Arborman Tree Solutions Pty Ltd – Professionals in Arboriculture
23 Aberdeen Street
Port Adelaide SA 5015

ATS4703-MaiNorRdKinRdDIRAdd – Monday, 5 February 2018

Phone: (08) 8240 5555
Fax: (08) 8240 4525
Email: arborman@arborman.com.au



Transplanting

Trees 22-25 and 32-40 have all been identified as suitable for transplanting.

All these trees, except for Tree 34, are *Phoenix canariensis* (Canary Island Date Palm) which is a species that is commonly and readily transplanted throughout Australia. Mature specimens such as these are often used to create entrance statements in new housing and/or business estates; an example of this in the City of Salisbury is the three entrances to Mawson Lakes from Montague Road, Salisbury Highway and Main North Road.

Tree 34 is a *Brachychiton rupestris* (Queensland Bottle Tree) this species is also commonly and readily transplanted. Semi-mature specimens of this species are often used as feature trees in landscaping projects. This specimen, whilst having a large trunk circumference, is relatively small and suitable for transplanting. A nearby example of this species being transplanted is the planting adjacent to the "Welcome to the City of Playford" sign on Main North Road, Elizabeth Vale, these trees were transplanted approximately eight years ago.

Summary

1. the soil level changes required to achieve the desired falls are such that the trees within the site cannot be successfully retained
2. the trees identified as suitable for transplanting are all species that are commonly transplanted and successful examples of this are evident in the area.

Thank you for the opportunity to provide this information. Should you have any questions or require further information, please contact me and I will be happy to be of assistance.

Yours sincerely

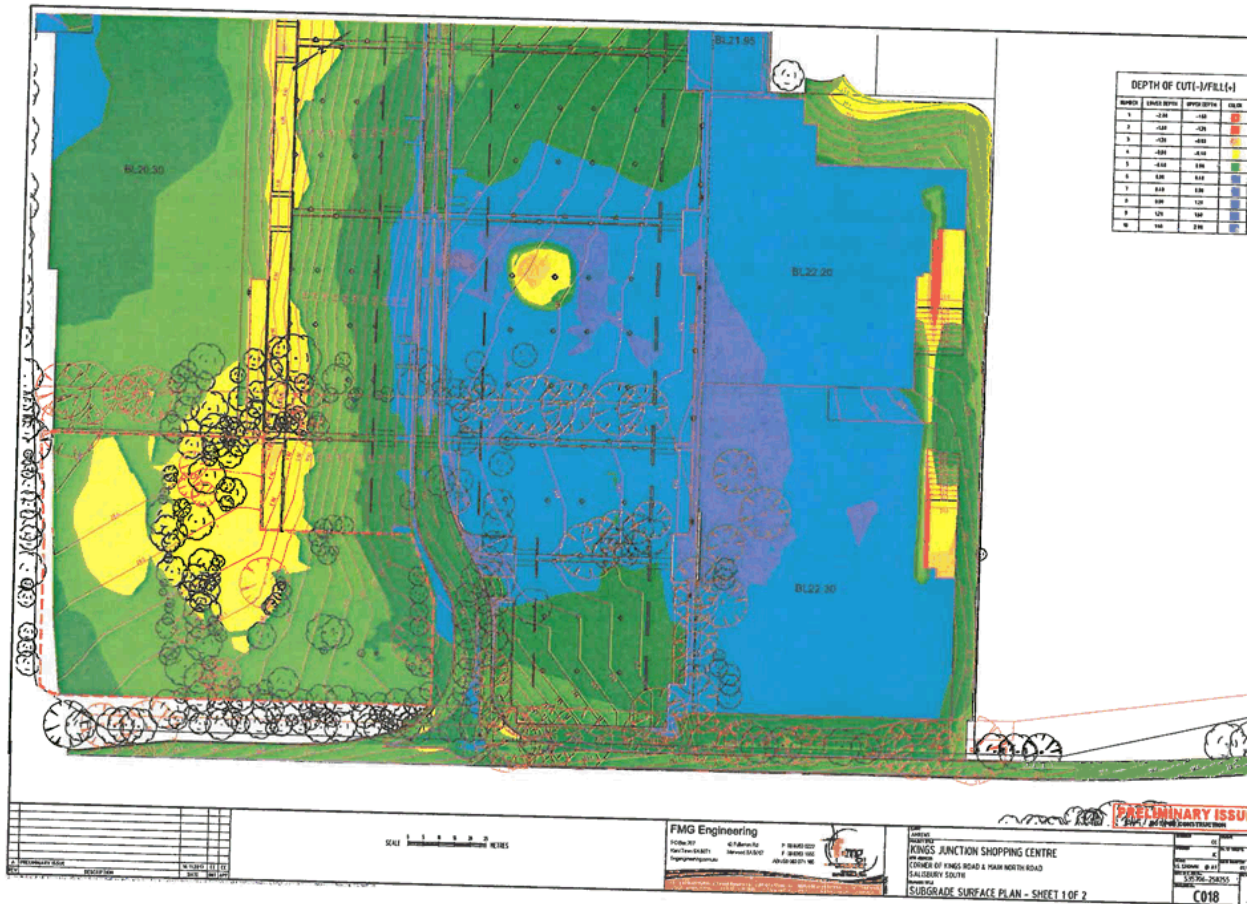
MARCUS LODGE

Senior Consulting Arboriculturist

Diploma in Arboriculture

International Society of Arboriculture – Tree Risk Assessment





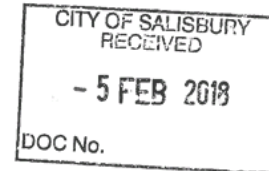
Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Our Ref: AK:M171882

5 February 2018



Mr Aaron Curtis
 Team Leader - Planning
 Development Services
 City of Salisbury
 12 James Street
 SALISBURY SA 5108



BY EMAIL: acurtis@salisbury.sa.gov.au

Dear Mr Curtis

**GIC KINGS ROAD PTY LTD
 DEVELOPMENT APPLICATION NUMBER 361/1589/2017**

We act for GIC Kings Road Pty Ltd.

Our client is the applicant in respect of the proposed development at the corner of Kings Road and Main North Road, Salisbury South, the subject of development application number 361/1589/2017.

We note that there have been representations lodged by entities which are not the owners or occupiers of a piece of adjacent land.

The proposed development is a Category 2 form of development for public notification purposes. The Public Notification section of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone stipulates that any development which is not Category 1 will be Category 2. There can therefore be no doubt that what is proposed is not a Category 3 form of development and, as a consequence, the steps to be undertaken are the usual Category 2 processes.

The right to make representations was considered by the Supreme Court in *Verdouw v City of Unley*¹. At paragraph 3, the Court stated that:

"a right of objection does not exist in relation to all applications for development consent. The question whether the right to make representations exists and, if it does, the extent to which that right may be pursued depends upon how the proposed development is classified. Three categories of development are prescribed by the Development Act. They are called Categories 1, 2 and 3."

¹ [2001] SASC 63.

Adelaide
 Level 5 80 King William Street Adelaide SA 5000
 GPO Box 74 Adelaide SA 5001 DX 543
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 Fax: +61 8 8414 3444

Port Lincoln
 11 Mortlock Terrace Port Lincoln SA 5606
 PO Box 411 Port Lincoln SA 5606 DX 51050
 Phone: (08) 8682 3133
 Fax: (08) 8682 6030

Clare
 165 Main North Road Clare SA 5453
 PO Box 671 Clare SA 5453
 Phone: (08) 8842 1833
 Fax: (08) 8842 1811

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 Regional Offices (By Appointment Only)
 Bordertown Kadina Keith
 McLaren Vale Nuriootpa
 Phone: 1300 414 414
 Fax: (08) 8414 3444

Web: www.mellorolsson.com.au Email: lawyers@mellorolsson.com.au Mellor Olsson (incorporating Jenkins Anderson) ABN 44 157 825 957

5 February 2018

Section 38(4) of the *Development Act 1993* ('the Act') stipulates that for a Category 2 form of development, notice should only be given to the owner or occupier of each piece of adjacent land or any other person of a prescribed class (and there are no other persons of a prescribed class in this instance). Subsections (8) and (10) then specify that any such person is entitled to make representations in writing and, furthermore, that person may be permitted to appear before the Council's Assessment Panel to be heard in support of any such representation.

Importantly, subsection (17) sets out that a representation made by a person who is not entitled to be given notice of the application is not required to be taken into account and will not have effect for any relevant purpose under section 38.

Section 4 of the Act defines 'adjacent land' as being land which:

- (a) abuts on other land; or
- (b) is no more than 60 metres from the other land and is directly separated from the other land only by a road, street, footpath, railway or thoroughfare; a watercourse; or a reserve or some other similar open space.

The representations lodged on behalf of 83 Saints Road Nominees, the Di Mauro Group of Companies and the Taplin Group should therefore not be presented to the CAP or considered by it, as none of these entities are 'owners or occupiers of adjacent land'. Furthermore, these entities and their representatives must not be given permission to appear before the CAP and make submissions.

To take a contrary approach would be a fundamental breach of the requirements of the Act.

If you would like to discuss any of the above, please do not hesitate to contact me.

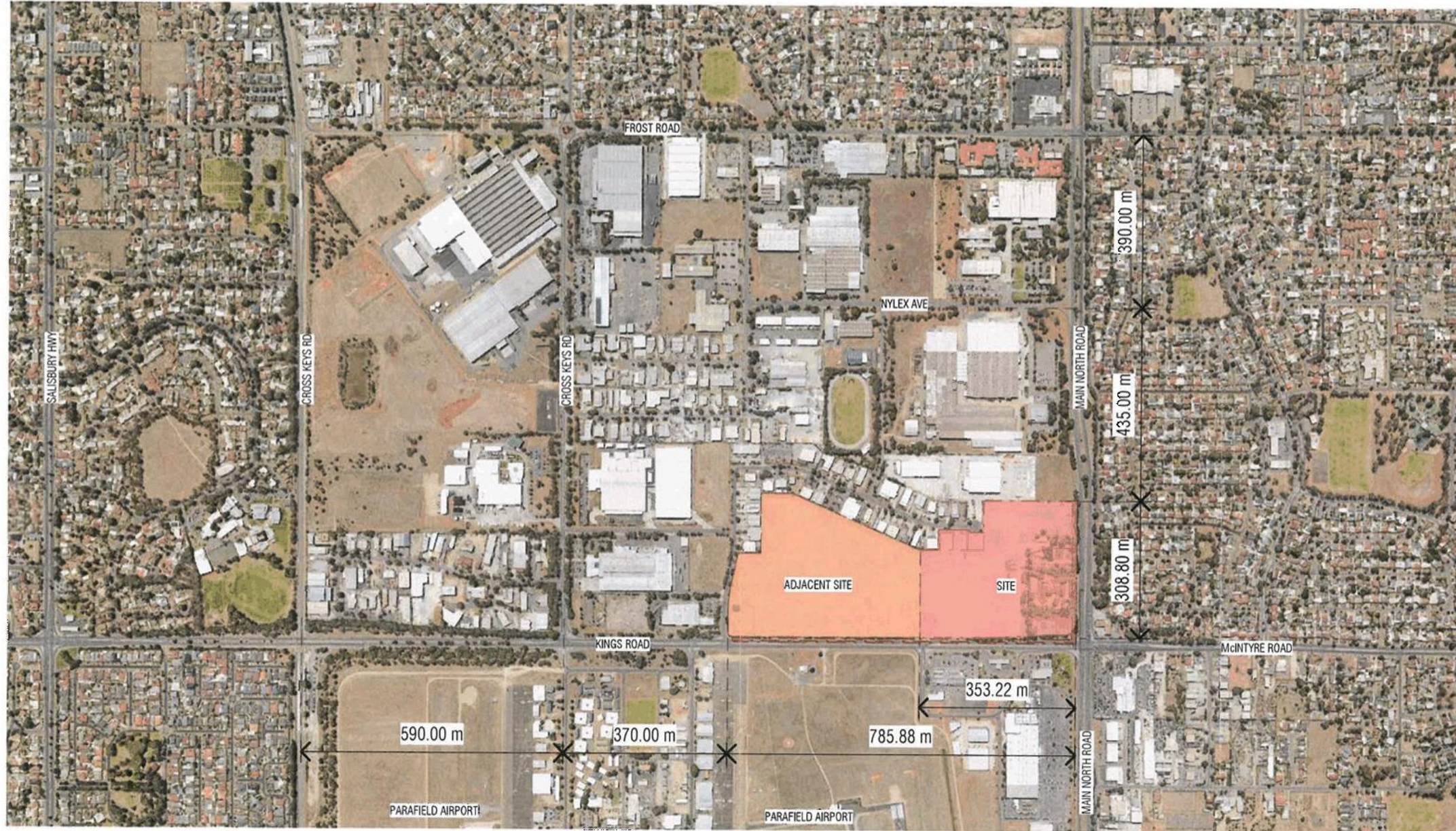
Yours faithfully
MELLOR OLSSON



ANTHONY KELLY
Partner
Direct Email: akelly@mellorolsson.com.au
Phone: 8414 3449 (Adelaide)

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Architectural Plans



1 SITE CONTEXT
SK50 1 : 10000

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DRAWING
SITE PLAN

DRAWING NUMBER
SK01

SCALE @ A3
1 : 10000

PROJECT
KINGS JUNCTION

CLIENT
GIC

PROJECT NO.
17009

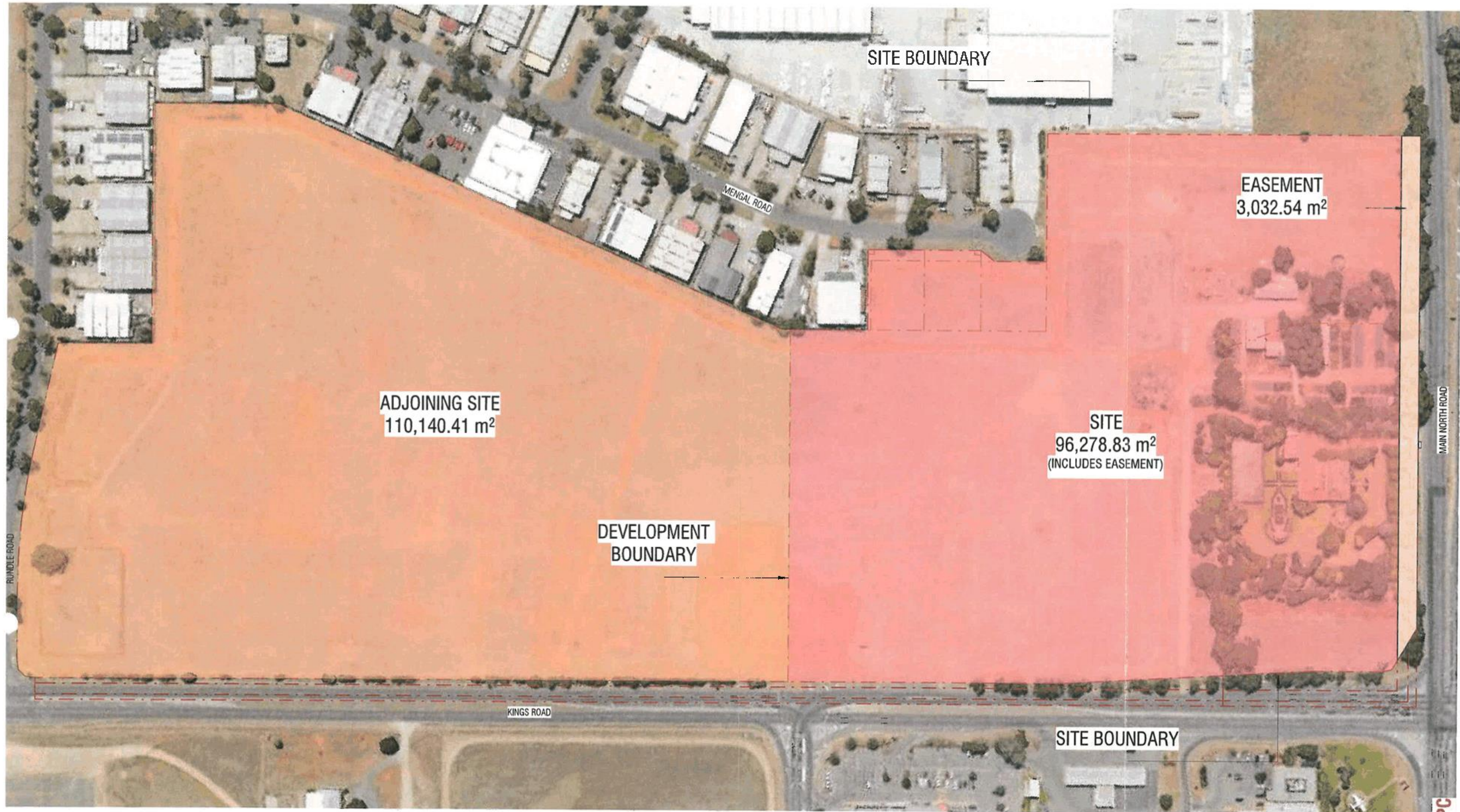
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SITE LAND AREA PLAN
1 : 2000

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DRAWING
SITE AREAS

DRAWING NUMBER
SK02

SCALE @ A3
1 : 2000

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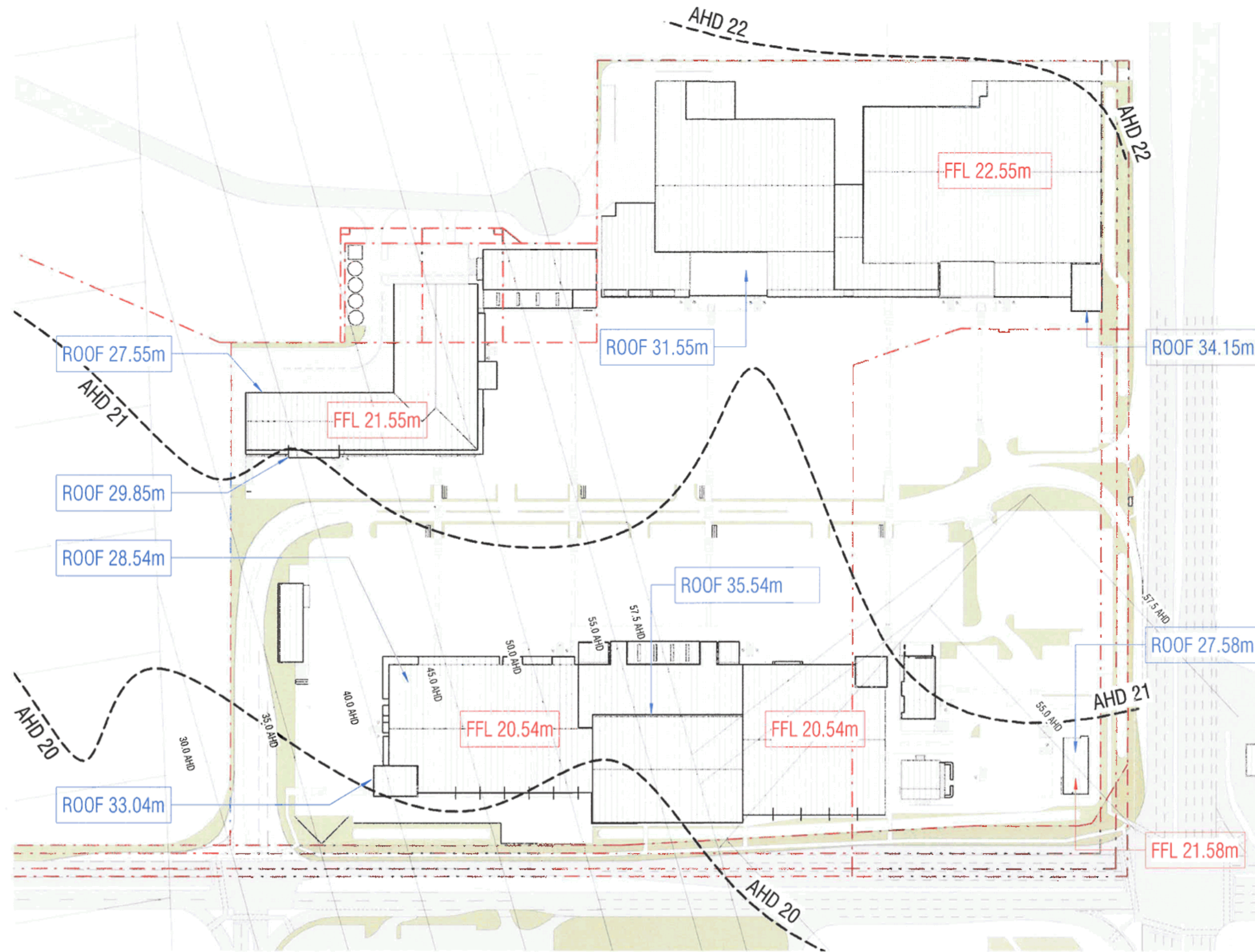
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LEGEND

FFL XX.XX	PROPOSED BUILDING LEVEL
AHD XX	APPROXIMATE SITE COUNTOUR LINES
ROOF XX.XX	BUILDING HEIGHT (ROOF/PARAPET)
XX.X AHD	DEVELOPMENT PLAN BUILDING HEIGHT LINE

*FFL SUBJECT TO DETAILED DESIGN

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 AIRPORT BUILDING HEIGHTS
 DRAWING NUMBER
 SK03

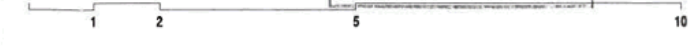
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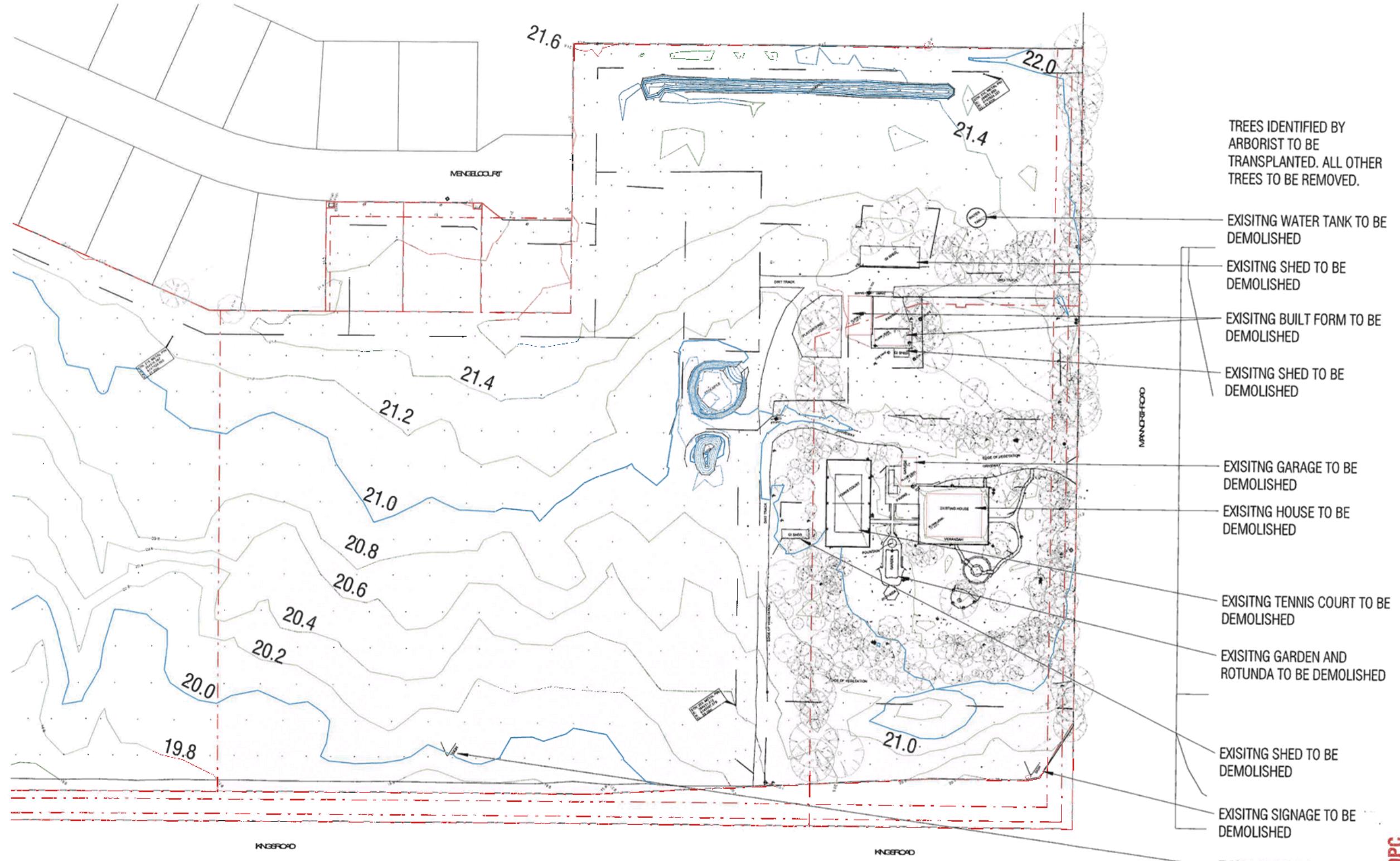
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DRAWING
SITE SURVEY

DRAWING NUMBER
SK04

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1:1500

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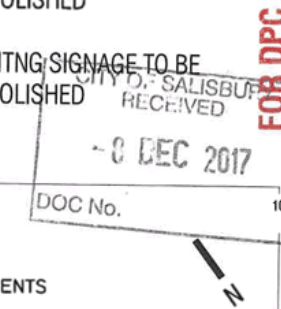
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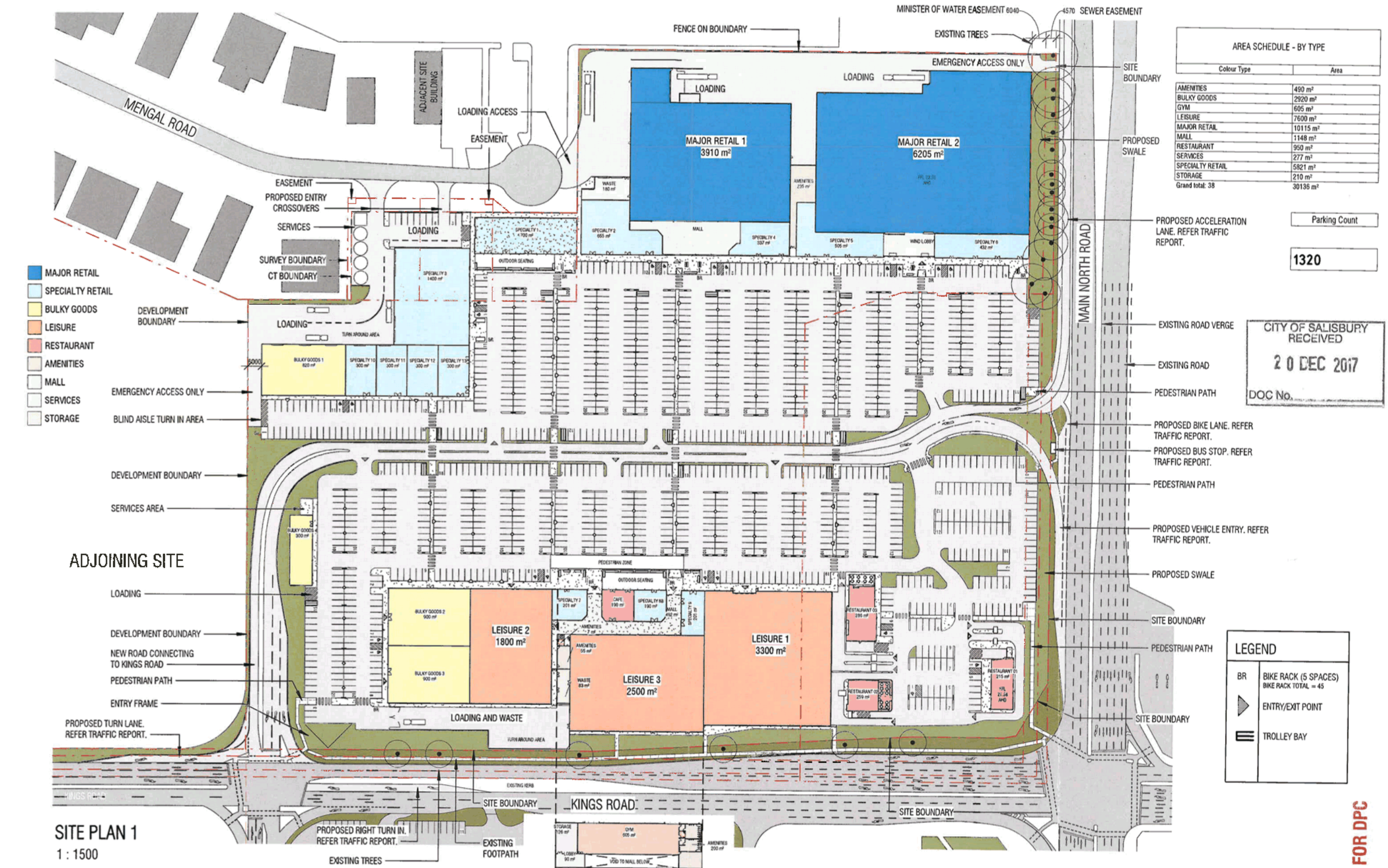
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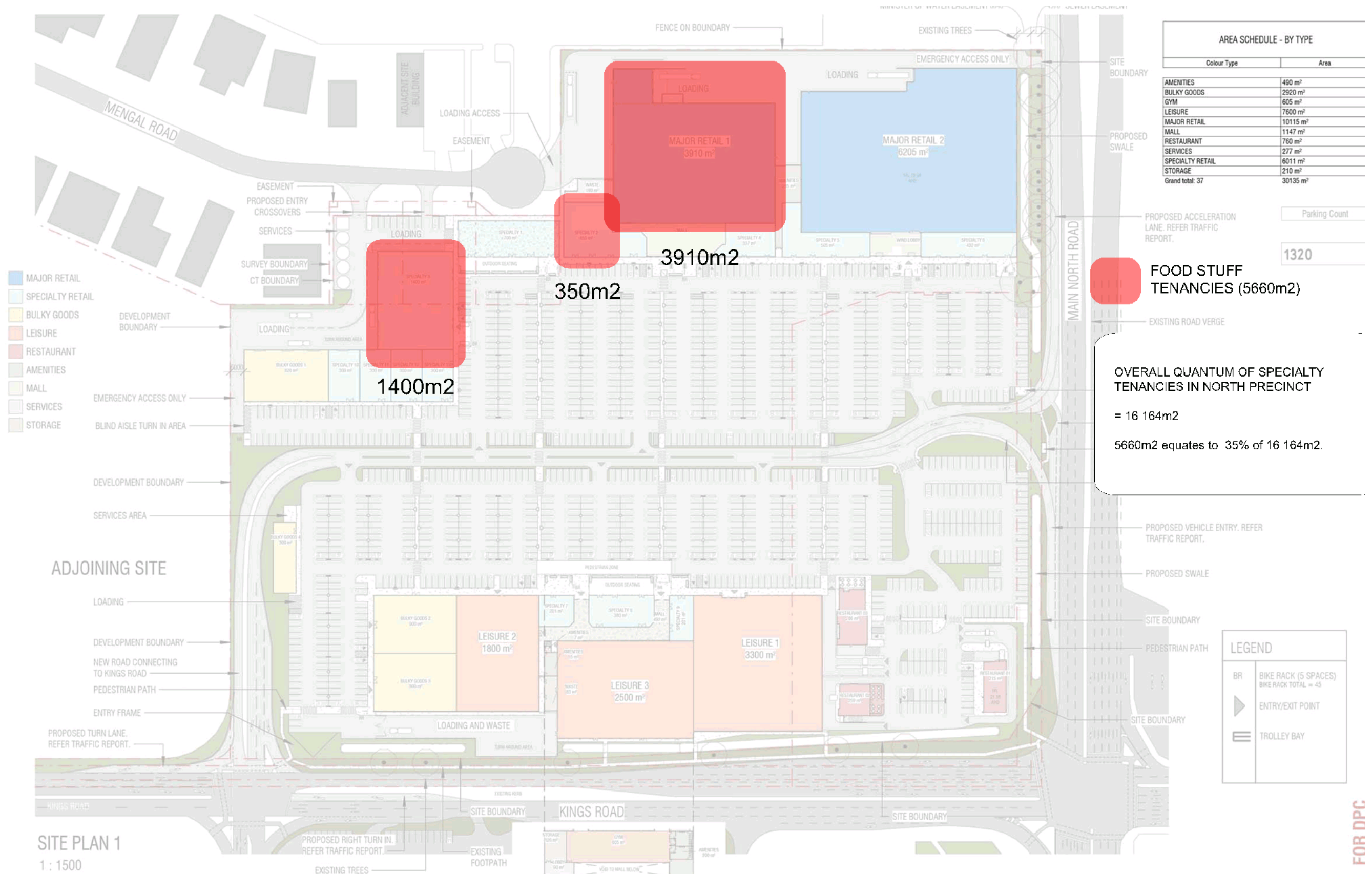
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DRAWING NUMBER SK05
First Floor
1 : 1500
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AREA SCHEDULE - BY TYPE	
Colour Type	Area
AMENITIES	490 m ²
BULKY GOODS	2920 m ²
GYM	605 m ²
LEISURE	7600 m ²
MAJOR RETAIL	10115 m ²
MALL	1147 m ²
RESTAURANT	760 m ²
SERVICES	277 m ²
SPECIALTY RETAIL	6011 m ²
STORAGE	210 m ²
Grand total: 37	30135 m ²

Parking Count
1320

FOOD STUFF TENANCIES (5660m²)

OVERALL QUANTUM OF SPECIALTY TENANCIES IN NORTH PRECINCT
= 16 164m²
5660m² equates to 35% of 16 164m².

LEGEND	
BR	BIKE RACK (5 SPACES) BIKE RACK TOTAL = 45
▶	ENTRY/EXIT POINT
≡	TROLLEY BAY

SITE PLAN 1
1 : 1500

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First Floor
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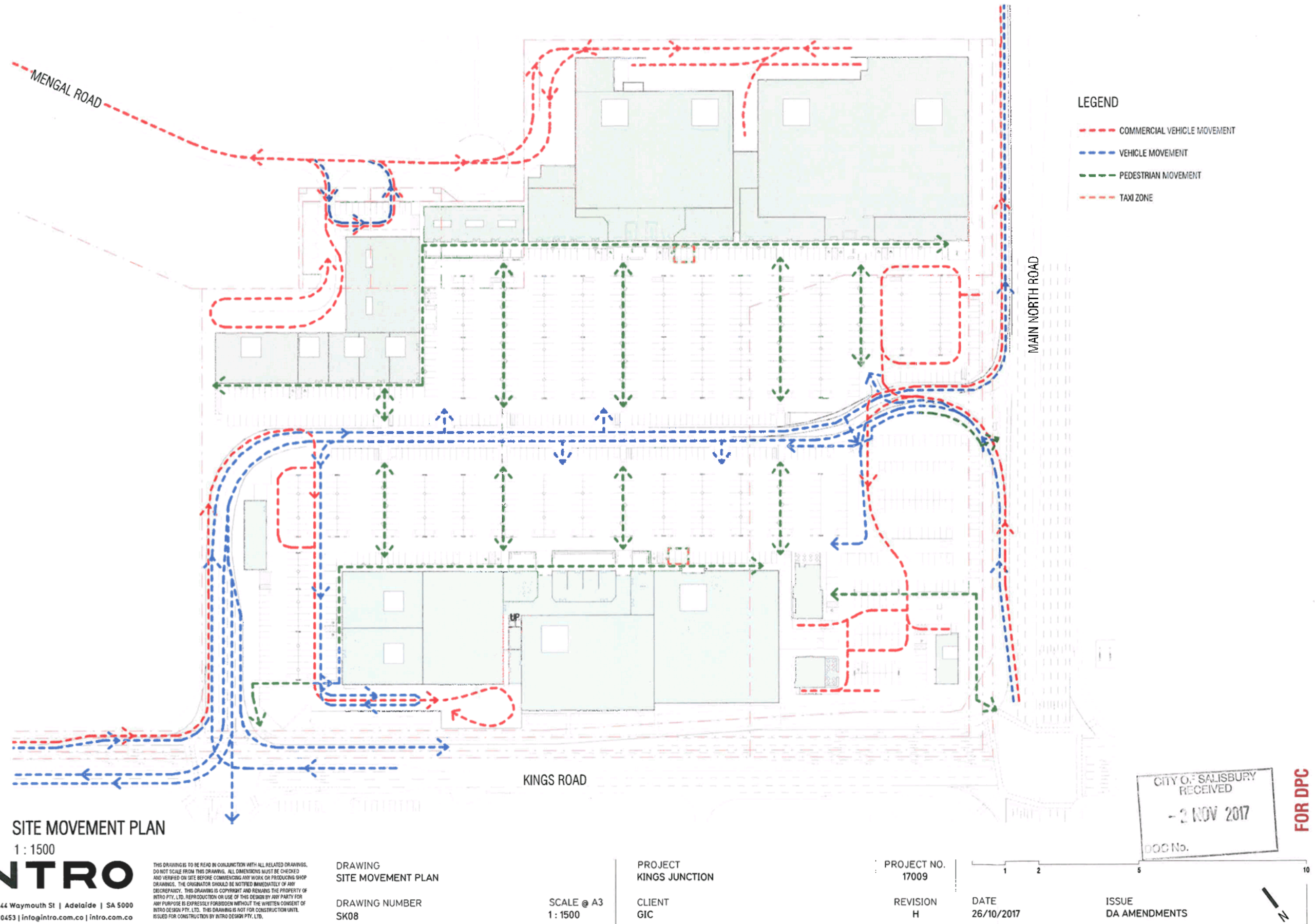
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SITE MOVEMENT PLAN
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SITE MOVEMENT PLAN
DRAWING NUMBER
SK08

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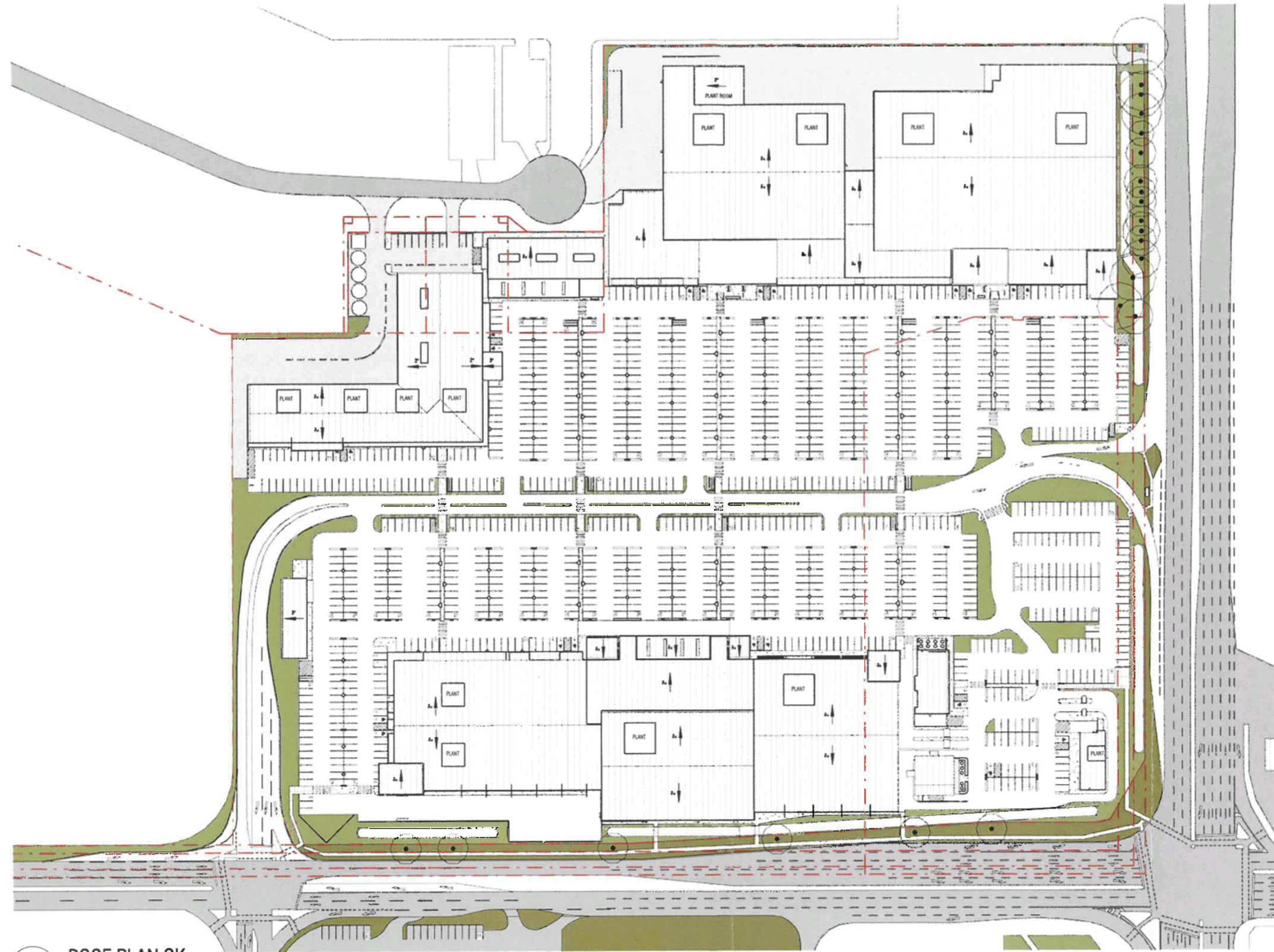
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1 ROOF PLAN SK
SK50 1:1500

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ROOF PLAN
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SK09

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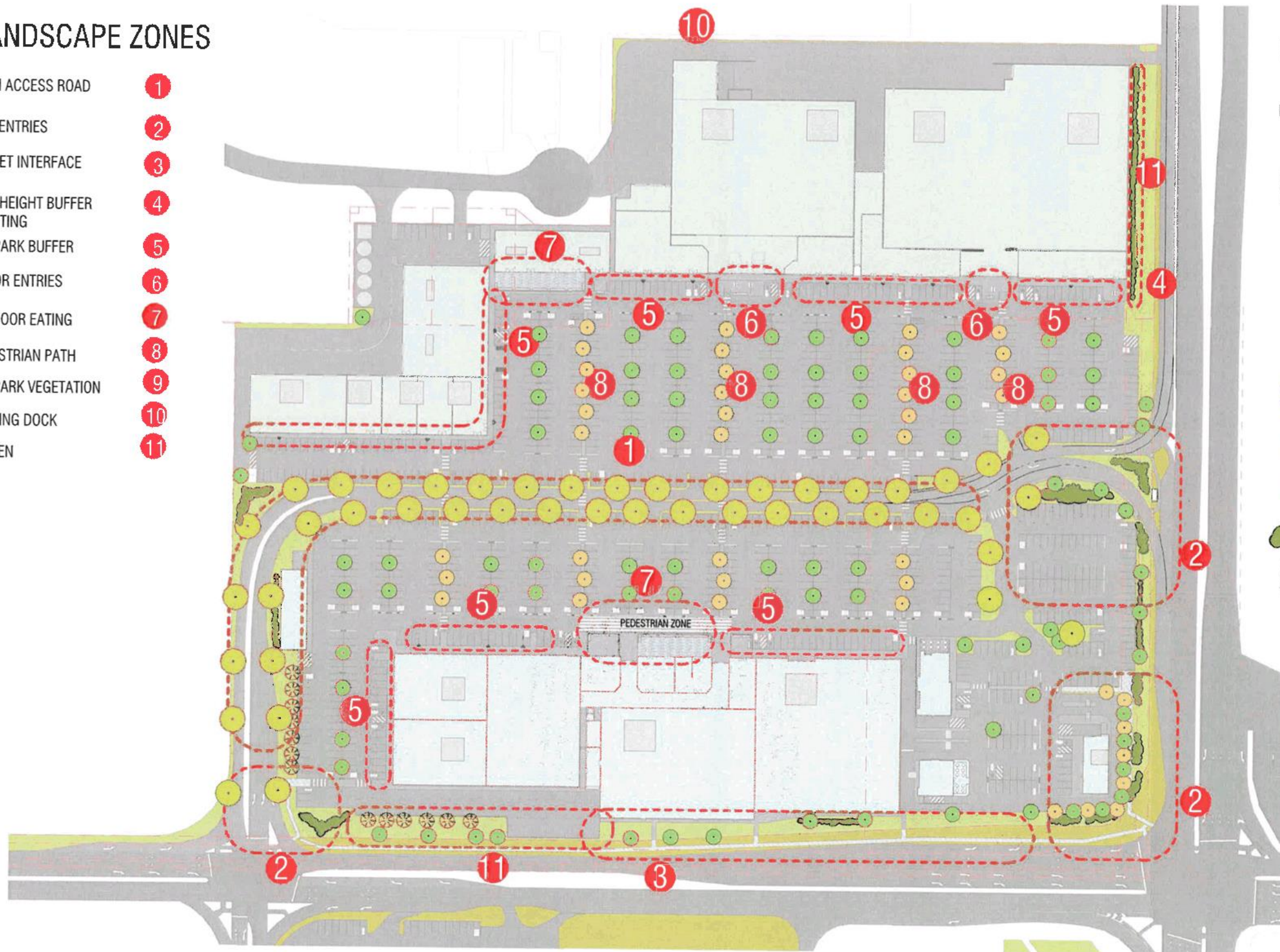
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LANDSCAPE ZONES

- MAIN ACCESS ROAD 1
- SITE ENTRIES 2
- STREET INTERFACE 3
- LOW HEIGHT BUFFER PLANTING 4
- CARPARK BUFFER 5
- MAJOR ENTRIES 6
- OUTDOOR EATING 7
- PEDESTRIAN PATH 8
- CARPARK VEGETATION 9
- LOADING DOCK 10
- SCREEN 11



LANDSCAPE MATERIALS

FOOTPATHS

PEDESTRIAN ZONE

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LANDSCAPING LEGEND

- MAJOR TREES (APPROX. SPACING 15m-20m)
- SECONDARY CARPARK TREES
- SECONDARY PATH TREES
- LOW HEIGHT PLANTING
- REGULATED TREES TO BE TRANSPLANTED

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DRAWING
LANDSCAPE AREA PLAN

DRAWING NUMBER
SK10

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As
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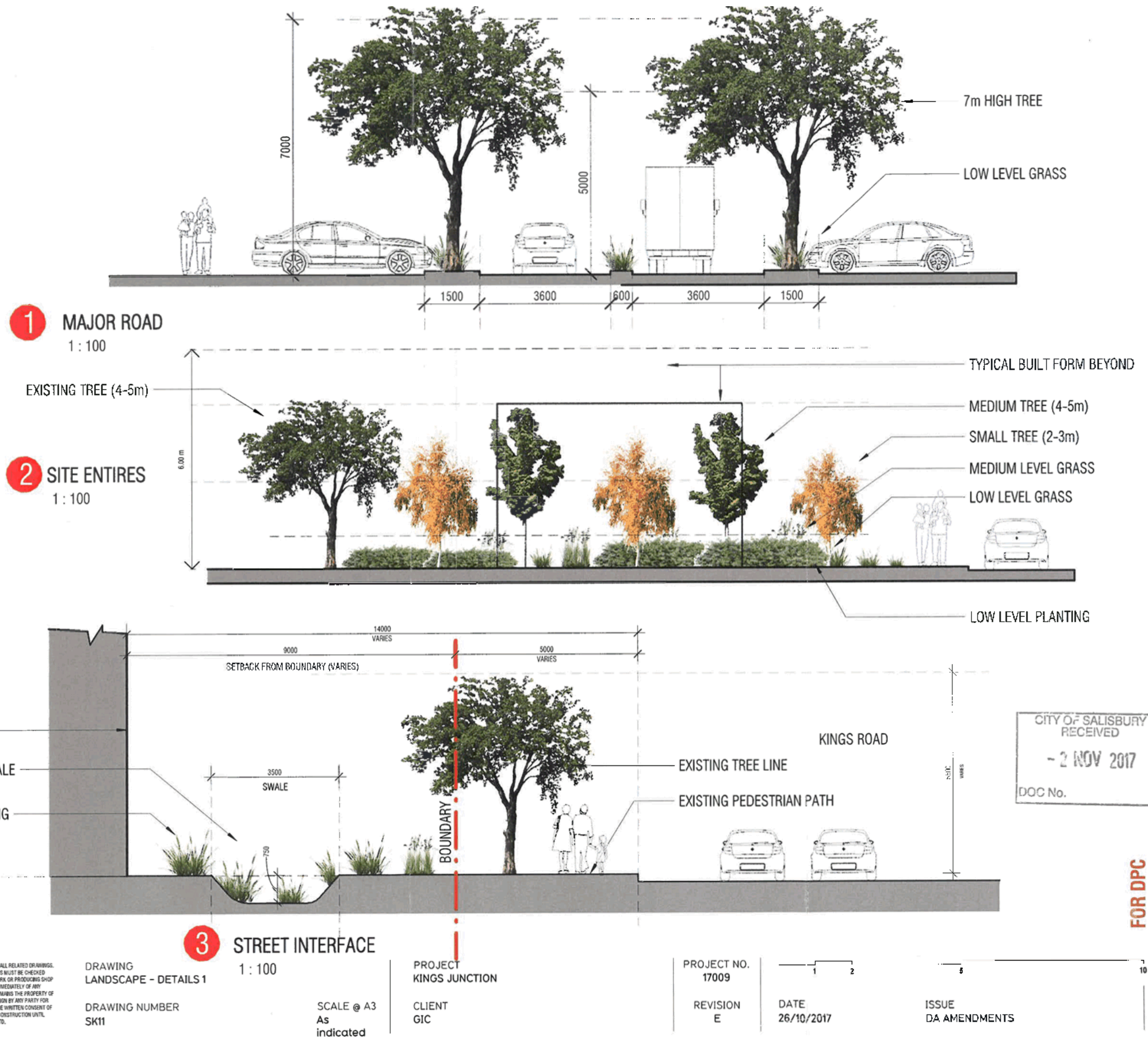
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LANDSCAPE ZONES

- 1 MAIN ACCESS ROAD
- 2 SITE ENTRIES
- 3 STREET INTERFACE
- 4 COMPLEMENTARY PLANTING WITH EXISTING TREES.
- 5 CARPARK BUFFER
- 6 MAJOR ENTRIES
- 7 OUTDOOR EATING
- 8 PEDESTRIAN PATH
- 9 CARPARK VEGETATION
- 10 LOADING DOCK
- 11 SCREEN



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DRAWING
LANDSCAPE - DETAILS 1
DRAWING NUMBER
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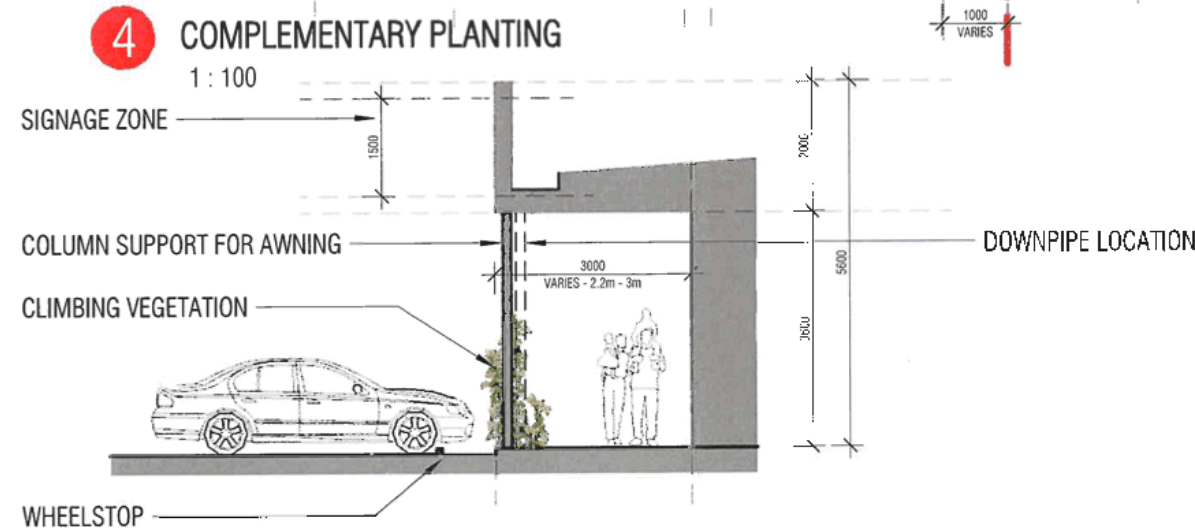
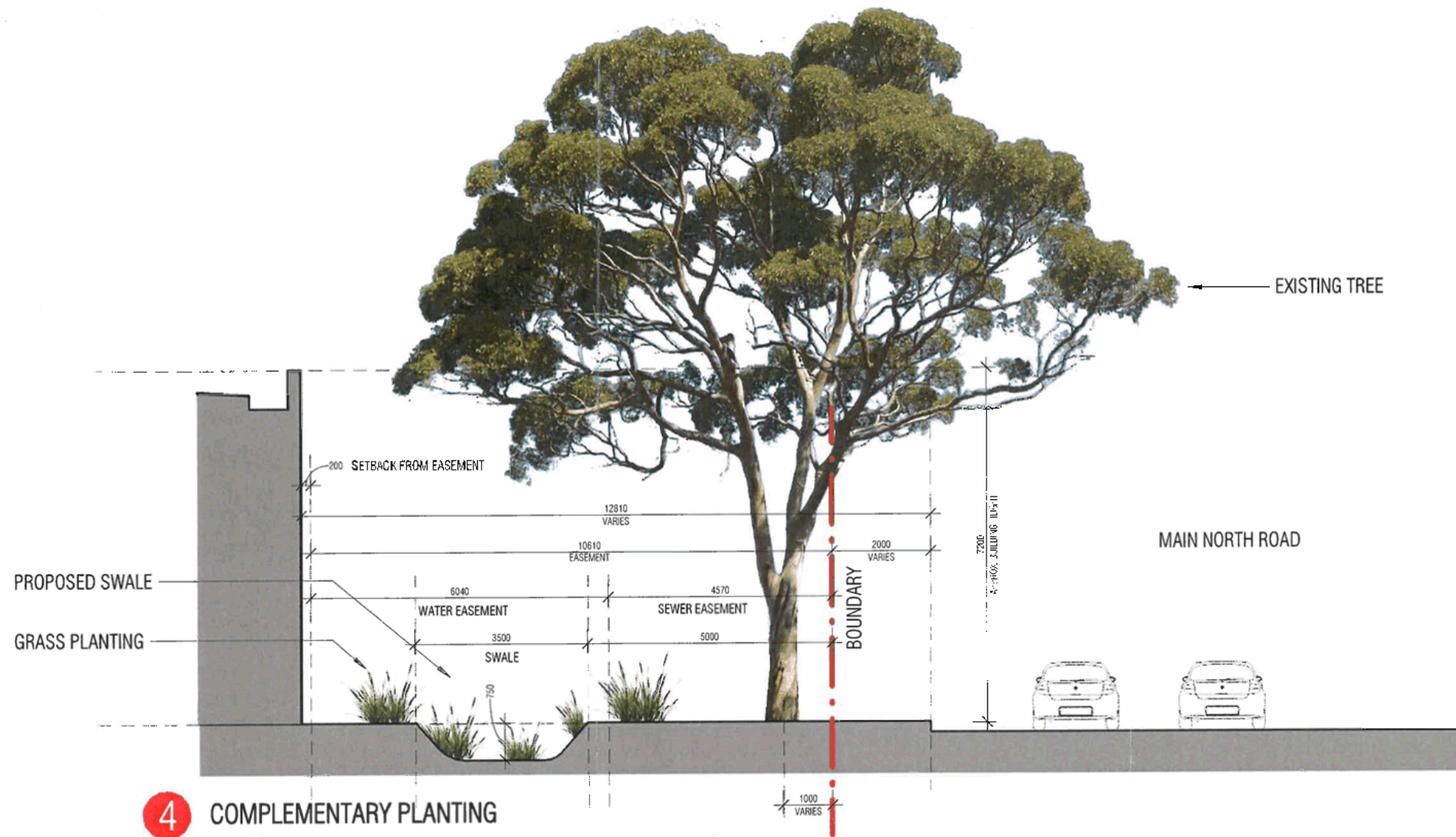
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LANDSCAPE ZONES

- MAIN ACCESS ROAD 1
- SITE ENTRIES 2
- STREET INTERFACE 3
- COMPLEMENTARY PLANTING WITH EXISTING TREES. 4
- CARPARK BUFFER 5
- MAJOR ENTRIES 6
- OUTDOOR EATING 7
- PEDESTRIAN PATH 8
- CARPARK VEGETATION 9
- LOADING DOCK 10
- SCREEN 11



5 CARPARK BUFFER
1:100

DRAWING LANDSCAPE - DETAILS 2

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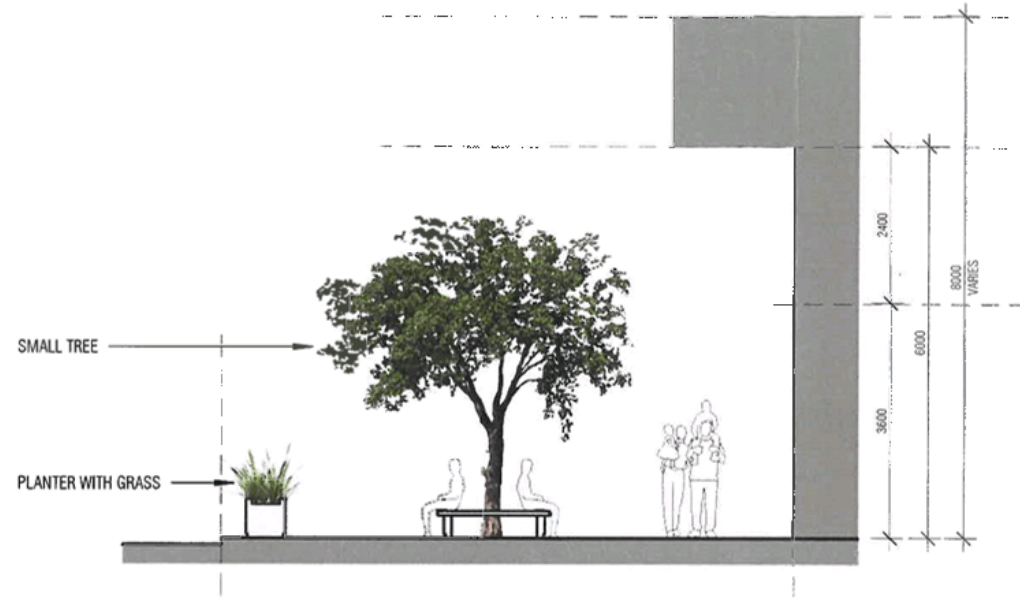
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DATE 22/08/2017

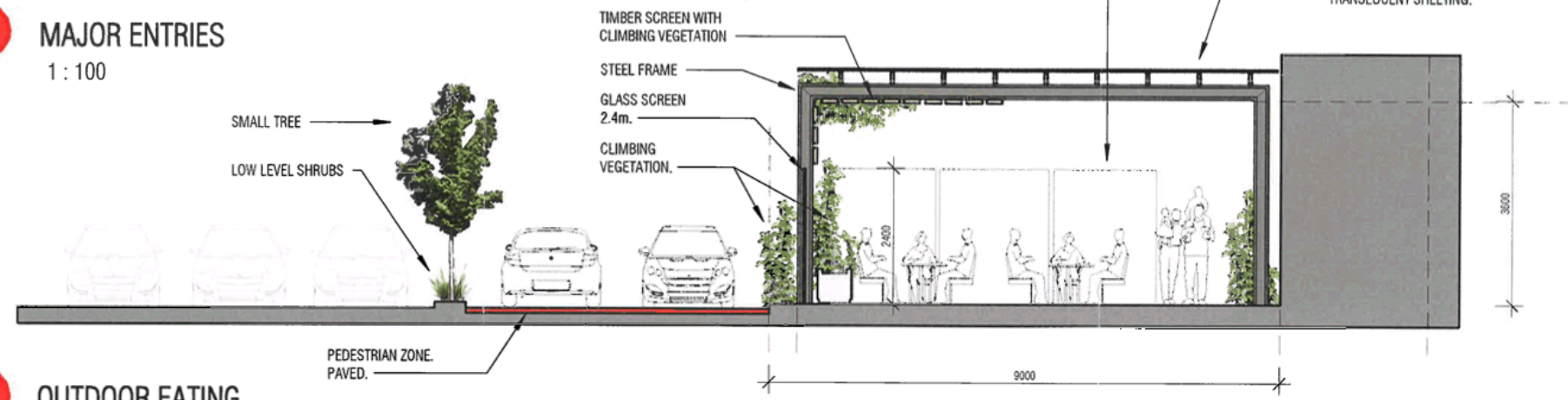
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LANDSCAPE ZONES

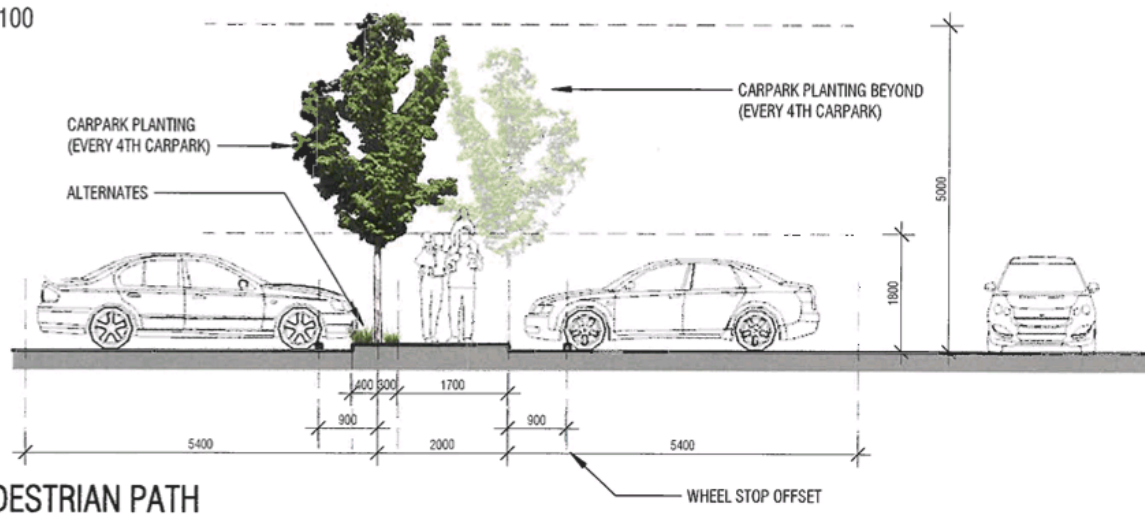
- MAIN ACCESS ROAD ①
- SITE ENTRIES ②
- STREET INTERFACE ③
- COMPLEMENTARY PLANTING WITH EXISTING TREES. ④
- CARPARK BUFFER ⑤
- MAJOR ENTRIES ⑥
- OUTDOOR EATING ⑦
- PEDESTRIAN PATH ⑧
- CARPARK VEGETATION ⑨
- LOADING DOCK ⑩
- SCREEN ⑪



6 MAJOR ENTRIES
1:100



7 OUTDOOR EATING
1:100



8 PEDESTRIAN PATH
1:100

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DRAWING
LANDSCAPE - DETAILS 3

DRAWING NUMBER
SK13

SCALE @ A3
As indicated

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KINGS JUNCTION

CLIENT
GIC

PROJECT NO.
17009

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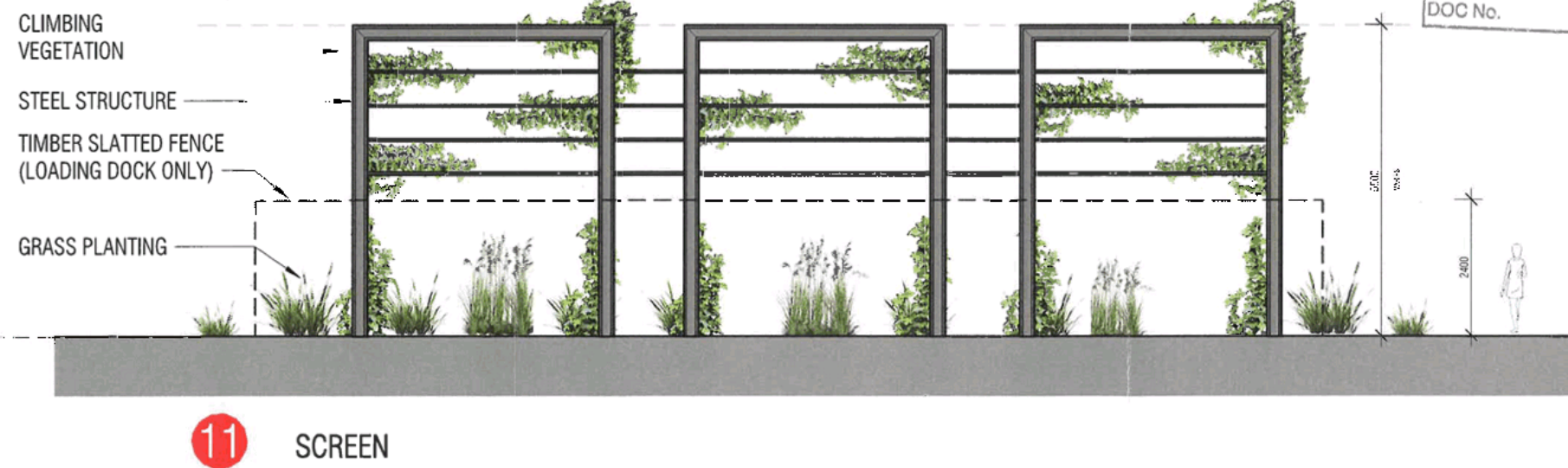
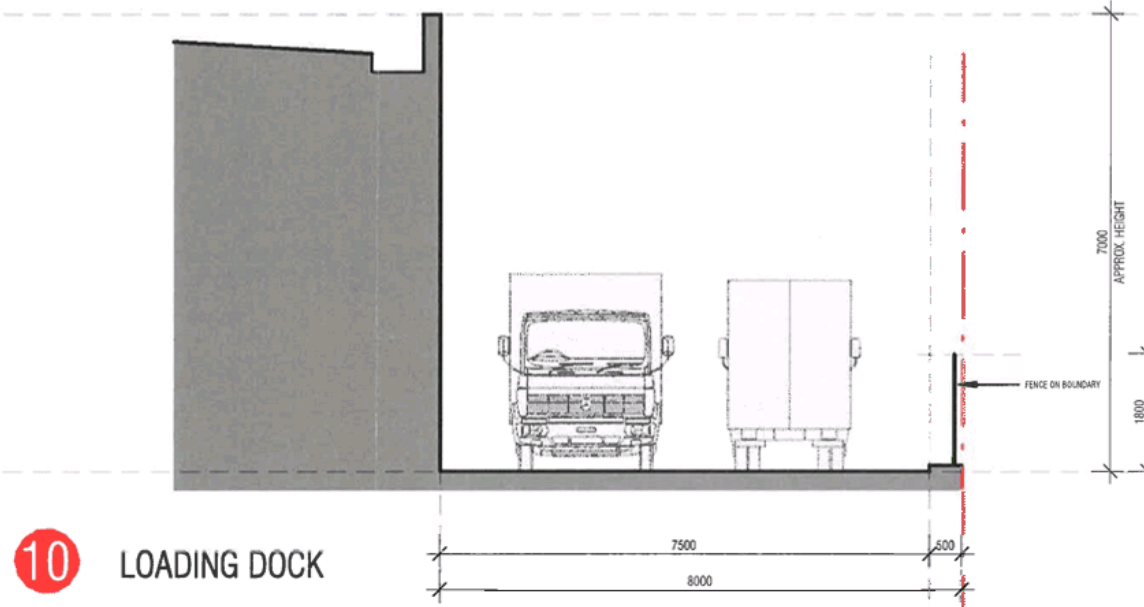
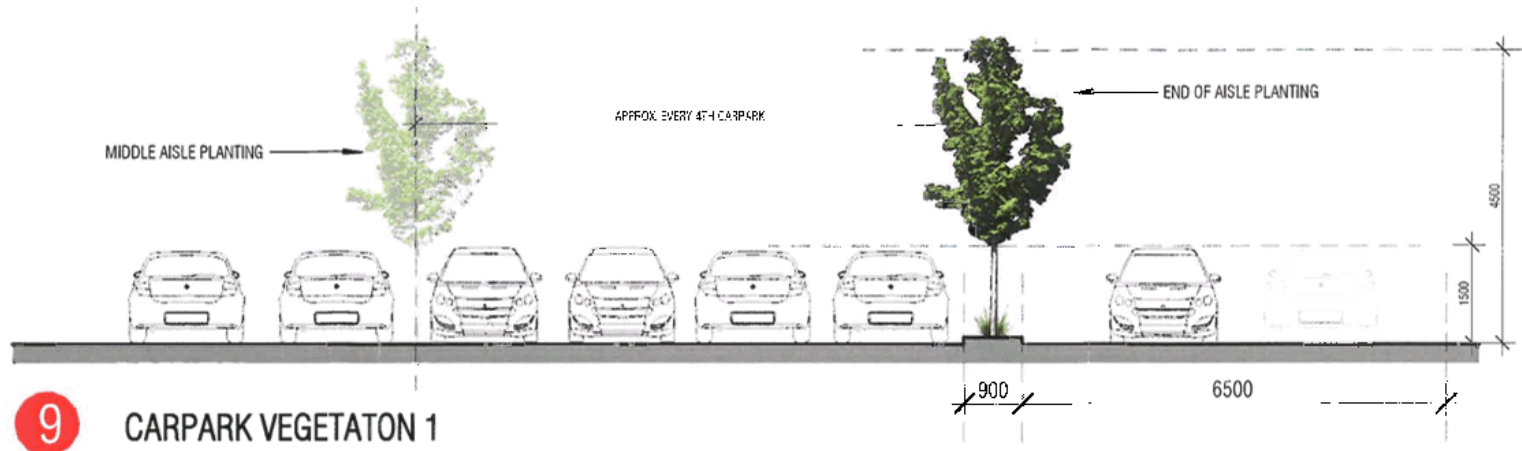
DATE
22/08/2017

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LANDSCAPE ZONES

- MAIN ACCESS ROAD 1
- SITE ENTRIES 2
- STREET INTERFACE 3
- COMPLEMENTARY PLANTING WITH EXISTING TREES. 4
- CARPARK BUFFER 5
- MAJOR ENTRIES 6
- OUTDOOR EATING 7
- PEDESTRIAN PATH 8
- CARPARK VEGETATION 9
- LOADING DOCK 10
- SCREEN 11



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DRAWING LANDSCAPE - DETAILS 4
DRAWING NUMBER SK14
SCALE @ A3 As indicated

PROJECT KINGS JUNCTION
CLIENT GIC

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DRAWING
ELEVATIONS - SITE

DRAWING NUMBER
SK50

SCALE @ A3
1:1000

PROJECT
KINGS JUNCTION

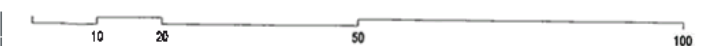
CLIENT
GIC

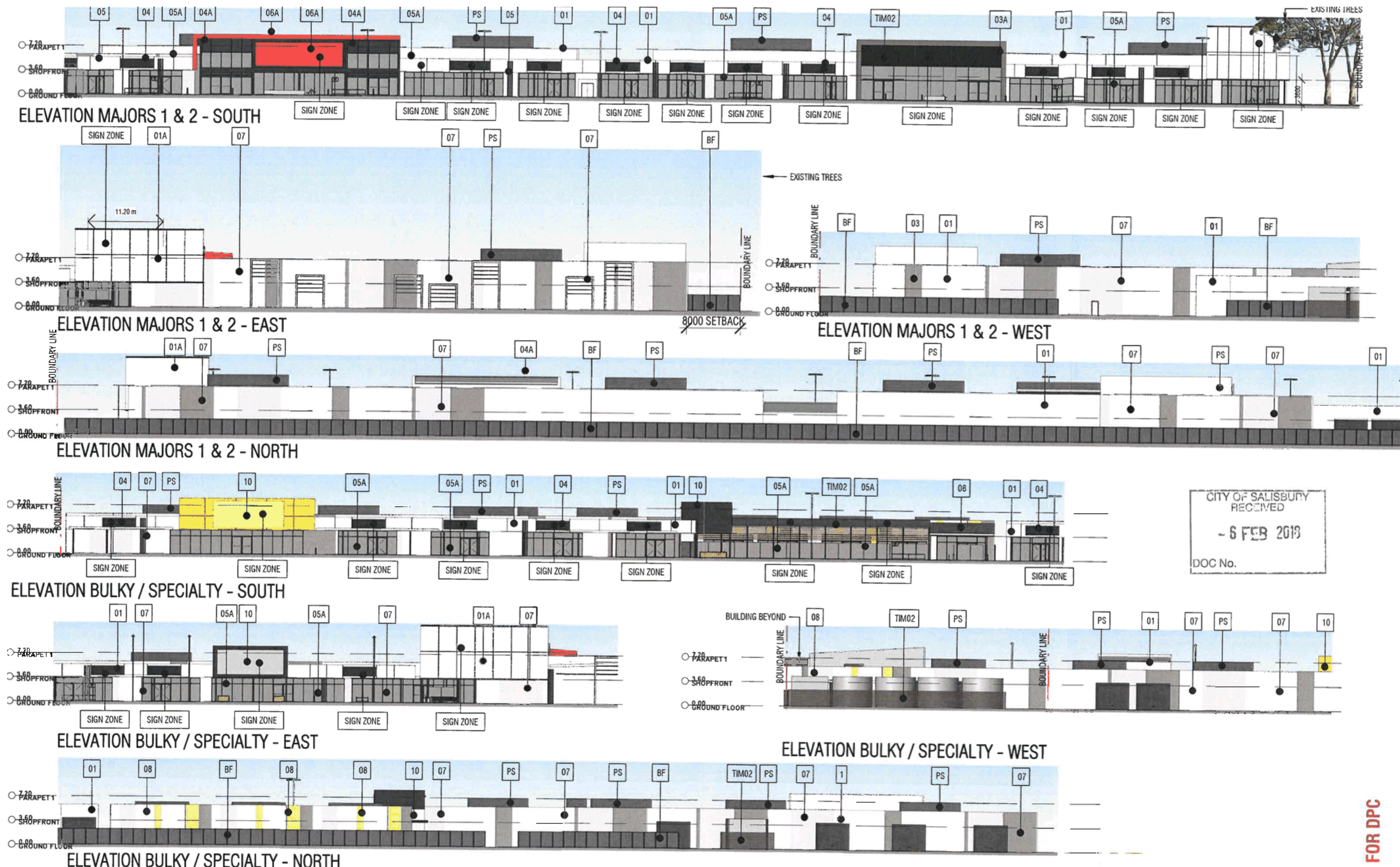
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DATE
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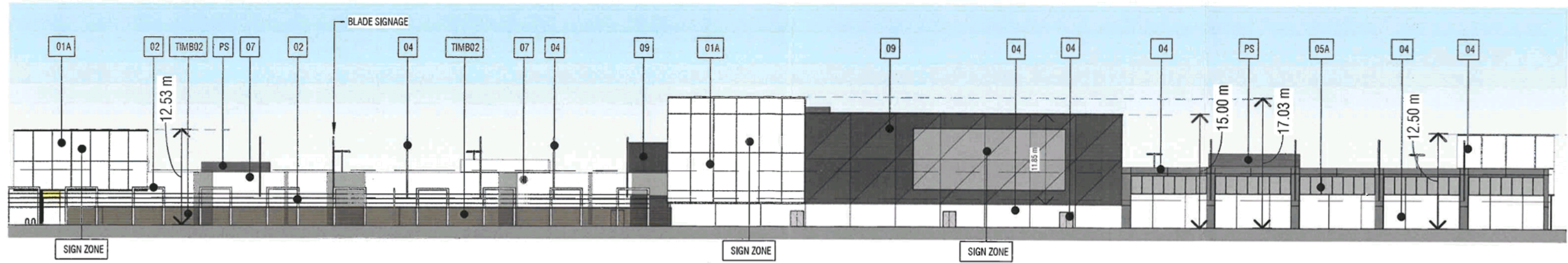
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DRAWING ELEVATIONS - NORTH SIDE
DRAWING NUMBER SK51
SCALE @ A3 1:500

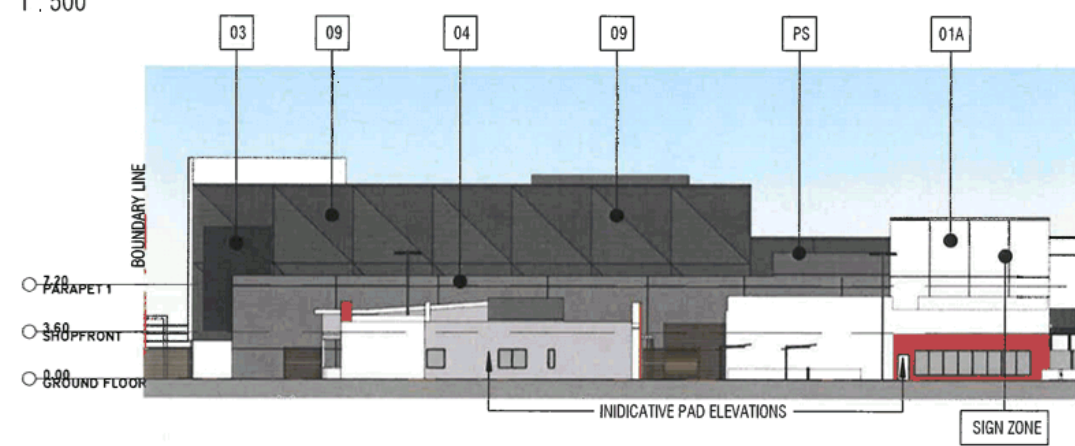
PROJECT KINGS JUNCTION
CLIENT GIC

PROJECT NO. 17009	DATE 06/02/2018	ISSUE DA AMENDMENT
REVISION J		



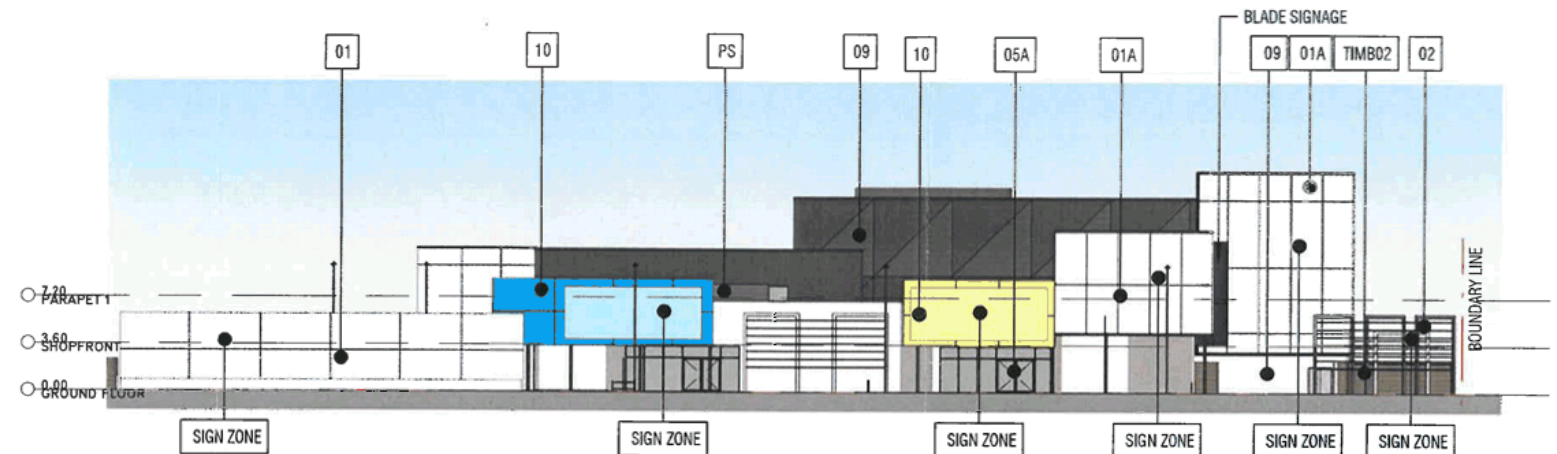
ELEVATION LEISURE - SOUTH

1 : 500



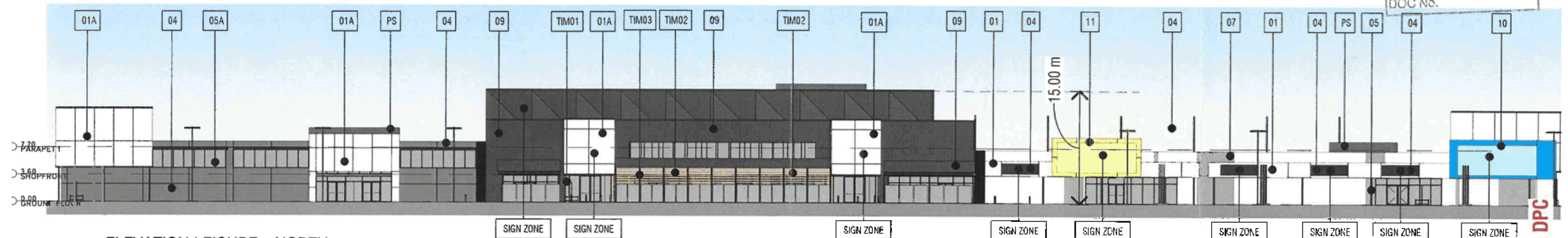
ELEVATION LEISURE - EAST

1 : 500



ELEVATION LEISURE - WEST

1 : 500



ELEVATION LEISURE - NORTH

1 : 500

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DRAWING
ELEVATIONS - SOUTH SIDE

DRAWING NUMBER
SK52

SCALE @ A3
1 : 500

PROJECT
KINGS JUNCTION

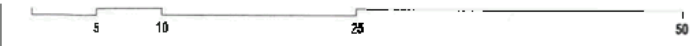
CLIENT
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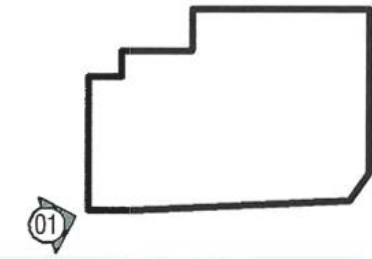
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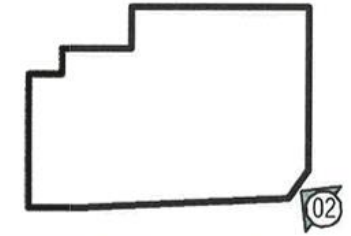
DRAWING
 PERSPECTIVE 1 - AERIAL 1
 DRAWING NUMBER
 SK100

PROJECT
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DRAWING
 PERSPECTIVE 2 - AERIAL 2

DRAWING NUMBER
 SK101

PROJECT
 KINGS JUNCTION

CLIENT
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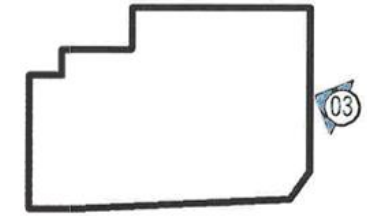
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DRAWING
 PERSPECTIVE 3 - NORTH 1
 DRAWING NUMBER
 SK103

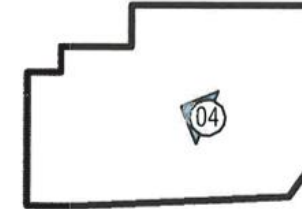
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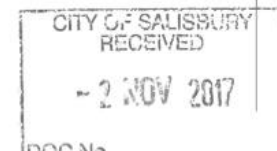
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 PERSPECTIVE 4 - NORTH 2
 DRAWING NUMBER
 SK104

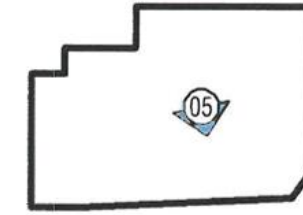
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DRAWING
PERSPECTIVE 5 - SOUTH 1

DRAWING NUMBER
SK105

SCALE @ A3
 As
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PROJECT
KINGS JUNCTION

CLIENT
GIC

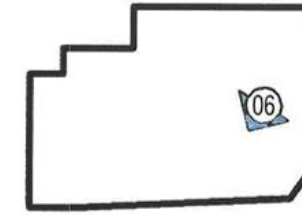
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DRAWING
PERSPECTIVE 6 - SOUTH 2

DRAWING NUMBER
SK106

SCALE @ A3
 As
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PROJECT
KINGS JUNCTION

CLIENT
GIC

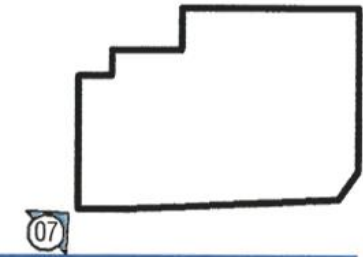
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DRAWING
 PERSPECTIVE 7 - MAIN ROAD 1

DRAWING NUMBER
 SK107

SCALE @ A3
 As indicated

PROJECT
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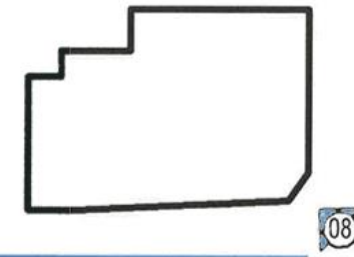
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DRAWING
 PERSPECTIVE 8 - MAIN ROAD 2

DRAWING NUMBER
 SK108

SCALE @ A3
 As
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PROJECT
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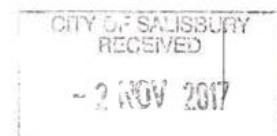
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EXTERNAL FINISHES 1

01		WHITE PAINT	01A		WHITE ALUMINIUM COMPOSITE PANEL	09		METAL CLADDING	TIM01		TIMBER CLADDING
02		LIGHT GREY PAINT	02A		LIGHT GREY ALUMINIUM COMPOSITE PANEL	09A		ANGLED METAL CLADDING	TIM02		TIMBER SHADING AND SCREENS
03		MEDIUM GREY PAINT	03A		MEDIUM GREY ALUMINIUM COMPOSITE PANEL	10		INDICATIVE COLOUR TENANCY DEPENDANT	TIM03		TIMBER BEAMS AND POSTS
04		DARK GREY PAINT	04A		DARK GREY ALUMINIUM COMPOSITE PANEL	11		INDICATIVE COLOUR TENANCY DEPENDANT	PS		PLANT SCREEN DARK GREY METAL SCREEN
05		BLACK PAINT	05A		BLACK ANNOXIDISED WINDOW FRAME	12		INDICATIVE COLOUR TENANCY DEPENDANT	BF		FENCE ON BOUNDARY
06		RED PAINT	06A		RED ALUMINIUM COMPOSITE PANEL	13		ROOF FINISH COLORBOND - SURFMIST			
07		GREY PANELLING PAINT									
08		GREY & GREEN PANELLING PAINT									

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DRAWING MATERIAL SCHEDULE PLAN
DRAWING NUMBER SK300

PROJECT KINGS JUNCTION
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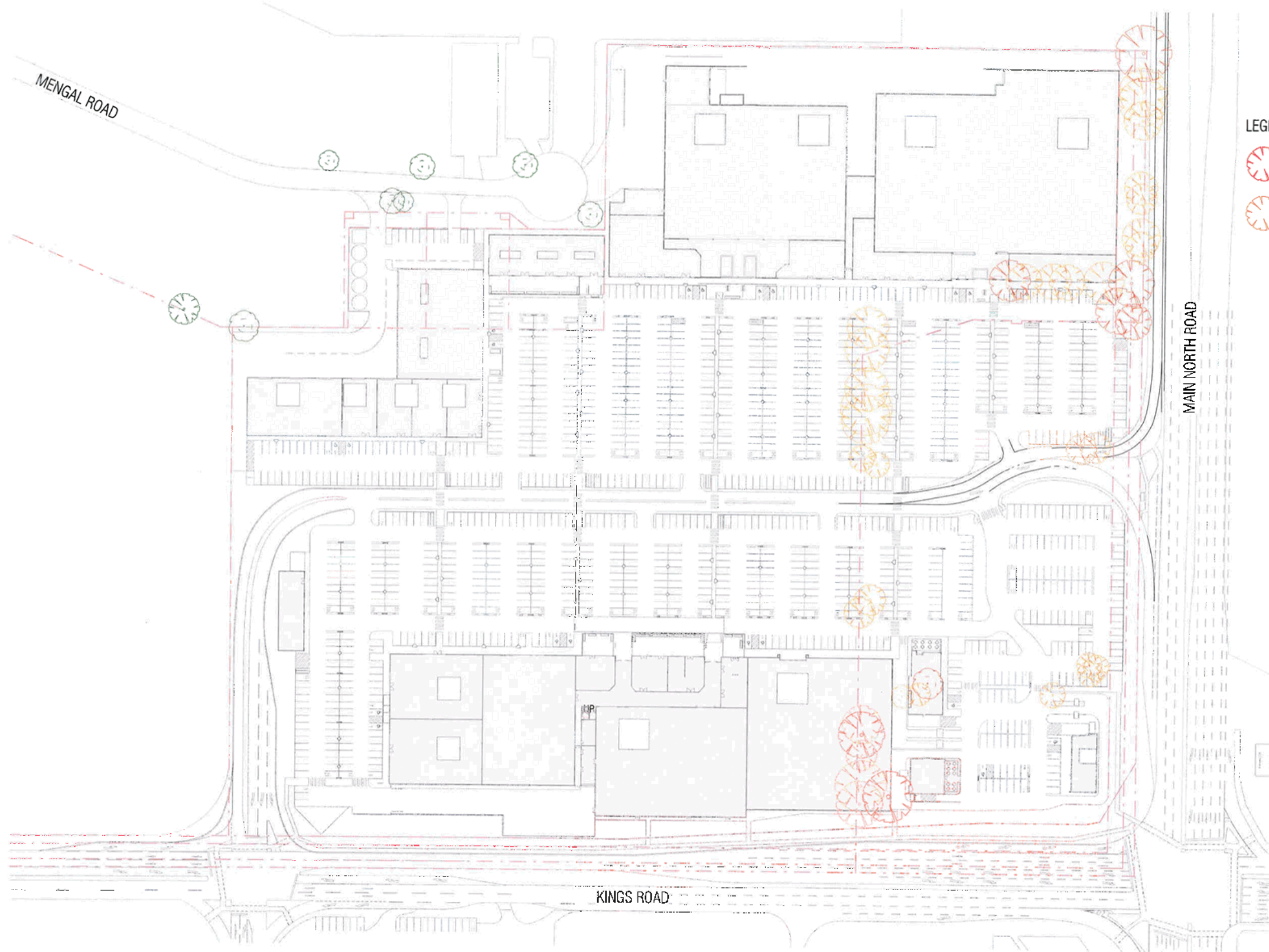
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REVISION E
DATE 26/10/2017
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LEGEND

-  SIGNIFICANT TREES
(PLEASE REFER TO ARBORIST REPORT FOR FURTHER INFORMATION)
-  REGULATED TREES
(PLEASE REFER TO ARBORIST REPORT FOR FURTHER INFORMATION)

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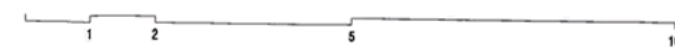
DRAWING
SITE PLAN - SIGNIFICANT AND REGULATED TREES
DRAWING NUMBER
SK04.1

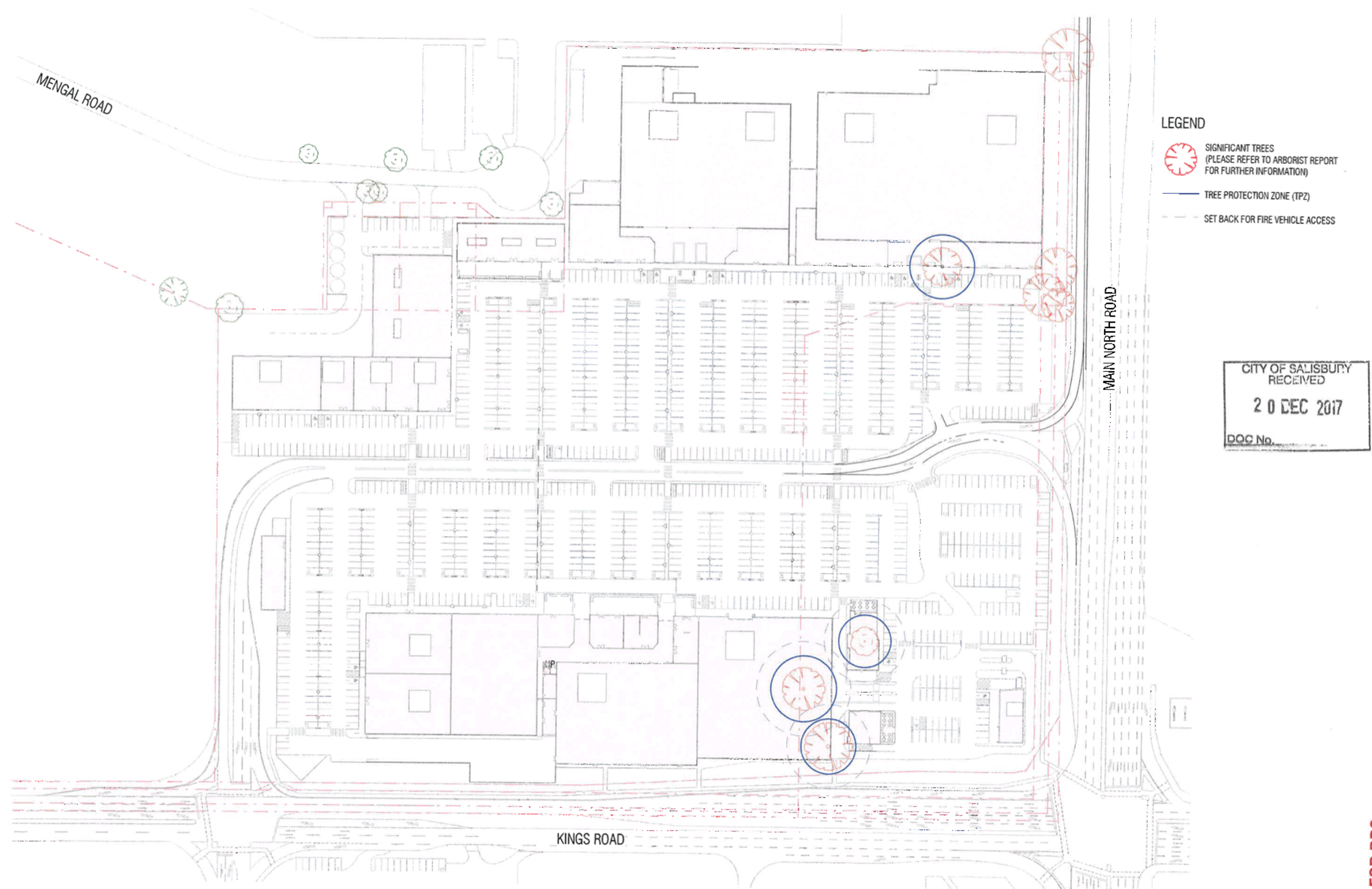
SCALE @ A3
1 : 1500

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DRAWING
SITE PLAN - SIGNIFICANT TREE PROTECTION ZONE

DRAWING NUMBER
SK04.2

SCALE @ A3
1:1500

PROJECT
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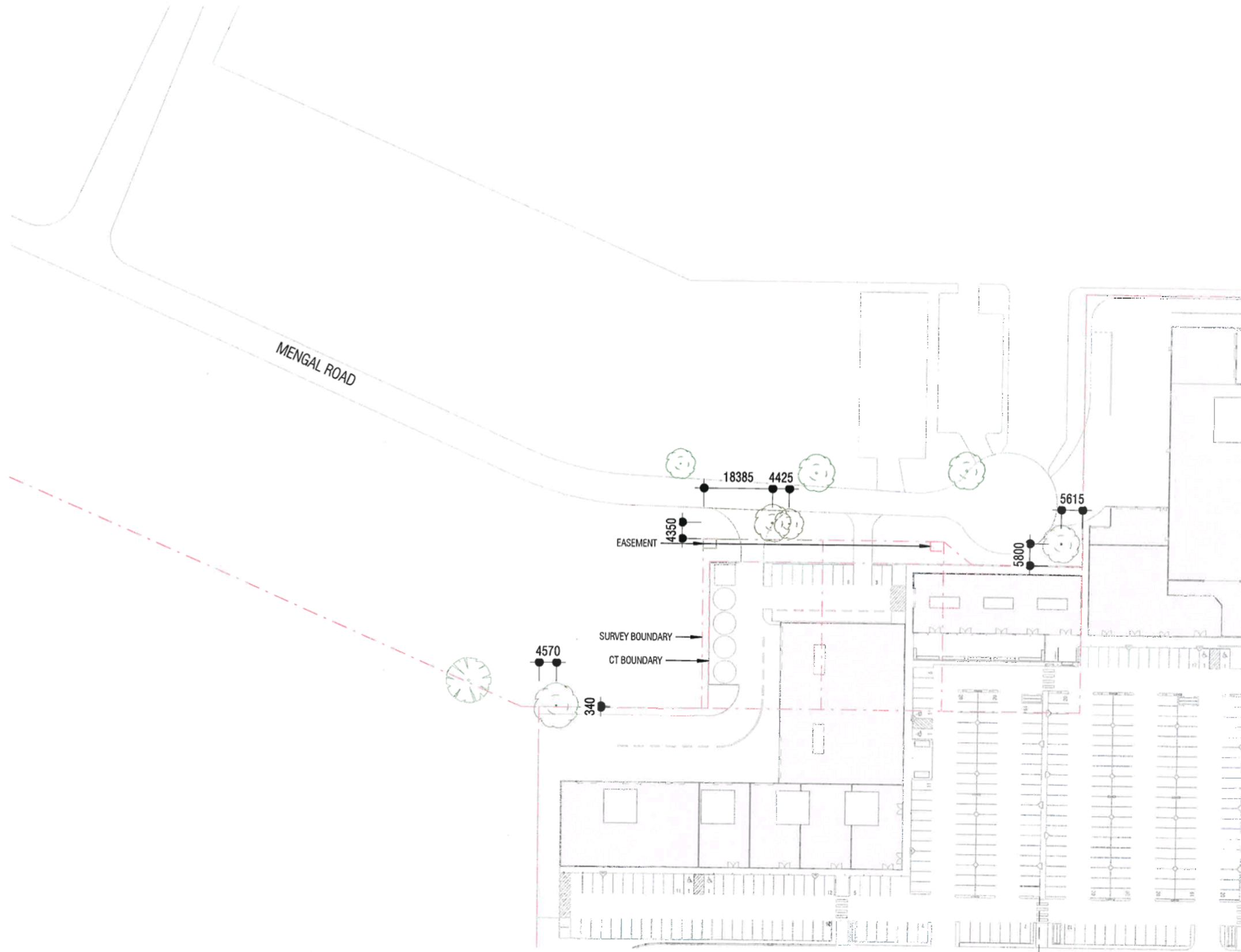
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LEGEND
 EXISTING TREES
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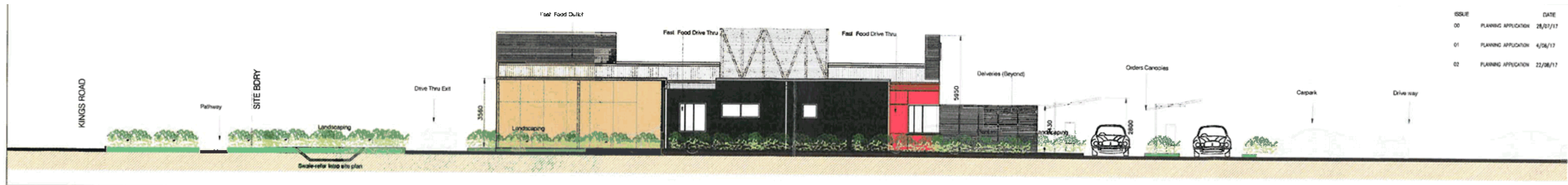
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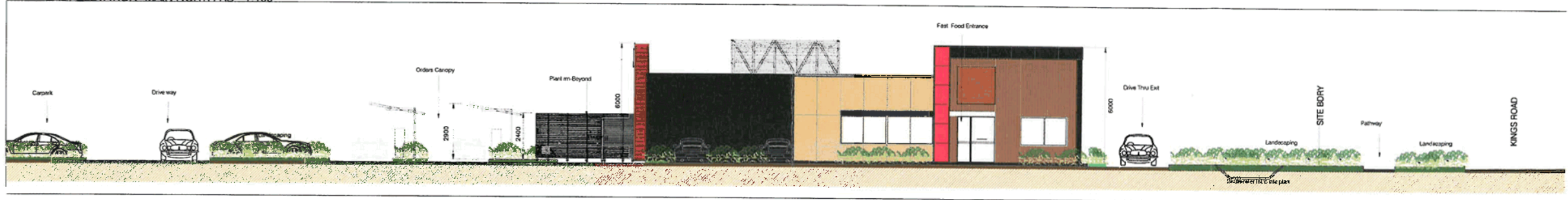
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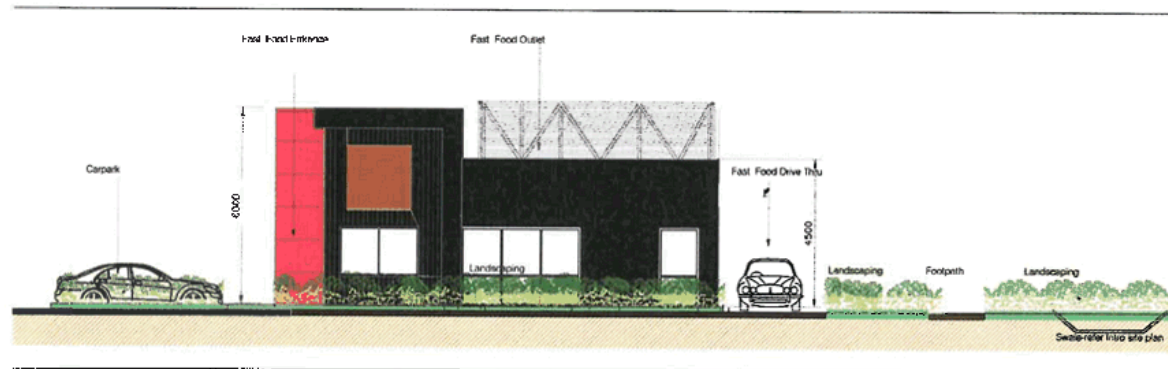


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01	PLANNING APPLICATION 4/08/17
02	PLANNING APPLICATION 22/08/17

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WEST ELEVATION - 1:100



SOUTH ELEVATION - (KINGS ROAD) 1:100



NORTH ELEVATION - 1:100



FLOOR PLAN 1:100

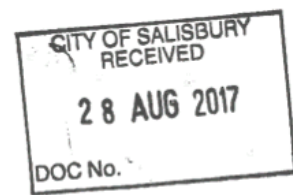
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CNR MAIN NORTH RD & KINGS ROAD SALISBURY

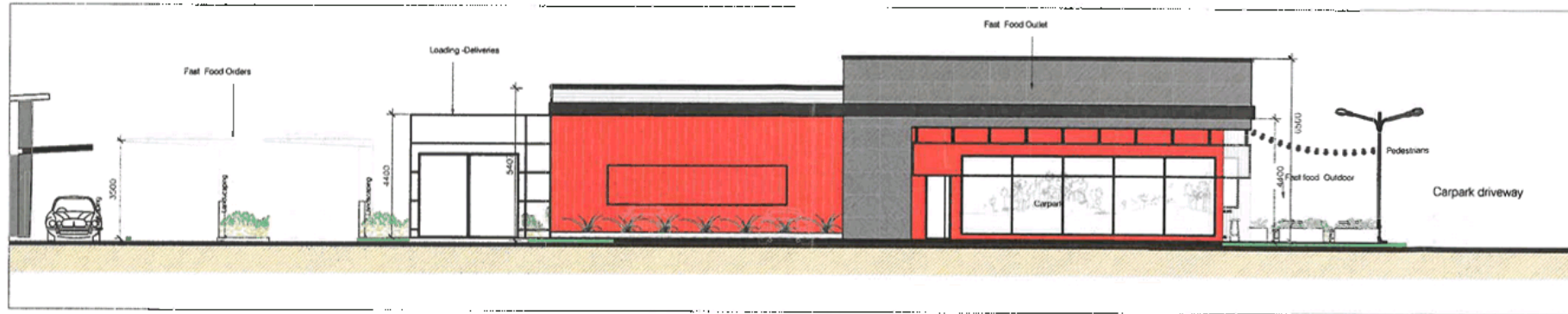
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PAD SITE 1 DEVELOPMENT

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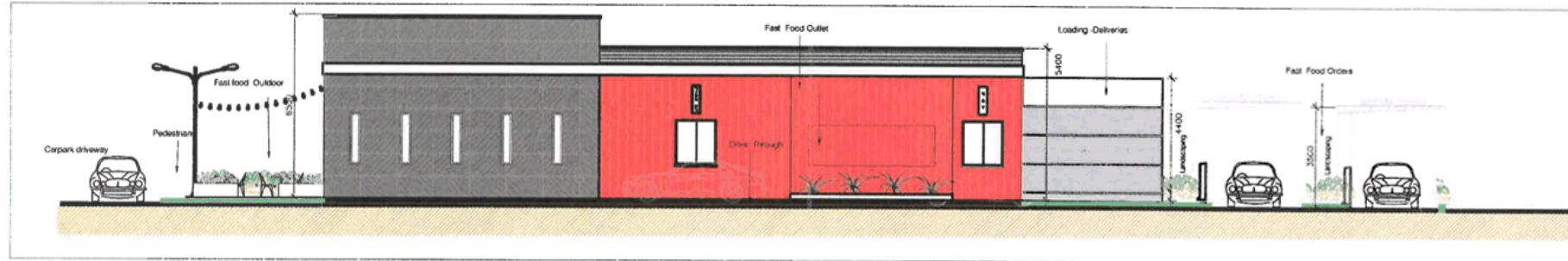
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 ARCHITECTURAL SERVICES
 177 GILLES STREET
 ADELAIDE SA 5000
 T: 08 8207 0401
 F: 08 8207 0400



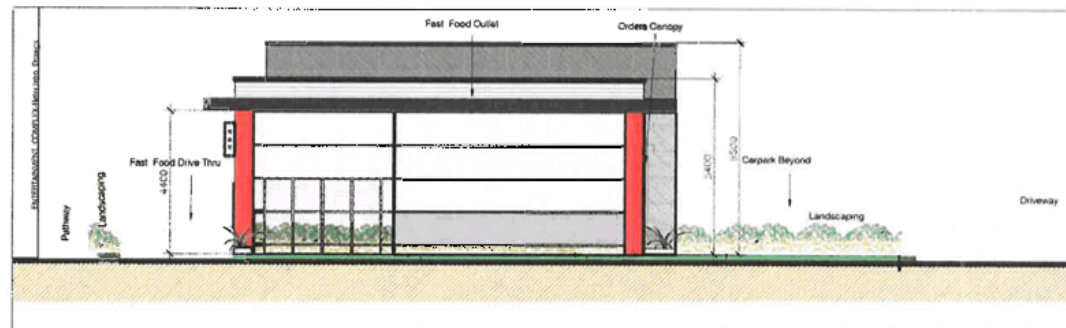
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02	PLANNING APPLICATION	PDC	17/05/17
03	PLANNING APPLICATION	PDC	22/05/17



EAST ELEVATION 1:100



WEST ELEVATION - 1:100



SOUTH ELEVATION - 1:100



NORTH ELEVATION - 1:100

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**KINGS JUNCTION
DEVELOPMENT**
CNR MAIN NORTH RD & KINGS
ROAD SALISBURY

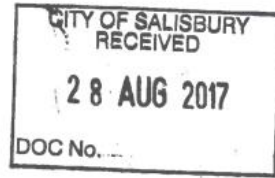
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MCA STUDIO
ARCHITECTURAL SERVICES
177 GILLES STREET
ADELAIDE SA 5000
T (08) 8227 0401
F (08) 8227 0402



Reports and Technical Details



Kings Junction - Salisbury South Proposed Mixed Use Development Transport Impact Assessment

Client // GIC Kings Road Pty Ltd
Office // SA
Reference // S114920
Date // 29/08/2017

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S114920 // 29/08/2017

Transport Impact Assessment // Issue: V01

Kings Junction - Salisbury South, Proposed Mixed Use Development



GTA consultants

1. Introduction

1.1 Background

A Development Application is to be submitted for a proposed mixed-use development on the north-western corner of Kings Road and Main North Road in Salisbury South.

GTA Consultants was commissioned by GIC Australia to undertake a transport impact assessment for the proposed development.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- i existing traffic and parking conditions surrounding the site
- ii parking demand likely to be generated by the proposed development
- iii suitability of the proposed parking in terms of supply (quantum) and layout
- iv traffic generation characteristics of the proposed development
- v proposed access arrangements for the site
- vi transport impact of the development proposal on the surrounding road network.

1.3 References

In preparing this report, reference has been made to the following:

- o Austroads Guide to Road Design, Part 4A: Unsignalised and Signalised Intersections
- o Plans for the proposed development prepared by Intro Design Pty Ltd
- o City of Salisbury Development Plan (consolidated 15 December 2016)
- o traffic surveys undertaken by the Department of Planning Transport & Infrastructure
- o various technical data as referenced in this report
- o an inspection of the site and its surrounds
- o other documents as nominated.

2. Existing Conditions

2.1 Subject Site

The subject site is located at the north-west corner of the Main North Road, Kings Road and McIntyre Road intersection in Salisbury City Council.

The development site of approximately 95,406 sq. m has frontages of 400 m to Kings Road and 400m to Main North Road.

The subject site is located within a Mixed Use (Bulky Goods, Entertainment and Leisure) Zone. The site is mostly vacant (except for a residential dwelling) with the surrounding properties including a mix of industrial, commercial and retail land uses. An airport is located to the south.

The location of the subject site and the surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject Site and its Environs



(PhotoMap courtesy of NearMap Pty Ltd)
(Reproduced with Permission from Melway Publishing Pty Ltd)

2.2 Road Network

2.2.1 Adjoining Roads

Main North Road

Main North Road (A52) is arterial road connecting the northern suburbs to the central business district in the Adelaide city centre. Main North Road functions as an arterial road and is under the care, control and management of the Department of Planning, Transport and Infrastructure (DPTI). It is a two-way road aligned in north east direction and configured with dual carriageways comprising 2-3 lanes adjacent the subject site. No kerbside parking is permitted along the carriageway.

Main North Road carries approximately 47,700 vehicles per day¹ and has a posted speed limit of 80km/h.

Kings Road / McIntyre Road

Kings Road and McIntyre Road are arterial roads connecting the northern and north-eastern suburbs of Adelaide. They are designated as route A18. Both Kings Road and McIntyre Road are under the care, control and management of DPTI. Both are configured 2-lanes in each direction. No kerbside parking is permitted along Kings Road and McIntyre Road adjacent the subject site.

Kings Road carries approximately 26,100 vehicles per day while McIntyre Road carries approximately 30,100 vehicles per day¹.

The posted speed limit for Kings Road and McIntyre Road are 70 km/h and 60 km/h respectively.

Local Roads

Other local roads within the vicinity of the site include Horrie Miller Drive, and Mengel Court which are shown in Figure 2.1. Local roads are two-way single carriageway and form two lanes as it reaches the intersection. Horrie Miller Drive has a posted speed limit of 50km/h and Mengel Court has a default speed limit of 50 km/h.

2.2.2 Surrounding Intersections

The following intersections currently exist in the vicinity of the site:

- Main North Road – Kings Road / McIntyre Road (signalised)
- Kings Road – Horrie Miller Drive (signalised)

2.2.3 Traffic Volumes

GTA Consultants liaised with DPTI traffic section to collate the existing traffic movement counts on key roads in the vicinity of the site during the following peak periods:

- 7:00am - 9:00am
- 4:00pm - 6:00pm.

The AM and PM peak hour traffic volumes are shown in Figure 2.2 and Figure 2.3, respectively for North Main Road – Kings Road / McIntyre Road Intersection and Kings Road – Horrie Miller Drive.

¹ Based on DPTI Metropolitan Traffic Estimate Maps (https://www.dpti.sa.gov.au/traffic_volumes).

Figure 2.2: Existing AM & PM Peak Volumes – Main North Rd/Kings Rd/McIntyre Rd Intsn

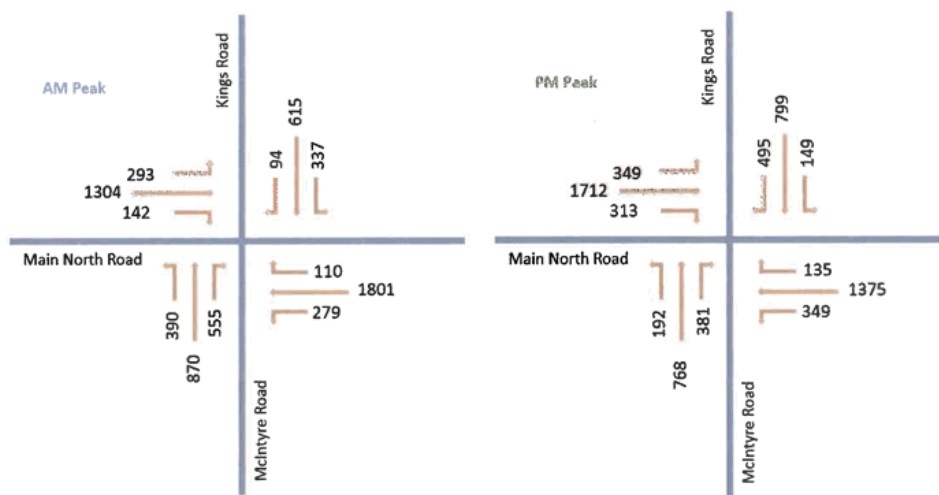
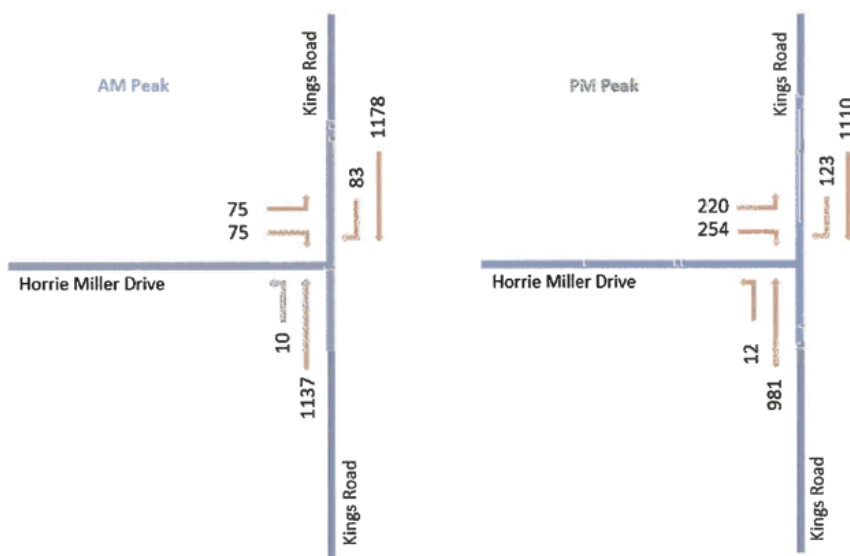


Figure 2.3: Existing AM & PM Peak Volumes – Kings Road/Horrie Miller Drive Intsn



2.2.4 Intersection Operation

A.1.1 Existing Intersection Operation

GTA has obtained existing traffic volume data from DPTI for the following key intersections adjoining the subject site:

- o Main North Road / Kings Road / McIntyre Road
- o Kings Road / Horrie Miller Drive

The existing operation of the above intersections has been assessed using *SIDRA INTERSECTION*², a computer based modelling package which calculates intersection performance.

The commonly used measure of intersection performance is referred to as the *Degree of Saturation (DOS)*. The DOS represents the flow-to-capacity ratio for the most critical movement on each leg of the intersection. For signalised intersections, a DOS of around 0.95 has been typically considered the 'ideal' limit, beyond which queues and delays increase disproportionately³.

Table 2.1 and Table 2.2 present a summary of the existing operation of the Main North Road / Kings Road / McIntyre intersection during the weekday AM and PM peak.

Table 2.1: Main North Road/Kings Road/McIntyre Intersection – Existing AM Peak

Approach	Road Name	Movements	DOS	Average Delay (sec)	95 th Percentile Queue (Veh)	LOS
South	McIntyre Road	Left	1.170	238.6	55.8	F
		Through	0.999	100.7	41.3	F
		Right	1.158	229.5	38.3	F
East	Main North Road	Left	0.261	12.2	6.8	B
		Through	1.165	225.5	88.3	F
		Right	0.337	54.9	6.4	D
North	Kings Road	Left	0.502	36.9	16.8	D
		Through	1.171	234.0	43.6	F
		Right	0.590	76.5	3.3	E
West	Main North Road	Left	0.173	5.7	0.0	A
		Through	0.829	50.9	29.1	D
		Right	0.440	56.1	8.5	E
Overall			1.171	141.9	88.3	F

DOS – Degree of saturation, LOS – Level of Service

Table 2.2: Main North Road/Kings Road/McIntyre Intersection – Existing PM Peak

Approach	Road Name	Movements	DOS	Average Delay (sec)	95 th Percentile Queue (Veh)	LOS
South	McIntyre Road	Left	0.704	63.3	12.6	E
		Through	1.091	166.1	45.9	F
		Right	1.014	119.8	18.2	F
East	Main North Road	Left	0.383	24.1	12.4	C
		Through	0.923	66.7	37.2	E
		Right	0.439	59.4	7.6	E
North	Kings Road	Left	0.194	29.2	6.0	C
		Through	1.022	116.3	40.6	F
		Right	1.099	180.9	29.9	F
West	Main North Road	Left	0.201	5.7	0.0	A
		Through	1.133	198.7	78.8	F
		Right	1.106	185.4	38.7	F
Overall			1.133	125.6	78.8	F

DOS – Degree of saturation, LOS – Level of Service

² Program used under license from Akcelik & Associates Pty Ltd.

³ SIDRA INTERSECTION adopts the following criteria for Level of Service assessment:

The SIDRA analysis indicates that the intersection of Main North Road / Kings Road / McIntyre Road is already at its functional capacity with SIDRA analysis indicating an overall DOS in excess of 1 during both the AM and PM peak periods.

Table 2.3 and Table 2.4 present a summary of the existing operation of the Kings Road / Horrie Miller Drive intersection during the weekday AM and PM peak.

Table 2.3: Kings Road / Horrie Miller Drive Intersection – Existing AM Peak

Approach	Road Name	Movements	DOS	Average Delay (sec)	95 th Percentile Queue (m)	LOS
South	Kings Road	Left	0.01	6.3	0.1	A
		Through	0.50	14.2	20.4	B
North	Kings Road	Through	0.42	5.0	12.7	A
		Right	0.47	66.4	5.4	E
West	Horrie Miller Drive	Left	0.12	9.4	1.2	A
		Right	0.18	61.0	2.3	E
Overall			0.50	12.9	20.4	B

DOS – Degree of saturation, LOS – Level of Service

Table 2.4: Kings Road / Horrie Miller Drive Intersection – Existing PM Peak

Approach	Road Name	Movements	DOS	Average Delay (sec)	95 th Percentile Queue (m)	LOS
South	Kings Road	Left	0.01	6.6	0.6	A
		Through	0.49	19.3	142.4	B
North	Kings Road	Through	0.40	6.3	93.8	A
		Right	0.49	61.0	53.8	E
West	Horrie Miller Drive	Left	0.28	9.8	28.8	A
		Right	0.48	60.0	55.3	E
Overall			0.49	18.9	142.4	B

DOS – Degree of saturation, LOS – Level of Service

The analysis indicates that the existing intersection of Kings Road and Horrie Miller Drive is operating well with no notable queues or delays and an overall DOS of 0.5.

2.3 Sustainable Transport Infrastructure

2.3.1 Public Transport

Adelaide Metro buses service is available along Main North Road. Currently, there are eleven public transport bus services operating along the study area (Routes 225, 225F, 225M, 225X, 228, 228F, 228X, 472, 475, 949 and AOX15).

Bus services operate at regular intervals on both weekdays and weekends. The nearest bus stops are located approximately 200m to the east of the site on Port Elliot Road and 300m west of the site on Hindmarsh Road.

In addition, school bus service provides a shuttling school kids in the morning hours and cater the catchment area of Roma Mitchell Secondary College.

2.3.2 Pedestrian Infrastructure

There is an existing paved footpath along the frontage of the subject site along Kings Road. There is no footpath along the Main North Road frontage of the site.

2.3.3 Cycle Infrastructure

Bicycle facilities are available on the Main North Road. Painted bicycle lanes exist for entire stretch of road along Main North Road. However, there are currently no bicycle facilities on Kings Road immediately adjoining the subject site.

3. Development Proposal

3.1 Land Uses

The proposed development will include the uses summarised in Table 3.1:

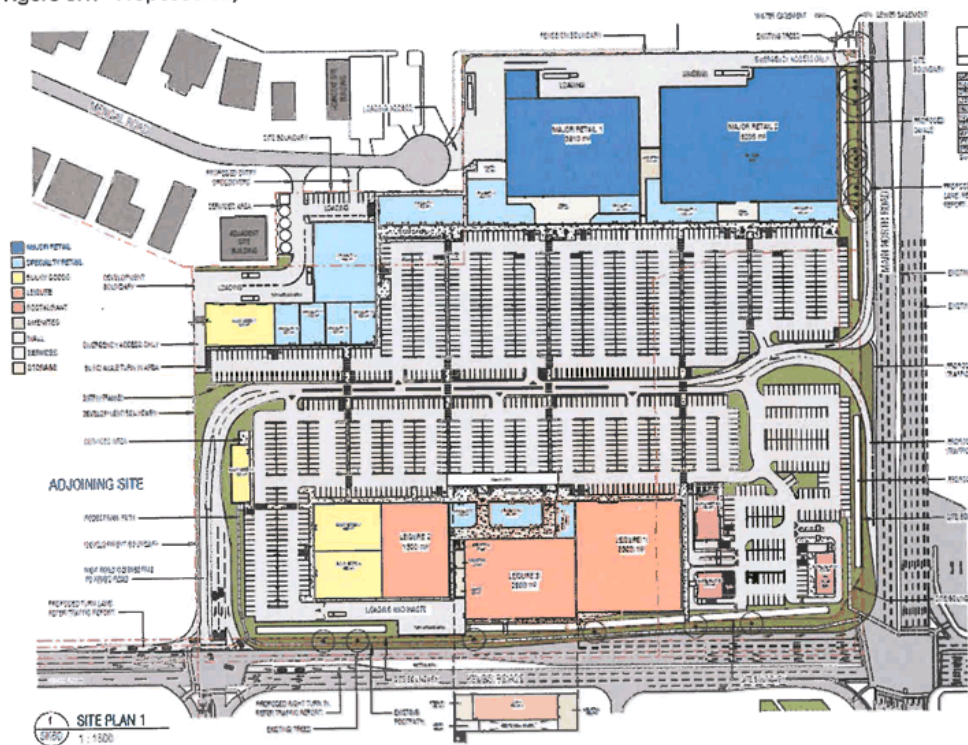
Table 3.1: Proposed Land Use

Occupancy		Area (sq. m) GLFA
Bulky Goods		2,900
Gym		605
Leisure		7,600
Retail	Major	3,910
	Major	6,205
Restaurant (Fast Food)		760
Specialty Retail		5,935
TOTAL		27,915

The proposed development will include 1,332 parking spaces.

Figure 3.1 presents the proposed site layout.

Figure 3.1: Proposed Layout Plan



4. Car Parking

4.1 Development Plan Car Parking Requirements

The proposed development is located within a 'Mixed Use (Bulky Goods, Entertainment and Leisure)' Zone and hence the following parking rates apply (from the Salisbury Council Development Plan, consolidated 15 December 2016):

All forms of development (except Light Industry) 3 spaces per 100 square metres of gross leasable floor area

Based on the above rate, Table 4.1 summarises the parking requirements of proposed development.

Table 4.1: Development Plan Parking Requirements

Use	Size (sq. m)	Parking Rate	Parking Requirement
Gross Leasable Floor Space	27,915	3 spaces per 100sq.m	837

The above shows that the proposed development will require some 837 parking spaces.

4.1.1 Adequacy of Parking Supply

The proposed development includes 1,332 spaces in total, which exceeds the requirements of Development Plan (837 spaces).

GTA notes that the proposed development includes 21 disability parking spaces. GTA have subsequently referred to the Building Code of Australia (BCA), which specifies the following rate:

Class 6 (Retail) 1 space for every 50 car parking spaces or part thereof up to 1000 car parking spaces.
 1 space per 100 car parking spaces or part thereof in excess of 1000 car parking spaces.

Based on the above parking provision of 1,332 car parking spaces, the proposed development will generate a parking provision of 24 spaces. Therefore, the current provision of 21 is a slight shortfall of 3 spaces. GTA notes that the disabled parking spaces are distributed around the car park and adjacent key entrances to the various tenancies. Given the site parking provision is high the current provision will meet anticipated demands when calculating based on the statutory parking requirement.

4.2 Car Park Layout

The car parking areas have been designed around a central circulation road which links between Kings Road and Main North Road with northern and southern parking precincts. Various access points along this circulation road are proposed. Given the length and straight alignment of this road, a number of raised tables are proposed (integrated with pedestrian wombat crossings) to assist in managing the speed of vehicles along this road and pedestrian safety.

The parking layout has been designed in accordance with AS/NZS2890.1. The parking spaces are suitable for User Class 3A: short term, high turnover parking. As such, parking spaces will generally be 2.7 metres wide and a minimum 5.5 metres long and set within a minimum 6.6 metre wide car parking aisle. These dimensions meet or exceed the minimum requirements of AS/NZS2890.1.

Disabled parking spaces will be located near the building entrances and meet the dimensions of 'Australian / New Zealand Standards for Off-Street Parking Facilities for People with Disabilities' (2009, henceforth referred to as AS/NZS2890.6).

Further to the above, the grades within the parking area will conform to the following requirements (as per AS/NZS2890.6 and AS2890.2) and addressed in the detailed design:

- Maximum grade of 1 in 20 (5%) across nature strip;
- Maximum grade of 1 in 40 (2.5%) across any footpath;
- Maximum grade of 1 in 20 (5%) for 15 metres into the site (where commercial vehicles use the driveway, i.e. northern driveway);
- A maximum grade of 1 in 6.5 (15.4%) along commercial vehicles circulation roads, the maximum grade shall be 1 in 8 (12.5%) where reverse manoeuvres are required
- A maximum grade of 1 in 20 (5%) measured parallel to the angle of parking;
- Maximum grade of 1 in 16 (6.25%) measured in any other direction to the angle of parking.

5. Vehicle Access

5.1 Vehicle Access

Vehicle access to the site is proposed at the following locations:

- A new two-way signalised access from the western side of the proposed development along Kings Road aligning with Horrie Miller Drive.
- A new two-way customer vehicle access to Main North Road restricted to left in and left out movements.
- A service vehicle access from Mengel Court for the specialty retail and bulky goods.
- A heavy vehicle access at the end of the Mengel Court cul-de-sac, servicing Major Retail tenant loading/refuse.

The approximate locations of the proposed vehicle access points are shown in Figure 5.1.

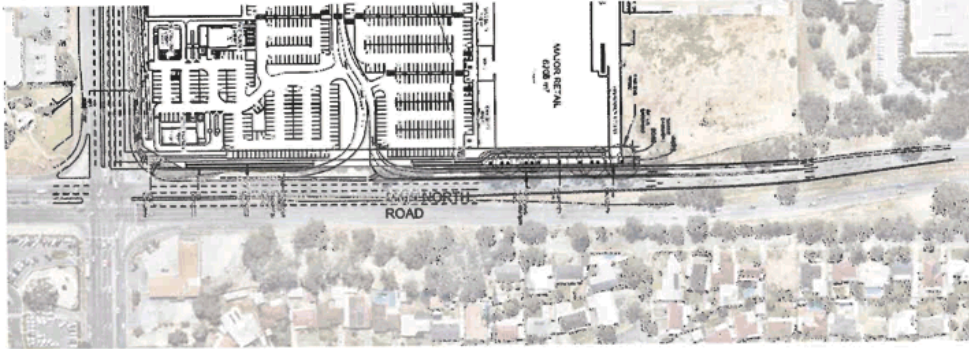
Figure 5.1: Proposed Vehicle Access Points to the Subject Site



5.1.1 Main North Road

A main customer vehicle access to Main North Road is proposed. GTA has developed a preliminary concept for an access design for Main North Road based on preliminary discussions with DPTI. The concept design is shown in Figure 5.2 below.

Figure 5.2: Preliminary Concept of Main North Road Customer Access



The concept includes a left turn lane on Main North Road leading into the site. The left turn lane has been designed for a 90 km/h design speed (i.e. 10km/h above the posted speed limit) with deceleration into the site which would enable a stop prior to the first access point into the car parking precincts.

The entry lane has been designed to include a right turn lane into the northern parking area which will enable suitable deceleration and queueing, which will ensure that access into the site is not impeded by any queue of right turning vehicles into the northern car parking precinct. The exit to Main North Road has been designed as a separated acceleration lane (similar to a service road).

The length of the lane has been designed to enable vehicles to appropriately merge back into the existing through lanes on Main North Road. The lane will provide 340 metres of acceleration assuming an entry speed of 20 km/h and merge speed of 90 km/h. This exceeds Austroad Guide requirements.

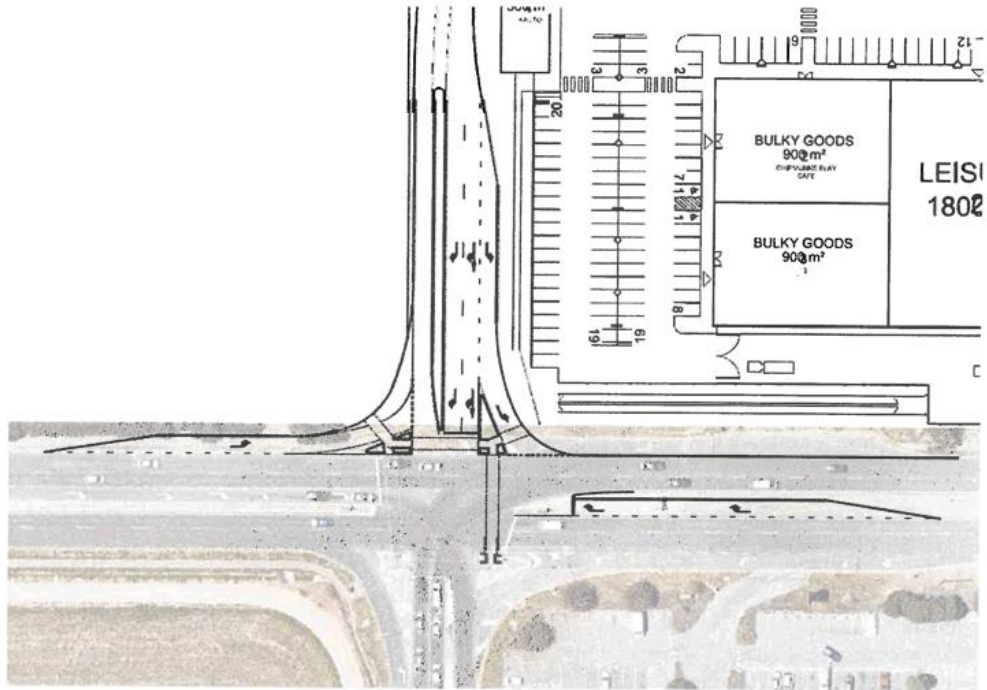
5.1.2 Mengel Court

Mengel Court will primarily provide access to the industrial properties that front it. Heavy vehicle access to the site via rundle and Mengel Court is therefore considered appropriate.

5.1.3 Kings Road

An access point is proposed on Kings Road to align with Horrie Miller Drive through the creation of a 4-way intersection. A concept design of the proposed changes to the existing signalised intersection at Horrie Miller Road access has been developed and is shown in Figure 5.3.

Figure 5.3: Proposed Concept Layout – Access to Development



6. Sustainable Transport Infrastructure

6.1 End-of-Trip Bicycle Facilities

Table Sal/3 within the Salisbury (City) Development Plan provides the following bicycle parking rates applicable to the proposed development:

Shop	Employee	1 per 300 sq. m GLFA
	Visitor	1 per 600 sq. m GLFA

GTA notes that the Development Plan does not contain a specific bicycle parking requirement for a Bulky Goods and hardware retail use.

Based on the Development Plan Rates above, the combined floor area of 27,915, the proposed development should provide 140 bicycle spaces throughout the site, which include 93 bicycle spaces for employees and 47 spaces for visitors.

The proposed development will include 45 bicycle parking across the development site. The need for employee bicycle parking is generally low in these types of developments.

The provision of 45 bicycle parking spaces is considered appropriate for this development.

7. Loading Facilities

7.1 Statutory Requirements

PDC 113 for the Movement Systems as provided within the Salisbury (City) Development Plan states:

Development should make sufficient provision on site for the loading, unloading and turning of all traffic likely to be generated.

7.2 Proposed Loading Arrangements

The following loading areas have been proposed within the site:

- Back of House (BOH) Loading for Major Retail, with ingress and egress proposed via Mengel Court.
- Loading to service the specialty retail and bulky goods at the northern corner of the site, with ingress and egress via Mengel Court.
- Deliveries to/from the Fast Food Outlets via Main North Road.
- Deliveries to service Leisure and Bulky Goods Outlets at the north-western corner of the site.

7.2.1 Major Retail Loading (19m Semi)

The major tenants will be serviced by vehicles up to a 19.0m Semi Trailer will ingress and egress via Mengel Court.

Figure 7.1 considers a 19.0m Semi Trailer entering and exiting the Major Retail 1 Loading dock. The truck turn into the manoeuvring area prior to reversing at 90 degrees as shown. The exit movement is forward towards Mengel Court.

Figure 7.2 considers a 19.0m Semi Trailer entering and exiting the Major Retail 2 Loading Dock. The truck will drive forward, prior to reversing into a straight line when entering the dock. On exit, the Semi will undertake a 3-staged turn using the manoeuvring area prior to exiting towards Mengel Court.

Figure shows two 19.0m Semi Trailers entering via the Mengel Court access, with give way control proposed internally to manage traffic movements. This is feasible within the current layout. GTA notes that two semi-trailers will be unable to turn simultaneously at the northern corner of the building. A hold bar (give way) approach is proposed to enable a view and check of sight lines down the access road for any approaching vehicles.

Smaller vehicles such as waste trucks and compactors will also utilise the BOH area proposed.

It is expected there would be 2 to 3 semi-trailers per day for the major retailers, along with 20 smaller delivery vehicles (up to 12.5 metre rigid trucks) for the major retail uses.

Based on these volumes, the proposed loading area and access arrangement will operate satisfactorily.

Figure 7.1: 19m Semi – Major Retail 1 Access

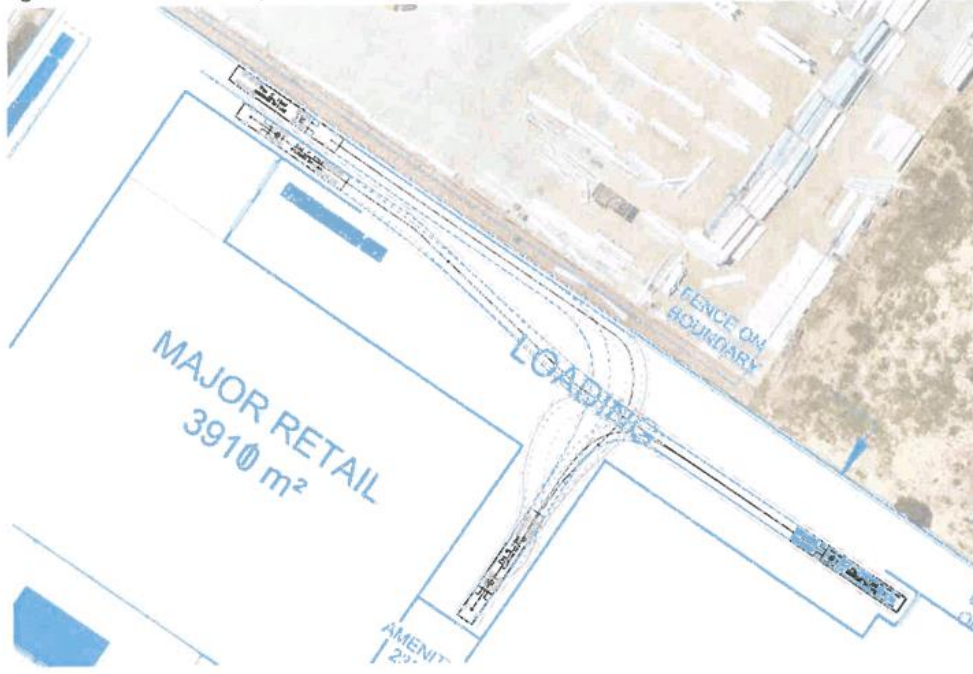


Figure 7.2: 19m Semi – Major Retail 2 Access

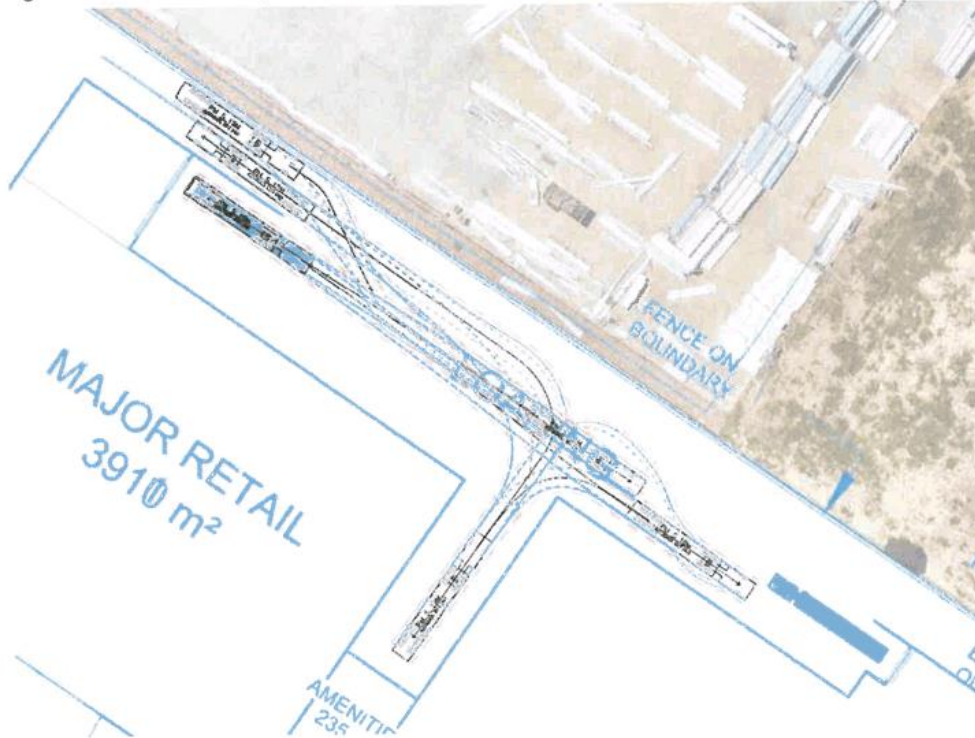
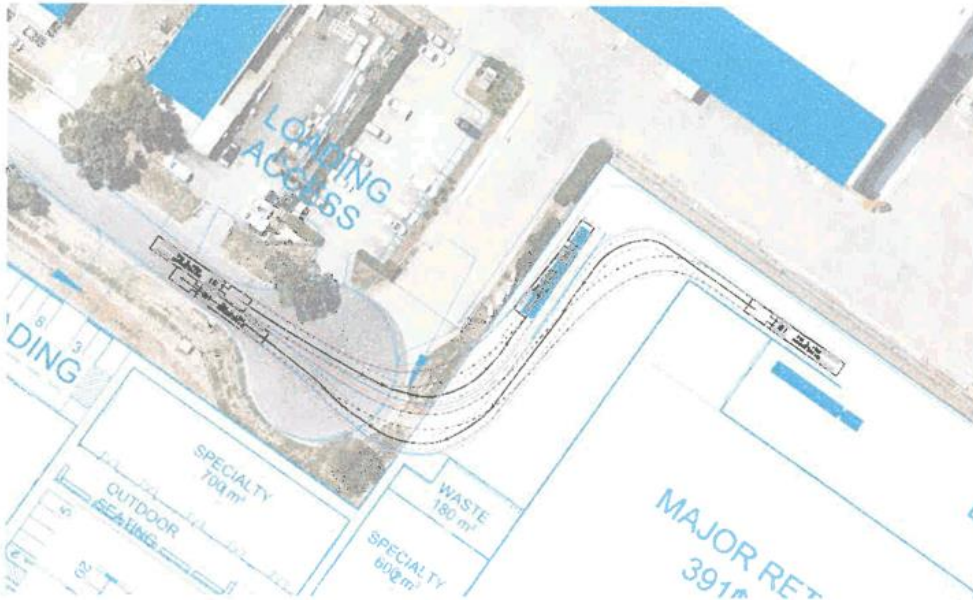


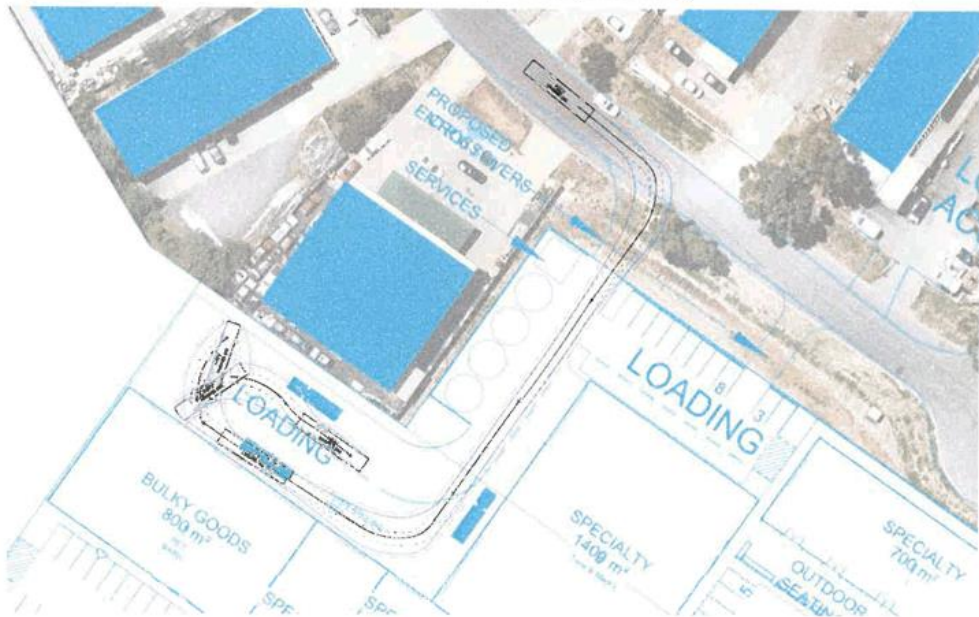
Figure 7.3: 19m Semi – Mengel Court Ingress/Egress



7.2.2 Specialty Retail BOH Loading

Loading for the Bulky Goods and Specialty Retail has been proposed at the northern corner of the site, with vehicle access up to a Heavy Rigid Vehicle (HRV). Two crossover access have been proposed to facilitate this. The proposed loading docks will operate via side loading as indicated in Figure 7.4 and Figure 7.5.

Figure 7.4: Bulky Good Loading – Access via Mengel Court (12.5m HRV)



S114920 // 29/08/2017

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Kings Junction - Salisbury South, Proposed Mixed Use Development



Figure 7.5: Specialty Loading – Access via Mengel Court (12.5m HRV)



7.2.3 Leisure Loading Area

The loading for the leisure stores is situated at the western end of the site, with ingress and egress proposed for a vehicle up to an 8.8 metre Medium Rigid Vehicle (MRV). Figure 7.6 indicates access to the loading area with a three (3) point turn required to enable the truck to egress. Figure 7.7 indicates vehicle ingress/egress via the internal road network.

Figure 7.6: Leisure Loading – Ingress and Egress (8.8 metre MRV)

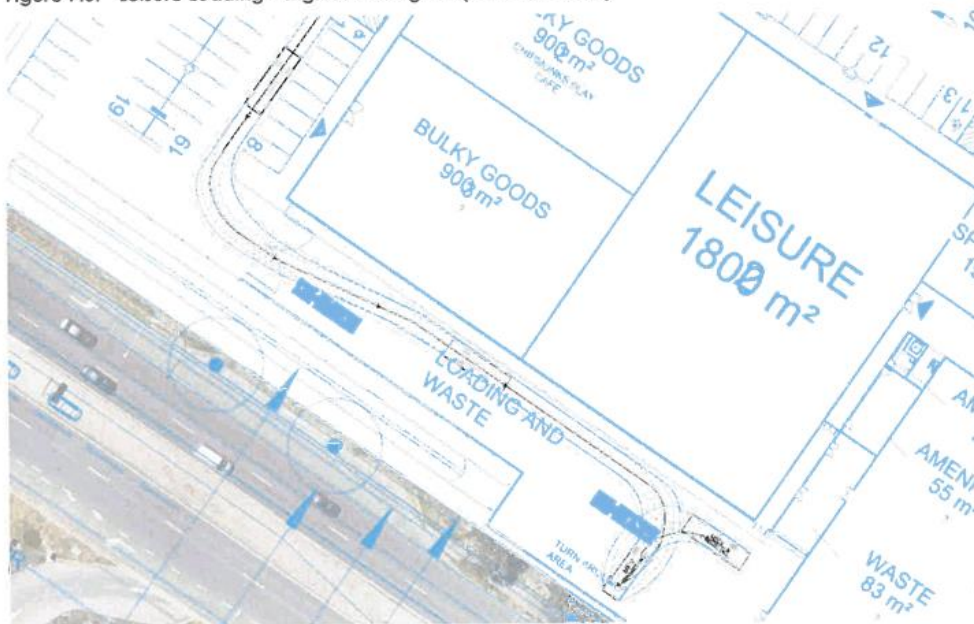
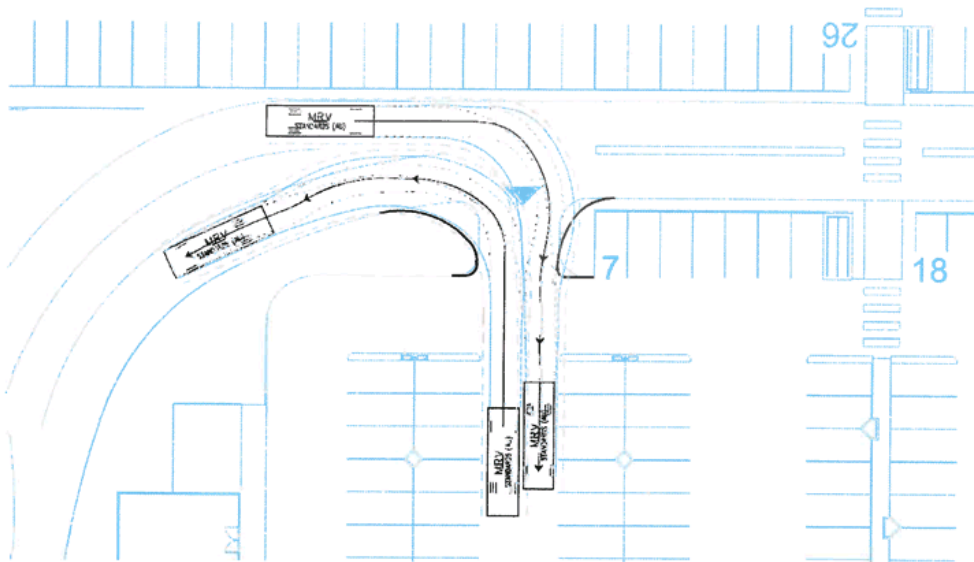


Figure 7.7: MRV Ingress from Internal Road



7.2.4 Fast Food Loading

Fast Food Loading has been considered for vehicle ranging between an 8.8m MRV to a 14.0m semi-trailer with ingress and egress proposed via Main North Road. Figure 7.8 considers a 14m semi-trailer accessing Fast Food 1, Figure 7.9 indicates a 14m Semi-trailer accessing Fast Food 2 while Figure 7.10 considers an MRV accessing Fast Food 3. Slight modifications to the layout are required to enable safe and satisfactory access and can be incorporated into detailed design.

Figure 7.8: Fast Food 1 Access – 14m Semi-trailer



Figure 7.9: Fast Food 2 Access – 14 m Semi-trailer



8. Traffic Impact Assessment

8.1 Traffic Generation

Traffic generation rates for the proposed uses have been sourced from the RTA NSW's *Guide to Traffic Generating Developments* (2002, henceforth referred to as the RTA Guide) as well as data collected by GTA at other sites around the country.

The weekday peak hour traffic generation rates that have been applied to the proposed development are summarised in Table 8.

Table 8.1: Development Traffic Generation Rates

Use	Peak Hour Traffic Generation Rate (trips per 100sq.m GLFA)
Bulky Goods	2.7
Gym	9.0
Leisure	5.1
Shopping Centre (Inc Major Retail, Specialty Retail)	7.6
Fast Food	180 per tenant

Based on the rates above, Table 8.2 has been prepared to summarise the estimated weekday peak hour traffic generation for the proposed development.

Table 8.2: Proposed Development Weekday Traffic Generation Estimate

Use	Area (sq. m)	Peak Hour Traffic Generation Rate (trips per 100sq.m GLFA)	Peak Hour Trips	
Bulky Goods	2,900	2.7	78	
Gym	605	9.0	54	
Leisure	7,600	5.1	389	
Retail	Major	3,910	7.6	297
	Major	6,205	7.6	472
Fast Food (3 Tenancies)	760	180 trips per tenant	540	
Specialty Retail	5,935	7.6	451	
TOTAL			2,281	

Based on Table 9, the proposed development could be expected to generate in the order of 2,300 trips during the weekday peak hour.

However, a number of these trips will be linked/passing trade trips that are already present on the road network (a 20% discount is the maximum linked trip discount that is typically permitted by DPTI). There would also be a percentage of shared trips between the on-site uses (estimated at 30%). In addition, it is unlikely that the uses will operate at full capacity during the weekday road network peak period (the critical peak for assessing the traffic impacts).

Application of the above discounts suggests that the site could generate up to 1,275 new vehicle trips during the weekday peak hour period. The number of trips would be higher on a Saturday (1,652 new vehicle trips estimated).

8.2 Distribution and Directional Split

Traffic distribution for the proposed development has been estimated as follows:

- to/from North (between Main North Road and Gawler rail line) 25%
- to/from West (west of Gawler rail line) 25%
- to/from South (east of Gawler rail line and south of McIntyre Road) 25%
- to/from East (east of Main North Road and north of McIntyre Road) 25%

In addition, the directional split of traffic (i.e. the ratio of inbound to outbound traffic movements) has been assumed to be 50:50.

Based on the above distribution and the forecast traffic generation estimates, GTA has assessed the future operation of the following key intersections:

- Main North Road / Kings Road / McIntyre Road
- Kings Road / Horrie Miller Drive / Site Access

8.3 Traffic Impact Analysis

8.3.1 Main North Road/Kings Road/McIntyre Road Intersection

Table 8.3 presents a summary of the future operation of the existing intersection at the completion of the proposed development.

Table 8.3: Main North Rd/Kings Rd/McIntyre Rd Intsn. – Predicted PM Peak

Approach	Road Name	Movements	DOS	Average Delay (sec)	95 th Percentile Queue (Veh)	LOS
South	McIntyre Road	Left	0.942	90.3	16.0	F
		Through	0.918	69.5	31.4	E
		Right	1.190	257.5	32.8	F
East	Main North Road	Left	0.352	19.2	11.3	B
		Through	0.858	54.0	33.3	D
		Right	0.691	65.5	11.0	E
North	Kings Road	Left	0.287	23.3	4.8	C
		Through	1.052	101.5	35.2	F
		Right	1.174	243.0	44.7	F
West	Main North Road	Left	0.207	5.7	0.0	A
		Through	1.151	213.9	90.7	F
		Right	1.198	262.9	46.6	F
Overall			1.198	133.5	90.7	F

DOS – Degree of saturation, LOS – Level of Service

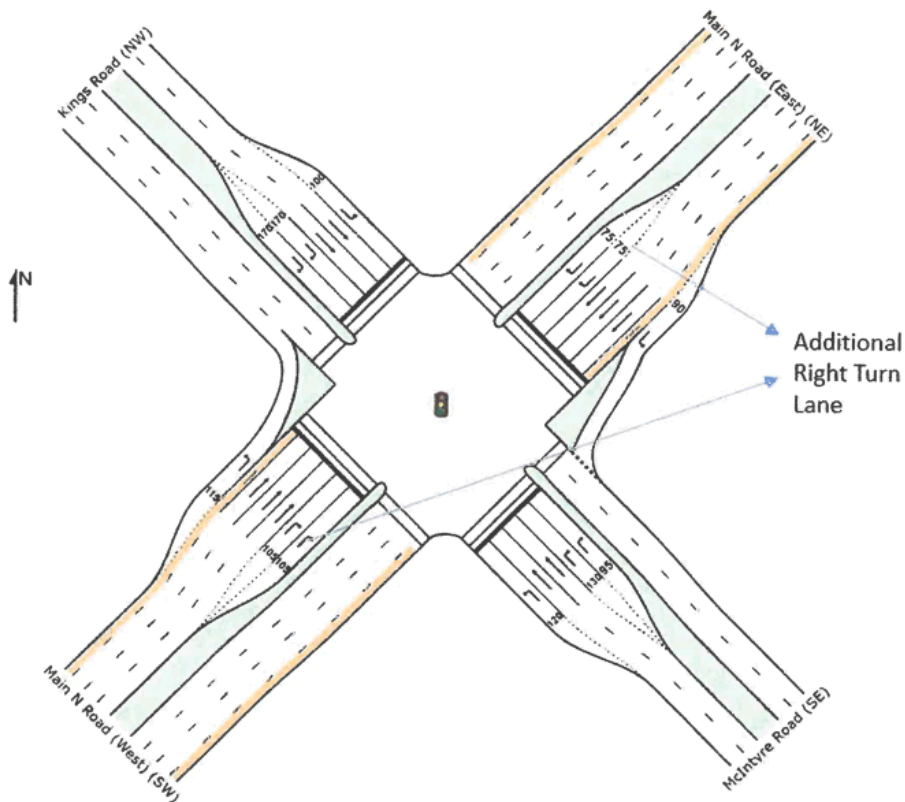
Table 8.3 demonstrates that the overall DOS will increase from an existing 1.133 to 1.198 at the completion of the proposed development. GTA notes the average delay increases from 125.6 seconds to 133.5 seconds while the 95th percentile queue increases from 78.8 metres to 90.7 metres.

GTA has completed an assessment of what would be required to 'hold' the intersection at pre-development conditions and the following was found:

- Provision of additional right turn lane from Main North Road to Kings Road
- Provision of additional right turn lane from Main North Road to McIntyre Road.

The identified upgrade option is shown in Figure 8.1.

Figure 8.1: Main North Rd/Kings Rd/McIntyre Rd Intsn – Upgrade Option



With the addition of the changes shown above, the intersection performance would reduce to better than pre-development conditions (DOS 1.067). Under these conditions, there will be a decrease in the average delay.

Given the minor impact of the proposed development on this intersection, it is proposed that no works be implemented until the whole site is developed and confirmed for land uses and associated traffic impacts. This proposal will be discussed with DPTI as part of consultation for the traffic impact of the proposed development.

8.3.2 Horrie Miller Drive / Kings Road / Site Access

GTA has assessed the impact that the proposed site access would have on the operation of the existing intersection of Horrie Miller Drive / Kings Road using SIDRA software. The assessment found that it would be possible to add a fourth leg to the intersection and maintain an appropriate level of operation in accordance with typical DPTI requirements.

Table 8.4 presents a summary of the future operation of the proposed intersection at the completion of the proposed development.

Table 8.4: Kings Rd/Horrie Miller Dr/New Access Rd Intsn – Predicted PM Peak

Approach	Road Name	Movements	DOS	Average Delay (sec)	95 th Percentile Queue (Veh)	LOS
East	Kings Road	Left	0.008	6.6	0.6	A
		Through	0.671	29.0	181.1	C
		Right	0.532	64.1	37.0	E
North	Access	Left	0.145	5.6	0.0	A
		Through	0.642	53.1	71.0	D
		Right	0.642	58.7	71.0	E
West	Kings Road	Left	0.192	5.6	0.0	A
		Through	0.882	42.7	275.8	D
		Right	0.824	71.2	58.1	E
South	Horrie Miller Drive	Left	0.243	16.0	41.4	B
		Through	0.589	54.4	53.7	D
		Right	0.589	60.0	53.7	E
Overall			0.882	35.6	275.8	D

Table 8.4 demonstrates that the overall DOS will increase from an existing 0.492 to 0.882 at the completion of the proposed development. The intersection will increase from a Level of Service of B to D, with an increase the 95th percentile queue and average delay. Notwithstanding, the intersection will continue to operate at a satisfactory level of service below the intersection's functional capacity.

The actual queue lengths on Kings Road will be subject to coordination of this intersection with the Main North Road intersection to the east. Good coordination would assist in reducing westbound queue lengths on Kings Road.

Given that changes are required to both intersections to achieve a Level of Service (LOS) to meet existing conditions, modelling will be deferred to consider the proposed development and future adjacent developmental traffic holistically.

9. Conclusion

9

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i The proposed development will include 27,915sq.m Gross Leasable Floor Area for a Mixed Use development comprising commercial, retail and leisure uses with access to and from Main North Road, Kings Road and Mengel Court and includes 1,332 parking spaces within the site.
- ii The proposed development generates a statutory parking requirement of 837 spaces. The proposed supply exceeds the requirement of the Salisbury Development Plan.
- iii The proposed parking layout is consistent with the dimensional requirements as set out in the Australian/New Zealand Standards for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009).
- iv The proposed provision of 21 disabled spaces will be consistent with the Building Code of Australia requirements and will be distributed around the car park adjacent key entrances of the various land uses.
- v The proposed development will provide 45 bicycle parking spaces located in public areas which will meet the requirements for visitor parking in the Salisbury Development Plan.
- vi The proposed loading arrangements will provide access for the various types of vehicles required for the retail, commercial and leisure uses.
- vii Analysis of the existing Main North Road, Kings Road and McIntyre Road intersection indicates it is operating over-capacity with a Degree of Saturation over 1.
- viii The site is expected to generate up to 1275 and 1652 vehicle movements during the weekday and weekend peak periods respectively.
- ix The proposed development will include a main access point on Main North Road with associated deceleration and acceleration facilities given the 80km/h speed limit on this section of Main North Road.
- x A new northern leg will be added to the Kings Road and Horrie Miller Drive intersection for access to the proposed development, and will maintain a suitable level of operation and minor impact to Kings Road.
- xi A review of the traffic impact of the proposed development on the Main North Road, Kings Road and McIntyre Road intersection indicates a minor increase in Degree of Saturation and associated queues/delays. Given the minor nature of the impact for the proposed development, no upgrades are recommended as part of this development.
- xii The traffic modelling provided in this report is based on preliminary analysis to guide the progress of the proposed development and will require further discussion with DPTI to confirm the identified traffic impacts and agreed arterial road infrastructure requirements.

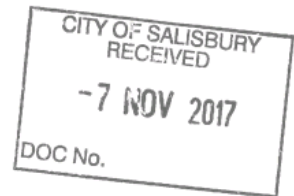
<p>Melbourne A Level 25, 55 Collins Street PO Box 24055 MELBOURNE VIC 3000 P +613 9851 9600 E melbourne@gta.com.au</p>	<p>Brisbane A Level 4, 283 Elizabeth Street BRISBANE QLD 4000 GPO Box 115 BRISBANE QLD 4001 P +617 3113 5000 E brisbane@gta.com.au</p>	<p>Adelaide A Suite 4, Level 1, 136 The Parade PO Box 3421 NORWOOD SA 5067 P +618 8334 3600 E adelaide@gta.com.au</p>	<p>Townsville A Level 1, 25 Sturt Street PO Box 1064 TOWNSVILLE QLD 4810 P +617 4722 2765 E townsville@gta.com.au</p>
<p>Sydney A Level 6, 15 Help Street CHATSWOOD NSW 2067 PO Box 5254 WEST CHATSWOOD NSW 1515 P +612 8448 1800 E sydney@gta.com.au</p>	<p>Canberra A Tower A, Level 5, 7 London Circuit Canberra ACT 2600 P +612 6243 4826 E canberra@gta.com.au</p>	<p>Gold Coast A Level 9, Corporate Centre 2 Box 37, 1 Corporate Court BUNDALL QLD 4217 P +617 5510 4800 F +617 5510 4814 E goldcoast@gta.com.au</p>	<p>Perth A Level 2, 5 Mill Street PERTH WA 6000 PO Box 7025, Cloisters Square PERTH WA 6850 P +618 6169 1000 E perth@gta.com.au</p>



Reference: #S114920

6 November 2017

Intro
L11, 44 Waymouth Street
ADELAIDE SA 5000



Attention: Mr. Anthony Gatti

Dear Anthony

RE: 361/1589/2017/1B – RESPONSE TO COUNCIL COMMENTS REGARDING TRAFFIC

I refer to the proposed development contained within 361/1589/2017/1B and comments received from City of Salisbury regarding traffic and parking matters.

This letter provides a response to those matters as follows:

i Creating A Low Speed Environment

The pedestrian crossings will be raised wombat crossings (refer Page 9 of TIA) which will provide effective speed control through this area, along with pedestrian priority for connectivity across the car park.

ii Internal Roadway Junction Adjacent Bulky Goods Tenancy 4

There is clear sight distance for the intended speed environment to facilitate safe access into and out of this access point for the southern car park area. This access point will have lower traffic volumes than to the other central access points due to destinations sought by customers on the site. The proposed low speed environment of the main circulating road will assist with a safe intersection operation at this location.

iii Design Of 'T-Junctions' At Roadway Connections

A raised median can be added to further delineate the junctions. The most appropriate treatment will be confirmed with the detailed design in the Building Rules Consent package.

iv Bus Stop 43

A bus stop layout has been prepared to relocate the stop in a more convenient location for access at the site. This will be part of the design to be agreed with Department for Planning, Transport and Infrastructure for the Land Management Agreement.

v Removal Of Two Car Parking Spaces

These spaces have been deleted.

vi Linemarking Required At Three-Way Intersection

The north-south road will be the priority, with give-way holding lines to be provided on the east-east approaches. The traffic controls will be confirmed with the Traffic Control Layout (as per point ix below).

VIC | NSW | QLD
ACT | SA | WA
Suite 4, Level 1,
136 The Parade
NORWOOD SA 5067
PO Box 3421
NORWOOD SA 5067
t// +618 8334 3600

www.gta.com.au



vii Turning Template Conflict

The diagram on Page 20 in the Transport Impact Assessment report indicates the parking layout required to enable delivery vehicles into the tenancy adjacent. The concept plans will be updated to reflect this layout.

viii Vehicle Movements Closed Off To Rear Of 'Bulky Goods 1'

These areas will maintain physical vehicle access for emergency services requirements. There will be signage and linemarking (as indicated by chevrons on the plans) to deter use by unauthorised vehicles.

ix Traffic Control Layout

A detailed traffic control layout will be developed once Development Consent has been provided, as part of the Building Rules Consent package. There are no issues which will impact the ability to provide a Traffic Control Layout for the site in accordance with the relevant standards, guidelines and code.

x Deliveries For Bulky Goods Tenancy 4

A loading dock has been provided adjoining the tenancy to suit delivery vehicles up to Medium Rigid Vehicle generally.

xi Final Design Of Access Points To Mengel Court

The intention for access to Mengel Court is shown on the plans with associated turn paths indicated in the Transport Impact Assessment report. The detailed design will confirm the driveway crossover specifications as part of the Building Rules Consent package.

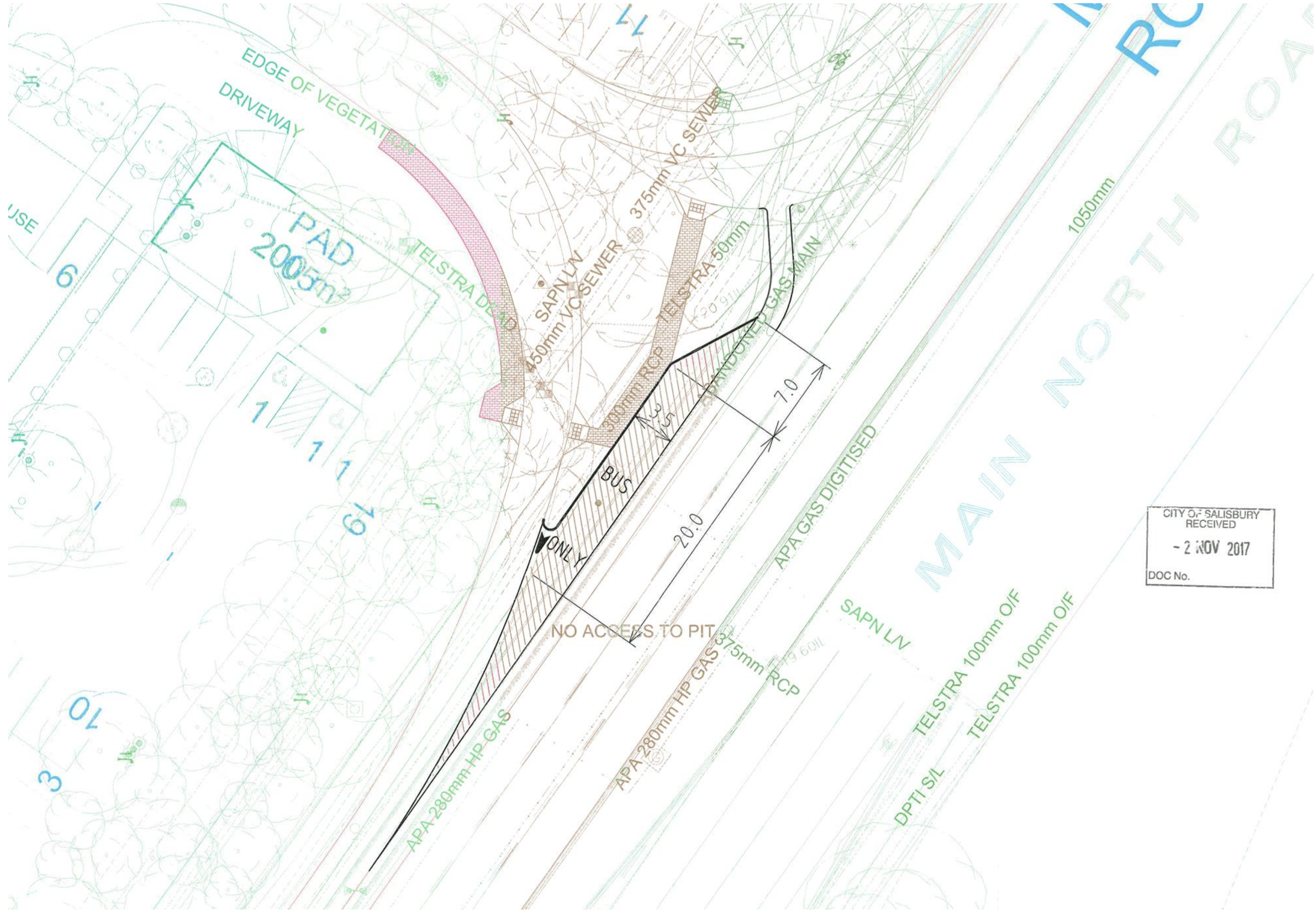
Naturally, should you have any questions or require any further information, please do not hesitate to contact me in our Adelaide office on (08) 8334 3600.

Yours sincerely

GTA CONSULTANTS

A handwritten signature in black ink, appearing to read "Paul Morris".

Paul Morris
Director



CITY OF SALISBURY
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- 2 NOV 2017
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Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



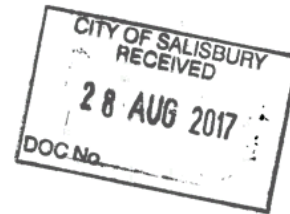
ADELAIDE | MOUNT GAMBIER

170 Greenhill Road Parkside SA 5063
 P 8172 1088 E enquiry@southfront.com.au
 ABN 96 007 344 191

Our Ref: 17033-2-C

24 August 2017

Nick Argyros
 Senior Project Manager
 GIC Kings Road Pty Ltd
 165 Grenfell Street
 ADELAIDE SA 5000



Dear Nick

Kings Junction – Site Based Stormwater Management Plan

Southfront have been commissioned by GIC Kings Road Pty Ltd to prepare a Site Based Stormwater Management Plan to support the Development Application for Kings Junction, a proposed 9.54 hectare commercial development located at the corner of Kings Road and Main North Road. This report documents the stormwater management opportunities for the proposed development in order that both flood protection and the sustainable management of stormwater (improved water quality and reuse) could be achieved.

Site Description and Existing Stormwater Drainage

The Kings Junction development is proposed to be located on a 9.54 hectare site at the corner of Main North Road and Kings Road, Salisbury South. The subject land is currently undeveloped and situated within the Dry Creek catchment. Detailed engineering survey shows that a majority of the subject land grades in a predominantly south-westerly direction towards Kings Road (red catchment), while a small portion of the subject land also grades in a north-westerly direction towards Mengel Court (green catchment), as highlighted in the Catchment Plan below.



Figure 1 Catchment Plan

Asset data provided by Council shows that an existing 1950mm diameter concrete pipe runs along Kings Road. This drain currently collects stormwater runoff from the subject land via a series of side entry pits on the northern side of Kings Road. Approximately 830 metres downstream of the subject land, this drain discharges into an open channel that runs along the northern and western boundaries of the Parafield Airport, from which stormwater runoff is directed into the Parafield Airport Managed Aquifer Recharge (MAR) scheme. Stormwater runoff from this catchment is ultimately discharged to Barker Inlet via the Dry Creek system.

Asset data shows that the existing stormwater drain in Mengel Court, at the northern extent of the subject land, is a concrete pipe that ranges in size from 375mm diameter to 600mm diameter. This is the upstream end of a drainage system which runs along Mengel Court and Rundle Road, before connecting to the existing 1950mm diameter concrete pipe in Kings Road.

The distribution system for stormwater that is harvested by the Parafield Airport MAR scheme currently services businesses to the north of the subject land (eg. Michell Wool), via a 225mm diameter rising main along Rundle Road (a distance of approximately 200 metres to the north-west of the subject land). Figure 2 shows Council's existing stormwater drainage system (blue lines) and MAR scheme distribution system (purple lines) in proximity to the subject land (yellow shaded area).



Figure 2 Existing Council Stormwater Infrastructure

Proposed Development

Kings Junction shall be a Mixed Use development comprising Retail, Bulky Goods, Entertainment and Leisure facilities. Other key features of the development include an internal roadway that bisects the site and provides access/egress to Kings Road and Main North Road, and carparking to service the various tenancies. The proposed site plan is included as an attachment and an excerpt is shown in Figure 3.

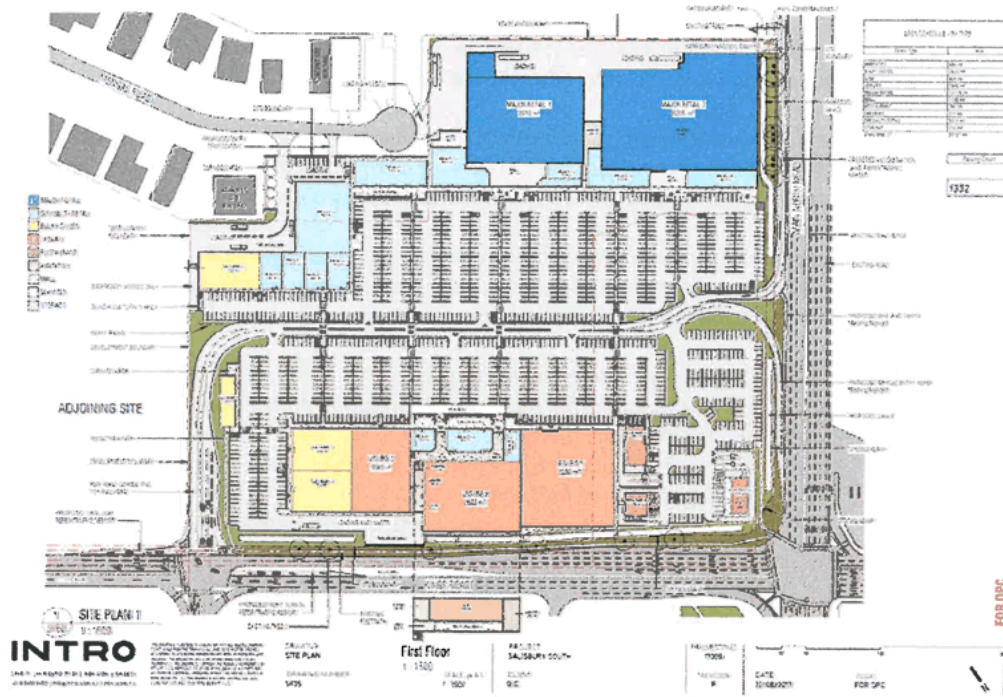


Figure 3 Excerpt of Proposed Site Plan

There are also two easements situated within the subject land along the eastern boundary of the site; a 6.04m wide easement to the Minister of Water Resources and a 4.57m wide sewer easement to SA Water. These easements continue along the southern boundary of the site however they are situated within the road reserve of Kings Road.

Council Requirements

The *General Section – Natural Resources - Water Sensitive Design* section of City of Salisbury's Development Plan (consolidated 15 December 2016) outlines a number of general requirements that are applicable to stormwater management for developments of this type. Summarised below is a sub-set of these requirements which highlight the need for the proposed stormwater management strategy to provide consideration of Flood Protection (Item 9), Pre and Post-development Peak Flow Generation (Item 11), Water Quality Improvement (Item 12) and the Beneficial Use of Stormwater (Item 14).

- 9 *Development should include stormwater management systems to protect it from damage during a minimum of a 1-in-100 year average return interval flood*
- 11 *Development should include stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure the carrying capacities of downstream systems are not overloaded*
- 12 *Development should include stormwater management systems to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system.*
- 14 *Stormwater management systems should:*
 - (a) maximise the potential for stormwater harvesting and re-use, either on-site or as close as practicable to the source*
 - (b) utilise, but not be limited to, one or more of the following harvesting methods:*
 - (i) the collection of roof water in tanks*
 - (ii) the discharge to open space, landscaping or garden areas, including strips adjacent to car parks*
 - (iii) the incorporation of detention and retention facilities*
 - (iv) aquifer recharge.*

The stormwater management strategy shall also have regard for the City of Salisbury's floodplain mapping of the Dry Creek Catchment and opportunities for integration with existing regional stormwater harvesting and reuse schemes.

Throughout the development of this stormwater management strategy Southfront has liaised with City of Salisbury staff to identify if there are any preferred methods to meet the aforementioned requirements for this development. A summary of these discussions and the resultant site-specific stormwater management requirements is included below:

- **Pre and Post-development Peak Flow Generation (Item 11)** - Shallow surface ponding in the carpark and swales shall be sufficient to meet Council's performance objectives relating to flow mitigation, and underground detention or large-scale basins will not be required for this development (pers. comm. Dameon Roy, Manager Technical Services, 11 July 2017). We understand that Council have provided this advice with consideration of the varying response times of the catchments that contribute flows to the existing 1950mm diameter drain in Kings Road, with a view to minimising the likelihood that the peak flow discharged from the subject land will coincide with the peak flow arriving at this location from the upstream catchment.
- **Water Quality Improvement (Item 12)** - Primary treatment of stormwater is required, in the form of an appropriate Gross Pollutant Trap, to ensure that stormwater discharges from the site are of an acceptable quality for input to the Parafield Airport MAR scheme (pers. comm. Bruce Naumann, Manager Salisbury Water, 30 June 2017). The development shall also incorporate,

where possible, swales and vegetated systems to provide additional treatment of stormwater (pre-lodgement meeting discussions, 28 July 2017).

- **Beneficial Use of Stormwater (Item 14)** – Due to the close proximity of the Parafield Airport MAR scheme, Council do not require the development to incorporate site-based stormwater harvesting and reuse measures such as rainwater tanks. There is an opportunity for the development to be a customer of Salisbury Water and be supplied with harvested stormwater to meet the non-potable water demands of the development at a nominal flowrate of 20-30L/s and retail cost of \$2.60/kL (pers. comm. Bruce Naumann, Manager Salisbury Water, 30 June 2017).

Flood Protection

Flows from External Catchments

Council have provided an excerpt from the 100 year Average Recurrence Interval (ARI) floodplain map of the catchment to inform the stormwater management strategy for the development (refer Figure 4).

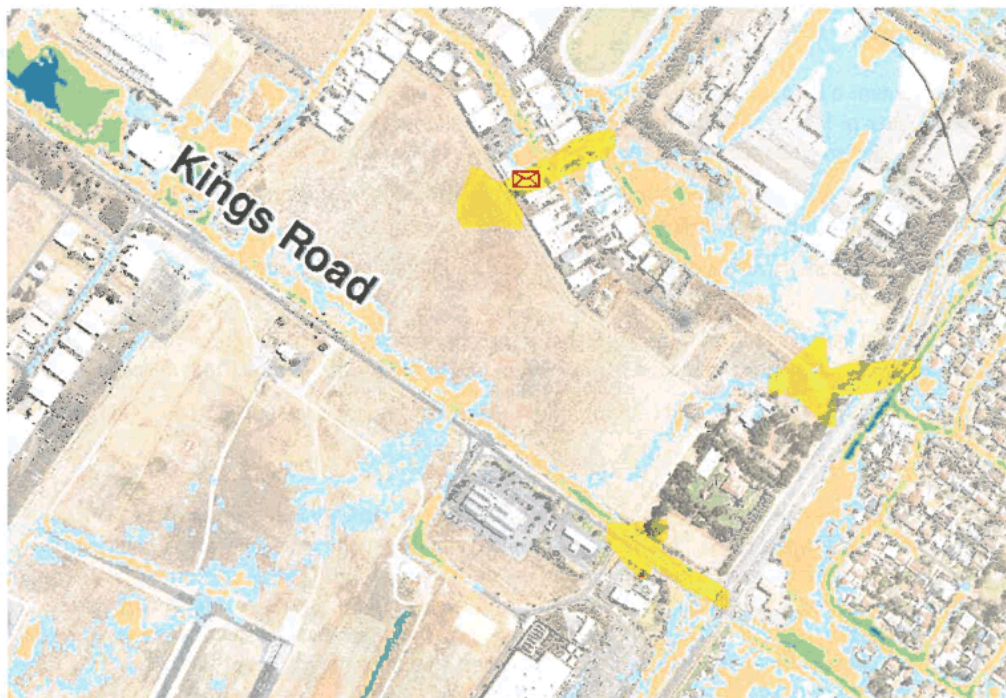


Figure 4 Excerpt of 100 Year ARI Floodplain Map

The floodplain map shows two existing flow paths that are relevant to the subject land (denoted by yellow arrows) as follows:

- Flows are shown to enter the subject land at the north-eastern corner and travel in a south-westerly direction through the site. It is recommended that a regional flow path be provided along the eastern and southern boundaries of the subject land, to enable these flows to safely bypass the new development. The regional flow path is proposed to be a swale that operates in conjunction with the overland flow capacity of the adjacent road reserve. Sections of the regional flow path will require underground culverts to safely convey flows beneath intersections and trafficable zones.

- Kings Road is shown to be a significant overland flow route, with flows encroaching on the southern portion of the subject land during a 100 year ARI event. The Finished Floor Level (FFL) of new buildings which abut Kings Road will need to provide adequate freeboard to the 100 year ARI flood level in Kings Road.

Additional information has also been sought from Council to confirm the 100 year ARI water surface elevation along Kings Road and the magnitude of flows currently shown to be entering the subject land. This additional information was not available at the time of writing this report.

Preliminary Assessment of Regional Flow Path Sizing

We have undertaken a high level assessment of the opportunities for the proposed regional flow path along the eastern and southern boundaries of the subject land. Our assessment is based on the assumption that the development will secure the consent of SA Water and the Minister of Water Resources to utilise their easements along the eastern boundary of the site to assist in the management of flows arriving at the site boundary from external catchments. Along the southern boundary of the subject land the proposed regional flow path is not proposed to encroach on the existing easements.

Our assessment has sought to determine a flow capacity that is practically achievable within a corridor width of 5 metres, and we have used the engineering survey of the subject land to provide preliminary design guidance for the regional flow path as follows:

- Swale to be constructed 'on-grade' such that it can drain dry. Survey indicates that a constant longitudinal grade of 0.33% is achievable.
- Proposed maximum swale depth of 0.75 metres, and a maximum headwater depth of 0.75 metres at the upstream end of culverts.
- Typical swale batter slopes to be 1V:5H, with the opportunity to incorporate vertical edge treatments (eg. gabions) of proposed maximum height 0.6 metres (subject to landscape design).
- Floor of swale to be vegetated with approved species of grasses and sedges to provide filtration of low flows.

Based on these assumptions we estimate that a nominal flow capacity in the order of 1 – 2 m³/s could be achieved by the regional flow path. The final alignment and configuration of the regional flow path shall be subject to refinement during the design phase, with consideration of the overland flow capacity of the adjacent road reserves and the 100 year ARI flows to be confirmed by Council. SA Water's specific requirements for protecting and accessing their existing sewer main (understood to be approximately 4 metres deep) will also be addressed during the design phase.

Preliminary Assessment of Finished Floor Levels

We recommend that the Finished Floor Level of new buildings be sited a minimum of 300mm above adjacent 100 year ARI flood levels.

Pending Council's confirmation of the 100 year ARI water surface elevation along Kings Road we have assessed the excerpt from Council's 100 year ARI floodplain map against the engineering survey of the subject land. Based on the extent of inundation shown across the southern portion of the subject land that fronts Kings Road, we would estimate that the existing 100 year ARI flood level is approximately 20.2 mAHD (refer Figure 5). Therefore we would recommend that new buildings which abut Kings Road have a minimum FFL of 20.5 mAHD, or be 300mm higher than the peak 100 year ARI flood level in the proposed bypass drain along the southern boundary (whichever is higher).



Figure 5 Estimated 100 Year ARI Flood Level along Kings Road Development Frontage

We also recommend that new buildings which abut Main North Road be required to provide 300mm freeboard to the peak 100 year ARI flood level in the proposed regional flow path along the eastern boundary. We have provided preliminary design levels for the top of the proposed swale (refer Figure 6) and these values have been used by Intro to assign preliminary floor levels for new buildings as shown on the architectural drawing set.

These preliminary floor levels assume that the swale is flowing full during a 100 year ARI event. We note that there may be an opportunity to refine these preliminary floor levels, subject to the final design of the regional flow path as discussed in the previous section of this report.

New buildings that abut the cul de sac in Mengel Court shall be sited a minimum of 300mm above the adjacent top of kerb level. As a general rule, all new buildings within the site shall also be required to provide 300mm freeboard to the 100 year ARI flood level in the proposed carpark (this will be influenced by the design of the site's internal drainage system and carpark).

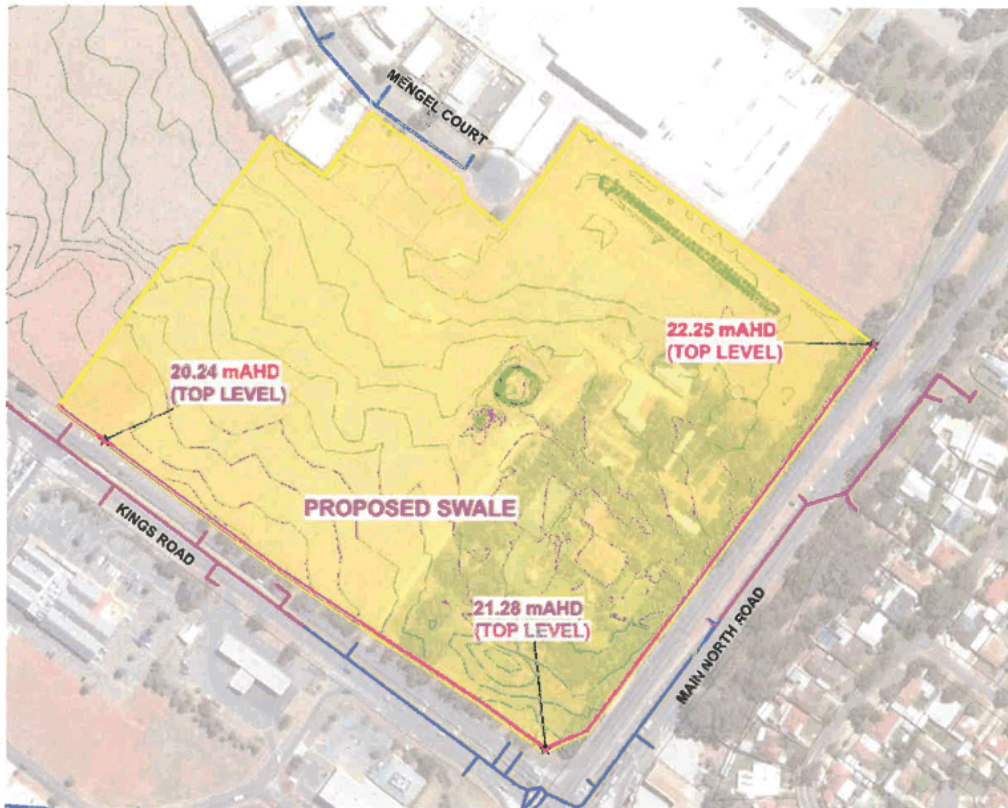


Figure 6 Preliminary Top of Swale Levels

Pre and Post-development Peak Flow Generation

DRAINS Modelling

The DRAINS computer modelling software is an industry standard tool used for the hydrological and hydraulic analysis of stormwater drainage systems. DRAINS models were compiled for both the pre-development and post-development scenarios to allow for comparison of flows.

The ILSAX hydrology option was used within DRAINS, and modelling parameters were selected in accordance with those recommended for greenfields development in “Part 5 Section 6.0 Hydrology” of the Department of Planning Transport and Infrastructure’s “Stormwater Design - DD 300” guidelines, as summarised in Table 1 and Table 2.

Table 1 Hydrological Modelling Parameters – Depression Storages

Land Use	Depression Storages (mm)	
	Pre-development	Post-development
Paved	1	1
Supplementary Paved	1	1
Grassed	10	5

Table 2 Hydrological Modelling Parameters – Impervious Fractions

Land Use	Fractions (%)	
	Pre-development	Post-development
Paved	2	90
Supplementary Paved	0	0
Grassed	98	10

A soil type of 4 (representative of clay soils) and an Antecedent Moisture Condition (AMC) of 2.5 were assumed.

Intensity Frequency Duration (IFD) data was prepared for Salisbury South utilising the tool provided by the Bureau of Meteorology for the preparation of Australian Rainfall and Runoff (ARR) 2016 design rainfalls. Both major and minor rainfall events were considered as follows:

- Major = 1% Annual Exceedance Probability (AEP). This rainfall event has a 1% probability of occurring or being exceeded within any given year, and is also commonly referred to as the 100 year Average Recurrence Interval (ARI) event.
- Minor = 0.2 Events per Year (EY). This rainfall event is likely to occur or be exceeded 0.2 times within any given year, and is also commonly referred to as the 5 year Average Recurrence Interval (ARI) event.

The DRAINS models were executed to determine the peak flow discharged from the subject land in the minor and major rainfall events, under both pre-development and post-development conditions.

Table 3 Peak Flow Estimation

Rainfall Event	Flow (m ³ /s)	
	Pre-development	Post-development
Minor (0.2 EY)	0.166	1.06
Major (1% AEP)	1.07	2.47

Based on the Catchment Plan shown in Figure 1, the pre-development 'minor' and 'major' flows to Mengel Court are estimated to be 0.017 m³/s and 0.107 m³/s respectively.

Concept Stormwater Drainage Plan

An indicative layout has been prepared for the proposed underground drainage system that will service the new development (refer attached Concept Stormwater Drainage Plan). This layout assumes that the internal roadway and carpark surfaces of the development will grade in a predominantly south-westerly direction, facilitating a gravity drainage system with a single connection to the existing drain in Kings Road (a 1950mm diameter RCP). The catchment that will be serviced by this drainage system includes a majority of the subject land (approximately 8.5 hectares).

Preliminary sizing of the proposed underground drainage system has also been undertaken using the DRAINS model, to achieve a 0.2 EY (5 year ARI) performance standard. The drain sizing assumes that the Hydraulic Grade Line (HGL) at the connection to the existing Kings Road drain is a constant 19 mAHD (ie. assumed top of pipe level) during the course of the 0.2 EY rainfall event. The internal roadway and carpark shall be designed to safely convey major flows to the discharge point at the south-western corner of the subject land, such that the combined capacity of the underground and overland flow route achieves a 1% AEP (100 year ARI) performance standard.

A comparatively small catchment at the south-eastern corner of the subject land (approximately 1 hectare), comprising pad sites and associated carparking, shall discharge to the proposed swale along the southern boundary of the site.

Design Development

We expect that the drainage layout will evolve during the design phase; in particular there will be a need for additional pits and lateral drains that feed into the trunk system, and this will be guided by the grading of the internal roads and carparks. Roof drainage has not been shown, however the indicative layout has been aligned to provide a stormwater connection in relatively close proximity to each building.

Subject to the civil design it may only be feasible for the loading bays and carparks at the northern extents of the subject land to gravity drain to Mengel Court. Should this prove to be the case we recommend that the peak post-development discharge to Mengel Court be limited to less than or equal to the peak pre-development discharge of 0.017 m³/s in the 0.2 EY (5 year ARI) and 0.107 m³/s in the 1% AEP (100 year ARI) rainfall events.

The regional flow path shall include a culvert beneath the new entrance road at the south-western corner of the subject land, in order to prevent floodwaters from being impeded from travelling along the existing overland flow route of Kings Road.

Water Quality Improvement

MUSIC Modelling

The MUSIC (Model for Urban Stormwater Improvement Conceptualisation) computer software package developed by the Cooperative Research Centre for Catchment Hydrology can be used to simulate the quantity and quality of runoff from stormwater catchments, and predict the performance of stormwater quality management systems.

The MUSIC model requires user defined meteorological and catchment data to estimate the quantity and quality of stormwater runoff for a given catchment, as described below:

- The meteorological data templates used for this project were compiled using average monthly potential evapo-transpiration (PET) values for Adelaide, and 6 minute rainfall data from a gauge at Parafield Airport (No. 23013) for the years 2004-05. The average annual rainfall for this period was 442mm, compared to an overall average of 452mm for the period 1929-2017.
- MUSIC's default pollutant load parameters have been adopted for Gross Pollutants (GP), Total Suspended Solids (TSS), Total Nitrogen (TN) and Total Phosphorus (TP).
- The 'effective impervious' fractions adopted in MUSIC correspond to the directly connected impervious fraction of the development (90%).
- A 'rainfall threshold' of 1mm was adopted for the impervious areas (commonly referred to as the initial loss), which is consistent with the industry standard approach to hydrological modelling of urban catchments.
- A 'soil storage capacity' of 40mm and 'field capacity' of 30mm have been adopted for the pervious areas, which is consistent with MUSIC's recommended values for the Adelaide region.

A MUSIC model was compiled for the post-development scenario using the input parameters described above, and the default rates for pollutant generation on commercial sites. The average annual pollutant loads estimated to be generated by each catchment are shown in Table 4.

Table 4 MUSIC Modelling Results – Pollutant Load Estimates

Pollutant	Units	Pollutant Load by Catchment	
		To Kings Road Drain	To Swale
Flow	ML/yr	29.1	3.07
Total Suspended Solids (TSS)	kg/yr	3,600	567
Total Phosphorus (TP)	kg/yr	7.22	0.894
Total Nitrogen (TN)	kg/yr	63.5	6.71
Gross Pollutants (GP)	kg/yr	1,210	128

Gross Pollutant Traps

Proprietary Gross Pollutant Trap (GPT) devices are proposed to be installed at two locations:

- At the south-western corner of the site, upstream of the connection of the new underground drainage system to the existing Kings Road drain.
- At the south-eastern corner of the site, prior to discharge of flows to the proposed swale.

Based on the annual pollutant loads reported by MUSIC, and assuming volumetric conversion rates of 1,800 kg/m³ for Total Suspended Solids (TSS) and 250 kg/m³ for Gross Pollutants (GP), an estimate of the annual volumetric load of solid pollutants passing through each GPT is shown in Table 5.

Table 5 Annual Load of Solid Pollutants

Pollutant	Annual Volumetric Load (m ³ /yr)	
	South-western GPT	South-eastern GPT
Total Suspended Solids (TSS)	2.00	0.32
Gross Pollutants (GP)	4.84	0.51
Total	6.94	0.83

The make and model of the GPTs shall be selected during the design phase, and the pollutant holding chambers shall be sized to achieve a quarterly or bi-annual cleaning frequency.

The GPTs shall be designed to treat flows up to 50% of the 1 EY rainfall event (ie. an approximation of the traditional 3 month ARI event). Therefore the Treatable Flow Rates (TFR) shall be as follows:

- South-western GPT = 0.277 m³/s
- South-eastern GPT = 0.032 m³/s

The pollutant removal performance predicted by MUSIC is sensitive to the user defined efficiency of proprietary GPTs. Based on a review of available literature and MUSIC modelling guidelines the pollutant removal efficiencies stated in Table 6 for the Humegard device were adopted.

Table 6 Proprietary GPT Pollutant Removal Efficiency

Pollutant	Annual Pollutant Removal Efficiency (% Reduction)	
	CDS ¹	Humegard ²
Total Suspended Solids (TSS)	65	50
Total Phosphorus (TP)	21	20
Total Nitrogen (TN) ³	-	-
Gross Pollutants (GP)	98	85

¹ Based on research by the Cooperative Research Centre for Catchment Hydrology

² Recommended for use in MUSIC by Humes Water Solutions based on research by the Swinburne University of Technology

³ The removal efficiency for Total Nitrogen has been downgraded to zero on the basis that the available test results are highly erratic

Vegetated Treatment Systems

Vegetated treatment systems shall also be incorporated with the civil and landscape design of the development. The proposed swale along the eastern and southern boundaries shall be vegetated. For the purposes of the MUSIC model it has been conservatively assumed that half the length of the regional flow path will be a vegetated swale, with properties as described in Table 7.

Table 7 Vegetated Swale Properties

Parameter	Units	Value
Bed Slope	%	0.33
Floor Width	m	1
Vegetation Height	m	0.25
Exfiltration Rate	mm/hr	3

The design of the internal roadway and carpark may incorporate passive irrigation of street trees, by installing kerb breaks and/or drainage pits with sub-surface soakage systems to tree root zones.

Water Quality Improvement Performance

A MUSIC model was compiled for the post-development scenario to include the proposed water quality improvement measures, and the overall performance of the proposed stormwater treatment train is shown in Table 8.

Table 8 MUSIC Modelling Results – Treatment Train Performance

Pollutant	Units	Pollutant Load		
		Source	Residual	% Reduction
Flow	ML/yr	32.2	31.2	3
Total Suspended Solids (TSS)	kg/yr	4,167	2,070	50
Total Phosphorus (TP)	kg/yr	8.11	6.09	25
Total Nitrogen (TN)	kg/yr	70.2	67.2	4
Gross Pollutants (GP)	kg/yr	1,338	209	84

Beneficial Use of Stormwater

In addition to the use of stormwater runoff for passive irrigation of landscaped areas as described above, there is an opportunity for the existing rising main to be extended from the intersection of Rundle Road and Mengel Court to the north-western corner of the subject land (a distance of

approximately 200 metres), to provide harvested stormwater to meet the non-potable water demands of the development. This opportunity would be subject to a cost-benefit analysis by GIC Australia and does not form part of the Development Application process.

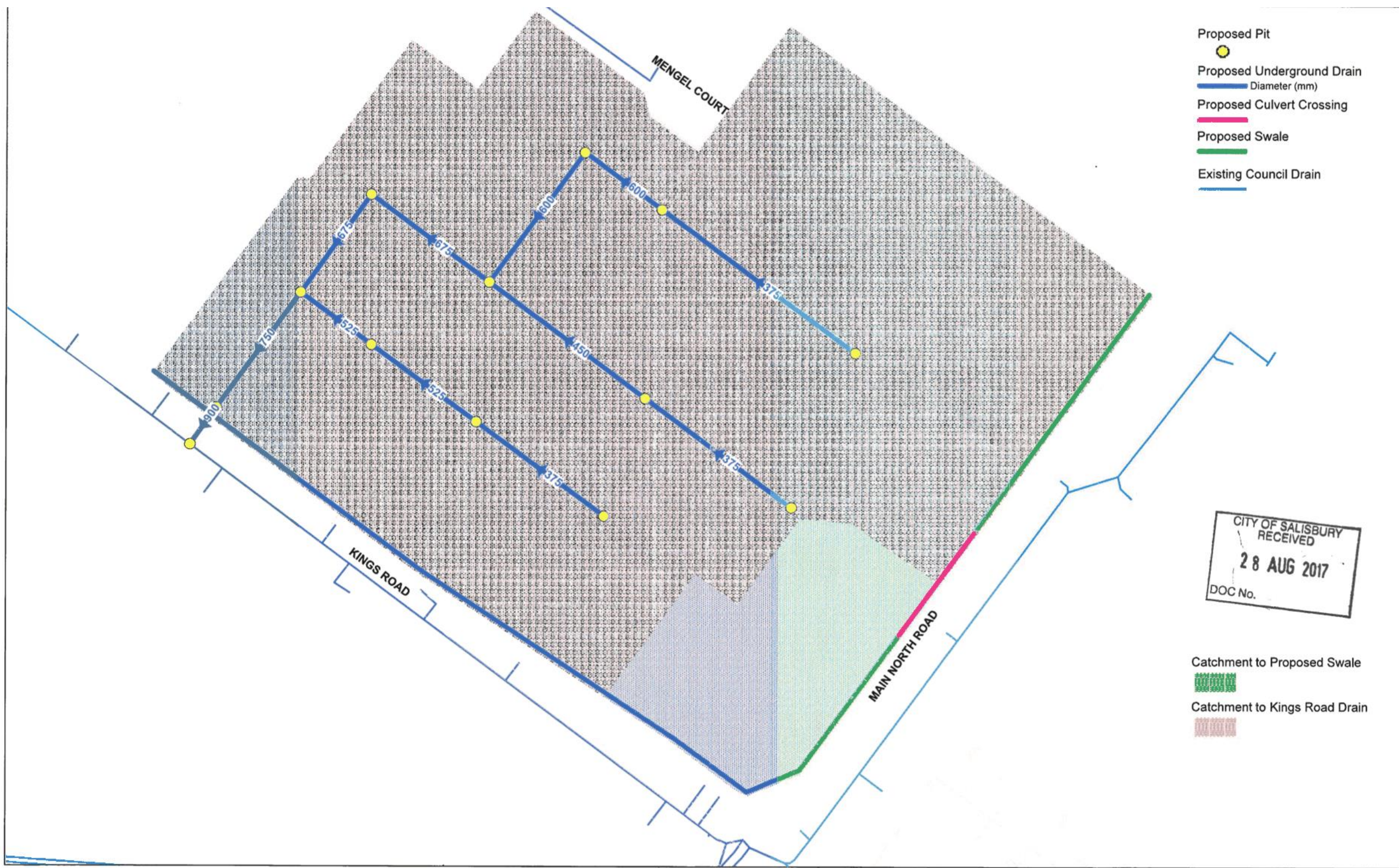
Please do not hesitate to call if you require any further information regarding the above.

Yours sincerely



Brett Shuttleworth
Senior Engineer – WSUD & Project Delivery

Enc: Proposed Site Plan
Concept Stormwater Drainage Plan



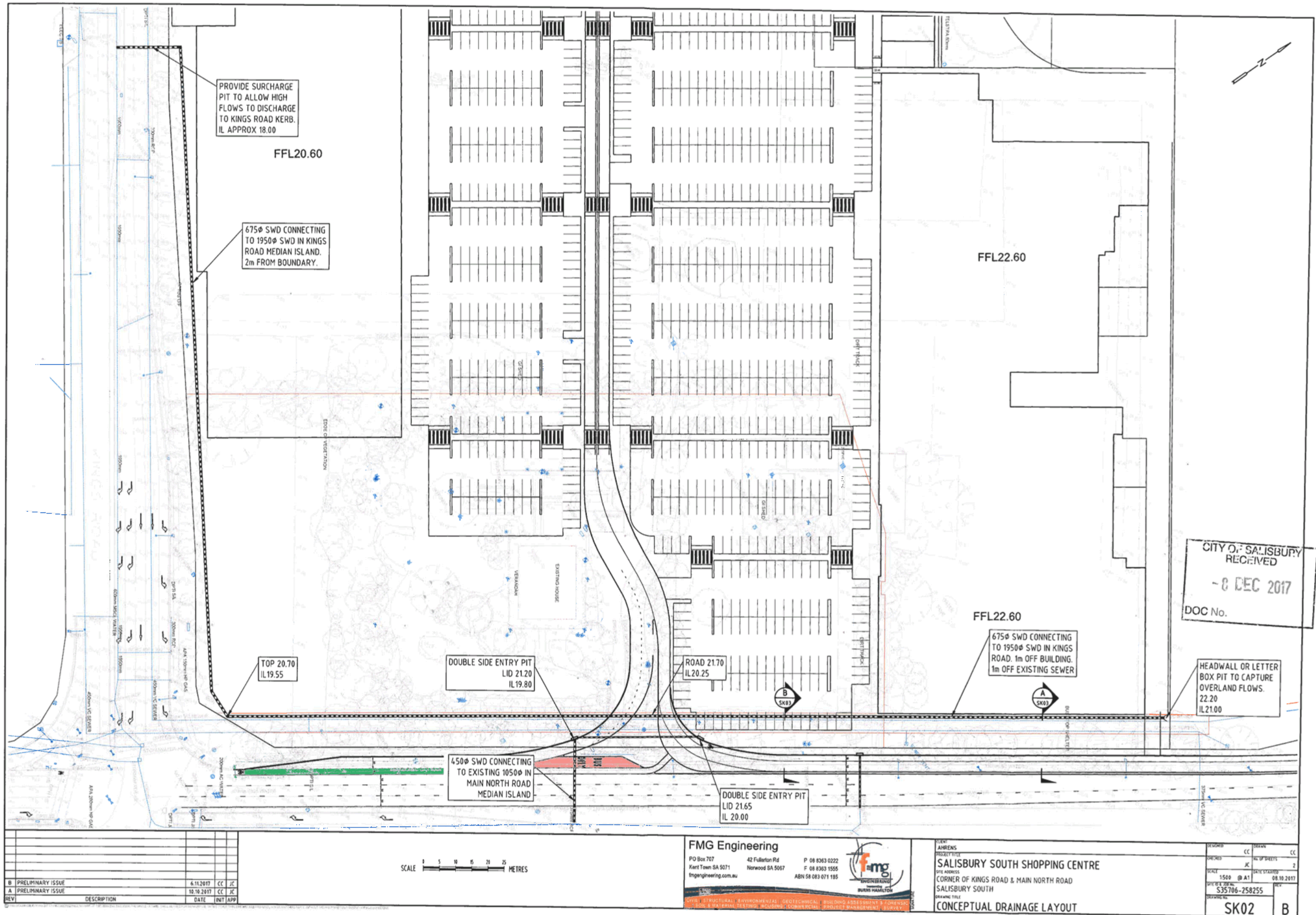
Copyright Southfront 2017

Data Sources:
 GIC Kings Road Pty Ltd
 Southfront
 City of Salisbury



Notes:
 The proposed underground trunk drainage system has been sized to cater for a 5 year Average Recurrence Interval (0.2 events per year) performance standard. The proposed layout represents one option only, and may be subject to change during detailed design.
 The full extent of lateral drainage systems to service the carpark and internal roadways has not been shown (subject to detailed design).
 Roof drainage systems have not been shown.
 On-site detention not required based on advice from City of Salisbury.

Kings Junction, Salisbury South
 Concept Stormwater Drainage Plan
 24 August 2017



CITY OF SALISBURY
RECEIVED
- 8 DEC 2017
DOC No.

HEADWALL OR LETTER
BOX PIT TO CAPTURE
OVERLAND FLOWS.
22.20
IL 21.00

675Ø SWD CONNECTING
TO 1950Ø SWD IN KINGS
ROAD. 1m OFF BUILDING.
1m OFF EXISTING SEWER

DOUBLE SIDE ENTRY PIT
LID 21.65
IL 20.00

DOUBLE SIDE ENTRY PIT
LID 21.20
IL 19.80

450Ø SWD CONNECTING
TO EXISTING 1050Ø IN
MAIN NORTH ROAD
MEDIAN ISLAND

TOP 20.70
IL 19.55

PROVIDE SURCHARGE
PIT TO ALLOW HIGH
FLOWS TO DISCHARGE
TO KINGS ROAD KERB.
IL APPROX 18.00

675Ø SWD CONNECTING
TO 1950Ø SWD IN KINGS
ROAD MEDIAN ISLAND.
2m FROM BOUNDARY.

FFL20.60

FFL22.60

FFL22.60

FMG Engineering
PO Box 707 42 Fullerton Rd P 08 8363 0222
Kent Town SA 5071 Norwood SA 5007 F 08 8363 1555
fmgeengineering.com.au ABN 58 083 071 185



CLIENT: ANDREWS
PROJECT: SALISBURY SOUTH SHOPPING CENTRE
SITE ADDRESS: CORNER OF KINGS ROAD & MAIN NORTH ROAD
SALISBURY SOUTH

DESIGNED	CC	DRAWN	CC
CHECKED	JK	NO. OF SHEETS	2
SCALE	1:500 @ A1	DATE STARTED	08.10.2017
CLIENT'S JOB NO.	535706-258255	REV	

REV	DESCRIPTION	DATE	INT	APP
B	PRELIMINARY ISSUE	6.11.2017	CC	JC
A	PRELIMINARY ISSUE	18.10.2017	CC	JC

SCALE 1:500 METRES

CONCEPTUAL DRAINAGE LAYOUT

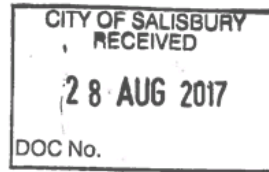
SK02 B



KINGS JUNCTION SHOPPING CENTRE DEVELOPMENT

Project No: LCE13136

Sustainability Report



August 2017



KINGS JUNCTION SHOPPING CENTRE

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KINGS JUNCTION SHOPPING CENTRE

1 EXECUTIVE SUMMARY

This report provides an overview of the sustainability initiatives proposed for the Kings Junction Shopping Centre development.

The proposed development consists of multiple tenancies ranging from major food and retail outlets, variety stores, food outlets, entertainment precinct and leisure facilities. The proposed tenancies range from 200m² to approximately 6200m².

The following initiatives are proposed: -

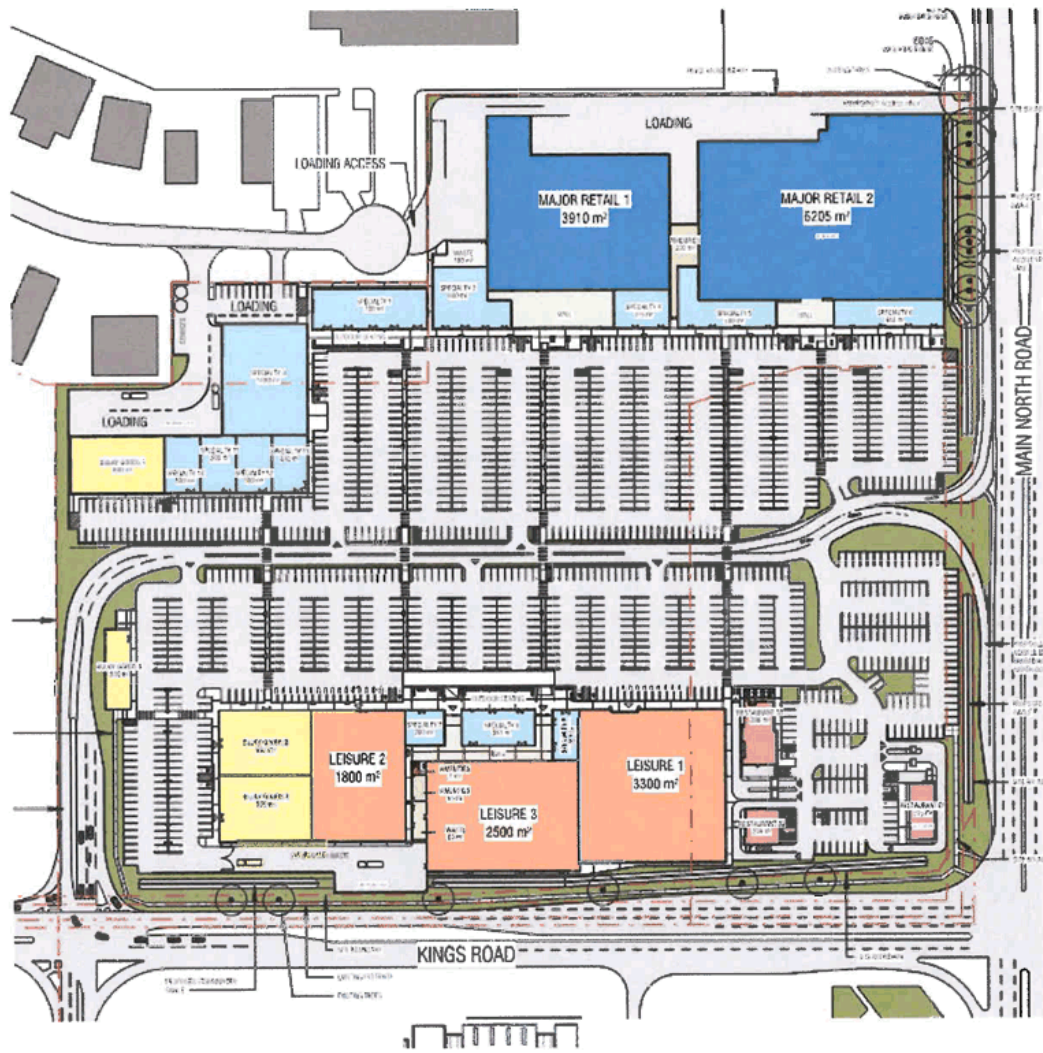
- PASSIVE DESIGN FEATURES**
 - High performance building envelope; wall and roof insulation to meet best practice guidelines.
 - High performance glazing with improved solar control where required to minimise solar heat gains in summer and mid-season.
- ENERGY**
 - High efficiency air-conditioning units.
 - Economy cycle to all air-conditioning units to minimise requirement for cooling when ambient conditions are suitable.
 - LED lighting throughout.
 - Lighting in common areas controlled via time schedule to reduce energy consumption.
 - Motion sensors to control lighting in transient spaces such as amenities.
 - External lighting controlled by time schedule and daylight sensors.
- DOMESTIC WATER**
 - Water-efficient fittings and fixtures.
- SALISBURY WATER**
 - Irrigation and toilet flushing system, subject to feasibility of supply via council system
- INDOOR ENVIRONMENT QUALITY**
 - Paints with a low volatile organic compound (VOC) content.
 - High daylight levels provided in all common corridors.
 - Exhaust ventilation systems complying with AS1668.2-2012.
- TRANSPORT**
 - Good access to public transport.
 - Bicycle racks provided to encourage carbon free means of transport.

KINGS JUNCTION SHOPPING CENTRE

2 INTRODUCTION

2.1 PROJECT OVERVIEW

The proposed development consists of multiple tenancies ranging from major food and retail outlets, variety stores, food outlets, entertainment precinct and leisure facilities. The proposed tenancies range from 200m² to approximately 6200m² and are located on the southern and northern sides of the site.



Site plan showing the proposed Shopping Centre development

This report outlines the sustainability initiatives that are proposed for the development in order to minimise depletion of natural resources including water and fossil fuel energy sources.

KINGS JUNCTION SHOPPING CENTRE

3 ENERGY**3.1 Passive design features**

Passive design features provide improved indoor environment quality, improved thermal comfort, reduced demand for mechanical air conditioning and benefits throughout the life of the building.

High performance insulation

High performance insulation (wall and roof insulation) will be provided and will exceed the National Construction Code Volume One requirements.

High performance glazing

It is proposed that high performance single glazing is installed with low-E solar control where required to reduce the solar heat gains in summer and mid-season. The glazing selection will be confirmed during the detailed design and documentation phase of this project.

3.2 Energy efficiency

The following energy efficiency initiatives are proposed to complement the passive design features:-

- High efficiency air-conditioning units.
- Economy cycle to all air-conditioning units to minimise requirement for cooling when ambient conditions are suitable.
- LED lighting throughout.
- Lighting in common areas controlled via time schedule to reduce energy consumption.
- Motion sensors to control lighting in transient spaces such as amenities.
- External lighting controlled by time schedule and daylight sensor.

4 WATER**4.1 Low flow fittings & fixtures**

Provision of low-flow fittings and fixtures including taps and water closets with high water efficiency ratings (Water Efficiency Labelling and Standards ratings) can significantly reduce the development's potable water consumption. The Water Efficiency Labelling and Standards (WELS) scheme provides a verified measure of performance.

The following WELS ratings are proposed:

- Taps with a WELS rating of not less than 5 Stars (6 L/min)
- Water closets with a WELS rating of not less than 3 Stars (4.0 L/flush, dual flush)

Taps with a 5 star rating reduce water consumption by approximately 30% compared to standard taps with a flow rate of 9 L/min.

Water closets with a 3 star rating reduce water consumption by approximately 50% compared to water closets with a 8 litre flush.

4.2 Salisbury Recycled Water

Salisbury Recycled Water is proposed to be utilized in the project for the toilet flushing and garden irrigation for the project. The use of the water is subject to the extension by the Council of the existing main down Mengel Court to the property boundary and is subject to the feasibility of the extension and internal work.

KINGS JUNCTION SHOPPING CENTRE

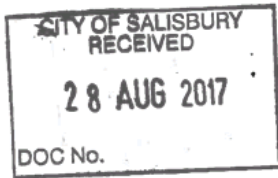
5 INDOOR ENVIRONMENT QUALITY

The following initiatives are proposed:-

- Paints to have a low volatile organic compound (VOC) content to minimise the extent of chemical compounds in the indoor environment.
- Exhaust systems will be designed in accordance with Best Practice guidelines and will comply with Australian Standards 1668.2-2012.
- High daylight levels will be provided in all common corridors via translucent roof sheets or sky lights.
- Exhaust will be discharged at roof level to ensure contaminants from sources such as waste storage facilities, commercial kitchens and amenities do not enter the building.

6 TRANSPORT

In addition to the availability of public transport within close proximity, bicycle racks will be provided to encourage carbon free means of transport.



MEMORANDUM

To: GIC Australia
 Attention: George Economou Pages: Page 1 of 10
 From: Andrew Shinnick Reference: LCE13136-003a
 Project: King Junction Shopping Centre
 Date: 23 August 2017
 Subject: Town Planning Authority Services Infrastructure Report

Lucid Consulting have been engaged by GIC Australia to carry out an investigation of existing authority infrastructure surrounding the proposed development at King Junction Salisbury South locate at the corner of Kings Road and Main North Road Salisbury:

Scope of Work

- Identification and approximate location of existing infrastructure relative to site requirements.
- Identification of existing titles and associated issues.

Information contained within this report has been sourced from the following locations:

- Dial Before You Dig (DBYD) information (29 July 2017).
- Project drawings August 2017.

Our understanding of the proposed shopping complex is summarized below:

Building Elements	Project Details
Council	City of Salisbury
Classification	Mixture of 6 and 9B
Retail / Commercial Tenancies	Mixed
Site Area	96,500m ² (app)
Building GFA	30,145m ²
Carparking	1332

AUTHORITY SERVICES INFRASTRUCTURE INVESTIGATION
MEMORANDUM



Retail / Commercial Tenancies GFA	89.5m ²
Sewer / Water Authority	SA Water Corporation
Power Authority	SA Power Networks
Telecommunications	Telstra / NBN
Natural Gas	APA Group
Fire Brigade	SA Metropolitan Fire Service
Easements	Title plans as provided by TTT

HYDRAULIC SERVICES

WATER SUPPLY

Existing Services

- The existing site is bounded by SA Water Corporation (SAWC) authority water mains on Mengel Court, Kings Road and Main North Road.
 - Mengel Court is serviced by a single 150mm Ductile Iron Concrete Lined (DACL) water main.
 - Kings Road is serviced by two water mains, a 600mm Mild Steel Cement Lined (MSCL) and a 150mm Cast Iron Concrete Lined (CICL) water main
 - Main North Road is serviced by two water mains, a 300mm Asbestos Cement (AC) and a 200mm Cast Iron (CICS) (see Figure 1 for reference).
- Multiple water meters will be able to be provided based on the specific requirements for each title.
- SA Water will be required to undertake an infrastructure network evaluation to confirm the feasibility of the proposed plan.

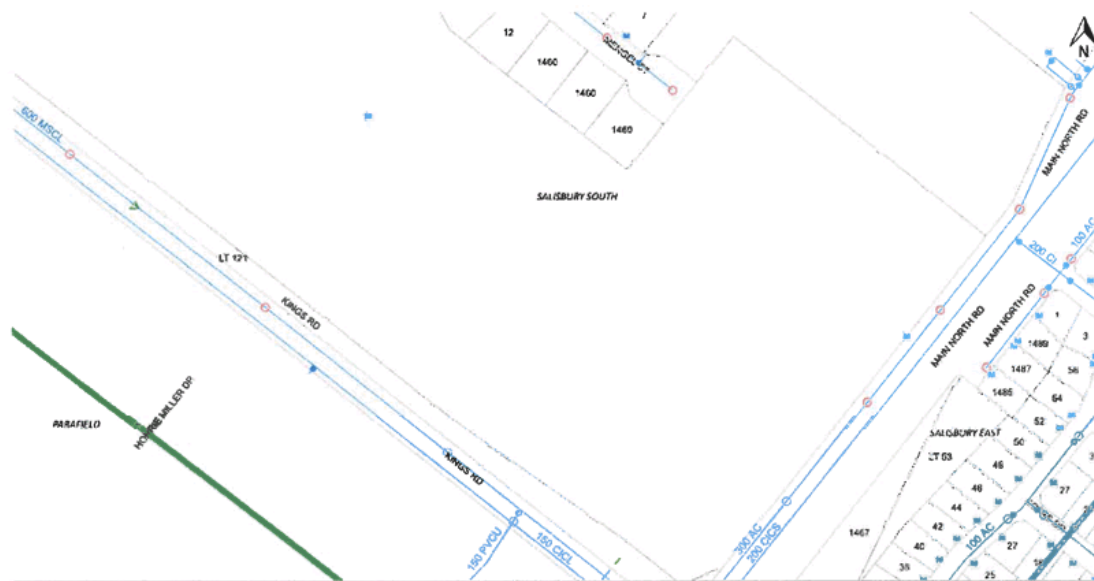


Figure 1: SA Water Corporation Water Mains

Recycled Water Supply

- City of Salisbury Council has a recycled or as it is called a Re-water main located on Rundle Road, this system supplies the nearby Rundle Park. The actual size and capacity of the system is yet to be confirmed by the City of Salisbury Council along with the feasibility of the Council extending the system to the site boundary.
- Based on the feasibility of the proposed Council extension of the system it is proposed to extend this Re-water main along Mengel Court approximately 200m to supply non-potable water to the northern area of the site to supply irrigation system and toilet flushing systems.



Figure 2: City of Salisbury Council Rewater Mains (Purple)

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Proposed Fire Water Supply

- Based upon the areas of the building footprints, we estimate the required water flow for fire services to be in the order of 30 L/sec for hydrant outlets and 20-30L second for sprinklers. As per the hydraulic services report the water mains are as follows.
 - Mengel Court is serviced by a single 150mm Ductile Iron Concrete Lined (DACL) water main.
 - Kings Road is serviced by two water mains, a 600mm Mild Steel Cement Lined (MSCL) and a 150mm Cast Iron Concrete Lined (CICL) water main.
 - Main North Road is serviced by two water mains, a 300mm Asbestos Cement (AC) and a 200mm Cast Iron (CICS) (see Figure 1 for reference).
- It is anticipated the above fire water demand will not be satisfied by the SA Water infrastructure (pending SA Water flow test results) as such may require on-site fire water storage tanks and pumps to supplement the water supply.
- The minimum connection size to authority water mains required for a combined sprinkler-hydrant system is 150mm. It is proposed to provide the building with a 150mm fire services connection off North East Road and Kings Road water mains.
- The South Australian Metropolitan Fire Services (SAMFS) requires the booster assembly to be located in the frontage of a road fully accessible for the fire appliance. We envisage the booster assembly to be installed either facing to road entry points off North east road or Kings Road . The estimated approximate size of the booster assembly enclosure based on previous experiences with buildings of similar size is 2.5m wide x 1.8m height x 0.8m deep.

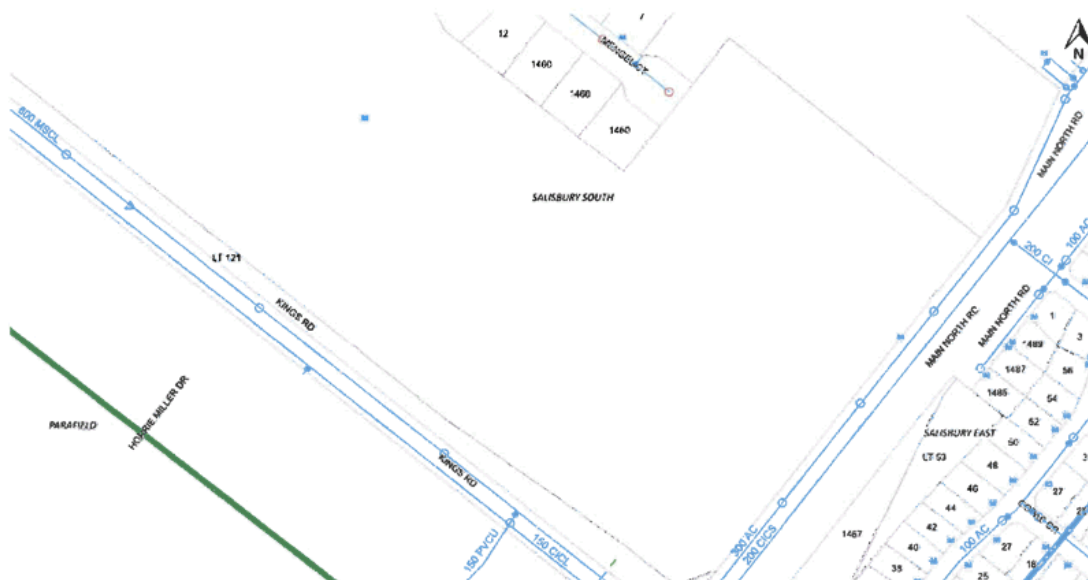


Figure 1: SA Water Corporation Water Mains

AUTHORITY SERVICES INFRASTRUCTURE INVESTIGATION
MEMORANDUM



SEWER SERVICES

Existing Sewer

- The site is bounded by SA Water Corporation (SAWC) authority sewer mains on Mengel Court, Kings Road and Main North Road and are as follows.
 - Mengel Court is serviced by a 225mm Un-plasticised Poly Vinyl Chloride (PVCU) sewer main.
 - Kings Road is serviced by two 450mm Vitreous China (VC) sewer mains.
 - Main North Road is serviced by a 450mm and 375mm Vitreous China (VC) sewer mains (see figure 2 for reference).
- Based on SAWC historical documents the sewer mains along 4.5m to 4.0m deep.
- SA Water will be required to undertake an infrastructure network evaluation to confirm the feasibility of the proposed plan

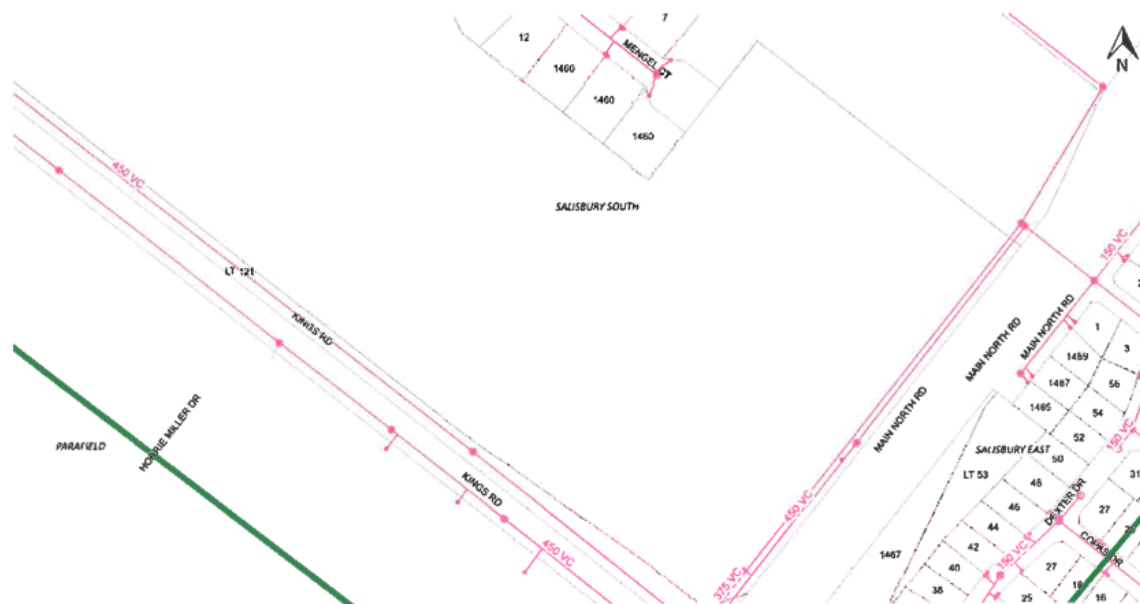


Figure 3: SAWC Water Corporation Sewer

GAS SERVICES

Existing

- The existing site is bounded by APA Group gas mains on Rundle Road, Kings Road and Main North Road. Rundle Road is serviced by a 100 SP high pressure gas main up to the intersection of Rundle Road and Mengel Court. Kings Road is serviced by a 150 SP high pressure gas main up to the intersection of Kings Road and Lawrence Hargrave Way. Main North Road is serviced by a 280 PMT high pressure gas main.

Proposed Gas Supply

- A potential extension of the 100mm SP high pressure gas main servicing Rundle Road along the length of Mengel Court to service the northern area of the site.
- A potential extension of the 150mm SP high pressure gas main servicing Kings Road to service the southern area of the site.
- The existing APA Group natural gas infrastructure is capable of providing high pressure gas to the site, however a submission will be required to the APA Group for capacity and connection costs.



Figure 4: APA Group High Natural Gas Mains – Mengel Court and Rundle Road

AUTHORITY SERVICES INFRASTRUCTURE INVESTIGATION
MEMORANDUM

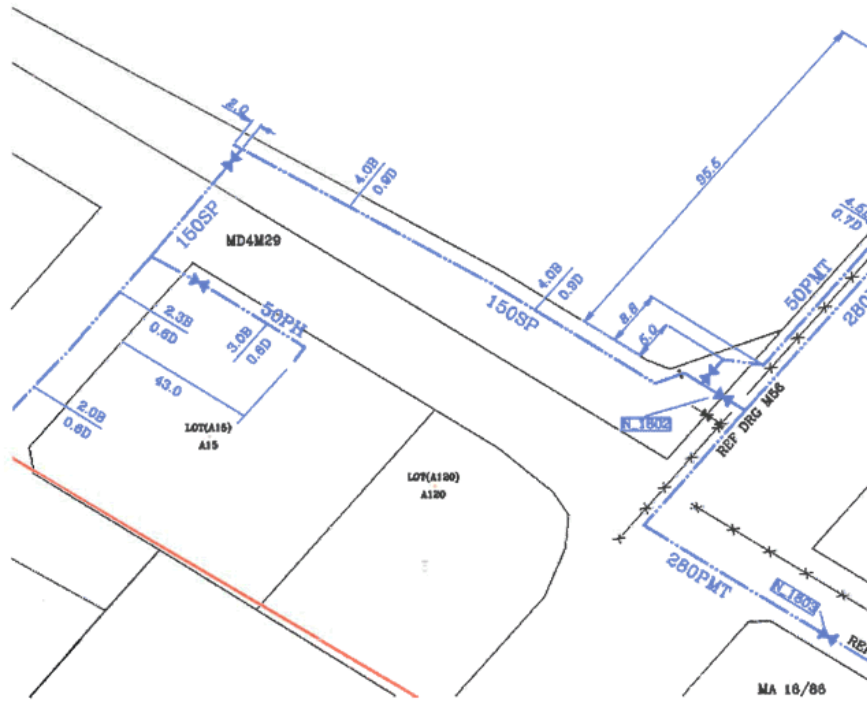


Figure 5: APA Group High Natural Gas Mains – Kings Road and Main North Road

ELECTRICAL SERVICES

Existing Electrical Infrastructure

Underground SA Power Networks high Voltage (11,000 Volts) and low Voltage (400 Volts) cabling are both located along Kings Road and Mengal Crescent. A small underground low Voltage supply supplying the existing property enters from Main North Road.



Figure 6: Overview of SA Power Networks Streetwise Infrastructure

Note that a SA Power Network cable runs along Kings Road which is outside the property boundary and won't be impacted by the proposed development.

There are no overhead powerlines within the vicinity of the proposed site however there are DPTI & SA Power Networks light poles along Main North Road and Kings Road. Minor lighting columns are located along Mengal Crescent.

Existing Communications Infrastructure

The existing site has an incoming Telstra connection originating from a Telstra pit located on Main North Road.

There is also an Optus main fibre optic cable running along Kings Road which is outside the property boundary and won't be impacted by the proposed development. This may offer an additional point of connection.



Figure 7: Communications Inground Infrastructure

Proposed Communications Arrangement

Due to the size and location of the development, it is expected that this project will be eligible for a NBN connection.

Due to the proximity of the existing inground infrastructure, it is not expected that any backhaul (civil / inground cable costs) will apply.

The existing conduits are expected to be adequate to permit other Telecommunications carriers to provide a service to the building (such as Internode, iiNet, Vocus etc)

Proposed Electrical Infrastructure

Based upon the current site plan, the estimated electrical demand for the northern portion of the projects is approximately 1600KVA. This will require an onsite substation of 2,000KVA to support a load of this size.

Additional similar sized transformers will be required to service the southern portion of the site with connection lost likely off Kings Roads.

Final arrangement will be dependent on negotiations with SAPN.

The spatial requirements for the substation are given below:

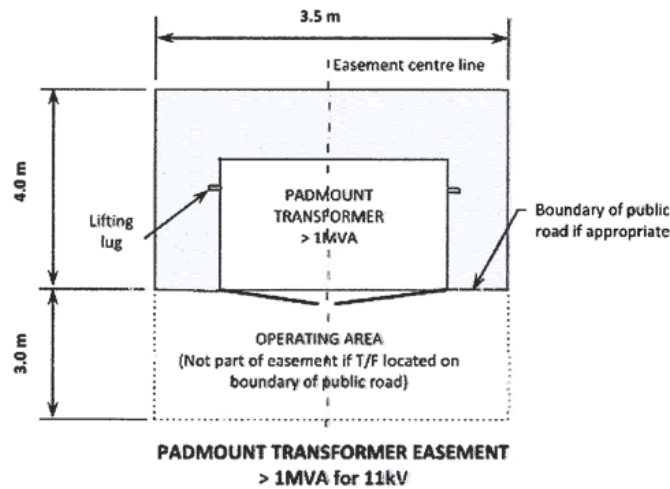


Figure 8: External Pad Mounted Substation

A new main switchboard / capacity limiting device is required to serve the northern site, which to comply with SA Power Networks standards, must be located between 3m and 10m from the substation.

We trust the above is satisfactory. Please do not hesitate to contact the undersigned should you require further information.

Regards,
LUCID CONSULTING ENGINEERS

ANDREW SHINNICK
Manager SA

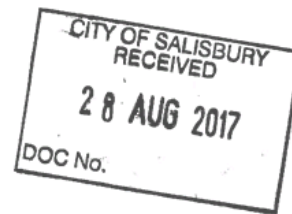


MEMORANDUM

To: GIC Australia
 Attention: George Economou
 From: Vasili Papageorgiou Reference: LCE13136 – 005a
 Project Name: Kings Junction
 Subject: Lighting Concept Design and Compliance Report Date: 24/08/2017

Please find attached our revised assessment below.

The following lighting concept and compliance verification has been produced for the proposed car parking area associated with the Kings Junction South Shopping Centre. The report generally outlines the lighting levels and luminaire heights and layouts necessary to meet the obtrusive lighting requirements in relation to the adjacent Parafield Airport and Salisbury Council.



ASSESSMENT QUALIFICATIONS

Lighting modelling has been undertaken based on the following: -

1. Industry standard software AGI32 version 18.2.
2. Proposed CAD drawing plans dated 22.08.17 and received from Intro Design Pty Ltd on 24.08.17.
3. Guidelines for modelling and assessment as outlined within AS1158 and AS4282-1997 compliant with post and pre-curfew, commercial areas and at the boundary of commercial and residential areas.
4. Use of photometric files produced by manufacturer "Pierlite" – "Pierlite-QUANTUM-LED-FLOOD-300W-IP65-S8-PPH1S8740ET-IES" and "Pierlite-QUANTUM-LED-FLOOD-300W-IP65-A5-PPH1A5740ET-IES"
5. The following table summarises the properties of the chosen luminaires:

Luminaire Type	Optic	Mounting Height (m)	Tilt Angle (°)	Out-Reach (m)
Pierlite Quantum 300W IP66 Trunnion	A5	12 (pole)	0	1.5
Pierlite Quantum 300W IP66 Trunnion	S8	12 (pole)	0	1.5
Pierlite Quantum 300W IP66 Trunnion	S8	6 (building)	0	1.5

6. Lighting layout has been designed within parking zones in accordance with AS1158.3.1:2005, lighting subcategory P11a, disabled parking zones to subcategory P12 and vehicular access roadways to P3 lighting subcategory.

GIC - SALISBURY SOUTH SHOPPING CENTRE
LCE13136



COMPLIANCE RESULTS

Based on the lighting concept design, compliance with the following is achieved:

1. Maximum allowable luminous intensity levels along the boundaries of Main North Road, Mengal Road and Kings Road residential properties are consistent with Pre-and Post-Curfew, Commercial and Residential boundary requirements outlined within AS4282-1997.
2. Maximum allowable threshold increment value is consistent within commercial areas to traffic on Main North Road and Kings Road as outlined within AS4282-1997.
3. Maximum luminous intensity output from the selected luminaire types is 0 candela at 3° above the horizontal in accordance with the Salisbury Council Overlay Map Sal/41 Development Constraints. I.e. this complies with all zone lighting requirements.

Attached to this memorandum is the lighting concept design, with calculation assessment grids and our luminaire layout. In addition to this, pre-and post-curfew Obtrusive Lighting Compliance Reports, luminaire specifications from the manufacturer and the Salisbury Council Concept Plan Map have been provided.

Trusting the above is satisfactory for development approval purposes.

If you have any queries, please do not hesitate to contact the undersigned.

Regards,

A handwritten signature in blue ink, appearing to read "Vasili Papageorgiou", is written over a faint, illegible printed name.

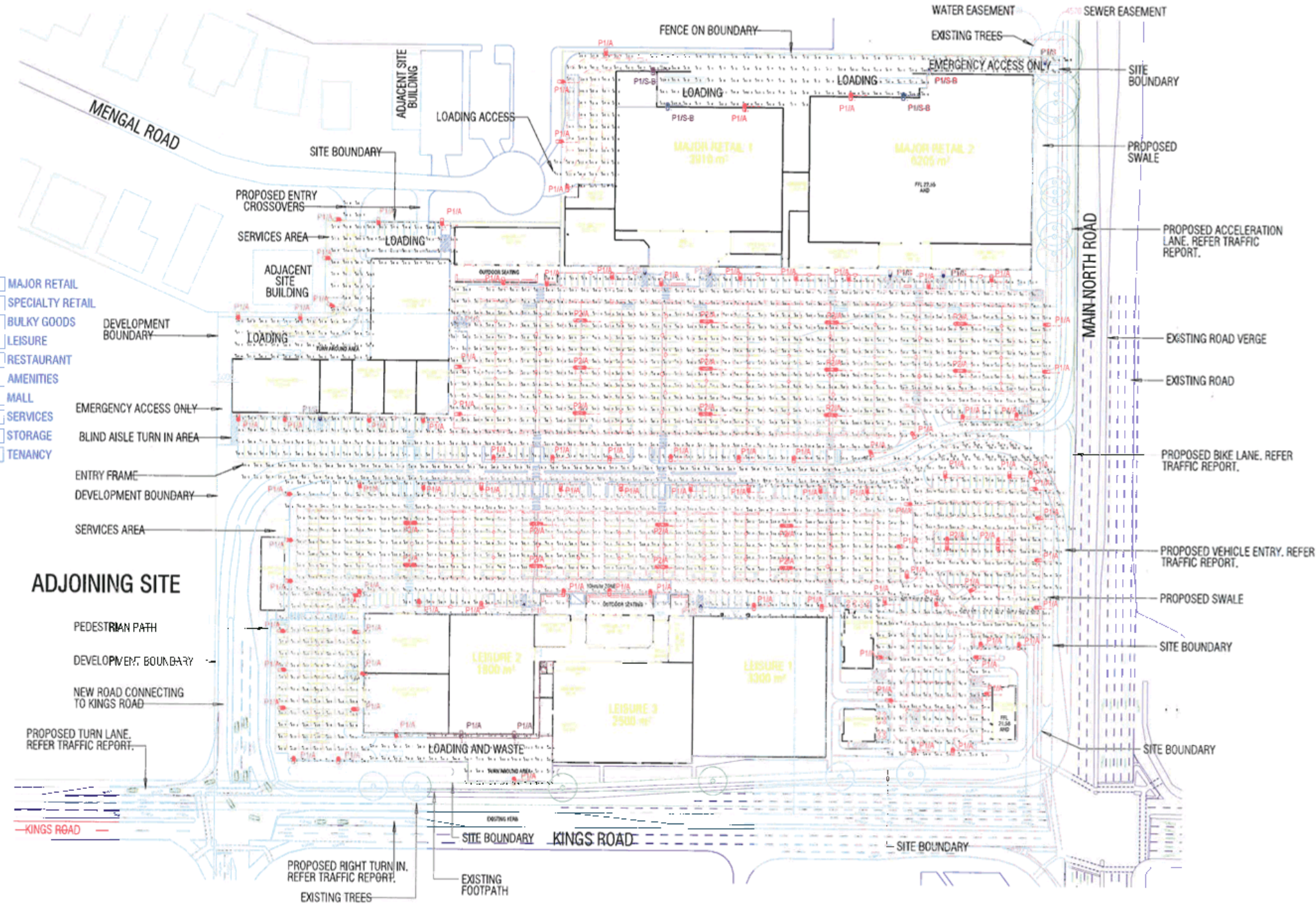
Vasili Papageorgiou
Services Manager - Public Realm

Attached:

- LCE13136 Lighting Concept Design
- AGI32 Compliance Test Results
- Pierlite Quantum LED Floodlight Specifications
- Concept Plan Map Sal/30

- LEGEND**
- SYMBOL DESCRIPTION
- P1/A 300W LED LUMINAIRE WITH 15M OUTREACH MOUNTED TO 12M HIGH POLE C/W DALI ELECTRONIC CONTROL GEAR, IP66 RATED HOUSING, 4000K COLOUR TEMPERATURE AND AS OPTIC. SELECTION: PIERLITE 'QUANTUM' SERIES.
 - P2/A 2 x 300W LED LUMINAIRE WITH 15M OUTREACHES MOUNTED BACK TO BACK (B2B), TO A 12M HIGH POLE C/W DALI ELECTRONIC CONTROL GEAR, IP66 RATED HOUSING, 4000K COLOUR TEMPERATURE AND AS OPTIC. SELECTION: PIERLITE 'QUANTUM' SERIES.
 - P1/S/B 300W LED LUMINAIRE WITH 15M OUTREACH MOUNTED TO BUILDING, AT 6M HIGH, C/W DALI ELECTRONIC CONTROL GEAR, IP66 RATED HOUSING, 4000K COLOUR TEMPERATURE AND S8 OPTIC. SELECTION: PIERLITE 'QUANTUM' SERIES.
 - P1/S 300W LED LUMINAIRE WITH 15M OUTREACH MOUNTED TO 12M HIGH POLE C/W DALI ELECTRONIC CONTROL GEAR, IP66 RATED HOUSING, 4000K COLOUR TEMPERATURE AND S8 OPTIC. SELECTION: PIERLITE 'QUANTUM' SERIES.
 - 68.4 LIGHT ILLUMINATION CALCULATION POINT LOCATED ON THE HORIZONTAL 'GROUND' PLANE.
 - 68.4 LIGHT ILLUMINATION CALCULATION POINT LOCATED ON A VERTICAL PLANE.

- MAJOR RETAIL
- SPECIALTY RETAIL
- BULKY GOODS
- LEISURE
- RESTAURANT
- AMENITIES
- MALL
- SERVICES
- STORAGE
- TENANCY



CITY OF SALISBURY RECEIVED
28 AUG 2017
DOC No.

LUCID CONSULTING AUSTRALIA
Level 3/169 Pirie St Adelaide SA 5000
Phone: (08) 8407 9700
Email: adelaide@lucidoconsulting.com.au

AS4282-1997 LIGHTING ASSESSMENT

- DESIGN COMPLIANCE TO AS1518 P1/A AND P12 FOR DISABLED CAR PARKING.
- DESIGN COMPLIANCE TO THE REQUIREMENTS OF P12 CURFEW, RESIDENTIAL-COMMERCIAL BOUNDARIES.
- DESIGN COMPLIANCE FOR 10% MAXIMUM THRESHOLD INCREMENT.
- LUMINAIRE UPCAST 0 CANDELLA AT 3 DEGREES ABOVE HORIZONTAL.

DATE: 24.08.2017
NAME: V.PAPAGEORGIU

REV	DESCRIPTION	DATE	VP
FOR COMMENT		24.08.17	VP

LUCID CONSULTING AUSTRALIA
Level 3/169 Pirie St Adelaide SA 5000
Phone: (08) 8407 9700
Email: adelaide@lucidoconsulting.com.au

BUILDER MUST CHECK ALL DIMENSIONS ON THE SITE BEFORE COMMENCING ANY WORK OR MAKING ANY SHOP DRAWINGS WHICH MUST BE SUBMITTED AND APPROVED BEFORE MANUFACTURE. THIS DRAWING IS THE PROPERTY OF THE ENGINEERS AND IS SUBJECT TO RETURN ON REQUEST.

CLIENT
GIC AUSTRALIA

PROJECT
KINGS JUNCTION

DRAWING
CONCEPT DESIGN AND OBTRUSIVE LIGHTING ASSESSMENT

SCALE 1:1000	DATE AUGUST 2017
DESIGNED VP	DRAWN MS
NO. IN SET 1 OF 1	DRAWING NUMBER LCE13136-ESK01

Obtrusive Light - Compliance Report

AS 4282-1997, Pre-Curfew, Commercial
 Filename: Kings Junction Lighting Design
 24/08/2017 1:36:20 PM

Illuminance

Maximum Allowable Value: 25 Lux

Calculations Tested (19):

Calculation Label	Test Results	Max. Illum.
Mengal Rd Residential_III_Seg1	PASS	0.0
Mengal Rd Residential_III_Seg2	PASS	0.0
Mengal Rd Residential_III_Seg3	PASS	0.0
Mengal Rd Residential_III_Seg4	PASS	0.0
Mengal Rd Residential_III_Seg5	PASS	0.0
Mengal Rd Residential_III_Seg6	PASS	0.0
Mengal Rd Residential_III_Seg7	PASS	0.1
Mengal Rd Residential_III_Seg8	PASS	0.0
Mengal Rd Residential_III_Seg9	PASS	0.0
Mengal Rd Residential_III_Seg10	PASS	0.0
Mengal Rd Residential_III_Seg11	PASS	0.0
Mengal Rd Residential_III_Seg12	PASS	0.0
Mengal Rd Residential_III_Seg13	PASS	0.0
Mengal Rd Residential_III_Seg14	PASS	0.1
Mengal Rd Residential_III_Seg15	PASS	0.5
Mengal Rd Residential_III_Seg16	PASS	0.8
Mengal Rd Residential_III_Seg17	PASS	0.1
Main N Rd Residential East_III_Seg1	PASS	0.1
Kings Rd Residential East_1_III_Seg1	PASS	0.1

Luminous Intensity (Cd) Per Luminaire

Maximum Allowable Value: 7500 Cd
 Control Angle: 83 Degrees

Luminaire Locations Tested (149)

Test Results: **PASS**

Threshold Increment (TI)

Maximum Allowable Value: 20 %

Calculations Tested (5):

Calculation Label	Adaptation Luminance	Test Results
KingsRd_TI	10	PASS
KingsRd_TI E	10	PASS
Main N Rd N	10	PASS
Main N Rd S	10	PASS
KingsRd_TI W Sliplane	10	PASS

Obtrusive Light - Compliance Report

AS 4282-1997, Post-Curfew, Commercial
 Filename: Kings Junction Lighting Design
 24/08/2017 1:37:44 PM

Illuminance

Maximum Allowable Value: 4 Lux

Calculations Tested (19):

Calculation Label	Test Results	Max. Illum.
Mengal Rd Residential_III_Seg1	PASS	0.0
Mengal Rd Residential_III_Seg2	PASS	0.0
Mengal Rd Residential_III_Seg3	PASS	0.0
Mengal Rd Residential_III_Seg4	PASS	0.0
Mengal Rd Residential_III_Seg5	PASS	0.0
Mengal Rd Residential_III_Seg6	PASS	0.0
Mengal Rd Residential_III_Seg7	PASS	0.1
Mengal Rd Residential_III_Seg8	PASS	0.0
Mengal Rd Residential_III_Seg9	PASS	0.0
Mengal Rd Residential_III_Seg10	PASS	0.0
Mengal Rd Residential_III_Seg11	PASS	0.0
Mengal Rd Residential_III_Seg12	PASS	0.0
Mengal Rd Residential_III_Seg13	PASS	0.0
Mengal Rd Residential_III_Seg14	PASS	0.1
Mengal Rd Residential_III_Seg15	PASS	0.5
Mengal Rd Residential_III_Seg16	PASS	0.8
Mengal Rd Residential_III_Seg17	PASS	0.1
Main N Rd Residential East_III_Seg1	PASS	0.1
Kings Rd Residential East_1_III_Seg1	PASS	0.1

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 2500 Cd

Calculations Tested (19):

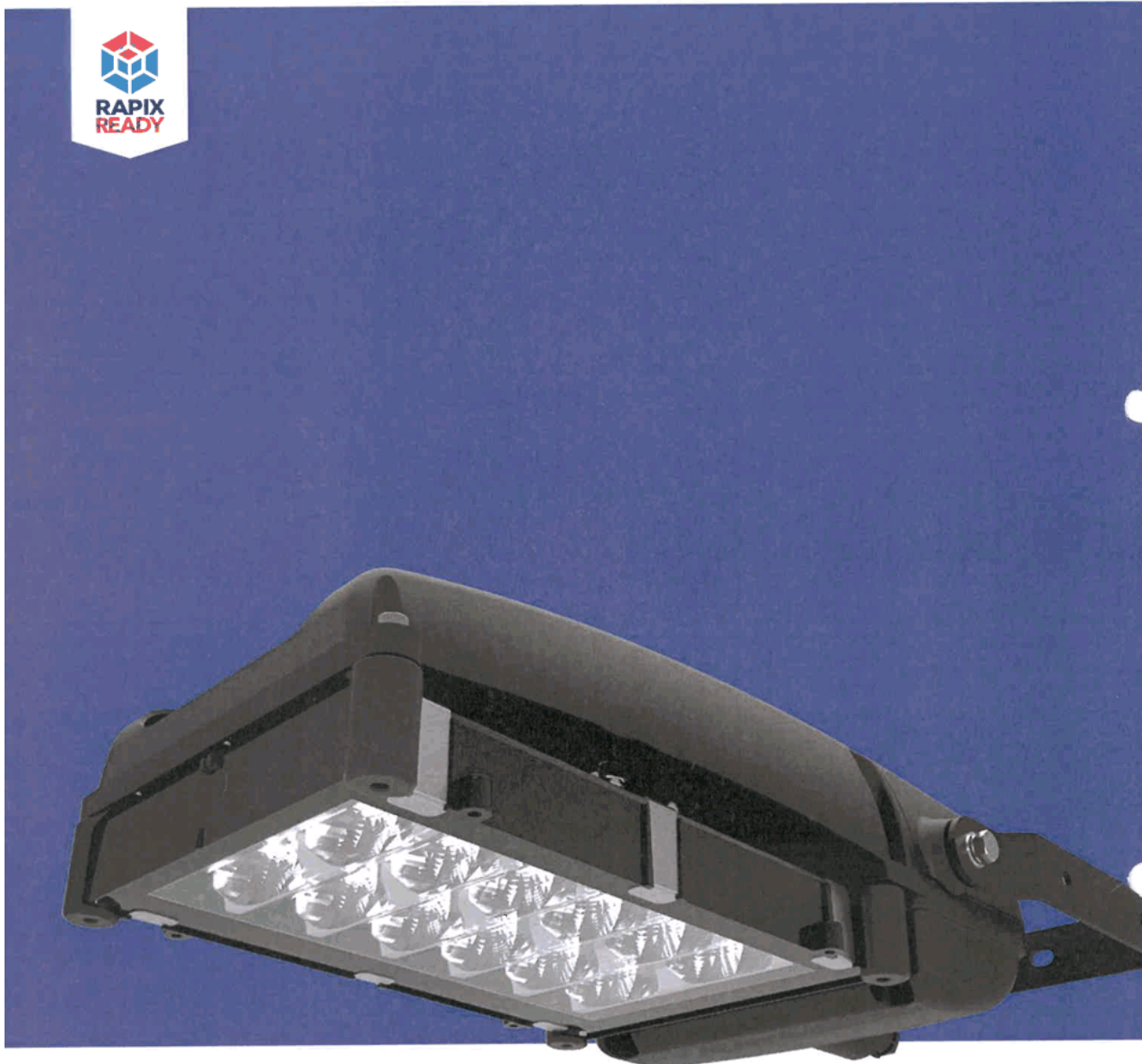
Calculation Label	Test Results
Mengal Rd Residential_Cd_Seg1	PASS
Mengal Rd Residential_Cd_Seg2	PASS
Mengal Rd Residential_Cd_Seg3	PASS
Mengal Rd Residential_Cd_Seg4	PASS
Mengal Rd Residential_Cd_Seg5	PASS
Mengal Rd Residential_Cd_Seg6	PASS
Mengal Rd Residential_Cd_Seg7	PASS
Mengal Rd Residential_Cd_Seg8	PASS
Mengal Rd Residential_Cd_Seg9	PASS
Mengal Rd Residential_Cd_Seg10	PASS
Mengal Rd Residential_Cd_Seg11	PASS
Mengal Rd Residential_Cd_Seg12	PASS
Mengal Rd Residential_Cd_Seg13	PASS
Mengal Rd Residential_Cd_Seg14	PASS
Mengal Rd Residential_Cd_Seg15	PASS
Mengal Rd Residential_Cd_Seg16	PASS
Mengal Rd Residential_Cd_Seg17	PASS
Main N Rd Residential East_Cd_Seg1	PASS
Kings Rd Residential East_1_Cd_Seg1	PASS

Threshold Increment (TI)

Maximum Allowable Value: 20 %

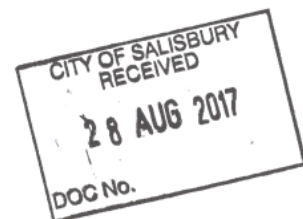
Calculations Tested (5):

<u>Calculation Label</u>	<u>Adaptation Luminance</u>	<u>Test Results</u>	
KingsRd_TI	10	PASS	
KingsRd_TI E		10	PASS
Main N Rd N	10	PASS	
Main N Rd S	10	PASS	
KingsRd_TI W Sliplane	10	PASS	

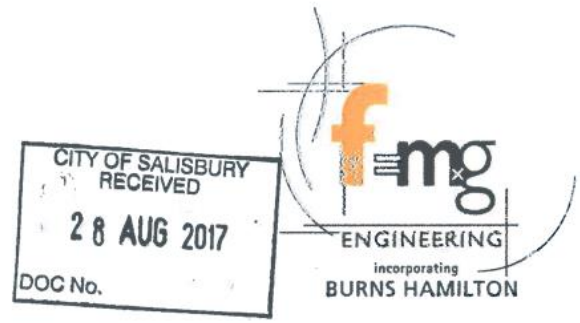


Pierlite Quantum LED Floodlight

Compact | Flexible | Efficient | RAPIX Ready



gerardlighting.com.au



Preliminary Site Investigation - Stage 1 Environmental Site Assessment Report

JOB NUMBER: **S35706 - 255881**
CLIENT: **GIC Kings Road Pty Ltd**
SITE: **1460 Main North Road, Salisbury South, SA, 5106**
DATE: **18 August 2017**
REVISION: **0**

GIC Kings Road Pty Ltd.
1460 Main North Road, Salisbury South, SA, 5106



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Document Status

Rev No.	Status	Author	Reviewer			Approved for Issue		
			Name	Signature	Date	Name	Signature	Date
0	Rev01	JE	DN		18/8/17	DN		18/8/17

FMG Engineering
P08 8363 0222
F08 8363 1555
enquiry@fmgengineering.com.au
42 Fullarton Rd, Norwood SA 5067
fmgengineering.com.au

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GIC Kings Road Pty Ltd.
1460 Main North Road, Salisbury South, SA, 5106

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Executive Summary

Site Location and Current Condition	The site is located at 1460 Main North Road, Salisbury South, South Australia. The site comprises an area of approximately 95,500 square metres (m ²) and currently comprises vacant agricultural land with a residential dwelling on the southern portion of the site.
Objectives of Investigation	The objective of this PSI which included an intrusive soil investigation is to provide an assessment of the potential contaminants of concern in soil (as identified in the ESH) that may pose an unacceptable risk to future users of the site.
Proposed Development	Shopping centre comprising two department stores, a cinema and various specialty stores and car parking spaces.
Intrusive Investigation Observations	<p>FMG Engineering completed an intrusive soil investigation at the site. As part of the intrusive soil investigation FMG Engineering advanced eleven soil boreholes and collected six hand auger samples, at selected locations to target potentially contaminating activities identified within the Environmental Site History produced for the site.</p> <p>A total of 20 soil samples were submitted for a range of analysis including OCP/OPP, heavy metals, TRH, BTEX, PAH and a limited number of samples submitted for an ASC NEPM Screen. Specific analytes were selected based on FMG's experience on similar sites and field observations during sampling.</p>
Results and Conclusions	<p>The analytical results of the PSI indicate that no analyte concentrations within the soil samples tested were elevated above the ASC NEPM screening criteria protective of human health in a commercial (HIL D) land use setting.</p> <p>FMG therefore conclude that there is no evidence of contamination within the upper 1m of the soil profile that would present an unacceptable risk to human health and/or the environment in a commercial land use setting.</p>

GLOSSARY

ALS	Australian Laboratory Services
AS	Australian Standards
Bgl	Below ground level
BTEX	Benzene, Toluene, Ethyl Benzene and Xylenes
CEC	Cation Exchange Capacity
COC	Chain of Custody
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EIL	Ecological Investigation Level
EPA	Environment Protection Authority South Australia
ESL	Ecological Screening Level
FMG	FMG Engineering
Ha	Hectare
HIL	Health Investigation Level
HSL	Health Screening Level
km	Kilometers
LOR	(Laboratory) Limit of Reporting
m	Metres
m ²	Square metres
m bgl	Metres below ground level
mg/kg	Milligrams per kilogram
mg/L	Milligrams per litre
NATA	National Association of Testing Authorities Australia
NEPM	National Environment Protection Measure
OCP/OPP	Organochlorine/ Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCA	Potentially Contaminating Activities
PCB	Polychlorinated Biphenyls
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/ Quality Control
RPD	Relative Percentage Difference
SOP	Standard Operating Procedures
TB	Trip Blank
TOC	Total Organic Carbon
TRH	Total Recoverable Hydrocarbons

1. Introduction

1.1. Terms of Reference

FMG Engineering (FMG) was engaged by GIC Kings Road Pty Ltd (the client) to undertake a Preliminary Site Investigation (PSI), which included intrusive soil investigation works, at 1460 Main North Road, Salisbury South, South Australia (the site).

The site has been divided into two development stages. This report details the findings of the intrusive investigation (drilling and sampling) works for Stage 1 only and will be referred to herein as 'the site'. The site comprises an area of approximately 95,500 square metres (m²) and currently comprises vacant agricultural land with a residential dwelling on the southern portion of the site. The location of the site and development boundaries is presented in Figure 1, Appendix A.

The work undertaken in the preparation of this report has been completed in accordance with the requirements of FMG's Quality Management System which is certified by BSI Australia Pty. Ltd. to comply with the requirements of ISO9001. This report was additionally prepared with reference to the following documents:

- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), 1999 (amended 2013). Referenced as "ASC NEPM" in this report; and
- Australian Standard AS4482.1-2005, Guide to the investigation and sampling of site with potentially contaminated soil.

1.2. Overview and Background

FMG understands that the client proposes to redevelop the site for commercial land use comprising shopping centre containing two department stores, a cinema as well as various specialty stores and car parking spaces.

FMG completed an Environmental Site History for the site (FMG Engineering, 2017, Preliminary Site Investigation – Environmental Site History, July 2017) and identified the following potentially contaminating activities (PCAs):

- Storage of fuel onsite within an un-bunded above ground storage tank (AST);
- Potential importation of fill observed in stockpiles along the north-eastern site boundary;
- Maintenance of grassed/unsealed areas, including the use of herbicides;
- Storage and potential fluid leakage of disused machinery in the central portion of the site; and
- Chemical storage shed (potential spillage and leakage of chemicals) located in the eastern portion of the site.

An intrusive investigation was recommended to investigate whether the identified PCAs have impacted the soils at the site to levels that could pose unacceptable health risks to future residential site users.

1.3. Objectives

The objective of this intrusive investigation is to provide an assessment of the potential contaminants of concern in soil that may pose an unacceptable risk to the future users of the site. The objectives of this investigation are to:

- Obtain site specific data on the ground conditions present at the site;
- Obtain site specific data regarding the contamination status of the soils at the site;
- Identify any significant data gaps and include an assessment of the accuracy of the information collected;

-
- Provide recommendations for the future management of the site.

1.4. Scope of Work

All work was undertaken in general accordance with the scope of works outlined in the FMG proposal EST12095, dated 15 June 2017 and complied with the requirements of FMG's Quality Management System, which is certified by BSI Australia Pty Ltd comply with the requirements of ISO9001.

2. Site Identification

The site identification details are summarised in Table 2.1 below.

Table 2.1 Site Details

Site Address	1460 Main North Road, Salisbury South, South Australia
Certificate of Title(s) and Legal Description	Volume 5068 Folio 957 – Allotment 120, Deposited Plan 30240, Area of Salisbury South, Hundred of Yatala. The current certificate of title is presented within Appendix A.
Current Ownership	Engel Holdings Pty Ltd
Site Area	The site occupies approximately 95,500m ² .
Current Land Use	Vacant agricultural land with a residential dwelling in the southern portion of the site.
Local Government Authority	Salisbury Council.
Proposed Land Use	Shopping Centre.
Surrounding Land Use	To the North – Commercial Properties.
	To the East – Main North Road with residential dwellings beyond.
	To the South – Petrol filling station, retail outlets and Parafield Airport.
	To the West – Parafield Airport and associated buildings.

3. Data Quality Objectives

Schedule B2 of the ASC NEPM emphasises the importance of defining Data Quality Objectives (DQOs) as a key component of site contamination investigations. The DQO process is a seven step iterative planning approach incorporating the following:

- Step 1: State the problem;
- Step 2: Identify the goal of the investigation;
- Step 3: Identify the information inputs;
- Step 4: Define the boundaries of the investigation;
- Step 5: Develop the analytical approach;
- Step 6: Specify performance or acceptance criteria; and
- Step 7: Develop the plan for obtaining data.

This section details the required components of the DQO process.

3.1. Step 1: State the Problem

An Environmental Site History was completed for the site by FMG which identified a number of potentially contaminating activities which have or potentially have occurred on the site. Identified PCAs were as follows:

- Storage of fuel onsite within an un-bunded above ground storage tank;
- Potential importation of fill observed in stockpiles along the north-eastern site boundary;
- Maintenance of grassed/unsealed areas, including the use of herbicides;
- Storage and potential fluid leakage of disused machinery in the central portion of the site; and
- Chemical storage shed (potential spillage and leakage of chemicals) located in the eastern portion of the site.

Therefore, the contamination status of the soils at the site were unknown and needed to be assessed to investigate whether the site poses an unacceptable risk to the health of future users of the site, following the proposed commercial development.

3.2. Step 2: Identify the Goal of the Study

The objectives of the additional intrusive soil investigation works are to:

- Assess the contamination status of soils at the site to assess if there was currently (or are likely to be in the future) an unacceptable risk of harm to human health or the environment;
- Determine whether further investigation or management is required.

3.3. Step 3: Identify the information inputs

The third step of the DQO process involves identifying the information needed to support any decision and whether new environmental data will be needed. Data used within the decision-making process includes:

- Quantitative data to be collected during the FMG investigation as detailed in Section 7; and
- Current assessment criteria as discussed in Section 6.

The nominated FMG project team for the planned works is as follows:

- Project Manager and Environmental Scientist – Jody Elsworth;

- Field Environmental Scientist – Jody Elsworth; and
- Technical Review – Dean Noske.

3.4. Step 4: Define the boundaries of the study

The lateral boundaries of the investigation are formed by the site boundaries as presented in Figure 1, Appendix A.

The vertical boundaries of the soil investigation were determined by the depth of the soil boreholes, advanced to a maximum depth of 6.0m below ground level (bgl). It should be noted however that environmental sampling only occurred to a maximum depth of 1.0 m.

3.5. Step 5: Develop the Analytical Approach (or Decision Rule)

The analytical results will be compared with the assessment criteria discussed in Section 6.

The acceptable limits for QA/QC samples are discussed in Section 9.

3.6. Step 6: Specify the Performance or Acceptance Criteria

Decision errors are incorrect decisions caused by using data that is not representative of site conditions due to sampling or analytical error.

Appendix B, Schedule B2 of ASC NEPM states that there are two types of decision error:

- Sampling errors when the sampling program does not adequately detect the variability of a contaminant from point to point across the site, e.g. an appropriate number of representative samples have not been collected from each stratum to account for estimated variability; and
- Measurement errors occur during sample collection, handling, preparation, analysis and data reduction.

Decision errors can be controlled through the use of hypothesis testing. This test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false.

The null hypothesis is an assumption assumed to be true in the absence of contrary evidence, e.g. that the site is contaminated unless proved clean.

Given that no previous investigations have been conducted at the site it is considered that the null hypothesis is relevant to this investigation (that is, that potentially contaminating activities had taken place at the site). Therefore, it is assumed that the site soil is contaminated unless proved clean.

QA/QC protocols are discussed in Section 5. They were undertaken in order to allow an evaluation of the Data Quality Indicators (DQIs) discussed in Section 4. The DQIs will be used to evaluate the acceptability of the data.

3.7. Step 7: Optimise the Design for Obtaining Data

The investigation will be undertaken in accordance with the proposed scope of works as detailed within Section 1.

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4. Data Quality Indicators

Table 4.1 below details the DQIs that will be assessed to ensure that the data is of a high quality.

Table 4.1 Data Quality Indicators to be assessed

Data Quality Indicators	Field Considerations	Laboratory Considerations	Notes
Completeness A measure of the amount of useable data (expressed as %) from a data collection activity	All critical locations sampled? All samples collected (from grid and at depth) Standard Operating Procedures (SOPs) complied with? Experienced Sampler? Documentation Correct?	All critical samples analytes analysed? All appropriate analytes analysed? Appropriate methods and laboratory Limit of Reporting (LOR) undertaken? Sample documentation complete? Sample holding times complied with?	The required completeness will be assessed at 95% All required data must be obtained for critical samples and contaminants of concern
Comparability The confidence (expressed qualitatively) that data may be considered equivalent for each sampling and analytical event	Same SOPs used on each occasion? Experienced Sampler? Similar climatic conditions? Same types of samples collected?	What sample analytical methods were used? Were there representative sample PQLs? Were the same laboratories used? Were the same units used?	A level of consistency in techniques used to collect and analyse the samples will be maintained throughout the investigation to ensure a high level of comparability.
Representativeness The confidence (expressed qualitatively) that data is representative of soil at the site	Appropriate media sampled? All media identified sampled?	All critical samples analysed according?	The scope of works discussed within the proposal will be undertaken so that an adequate number of samples are collected from an appropriate number of locations in order to suitably characterise the site.

Data Quality Indicators	Field Considerations	Laboratory Considerations	Notes
<p>Precision A quantitative measure of variability (or reproducibility) of data.</p>	<p>SOPs appropriate and complied with?</p>	<p>Analysis of: Laboratory and inter-laboratory duplicates Field duplicates and triplicates</p>	<p>The precision of the data shall be measured by calculating the Relative Percent Difference (RPD) between duplicate sample pairs. The standard acceptance criteria of 50% RPD will be used. However, it should be noted that this will not always be achieved, is any heterogeneous fill material is identified on the site.</p>
<p>Accuracy (bias) A quantitative measure of the closeness of the reported data to the true value.</p>	<p>SOP appropriate and complied with?</p>	<p>Analysis of: Laboratory duplicates samples Laboratory-prepared spikes Laboratory blanks</p>	<p>The "acceptance limits" on laboratory control samples are: Field blanks should be below laboratory LORs. Laboratory duplicates - <30 % for metals/inorganics, <50 % for organics. Laboratory spikes – 70-130 % for metals/inorganics, 60-140 % for organics. Laboratory blanks - <LOR</p>

5. Quality Assurance and Quality Control

5.1. Field QA/QC

The following QA/QC programme was undertaken during the field investigation to meet the ASC NEPM requirements:

- Field work was performed in accordance with FMG's Standard Quality Procedures;
- In addition to the primary soil samples, intra-laboratory and inter-laboratory duplicate samples are to be collected as follows:
 - The intra-laboratory duplicate soil samples were submitted for analysis to the Primary Laboratory to assess the reproducibility and precision of the laboratory data.
 - The inter-laboratory triplicate soil samples were submitted for analysis to the Secondary Laboratory to assess the accuracy of laboratory data.
 - Both laboratories were NATA accredited for the analysis undertaken.
- The drilling lengths and hand drilling equipment were decontaminated on-site, to ensure that cross contamination between sampling locations did not occur. The drilling lengths and hand equipment were decontaminated with a 5% Decon 90 and water solution and then rinsed.
- Clean disposable nitrile gloves were used to collect soil samples in order to prevent cross-contamination.
- Soil samples were placed into pre-labelled laboratory supplied glass jars and packed in chilled cool boxes prior to dispatch to the analytical laboratories under standard FMG chain of custody procedures.

5.2. Laboratory QA/QC

All primary and intra-laboratory duplicate samples were submitted to ALS Environmental (ALS) for analysis. Inter-laboratory triplicate samples were submitted to Envirolab Services Pty. Ltd. (Envirolab). Both laboratories are accredited by NATA for the sample matrix and analyses performed.

As part of their QA/QC programs, the laboratories perform internal duplicate analysis, spike and recovery analysis, and blank analysis in accordance with NATA requirements. A review of the laboratory QA/QC results are discussed in Section 9.

6. Assessment Criteria

To assess the significance of laboratory chemical analytical results in relation to health and environmental risk, sample concentrations were compared to established health and environmental investigation levels outlined in the ASC NEPM, which is adopted as an Environment Protection Policy under the Environment Protection Act (1993).

The ASC NEPM states the screening criteria are not clean up or response levels, nor are they desirable soil quality criteria. They are to be used for assessment of existing contamination only and are intended to prompt an appropriate site specific assessment when they are exceeded.

Site specific health and ecological risk assessments should be conducted where exceedance of investigation levels indicate that there is a likelihood of adverse effects on human health or ecological values for a site.

The adopted screening criteria for the appropriate analytical suite are presented together with the analytical results in summary tables (Appendix B) at the rear of this document. When an analytical result exceeds the adopted criteria threshold, the result is highlighted in the table.

A description of the assessment criteria adopted as part of this investigation is provided below.

6.1. Health Investigation Levels (HILs)

HILs have been developed for a broad range of metals and organic substances. The HILs are applicable for assessing human health risk via all relevant pathways of exposure. The HILs are generic to all soil types. The ASC NEPM states that site specific conditions should determine the depth to which HILs apply for other land uses.

The proposed end-use of the site is understood to be commercial, comprising a shopping centre containing two department stores, a cinema as well as various specialty stores and car parking spaces. Therefore, the HIL exposure setting 'Commercial/industrial' is applicable, referred to as 'HIL D'.

6.2. Health Screening Levels (HSLs)

HSLs have been developed for selected petroleum compounds and fractions. They are applicable to assessing human health risk via the inhalation of soil vapours.

The HSLs depend upon specific soil physiochemical properties, land use scenarios and the characteristics of building structures. They apply to different soils types, and depths below surface (greater than 4m).

Based upon the conditions identified at the site during the intrusive investigation, the HSLs for exposure setting 'HSL D, Commercial/industrial' land use has been selected for 'Sand soils' with a source depth of 0 m to less than 1 m bgl; 1 m bgl to less than 2 m bgl; and 2 m bgl to less than 4 m bgl.

6.3. Ecological Investigation Levels (EILs)

The ASC NEPM also provides screening criteria to assess the potential risk posed to ecological receptors. EILs have been developed for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physiochemical properties and land use scenarios and generally apply to the top 2 m of soil.

Based upon the land use of the site and surrounding area, the criteria for the generic land use setting 'commercial' have been used.

Selected samples were analysed for Cation Exchange Capacity (CEC), Total Organic Carbon (TOC) and pH in order to generate site specific EILs for many of the heavy metals. The reported CEC and pH levels are presented below.

The soil parameters are entered into the National Environment Protection Council (NEPC), Ecological Investigation Level Calculation Spreadsheet and the EILs are generated.

The spreadsheet is used to calculate EILs for chromium III, copper, nickel and zinc for coarse sand soils. The parameters entered are as follows:

- CEC = 25.5 cmol/kg;
- TOC = 0.8 mg/kg;
- pH = 7.8;
- State = SA;
- Traffic Volume = Low; and
- Clay content = 23%.

The soil specific EILs for 'Aged Contamination' have been selected.

6.4. Ecological Screening Levels (ESLs)

ESLs have been developed for the management of potential risk posed by selected petroleum hydrocarbons. ESLs broadly apply to coarse and fine grained soils and various land uses. They are generally applicable to the top 2m of soil.

Based upon the land use of the site and surrounding area, the criteria for the generic land use setting 'commercial/industrial', for coarse soils have been used.

7. Preliminary Soil Investigation

7.1. Sampling Location Rationale

The rationale behind the locations of each of the boreholes advanced is provided within Table 7.1. Borehole locations were selected to collect representative samples from across the site to assess whether identified PCAs have affected site soils.

The number of boreholes advanced complies with the requirements of AS4482.1-2005.

Table 7.1 Sampling Location Rationale

Borehole ID	Rationale
BH01 - BH11	Advanced to assess for the presence of residual pesticides and herbicides in the soil in the area of vacant land.
HA01	Advanced to assess potential fuel leakage and subsequent fuel contamination in soil beneath an un-bunded above ground storage tank;
HA02	Advanced to assess potential fuel leakage and contamination in soil within an area where disused machinery is stored in the central portion of the site.
HA03	Advanced to assess stockpiled soil stored in the central portion of the site.
HA04	Advanced to assess stockpiled soil stored in the central portion of the site.
HA05	Advanced to assess stockpiled soil stored in the northern portion of the site.
HA06	Advanced to assess stockpiled soil stored in the northern portion of the site.

7.2. Soil Sampling Methodology

A site specific Health and Safety Plan was prepared and implemented during site works.

On 26 July 2017, eleven soil boreholes (BH01 – BH011) were advanced using a using a four-wheel drive mounted push tube drill rig across the site. It should be noted that the geotechnical soil bores were utilised for environmental sampling purposes. In addition, six soil samples were collected from the stockpile areas using a hand auger (HA01 – HA06). The site layout plan with the sampling locations is shown in Figure 2 (Appendix A).

Boreholes BH01 to BH11 were advanced to the following depths:

- Boreholes BH02 and BH08 were advanced to a maximum depth of 1.5m bgl.
- Boreholes BH03 – BH05, BH07 and BH09 – BH11 were advanced to a maximum depth of 4.0m bgl.
- Boreholes BH01 and BH06 were advanced to a maximum depth of 6.0m bgl.

Prior to commencing any intrusive works, all borehole locations were cleared for underground and above ground services by Tron, a licensed services locator, under the direction of a suitably qualified FMG Environmental Scientist.

A drilling contractor, SPK Geodrig Pty Ltd, was engaged to drill the soil boreholes under the direct supervision of a suitably qualified FMG Engineering Environmental Scientist. Soil borehole locations are presented in Appendix A.

Soil samples were collected from the surface, at changes in lithology (including each distinct soil layer) and at the base of each soil borehole. In total 54 soil samples were collected from the site. Soil logging was undertaken based on field interpretation and in general accordance with

Australian Standard AS1726-1993, *Geotechnical Site Investigations*. The presence of any visual and olfactory evidence of contamination (e.g. fill, staining and odour) was also noted on the bore logs. Copies of soil borehole logs are presented in Appendix C.

The six soil samples collected from stockpiles were collected at a minimum depth of 0.5m from the surface of the stockpile, in accordance with SA EPA Guidelines and best industry practice.

QA/QC field procedures were followed as discussed in Section 9.

7.3. Laboratory Analysis of Soil Samples

In total 20 primary soil samples were selected for analysis, the remaining samples were stored at the laboratory, pending the possible requirement for further analysis.

Selected samples were analysed for one or more of the following:

- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX);
- Polycyclic Aromatic Hydrocarbons (PAH);
- Heavy Metals (8 Metals);
- Organochlorine and Organophosphorous Pesticides (OCP and OPP);
- Triazine Herbicides;
- Analytes contained within the ASC NEPM Human Health Investigation Level Screen including phenols; and

7.4. Storage, Preservation and Transport of Samples

Soil samples were clearly labelled and collected in appropriate sampling jars which were supplied by the NATA accredited laboratory.

All samples were stored with cooling aids in an insulated chest immediately after sampling. Samples were kept chilled prior to and during delivery to the laboratory.

Samples were stored with cooling aids in insulated chests provided by the laboratory. Sample details and analytical requests were recorded on the FMG Chain of Custody (COC) forms included with the samples, prior to dispatching to the laboratory for analysis. Samples were dispatched to the laboratory within appropriate *time frames* to prevent holding time breaches.

8. Soil Assessment Results

8.1. Field Observations

Details of the sub-surface conditions encountered during the intrusive soil investigation are outlined in the soil borehole logs presented in Appendix C.

Fill material was encountered to depths ranging between 0.0-0.85m bgl. Eight distinct fill material types were encountered at the site, and are summarised as follows:

- F1: Silty Sand: pale brown; sand fine grained;
- F2: Sandy Silt: dark brown; of non-plasticity;
- F3: Clayey Sand; pale brown; of low plasticity; with gravel;
- F4: Silty Clay: brown; with gravel;
- F5: Clayey Silt: red-brown mottled grey-pale brown; of low plasticity; with gravel;
- F6: Clayey Silt: pale brown; with gravel;
- F7: Sandy Clay: pale yellow; of low plasticity;
- F8: Orange-brown; of medium plasticity; with gravel;

Natural material was encountered at all locations on the site and included a red-brown high plasticity clay and a light brown silty sand, with calcareous inclusions.

No visual or olfactory evidence of contamination was observed by the Field Scientist. Groundwater was not encountered during the intrusive investigation.

The soils encountered at the site are presented in the soil bore logs attached in Appendix C.

8.2. Laboratory Results

Tabulated summaries of the laboratory chemical analytical results are provided in Appendix B, at the rear of this report, along with a comparison of the analytical results to the adopted screening criteria. Laboratory certificates of analysis, sample receipt notices and chain of custody documentation are presented in Appendix D.

All laboratory results were below the adopted ASC NEPM screening criteria

9. Quality Assurance and Quality Control

Quality control procedures implemented during the PSI were based upon the guidelines in AS4482.1-2005 and the ASC NEPM.

9.1. Field Methods - Quality Assurance / Quality Control

Field methods were conducted in accordance with the quality control plan presented in Section 5.

9.2. Data Validation

The ASC NEPM supports the use of intra-laboratory duplicate sample analysis to provide information on the precision of analytical data and the use of inter-laboratory triplicate sample analysis to provide information on accuracy of analytical data.

All primary samples and intra-laboratory duplicate samples were submitted to the primary laboratory (ALS Laboratory). The purpose of the intra-laboratory duplicate is to provide information on the precision and consistency of the sampling technique and primary laboratory analysis. In addition, the ASC NEPM supports the use of inter-laboratory triplicate analysis to provide information on the accuracy of the analytical data and consistency between the two laboratories. This was achieved by dispatching an inter-laboratory triplicate sample to a secondary laboratory (Envirolab).

Validation and interpretation of the QA/QC data was undertaken by calculating the RPD for duplicate sample pairs. Results from RPD analysis of field duplicates taken during the investigation are included in the appended summary Appendix B.

Duplicate samples with an RPD less than 50% are considered to have acceptable correlation. However, consideration needs to be given to the inherent heterogeneity of the sampled material and the concentrations detected when interpreting the RPD results. When calculating RPDs for low concentration analytes, the RPD results can be high, but the RPD value is not considered critical because each of the concentrations is at or below the adopted criteria.

9.2.1. Intra and inter-laboratory Duplicates

Two intra-laboratory duplicate samples were analysed as part of the assessment (BH10_1.08-3.22 / QA01-Dup / QA01-Trip), as well as two inter-laboratory duplicate (BH11_1.02-1.92 / QA01-Dup / QA01-Trip).

The RPD results for the intra/inter laboratory field duplicates were all within the absolute 50% acceptance range.

RPDs could not be calculated for several analytes due to sample concentrations being below the laboratory's LOR in both samples of the duplicate pair. The consistent 'below laboratory limit' of recording results indicate good analytical data correlation between the sample and duplicate pair.

9.2.2. Laboratory QA/QC

As part of their QA/QC program ALS and Envirolab perform internal duplicate analyses, matrix spike samples and recovery efficiency analysis, and include blank analysis in accordance with NATA requirements. Details of internal laboratory QC results are included in results certificates (Appendix D).

9.2.3. Data Quality Indicators (DQIs) Close-out

The DQIs are assessed to ensure that the data that has been collected as part of this investigation is of a high quality. The DQIs are presented in Section 3.1.

Table 9.1, provides a summary of the close-out of each of the DQIs and provides commentary on deviations as required.

9.3. Quality Review Conclusions

- The number of the quality control samples analysed were sufficient to comply with the ASC NEPM quality control guidelines;
- RPD results suggest that no laboratory or sampling errors have occurred;
- Holding times were acceptable for the selected analytes;
- No significant quality issues regarding sample analysis were identified throughout the quality control procedures; and

Based on the laboratory's QA/QC program and the FMG field duplicate QA/QC assessment FMG considers the analytical data is of suitable precision and accuracy for the purposes of this Assessment.

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

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Table 9.1 Data Quality Indicators Close Out

Data Quality Indicators	Field Considerations	Compliance	Laboratory Considerations	Compliance
<p>Completeness A measure of the amount of useable date (expressed as %) from a data collection activity</p>	<p>All critical locations sampled? All samples collected (from grid and at depth) Standard Operating Procedures (SOPs) complied with? Experienced Sampler? Documentation Correct?</p>	<p>Fully complies (100%).</p>	<p>All critical samples and analytes analysed? All appropriate analytes analysed? Appropriate methods and Laboratory Limit of Reporting (LOR) undertaken? Sample documentation complete? Sample holding times complied with?</p>	<p>Fully complies (100%)</p>
<p>Comparability The confidence (expressed qualitatively) that data may be considered equivalent for each sampling and analytical event</p>	<p>Same SOPs used on each occasion? Experienced Sampler? Similar climatic conditions? Same types of samples collected?</p>	<p>Fully complies (100%).</p>	<p>What sample analytical methods were used? Were there representative sample Laboratory LOR? Were the same laboratories used? Were the same units used?</p>	<p>Both laboratories are NATA accredited for matrix and analyses performed. Therefore it is considered that appropriate and comparable methodology has been employed by both laboratories. The laboratories generally have the same LORs. Some LORs exceeded the adopted criteria. The same units were reported for each analyte.</p>

Data Quality Indicators	Field Considerations	Compliance	Laboratory Considerations	Compliance
<p>Representativeness The confidence (expressed qualitatively) that data is representative of each medium present on the site</p>	<p>All material types identified on-site sampled?</p>	<p>Yes, samples were collected from each material type.</p>	<p>All critical samples analysed accordingly?</p>	<p>Yes, all material types were submitted for analysis.</p>
<p>Precision A quantitative measure of variability (or reproducibility) of data</p>	<p>Standard Operating Procedures (SOPs) appropriate and complied with. Use of intra –laboratory duplicate sample sets through calculation of Relative Percent Differences (RPDs). Use of inter –laboratory duplicate (blind) sample sets through calculation of Relative Percent Differences (RPDs).</p>	<p>Fully complies Intra and Inter duplicate samples collected. SOPs appropriate and complied with.</p>	<p>Analysis of: Field intra –laboratory duplicate and inter –laboratory duplicate (blind) samples.</p>	<p>RPDs complied with the acceptance criteria of 50% RPD.</p>
<p>Accuracy (bias) A quantitative measure of the closeness of the reported data to the true value</p>	<p>Use of intra –laboratory duplicate sample sets through calculation of Relative Percent Differences (RPD). Use of inter –laboratory duplicate (blind) sample sets through calculation of Relative Percent Differences (RPD).</p>	<p>Fully complies Intra and Inter duplicate samples collected.</p>	<p>Analysis of: <ul style="list-style-type: none"> • Trip Blanks • Rinsate • Laboratory duplicates samples • Laboratory-prepared spikes • Laboratory blanks </p>	<p>Laboratory duplicates were within the acceptance limits. Laboratory spikes were within the acceptance limits. Laboratory blanks were below the laboratory LOR.</p>

10. Data Gaps

Schedule B2 of the ASC NEPM states that the PSI report should clearly identify any significant data gaps and include an assessment of the accuracy of the information collected.

The following data gaps have been identified during this assessment:

- Contamination status of groundwater beneath the site.

The onsite groundwater well was unable to be located and groundwater has not been assessed as a part of the works. Although the assessment of groundwater is technically a data gap, on the basis of the negligible soil results and the absence of identified contaminating activities and site contamination (as defined within the EP Act), groundwater was deemed unlikely to be impacted by historical onsite activities, and hence investigation is not warranted. The impact to groundwater by historical and/ or current offsite activities including commercial/ industrial land use surrounding the site and the petrol filling station to the east of the site remains undetermined.

It should be noted that a limitation of the soil sampling undertaken as part of the PSI is that the results relate to a relatively limited scope of testing of material. Whilst we infer that the data was representative of soil conditions at the site at the time of sampling, actual conditions between the sampling locations may vary. Therefore, it must be noted that a degree of uncertainty does exist at the site.

11. Conclusion

FMG completed a PSI comprising an intrusive investigation for Stage 1 of the proposed development site located at 1460 Main North Road, Salisbury South, South Australia.

The site currently comprises vacant agricultural land with a residential dwelling on the southern portion of the site. FMG understands that the client proposes to redevelop the site for commercial land use, namely a shopping centre comprising two department stores, a cinema, as well as various specialty stores and car parking spaces and therefore requires a PSI report to progress development approval.

The PSI was undertaken to provide an assessment of the potential contaminants of concern in soil that may pose an unacceptable risk to the future users of the site.

FMG advanced a total of eleven soil boreholes, to a maximum depth of 6.0 m bgl and six soil hand auger samples were taken to a maximum depth of 0.3m bgl. Soil boreholes and hand auger locations were targeted to assess the potentially contaminating activities identified within the Environmental Site History Report completed for the site.

A total of 20 soil samples were collected as a part of the environmental assessment to a maximum depth of 1 m bgl and were submitted for a range of analysis, including but not limited to OCP /OPP, TRH, BTEX, PAH, herbicides, heavy metals and analytes contained within the ASC NEPM Screen. Specific analytes were selected based on FMGs experience on similar sites and field observations during sampling.

The analytical results of the PSI indicate that no analyte concentrations within the soil samples tested were elevated above the ASC NEPM screening criteria protective of human health in a commercial (HIL D) land use setting.

FMG therefore conclude that there is no evidence of contamination within the upper 1 m of the soil profile at the locations tested that would present an unacceptable risk to human health and/or the environment, or that would preclude the proposed commercial development of the site .

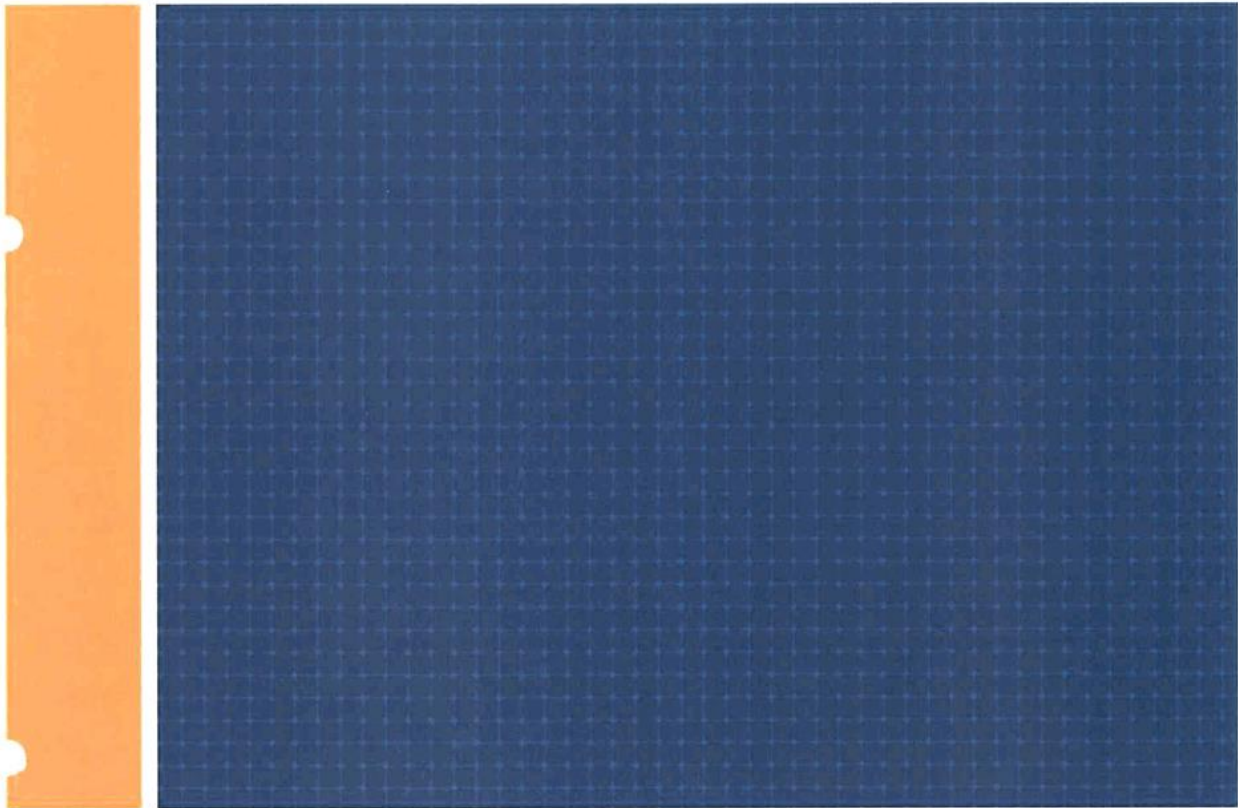
12. Report Limitations

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This report is intended for the sole use of GIC Kings Road Pty Ltd (the client) and should not be relied upon by any other party. It has been prepared to meet the objectives of the client with reference to the requirements of the development of the site, as understood by FMG Engineering at the time of writing. Those objectives may not necessarily be the objectives desired by any other third party or any potential purchaser or user of the site.

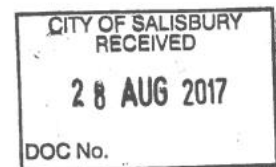
This report outlines the findings of the Preliminary Site Investigation works undertaken at the site. The nature of the assessment means that the findings are limited in their application and should not be considered as adequately addressing all potential environmental issues and risks.

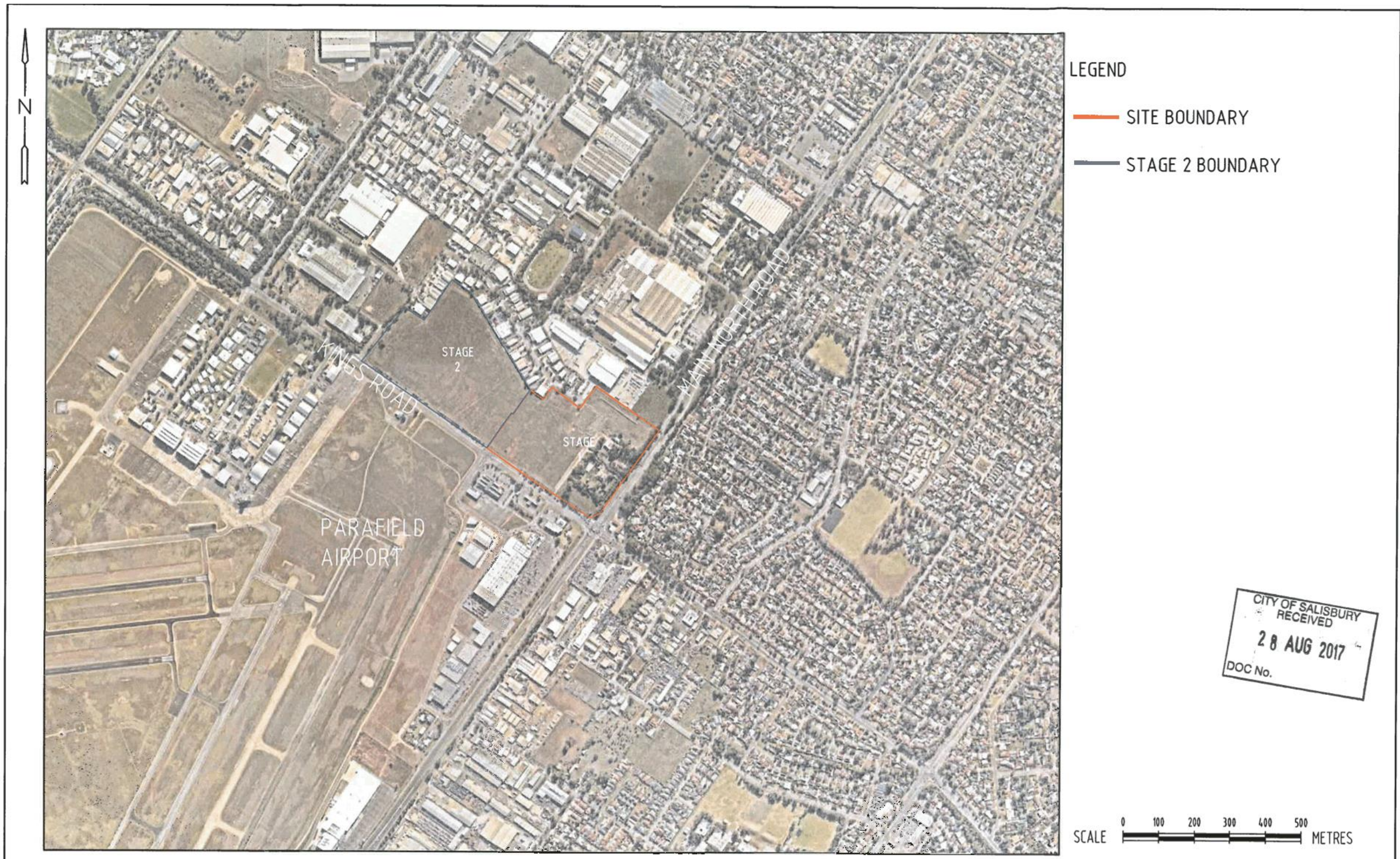
Reference should be made to Appendix E for further information about the interpretation of this report.



Appendix A

Figures





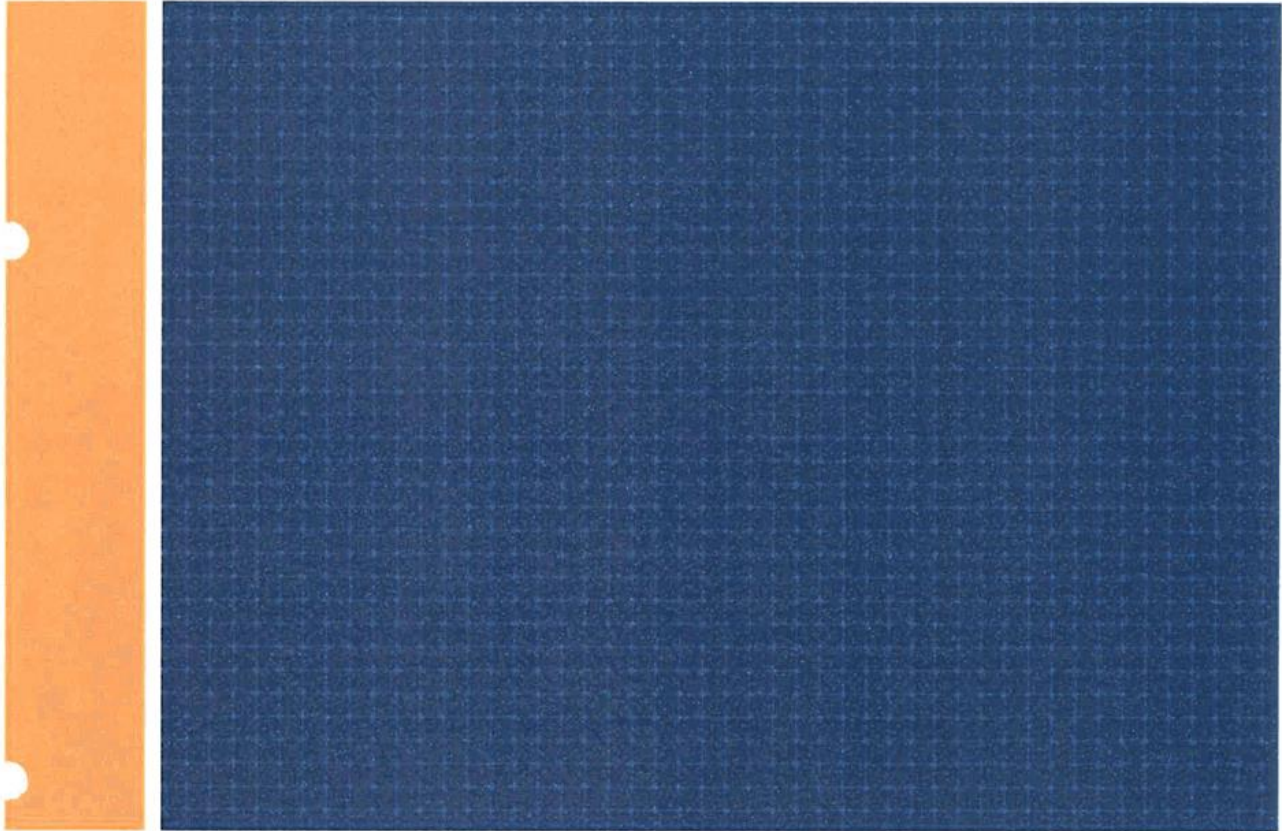
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		FMG Engineering		CLIENT GIC KINGS ROAD PTY LTD PROJECT TITLE PRELIMINARY SITE INVESTIGATION SITE ADDRESS 1460 MAIN NORTH ROAD, SALISBURY SOUTH DRAWING TITLE SITE LOCATION PLAN		DESIGNED KS	DRAWN KS
		PO Box 707 42 Fullarton Rd P 08 8363 0222 Kent Town SA 5071 North Road SA 5067 F 08 8363 1555 info@fmge.com.au ABN 58 083 071 185		BURNS HAMILTON CIVIL STRUCTURAL ENVIRONMENTAL GEOTECHNICAL BUILDING ASSESSMENT & FORENSIC SOIL & MATERIAL TESTING HOUSING COMMERCIAL PROJECT MANAGEMENT SURVEY		CHECKED DG	No. OF SHEETS 1
		DATE 25.07.2017		DATE STARTED 25.07.2017		SCALE 1:10,000 @ A3	
		INIT KS		APP DG		SITE NO & JOB No 255881	
REV A		DESCRIPTION PRELIMINARY ISSUE		DRAWING No. FIGURE 1		REV. A	

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Figure 2: Site Layout Plan and Sampling Locations
1460 Main North Road, Salisbury South, SA, 5106





Appendix B

Chemical Results Tables

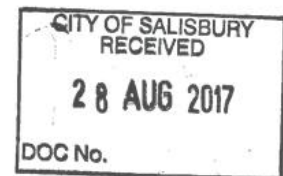


Table 2
Reported Concentrations of PAHs

Laboratory Limits of Reporting		PAHs																	
mg/kg	mg/kg	Acenaphthylene	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(k)fluoranthene	Chrysene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (sum of total)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	
0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4000	40	40	
ASC NEPM HSL D - Commercial																			
ASC NEPM HSL D - Commercial for Vapour Intrusion, 0-1m bgl																			
ASC NEPM HSL D - Commercial for Vapour Intrusion, 1-2m bgl																			
ASC NEPM HSL D - Commercial for Vapour Intrusion, 2-4m bgl																			
ASC NEPM ESLS for Commercial																			
ASC NEPM EIS for Commercial																			
Sample ID	Date Sampled	Laboratory Report	Purpose	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH2_0-0.22	26-Jul-17	EM1710012	Assess pesticide usage and grid based borehole	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH5_0-0.53	26-Jul-17	EM1710012		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH7_0-0.45	26-Jul-17	EM1710012		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HA03_0-0.25	26-Jul-17	EM1710012	Assess basement AST	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HA02_0-0.05	26-Jul-17	EM1710012	Assess stormwater equipment	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HA03_0-0.3	26-Jul-17	EM1710012	Assess stockpile in central portion of site	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HA04_0-0.3	26-Jul-17	EM1710012		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
HA06_0-0.3	26-Jul-17	EM1710012	Assess stockpiles along northern boundary	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5



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Table 3
Reported Concentrations of TRH and BTEX

Sample ID	Date Sampled	Laboratory Report	Purpose	TRH						BTEX							
				CG-C10 mg/kg	C10-C16 mg/kg	C16-C24 mg/kg	C34-C40 mg/kg	C10-C40 (Sum of total)	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Total BTEX mg/kg	Xylene (m & p) mg/kg	Xylene (o) mg/kg	Xylene Total mg/kg	F1-C6-C10 less BTEX mg/kg	F2-C10-16 less Naphthalene mg/kg
Laboratory Limit of Reporting				10	30	100	100	50	0.2	0.5	0.5	0.2	0.5	0.5	0.5	10	50
ASC NEPM HSL D - Commercial																	
ASC NEPM HSL D - Commercial for Vapour Intrusion, 0-1m bgl																	
ASC NEPM HSL D - Commercial for Vapour Intrusion, 1-2m bgl																	
ASC NEPM HSL D - Commercial for Vapour Intrusion, 2-4m bgl																	
ASC NEPM ESLS for Commercial, coarse																	
ASC NEPM ESLS for Commercial																	
BH2_0-0.25	26-Jul-17	EM1710012	Assess pesticide usage and grid based borehole	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
BH5_0-0.53	26-Jul-17	EM1710012	Assess pesticide usage and grid based borehole	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
BH7_0-0.45	26-Jul-17	EM1710012	Assess beneath AST	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
HA01_0-0.25	26-Jul-17	EM1710012	Assess within farm equipment storage	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
HA02_0-0.05	26-Jul-17	EM1710012	Assess within farm equipment storage	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
HA03_0-0.3	26-Jul-17	EM1710012	Assess stockpiles in central portion of site	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
HA04_0-0.3	26-Jul-17	EM1710012	Assess stockpiles along northern boundary	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50
HA06_0-0.3	26-Jul-17	EM1710012	Assess stockpiles along northern boundary	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.2	<0.5	<0.5	<0.5	<10	<50



Table 6
Reported Concentrations of Other Pesticides

Sample ID	Date Sampled	Laboratory Report	Purpose	Organophosphorous Pesticides												Pesticides								
				Azinphos methyl mg/kg	Bromophos-ethyl mg/kg	Carbophenothion mg/kg	Chlorfenvinphos mg/kg	Chlorpyrifos mg/kg	Chlorpyrifos-methyl mg/kg	Diazinon mg/kg	Dichlorvos mg/kg	Dimethoate mg/kg	Ethion mg/kg	Fenitrothion mg/kg	Malathion mg/kg	Methyl parathion mg/kg	Monocrotophos mg/kg	Prothios mg/kg	Bifenthrin mg/kg	Demeton-5-methyl mg/kg	Fenamiphos mg/kg	Mifex mg/kg	Parathion mg/kg	Triphos-ethyl mg/kg
Laboratory Limit of Reporting				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.05
ASC NEPM HSL D - Commercial																								
ASC NEPM HSL D - Commercial for Vapour Intrusion, 0-3m bgl																								
ASC NEPM HSL D - Commercial for Vapour Intrusion, 1-2m bgl																								
ASC NEPM HSL D - Commercial for Vapour Intrusion, 2-4m bgl																								
ASC NEPM ESLs for Commercial																								
ASC NEPM EILs for Commercial																								
BH1_0-0.5	26-Jul-17	EM1710012	Assess pesticide usage and grid based borehole	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
BH2_0-0.22	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
BH3_0-0.47	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
BH5_0-0.53	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
BH6_0-0.26	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
BH9_0-0.43	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
BH11_0-0.55	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
HA04_0-0.3	26-Jul-17	EM1710012		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05



Table 7
Reported Concentrations of Herbicides

Laboratory Limit of Reporting ASC NEPM HSL D - Commercial	Herbicides									
	Atrazine mg/kg	Atrazine mg/kg	Cyanazine mg/kg	Propetryn mg/kg	Propazine mg/kg	Simazine mg/kg	Terbutryn mg/kg	Terbutryazine mg/kg	Terbutryn mg/kg	Terbutryazine mg/kg
2500	<0.002	<0.002	<0.005	0.002	0.002	0.005	0.1	0.002		
ASC NEPM HSL D - Commercial for Vapour Intrusion, 0-1m bgl										
ASC NEPM HSL D - Commercial for Vapour Intrusion, 1-2m bgl										
ASC NEPM HSL D - Commercial for Vapour Intrusion, 2-4m bgl										
ASC NEPM ESLS for Commercial										
ASC NEPM EILs for Commercial										

Sample ID	Date Sampled	Laboratory Report	Purpose	
BH1_0-0.5	26-Jul-17	EM1710012	Assess pesticide usage and grid based borehole	
BH2_0-0.22	26-Jul-17	EM1710012		
BH3_0-0.47	26-Jul-17	EM1710012		
BH5_0-0.53	26-Jul-17	EM1710012		
BH6_0-0.26	26-Jul-17	EM1710012		
BH9_0-0.43	26-Jul-17	EM1710012		
BH11_0-0.55	26-Jul-17	EM1710012		
HA04_0-0.3	26-Jul-17	EM1710012		Assess stockpile in central portion of site



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Table 9
Summary of Duplicate Analysis

Chem. Group	ChemName	Units	EQI	EM1710012		EM1710012		EM1710012		EM1710012		EM1710012		EM1710012		EM1710012		EM1710012	
				Field ID	Sampled Date	Field ID	Sampled Date	Field ID	Sampled Date	Field ID	Sampled Date	Field ID	Sampled Date	Field ID	Sampled Date	Field ID	Sampled Date	Field ID	Sampled Date
Metals	Arsenic	mg/kg	5 (Primary); 4 (Interlab)	<5.0	<5.0	6	6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Cadmium	mg/kg	1 (Primary); 0.4 (Interlab)	<1.0	<1.0	34	34	37	37	32	32	32	32	32	32	32	32	32	32
Lead	Chromium (III+VI)	mg/kg	2 (Primary); 1 (Interlab)	15	16	10	11	11	11	11	11	11	11	11	11	11	11	11	11
	Copper	mg/kg	5 (Primary); 1 (Interlab)	9	10	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Lead	Lead	mg/kg	5 (Primary); 1 (Interlab)	<0.1	<0.1	21	23	21	21	21	21	21	21	21	21	21	21	21	21
	Mercury	mg/kg	0.1	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Nickel	Nickel	mg/kg	2 (Primary); 1 (Interlab)	19	21	23	23	21	21	21	21	21	21	21	21	21	21	21	21
	Zinc	mg/kg	5 (Primary); 1 (Interlab)	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
RPD		%		0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0
		%		0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0



Appendix C

Soil Borehole Logs





Borehole No.
BH01
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284873.00 mE , 6147795.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 22.00m
Drill Operator: SPK GeoDrill Pty Ltd	Hole Diameter: 50mm
	Datum: AHD

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered			21	1		SM	SILTY SAND: pale brown; sand, fine grained; moist; loose.	M	L	0%		TOPSOIL
							CH	SILTY SANDY CLAY: red brown; of high plasticity; greater than plastic limit; firm.	>PL	F	2.8%		ALLUVIUM POORAKA FMN
							SM	SILTY SAND: pale brown; with gravel; sand, calcareous; gravel, sub-angular to angular; moist; loose.	M	L	0%		
							SM	SILTY SAND: pale brown; with cobbles; cobbles, calcareous; moist; loose; poorly graded.					
							CL	SILTY SANDY CLAY: brown; of low plasticity; with gravel; silt, calcareous; gravel, sub-angular to angular; moist; firm.	M	F	1%		
							CH	CLAY: red brown; of medium plasticity; greater than plastic limit; hard.	>PL	H	1.5%		
				18	4		CI	SILTY CLAY: pale brown grey mottled; of medium plasticity; greater than plastic limit; stiff.	>PL	St	1%		

Method	Consistency / Relative Density	Photo
PT - Push tube	VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	
Samples and Tests	Moisture Condition	
U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer	D - Dry M - Moist W - Wet	
Classification Symbols and Soil Descriptions	Plastic Limit	
Based on Unified Soil Classification System	> PL = PL < PL	Water Level (Date) Inflow Partial Loss Complete Loss
	Penetration	



Borehole No.
BH01
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284873.00 mE , 6147795.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 22.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated I _{pt}	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT			Groundwater Not Encountered	16	6		CL-CLC	<CONT> SILTY CLAY: pale brown grey mottled; of medium plasticity; greater than plastic limit; stiff. Hole Terminated at 6.00m - Target depth	>PL	St	1%	100 200 300 400 500	ALLUVIUM POORAKA FMN

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>▽ Level (Date) △ Inflow △ Partial Loss ▲ Complete Loss</p>	<p>Photo</p>
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>▨ No resistance range to refusal</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>				

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Borehole No.
BH02
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284724.00 mE , 6147775.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT		Groundwater Not Encountered		20	1	[Cross-hatched symbol]	FILL	FILL SANDY SILT: dark brown; of non plasticity; moist; loose.	M	L	0%		FILL
						[Dashed symbol]	ML	SANDY SILT: red brown mottled pale brown; of non plasticity; moist; loose.	M	L	0.5%		ALLUVIUM POORAKA FMN
						[Horizontal lines symbol]	CH	CLAY: orange brown; of high plasticity; greater than plastic limit; firm.	>PL	F	2.8%		
						[Dashed symbol]	ML	SANDY SILT: pale brown mottled red brown; of non plasticity; with gravel; gravel, calcareous; moist; medium dense.	M	MD	0.5%		
						[Dotted symbol]	SW	SILTY SAND: pale brown; with gravel; gravel, sub-angular to angular, calcareous; dry; loose; well graded.	D	L	1.5%		
Hole Terminated at 1.50m - Target depth													

Method
PT - Push tube

Consistency / Relative Density
 VS - Very Soft
 S - Soft
 F - Firm
 Vst - Very Stiff
 H - Hard
 VL - Very Loose
 L - Loose
 MD - Medium Dense
 D - Dense
 VD - Very Dense

Samples and Tests
 U - Undisturbed Sample
 D - Disturbed Sample
 SPT - Standard Penetration Test
 PP - Pocket Penetrometer

Moisture Condition
 D - Dry
 M - Moist
 W - Wet

Water
 ▽ Level (Date)
 ▲ Inflow
 ▲ Partial Loss
 ▲ Complete Loss

Classification Symbols and Soil Descriptions
 Based on Unified Soil Classification System

Plastic Limit
 > PL
 = PL
 < PL

Penetration
 [Diagonal lines symbol] No resistance range to refusal





Borehole No.
BH03
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284648.00 mE , 6147667.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated I _p	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered			20	1		SM	SILTY SAND: pale brown; of low plasticity; with clay; sand, fine grained; moist; loose.	M	L	0.5%		TOPSOIL
							CH	SILTY SANDY CLAY: red brown; greater than plastic limit; soft to firm.	>PL	S to F	2.8%		ALLUVIUM POORAKA FMN
							SM	SILTY SAND: pale brown; with gravel; gravel, sub-angular to angular, calcareous; dry; very loose.	D	VL	0%		
							CI	SILTY CLAY: pale brown mottled red brown; of medium plasticity; greater than plastic limit; firm.	>PL	F	2%		
							CH	CLAY: red brown mottled pale brown; of high plasticity; greater than plastic limit; firm.	>PL	F	1%		
Hole Terminated at 4.40m - Target depth													

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>Level (Date) Inflow Partial Loss Complete Loss</p>	<p>Photo</p>
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>No resistance range to refusal</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>				

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Borehole No.
BH04
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284712.00 mE , 6147599.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description				Observations					
Method	Penetration	Water	Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT			0.65m: EST CBR				FILL	FILL CLAYEY SAND: pale brown; of low plasticity; with gravel; moist; loose.	M	L	0.5%		FILL
							SM	SILTY SAND: pale brown; sand, fine grained; moist; loose.	M	L	0%		TOPSOIL
							CI	SILTY CLAY: dark brown; of medium plasticity; with organic matter (root fibres less than 2mm); greater than plastic limit; soft.	>PL	S	2.8%		ALLUVIUM POORAKA FMN
				20	1		SP	SILTY SAND: pale brown; with gravel; gravel, angular, calcareous; dry; loose.	D	L	0%		
				19	2								
				18	3		CI	SILTY CLAY: red brown mottled pale brown; of medium plasticity; less than plastic limit; firm.	<PL	F	1.5%		
				17	4			Hole Terminated at 4.00m - Target depth					

Method PT - Push tube	Consistency / Relative Density VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Moisture Condition D - Dry M - Moist W - Wet	Water ☑ Level (Date) ▲ Inflow ▲ Partial Loss ▲ Complete Loss
Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit > PL = PL < PL	Penetration No resistances range to refusal





Borehole No.
BH05
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Engineering Log - Borehole Project No.: 255881
 Client: GIC Kings Road Ltd Commenced: 26/07/2017
 Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH Completed: 26/07/2017
 Hole Location: See Site Plan Logged By: JE
 Hole Position: 284753.00 mE , 6147891.00 mN Coordinate System: MGA94 Checked By: NB
 Drill Model: Rockmaster RL Surface: 22.00m
 Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm Datum: AHD

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT		Groundwater Not Encountered		21	1		SM	SILTY SAND: pale brown; moist; loose.	M	L	0.5%	100	TOPSOIL
							CH	SILTY SANDY CLAY: red brown; of high plasticity; greater than plastic limit; firm.	>PL	F	2.8%	200	ALLUVIUM POORAKA FMN
							SM	SILTY SAND: pale brown; with gravel; gravel, angular, calcareous; moist; loose.	M	L	0%	300	
							CI	SILTY CLAY: red brown mottled pale brown; of medium plasticity; moist; firm.	M	F	1.5%	400	
				19	3		CI	CLAY: red brown; of medium plasticity; with silt / sand; greater than plastic limit; stiff.	>PL	St	2%	500	
				18	4			Hole Terminated at 4.00m - Target depth					

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>▽ Level (Date) ▽ Inflow ▲ Partial Loss ▼ Complete Loss</p>	<p>Photo</p>
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p> No resistance range to refusal</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>				

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Borehole No.
BH06
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284719.00 mE , 6147844.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description					Observations
Method	Penetration	Water	Remarks	Material Description	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT				Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional				100 200 300 400 500	
				FILL SILTY CLAY: brown; with gravel; moist; very soft.	M	VS	1.5%		FILL
				SILTY SAND: pale brown; sand, fine grained; moist; loose.	M	L	0.5%		ALLUVIUM POORAKA FMN
				SILTY CLAY: red brown; of medium plasticity; greater than plastic limit; soft.	>PL	S	2.8%		
				CLAYEY SILTY SAND: pale brown; with gravel; gravel, calcareous; moist; medium dense.	M	MD	0.8%		
				SILTY CLAY: brown mottled pale brown; of high plasticity; greater than plastic limit; hard.	>PL	H	2%		

Method
PT - Push tube

Consistency / Relative Density
 VS - Very Soft
 S - Soft
 F - Firm
 Vst - Very Stiff
 H - Hard
 VL - Very Loose
 L - Loose
 MD - Medium Dense
 D - Dense
 VD - Very Dense

Samples and Tests
 U - Undisturbed Sample
 D - Disturbed Sample
 SPT - Standard Penetration Test
 PP - Pocket Penetrometer

Moisture Condition
 D - Dry
 M - Moist
 W - Wet

Water
 Level (Date)
 Inflow
 Partial Loss
 Complete Loss

Classification Symbols and Soil Descriptions
 Based on Unified Soil Classification System

Plastic Limit
 > PL
 = PL
 < PL

Penetration
 No resistance range to refusal





Borehole No.
BH06
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284719.00 mE, 6147844.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT		Groundwater Not Encountered		15	6		AC NT Y O CH	<CONT> SILTY CLAY: brown mottled pale brown; of high plasticity; greater than plastic limit; hard.	>PL	H	2%	100 200 300 400 500	ALLUVIUM POORAKA FMN
							CI	SILTY SANDY CLAY: pale brown mottled red; of medium plasticity; greater than plastic limit; stiff.	>PL	St	1.5%		
								Hole Terminated at 6.00m - Target depth					
				14	7								
				13	8								
				12	9								

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Water</p> <p>Level (Date) Inflow Partial Loss Complete Loss</p>	<p>Photo</p>
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>No resistance range to refusal</p>	

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Borehole No.
BH07
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284638.00 mE , 6147882.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd	Hole Diameter: 50mm
	Datum: AHD

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT		Groundwater Not Encountered		20	1	[Cross-hatched]	FILL	FILL SILTY SAND: brown; of low plasticity; with clay / gravel; moist; loose.	M	L	0.5%		FILL
						[Horizontal lines]	SC	CLAYEY SILTY SAND: pale brown; of low plasticity; moist; loose.	M	L	0.5%		TOPSOIL
						[Horizontal lines]	CI	SILTY CLAY: red brown mottled grey pale brown; with organic matter (root fibres less than 2mm) / gravel; greater than plastic limit; firm.	>PL	F	2.8%		ALLUVIUM POORAKA FMN
				19	2	[Dotted]	SC	CLAYEY SAND; with gravel; gravel, sub-angular; dry; soft; well graded.	D	S	0%		
				18	3	[Horizontal lines]	CL	SILTY SANDY CLAY: borwn orange; of low plasticity; with gravel; gravel, sub-angular to angular, calcareous; less than plastic limit; firm; gap graded.	<PL	F	0.5%		
				17	4	[Horizontal lines]	CH	CLAY: brown mottled pale brown; of medium to high plasticity; greater than plastic limit; stiff to hard.	>PL	St to H	2%		
								Hole Terminated at 4.00m - Target depth					

Method PT - Push tube	Consistency / Relative Density VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Moisture Condition D - Dry M - Moist W - Wet	Water Level (Date) <input checked="" type="checkbox"/> Inflow <input type="checkbox"/> Partial Loss <input type="checkbox"/> Complete Loss <input type="checkbox"/>
Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit > PL = PL < PL	Penetration No resistance range to refusal





Borehole No.
BH08
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284593.00 mE , 6147803.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description					Observations			
Method Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered		20	1		CL	SILTY CLAY: red brown mottled grey pale brown; of low plasticity; with organic matter (root fibres less than 2mm) / gravel; greater than plastic limit; firm.	>PL	F	0.5%	100 200 300 400 500	ALLUVIUM POORAKA FMN
						SC	CLAYEY SAND: pale brown mottled dark brown red brown; with gravel; moist; loose.	M	L	0.5%		
						CI	SILTY CLAY: red brown mottled pale brown; of medium plasticity; greater than plastic limit; firm.	>PL	F	2.8%		
Hole Terminated at 1.50m - Target depth												

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Water</p> <p>Level (Date) Inflow Partial Loss Complete Loss</p>	<p>Photo</p>
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Penetration</p> <p>No resistance range to refusal</p>	
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>		

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Borehole No.
BH09
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284535.00 mE , 6147879.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 21.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description				Observations				
Method	Penetration	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Water	Groundwater Not Encountered	21.00	0		FILL	FILL CLAYEY SILT: red brown mottled grey pale brown; of low plasticity; with gravel; moist; firm.	M	F	0.3%	100 200 300 400 500	FILL
		0.60m: EST CBR		1		CI	SILTY SANDY CLAY: red brown mottled pale brown grey; of medium plasticity; greater than plastic limit; firm.	>PL	F	2%		ALLUVIUM POORAKA FMN
			18	2		SM	SANDY SILT: pale brown mottled red brown; moist; medium dense; well graded.	M	MD	0%		
			17	3			Hole Terminated at 4.00m - Target depth					

Method PT - Push tube	Consistency / Relative Density VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Moisture Condition D - Dry M - Moist W - Wet	Water Level (Date) Inflow Partial Loss Complete Loss
Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer	Classification Symbols and Soil Descriptions Based on Unified Soil Classification System	Plastic Limit > PL = PL < PL	Penetration No resistance range to refusal





Borehole No.
BH10
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284507.00 mE , 6147824.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 20.00m
Drill Operator: SPK GeoDrill Pty Ltd Hole Diameter: 50mm	Datum: AHD

Drilling Information				Soil Description					Observations			
Method Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT Groundwater Not Encountered				19	[Cross-hatched]	FILL	FILL CLAYEY SILT: pale brown; with gravel; moist; loose to medium dense.	M	L to MD	0.5%		FILL
					[Horizontal lines]	ML	CLAYEY SILT: red brown mottled grey pale brown; moist; firm.	M	F	0.5%		TOPSOIL
					[Horizontal lines]	CH	SILTY SANDY CLAY: red brown; of high plasticity; greater than plastic limit; firm.	>PL	F	2.8%		ALLUVIUM POORAKA FMN
					[Dotted]	SM	CLAYEY SILTY SAND: pale brown; of low plasticity; with gravel; sand, calcareous; gravel, sub-angular to angular; dry; medium dense.	D	MD	0.5%		
				17		CL	SILTY SANDY CLAY: pale brown mottled red brown; of low plasticity; greater than plastic limit; firm.	>PL	F	1%		
				16			Hole Terminated at 4.00m - Target depth					

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>Level (Date) Inflow Partial Loss Complete Loss</p>	<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>No resistance range to refusal</p>	<p>Photo</p>
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Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Borehole No.
BH11
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 26/07/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 26/07/2017
Hole Location: See Site Plan	Logged By: JE
Hole Position: 284526.00 mE , 6147765.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Rockmaster	RL Surface: 20.00m
Drill Operator: SPK GeoDrill Pty Ltd	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description					Observations			
Method	Penetration	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated I _p	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered		19	1		CI	SILTY SANDY CLAY: red brown mottled grey pale brown; of medium plasticity; with gravel; greater than plastic limit; firm.	>PL	F	2.8%		ALLUVIUM POORAKA FMN
				SM		SILTY SAND: pale brown; with gravel; sand, calcareous; dry; loose.	D	L	0%			
				SM		SILTY SAND: pale brown; dry; loose; well graded.	D	L	0%			
				ML		CLAYEY SANDY SILT: red brown; dry; firm; well graded.	D	F	0.5%			
			18	2			CLAYEY SILTY SAND: pale brown mottled red brown; of low plasticity; with gravel; silt, calcareous; dry; medium dense.					
			17	3		SC		D	MD	0.5%		
			16	4			Hole Terminated at 4.00m - Target depth					

Method
PT - Push tube

Consistency / Relative Density
 VS - Very Soft
 S - Soft
 F - Firm
 Vst - Very Stiff
 H - Hard
 VL - Very Loose
 L - Loose
 MD - Medium Dense
 D - Dense
 VD - Very Dense

Samples and Tests
 U - Undisturbed Sample
 D - Disturbed Sample
 SPT - Standard Penetration Test
 PP - Pocket Penetrometer

Moisture Condition
 D - Dry
 M - Moist
 W - Wet

Water
 ▽ Level (Date)
 ▴ Inflow
 ▲ Partial Loss
 ▼ Complete Loss

Classification Symbols and Soil Descriptions
 Based on Unified Soil Classification System

Plastic Limit
 > PL
 = PL
 < PL

Penetration

 No resistance
 range to refusal





Borehole No.

BH12

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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 09/08/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 09/08/2017
Hole Location: See Site Plan	Logged By: AR
Hole Position: 284787.00 mE , 6147825.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Ezi Probe	RL Surface: 22.00m
Drill Operator: A & S Drilling	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered			21	1	[Cross-hatched]	FILL	FILL SANDY CLAY: pale yellow brown; of low plasticity; with gravel; gravel, angular, up to 5mm; moist to wet; soft.	M to W	S	1%		FILL
						ML	SANDY SILT: orange brown; of low plasticity; moist to wet; soft to firm.	M to W	S to F	0.3%		ALLUVIUM POORAKA FMN	
						SM	SILTY SAND: pale cream brown; of low plasticity; with clay / gravel; gravel, angular, up to 5mm; dry to moist; medium dense; calcareous.	D to M	MD	0.3%			
						ML	CLAYEY SILT: pale brown; of low plasticity; with sand; sand, fine grained; moist; dense.	M	D	0.5%			
						CL-CI	SILTY SANDY CLAY: orange brown; of low to medium plasticity; sand, fine grained; greater than plastic limit; stiff.	>PL	St	1.5%			
				19	3	[Horizontal lines]	CL-CI						
				18	4	[Vertical lines]	SC	CLAYEY SILTY SAND: pale yellow orange	M	MD to D	0.5%		ALLUVIUM

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>▽ Level (Date) ▽ Inflow △ Partial Loss ▲ Complete Loss</p>	<p>Photo</p>
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>[Symbol] No resistance range to refusal</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>				

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BH12
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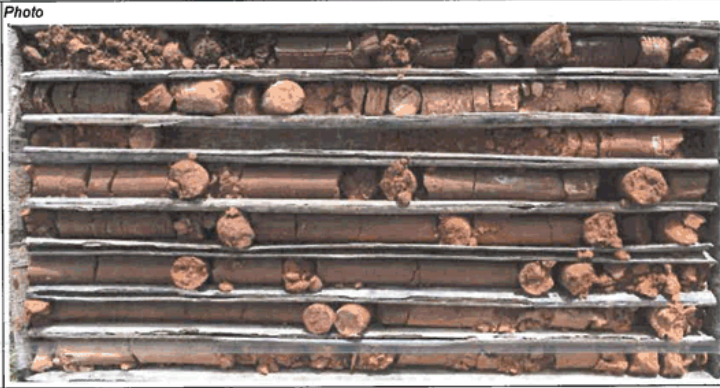
Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 09/08/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 09/08/2017
Hole Location: See Site Plan	Logged By: AR
Hole Position: 284787.00 mE , 6147825.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Ezi Probe	RL Surface: 22.00m
Drill Operator: A & S Drilling	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description				Observations				
Method Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered	SPT: 6.10m (S) 5,6,8 N=14	16	6		SC	brown; of low plasticity, trace gravel; sand, fine grained; gravel, angular, up to 5mm; moist; medium dense to dense. 6.4m - 6.6m: SAND: fine to medium grained	M	MD to D	0.5%		POORAKA FMN
		PP: 7.20m 170kPa	15	7		CI	SILTY CLAY: pale grey yellow mottled brown orange; of medium plasticity; greater than plastic limit becoming wet; firm becoming soft.	>PL becoming W	F becoming S	2%		ALLUVIUM POORAKA FMN
		SPT: 7.60m (S) 3,4,6 N=10	14	8		CI						
		PP: 8.20m 150kPa										
		PP: 8.70m 150kPa										
		SPT: 9.10m (S) 4,6,9 N=15	13	9		CI						
							Hole Terminated at 9.55m - Target depth					

Method PT - Push tube	Consistency / Relative Density VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense	Moisture Condition D - Dry M - Moist W - Wet	Water <input checked="" type="checkbox"/> Level (Date) <input type="checkbox"/> Inflow <input type="checkbox"/> Partial Loss <input type="checkbox"/> Complete Loss
Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer	Plastic Limit > PL = PL < PL	Penetration No resistance range to refusal	





Borehole No.
BH13
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Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 09/08/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 09/08/2017
Hole Location: See Site Plan	Logged By: AR
Hole Position: 284606.00 mE , 6147688.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Ezi Probe	RL Surface: 20.00m
Drill Operator: A & S Drilling	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered		SPT: 1.50m (S) 9,13,14 N=27	19	1	[Cross-hatched]	FILL	FILL SANDY CLAY: orange brown; of medium plasticity; with gravel; gravel, angular, up to 5mm; moist; soft to firm.	M	S to F	1%		FILL
				19	1	[Horizontal lines]	CH	SILTY CLAY: red brown; of high plasticity; with sand; sand, fine to coarse grained; less than plastic limit; stiff.	<PL	St	2.8%		ALLUVIUM POORAKA FMN
				18	2	[Horizontal lines]	CL	SILTY SANDY CLAY: cream orange brown; of low plasticity; with gravel; gravel, angular, up to 5mm; less than plastic limit; stiff, calcareous.	<PL	St	1%		
				17	3	[Dotted]	SC	CLAYEY SAND: pale orange brown; with gravel; gravel, angular, up to 10mm; dry to moist; medium dense to dense.	D to M	MD to D	0.5%		
				17	3	[Dotted]	SW	SAND: brown orange; sand, fine to coarse grained; moist; medium dense to dense.	M	MD to D	0%		
			SPT: 3.10m (S) 4,6,7 N=13	16	4	[Horizontal lines]	CL	SILTY CLAY: pale grey mottled brown orange; of low plasticity; greater than plastic limit becoming wet; firm to stiff.	>PL becoming W	F to St	1%		
			SPT: 4.60m (S) 5,8,10 N=18										

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>▽ Level (Date) ▽ Inflow ▽ Partial Loss ▲ Complete Loss</p>	
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>[Diagonal lines] No resistance range to refusal</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>				

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Borehole No.
BH13
Page 2 of 2

Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 09/08/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 09/08/2017
Hole Location: See Site Plan	Logged By: AR
Hole Position: 284606.00 mE , 6147688.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Ezi Probe	RL Surface: 20.00m
Drill Operator: A & S Drilling	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description					Observations				
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered		SPT: 6.05m (S) 14,23,18 N=41	14	6	[Graphic Log]	CO NT CL	<CONT> SILTY CLAY: pale grey mottled brown orange; of low plasticity; greater than plastic limit becoming wet; firm to stiff.	>PL becoming W	F to St	1%		ALLUVIUM POORAKA FMN
							GW	SANDY GRAVEL: brown orange; gravel, sub-angular to angular, up to 60mm, quartzite; sand, fine to coarse grained; moist; dense.	M	D	0%		
							SC	CLAYEY SAND: brown orange; of low plasticity; sand, fine to medium grained; moist; medium dense to dense.	M	MD to D	0.5%		
							SW	GRAVELLY SAND: brown orange; sand, fine to coarse grained; gravel, rounded to sub-angular, up to 5mm; dry to moist; loose.	D to M	L	0%		
							CI- CH	SILTY SANDY CLAY: pale grey yellow; of medium to high plasticity; with gravel; gravel, sub-angular, up to 10mm; greater than plastic limit; stiff.	>PL	St	2%		
			SPT: 7.55m (S) 10,9,10 N=19	13	7	[Graphic Log]	SC	CLAYEY GRAVELLY SAND: brown orange; of low to medium plasticity; sand, fine to coarse grained; gravel, angular, up to 10mm; moist to wet; soft.	M to W	S	0.5%		
			SPT: 8.95m (S) 12,20,23 N=43	12	8	[Graphic Log]	CH	SILTY CLAY: pale grey mottled orange red; of high plasticity; with gravel; gravel, sub-angular to angular, up to 10mm; greater than plastic limit; very stiff to hard.	>PL	VSt to H	3%		
				11	9	[Graphic Log]		Hole Terminated at 9.40m - Target depth					

Method
PT - Push tube

Consistency / Relative Density
VS - Very Soft
S - Soft
F - Firm
Vst - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

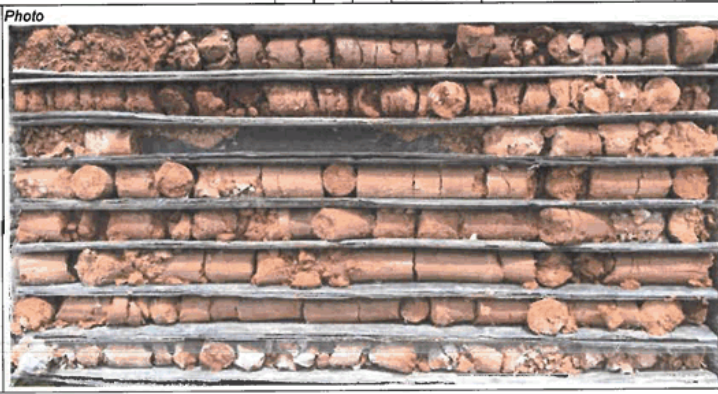
Moisture Condition
D - Dry
M - Moist
W - Wet

Water
▽ Level (Date)
△ Inflow
△ Partial Loss
▲ Complete Loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
> PL
= PL
< PL

Penetration
No resistance range to refusal





Borehole No.
BH14
Page 1 of 2

Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 09/08/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 09/08/2017
Hole Location: See Site Plan	Logged By: AR
Hole Position: 284549.00 mE , 6147691.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Ezi Probe	RL Surface: 20.00m
Drill Operator: A & S Drilling	Datum: AHD
Hole Diameter: 50mm	

Drilling Information				Soil Description				Observations					
Method	Penetration	Water	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT				19	1	[Hatched]	FILL	FILL SANDY CLAY: orange brown, trace gravel; gravel, angular, up to 30mm; moist; soft to firm.	M	S to F	1%		FILL
						[Horizontal lines]	ML	CLAYEY SILT: pale brown; of low plasticity; moist; firm.	M	F	0.5%		ALLUVIUM POORAKA FMN
						[Vertical lines]	CH	SILTY SANDY CLAY: brown red; of high plasticity, trace gravel; gravel, angular, up to 5mm; less than plastic limit; stiff.	<PL	St	2.8%		
			SPT: 1.50m (S) 15,18,19 N=37	18	2	[Dotted]	SC	CLAYEY SAND: pale orange cream; of low plasticity; with gravel; gravel, angular, up to 5mm; dry; dense; calcareous.	D	D	0.5%		
						[Dotted]	SC	CLAYEY SAND: orange brown; of low plasticity; with gravel; sand, fine to medium grained; gravel, sub-angular, up to 40mm; dry; dense.	D	D	0.5%		
			SPT: 3.00m (S) 12,15,19 N=34	17	3	[Dotted]	CL-CI	SILTY SANDY CLAY: orange brown; of low to medium plasticity; greater than plastic limit; stiff.	>PL	St	1.2%		
						[Horizontal lines]	CI	CLAY: red brown; of medium plasticity; with silt / sand; sand, fine grained; greater than plastic limit; stiff.	>PL	St	1.5%		
			SPT: 4.60m (S) 9,16,20 N=36	16	4	[Horizontal lines]							

<p>Method</p> <p>PT - Push tube</p>	<p>Consistency / Relative Density</p> <p>VS - Very Soft S - Soft F - Firm Vst - Very Stiff H - Hard VL - Very Loose L - Loose MD - Medium Dense D - Dense VD - Very Dense</p>	<p>Moisture Condition</p> <p>D - Dry M - Moist W - Wet</p>	<p>Water</p> <p>▽ Level (Date) △ Inflow ▽ Partial Loss ▲ Complete Loss</p>	
<p>Samples and Tests</p> <p>U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test PP - Pocket Penetrometer</p>	<p>Plastic Limit</p> <p>> PL = PL < PL</p>	<p>Penetration</p> <p>[Hatched] No resistance range to refusal</p>		
<p>Classification Symbols and Soil Descriptions</p> <p>Based on Unified Soil Classification System</p>				

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Borehole No.
BH14
Page 2 of 2

Engineering Log - Borehole

Project No.: 255881

Client: GIC Kings Road Ltd	Commenced: 09/08/2017
Project Name: Salisbury South Shopping Centre, SALISBURY SOUTH	Completed: 09/08/2017
Hole Location: See Site Plan	Logged By: AR
Hole Position: 284549.00 mE , 6147691.00 mN Coordinate System: MGA94	Checked By: NB
Drill Model: Ezi Probe	RL Surface: 20.00m
Drill Operator: A & S Drilling	Hole Diameter: 50mm
	Datum: AHD

Drilling Information				Soil Description					Observations			
Method	Penetration	Samples Tests Remarks	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description Fraction, Colour, Structure, Bedding, Plasticity, Sensitivity, Additional	Moisture Condition	Consistency / Relative Density	Estimated Ipt	Pocket Penetrometer UCS (kPa)	Structure and Additional Observations
PT	Groundwater Not Encountered	SPT: 6.15m (S) 8,12,16 N=28 PP: 7.00m 300kPa SPT: 7.50m (S) 6,12,18 N=30 PP: 8.00m 300kPa PP: 9.00m 200kPa SPT: 9.05m (S) 7,9,11 N=20	14	6		CL	SILTY SANDY CLAY: yellow orange brown; of low plasticity; with gravel; gravel, sub-angular, up to 5mm; greater than plastic limit; stiff.	>PL	St	1%		ALLUVIUM POORAKA FMN
			13	7		SW	SAND: brown orange; of low plasticity; with clay; sand, fine to coarse grained, rounded to sub angular; moist; medium dense to dense. 6.8m - 6.9m: SAND: brown orange, fine to coarse grained	M	MD to D	0.3%		
			12	8		CI	SILTY SANDY CLAY: pale grey yellow brown; of medium plasticity; with gravel; gravel, angular, up to 20mm; greater than plastic limit; stiff becoming firm. 7.5m - 7.6m: soft lense at 7.5m	>PL	St becoming F	1.5%		
			11	9		CI-CH	SILTY CLAY: pale grey mottled yellow; of medium to high plasticity; greater than plastic limit; firm to stiff; blocky in part.	>PL	F to St	2%		
Hole Terminated at 9.50m - Target depth												

Method
PT - Push tube

Consistency / Relative Density
VS - Very Soft
S - Soft
F - Firm
Vst - Very Stiff
H - Hard
VL - Very Loose
L - Loose
MD - Medium Dense
D - Dense
VD - Very Dense

Samples and Tests
U - Undisturbed Sample
D - Disturbed Sample
SPT - Standard Penetration Test
PP - Pocket Penetrometer

Moisture Condition
D - Dry
M - Moist
W - Wet

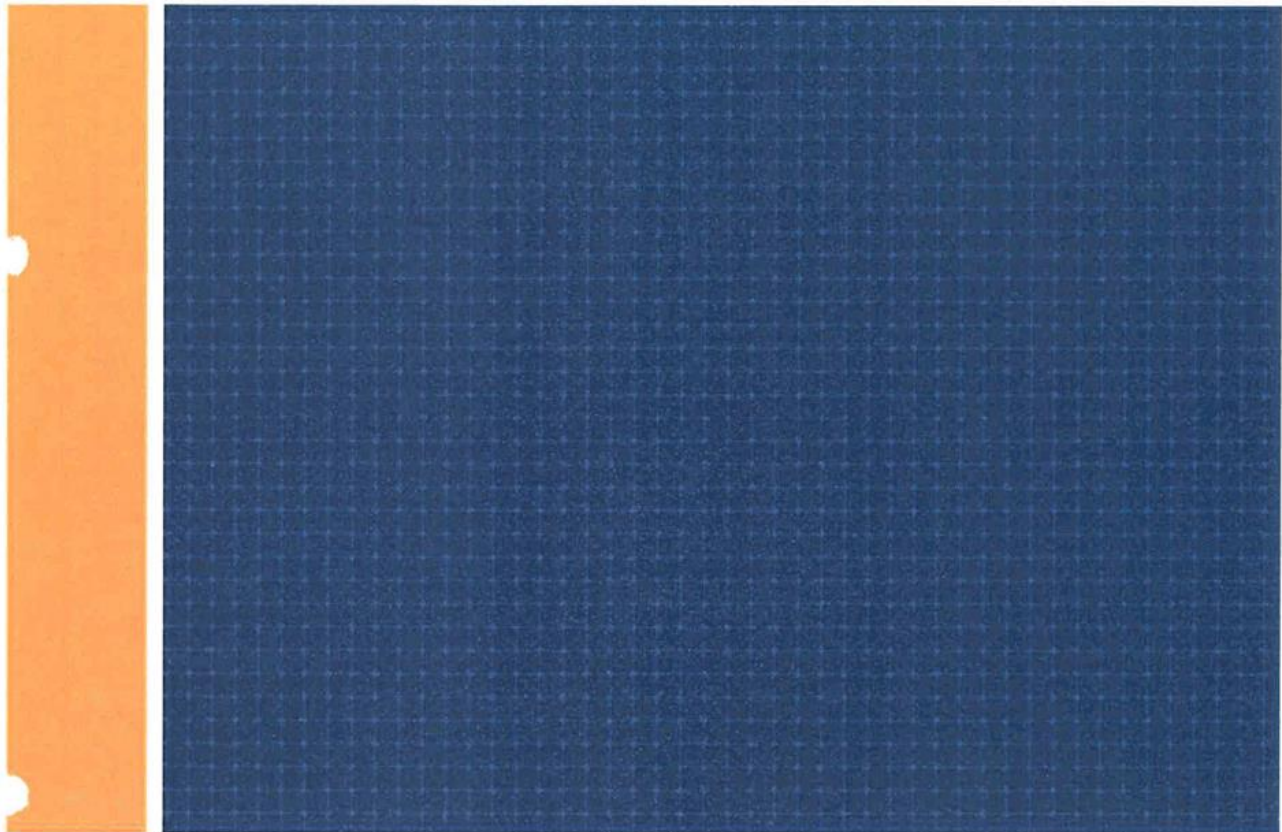
Water
▽ Level (Date)
▲ Inflow
△ Partial Loss
▲ Complete Loss

Classification Symbols and Soil Descriptions
Based on Unified Soil Classification System

Plastic Limit
> PL
= PL
< PL

Penetration
 No resistance
range to refusal





Appendix D

Certificates of Laboratory Analysis and Chain of Custody Records



1 Dalmore Drive, Scoresby, Victoria 3179
tel: +61 3 9763 2500

email: melbourne@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Melbourne | ABN 37 112 535 645 - 002

CERTIFICATE OF ANALYSIS

11406

Client:
FMG Engineering
42 Fullarton Rd
Norwood
SA 5067

Attention: Dean Noske

Sample log in details:

Your Reference: **255881 - Stage 1 North Area**
No. of samples: 2 Soils
Date samples received / completed instructions received 31/07/2017 / 31/07/2017

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date: 7/08/17 / 4/08/17
Date of Preliminary Report: Not Issued
NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

Chris De Luca
Senior Chemist

Envirolab Reference: 11406
Revision No: R 00



Client Reference: 255881 - Stage 1 North Area

Acid Extractable metals in soil	UNITS	11406-1	11406-2
Our Reference:	-----	QA01-Trip	QA02-Trip
Your Reference	-----	26/07/2017	26/07/2017
Date Sampled		Soil	Soil
Type of sample			
Date digested	-	01/08/2017	01/08/2017
Date analysed	-	02/08/2017	02/08/2017
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	28	33
Copper	mg/kg	15	18
Lead	mg/kg	9	10
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	15	18
Zinc	mg/kg	18	19

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Envirolab Reference: 11406
 Revision No: R 00

Page 2 of 7



Client Reference: 255881 - Stage 1 North Area

Moisture			
Our Reference:	UNITS	11406-1	11406-2
Your Reference	-----	QA01-Trip	QA02-Trip
Date Sampled	-----	26/07/2017	26/07/2017
Type of sample		Soil	Soil
Date prepared	-	01/08/2017	01/08/2017
Date analysed	-	02/08/2017	02/08/2017
Moisture	%	10	14

Envirolab Reference: 11406
 Revision No: R 00



Client Reference: 255881 - Stage 1 North Area

MethodID	Methodology Summary
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 12 hours.

Envirolab Reference: 11406
Revision No: R 00

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Client Reference: 255881 - Stage 1 North Area

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			01/08/2017	[NT]	[NT]	LCS-1	01/08/2017
Date analysed	-			02/08/2017	[NT]	[NT]	LCS-1	02/08/2017
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-1	96%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-1	101%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	99%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	100%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	100%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-1	111%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	100%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-1	101%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank				
Moisture								
Date prepared	-			[NT]				
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

EnviroLab Reference: 11406
Revision No: R 00



Client Reference: 255881 - Stage 1 North Area

Report Comments:

Asbestos ID was analysed by Approved Identifier: Not applicable for this job
Asbestos ID was authorised by Approved Signatory: Not applicable for this job

INS: Insufficient sample for this test
NR: Test not required
<: Less than

PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than

NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

Envirolab Reference: 11406
Revision No: R 00

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Client Reference: 255881 - Stage 1 North Area

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Envirolab Reference: 11406
Revision No: R 00





A division of EnviroLab Group



EnviroLab Services Pty Ltd - Melbourne:
 ABN 97 112 935 645 -02
 1 Dalmore Drive, Scoresby, VIC 3179 Australia
 PH +613 9763 2500 Fax +613 9763 2633
 melbourne@envirolab.com.au
 www.envirolab.com.au

DATA QUALITY ASSESSMENT SUMMARY

Report Details	
EnviroLab Report Reference	11406
Client ID	FMG Engineering
Project Reference	255881 - Stage 1 North Area
Date Issued	04/08/2017

QC DATA:

All laboratory QC data was within the EnviroLab Group's specifications

See Report 11406-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION:

The table below summarizes compliance with preservation / holding times (based on AS/APHA/ISO/NEPM/USEPA reference documents and standards):-

Analysis	Date Sampled	Date Extracted	Date Analysed	Accept
Acid Extractable metals in soil	26/07/2017	01/08/2017	02/08/2017	✓
Moisture	26/07/2017	01/08/2017	02/08/2017	✓

COMPLIANCE TO QC FREQUENCY (NEPM):

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

	Evaluation
Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) was analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency	✓

Refer to Certificate of Analysis for all Quality Control data.

ADDITIONAL REPORT COMMENTS:



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Envirolab Services Pty Ltd - Melbourne
 ABN 37 112 535 645 -02
 1 Dalmore Drive, Scoresby, VIC 3179 Australia
 PH +613 9763 2500 Fax +613 9763 2633
 melbourne@envirolab.com.au
 www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	FMG Engineering
Attention	Dean Noske

Sample Login Details	
Your Reference	255881 - Stage 1 North Area
Envirolab Reference	11406
Date Sample Received	31/07/2017
Date Instructions Received	31/07/2017
Date Results Expected to be Reported	07/08/2017

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	2 Soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	4.5C
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

Pamela Adams	Analisa Mathrick
Phone: 03 9763 2500	Phone: 03 9763 2500
Fax: 03 9763 2633	Fax: 03 9763 2633
Email: padams@envirolab.com.au	Email: amathrick@envirolab.com.au

Sample and Testing Details on following page



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Envirolab Services Pty Ltd - Melbourne
ABN 37 112 535 645 -02
1 Dalmore Drive, Scoresby, VIC 3179 Australia
PH +613 9763 2500 Fax +613 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

Sample Id	Acid Extractable metals in soil
QA01-Trip	✓
QA02-Trip	✓



Environmental

CERTIFICATE OF ANALYSIS

Work Order	: EM1710012	Page	: 1 of 23
Client	: FMG CONSULTING ENGINEERS	Laboratory	: Environmental Division Melbourne
Contact	: DEAN NOSKE	Contact	: Justin Wilson
Address	: 42 FULLARTON RD NORWOOD SA, AUSTRALIA 5067	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 08 83630222	Telephone	: +61-3-8549 9600
Project	: 255881	Date Samples Received	: 28-Jul-2017 10:50
Order number	: PO120012	Date Analysis Commenced	: 31-Jul-2017
C-O-C number	: ---	Issue Date	: 04-Aug-2017 17:08
Sampler	: JE		
Site	: Stage 1 - Northern Area		
Quote number	: ADBQ/003/15		
No. of samples received	: 58		
No. of samples analysed	: 22		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

RIGHT SOLUTIONS | RIGHT PARTNER



Page : 2 of 23
 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported result is less than (<) the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EK0285F: EM1710012-007 Poor matrix spike recovery for WAD-CN due to matrix effects. This has been confirmed by re-analysis.
- Benzo(e)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benzo(a)anthracene (0.1), Chrysene (0.01), Benzo(b)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1,2,3-cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
 Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- ED007 and ED008: When Exchangeable AI is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).



Page : 3 of 23
 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Compound	CAS Number	LOR	Client sample ID		Unit
			Client sampling date / time	Result	
Sub-Matrix: SOIL (Matrix: SOIL)					
EA055: Moisture Content (Dried @ 105-110°C)		1.0			
Moisture Content			8.8	12.7	13.3
			26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
			EM1710012-001	EM1710012-007	EM1710012-020
EG005T: Total Metals by ICP-AES					
Arsenic	7440-38-2	5	<5	7	<5
Barium	7440-39-3	10	---	70	---
Beryllium	7440-41-7	1	---	<1	---
Boron	7440-42-8	50	---	<50	---
Cadmium	7440-43-9	1	<1	<1	<1
Chromium	7440-47-3	2	22	28	29
Cobalt	7440-48-4	2	---	10	---
Copper	7440-50-8	5	14	18	16
Lead	7439-92-1	5	41	28	18
Manganese	7439-96-5	5	---	462	---
Nickel	7440-02-0	2	9	15	15
Selenium	7782-49-2	5	---	<5	---
Vanadium	7440-62-2	5	---	37	---
Zinc	7440-66-6	5	33	38	22
EG035T: Total Recoverable Mercury by FIMS					
Mercury	7439-97-6	0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)					
Hexavalent Chromium	18540-29-9	0.5	---	<0.5	---
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser					
Weak Acid Dissociable Cyanide		1	---	<1	---
EP066: Polychlorinated Biphenyls (PCB)					
Total Polychlorinated biphenyls		0.1	---	<0.1	---
EP068A: Organochlorine Pesticides (OC)					
alpha-BHC	319-84-6	0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)		0.05	<0.05	---	<0.05

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Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		Client sampling date / time		Result	
	CAS Number	LOR	Unit	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued						
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	BH1_0-0.5	BH5_0-0.53
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	EM1710012-001	EM1710012-020
Dieldrin	60-57-1	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	EM1710012-012	EM1710012-017
Endrin	72-20-8	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	EM1710012-001	EM1710012-017
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	EM1710012-012	EM1710012-017
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	26-Jul-2017 00:00	26-Jul-2017 00:00
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	26-Jul-2017 00:00	26-Jul-2017 00:00
Mirex	2385-85-5	0.20	mg/kg	<0.20	EM1710012-007	EM1710012-012
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
EP068B: Organophosphorus Pesticides (OP)						
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	BH1_0-0.5	BH5_0-0.53
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Mnecrotophos	6923-22-4	0.2	mg/kg	<0.2	EM1710012-012	EM1710012-017
Dimethoate	60-51-5	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Diazinon	333-41-5	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	EM1710012-007	EM1710012-012
Melathion	121-75-5	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Fenthion	55-38-9	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Parathion	56-38-2	0.2	mg/kg	<0.2	EM1710012-007	EM1710012-012
Pririmphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	EM1710012-007	EM1710012-012
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	26-Jul-2017 00:00	26-Jul-2017 00:00



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Analytical Results

Compound	CAS Number	LOR	Unit	Client sample ID	
				Client sampling date / time	Result
Sub-Matrix: SOIL (Matrix: SOIL)					
EP068B: Organophosphorus Pesticides (OP) - Continued					
Ethion	563-12-2	0.05	mg/kg	26-Jul-2017 00:00	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	26-Jul-2017 00:00	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	26-Jul-2017 00:00	<0.05
EP068C: Triazines					
Atrazine	1912-24-9	0.05	mg/kg	26-Jul-2017 00:00	<0.05
EP068D: Pyrethroids					
Bifenthrin	82657-04-3	0.05	mg/kg	26-Jul-2017 00:00	<0.05
EP075(SIM)A: Phenolic Compounds					
Phenol	108-95-2	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	26-Jul-2017 00:00	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	26-Jul-2017 00:00	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	26-Jul-2017 00:00	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	26-Jul-2017 00:00	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	26-Jul-2017 00:00	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons					
Naphthalene	91-20-3	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Fluorene	86-73-7	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Anthracene	120-12-7	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Pyrene	129-00-0	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Chrysene	218-01-9	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	26-Jul-2017 00:00	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	26-Jul-2017 00:00	<0.5

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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		Client sampling date / time		Client sample ID	
	CAS Number	LOR	Unit	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued						
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	***	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	***	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	***	<0.5
^ Sum of polycyclic aromatic hydrocarbons	***	0.5	mg/kg	<0.5	***	<0.5
^ Benzo(a)pyrene TEQ (zero)	***	0.5	mg/kg	<0.5	***	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	***	0.5	mg/kg	0.6	***	0.6
^ Benzo(a)pyrene TEQ (LOR)	***	0.5	mg/kg	1.2	***	1.2
EP080/071: Total Petroleum Hydrocarbons						
C6 - C9 Fraction	***	10	mg/kg	<10	***	<10
C10 - C14 Fraction	***	50	mg/kg	<50	***	<50
C15 - C28 Fraction	***	100	mg/kg	<100	***	<100
C29 - C36 Fraction	***	100	mg/kg	<100	***	<100
^ C10 - C36 Fraction (sum)	***	50	mg/kg	<50	***	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
C6 - C10 Fraction	***	10	mg/kg	<10	***	<10
C6 - C10-BTEX	***	10	mg/kg	<10	***	<10
(F1)	***	50	mg/kg	<50	***	<50
>C10 - C16 Fraction	***	100	mg/kg	<100	***	<100
>C16 - C34 Fraction	***	100	mg/kg	<100	***	<100
>C34 - C40 Fraction	***	50	mg/kg	<50	***	<50
^ >C10 - C40 Fraction (sum)	***	50	mg/kg	<50	***	<50
^ >C10 - C16 Fraction minus Naphthalene	***	50	mg/kg	<50	***	<50
(F2)	***	0.2	mg/kg	<0.2	***	<0.2
EP080: BTEXN						
Benzene	71-43-2	0.5	mg/kg	<0.5	***	<0.5
Toluene	108-88-3	0.5	mg/kg	<0.5	***	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	***	<0.5
meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	***	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	***	<0.5
^ Sum of BTEX	***	0.2	mg/kg	<0.2	***	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	***	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	***	<1
EP234H: Triazine Herbicides						
Ametryn	834-12-8	0.002	mg/kg	<0.002	***	<0.002



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Analytical Results

Compound	CAS Number	LOR	Unit	Client sample ID		Result
				BH1_0-0.5	BH2_0-0.22	
Client sampling date / time				BH3_0-0.47	BH4_0-0.49	BH5_0-0.53
26-Jul-2017 00:00				26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
EM1710012-001				EM1710012-007	EM1710012-017	EM1710012-020
Result				Result	Result	Result
EP234H: Triazine Herbicides - Continued						
Atrazine	1912-24-9	0.002	mg/kg	<0.002	<0.002	<0.002
Cyanazine	21725-46-2	0.005	mg/kg	<0.005	<0.005	<0.005
Prometryn	7287-19-6	0.002	mg/kg	<0.002	<0.002	<0.002
Propazine	139-40-2	0.002	mg/kg	<0.002	<0.002	<0.002
Simazine	122-34-9	0.005	mg/kg	<0.005	<0.005	<0.005
Terbutylazine	5915-41-3	0.002	mg/kg	<0.002	<0.002	<0.002
Terbutryn	886-50-0	0.1	mg/kg	<0.1	<0.1	<0.1
EP066S: PCB Surrogate						
Decachlorobiphenyl	2051-24-3	0.1	%	83.3	83.3	83.3
EP068S: Organochlorine Pesticide Surrogate						
Dibromo-DDE	21655-73-2	0.05	%	86.3	96.7	83.8
EP068T: Organophosphorus Pesticide Surrogate						
DEF	78-48-8	0.05	%	73.6	91.3	72.4
EP075(SIM)S: Phenolic Compound Surrogates						
Phenol-d6	13127-88-3	0.5	%	87.3	87.3	87.3
2-Chlorophenol-D4	93951-73-6	0.5	%	104	104	104
2,4,6-Tribromophenol	118-79-6	0.5	%	58.8	58.8	58.8
EP075(SIM)T: PAH Surrogates						
2-Fluorobiphenyl	321-60-8	0.5	%	113	113	113
Anthracene-d10	1719-06-8	0.5	%	107	107	107
4-Terphenyl-d14	1718-51-0	0.5	%	114	114	114
EP080S: TPH(V)/BTEX Surrogates						
1,2-Dichloroethane-D4	17060-07-0	0.2	%	75.6	75.6	75.6
Toluene-D8	2037-26-5	0.2	%	77.1	77.1	77.1
4-Bromofluorobenzene	460-00-4	0.2	%	84.5	84.5	84.5

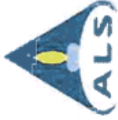
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Analytical Results

Compound	CAS Number	Client sampling date / time		Result	Result	Result	Result
		LOR	Unit				
Sub-Matrix: SOIL							
(Matrix: SOIL)							
EAO01: pH in soil using 0.01M CaCl extract		0.1	pH Unit	7.8			BH9_0-0.43 26-Jul-2017 00:00
EAO55: Moisture Content (Dried @ 105-110°C)		1.0	%	13.9			BH8_0.64-0.96 26-Jul-2017 00:00
Moisture Content							
ED006: Exchangeable Cations on Alkaline Solis							
Exchangeable Calcium		0.2	meq/100g	17.0			BH7_0-0.45 26-Jul-2017 00:00
Exchangeable Magnesium		0.2	meq/100g	5.0			BH8_0-0.64 26-Jul-2017 00:00
Exchangeable Potassium		0.2	meq/100g	0.8			BH6_0-0.26 26-Jul-2017 00:00
Exchangeable Sodium		0.2	meq/100g	2.6			EM1710012-033 EM1710012-032
Cation Exchange Capacity		0.2	meq/100g	25.5			EM1710012-028 EM1710012-032
EG005T: Total Metals by ICP-AES							
Arsenic	7440-38-2	5	mg/kg	6			BH8_0-0.64 26-Jul-2017 00:00
Cadmium	7440-43-9	1	mg/kg	<1			BH8_0-0.64 26-Jul-2017 00:00
Chromium	7440-47-3	2	mg/kg	37			BH8_0-0.64 26-Jul-2017 00:00
Copper	7440-50-8	5	mg/kg	15			BH8_0-0.64 26-Jul-2017 00:00
Iron	7439-89-6	0.005	%				BH8_0-0.64 26-Jul-2017 00:00
Lead	7439-92-1	5	mg/kg	13			BH8_0-0.64 26-Jul-2017 00:00
Nickel	7440-02-0	2	mg/kg	22			BH8_0-0.64 26-Jul-2017 00:00
Zinc	7440-66-6	5	mg/kg	27			BH8_0-0.64 26-Jul-2017 00:00
EG035T: Total Recoverable Mercury by FIMS							
Mercury	7439-97-6	0.1	mg/kg	<0.1			BH8_0-0.64 26-Jul-2017 00:00
EP004: Organic Matter							
Organic Matter		0.5	%	1.3			BH8_0-0.64 26-Jul-2017 00:00
Total Organic Carbon							
EP068A: Organochlorine Pesticides (OC)							
alpha-BHC	319-84-6	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
beta-BHC	319-85-7	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
gamma-BHC	58-89-9	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
delta-BHC	319-86-8	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
Heptachlor	76-44-8	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
Aldrin	309-00-2	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
^ Total Chlordane (sum)		0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05			BH8_0-0.64 26-Jul-2017 00:00



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Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		Client sampling date / time		Result	
	CAS Number	LOR	Unit	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued						
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	****	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	****	<0.05
Dieldrin	60-57-1	0.05	mg/kg	0.42	****	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	****	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	****	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	****	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	****	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	****	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	****	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	****	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	****	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	****	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	****	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	0.42	****	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	<0.05	****	<0.05
	0-2					
EP068B: Organophosphorus Pesticides (OP)						
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	****	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	****	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	****	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	****	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	****	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	****	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	****	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	****	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	****	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	****	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	****	<0.2
Prirmpfos-ethyl	23505-41-1	0.05	mg/kg	<0.05	****	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	****	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	****	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	****	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	****	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	****	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	****	<0.05

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Page : 10 of 23
 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Compound	CAS Number	LOR	Client sample ID	BH6_0-0.26	BH7_0-0.45	BH8_0-0.64	BH8_0.64-0.96	BH9_0-0.43
			Client sampling date / time	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
			Unit	EM1710012-023	EM1710012-028	EM1710012-032	EM1710012-033	EM1710012-035
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	***	***	***	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	***	<0.5	***	***	***
Acenaphthylene	208-96-8	0.5	mg/kg	***	<0.5	***	***	***
Acenaphthene	83-32-9	0.5	mg/kg	***	<0.5	***	***	***
Fluorene	86-73-7	0.5	mg/kg	***	<0.5	***	***	***
Phenanthrene	85-01-8	0.5	mg/kg	***	<0.5	***	***	***
Anthracene	120-12-7	0.5	mg/kg	***	<0.5	***	***	***
Fluoranthene	206-44-0	0.5	mg/kg	***	<0.5	***	***	***
Pyrene	129-00-0	0.5	mg/kg	***	<0.5	***	***	***
Benz(a)anthracene	56-55-3	0.5	mg/kg	***	<0.5	***	***	***
Chrysene	218-01-9	0.5	mg/kg	***	<0.5	***	***	***
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	***	<0.5	***	***	***
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	***	<0.5	***	***	***
Benzo(a)pyrene	50-32-8	0.5	mg/kg	***	<0.5	***	***	***
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	***	<0.5	***	***	***
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	***	<0.5	***	***	***
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	***	<0.5	***	***	***
Sum of polycyclic aromatic hydrocarbons				***	<0.5	***	***	***
Benzo(a)pyrene TEQ (zero)		0.5	mg/kg	***	<0.5	***	***	***
Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg	***	0.6	***	***	***
Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg	***	1.2	***	***	***
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction		10	mg/kg	***	<10	***	***	***
C10 - C14 Fraction		50	mg/kg	***	<50	***	***	***
C15 - C28 Fraction		100	mg/kg	***	<100	***	***	***
C29 - C36 Fraction		100	mg/kg	***	<100	***	***	***
C10 - C36 Fraction (sum)		50	mg/kg	***	<50	***	***	***
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	***	<10	***	***	***
C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	***	<10	***	***	***
>C10 - C16 Fraction		50	mg/kg	***	<50	***	***	***
>C16 - C34 Fraction		100	mg/kg	***	<100	***	***	***



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Compound	CAS Number	LOR	Client sample ID		Unit	Result
			CAS Number	Client sampling date / time		
EA055: Moisture Content (Dried @ 105-110°C)						
Moisture Content		1.0			%	13.2
EG005T: Total Metals by ICP-AES						
Arsenic	7440-38-2	5			mg/kg	<5
Cadmium	7440-43-9	1			mg/kg	<1
Chromium	7440-47-3	2			mg/kg	30
Copper	7440-50-8	5			mg/kg	18
Lead	7439-92-1	5			mg/kg	28
Nickel	7440-02-0	2			mg/kg	18
Zinc	7440-66-6	5			mg/kg	29
EG035T: Total Recoverable Mercury by FIMS						
Mercury	7439-97-6	0.1			mg/kg	<0.1
EP068A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.05			mg/kg	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05			mg/kg	<0.05
beta-BHC	319-85-7	0.05			mg/kg	<0.05
gamma-BHC	58-89-9	0.05			mg/kg	<0.05
delta-BHC	319-86-8	0.05			mg/kg	<0.05
Heptachlor	76-44-8	0.05			mg/kg	<0.05
Aldrin	309-00-2	0.05			mg/kg	<0.05
Heptachlor epoxide	1024-57-3	0.05			mg/kg	<0.05
^ Total Chlordane (sum)						
trans-Chlordane	5103-74-2	0.05			mg/kg	<0.05
alpha-Endosulfan	959-98-8	0.05			mg/kg	<0.05
cis-Chlordane	5103-71-9	0.05			mg/kg	<0.05
Dieldrin	60-57-1	0.05			mg/kg	<0.05
4,4'-DDE	72-55-9	0.05			mg/kg	<0.05
Endrin	72-20-8	0.05			mg/kg	<0.05
beta-Endosulfan	33213-65-9	0.05			mg/kg	<0.05
^ Endosulfan (sum)						
4,4'-DDD	115-29-7	0.05			mg/kg	<0.05
Endrin aldehyde	72-54-8	0.05			mg/kg	<0.05
Endosulfan sulfate	7421-93-4	0.05			mg/kg	<0.05
4,4'-DDT	1031-07-8	0.05			mg/kg	<0.05
Endrin ketone	50-29-3	0.2			mg/kg	<0.2
	53494-70-5	0.05			mg/kg	<0.05

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Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Compound	CAS Number	LOR	Client sample ID		Result
			Client sampling date / time	Unit	
EP068A: Organochlorine Pesticides (OC) - Continued					
Methoxychlor	72-43-5	0.2			
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05			
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05			
	0-2				
EP068B: Organophosphorus Pesticides (OP)					
Dichlorvos	62-73-7	0.05			
Demeton-S-methyl	919-86-8	0.05			
Monocrotophos	6923-22-4	0.2			
Dimethoate	60-51-5	0.05			
Diazinon	333-41-5	0.05			
Chlorpyrifos-methyl	5598-13-0	0.05			
Parathion-methyl	298-00-0	0.2			
Malathion	121-75-5	0.05			
Fenitrothion	55-38-9	0.05			
Chlorpyrifos	2921-88-2	0.05			
Parathion	56-38-2	0.2			
Phosphor-ethyl	23505-41-1	0.05			
Chlorfenvinphos	470-90-6	0.05			
Bromophos-ethyl	4824-78-6	0.05			
Fenamiphos	22224-92-6	0.05			
Prothiofos	34643-46-4	0.05			
Ethion	563-12-2	0.05			
Carbophenothion	786-19-6	0.05			
Azinphos Methyl	86-50-0	0.05			
EP075(S)MJD: Polynuclear Aromatic Hydrocarbons					
Naphthalene	91-20-3	0.5			
Acenaphthylene	208-96-8	0.5			
Acenaphthene	83-32-9	0.5			
Fluorene	86-73-7	0.5			
Phenanthrene	85-01-8	0.5			
Anthracene	120-12-7	0.5			
Fluoranthene	206-44-0	0.5			
Pyrene	129-00-0	0.5			
Benz(a)anthracene	56-55-3	0.5			
Chrysene	218-01-9	0.5			



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		CAS Number	LOR	Unit	Client sampling date / time		Result
	BH10_0-0.70	BH10_1.08-3.22				BH11_0-0.55	BH11_1.02-1.92	
Compound	EM1710012-038	EM1710012-040				EM1710012-042	EM1710012-045	EM1710012-047
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	205-82-3	0.5	mg/kg	***	***	***	<0.5
Benzo(k)fluoranthene	207-08-9		0.5	mg/kg	***	***	***	<0.5
Benzo(a)pyrene	50-32-8		0.5	mg/kg	***	***	***	<0.5
Indeno(1,2,3-cd)pyrene	193-39-5		0.5	mg/kg	***	***	***	<0.5
Dibenz(a,h)anthracene	53-70-3		0.5	mg/kg	***	***	***	<0.5
Benzo(g,h,i)perylene	191-24-2		0.5	mg/kg	***	***	***	<0.5
^ Sum of polycyclic aromatic hydrocarbons			0.5	mg/kg	***	***	***	<0.5
^ Benzo(a)pyrene TEQ (zero)			0.5	mg/kg	***	***	***	<0.5
^ Benzo(a)pyrene TEQ (half LOR)			0.5	mg/kg	***	***	***	0.6
^ Benzo(a)pyrene TEQ (LOR)			0.5	mg/kg	***	***	***	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction			10	mg/kg	***	***	***	<10
C10 - C14 Fraction			50	mg/kg	***	***	***	<50
C15 - C28 Fraction			100	mg/kg	***	***	***	<100
C29 - C36 Fraction			100	mg/kg	***	***	***	<100
^ C10 - C36 Fraction (sum)			50	mg/kg	***	***	***	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10		10	mg/kg	***	***	***	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX		10	mg/kg	***	***	***	<10
>C10 - C16 Fraction			50	mg/kg	***	***	***	<50
>C16 - C34 Fraction			100	mg/kg	***	***	***	<100
>C34 - C40 Fraction			100	mg/kg	***	***	***	<100
^ >C10 - C40 Fraction (sum)			50	mg/kg	***	***	***	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)			50	mg/kg	***	***	***	<50
EP080: BTEXN								
Benzene	71-43-2		0.2	mg/kg	***	***	***	<0.2
Toluene	108-88-3		0.5	mg/kg	***	***	***	<0.5
Ethylbenzene	100-41-4		0.5	mg/kg	***	***	***	<0.5
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	***	***	***	<0.5
ortho-Xylene	95-47-6		0.5	mg/kg	***	***	***	<0.5
^ Sum of BTEX			0.2	mg/kg	***	***	***	<0.2
^ Total Xylenes	1330-20-7		0.5	mg/kg	***	***	***	<0.5

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

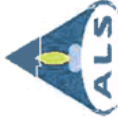
Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Compound	CAS Number	LOR	Unit	Client sample ID					
				BH10_0-0.70	BH10_1.08-3.22	BH11_0-0.55	BH11_1.02-1.92	HA01_0-0.25	
Sub-Matrix: SOIL (Matrix: SOIL)				Client sampling date / time	Result	Result	Result	Result	Result
EP080: BTEXN - Continued	91-20-3	1	mg/kg	EM1710012-038	EM1710012-040	EM1710012-042	EM1710012-045	EM1710012-047	
Naphthalene				26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	<1
EP234H: Triazine Herbicides									
Ametryn	834-12-8	0.002	mg/kg	****	****	<0.002	****	****	****
Atrazine	1912-24-9	0.002	mg/kg	****	****	<0.002	****	****	****
Cyanazine	21725-46-2	0.005	mg/kg	****	****	<0.005	****	****	****
Prometryn	7287-19-6	0.002	mg/kg	****	****	<0.002	****	****	****
Propazine	139-40-2	0.002	mg/kg	****	****	<0.002	****	****	****
Simazine	122-34-9	0.005	mg/kg	****	****	<0.005	****	****	****
Terbuthylazine	5915-41-3	0.002	mg/kg	****	****	<0.002	****	****	****
Terbutryn	866-50-0	0.1	mg/kg	****	****	<0.1	****	****	****
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	****	****	85.8	****	****	****
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	****	****	86.7	****	****	****
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	****	****	****	****	****	89.9
2-Chlorophenol-D4	93951-73-6	0.5	%	****	****	****	****	****	108
2,4,6-Tribromophenol	118-79-6	0.5	%	****	****	****	****	****	62.1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	****	****	****	****	****	114
Anthracene-d10	1719-06-8	0.5	%	****	****	****	****	****	113
4-Terphenyl-d14	1718-51-0	0.5	%	****	****	****	****	****	122
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	****	****	****	****	****	82.8
Toluene-D8	2037-26-5	0.2	%	****	****	****	****	****	88.6
4-Bromofluorobenzene	460-00-4	0.2	%	****	****	****	****	****	93.9



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255981

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		CAS Number	LOR	Client sampling date / time	Unit	HA02_0-0.05		HA03_0-0.3		HA04_0-0.3		HA05_0-0.3		HA06_0-0.3	
	Compound	Result					EM1710012-048	EM1710012-050	EM1710012-051	EM1710012-052	EM1710012-053					
EA055: Moisture Content (Dried @ 105-110°C)																
Moisture Content	----	1.0	----	1.0	%	15.8	15.0	9.2	11.2	17.6	----	----	----	----	----	----
EG005T: Total Metals by ICP-AES																
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Boron	7440-42-8	50	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	30	28	11	24	22	11	24	22	11	24	22	11	24
Cobalt	7440-48-4	2	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Copper	7440-50-8	5	mg/kg	30	17	30	23	10	10	11	9	9	9	9	9	9
Lead	7439-92-1	5	mg/kg	122	----	----	----	----	----	----	----	----	----	----	----	----
Manganese	7439-96-5	5	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Nickel	7440-02-0	2	mg/kg	14	13	4	107	4	9	10	4	9	10	4	9	10
Selenium	7782-49-2	5	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	----	----	----	----	----	----	----	----	----	----	----	----	----
Zinc	7440-66-6	5	mg/kg	644	30	119	19	19	19	19	19	19	19	19	19	19
EG035T: Total Recoverable Mercury by FIMS																
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)																
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	----	<0.5	----	----	----	----	----	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser																
Weak Acid Dissociable Cyanide	----	1	mg/kg	----	----	----	----	<1	----	----	----	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)																
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1	----	----	----	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)																
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	----	<0.05	----	----	----	----	----	----	----	----

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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Compound	CAS Number	LOR	Client sample ID																																					
			Client sampling date / time	Result	Client sampling date / time	Result	Client sampling date / time	Result																																
EP068A: Organochlorine Pesticides (OC) - Continued																																								
alpha-Endosulfan	959-98-8	0.05	mg/kg	***	HA02_0-0.05	26-Jul-2017 00:00	EM1710012-048	Result	***	HA03_0-0.3	26-Jul-2017 00:00	EM1710012-050	Result	***	HA04_0-0.3	26-Jul-2017 00:00	EM1710012-051	Result	<0.05	HA05_0-0.3	26-Jul-2017 00:00	EM1710012-052	Result	***	HA06_0-0.3	26-Jul-2017 00:00	EM1710012-053	Result	***											
cis-Chlordane	5103-71-9	0.05	mg/kg	***																																				
Dieldrin	60-57-1	0.05	mg/kg	***																																				
4,4'-DDE	72-55-9	0.05	mg/kg	***																																				
Endrin	72-20-8	0.05	mg/kg	***																																				
beta-Endosulfan	33213-65-9	0.05	mg/kg	***																																				
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	***																																				
4,4'-DDD	72-54-8	0.05	mg/kg	***																																				
Endrin aldehyde	7421-93-4	0.05	mg/kg	***																																				
Endosulfan sulfate	1031-07-8	0.05	mg/kg	***																																				
4,4'-DDT	50-29-3	0.2	mg/kg	***																																				
Endrin ketone	53494-70-5	0.05	mg/kg	***																																				
Methoxychlor	72-43-5	0.2	mg/kg	***																																				
Mirex	2385-85-5	0.20	mg/kg	***																																				
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	***																																				
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5	0.05	mg/kg	***																																				
		0-2																																						
EP068B: Organophosphorus Pesticides (OP)																																								
Dichlorvos	62-73-7	0.05	mg/kg	***																																				
Demeton-S-methyl	919-86-8	0.05	mg/kg	***																																				
Monocrotophos	6923-22-4	0.2	mg/kg	***																																				
Dimethoate	60-51-5	0.05	mg/kg	***																																				
Diazinon	333-41-5	0.05	mg/kg	***																																				
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	***																																				
Parathion-methyl	298-00-0	0.2	mg/kg	***																																				
Malathion	121-75-5	0.05	mg/kg	***																																				
Fenthion	55-38-9	0.05	mg/kg	***																																				
Chlorpyrifos	2921-88-2	0.05	mg/kg	***																																				
Perathion	56-38-2	0.2	mg/kg	***																																				
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	***																																				
Chlorfenvinphos	470-90-6	0.05	mg/kg	***																																				
Bromophos-ethyl	4824-78-6	0.05	mg/kg	***																																				
Fenamiphos	22224-92-6	0.05	mg/kg	***																																				
Prothiofos	34643-46-4	0.05	mg/kg	***																																				
Ethion	563-12-2	0.05	mg/kg	***																																				



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Laboratory sample ID	Client sample ID	Method: Compound	Matrix Spike (MS) Report		
			Spike Concentration	MS Spike/Recovery(%)	Recovery Limits (%)
			Low	High	
EG005T: Total Metals by ICP-AES (QCLot: 1025938) - continued					
EM1710012-040	BH10_1.08-3.22	EG005T: Copper	50 mg/kg	91.9	82
		EG005T: Lead	50 mg/kg	83.2	76
		EG005T: Manganese	50 mg/kg	# Not Determined	68
		EG005T: Nickel	50 mg/kg	80.0	78
		EG005T: Selenium	50 mg/kg	75.6	71
		EG005T: Vanadium	50 mg/kg	84.2	76
		EG005T: Zinc	50 mg/kg	76.8	74
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1025938)					
EM1709905-002	Anonymous	EG035T: Mercury	5 mg/kg	92.5	76
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1025939)					
EM1710012-040	BH10_1.08-3.22	EG035T: Mercury	5 mg/kg	79.9	78
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 1027566)					
EM1709985-001	Anonymous	EG048G: Hexavalent Chromium	40 mg/kg	94.3	58
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 1028055)					
EM1710012-007	BH2_0-0.22	EK028SF: Weak Acid Dissociable Cyanide	20 mg/kg	# 41.5	70
EP004: Organic Matter (QCLot: 1025898)					
EM1709981-011	Anonymous	EP004: Organic Matter	77 %	87.8	70
		EP004: Total Organic Carbon	43.5 %	88.2	70
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1026124)					
EB1715231-002	Anonymous	EP066: Total Polychlorinated biphenyls	1 mg/kg	70.9	44
EP068A: Organochlorine Pesticides (OC) (QCLot: 1026123)					
EB1715231-003	Anonymous	EP068: gamma-BHC	0.5 mg/kg	83.2	22
		EP068: Heptachlor	0.5 mg/kg	79.4	18
		EP068: Aldrin	0.5 mg/kg	89.1	23
		EP068: Dieldrin	0.5 mg/kg	72.2	42
		EP068: Endrin	0.5 mg/kg	81.4	23
		EP068: 4,4'-DDT	0.5 mg/kg	83.3	20
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1026123)					
EB1715231-003	Anonymous	EP068: Diazinon	0.5 mg/kg	97.0	49
		EP068: Chlorpyrifos-methyl	0.5 mg/kg	87.6	41
		EP068: Pirimphos-ethyl	0.5 mg/kg	99.6	47
		EP068: Bromophos-ethyl	0.5 mg/kg	82.6	45
		EP068: Prothofos	0.5 mg/kg	90.8	40
EP075(SIM)A: Phenolic Compounds (QCLot: 1026126)					
EM1710012-007	BH2_0-0.22	EP075(SIM): Phenol	3 mg/kg	102	63
					117

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EMT170012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Method: Compound	CAS Number	LOR	Unit	Method Blank (MS) Report Result	Spike		Laboratory Control Spike (LCS) Report	
					Concentration	Recovery (%)	LCS	Recovery Limits (%)
Sub-Matrix: SOIL								
EP080: BTEXN (QCLot: 1025007) - continued	91-20-3	1	mg/kg	<1	0.5 mg/kg	83.9	66	130
EP080: Naphthalene								
EP234H: Triazine Herbicides (QCLot: 1029520)								
EP234: Ametryn	834-12-8	0.002	mg/kg	<0.002	0.02 mg/kg	114	70	130
EP234: Atrazine	1912-24-9	0.002	mg/kg	<0.002	0.02 mg/kg	109	62	120
EP234: Cyanazine	21725-46-2	0.005	mg/kg	<0.005	0.04 mg/kg	81.6	70	130
EP234: Prometryn	7287-19-6	0.002	mg/kg	<0.002	0.02 mg/kg	112	58	130
EP234: Propazine	139-40-2	0.002	mg/kg	<0.002	0.02 mg/kg	96.8	61	127
EP234: Simazine	122-34-9	0.005	mg/kg	<0.005	0.04 mg/kg	100	70	130
EP234: Terbutylazine	5915-41-3	0.002	mg/kg	<0.002	0.02 mg/kg	114	63	117
EP234: Terbutyn	886-50-0	0.1	mg/kg	<0.1	0.02 mg/kg	115	59	115

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike		Matrix Spike (MS) Report	
				Concentration	Recovery (%)	MS	Recovery Limits (%)
Sub-Matrix: SOIL							
EG005T: Total Metals by ICP-AES (QCLot: 1025937)							
EM1709905-002	Anonymous						
		EG005T: Arsenic	7440-38-2	50 mg/kg	79.2	78	124
		EG005T: Barium	7440-39-3	50 mg/kg	89.5	71	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	92.3	85	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.4	84	116
		EG005T: Chromium	7440-47-3	50 mg/kg	92.7	79	121
		EG005T: Copper	7440-50-8	50 mg/kg	86.2	82	124
		EG005T: Lead	7439-92-1	50 mg/kg	83.4	76	124
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	68	136
		EG005T: Nickel	7440-02-0	50 mg/kg	109	78	120
		EG005T: Selenium	7782-49-2	50 mg/kg	97.2	71	125
		EG005T: Vanadium	7440-62-2	50 mg/kg	102	76	124
		EG005T: Zinc	7440-66-6	50 mg/kg	81.5	74	128
EG005T: Total Metals by ICP-AES (QCLot: 1025938)							
EM170012-040	BH10_1.08-3.22						
		EG005T: Arsenic	7440-38-2	50 mg/kg	88.3	78	124
		EG005T: Barium	7440-39-3	50 mg/kg	133	71	135
		EG005T: Beryllium	7440-41-7	50 mg/kg	90.8	85	125
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.4	84	116
		EG005T: Chromium	7440-47-3	50 mg/kg	82.0	79	121

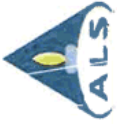


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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report			Recovery Limits (%)	
				Result	Concentration	Spike Recovery (%)	LCS	Low	High	
Sub-Matrix: SOIL										
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1026126)										
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	106	80	121		
EP075(SIM): Acenaphthylene	208-86-8	0.5	mg/kg	<0.5	3 mg/kg	106	70	130		
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	108	80	120		
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	111	70	124		
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	110	80	122		
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	113	80	126		
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	119	70	128		
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	118	80	125		
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	106	70	130		
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	114	80	126		
EP075(SIM): Benzo(b+g)fluoranthene	205-99-2	0.5	mg/kg	<0.5	3 mg/kg	97.7	70	124		
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	104	75	125		
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	92.4	65	125		
EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	83.4	65	128		
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	86.5	65	126		
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	83.5	65	127		
EP080/074: Total Petroleum Hydrocarbons (QCLot: 1025007)										
EP080: C6 - C9 Fraction	---	10	mg/kg	<10	36 mg/kg	89.0	70	127		
EP080/074: Total Petroleum Hydrocarbons (QCLot: 1026125)										
EP071: C10 - C14 Fraction	---	50	mg/kg	<50	837 mg/kg	82.8	65	131		
EP071: C15 - C28 Fraction	---	100	mg/kg	<100	3061 mg/kg	84.4	70	126		
EP071: C29 - C36 Fraction	---	100	mg/kg	<100	1592 mg/kg	83.5	70	122		
EP071: C10 - C36 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---		
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1025007)										
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	86.2	68	125		
EP080/074: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026125)										
EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	1222 mg/kg	80.5	68	130		
EP071: >C16 - C34 Fraction	---	100	mg/kg	<100	3919 mg/kg	83.0	72	116		
EP071: >C34 - C40 Fraction	---	100	mg/kg	<100	316 mg/kg	82.9	38	132		
EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	---	---	---	---		
EP080: BTEXN (QCLot: 1025007)										
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	84.7	74	124		
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	91.8	77	125		
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	86.5	73	125		
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4 mg/kg	92.5	77	128		
EP080: ortho-Xylene	106-42-3	0.5	mg/kg	<0.5	2 mg/kg	96.7	81	128		

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EMI710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
				Result	Concentration	Spike Recovery (%)	Low	High
Sub-Matrix: SOIL								
EP068A: Organochlorine Pesticides (OC) (QCLot: 1026123) - continued								
EP068: Mirex	2385-85-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	63	138
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1026123)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	54	135
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	51	143
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	46.0	10	136
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	43	128
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	53	131
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	53	131
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	90.0	50	132
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	51	133
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	51	130
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	54	130
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	91.6	49	135
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	48	133
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	50	134
EP068: Bromophos-ethyl	4824-78-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	53	131
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.4	46	134
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	51	133
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	51	133
EP068: Carbofenthiion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	51	133
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	63.6	14	124
EP068C: Triazines (QCLot: 1026123)								
EP068: Atrazine	1912-24-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	54	138
EP068D: Pyrethroids (QCLot: 1026123)								
EP068: Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	0.5 mg/kg	95.7	66	132
EP075(SIM)A: Phenolic Compounds (QCLot: 1026126)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	108	65	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	110	74	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	105	76	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	107	70	123
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	88.5	56	120
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	108	66	125
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	103	61	120
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	106	70	123
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	92.3	57	122
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	90.6	54	120
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	101	57	119
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	6 mg/kg	35.8	20	112



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
				Result	Concentration	Spike Recovery (%)	Low	High
Sub-Matrix: SOIL								
EG005T: Total Metals by ICP-AES (QCLot: 1025938) - continued								
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	97.7	93	109
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	97.9	80	109
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	101	82	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1025938)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	85.8	77	104
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1025939)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	85.9	77	104
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 1027566)								
EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	85.7	80	120
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 1028055)								
EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	20 mg/kg	98.6	80	110
EP004: Organic Matter (QCLot: 1025898)								
EP004: Organic Matter	----	0.5	%	<0.5	77 %	88.6	81	112
EP004: Total Organic Carbon								
EP004: Total Organic Carbon	----	0.5	%	<0.5	43.5 %	91.0	83	114
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 1026124)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	76.2	55	135
EP068A: Organochlorine Pesticides (OC) (QCLot: 1026123)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	45	131
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	45	125
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	46	134
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	49	133
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	52	128
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	48	128
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	52	128
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	52	130
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	51	131
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	57	135
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.0	51	131
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	75.4	51	131
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	51	131
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.9	41	131
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	52	132
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	50	134
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	87.6	49	130
EP068: Endosulfan sulfate	1031-07-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	50	132
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	105	38	140
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	90.3	64	132
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	81.5	41	141

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 Work Order : EMT1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Method/Compound	CAS Number	LOR	Unit	Method Blank (MB) Report		Laboratory Control Spike (LCS) Report		
				Result	Concentration	Spike Recovery (%)	LCS	Low
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 1032258)								
ED006: Exchangeable Calcium	---	0.1	meq/100g	<0.1	33 meq/100g	81.6	80	120
ED006: Exchangeable Magnesium	---	0.1	meq/100g	<0.1	32 meq/100g	98.6	80	120
ED006: Exchangeable Potassium	---	0.1	meq/100g	<0.1	2.2 meq/100g	96.0	80	120
ED006: Exchangeable Sodium	---	0.1	meq/100g	<0.1	5.6 meq/100g	103	80	120
ED006: Cation Exchange Capacity	---	0.1	meq/100g	<0.1	---	---	---	---
EG005T: Total Metals by ICP-AES (QC Lot: 1025937)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	97.7	79	113
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	101	79	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	107	85	120
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	99.1	82	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	89.6	85	109
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	101	83	109
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	104	78	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	97.1	78	108
EG005T: Iron	7439-89-6	50	mg/kg	<50	8400 mg/kg	109	90	110
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	90.5	78	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	105	82	107
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	99.2	82	111
EG005T: Selenium	7782-49-2	5	mg/kg	<5	5.37 mg/kg	97.7	93	109
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	98.2	80	109
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	101	82	111
EG005T: Total Metals by ICP-AES (QC Lot: 1025938)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	98.2	79	113
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	101	79	110
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	107	85	120
EG005T: Boron	7440-42-8	50	mg/kg	<50	33.2 mg/kg	99.8	82	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	89.6	85	109
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	100	83	109
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	103	78	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	96.4	78	108
EG005T: Iron	7439-89-6	50	mg/kg	<50	8400 mg/kg	109	90	110
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	90.4	78	106
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	105	82	107
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	99.1	82	111



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		RPD (%)	Recovery Limits (%)
						Original Result	Duplicate Result		
Sub-Matrix: SOIL									
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026125) - continued									
EB1715231-001	Anonymous	EP071: >C10 - C16 Fraction	---	50	mg/kg	<50	<50	0.00	No Limit
		EP071: >C10 - C40 Fraction (sum)	---	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 1025007)									
EM1710012-007	BH2_0-0.22	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		106-42-3	106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP234H: Triazine Herbicides (QC Lot: 1029520)									
EM1710012-020	BH5_0-0.53	EP234: Ametryn	834-12-8	0.002	mg/kg	<0.002	<0.002	0.00	No Limit
		EP234: Altrazine	1912-24-9	0.002	mg/kg	<0.002	<0.002	0.00	No Limit
		EP234: Prometryn	7287-19-6	0.002	mg/kg	<0.002	<0.002	0.00	No Limit
		EP234: Propazine	139-40-2	0.002	mg/kg	<0.002	<0.002	0.00	No Limit
		EP234: Terbutylazine	5915-41-3	0.002	mg/kg	<0.002	<0.002	0.00	No Limit
		EP234: Cyanazine	21725-46-2	0.005	mg/kg	<0.005	<0.005	0.00	No Limit
		EP234: Simazine	122-34-9	0.005	mg/kg	<0.005	<0.005	0.00	No Limit
		EP234: Terbutryn	886-50-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit



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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Laboratory sample ID	Client sample ID	Method/Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery Limits (%)
						Original Result	Duplicate Result	RPD (%)	
Sub-Matrix: SOIL									
EP075(SIM)A: Phenolic Compounds (QC Lot: 1026126) - continued									
EM1710012-051	HA04_0-0.3	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,6-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EB1715231-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1026126)									
EM1710012-051	HA04_0-0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Sub-Matrix: SOIL	Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)			
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1026123) - continued	EM1710012-051	HA04_0-0.3	EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Fenitrothion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit			
			EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit			
			EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit			
			EP068C: Triazines (QC Lot: 1026123)	EB1715231-001	Anonymous	EP068: Fenitrothion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP068: Chlorpyrifos	2921-88-2	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Pirimphos-ethyl	23505-41-1	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Chlorfenvinphos	470-90-6	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Bromophos-ethyl	4824-78-6	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Fenamiphos	22224-92-6	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Prothiofos	34643-46-4	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Ethion	563-12-2	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Carbophenothion	786-19-6	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Azinphos Methyl	86-50-0	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Monocrotophos	6923-22-4	0.2				mg/kg	<0.2	<0.2	0.00	No Limit			
EP068: Parathion-methyl	298-00-0	0.2				mg/kg	<0.2	<0.2	0.00	No Limit			
EP068: Parathion	56-38-2	0.2				mg/kg	<0.2	<0.2	0.00	No Limit			
EP068: Atrazine	1912-24-9	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068: Atrazine	1912-24-9	0.05				mg/kg	<0.05	<0.05	0.00	No Limit			
EP068D: Pyrethroids (QC Lot: 1026123)	EM1710012-051	HA04_0-0.3				EP068: Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
						EP068: Bifenthrin	82657-04-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 1026126)													



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 258881

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		Recovery Limits (%)
						Original Result	Duplicate Result	
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1026123) - continued								
EM1710012-051	HA04_0-0.3	EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Mirex	2385-85-5	0.05	mg/kg	<0.20	<0.20	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	No Limit
		EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Mirex	2385-85-5	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 1026123)								
EM1710012-051	HA04_0-0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	No Limit

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Laboratory sample ID	Client sample ID	Sub-Matrix: SOIL	CAS Number	LOR	Unit	Laboratory Duplicate (DUP) Report		Recovery Limits (%)
						Original Result	Duplicate Result	
EG005T: Total Metals by ICP-AES (QC Lot: 1025938) - continued								
EM1710012-053	HA06_0-0.3		7440-47-3	2	mg/kg	24	24	0% - 50%
		EG005T: Chromium						No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	7	7	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	10	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	11	11	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	9	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	242	241	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	36	37	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	22	22	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	No Limit
		EG005T: Iron	7439-89-6	50	mg/kg	24500	24200	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1025936)								
EM1709905-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	No Limit
EM1709907-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1025939)								
EM1710012-038	BH10_0-0.70	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	No Limit
EM1710012-053	HA06_0-0.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 1027566)								
EM1709979-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	No Limit
EM1710054-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	No Limit
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QC Lot: 1028055)								
EM1709964-029	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	No Limit
EP004: Organic Matter (QC Lot: 1025898)								
EM1709981-010	Anonymous	EP004: Organic Matter	----	0.5	%	34.4	31.3	0% - 20%
EP004: Total Organic Carbon (QC Lot: 1026124)								
EM1715231-001	Anonymous	EP004: Total Organic Carbon	----	0.5	%	20.0	18.1	0% - 20%
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 1026123)								
EM1710012-051	HA04_0-0.3	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	No Limit
		EP066: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	No Limit
		EP066: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	No Limit



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 258881

Sub-Matrix: SOIL	Laboratory sample ID	Client sample ID	Method: Compacted	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EM1709905-001	EG005T: Total Metals by ICP-AES (QC Lot: 1025937) - continued									
	Anonymous									
	EG005T: Manganese	7439-96-5	5	mg/kg	527	489	11.6	0% - 20%		
	EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit		
	EG005T: Vanadium	7440-62-2	5	mg/kg	70	66	5.88	0% - 50%		
	EG005T: Zinc	7440-66-6	5	mg/kg	26	26	0.00	No Limit		
	EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit		
	EG005T: Iron	7439-89-6	50	mg/kg	35200	34000	3.22	0% - 20%		
	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit		
	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit		
	EG005T: Barium	7440-39-3	10	mg/kg	100	110	0.00	0% - 50%		
	EG005T: Chromium	7440-47-3	2	mg/kg	48	46	4.66	0% - 20%		
	EG005T: Cobalt	7440-48-4	2	mg/kg	18	18	0.00	No Limit		
	EG005T: Nickel	7440-02-0	2	mg/kg	55	53	4.12	0% - 20%		
	EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit		
EG005T: Copper	7440-50-8	5	mg/kg	25	24	0.00	No Limit			
EG005T: Lead	7439-92-1	5	mg/kg	5	7	31.9	No Limit			
EG005T: Manganese	7439-96-5	5	mg/kg	379	377	0.479	0% - 20%			
EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit			
EG005T: Vanadium	7440-62-2	5	mg/kg	39	38	3.11	No Limit			
EG005T: Zinc	7440-66-6	5	mg/kg	55	54	2.53	0% - 50%			
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit			
EG005T: Iron	7439-89-6	50	mg/kg	31800	31000	2.41	0% - 20%			
EM1710012-038	EG005T: Total Metals by ICP-AES (QC Lot: 1025938)									
BH10_0-0.70										
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit			
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit			
EG005T: Barium	7440-39-3	10	mg/kg	150	140	6.87	0% - 50%			
EG005T: Chromium	7440-47-3	2	mg/kg	30	30	0.00	0% - 50%			
EG005T: Cobalt	7440-48-4	2	mg/kg	10	9	0.00	No Limit			
EG005T: Nickel	7440-02-0	2	mg/kg	18	18	0.00	No Limit			
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit			
EG005T: Copper	7440-50-8	5	mg/kg	18	18	0.00	No Limit			
EG005T: Lead	7439-92-1	5	mg/kg	28	30	9.08	No Limit			
EG005T: Manganese	7439-96-5	5	mg/kg	371	373	0.730	0% - 20%			
EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.00	No Limit			
EG005T: Vanadium	7440-62-2	5	mg/kg	42	42	0.00	No Limit			
EG005T: Zinc	7440-66-6	5	mg/kg	29	30	0.00	No Limit			
EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.00	No Limit			
EG005T: Iron	7439-89-6	50	mg/kg	30900	30200	2.35	0% - 20%			
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.00	No Limit			
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit			
EG005T: Barium	7440-39-3	10	mg/kg	60	60	0.00	No Limit			
EM1710012-053	HA06_0-0.3									

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
 LOR = Limit of reporting
 RPD = Relative Percentage Difference
 # = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting. Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Laboratory sample ID	Client sample ID	Method/Compound	LOR	Unit	Laboratory Duplicate (DUP) Report			Recovery/Limits (%)
					Original Result	Duplicate Result	RPD (%)	
Sub-Matrix: SOIL								
Laboratory sample ID Client sample ID Method/Compound								
EA001: pH in soil using 0.01M CaCl extract (QC Lot: 1027578)								
EM1709984-011	Anonymous	EA001: pH (CaCl2)	0.1	pH Unit	5.0	5.0	0.00	0% - 20%
EM1710051-002	Anonymous	EA001: pH (CaCl2)	0.1	pH Unit	5.0	5.0	0.00	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 10256538)								
EM1709986-001	Anonymous	EA055: Moisture Content	1	%	17.0	14.8	13.8	0% - 50%
EM1710012-035	BH9_0-0.43	EA055: Moisture Content	1	%	10.6	10.8	1.77	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 10256537)								
EM1710012-053	HA06_0-0.3	EA055: Moisture Content	1	%	17.6	17.7	0.777	0% - 50%
EM1710053-014	Anonymous	EA055: Moisture Content	1	%	4.5	4.4	2.99	No Limit
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 1032258)								
EM1709981-010	Anonymous	ED006: Exchangeable Calcium	0.1	meq/100g	6.2	6.1	1.70	0% - 20%
		ED006: Exchangeable Magnesium	0.1	meq/100g	14.4	14.2	1.17	0% - 20%
		ED006: Exchangeable Potassium	0.1	meq/100g	3.8	3.7	0.00	0% - 50%
		ED006: Exchangeable Sodium	0.1	meq/100g	15.3	15.0	1.70	0% - 20%
		ED006: Cation Exchange Capacity	0.1	meq/100g	39.7	39.1	1.54	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 1025937)								
EM1709905-001	Anonymous	EG005T: Beryllium	7440-41-7	mg/kg	1	1	0.00	No Limit
		EG005T: Cadmium	7440-43-9	mg/kg	<1	<1	0.00	No Limit
		EG005T: Barium	7440-39-3	mg/kg	190	180	0.00	0% - 50%
		EG005T: Chromium	7440-47-3	mg/kg	68	67	1.64	0% - 20%
		EG005T: Cobalt	7440-48-4	mg/kg	24	20	15.6	0% - 50%
		EG005T: Nickel	7440-02-0	mg/kg	48	48	0.00	0% - 20%
		EG005T: Arsenic	7440-38-2	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	mg/kg	17	17	0.00	No Limit
		EG005T: Lead	7439-92-1	mg/kg	11	9	13.0	No Limit



QUALITY CONTROL REPORT

Work Order : **EM1710012** Page : 1 of 16

Client : **FMG CONSULTING ENGINEERS** Laboratory : Environmental Division Melbourne
 Contact : **DEAN NOSKE** Contact : Justin Wilson
 Address : **42 FULLARTON RD NORWOOD SA, AUSTRALIA 5067** Address : **4 Westall Rd Springvale VIC Australia 3171**

Telephone : **+61 08 83630222** Telephone : **+61-3-8549 9600**
 Project : **255881** Date Samples Received : **28-Jul-2017**
 Order number : **PO120012** Date Analysis Commenced : **31-Jul-2017**
 C-O-C number : **----** Issue Date : **04-Aug-2017**
 Sampler : **JE**

Site : **Stage 1 - Northern Area**
 Quote number : **ADBQ/003/15**
 No. of samples received : **58**
 No. of samples analysed : **22**



Accreditation No. 825
 Accredited for compliance with
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaire	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

RIGHT SOLUTIONS | RIGHT PARTNER



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	36	140
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	38	128
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	33	139
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	54	125
2-Chlorophenol-D4	93951-73-6	65	123
2,4,6-Tribromophenol	118-79-6	34	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	61	125
Anthracene-d10	1719-06-8	62	130
4-Terphenyl-d14	1718-51-0	67	133
EP080S: TPH(V)BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124



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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		CAS Number	LOR	Unit	Client sampling date / time	QA01-Dup	QA02-Dup	Result
	QA01-Dup	QA02-Dup							
Compound	EM1710012-054	EM1710012-055				26-Jul-2017 00:00	26-Jul-2017 00:00		
EA055: Moisture Content (Dried @ 105-110°C)				1.0	%				15.6
Moisture Content									
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2		5	mg/kg					6
Cadmium	7440-43-9		1	mg/kg					<1
Chromium	7440-47-3		2	mg/kg					38
Copper	7440-50-8		5	mg/kg					20
Lead	7439-92-1		5	mg/kg					11
Nickel	7440-02-0		2	mg/kg					21
Zinc	7440-66-6		5	mg/kg					20
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6		0.1	mg/kg					<0.1

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		Client sampling date / time		CAS Number	LOR	Unit	Result	Result	Result	Result
	HA02_0-0.05	HA03_0-0.3	HA04_0-0.3	HA05_0-0.3							
Compound	EM1710012-048	EM1710012-050	EM1710012-051	EM1710012-052							
EP068S: Organochlorine Pesticide Surrogate - Continued											
Dibromo-DDE	21655-73-2		89.1								
EP068T: Organophosphorus Pesticide Surrogate											
DEF	78-48-8		92.0								
EP075(SIM)S: Phenolic Compound Surrogates											
Phenol-d6	13127-88-3	92.9	91.6								91.0
2-Chlorophenol-D4	93951-73-6	109	107								107
2,4,6-Tribromophenol	118-79-6	72.0	66.0	69.7							66.5
EP075(SIM)T: PAH Surrogates											
2-Fluorobiphenyl	321-60-8	115	115								115
Anthracene-d10	1719-06-8	114	110	114							113
4-Terphenyl-d14	1718-51-0	128	124	130							126
EP080S: TPH(V)/BTEX Surrogates											
1,2-Dichloroethane-D4	17060-07-0	76.2	71.1	81.3							82.4
Toluene-D8	2037-26-5	76.7	78.0	83.7							88.3
4-Etromfluorobenzene	460-00-4	82.3	81.4	92.0							94.7



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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		Client sampling date / time		CAS Number	LOR	Unit	Result	
	HA02_0-0.05	HA03_0-0.3	HA04_0-0.3	HA05_0-0.3				HA06_0-0.3	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)		0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)		0.5	mg/kg	0.6	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)		0.5	mg/kg	1.2	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction		10	mg/kg	<10	<10	<10	<10	<10	<10
C10 - C14 Fraction		50	mg/kg	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction		100	mg/kg	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction		100	mg/kg	<100	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction		10	mg/kg	<10	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)		10	mg/kg	<10	<10	<10	<10	<10	<10
>C10 - C16 Fraction		50	mg/kg	<50	<50	<50	<50	<50	<50
>C16 - C34 Fraction		100	mg/kg	<100	<100	<100	<100	<100	<100
>C34 - C40 Fraction		100	mg/kg	<100	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)		50	mg/kg	<50	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)		50	mg/kg	<50	<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	106-98-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3	106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX		0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	---	---	---	---	---	---
EP068S: Organochlorine Pesticide Surrogate									
								76.7	---

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)	Client sample ID		CAS Number	LOR	Unit	Client sampling date / time		Result	Result	Result
	HA02_0-0.05	EM1710012-048				HA03_0-0.3	EM1710012-050			
EP068B: Organophosphorus Pesticides (OP) - Continued										
Carbofenthiolion	786-19-6	0.05	mg/kg	0.05	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Azinphos Methyl	86-50-0	0.05	mg/kg	0.05	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
EP068C: Triazines										
Atrazine	1912-24-9	0.05	mg/kg	0.05	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
EP068D: Pyrethroids										
Bifenthrin	82657-04-3	0.05	mg/kg	0.05	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
EP075(SIM)A: Phenolic Compounds										
Phenol	108-95-2	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2-Chlorophenol	95-57-8	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2-Methylphenol	95-48-7	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
3- & 4-Methylphenol	1319-77-3	1	mg/kg	1	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2-Nitrophenol	88-75-5	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Pentachlorophenol	87-86-5	2	mg/kg	2	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Naphthalene	91-20-3	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Acenaphthylene	208-96-8	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Acenaphthene	83-32-9	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Fluorene	86-73-7	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Phenanthrene	85-01-8	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Anthracene	120-12-7	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Fluoranthene	206-44-0	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Pyrene	129-00-0	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Benz(a)anthracene	56-55-3	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Chrysene	218-01-9	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Benzo(a)pyrene	50-32-8	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	mg/kg	0.5	mg/kg	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00	26-Jul-2017 00:00



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Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Recovery Limits (%)		
				MS	Low	High	
Sub-Matrix: SOIL							
EP075(SIM)A: Phenolic Compounds (QCLot: 1026126) - continued							
EM1710012-007	BH2_0-0.22	EP075(SIM): 2-Chlorophenol	95-57-8	3 mg/kg	104	65	123
		EP075(SIM): 2-Nitrophenol	88-75-5	3 mg/kg	87.5	40	134
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	78.7	56	122
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	29.0	15	139
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1026126)							
EM1710012-007	BH2_0-0.22	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	99.7	67	117
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	119	52	148
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1025007)							
EM1710012-020	BH5_0-0.53	EP080: C6 - C9 Fraction	----	28 mg/kg	99.7	42	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026125)							
EB1715231-004	Anonymous	EP071: C10 - C14 Fraction	----	837 mg/kg	81.0	53	123
		EP071: C15 - C28 Fraction	----	3061 mg/kg	83.0	70	124
		EP071: C29 - C36 Fraction	----	1592 mg/kg	82.7	64	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1025007)							
EM1710012-020	BH5_0-0.53	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	94.5	39	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026125)							
EB1715231-004	Anonymous	EP071: >C10 - C16 Fraction	----	1222 mg/kg	78.4	65	123
		EP071: >C16 - C34 Fraction	----	3919 mg/kg	81.8	67	121
		EP071: >C34 - C40 Fraction	----	316 mg/kg	82.6	44	126
EP080: BTEXN (QCLot: 1025007)							
EM1710012-020	BH5_0-0.53	EP080: Benzene	71-43-2	2 mg/kg	85.9	50	136
		EP080: Toluene	106-88-3	2 mg/kg	91.3	56	139
EP234H: Triazine Herbicides (QCLot: 1029520)							
EM1710012-020	BH5_0-0.53	EP234: Ametryn	834-12-8	0.02 mg/kg	109	70	130
		EP234: Atrazine	1912-24-9	0.02 mg/kg	110	70	130
		EP234: Cyanazine	21725-46-2	0.04 mg/kg	78.4	70	130
		EP234: Prometryn	7287-19-6	0.02 mg/kg	111	70	130
		EP234: Propazine	139-40-2	0.02 mg/kg	112	70	130
		EP234: Simazine	122-34-9	0.04 mg/kg	119	70	130
		EP234: Terbutylazine	5915-41-3	0.02 mg/kg	112	70	130
		EP234: Terbutryn	886-50-0	0.02 mg/kg	101	70	130



Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1710012	Page	: 1 of 9
Client	: FMG CONSULTING ENGINEERS	Laboratory	: Environmental Division Melbourne
Contact	: DEAN NOSKE	Telephone	: +61-3-8549 9600
Project	: 255881	Date Samples Received	: 28-Jul-2017
Site	: Stage 1 - Northern Area	Issue Date	: 04-Aug-2017
Sampler	: JE	No. of samples received	: 58
Order number	: PO120012	No. of samples analysed	: 22

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

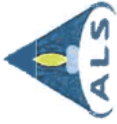
- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



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Outliers : Quality Control Samples
 Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM1709905--002	Anonymous	Manganese	7439-96-5	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG005T: Total Metals by ICP-AES	EM1710012--040	BH10_1.08-3.22	Manganese	7439-96-5	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK028SF: Weak Acid Dissociable CN by Segmented F	EM1710012--007	BH2_0-0.22	Weak Acid Dissociable Cyanide	----	41.5 %	70-130%	Recovery less than lower data quality objective

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results. This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein. Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters. Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Method	Container / Client Sample ID(s)	Sample Date		Extraction / Preparation		Analysis	
		Date extracted	Due for extraction	Date analysed	Due for analysis	Evaluation	Evaluation
EA001: pH in soil using 0.01M CaCl extract							
Soil Glass Jar - Unpreserved (EA001)	BH8_0.64-0.96	26-Jul-2017	02-Aug-2017	02-Aug-2017	02-Aug-2017	02-Aug-2017	02-Aug-2017
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)	BH1_0-0.5, BH3_0-0.47, BH5_0-0.53, BH7_0-0.45, BH8_0.64-0.96, BH10_0-0.70, BH11_0-0.55, HA01_0-0.25, HA03_0-0.3, HA05_0-0.3, QA02-Dup	26-Jul-2017	02-Aug-2017	02-Aug-2017	02-Aug-2017	02-Aug-2017	02-Aug-2017
EA006: Exchangeable Cations on Alkaline Soils							
Soil Glass Jar - Unpreserved (EA006)	BH8_0.64-0.96	26-Jul-2017	03-Aug-2017	23-Aug-2017	03-Aug-2017	03-Aug-2017	23-Aug-2017

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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Matrix: SOIL

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Analysis	
		Date extracted	Due for extraction	Date analysed	Due for analysis
EG005T: Total Metals by ICP-AES Soil Glass Jar - Unpreserved (EG005T) BH1_0-0.5, BH3_0-0.47, BH4_0-0.49, BH5_0-0.53, BH6_0-0.26, BH7_0-0.45, BH8_0-0.64, BH9_0-0.43, BH10_0-0.70, BH11_1.02-1.92, HA01_0-0.25, HA02_0-0.05, HA03_0-0.3, HA04_0-0.3, HA05_0-0.3, QA02-Dup	26-Jul-2017	01-Aug-2017	22-Jan-2018	01-Aug-2017	22-Jan-2018
				✓	✓
EG035T: Total Recoverable Mercury by FIMS Soil Glass Jar - Unpreserved (EG035T) BH1_0-0.5, BH3_0-0.47, BH4_0-0.49, BH5_0-0.53, BH6_0-0.26, BH7_0-0.45, BH8_0-0.64, BH9_0-0.43, BH10_0-0.70, BH11_1.02-1.92, HA01_0-0.25, HA02_0-0.05, HA03_0-0.3, HA04_0-0.3, HA05_0-0.3, QA01-Dup, HA06_0-0.3, QA02-Dup	26-Jul-2017	01-Aug-2017	23-Aug-2017	02-Aug-2017	23-Aug-2017
				✓	✓
EG048: Hexavalent Chromium (Alkaline Digest) Soil Glass Jar - Unpreserved (EG048G) BH2_0-0.22, HA04_0-0.3	26-Jul-2017	01-Aug-2017	23-Aug-2017	01-Aug-2017	08-Aug-2017
				✓	✓
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser Soil Glass Jar - Unpreserved (EK028SF) BH2_0-0.22, EP004: Organic Matter Soil Glass Jar - Unpreserved (EP004) BH8_0.64-0.96 EP068: Polychlorinated Biphenyls (PCB) Soil Glass Jar - Unpreserved (EP068) BH2_0-0.22,	26-Jul-2017	01-Aug-2017	09-Aug-2017	02-Aug-2017	15-Aug-2017
				✓	✓
	26-Jul-2017	02-Aug-2017	23-Aug-2017	02-Aug-2017	23-Aug-2017
				✓	✓
	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017
				✓	✓



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Matrix: SOIL

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation		Date analysed	Analysis Due for analysis	Evaluation
		Date extracted	Due for extraction			
EP068A: Organochlorine Pesticides (OC)						
Soil Glass Jar - Unpreserved (EP068)						
BH1_0-0.5, BH3_0-0.47, BH6_0-0.26, BH11_0-0.55,	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
BH2_0-0.22, BH5_0-0.53, BH9_0-0.43, HA04_0-0.3						
EP068B: Organophosphorus Pesticides (OP)						
Soil Glass Jar - Unpreserved (EP068)						
BH1_0-0.5, BH3_0-0.47, BH6_0-0.26, BH11_0-0.55,	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
BH2_0-0.22, BH5_0-0.53, BH9_0-0.43, HA04_0-0.3						
EP068C: Triazines						
Soil Glass Jar - Unpreserved (EP068)						
BH2_0-0.22, HA04_0-0.3	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
EP068D: Pyrethroids						
Soil Glass Jar - Unpreserved (EP068)						
BH2_0-0.22, HA04_0-0.3	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
EP075(SIM)A: Phenolic Compounds						
Soil Glass Jar - Unpreserved (EP075(SIM))						
BH2_0-0.22, HA04_0-0.3	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Soil Glass Jar - Unpreserved (EP075(SIM))						
BH2_0-0.22, BH7_0-0.45, HA02_0-0.05, HA04_0-0.3,	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
BH5_0-0.53, HA01_0-0.25, HA03_0-0.3, HA06_0-0.3						
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved (EP071)						
BH2_0-0.22, BH7_0-0.45, HA02_0-0.05, HA04_0-0.3,	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017	✓
BH5_0-0.53, HA01_0-0.25, HA03_0-0.3, HA06_0-0.3						
Soil Glass Jar - Unpreserved (EP080)						
BH2_0-0.22, BH7_0-0.45, HA02_0-0.05, HA04_0-0.3,	26-Jul-2017	31-Jul-2017	09-Aug-2017	31-Jul-2017	09-Aug-2017	✓
BH5_0-0.53, HA01_0-0.25, HA03_0-0.3, HA06_0-0.3						

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Matrix: SOIL

Evaluation: x = Holding time breach, ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation		Analysis	
		Date extracted	Due for extraction	Date analysed	Due for analysis
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions					
Soil Glass Jar - Unpreserved (EP071)					
BH5_0-0.53, HA01_0-0.25, HA03_0-0.3, HA06_0-0.3	26-Jul-2017	01-Aug-2017	09-Aug-2017	01-Aug-2017	10-Sep-2017
				✓	✓
Soil Glass Jar - Unpreserved (EP080)					
BH5_0-0.53, HA01_0-0.25, HA03_0-0.3, HA06_0-0.3	26-Jul-2017	31-Jul-2017	09-Aug-2017	31-Jul-2017	09-Aug-2017
				✓	✓
EP080: BTEXN					
Soil Glass Jar - Unpreserved (EP080)					
BH5_0-0.53, HA01_0-0.25, HA03_0-0.3, HA06_0-0.3	26-Jul-2017	31-Jul-2017	09-Aug-2017	31-Jul-2017	09-Aug-2017
				✓	✓
EP234H: Triazine Herbicides					
Soil Glass Jar - Unpreserved (EP234)					
BH3_0-0.47, BH6_0-0.26, BH11_0-0.55	26-Jul-2017	03-Aug-2017	09-Aug-2017	03-Aug-2017	12-Sep-2017
				✓	✓



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Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**
 Evaluation: * = Quality Control frequency not within specification; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)		Evaluation	Quality Control Specification
		QC	Regular	Actual	Expected		
Laboratory Duplicates (DUF)							
Exchangeable Cations on Alkaline Soils	ED006	1	8	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
pH in soil using a 0.01M CaCl2 extract	EA001	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	6	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	39	10.26	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Exchangeable Cations on Alkaline Soils	ED006	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Exchangeable Cations on Alkaline Soils	ED006	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMSMS (Positive Ion Mode)	EP234	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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 Work Order : EM1710012
 Client : FMG CONSULTING ENGINEERS
 Project : 255881

Matrix: SOIL

Evaluation: * = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)		Evaluation	Quality Control Specification
		OC	Regular	Actual	Expected		
Analytical Methods							
Method Blanks (MB) - Continued							
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GC/MS	EP068	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by LCMS/MS (Positive Ion Mode)	EP234	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard



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Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH in soil using a 0.01M CaCl2 extract	EA001	SOIL	In house: Referenced to Rayment and Lyons (2011) 4B3 (mod.) or 4B4 (mod.) 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3)
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Exchangeable Cations on Alkaline Soils	ED006	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
WAD Cyanide by Segmented Flow Analyser	EK028SF	SOIL	In house: Referenced to APHA 4500-CN-O. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Hydrogen cyanide is liberated from a slightly acidified (pH 4.5) and is dialysed. Tight cyanide complexes that would not be amenable to oxidation by chlorine are not converted. Iron cyanide Liberated HCN diffuses through a membrane into a stream of sodium hydroxide where it is carried as CN-. The cyanide in caustic solution is buffered to pH 5.2 and further converted to cyanogen chloride by reaction with chloramine-T. Cyanogen chloride subsequently reacts with 4-βpyridine carboxylic and 1,3 - dimethylbarbituric acids to give a red colour complex. This colour is measured at 600 nm.
Organic Matter	EP004	SOIL	This method is compliant with NEPM (2013) Schedule B(3) In house: Referenced to AS1289.4.1.1 - 1997. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3).
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extrads are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



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Analytical Methods	Method	Matrix	Method Descriptions
Pesticides by GC/MS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504.505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Pesticides by LC/MS/MS (Positive Ion Mode)	EP234	SOIL	In house: LC-MS/MS, direct injection. A sample extracted into acetonitrile, diluted with water and injected directly onto the instrument... Analysis is by LC/MS/MS, ESI Positive Mode.
Preparation Methods	Method	Matrix	Method Descriptions
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
pH in soil using a 0.01M CaCl2 extract	EA001-PR	SOIL	In house: Referenced to Rayment and Higginson 4B1, 10 g of soil is mixed with 50 mL of 0.01M CaCl2 and tumbled end over end for 1 hour. pH is measured from the continuous suspension. This method is compliant with NEPM (2013) Schedule B(3) (Method 103)
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons 2011 method 15C1.
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Higginson (1992) method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	In house: Referenced to ASTM D289.4.1.1 - 1997. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
Sample preparation for Pesticides by LC/MS/MS	EP234-PR	SOIL	In house
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1710012

Client	: FMG CONSULTING ENGINEERS	Laboratory	: Environmental Division Melbourne
Contact	: DEAN NOSKE	Contact	: Justin Wilson
Address	: 42 FULLARTON RD NORWOOD SA, AUSTRALIA 5067	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: dean.noske@fmgengineering.com.au	E-mail	: justin.wilson@alsglobal.com
Telephone	: +61 08 83630222	Telephone	: +61-3-8549 9600
Facsimile	: +61 08 83631555	Facsimile	: +61-3-8549 9601
Project	: 255881	Page	: 1 of 5
Order number	: PO120012	Quote number	: EM2015KOUKOU0058 (ADBQ/003/15)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Stage 1 - Northern Area		
Sampler	: JE		

Dates

Date Samples Received	: 28-Jul-2017 10:50	Issue Date	: 28-Jul-2017
Client Requested Due Date	: 04-Aug-2017	Scheduled Reporting Date	: 04-Aug-2017

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 8.9°C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 58 / 22

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- Please direct any queries related to sample condition / numbering / breakages to Client Services.
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- Analytical work for this work order will be conducted at ALS Springvale and ALS Sydney.
- Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.

Issue Date : 28-Jul-2017
 Page : 2 of 5
 Work Order : EM1710012 Amendment 0
 Client : FMG CONSULTING ENGINEERS



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: SOIL

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP234 Pesticide by LCMS/MS (Positive Ion Mode)	SOIL - P-211 (fifeb) NEPM (2013) HIL Table 1A(1) Screen	SOIL - S-02 β Metals (incl. Digestion)	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 β metals/TRHIBTEX/PAH
EM1710012-001	26-Jul-2017 00:00	BH1_0-0.5		✓	✓		✓	✓	
EM1710012-002	26-Jul-2017 00:00	BH1_0.5-0.9	✓						
EM1710012-003	26-Jul-2017 00:00	BH1_1-1.1	✓						
EM1710012-004	26-Jul-2017 00:00	BH1_2.2-2.91	✓						
EM1710012-006	26-Jul-2017 00:00	BH1_4.75-6.0	✓						
EM1710012-007	26-Jul-2017 00:00	BH2_0-0.22		✓		✓			
EM1710012-008	26-Jul-2017 00:00	BH2_0.22-0.54	✓						
EM1710012-009	26-Jul-2017 00:00	BH2_0.54-0.89	✓						
EM1710012-010	26-Jul-2017 00:00	BH2_0.89-1.29	✓						
EM1710012-012	26-Jul-2017 00:00	BH3_0-0.47		✓	✓		✓	✓	
EM1710012-013	26-Jul-2017 00:00	BH3_0.47-0.96	✓						
EM1710012-014	26-Jul-2017 00:00	BH3_0.96-1.02	✓						
EM1710012-015	26-Jul-2017 00:00	BH3_1.62-4.12	✓						
EM1710012-016	26-Jul-2017 00:00	BH3_4.12-4.4	✓						
EM1710012-017	26-Jul-2017 00:00	BH4_0-0.49		✓			✓		
EM1710012-018	26-Jul-2017 00:00	BH4_0.49-2.19	✓						
EM1710012-019	26-Jul-2017 00:00	BH4_2.19-4.0	✓						
EM1710012-020	26-Jul-2017 00:00	BH5_0-0.53		✓	✓			✓	✓
EM1710012-021	26-Jul-2017 00:00	BH5_0.53-1.64	✓						
EM1710012-022	26-Jul-2017 00:00	BH5_1.64-4.0	✓						
EM1710012-023	26-Jul-2017 00:00	BH6_0-0.26		✓	✓		✓	✓	
EM1710012-024	26-Jul-2017 00:00	BH6_0.26-0.64	✓						
EM1710012-025	26-Jul-2017 00:00	BH6_0.64-1.53	✓						
EM1710012-026	26-Jul-2017 00:00	BH6_1.53-5.4	✓						
EM1710012-027	26-Jul-2017 00:00	BH6_5.4-6.0	✓						
EM1710012-028	26-Jul-2017 00:00	BH7_0-0.45		✓					✓
EM1710012-029	26-Jul-2017 00:00	BH7_0.45-1.07	✓						
EM1710012-030	26-Jul-2017 00:00	BH7_1.07-2.07	✓						
EM1710012-031	26-Jul-2017 00:00	BH7_2.07-4.0	✓						
EM1710012-032	26-Jul-2017 00:00	BH8_0-0.64		✓			✓		
EM1710012-033	26-Jul-2017 00:00	BH8_0.64-0.96		✓					
EM1710012-034	26-Jul-2017 00:00	BH8_0.96-1.50	✓						
EM1710012-035	26-Jul-2017 00:00	BH9_0-0.43		✓	✓		✓	✓	
EM1710012-036	26-Jul-2017 00:00	BH9_0.43-2.99	✓						
EM1710012-037	26-Jul-2017 00:00	BH9_2.99-4.0	✓						

Issue Date : 28-Jul-2017
 Page : 4 of 5
 Work Order : EM1710012 Amendment 0
 Client : FMG CONSULTING ENGINEERS



Matrix: WATER

Laboratory sample ID	Client sampling date / time	Client sample ID	On Hold/ WATER No analysis requested
EM1710012-058	26-Jul-2017 00:00	RB01_26072017	✓
EM1710012-059	26-Jul-2017 00:00	TP01_26072017	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Issue Date : 28-Jul-2017
 Page : 5 of 5
 Work Order : EM1710012 Amendment 0
 Client : FMG CONSULTING ENGINEERS



Requested Deliverables

ANGIE JOHNSON

- A4 - AU Tax Invoice (INV) Email angie.johnson@fmgengineering.com.au

DEAN NOSKE

- *AU Certificate of Analysis - NATA (COA) Email dean.noske@fmgengineering.com.au

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email dean.noske@fmgengineering.com.au

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email dean.noske@fmgengineering.com.au

- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email dean.noske@fmgengineering.com.au

- A4 - AU Tax Invoice (INV) Email dean.noske@fmgengineering.com.au

- Chain of Custody (CoC) (COC) Email dean.noske@fmgengineering.com.au

- EDI Format - ENMRG (ENMRG) Email dean.noske@fmgengineering.com.au

- EDI Format - ESDAT (ESDAT) Email dean.noske@fmgengineering.com.au

INVOICES ADDRESS

- A4 - AU Tax Invoice (INV) Email LabReports@fmgengineering.com.au

JODY ELSWORTH

- *AU Certificate of Analysis - NATA (COA) Email jody.elsworth@fmgengineering.com.au

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email jody.elsworth@fmgengineering.com.au

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email jody.elsworth@fmgengineering.com.au

- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email jody.elsworth@fmgengineering.com.au

- A4 - AU Tax Invoice (INV) Email jody.elsworth@fmgengineering.com.au

- Chain of Custody (CoC) (COC) Email jody.elsworth@fmgengineering.com.au

- EDI Format - ENMRG (ENMRG) Email jody.elsworth@fmgengineering.com.au

- EDI Format - ESDAT (ESDAT) Email jody.elsworth@fmgengineering.com.au

RESULTS ADDRESS

- *AU Certificate of Analysis - NATA (COA) Email labreports@fmgengineering.com.au

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) Email labreports@fmgengineering.com.au

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) Email labreports@fmgengineering.com.au

- A4 - AU Sample Receipt Notification - Environmental HT (SRN) Email labreports@fmgengineering.com.au

- A4 - AU Tax Invoice (INV) Email labreports@fmgengineering.com.au

- Chain of Custody (CoC) (COC) Email labreports@fmgengineering.com.au

- EDI Format - ENMRG (ENMRG) Email labreports@fmgengineering.com.au


- EDI Format - ESDAT (ESDAT) Email labreports@fmgengineering.com.au

ENVIRONMENTAL ANALYSIS REQUEST				LABORATORY DETAILS			
CHAIN OF CUSTODY				3. FORWARDING REFERENCE			
Project Title : Stage 1 - Northern Area		Primary Laboratory: ALB		24 HOURS		48 HOURS	
FMG Job Number : 255881		Laboratory Quote Ref:		3 DAYS		5 DAYS (standard)	
FMG Project Manager : Dean Noske		Laboratory Batch Ref:		EXPECTED IN PORTING DATE		Standard Turn Around	
Email: dean.noske@fmgengineering.com.au		Secondary Laboratory: Envirolab		Laboratory Batch Ref: PO120012			
Phone Direct: 06 8363 8222							
Results to: Jody Ekworth/ Lab Reports							
Email: jody.ekworth@fmgengineering.com.au							
Phone Direct: 06 8132 6618							

Date Sampled	Sample ID	Depth /mm	Sample Type	Comments	NEPM Screen (P-2/1)	NEPM Screen for Soil Classification (P-22)	TPH (C6-C10)/BTEXH /PAH/ metals (S-26)	DOCOP (S-12)	Triazine Herbicides	Heavy Metals (S-2)	
	BH1_0-0.5	1									
	BH1_0.5-0.9	2									
	BH1_1-1.1	3									
	BH1_2.2-2.91	4									
	BH1_2.91-4.75	5		← NR							
	BH1_4.75-6.0	6									
	BH2_0-0.22	7			1						
	BH2_0.22-0.54	8									
	BH2_0.54-0.89	9									
	BH2_0.89-1.29	10									
	BH2_1.29-1.5	11		← NR							
	BH3_0-0.47	12						1	1	1	
	BH3_0.47-0.96	13									
	BH3_0.96-1.02	14									
	BH3_1.02-4.12	15									
	BH3_4.12-4.4	16									
	BH4_0-0.49	17							1		
	BH4_0.49-2.19	18									
	BH4_2.19-4.0	19									
	BH5_0-0.53	20						1	1	1	
	BH5_0.53-1.04	21									
	BH5_1.04-4.0	22									
	BH6_0-0.28	23						1	1	1	
	BH6_0.28-0.54	24									
	BH6_0.54-1.53	25									
	BH6_1.53-5.4	26									
	BH6_5.4-6.0	27									
	BH7_0-0.45	28									
	BH7_0.45-1.07	29									
26/07/2017	BH7_1.07-2.07	30	Soil								
	BH7_2.07-4.0	31									
	BH8_0-0.64	32							1		
	BH8_0.64-0.96	33									
	BH8_0.96-1.50	34			1						
	BH9_0-0.43	35						1	1	1	
	BH9_0.43-2.99	36									
	BH9_2.99-4.0	37									
	BH10_0-0.70	38							1		
	BH10_0.7-1.08	39									
	BH10_1.08-3.22	40							1		
	BH10_3.22-4.0	41									
	BH11_0-0.55	42						1	1	1	
	BH11_0.55-0.85	43									
	BH11_0.85-1.02	44									
	BH11_1.02-1.02	45							1		
	BH11_1.02-4.0	46									
	HA01_0-0.25	47						1			
	HA02_0-0.05	48						1			
	HA02_0.05-0.3	49		← NR							
	HA03_0-0.3	50						1			
	HA04_0-0.3	51									
	HA05_0-0.3	52							1		
	HA06_0-0.3	53						1			
	QA01-Dup	54							1		
	QA01-Trip	55							1		
	QA02-Dup	56							1		
	QA02-Trip	57							1		
					2	1	6	6	6	15	2

Forwarded to Secondary Lab
Initials: JB Date: 31/7

Environmental Division
Melbourne
Work Order Reference
EM1710012



Telephone : + 61-3-8549 9800

FREIGHT

Please forward to Envirolab

Please forward to Envirolab

Requisitioned by: Dean Noske	Requisitioned by: [Signature]	Received by: [Signature]	Special Requirements:
Date/Time requisitioned: 27/08/2017	Date/Time requisitioned:	Date/Time received: 28/7/17	Samples Received in Good Condition Documentation in Proper Order Samples Received Clean Samples Received within Recommended Holding Time
Signature: [Signature]	Signature: [Signature]	Signature: [Signature]	
Counter & Consignment Number:	Counter & Consignment Number:	Counter & Consignment Number: 105000	

CHAIN OF CUSTODY

ALS Laboratory, please refer →

CLIENT: LAURELIDE 301 Burra Road Pokarna SA 5050
 Ph: 08 8182 5100 E: adelaide@alsglobal.com

OFFICE: PROJECT NO.: 255881

ORDER NUMBER: PURCHASE ORDER NO.:

PROJECT MANAGER: CONTACT PH: SAMPLER MOBILE: EDD FORMAT (or default):

SAMPLER: Email Reports to (will default to PM if no other addresses are listed):
 Email Invoice to (will default to PM if no other addresses are listed):

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

TURNAROUND REQUIREMENTS: Standard TAT (List due date): Non Standard or urgent TAT (List due date):

ALS QUOTE NO.: **COUNTRY OF ORIGIN:**

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A
 Free Ion / freeze ice bricks present upon receipt? Yes No N/A
 Random Sample Temperature on Receipt: °C

RECEIVED BY: DATE/TIME: RELINQUISHED BY: DATE/TIME:

ANALYSIS REQUIRED INCLUDING SUITES (NB. Suite Codes must be listed to attract suite price)
 Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (filtered bottle required).

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	Additional Information
EXTRAS						
56	QAOS-260780F	26/7/14	S			
57	QAOSA-260780F	26/7/14	S			
58	EBOL-260780F	26/7/17	W	1X1, 2 VOA, 1 N		
59	TRAI-260780F	26/7/17	W	1 VOA		
60	SHI-1.1-2.2	26/7/17	S			
61	BHLE-3.56-4.0	26/7/17	S			
TOTAL:						

FOR LABORATORY USE ONLY (Circle)

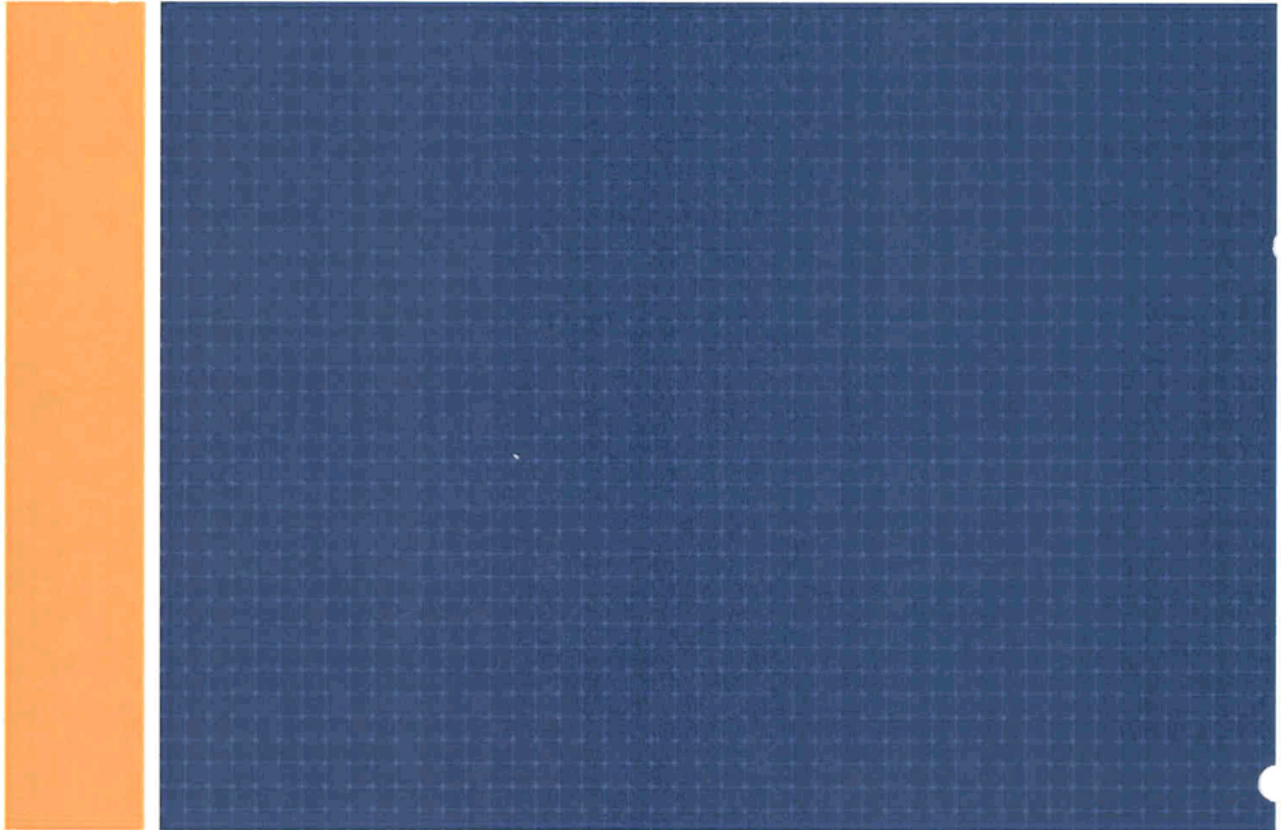
COC SEQUENCE NUMBER (Circle): coc: 1 2 3 4 5 6 7
 OF: 1 2 3 4 5 6 7

RECEIVED BY: DATE/TIME: RELINQUISHED BY: DATE/TIME:

Additional Information

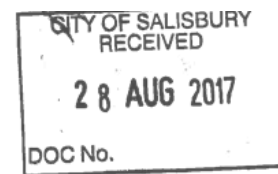
Comments on likely contaminant levels, odours, or samples requiring specific OC analysis etc.

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cl₂ Preserved; S = Sodium Hydroxide/Cl₂ Preserved; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; VU = Ultraviolet Light Preserved Vial; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
 Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Stainless Bottle; ZSS = Plastic Bag for AQS Substrate; B = Unpreserved Bag; U = Lycopodium Preserved Bottle; S11 = Sparte Sodium Thio sulfate Preserved Bottle.



Appendix E

Important Notes about the Interpretation and Use of this Environmental Assessment Report



Important Notes about the Interpretation and Use of this Environmental Site Investigation

These notes are offered to help in the interpretation of your environmental site investigation.

Notes about the definition of site contamination:

For the purposes of *Environment Protection Act 1993 (SA)*, site contamination exists at a site if:

- chemical substances are present on or below the surface of the site in concentrations above the background concentrations (if any); and
- the chemical substances have, at least in part, come to be present there as a result of an activity at the site or elsewhere; and
- the presence of the chemical substances in those concentrations has resulted in:
 - actual or potential harm to the health or safety of human beings that is not trivial, taking into account current or proposed land uses; or
 - actual or potential harm to water that is not trivial; or
 - other actual or potential environmental harm that is not trivial, taking into account current or proposed land uses.
- For the purposes of this Act, environmental harm is caused by the presence of chemical substances:
 - whether the harm is a direct or indirect result of the presence of the chemical substances; and
 - whether the harm results from the presence of the chemical substances alone or the combined effects of the presence of the chemical substances and other factors.
- For the purposes of this Act, site contamination does not exist at a site if circumstances of a kind prescribed by regulation apply to the site.

Similarly, the Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites" (ANZECC/NHMRC, 1992) defined "contaminated" as:

- a condition or state which represents or potentially represents an adverse health or environmental impact because of the presence of potentially hazardous substances.

To say that the levels of contaminants that may exist are not likely to be sufficient to constitute a health risk to the occupiers under the proposed land use scenario, for example a commercial use, or a risk to the environment, is not to say no "contamination" exists or that no risk whatsoever of contamination exists.

The level of investigation and degree of certainty required is dependent upon the sensitivity of the proposed land use. The most sensitive land use being a low to medium density residential backyard where a toddler, at the age where a high degree of hand to mouth activity may be engaged in, may play on the bare soil for reasonable periods of time each day.

Should a more conclusive assessment be required regarding the potential for contamination at the property, FMG Engineering can arrange to undertake a more detailed study including further soil sampling for chemical analysis. There will always be uncertainties arising from the practical limitations of the extent and nature of site testing and localised patches of unsuspected contamination may not be found in any case.

Reasons for conducting an environmental site investigation

Environmental site investigations are typically, though not exclusively, carried out for the following reasons:

- as pre-acquisition assessments, on behalf of either purchaser or vendor, when a property is to be sold
- as pre-development assessments, when a property or area of land is to be redeveloped or have its use changed, for example, from a factory to a residential subdivision
- as pre-development assessments of greenfield sites, to establish baseline conditions and assess environmental, geotechnical and hydrological constraints to the development of, for example, a landfill
- to audit the environmental effects of an ongoing operation.

Each of these circumstances requires a specific approach to the assessment of soil and groundwater contamination. In all cases, however, the objective is to identify and if possible quantify the risks which unrecognised contamination poses to the proposed activity. Such risks may be both financial, for example, clean-up costs or limitation on site use, and physical, for example, health risks to site users or the public.

Limitations of an environmental site investigation

Although the information provided by an environmental site investigation can reduce exposure to such risks, no environmental site investigation, however diligently carried out, can eliminate them. Even a rigorous professional assessment may fail to detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled.

An environmental site investigation is based on a unique set of project specific factors and with a particular site-use in mind

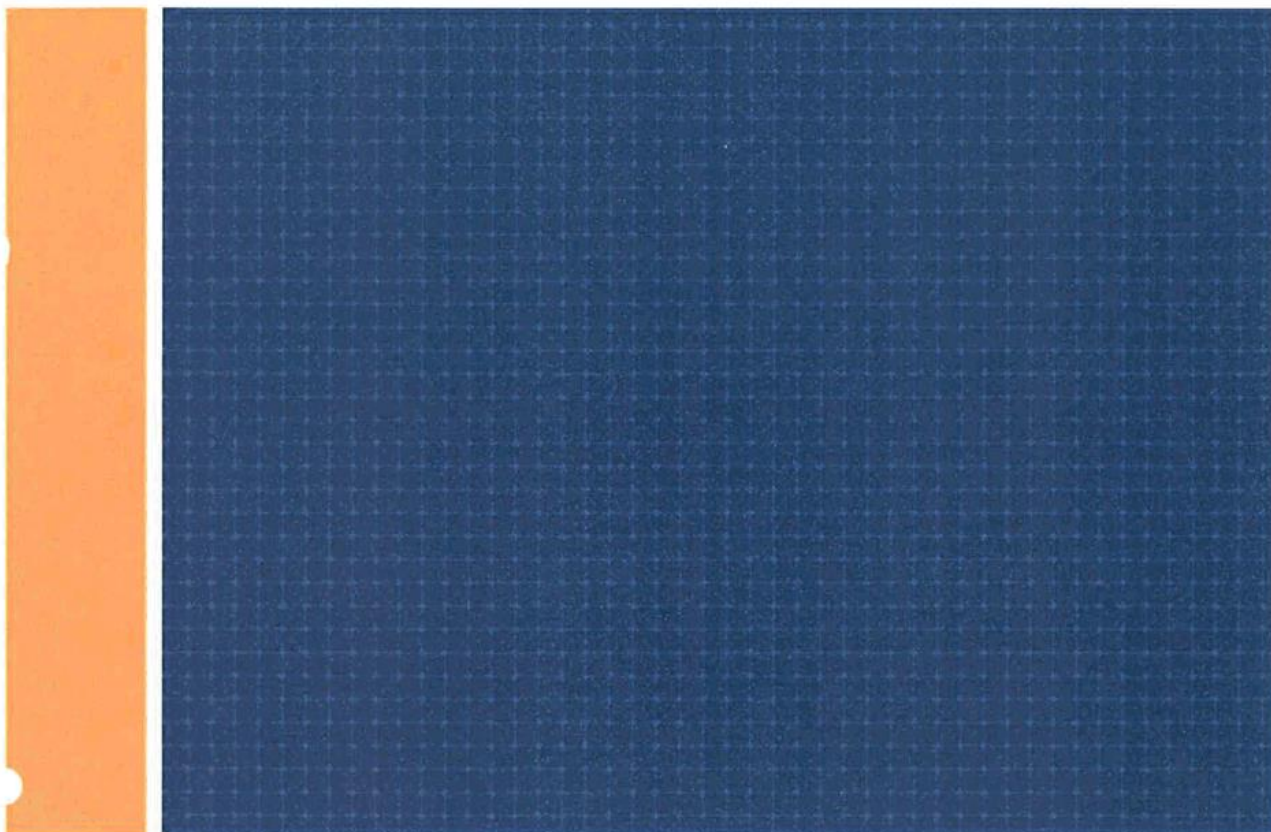
Your environmental report should not be used:

- when the nature of the proposed development or use is changed, for example, if a residential development is proposed instead of a commercial one
- when the size or configuration of the proposed development is altered
- when the location or orientation of the proposed structure is modified
- when there is a change of ownership; or
- for application to an adjacent site.

To help avoid costly problems, refer to your consultant to determine how any factors which have changed subsequent to the date of the report may affect our recommendations.

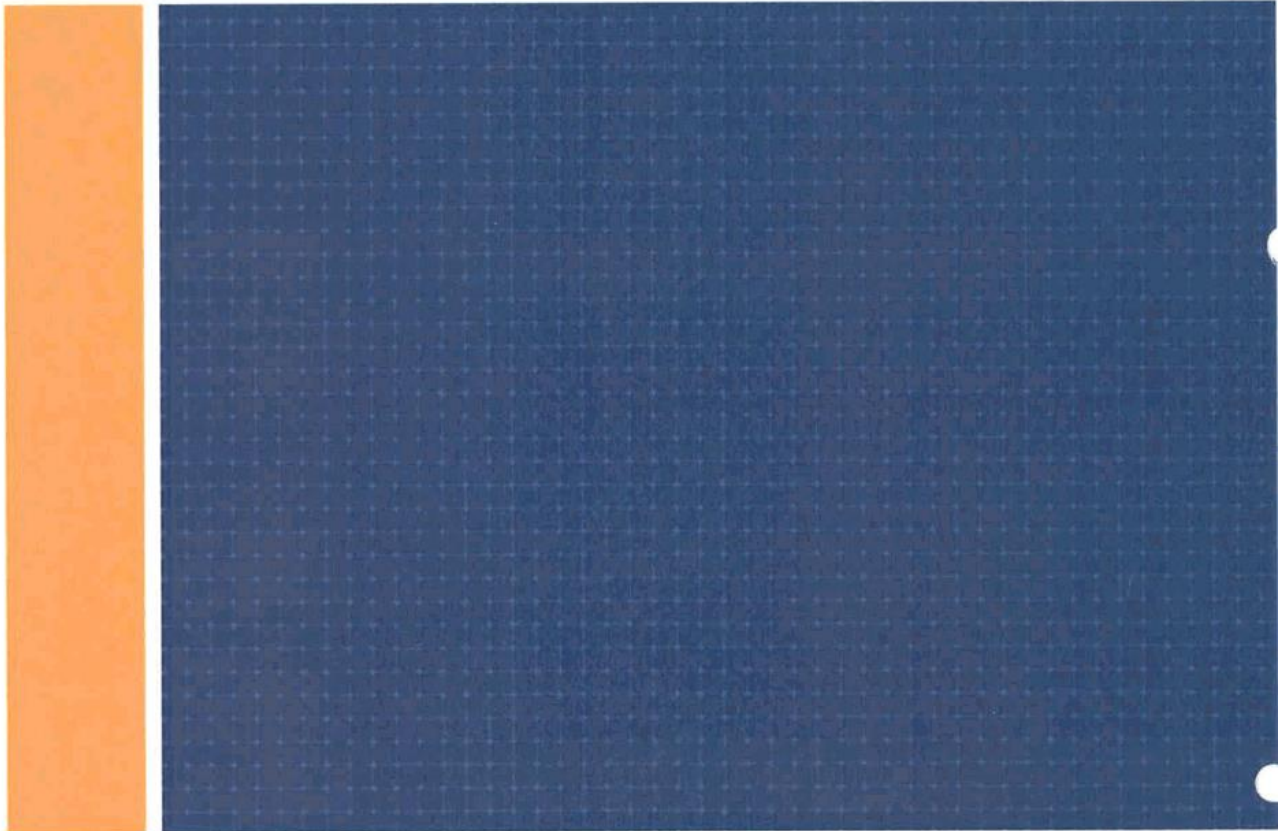
'Findings' are professional estimates

Site assessment identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing is interpreted by geologists, engineers or scientist who then render an opinion about overall subsurface conditions, the nature and extent of contamination, its likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred to exist, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than a report indicates. Actual conditions in areas not sampled may differ from prediction. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise its impact. For this reason, owners should retain the service of their consultants through the development stage, to identify variations, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.



Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

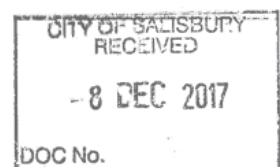




Arboricultural Impact Assessment

Site: Engels Property, cnr. Main North and Kings Roads, Salisbury

Date: Friday, 8 December 2017
ATS4703-MaiNorRdKinRdDIR





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- Appendix B Tree Assessment Findings
- Appendix C Mapping
- Appendix D Summary Table

Report Reference Number: ATS4703-MaiNorRdKinRdDIR

Report prepared for
Turner and Townsend

Author
Marcus Lodge Consulting Arborist Arborman Tree Solutions Pty Ltd



Brief

Arborman Tree Solutions was engaged to undertake an Arboricultural Impact Assessment at the Engels Property, cnr. Main North and Kings Roads, Salisbury and produce a Development Impact Report in relation to the Regulated and Significant Trees within the site. The purpose of a Development Impact Report is to identify potential impacts the proposed development will have on the trees within the site and to recommend impact mitigation strategies in accordance with *Australian Standard 4970-2009 Protection of trees on development sites* for trees to be retained. The proposed development includes the following: -

1. the demolition of the existing dwelling and out buildings,
2. the construction of a new shopping centre and car park,
3. the installation of new stormwater infrastructure and
4. the construction of an acceleration lane on Main North Road,

In accordance with section 2.2 of the *Australian Standard 4970-2009 Protection of trees on development sites (2.2)* the following information is provided:

- Assessment of the general condition and structure of the subject trees.
- Identification of the legislative status of trees on site as defined in the *Development Act 1993*.
- Identify and define the Tree Protection Zone for each tree which is marked on the plan.
- Identify potential impacts the development may have on tree health and/or stability which are identified on a plan.
- Recommend impact mitigation strategies in accordance with *Australian Standard 4970-2009 Protection of trees on development sites*.
- Provide information in relation to the management of trees.

Documents and Information Provided

The following information was provided for the preparation of this assessment

- Design Drawings including the following file names:
 - i. 20112017093044-0001
 - ii. S35706_258255_C001-C009
 - iii. S35706_258255_SK02
 - iv. S35706_258255_SK03
 - v. 170824 - DPC - Sheet - SK05 - SITE PLAN
 - vi. Kings Road
 - vii. Kings Road 2
 - viii. Kings MNR Junction
- Tree Management Report - ATS4703-MaiNorRdKinRdTMR



Executive Summary

I have assessed the potential impacts to the Regulated and Significant Trees from the proposed development and supporting infrastructure.

The proposed development will result in a Major encroachment to all the assessed trees as defined in Australian Standard AS4970-2009 *Protection of trees on development sites*. The trees are all in direct conflict with the proposed development and whilst there are options to that could reduce the conflict for some trees these are not large enough to reduce the impact to within acceptable limits.

The removal of the subject tree as part of the proposed development is the best management option and replacement planting schemes are recommended to maintain/enhance the aesthetic and environmental attributes within the area.



Site Location

Figure 1: Survey site location - Engels Property, cnr. Main North and Kings Roads, Salisbury



Arborman Tree Solutions Pty Ltd – Professionals in Arboriculture
23 Aberdeen Street
Port Adelaide SA 5015
ATS4703-MAINORRDKINRDDIR – FRIDAY, 8 DECEMBER 2017

Phone: (08) 8240 5555
Fax: (08) 8240 4525
Email: arborman@arborman.com.au



Methodology

The proposed design was reviewed in association with the information supplied in the Design Drawings and CAD files as supplied by Turner and Townsend, Medallion Homes.

When determining potential impacts of encroachment in to the TPZ, the following should be considered as per AS4970-2009 section 3.3.4;

- a) Location of roots and root development.
- b) The potential loss of root mass from the encroachment.
- c) Tree species and tolerance to root disturbance.
- d) Age, vigour and size of the tree.
- e) Lean and stability of the tree.
- f) Soil characteristics and volume, topography and drainage.
- g) The presence of existing or past structures or obstacles affecting root growth.
- h) Design factors.

Potential development impacts were determined in accordance with Australian Standard 4970-2009 *Protection of trees on development sites*. Impacts were classified into the following categories;

- No Impact - The proposed development is not likely to impact the viability of the tree.
 Low - The proposed development is not expected to have a noticeable impact the viability of the tree.
 High - The proposed development is expected to impact the viability of the tree.
 Substantial - The tree is in direct conflict with the proposed development and is unsustainable.

Trees with 'No Impact' have a calculated encroachment of less than 10% and therefore require general Tree Protection Zone management.

Trees with an impact identified as 'Low' have calculated encroachments greater than 10% however the clauses in AS4970 3.3.4 indicate these trees are sustainable and therefore require general Tree Protection Zone management.

Trees with an impact identified as 'High' have a calculated encroachment greater than 10% and no mitigating clauses in AS4970 3.3.4 apply, therefore alternative design solutions, additional root investigations or tree sensitive construction measures are required.

Trees with an impact identified as 'Substantial' have calculated encroachments greater than 40% and/or a Structural Root Zone encroachment and are considered to be in direct conflict with the proposed development. Mitigation strategies to reduce this impact are not available and therefore an alternative design or tree removal is required in this instance.

Regulatory Status, Tree Protection Zones and Arboricultural Impacts are shown in Appendix B.

Assessment

The purpose of a Development Impact Report is to identify potential impacts the proposed development will have on the tree(s) within the site and to recommend impact mitigation strategies in accordance with *Australian Standard 4970-2009 Protection of trees on development sites* for trees to be retained. The proposed development includes the following: -

1. the demolition of the existing dwelling and out buildings,
2. the construction of a new shopping centre and car park,
3. the installation of new stormwater infrastructure and
4. the construction of an acceleration lane on Main North Road.

The proposed development is recognised as a Major Encroachment, under AS4970-2009 *Protection of trees on development sites*, for all the trees within the site.

Areas of concern are the construction of the driveways and parking areas, the construction of several the buildings, the installation of the stormwater and the construction of the acceleration lane on Main North Road. The following table illustrates the impacts on each tree and identifies the level of the impact.

Tree Number	Botanic Name	Impacted Type				Overall Impact
		Carpark / Driveway	Buildings	Stormwater / Swale	Acceleration Lane	
1-9	<i>Eucalyptus cladocalyx</i>			Yes	Yes	Substantial
10-13	<i>Eucalyptus cladocalyx</i>	Yes	Yes			Substantial
14	<i>Eucalyptus cladocalyx</i>	Yes	Yes	Yes		Substantial
15	<i>Pinus halepensis</i>	Yes		Yes		Substantial
16	<i>Ceratonia siliqua</i>	Yes		Yes	Yes	Substantial
17-21	<i>Eucalyptus cladocalyx</i>	Yes				Substantial
22-25	<i>Phoenix canariensis</i>	Yes				Substantial
26-31	<i>Eucalyptus cladocalyx</i>		Yes			Substantial
32-33	<i>Phoenix canariensis</i>	Yes	Yes			Substantial
34	<i>Brachychiton rupestris</i>	Yes	Yes			Substantial
35-40	<i>Phoenix canariensis</i>	Yes				Substantial

In this case, the potential impacts to the subject trees are substantial and they cannot be suitably mitigated as no reasonable alternative design solutions are available to ensure tree sustainability.



All the *Eucalyptus cladocalyx* (Sugar Gum), i.e. Trees 1-14, 17-21 and 26-31, have been lopped with their crowns now consisting entirely of epicormic growth with resultant compromised attachment. Whilst this is not a substantial problem in the current site, trees with this structure are not suited to retention where occupancy of the areas below their crown is increased as this could lead to an unacceptable level of risk.

The *Phoenix canariensis* (Canary Island Date Palm) i.e. Trees 22-25, 32-33 and 35-40, and the *Brachyhiton rupestris* (Queensland Bottle Tree) i.e. Tree 34 are all suitable for transplanting and could be relocated within the local area if an appropriate site is available.



Conclusion

The proposed development has a substantial impact on all the trees within the site and is effectively in direct conflict with the retention of the trees.

There are two trees on the site, Trees 2 and 3, that are considered to have a High Retention Rating however they are substantially impacted by the building, stormwater and acceleration lane to the point where they will be unsustainable. To reduce the impact to an acceptable level the stormwater and building would have to be relocated and the acceleration lane removed completely i.e. both areas individually represent a Major Encroachment and therefore as a minimum a High Impact that would require the removal of the tree.

The remaining trees on site have a Moderate or Low Retention Rating and as such are not considered to achieve criteria under the *Development Act 1993* that indicate they should be retained at the expense of an otherwise reasonable and expected development.

The removal of the subject tree as part of the proposed development is the best management option and replacement planting schemes are recommended to maintain/enhance the aesthetic and environmental attributes within the area.

Thank you for the opportunity to provide this report. Should you have any questions or require further information, please contact me and I will be happy to be of assistance.

Yours sincerely

MARCUS LODGE
Senior Consulting Arboriculturist
Diploma in Arboriculture
International Society of Arboriculture – Tree Risk Assessment





Glossary

Size:	approximate height and width of tree in metres.
Age:	identification of the maturity of the subject tree.
Useful Life Expectancy:	expected number of the years that the subject specimen will remain alive and sound in its current location and/or continues to achieve the relevant Principles of Development Control.
Health:	visual assessment of tree health.
Structure:	visual assessment of tree structure.
Circumference:	trunk circumference measured at one metre above ground level. This measurement is used to determine the status of the tree in relation to the <i>Development Act 1993</i> .
Diameter at Breast Height (DBH):	trunk diameter measured at 1.4 metres above ground level used to determine the Tree Protection Zone as described in Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> .
Diameter at Root Buttress (DRB):	trunk diameter measured just above the root buttress as described in Australian Standard AS4970-2009 <i>Protection of trees on development sites</i> and is used to determine the Structural Root Zone.
Tree Damaging Activity	Tree damaging activity includes those activities described within the <i>Development Act 1993</i> such as removal, killing, lopping, ringbarking or topping or any other substantial damage such as mechanical or chemical damage, filling or cutting of soil within the TPZ. Can also include forms of pruning above and below the ground.
Tree Protection Zone:	area of root zone that should be protected to prevent substantial damage to the tree's health.
Structural Root Zone:	calculated area within the tree's root zone that is considered essential to maintain tree stability.
Project Arborist	A person with the responsibility for carrying out a tree assessment, report preparation, consultation with designers, specifying tree protection measures, monitoring and certification. The Project Arborist must be competent in arboriculture, having acquired through training, minimum Australian Qualification Framework (AQTF) Level 5, Diploma of Horticulture (Arboriculture) and/or equivalent experience, the knowledge and skills enabling that person to perform the tasks required by this standard.

References

- Australian Standard AS4970–2009 ***Protection of trees on development sites***: Standards Australia.
- Matheny N. Clark J. 1998: ***Trees and Development a Technical Guide to Preservation of Trees During Land Development***. International Society of Arboriculture, Champaign, Illinois, USA.
- Dunster J.A., Smiley E.T., Metheny N. and Lilly S. 2013. ***Tree Risk Assessment Manual***. International Society of Arboriculture, Champaign, Illinois USA.



Appendix A - Tree Assessment Methodology



Tree Assessment Form (TAF©)

Record	Description
Tree	A perennial woody plant with a mature height of greater than 5 metres and life expectancy of more than 10 years.
Genus and Species	Trees are identified using normal field plant taxonomy techniques. Due to hybridisation and plant conditions available on the day of observation it may not always be possible to identify the tree to species level; where species cannot be ascertained <i>sp.</i> is used.
Height	Tree height is observed and recorded in the following ranges; <5m, 5-10m, 10-15m and >20m.
Spread	Crown width (projection) diameter is recorded by the following fields <5m, 5-10m, 10-15m, 15-20m, >20m.
Tree Health	Tree health was assessed using the Arborman Tree Solutions - Tree Health Assessment Method that is based on international best practice.
Tree Structure	Tree structure was assessed using Arborman Tree Solutions - Tree Structure Assessment Method that is based on international best practice.
Tree Risk Assessment	Trees were assessed using the International Society of Arboriculture Level 1 Tree Assessment method. The person conducting the assessment has acquired the International Society of Arboriculture Tree Risk Assessment Qualification (TRAQ).
Legislative Status	Legislation status was identified through the interpretation of the <i>Development Act 1993</i> , and the <i>Natural Resource Management Act 2004</i> as well as other relevant legislation, therefore determining regulatory status of the subject tree.
Mitigation	Measures to reduce tree risk may be recommended in the form of pruning and this listed in the Tree Assessment Findings (Appendix C). Tree pruning is recommended in accordance with AS4373-2007 <i>Pruning amenity trees</i> where practicable. Where measures to mitigate risk is not possible and the risk is unacceptable, then tree removal or further investigation is recommended.

Useful Life Expectancy (ULE)

ULE Rating	Definition
Surpassed	The tree has surpassed its Useful Life Expectancy.
<10 years	The tree displays either or both Poor Health and/or Structure and is considered to have a short Useful Life Expectancy of less than ten years.
>10 years	The tree displays Fair Health or Structure and Good Health and Structure and is considered to have a Useful Life Expectancy of more than ten years.
>20 years	The tree displays Good Health and Structure and is considered to have an extended Useful Life Expectancy of more than twenty years.

Maturity (Age)

Age Class	Definition
Senescent	The tree has surpassed its optimum growing period and is declining and/or reducing in size. May be considered as a veteran in relation to its ongoing management. Tree will have generally reached greater than 80% of its expected life expectancy.
Mature	A tree which has reached full maturity in terms of its predicted life expectancy and size, the tree is still active and experiencing cell division. Tree will have generally reached 20-80% of its expected life expectancy.
Semi Mature	A tree which has established, but has not yet reached maturity. Normally tree establishment practices such as watering will have ceased. Tree will generally not have reached 20% of its expected life expectancy.
Juvenile	A newly planted tree or one which is not yet established in the landscape. Tree establishment practices such as regular watering will still be in place. Tree will generally be a newly planted specimen up to five years old; this may be species dependant.



Tree Health Indication (THI©)

Category	Description
Good	Tree displays high vigour, uniform leaf colour, no or little dieback (<5%), crown density (>85%) and or healthy axillary buds and typical internode length. The tree has little to no pest and/or disease infestation.
Fair	Tree displays low vigour, dull leaf colour, little dieback (<15%), crown density (>70%) and/or reduced axillary buds and internode length. Minor pest and/or disease infestation potentially impacting on tree health.
Poor	Tree displays no vigour, chlorotic or dull leaf colour, moderate to high crown dieback (>15%), low crown density (<70%) and/or few or small axillary buds and shortened internode length. Pest and or disease infestation is evident and/or widespread.
Dead	The tree has died and has no opportunity for recovery.

Tree Structural Assessment (TSA©)

Category	Description
Good	Little to no branch failure observed within the crown, well-formed unions, no included bark, good branch and trunk taper present, root buttressing and root plate are typical.
Fair	History of minor branch failure observed in crown, well-formed unions, no included bark, acceptable branch and trunk taper present, root buttressing and root plate are typical.
Poor	History of significant branch failure observed in crown, poorly formed unions, included bark present, branch and trunk taper absent, root buttressing and root plate are atypical.
Failed	The structure of the tree has or is in the process of collapsing.



Tree Retention Rating (TRR)

The Tree Retention Rating is based on a number of factors that are identified as part of the standard tree assessment criteria including Condition, Size, Environmental, Amenity and Special Values. These factors are combined in a number of matrices to provide a Preliminary Tree Retention Rating and a Tree Retention Rating Modifier which combine to provide a Tree Retention Rating that is measurable, consistent and repeatable

Preliminary Tree Retention Rating

The Preliminary Tree Retention Rating is conducted assessing Tree Health and Structure to give an overall Condition Rating and Height and Spread to give an overall Size Rating. The following matrices identify how these are derived.

Condition Matrix				
Structure	Health			
	Good	Fair	Poor	Dead
Good	C1	C1	C3	C4
Fair	C1	C2	C3	C4
Poor	C3	C3	C4	C4
Failed	C4	C4	C4	C4

Size Matrix					
Spread	Height				
	>20	15-20	10-15	5-10	<5
>20	S1	S1	S1	S2	S3
15-20	S1	S1	S2	S3	S3
10-15	S1	S2	S2	S3	S4
5-10	S2	S3	S3	S4	S5
<5	S3	S3	S4	S5	S5

The results from the Condition and Size Matrices are then placed in the Preliminary Tree Retention Rating Matrix.

Preliminary Tree Retention Rating				
Size	Condition			
	C1	C2	C3	C4
S1	High	High	Low	Low
S2	High	Moderate	Low	Low
S3	Moderate	Moderate	Low	Low
S4	Moderate	Moderate	Low	Low
S5	Low	Low	Low	Low

The Preliminary Tree Retention Rating gives a base rating for all trees regardless of other environmental and/or amenity factors and any Special Value considerations. The Preliminary Tree Retention Rating can only be modified if these factors are considered to be of high or low enough importance to warrant increasing or, in a few cases, lowering the original rating.



Tree Retention Rating Modifier

The Preliminary Tree Retention Rating is then qualified against the recognised Environmental and Amenity benefits that trees present to the community thereby providing a quantitative measure to determine the overall Tree Retention Rating. Data is collected in relation to Environmental and Amenity attributes which are compared through a set of matrices to produce a Tree Retention Rating Modifier.

Environmental Matrix				
Origin	Habitat			
	Active	Inactive	Potential	No Habitat
Indigenous	E1	E1	E2	E3
Native	E1	E2	E3	E3
Exotic	E2	E3	E3	E4
Weed	E3	E3	E4	E4

Amenity Matrix				
Character	Aesthetics			
	High	Moderate	Low	None
Important	P1	P1	P2	P3
Moderate	P1	P2	P3	P3
Low	P2	P3	P3	P4
None	P3	P3	P4	P4

Tree Retention Rating Modifier				
Amenity	Environment			
	E1	E2	E3	E4
P1	High	High	Moderate	Moderate
P2	High	Moderate	Moderate	Moderate
P3	Moderate	Moderate	Moderate	Moderate
P4	Moderate	Moderate	Moderate	Low

Tree Retention Rating

The results of the Preliminary Tree Retention Rating and the Tree Retention Rating Modifier matrices are combined in a final matrix to give the actual Tree Retention Rating.

Tree Retention Rating Matrix			
Tree Retention Rating Modifier	Preliminary Tree Retention Rating		
	High	Moderate	Low
High	Important	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Low



Special Value Trees

There are potentially trees that have Special Value for reasons outside of normal Arboricultural assessment protocols and therefore would not have been considered in the assessment to this point; to allow for this a Special Value characteristic that can override the Tree Retention Rating can be selected. Special Value characteristics that could override the Tree Retention Rating would include factors such as the following:

Cultural Values

Memorial Trees, Avenue of Honour Trees, Aboriginal Heritage Trees, Trees planted by Dignitaries and various other potential categories.

Environmental Values

Rare or Endangered species, Remnant Vegetation, Important Habitat for rare or endangered wildlife, substantial habitat value in an important biodiversity area and various other potential categories.

Where a tree achieves one or more Special Value characteristics the Tree Retention Rating will automatically be overridden and assigned the value of Important.

Tree Retention Rating Definitions

- Important** These trees are considered to be important and will in almost all instances be required to be retained within any future development/redevelopment. It is highly unlikely that trees that achieve this rating would be approved for removal or any other tree damaging activity. Protection of these trees should as a minimum be consistent with Australian Standard AS4970-2009 *Protection of trees on development sites* however given the level of importance additional considerations may be required.
- High** These trees are considered to be important and will in most instances be required to be retained within any future development/redevelopment. It is unlikely that trees that achieve this rating would be approved for removal or any other tree damaging activity. Protection of these trees should be consistent with Australian Standard AS4970-2009 *Protection of trees on development sites*.
- Moderate** These trees are considered to be suitable for retention however they achieve less positive attributes than the trees rated as Important or High and as such their removal or other tree damaging activity is more likely to be considered to be acceptable in an otherwise reasonable and expected development. The design process should where possible look to retain trees with a Moderate Retention Rating. Protection of these trees, where they are identified to be retained, should be consistent with Australian Standard AS4970-2009 *Protection of trees on development sites*.
- Low** These trees are not considered to be suitable for retention in any future development/redevelopment; trees in this category do not warrant special works or design modifications to allow for their retention. Trees in this category are likely to be approved for removal and/or other tree damaging activity in an otherwise reasonable and expected development. Protection of these trees, where they are identified to be retained, should be consistent with Australian Standard AS4970-2009 *Protection of trees on development sites*.



Appendix B - Tree Assessment Findings

Eucalyptus cladocalyx

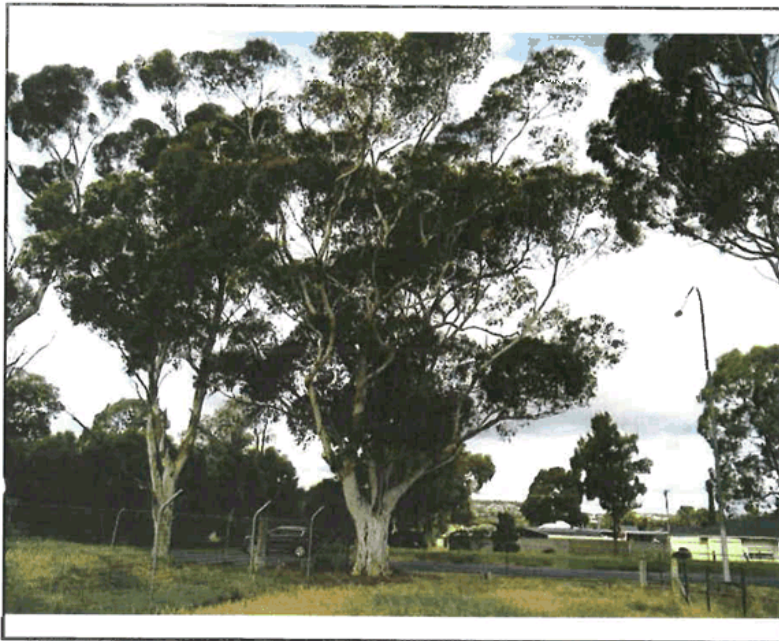
Tree No: 1

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	The lower trunk is decayed and hollow.
Spread:	15-20 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	3.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	12.48 metres	

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 2

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Fair	Recommendation
Trunk Circumference:	2.82 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>10 years	
Tree Protection Zone (TPZ):	10.8 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 3

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Fair	Recommendation
Trunk Circumference:	2.75 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>10 years	
Tree Protection Zone (TPZ):	10.2 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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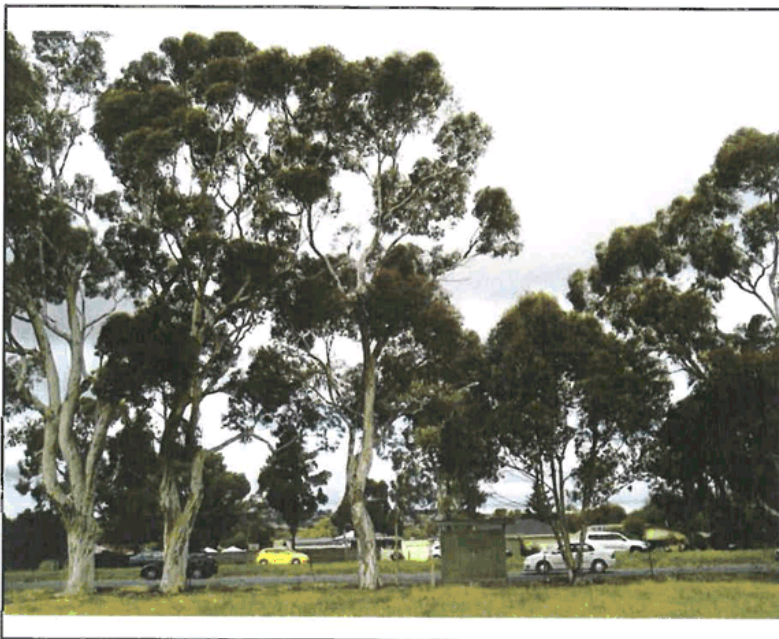
Eucalyptus cladocalyx

Tree No: 4

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	The lower trunk is decayed and hollow.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.57 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	9.84 metres	

Legislative Status Comments
 This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 5

Sugar Gum

Inspected: Thursday, 5 October 2017

Height: 15-20 metres

Spread: 10-15 metres

Health: Good

Structure: Poor

Trunk Circumference: 2.75 metres

Useful Life Expectancy: <10 years

Tree Protection Zone (TPZ): 9.6 metres

General Observations

The tree has suffered a recent large diameter stem failure. Trunk measurements are estimated due to an active bee hive near the area of measurement.

Development Impact Comments

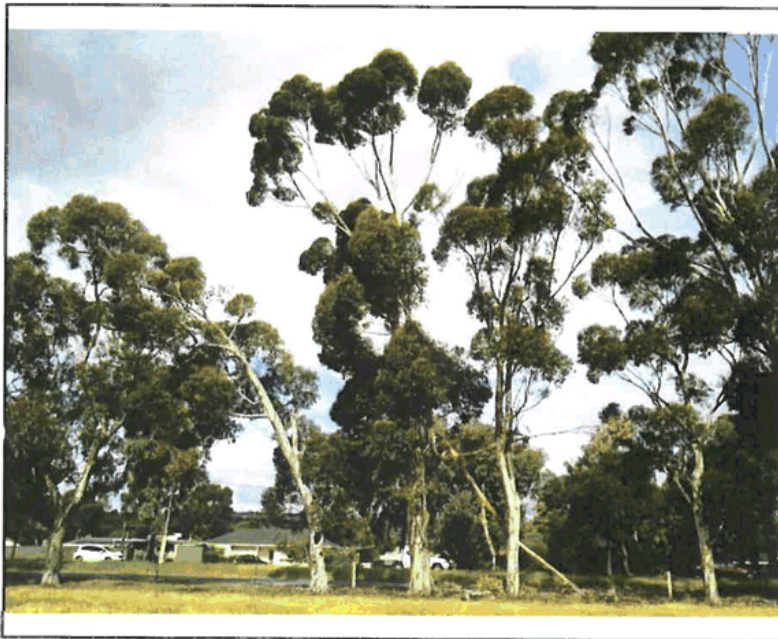
Development impact on this tree is considered to be substantial.

Recommendation

Tree removal is required to accommodate development.

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status

Regulated

Impact Rating

Substantial



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Eucalyptus cladocalyx

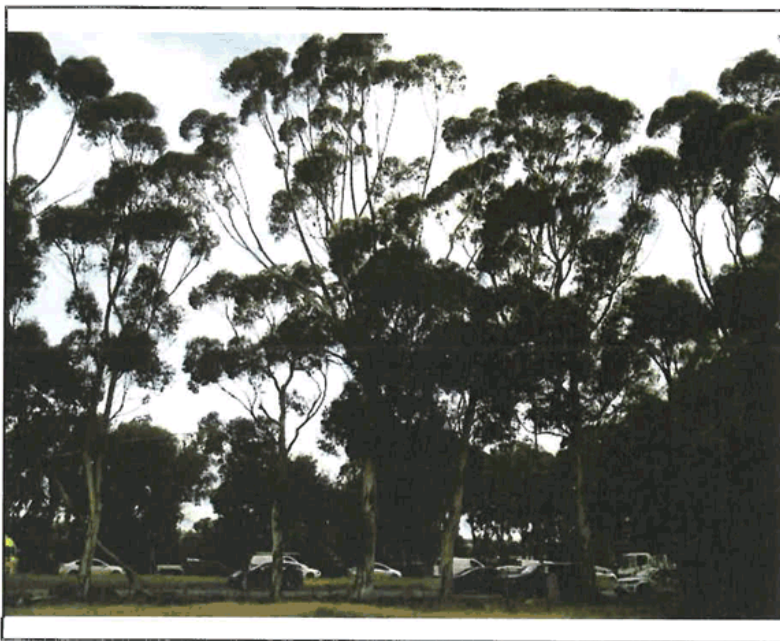
Tree No: 6

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations	There is an unstable union in the primary structure.
Height:	15-20 metres	Development Impact Comments	Development impact on this tree is considered to be substantial.
Spread:	10-15 metres	Recommendation	Tree removal is required to accommodate development.
Health:	Good		
Structure:	Poor		
Trunk Circumference:	2.65 metres		
Useful Life Expectancy:	<10 years		
Tree Protection Zone (TPZ):	9.72 metres		

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

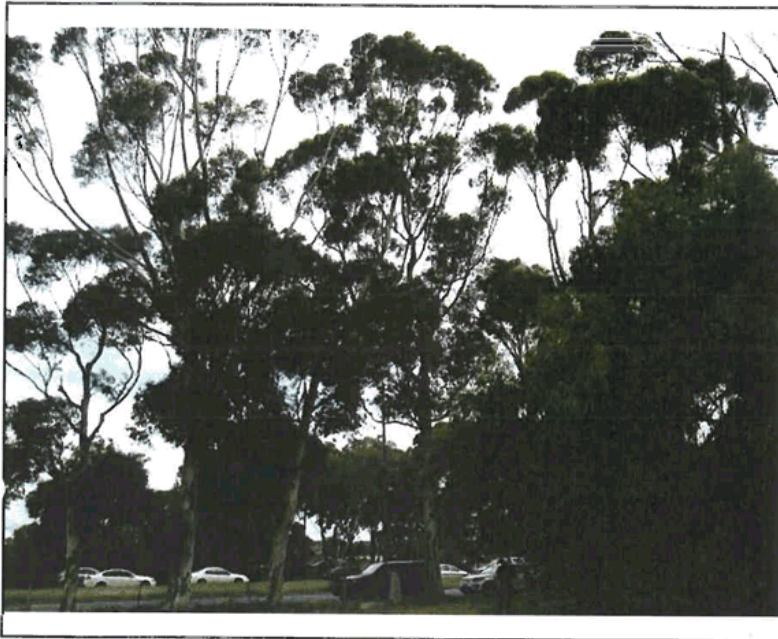
Tree No: 7

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Fair	Recommendation
Trunk Circumference:	2.07 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>10 years	
Tree Protection Zone (TPZ):	7.56 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 8

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	>20 metres	
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.35 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	8.52 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 9

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations	
Height:	>20 metres		The lower trunk is decayed and hollow.
Spread:	10-15 metres	Development Impact Comments	
Health:	Good		Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation	
Trunk Circumference:	3.08 metres		Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years		
Tree Protection Zone (TPZ):	11.76 metres		

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Eucalyptus cladocalyx

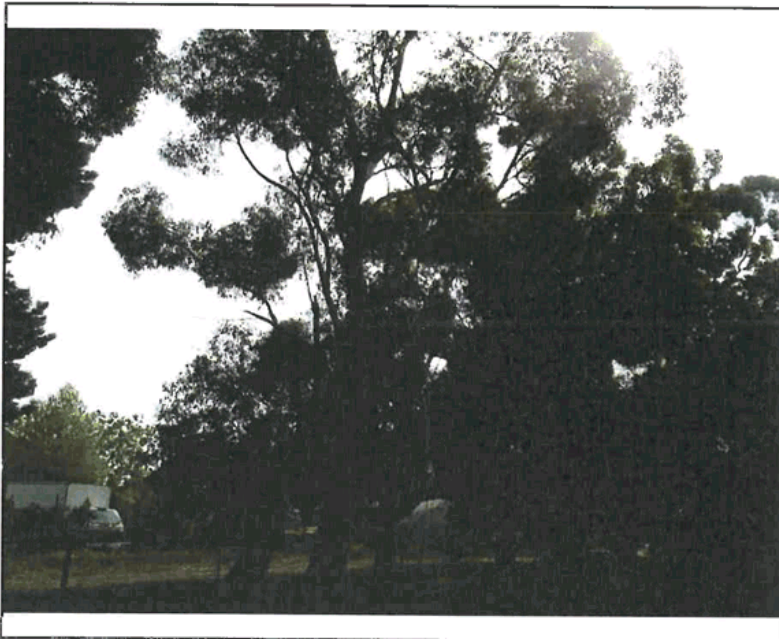
Tree No: 10

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	The tree has a history of branch failure. There is evidence of decay in the trunk and/or branches.
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.31 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	8.76 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 11

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	There is dieback of branch ends throughout the crown. The tree has a history of branch failure.
Spread:	10-15 metres	Development Impact Comments
Health:	Poor	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.27 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	Surpassed	
Tree Protection Zone (TPZ):	8.64 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 12

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	The tree has a history of branch failure. The lower trunk is decayed and hollow.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.65 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	10.08 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 13

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	The tree has a history of branch failure. The lower trunk is decayed and hollow.
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.55 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	9.48 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

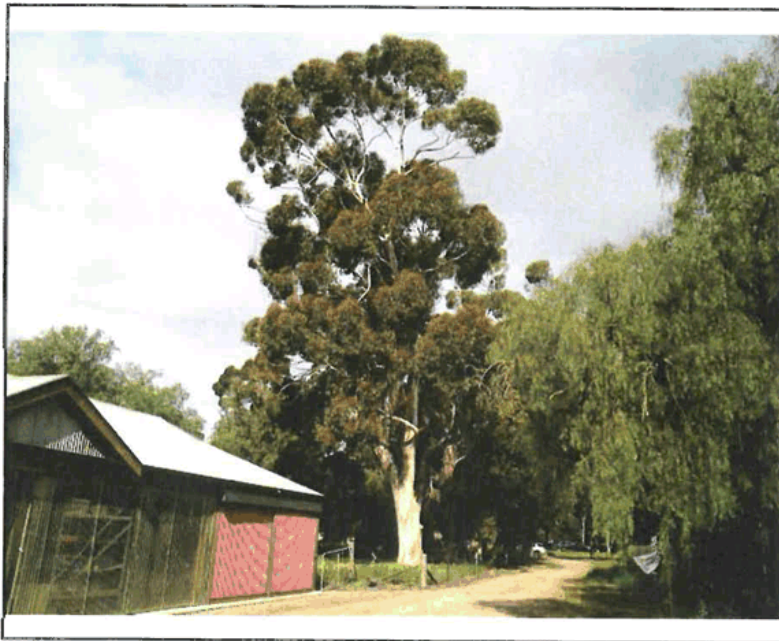
Tree No: 14

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	The tree has a history of branch failure.
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	3.34 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	12.84 metres	

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Pinus halepensis

Tree No: 15

Aleppo Pine

Inspected:	Thursday, 5 October 2017	General Observations
Height:	15-20 metres	
Spread:	15-20 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	3.34 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	9.24 metres	

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Ceratonia siliqua

Tree No: 16

Carob Bean

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	
Spread:	15-20 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Fair	Recommendation
Trunk Circumference:	3.69 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>10 years	
Tree Protection Zone (TPZ):	10.08 metres	

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 17

Sugar Gum

Inspected: Thursday, 5 October 2017
 Height: 10-15 metres
 Spread: 10-15 metres
 Health: Fair
 Structure: Poor
 Trunk Circumference: 2.52 metres
 Useful Life Expectancy: <10 years
 Tree Protection Zone (TPZ): 9.36 metres

General Observations

The crown appears to be formed entirely of epicormic growth from old lop points.

Development Impact Comments

Development impact on this tree is considered to be substantial.

Recommendation

Tree removal is required to accommodate development.

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated

Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 18

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	The tree has a history of branch failure. There is evidence of decay in the trunk and/or branches.
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.71 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	10.32 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 19

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	The tree has a history of branch failure. There is dieback of branch ends throughout the crown.
Spread:	5-10 metres	Development Impact Comments
Health:	Poor	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.24 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	Surpassed	
Tree Protection Zone (TPZ):	8.52 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 20

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	The tree has a history of branch failure. There is evidence of decay in the trunk and/or branches.
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.72 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	8.64 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

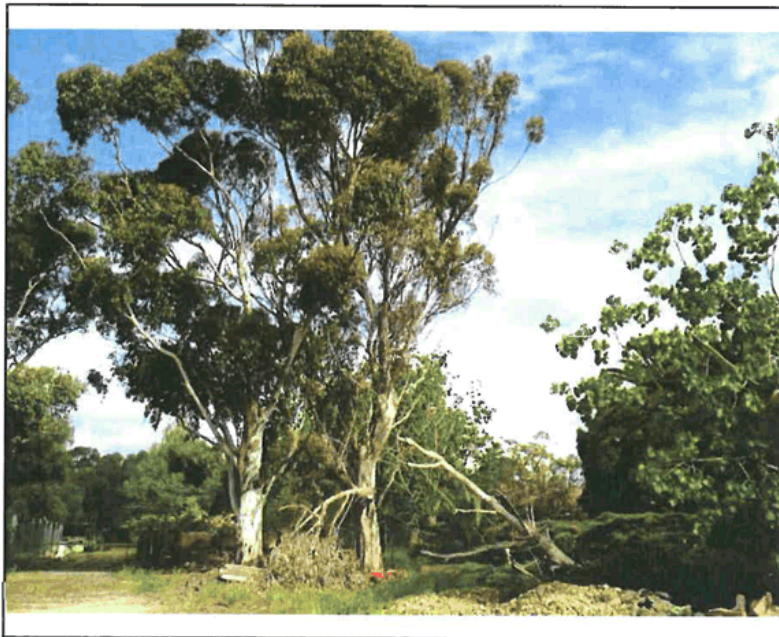
Tree No: 21

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	There is dieback of branch ends throughout the crown. The tree has a history of branch failure.
Spread:	10-15 metres	Development Impact Comments
Health:	Poor	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.41 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	Surpassed	
Tree Protection Zone (TPZ):	9.24 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

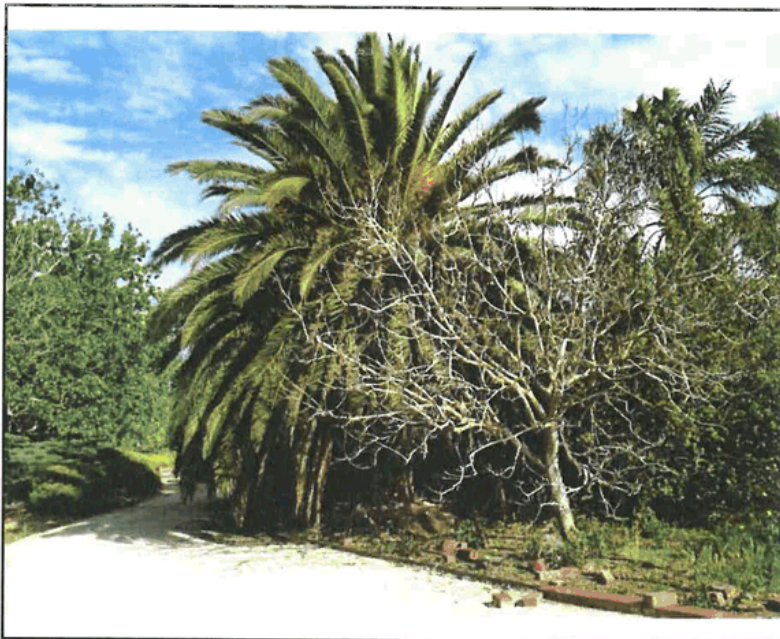
Tree No: 22

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 23

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 24

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 25

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 26

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	There is evidence of decay in the trunk and/or branches and the crown appears to be formed entirely of epicormic growth from old lop points.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.39 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	9.12 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 27

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Fair	Recommendation
Trunk Circumference:	3.45 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>10 years	
Tree Protection Zone (TPZ):	13.2 metres	

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 28

Sugar Gum

Inspected: Thursday, 5 October 2017

Height: 10-15 metres

Spread: 5-10 metres

Health: Fair

Structure: Poor

Trunk Circumference: 2.31 metres

Useful Life Expectancy: <10 years

Tree Protection Zone (TPZ): 8.04 metres

General Observations

There is evidence of decay in the trunk and/or branches and the crown appears to be formed entirely of epicormic growth from old lop points.

Development Impact Comments

Development impact on this tree is considered to be substantial.

Recommendation

Tree removal is required to accommodate development.

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated

Impact Rating
Substantial



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Eucalyptus cladocalyx

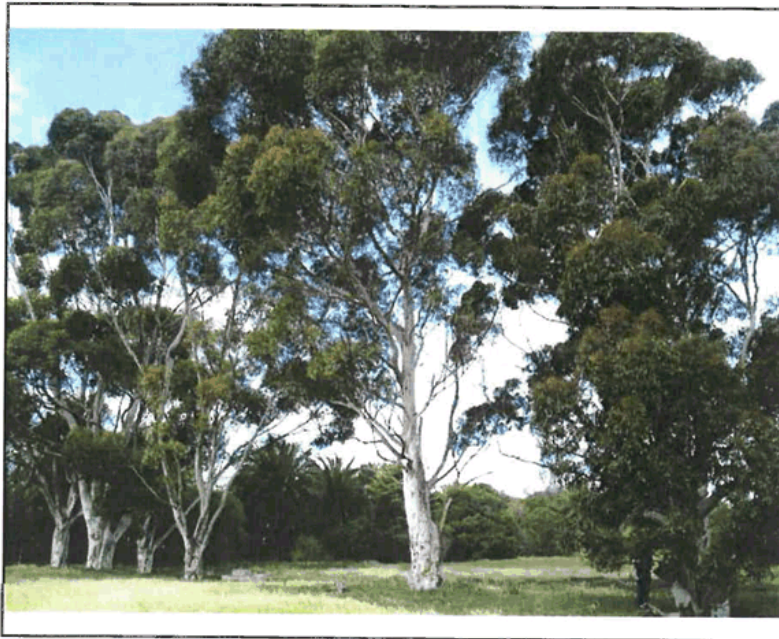
Tree No: 29

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	There is dieback of branch ends throughout the crown.
Spread:	10-15 metres	Development Impact Comments
Health:	Poor	Development impact on this tree is considered to be substantial.
Structure:	Fair	Recommendation
Trunk Circumference:	2.82 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	10.92 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 30

Sugar Gum

Inspected:	Thursday, 5 October 2017	General Observations
Height:	10-15 metres	The tree has a history of branch failure. There is evidence of decay in the trunk and/or branches.
Spread:	10-15 metres	Development Impact Comments
Health:	Fair	Development impact on this tree is considered to be substantial.
Structure:	Poor	Recommendation
Trunk Circumference:	2.32 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	<10 years	
Tree Protection Zone (TPZ):	6.96 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Eucalyptus cladocalyx

Tree No: 31

Sugar Gum

Inspected: Thursday, 5 October 2017
 Height: 10-15 metres
 Spread: 10-15 metres
 Health: Fair
 Structure: Poor
 Trunk Circumference: 4.4 metres
 Useful Life Expectancy: <10 years
 Tree Protection Zone (TPZ): 10.8 metres

General Observations

There is an unstable union in the primary structure. There is evidence of decay in the trunk and/or branches. Trunk measurements are estimated due to an active bee hive near the area of measurement.

Development Impact Comments

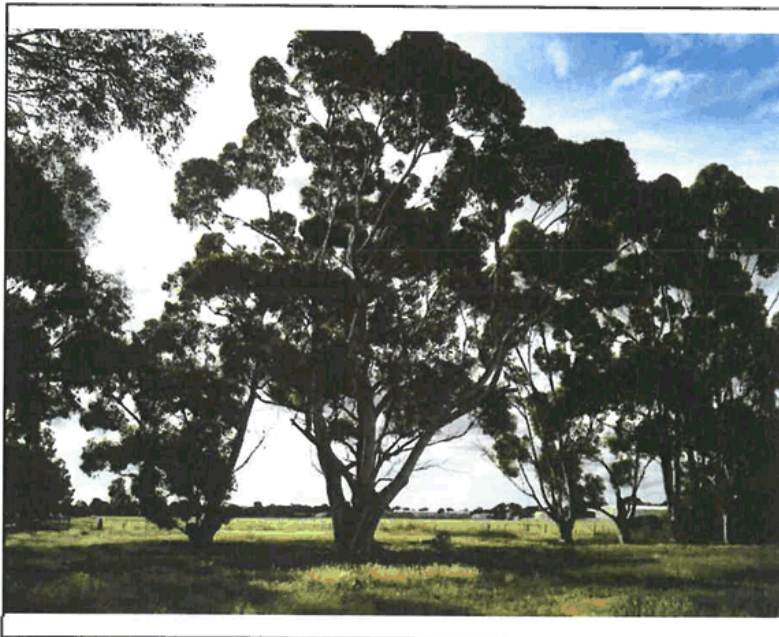
Development impact on this tree is considered to be substantial.

Recommendation

Tree removal is required to accommodate development.

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 32

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 33

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	10-15 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Brachychiton rupestris

Tree No: 34

Queensland Bottle Tree

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	3.48 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	10.44 metres	

Legislative Status Comments

This tree is a Significant Tree under the Development Act 1993.



Legislative Status
Significant
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 35

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 36

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 37

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



Published 8/12/2017

Page 37 of 40

Phoenix canariensis

Tree No: 38

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 39

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial



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Phoenix canariensis

Tree No: 40

Canary Island Date Palm

Inspected:	Thursday, 5 October 2017	General Observations
Height:	5-10 metres	Trunk measurements have been estimated.
Spread:	5-10 metres	Development Impact Comments
Health:	Good	Development impact on this tree is considered to be substantial.
Structure:	Good	Recommendation
Trunk Circumference:	2.25 metres	Tree removal is required to accommodate development.
Useful Life Expectancy:	>20 years	
Tree Protection Zone (TPZ):	5.04 metres	

Legislative Status Comments

This tree is a Regulated Tree under the Development Act 1993.



Legislative Status
Regulated
Impact Rating
Substantial

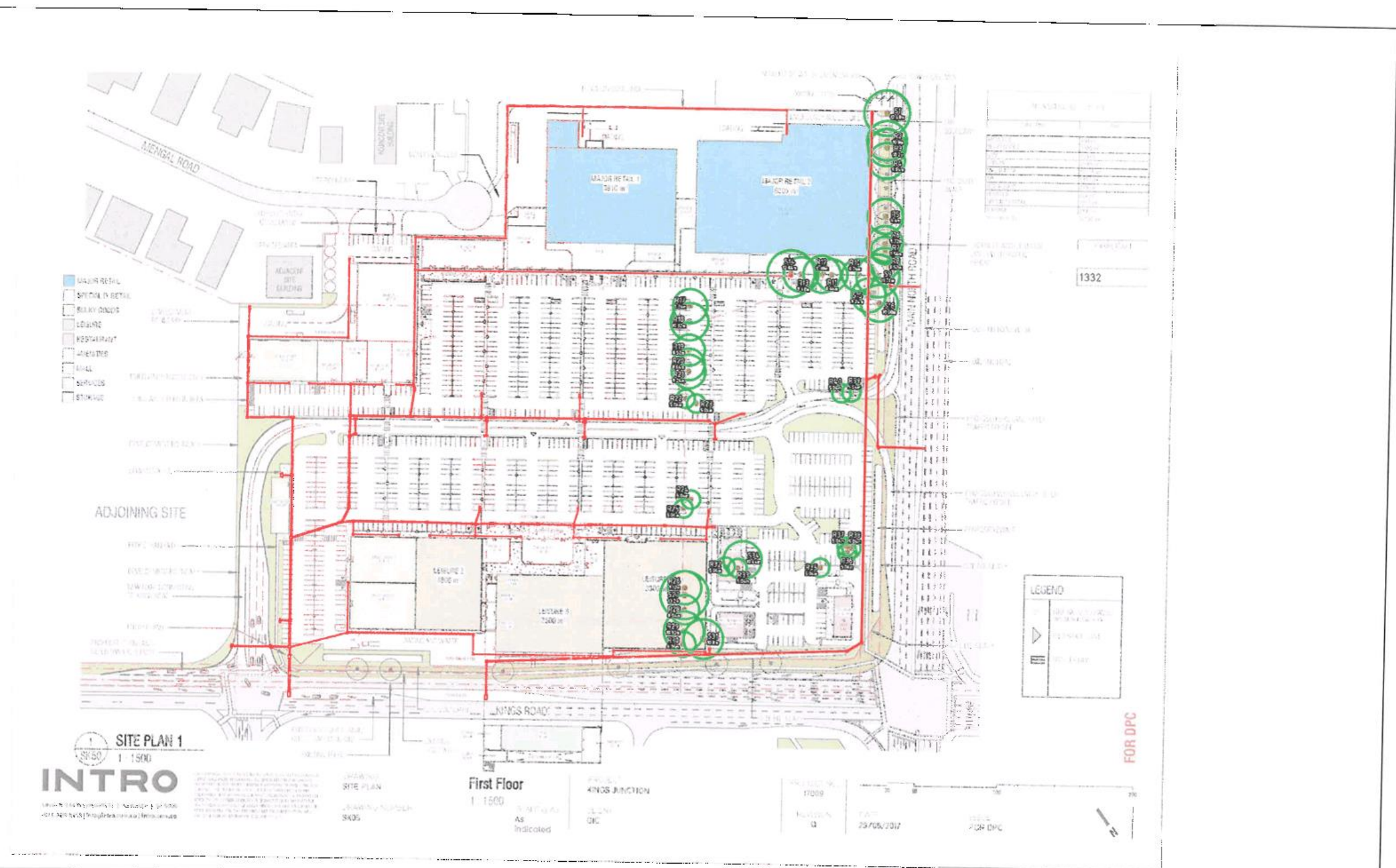


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Appendix C - Mapping



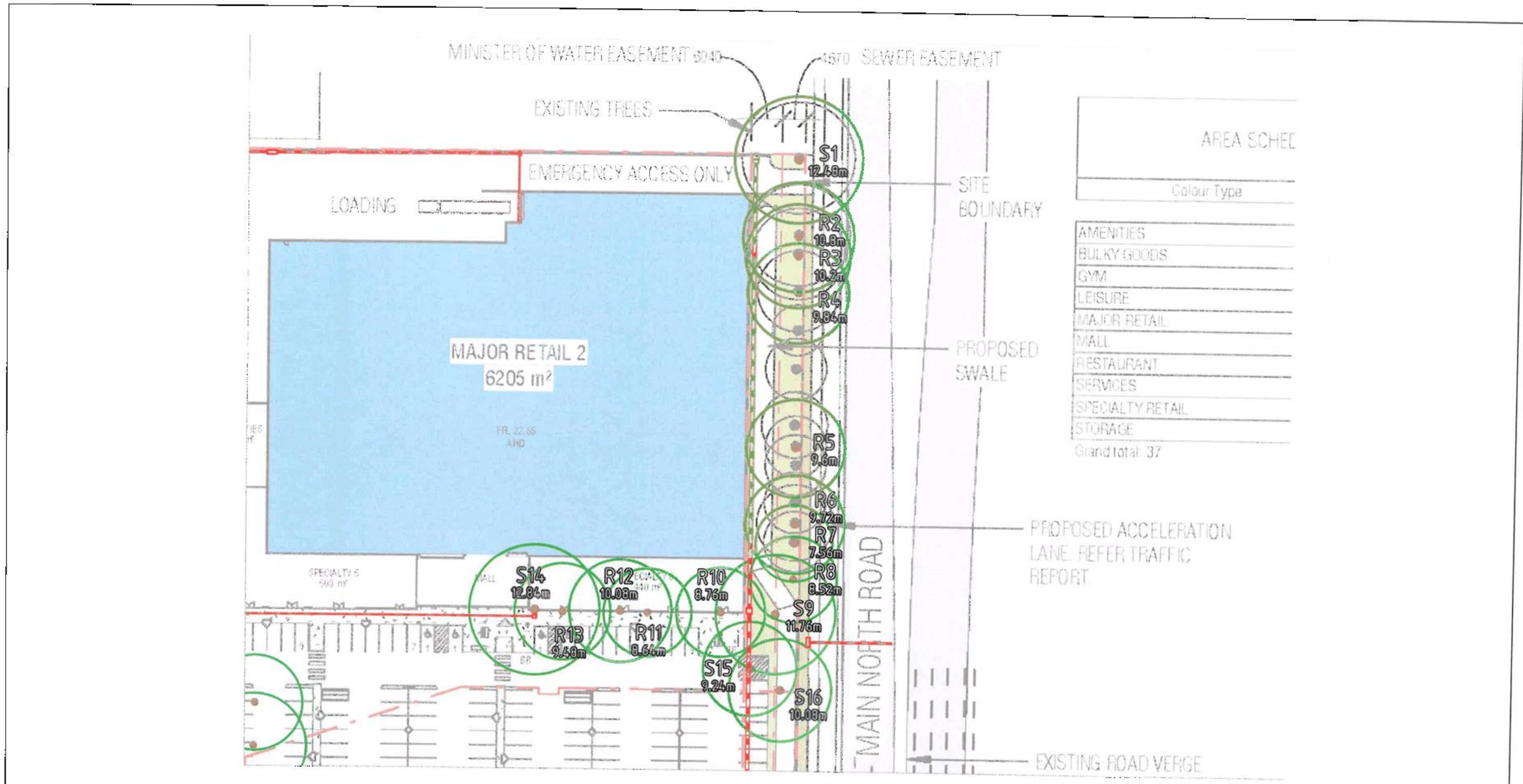
Tree Protection Zones and Encroachment

Map 1 of 4 - 8 December 2017

ATS4703-MaiNorRdKinRdDIR



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AREA SCHED	
Colour	Type
	AMENITIES
	BULKY GOODS
	GYM
	LEISURE
	MAJOR RETAIL
	MALL
	RESTAURANT
	SERVICES
	SPECIALTY RETAIL
	STORAGE
Grand total: 37	

Tree Protection Zones and Encroachment – Zoom 1

Map 2 of 4 - 8 December 2017

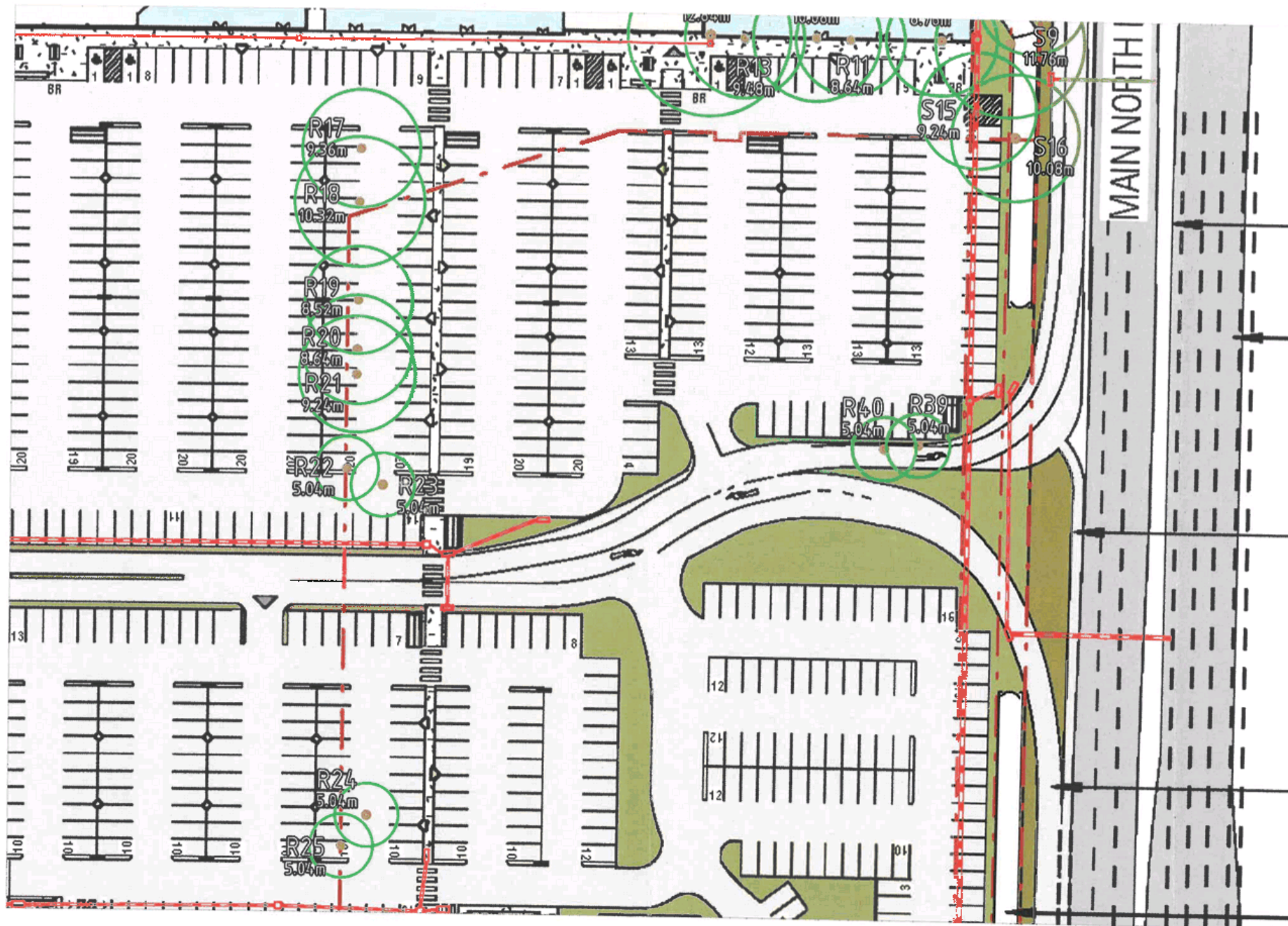
ATS4703-MaiNorRdKinRdDIR



Arborman Tree Solutions Pty Ltd – Professionals in Arboriculture
 23 Aberdeen Street
 Port Adelaide SA 5015
 AT93054A-HacRdVspPDS V6 – 30 April 2015

Phone: (08) 8240 5555
 Fax: (08) 8240 4525
 Email: arborman@arborman.com.au

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Tree Protection Zones and Encroachment – Zoom 2

Map 3 of 4 - 8 December 2017

ATS4703-MaiNorRdKinRdDIR



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 23 Aberdeen Street
 Port Adelaide SA 5015
 Phone: (08) 8240 5555
 Fax: (08) 8240 4525
 Email: arborman@arborman.com.au

Phone: (08) 8240 5555
 Fax: (08) 8240 4525
 Email: arborman@arborman.com.au

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Tree Protection Zones and Encroachment – Zoom 3

Map 4 of 4 - 8 December 2017

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 23 Aberdeen Street
 Port Adelaide SA 5015
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Phone: (08) 8240 5555
 Fax: (08) 8240 4525
 Email: arborman@arborman.com.au

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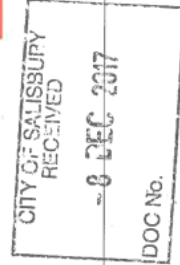
Appendix D - Tree Assessment Summary

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
1	<i>Eucalyptus cladocalyx</i>	Significant	12.48 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
2	<i>Eucalyptus cladocalyx</i>	Regulated	10.8 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
3	<i>Eucalyptus cladocalyx</i>	Regulated	10.2 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
4	<i>Eucalyptus cladocalyx</i>	Regulated	9.84 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
5	<i>Eucalyptus cladocalyx</i>	Regulated	9.6 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
6	<i>Eucalyptus cladocalyx</i>	Regulated	9.72 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial



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Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
7	<i>Eucalyptus cladocalyx</i>	Regulated	7.56 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
8	<i>Eucalyptus cladocalyx</i>	Regulated	8.52 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
9	<i>Eucalyptus cladocalyx</i>	Significant	11.76 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
10	<i>Eucalyptus cladocalyx</i>	Regulated	8.76 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
11	<i>Eucalyptus cladocalyx</i>	Regulated	8.64 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
12	<i>Eucalyptus cladocalyx</i>	Regulated	10.08 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial

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Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
13	<i>Eucalyptus cladocalyx</i>	Regulated	9.48 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
14	<i>Eucalyptus cladocalyx</i>	Significant	12.84 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
15	<i>Pinus halepensis</i>	Significant	9.24 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
16	<i>Ceratonia siliqua</i>	Significant	10.08 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
17	<i>Eucalyptus cladocalyx</i>	Regulated	9.36 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
18	<i>Eucalyptus cladocalyx</i>	Regulated	10.32 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial



Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
19	<i>Eucalyptus cladocalyx</i>	Regulated	8.52 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
20	<i>Eucalyptus cladocalyx</i>	Regulated	8.64 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
21	<i>Eucalyptus cladocalyx</i>	Regulated	9.24 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
22	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
23	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
24	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
25	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
26	<i>Eucalyptus cladocalyx</i>	Regulated	9.12 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
27	<i>Eucalyptus cladocalyx</i>	Significant	13.2 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
28	<i>Eucalyptus cladocalyx</i>	Regulated	8.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
29	<i>Eucalyptus cladocalyx</i>	Regulated	10.92 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
30	<i>Eucalyptus cladocalyx</i>	Regulated	6.96 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial



Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
31	<i>Eucalyptus cladocalyx</i>	Significant	10.8 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
32	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
33	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
34	<i>Brachychiton rupestris</i>	Significant	10.44 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
35	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
36	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial

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Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Tree Assessment Summary

Tree Number	Botanic Name	Legislative Status	TPZ Radius	Comments	Recommendation	Development Impact
37	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
38	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
39	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial
40	<i>Phoenix canariensis</i>	Regulated	5.04 metres	Development impact on this tree is considered to be substantial.	Tree removal is required to accommodate development.	Substantial

able access design

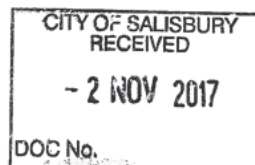


38 young street, parkside, sa, 5063
 t: 08 8272 2391 m: 0414 379 116
 e: ableaccess@primus.com.au
 www.ableaccessdesign.com.au
 abn: 87 101 217 707

Memorandum

To: Andrew Cialini - BuildSurv
cc:

Project: KINGS JUNCTION .
Reference: 4-1352_1
Date: 31st October 2017
Pages: 5



Disability Access Advice

Hi Andrew,

Please find attached advice regarding the following council concerns.

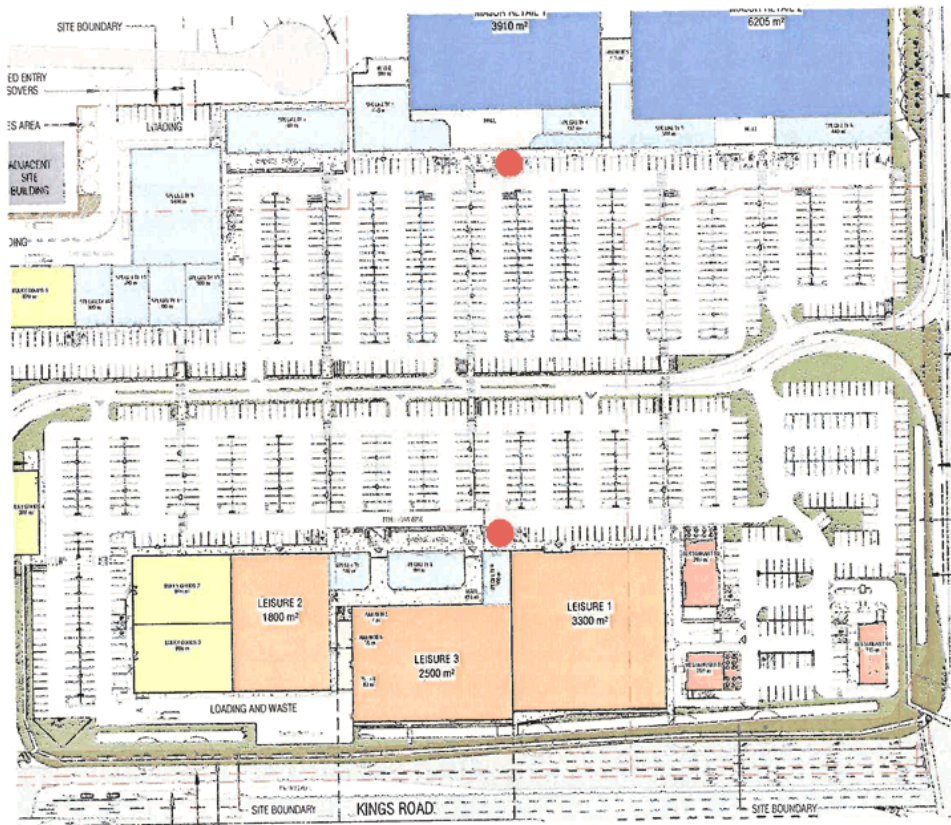
The plans do not appear to provide for a taxi and private vehicle short stay zone for drop off / pick up for persons with impaired mobility.

- In regards to taxi/vehicle pick-up and drop-off zones there are no requirements or specifications within the *Building Code of Australia (BCA)*, the *Disability (Access to Premises - Buildings) Standards 2010 (Premises Standards)*, the *Disability Discrimination Act 1992 (DDA)* or the *Australian Standard 1428 - Design for access and mobility Set (AS1428)*. As such, the requirements and appropriate design of such facilities are up to interpretation of councils, clients and user groups.
- For a development the size of Kings Junction it would be appropriate to have at least two dedicated taxi pick-up/drop-off zones. One located close to the mall entrances leading to Major Retail 1 And Major Retail 2, and one located near the entrances to the leisure tenancies on the southern side of the site. Refer to the marked up drawing below.
- The design of a taxi drop-off/pick-up facility is also up to interpretation. There are two options available:
 1. Parallel to the footpath style zone. This would require the drop-off/pick-up zone to be a minimum 3200mm wide and 7800mm in length (as per Figure 2.6 of AS2890.6) to allow for loading and unloading of passengers who may have a disability. This style of drop-off/pick-up zone will obviously result in the loss of some existing parking spaces. While guidance from a traffic engineer is advisable, it would be recommended that the drop-off/pick-up zone be of the size to allow multiply taxis to stop at the same time without restricting traffic movement.



2. Drop-off/pick-up zone located 90° to the kerb, similar to existing parking arrangement. This arrangement would require the taxi drop-off/pick-up zone to have a shared zone adjacent to it, similar to the current accessible car parking spaces, to allow for loading and unloading of passengers who may have a disability. The taxi drop-off/pick-up areas should be located as close as possible to the entrances to the buildings.
- In both cases outlined above there should be adequate undercover seating available in the close vicinity for customers to sit while waiting for their transport.
 - The zones would need to be appropriately signed to show that the areas are dedicated for taxis or passenger pick-up/drop-off only.

● Recommended taxi drop-off/pick-up locations





The surfaces for all pedestrian crossings across driveways should have a different surface treatment in terms of luminance contrast and tactile design.

- Similar to the taxi/vehicle pick-up and drop-off zones, there are no requirements or specifications within the BCA, the Premises Standards, DDA or AS1428 in regards to the treatment of pedestrian crossings from a disability access viewpoint . As such, the requirements and appropriate design of pedestrian crossing are up to interpretation by councils, clients and user groups.
- For people with a disabilities, the preferred style of pedestrian crossing are those which are raised to the same level as the footpath, similar to the photo below. The crossing is of a different colour to the road and is also bordered with a contrasting colour. Tactile ground surface indicators (TGSIs) are placed at the edge of the crossing to assist a pedestrian who is blind or vision impaired. The raised crossing also is a slowing device for approaching vehicles.
- If the crossings are not to be raised level with the footpaths, it would be recommended that the crossings be of a different material or colour to the road. TGSIs would be recommended to be placed on each kerb ramp leading to the crossings.



Preferred crossing option.

Where can vulnerable pedestrians shelter when waiting for a taxi?

- As previously noted, appropriate shelter and seating should be located in close proximity to the dedicated taxi pick-up/drop-off zones.



Well-designed and suitably located street furniture should be provided.

- The BCA , Premises Standards and DDA do not require or specify requirements for street furniture.
- Street furniture usually includes objects such as seats, tables, drinking fountains, planter boxes, rubbish bins and the like.
- In regards to street furniture AS1428 Part 2 recommends the following:
 - street furniture should not protrude into an accessible path of travel
 - seats should be located a minimum 500mm away from an accessible path of travel
 - street furniture should be a colour which provides a luminance contrast with the background surface of 30%
- In regards to seating AS1428 Part 2 recommends:
 - the front of the seat shall have a clear space between any legs at ground level to within 150 mm of the front edge of the seat, and to within 100 mm of the seat height to allow for rearward adjustment of feet when rising
 - seat height should be between 400mm and 450m
 - where armrests are provided, the top surface of the armrests shall be at a height of 260 ±40 mm above the seat
 - the front edge of the seat shall have a minimum radius of 30 mm.
 - no edge or projection shall have a radius of less than 5 mm unless protected from contact with the user
 - the seat shall drain free of water
 - some seat should have back rests
- As the development will be frequented by people with ambulatory disabilities, such as elderly people, in line with AS1428 Part 2, it is recommended that seats be provided no more than 60m apart alongside paths of travel.



- Accessible features:**
- armrests
 - backrest
 - clearance underneath
 - draining seat
 - rounded features
 - position off the access path
 - timber colour provides luminance contrast with background surface



Don't hesitate to contact me if you require further clarification on any of the above points.

Yours sincerely,

Warwick Gregg

Post Graduate Certificate in Built Environment
Bachelor of Architecture
Bachelor of Science
Diploma of Visual Communication & Graphic Design
Accredited Member - ACAA
Registered Assessor - LHA





Vipac Engineers and Scientists Limited
279 Normanby Rd, Port Melbourne, VIC 3207, Australia
Private Bag 16, Port Melbourne, VIC 3207, Australia
t. +61 3 9647 9700 | f. +61 3 9646 4370 | e. melbourne@vipac.com.au
w. www.vipac.com.au | A.B.N. 33 005 453 627 | A.C.N. 005 453 627

Vipac Engineers & Scientists

GIC Kings Road Pty Ltd



Kings Junction - Airport Turbulence & Wind Shear

Wind Impact Assessment



30N-17-0206-TNT-634465-1

6 November 2017

Melbourne • Sydney • Adelaide • Perth • Brisbane • Tasmania



Report Title: Wind Impact Assessment Job Title: Kings Junction - Airport Turbulence & Wind Shear		
DOCUMENT NO: 30N-17-0206-TNT-634465-1 PREPARED FOR: GIC Kings Road Pty Ltd c/o Turner Townsend Thinc Level 1, 333 King William Street Adelaide, South Australia, 5000, Australia CONTACT: Lewis Coulls Tel: +61 (08) 8113 0800 Fax:	REPORT CODE: TNT PREPARED BY: Vipac Engineers and Scientists Limited 279 Normanby Rd, Port Melbourne, VIC 3207, Australia Tel: +61 3 9647 9700 Fax: +61 3 9646 4370	
PREPARED BY: Author: Zhuyun Xu Senior Wind Consultant		Date: 6 Nov 2017
REVIEWED BY: Reviewer: Sophie Lamande Wind Group Leader		Date: 6 Nov 2017
AUTHORISED BY: Zhuyun Xu Senior Wind Consultant		Date: 6 Nov 2017
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GIC Kings Road Pty Ltd
Kings Junction - Airport Turbulence & Wind Shear
Wind Impact Assessment

EXECUTIVE SUMMARY

GIC Kings Road Pty Ltd commissioned Vipac Engineers and Scientists Ltd to prepare a statement of risk generated windshear and turbulence at Parafield Airport, Parafield by the proposed buildings at the northeast end of airport. This appraisal is based on Vipac's experience as a wind-engineering consultancy and NASF Guideline B.

The drawings of the proposed development were provided by INTRO in Nov 2017 as detailed in Section 5.

The findings of this study can be summarized as follows:

- The proposed development would not generate windshear and turbulence in excess of the criterion for safety by NASAG Guidelines.

As such, Vipac makes no recommendations to alter the building form design for flight risk control.

The assessments provided in this report have been made based on experience of similar situations in Adelaide and around the world. As with any opinion, it is possible that an assessment of wind effects based on experience and without experimental validation may not account for complex flow interactions in the vicinity.

6 November 2017

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GIC Kings Road Pty Ltd
Kings Junction - Airport Turbulence & Wind Shear
Wind Impact Assessment

1 INTRODUCTION

GIC Kings Road Pty Ltd commissioned Vipac Engineers and Scientists Ltd to prepare a statement of risk generated windshear and turbulence at Parafield Airport, Adelaide by the proposed buildings at the northeast side of airport. This appraisal is based on Vipac's experience as a wind-engineering consultancy.

The proposed development site is bounded by Kings Road to the south west, Main North Road to the southeast, Mengal Road to the northeast and an undeveloped site to the northwest (see Figure 1).

The proposed buildings are shown in Figure 2 in a 3D perspective view. Figure 3 presents various elevations of the proposed development showing the overall heights of the buildings.

This report details the opinion of Vipac as an experienced wind engineering consultancy regarding the wind shear and turbulence effects on the Parafield Airport runway adjacent to the development as proposed. No wind tunnel testing has been carried out for this development at this stage. Vipac has carried out wind tunnel studies on a large number of developments of similar shape and having similar exposure to that of the proposed development. These serve as a valid reference for the prediction of wind shear effects for this development. Empirical data for typical buildings in boundary layer flows has also been used to estimate likely wind shear conditions on the extend areas from the runway centreline adjacent to the proposed development [4] & [5].

The drawings of the proposed development were provided by **INTRO** in **Nov 2017** [6].

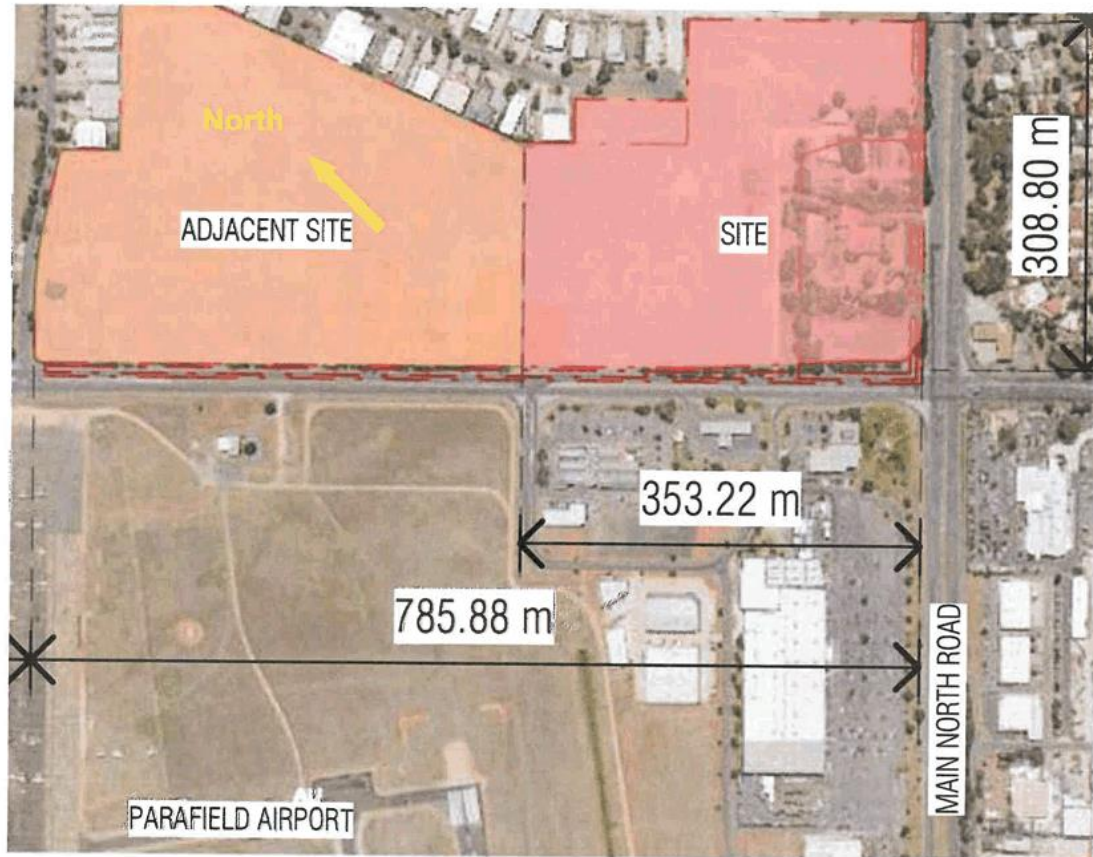


Figure 1: Aerial view of the proposed development site at Kings Junction

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GIC Kings Road Pty Ltd
Kings Junction - Airport Turbulence & Wind Shear
Wind Impact Assessment



Figure 2: West perspective view of the proposed development site at Kings Junction.

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Figure 3: Various Elevations of the proposed development

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2 ANALYSIS APPROACH

When considering whether a proposed development is likely to generate adverse windshear and turbulence conditions in adjacent airport runway, Vipac considers five main points:

- The site exposure (the orientation of the wind relative to the buildings),
- The regional wind climate,
- The location of the buildings in relation to safety critical zones;
- The scale of the buildings in relation to the runway dimensions;
- The assessment criteria, determined by the Guidelines [1].

The windshear effects on the safety-critical zone of an airport may be assessed by predicting the mean velocity deficit (BMD) at 100 m to the centreline of the runway. The buildings may be deemed generally acceptable for the flight actions if mean velocity deficit is within the threshold values noted in Section 2.5. For cases where Vipac predicts that the buildings would not meet its appropriate safety criterion we may recommend the use of wind control devices and/or local building geometry modifications to achieve the desired safety rating. For complex flow scenarios or where predicted flow conditions are well in excess of the recommended criteria, Vipac recommends scale model wind tunnel testing to determine the type and scope of the wind control measures required to achieve acceptable wind conditions.



2.1 THE SITE EXPOSURE

The surrounding developments are residential dwellings in the sector from west through north, east, and south to southwest and the airport field from southwest to west directions.

Therefore, for the current study, considering the proximity to Parafield Airport and the immediate presence of medium to low rise buildings, the site of the proposed development is considered to be Terrain Category 2 southwest to west sectors and Category 3 for all wind directions [2] (see Figure 4).

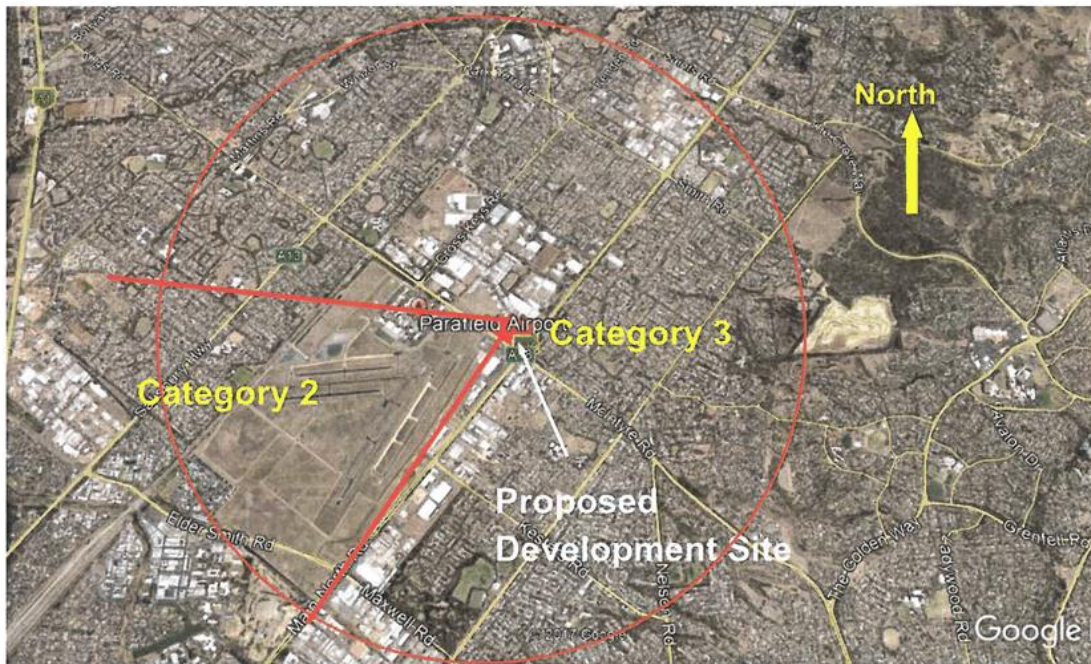


Figure 4: Terrain Categories for the site of the proposed development at Kings Junction.



2.2 REGIONAL WIND CLIMATE

The mean and gust wind speeds have been recorded in the Adelaide area for 30 years. This data has been analysed and the directional probability distribution of wind speeds have been determined. The directional distribution of hourly mean wind speed at the gradient height ($\approx 500\text{m}$), with a probability of occurring once per year (i.e. 1 year return period) is shown in Figure 5. The wind data at this free stream height are common to all Adelaide city sites and may be used as a reference to assess ground level wind conditions at the site. Figure 5 indicates that the stronger winds can be expected from the south-westerly, north-westerly and westerly directions.

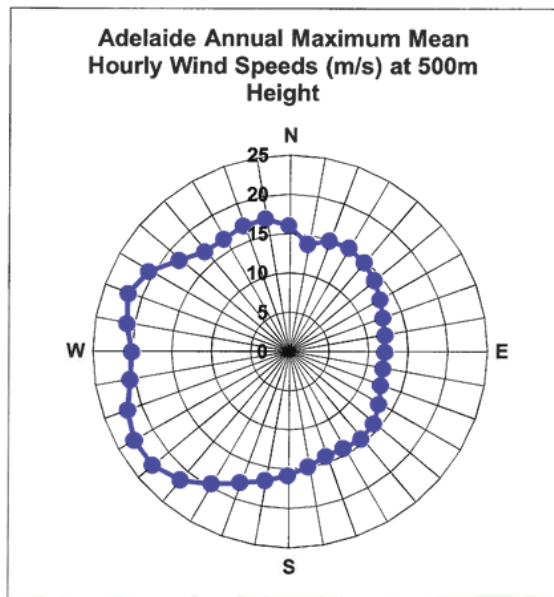


Figure 5: Directional Distribution of Annual Return Period Maximum Mean Hourly Wind Velocities (m/s) at gradient height of 500m in Adelaide.



2.3 THE LOCATION OF THE BUILDINGS IN RELATION TO SAFETY CRITICAL ZONES

Buildings that could pose a safety risk are those located within the shade zone shown in Figure 6. The proposed development site (see Figure 1) is entire within the safety critical zone.

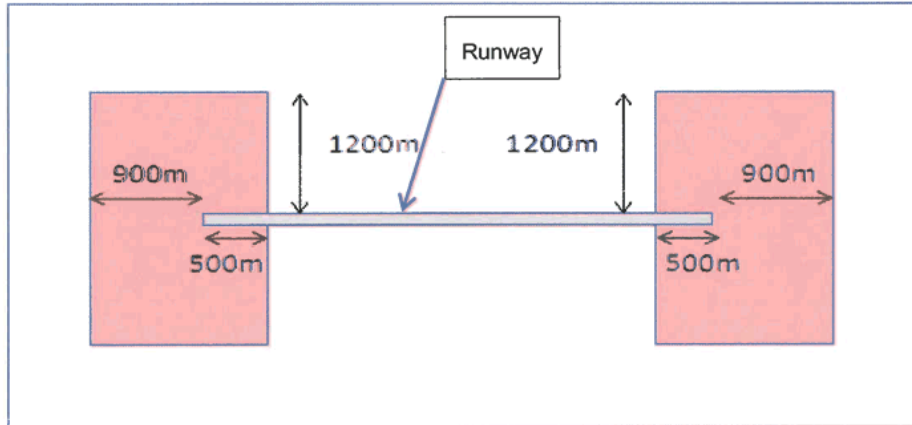
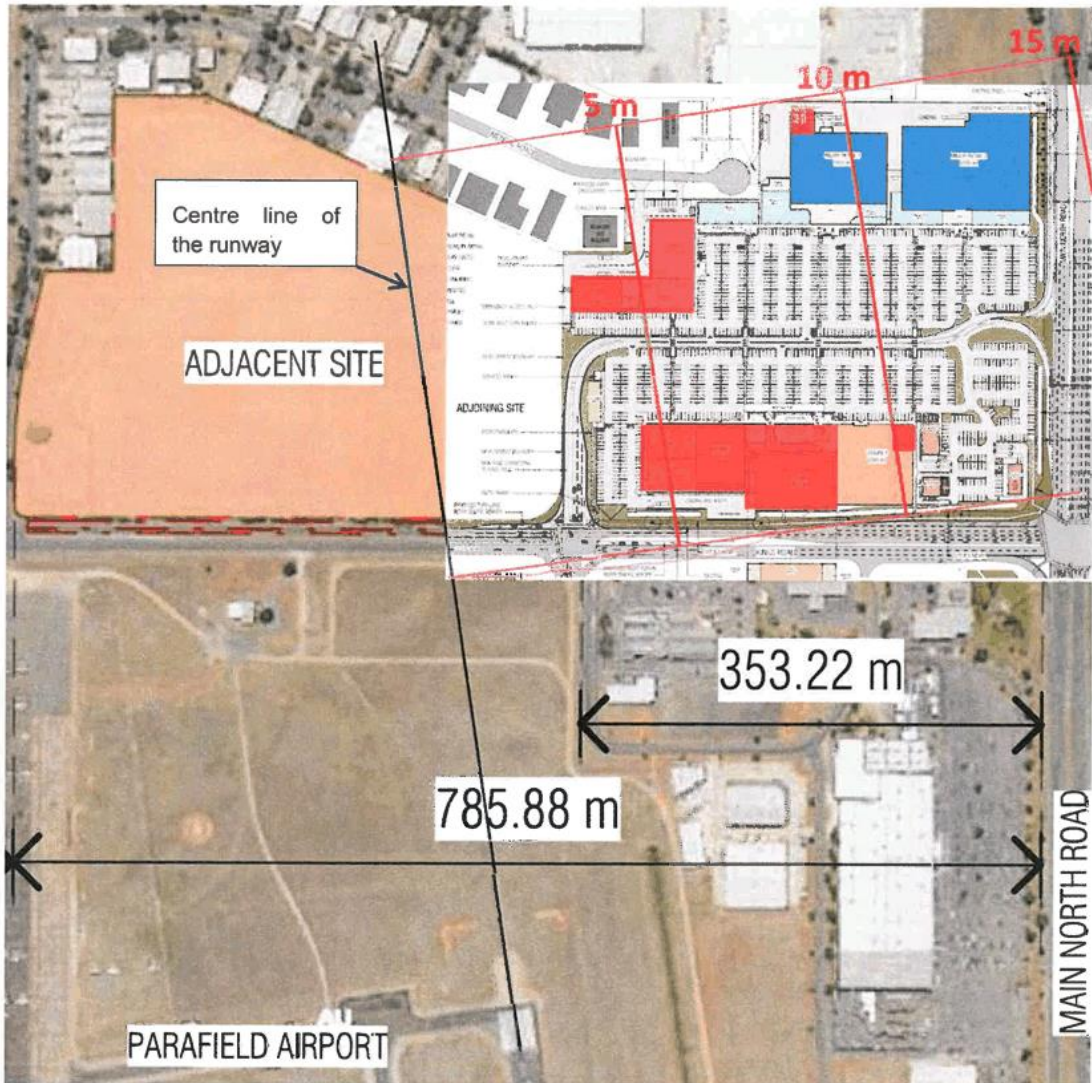


Figure 6: Envelope around runways within which buildings should be assessed [1].



2.4 THE SCALE OF THE BUILDINGS IN RELATION TO THE RUNWAY DIMENSIONS

The heights of the proposed buildings were checked against 1:35 rule [1]. This proposes that buildings with a distance to the runway centre line less than 35 times the height of the building should be subjected to aerodynamic modelling. This will create a plan with a limitation of the building heights. The checked result is shown in Figure 7 below. The red lines (5m, 10m and 15m) indicate the limitation of the heights within the site and the highlighted building blocks are the buildings with the heights exceeded the limitations.



■ Buildings with their heights exceeded 1:35 criterion,

Figure 7 The limitation of the building heights (m) with buildings for 1:35 rule exceeded



2.5 ASSESSMENT CRITERIA

For the buildings be assessed, the assessment will be premised on the acceptance criterion, viz, whether "7-knot wind deficit in the cross-wind direction over 100 m", will be exceeded or not, and if it is predicted to be exceeded, how often [1].

The mean velocity deficit data is provided in Table 1 below.

BWD	W/H Ratios =				
	1	2	4	6	8
0.48 V _H	1.7 H	3.4 H	6.5 H	9.5 H	12.5 H
0.35 V _H	2.2 H	4.2 H	8 H	11.5 H	15 H
0.22 V _H	3 H	5.5 H	10 H	14 H	18 H
0.11 V _H	5 H	9 H	17 H	24.5 H	32 H

Table 1: BWD values at downstream distances for buildings with W/H ratios between 1 & 8

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2.6 ASSESSMENT METHODOLOGY HIERARCHY

The following table lists the assessment methodology hierarchy on the Guideline [1]:

Table 2: Assessment Methodology Hierarchy

Category	Building Description	Assessment Methodology
Case A	<p>Building Shape: Any Shape</p> <p>The building height satisfies the 1:35 rule, i.e. the horizontal distance of the building's closest point from the edge of the runway is more than 35 times the height of the building</p>	<p>In this instance, the building is deemed acceptable and no further assessment is required.</p>
Case B1	<p>Building Shape: Single, Regular Shape, e.g. Rectangular Buildings</p> <p>Prevailing Wind-Building Angle: Perpendicular to Building Facades</p>	<p>In this instance, all available techniques, including a Qualitative (Desktop) Study, could be used to address the acceptability of the proposal.</p> <p>The mean velocity deficit data provided in Table 1 could be used in conjunction with the building height and local wind rose information to identify the potential (if any) for adverse cross wind conditions.</p>
Case B2	<p>Building Shape: Single, Regular Shape, e.g. Rectangular Buildings</p> <p>Prevailing Wind-Building Angle: Oblique to Building Facades</p>	<p>In this instance, a safety margin would need to be added to the mean velocity deficit data provided in Table 1 in conjunction with the building height and local wind rose information to identify the potential (if any) for adverse cross wind conditions.</p> <p>The safety margin might be in the form of an increase in perceived distance downstream of the order of at least 25%.</p>
Case C	<p>Building Shape: Complex Building Shape AND/OR Multiple Buildings</p>	<p>In this instance, unless a very conservative safety margin is added to the mean velocity deficit data provided in Table 1, one of the following quantitative modelling techniques should be used:</p> <ol style="list-style-type: none"> 1. Wind Tunnel using Hot-Wire Sensors, 2. Wind Tunnel using Particle Image Velocimetry (PIV), or 3. Computational Fluid Dynamics (CFD).

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3 ASSESSMENT RESULTS AND RECOMMENDATIONS

Key Point

- The proposed development would not generate windshear and turbulence in excess of the criterion for flight safety.

Wind shear assessment

The dimensions of the plans show that the building blocks could be assessed as an isolated case (ie. Case B2 in Table 2). From the Adelaide climate model, the 10 m height 3s gust across wind (ESE) is about 13 m/s on a yearly basis. Then the predicted mean velocity deficits to the 100m of the centreline on a yearly basis are within 7 knot criterion for all building blocks assessed within the site.

3.1 RECOMMENDATIONS

After careful consideration of the buildings on the site, Vipac predicts that the proposed development will present some changes to existing wind conditions to the adjacent flight trajectory. However, the mean velocity deficit BWD to the 100 m of the centreline would be within the 7 knot criterion. As such, Vipac makes no recommendations to alter the building form design for flight risk control.

It should be noted that this study is based on experience only and has not utilised any experimental data for the analysis.

4 CONCLUSIONS

An appraisal of the likely wind conditions adjacent to the flight trajectory by the proposed development at Kings Junction, Salisbury South has been made.

Vipac has carefully considered the flow structures likely to be generated by the proposed development that would affect the flight actions. From this analysis, Vipac predicts that windshear and turbulence due to the proposed development to the flight trajectory would be within the 7 knot criterion. As such, Vipac makes no recommendations to alter the building form design for the flight risk control.

The assessments provided in this report have been made based on experience of similar situations in Adelaide and around the world. As with any opinion, it is possible that an assessment of wind effects based on experience and without experimental validation may not account for all complex flow interactions in the vicinity.

This Report has been Prepared

For

GIC Kings Road Pty Ltd

By

VIPAC ENGINEERS & SCIENTISTS PTY LTD

6 November 2017

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Commercial-In-Confidence

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5 REFERENCES

- [1] *National Airports Safeguarding Framework. Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports. June 2013*
- [2] *Structural Design Actions, Part 2: Wind Actions, Australian/New Zealand Standard 1170.2:2011*
- [3] *Wind Effects on Structures* E. Simiu, R Scanlan, Publisher: Wiley-Interscience
- [4] *Architectural Aerodynamics* R. Aynsley, W. Melbourne, B. Vickery, Publisher: Applied Science Publishers
- [5] *NASAG guidelines for council assessment, CPP project 7225, 23 April 2014*
- [6] Drawings in the pdf files provided by INTRO in November 2017 as follows:

SHEET LIST SK SERIES					
NUMBER	TITLE	Sheet Use	REV	Revision Date	Revision Description
SK00	TITLE	PLANNING	J	26/10/2017	DA AMENDMENTS
SK01	SITE PLAN	PLANNING	H	22/08/2017	FOR DPC
SK02	SITE AREAS	PLANNING	G	22/08/2017	FOR DPC
SK03	AIRPORT BUILDING HEIGHTS	PLANNING	H	22/08/2017	FOR DPC
SK05	SITE PLAN	PLANNING	R	26/10/2017	DA AMENDMENTS
SK08	SITE MOVEMENT PLAN	PLANNING	G	22/08/2017	FOR DPC
SK09	ROOF PLAN	PLANNING	G	29/08/2017	FOR DPC
SK10	LANDSCAPE AREA PLAN	PLANNING	F	26/10/2017	DA AMENDMENTS
SK11	LANDSCAPE - DETAILS 1	PLANNING	E	26/10/2017	DA AMENDMENTS
SK12	LANDSCAPE - DETAILS 2	PLANNING	F	22/08/2017	FOR DPC
SK13	LANDSCAPE - DETAILS 3	PLANNING	B	22/08/2017	FOR DPC
SK14	LANDSCAPE - DETAILS 4	PLANNING	B	22/08/2017	FOR DPC
SK15	LIGHTING & SURVEILLANCE PLAN	PLANNING	E	22/08/2017	FOR DPC
SK50	ELEVATIONS - SITE	PLANNING	F	22/08/2017	FOR DPC
SK51	ELEVATIONS - NORTH SIDE	PLANNING	H	26/10/2017	DA AMENDMENTS
SK52	ELEVATIONS - SOUTH SIDE	PLANNING	H	26/10/2017	DA AMENDMENTS
SK100	PERSPECTIVE 1 - AERIAL 1	PLANNING	I	29/08/2017	FOR DPC
SK101	PERSPECTIVE 2 - AERIAL 2	PLANNING	H	22/08/2017	FOR DPC
SK103	PERSPECTIVE 3 - NORTH 1	PLANNING	G	22/08/2017	FOR DPC
SK104	PERSPECTIVE 4 - NORTH 2	PLANNING	B	22/08/2017	FOR DPC
SK105	PERSPECTIVE 5 - SOUTH 1	PLANNING	B	29/08/2017	FOR DPC
SK106	PERSPECTIVE 6 - SOUTH 2	PLANNING	B	29/08/2017	FOR DPC
SK107	PERSPECTIVE 7 - MAIN ROAD 1	PLANNING	B	29/08/2017	FOR DPC
SK108	PERSPECTIVE 8 - MAIN ROAD 2	PLANNING	A	22/08/2017	FOR DPC
SK300	MATERIAL SCHEDULE PLAN	PLANNING	D	22/08/2017	FOR DPC

6 November 2017

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Appendix A: ENVIRONMENTAL WIND EFFECTS

Atmospheric Boundary Layer

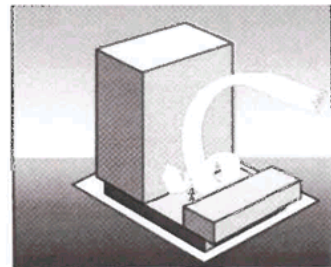
As wind flows over the earth it encounters various roughness elements and terrain such as water, forests, houses and buildings. To varying degrees, these elements reduce the mean wind speed at low elevations and increase air turbulence. The wind above these obstructions travels with unattenuated velocity, driven by atmospheric pressure gradients. The resultant increase in wind speed with height above ground is known as a wind velocity profile. When this wind profile encounters a tall building, some of the fast moving wind at upper elevations is diverted down to ground level resulting in local adverse wind effects.

The terminology used to describe the wind flow patterns around the proposed Development is based on the aerodynamic mechanism, direction and nature of the wind flow.

Downwash – refers to a flow of air down the exposed face of a tower. A tall tower can deflect a fast moving wind at higher elevations downwards.

Corner Accelerations – when wind flows around the corner of a building it tends to accelerate in a similar manner to airflow over the top of an aeroplane wing.

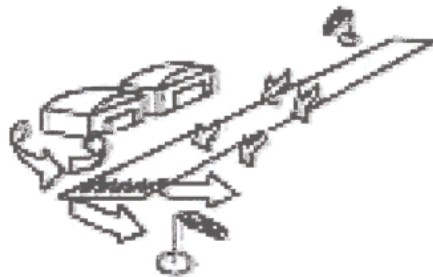
Flow separation – when wind flowing along a surface suddenly detaches from that surface and the resultant energy dissipation produces increased turbulence in the flow. Flow separation at a building corner or at a solid screen can result in gusty conditions.



Flow channelling – the well-known “street canyon” effect occurs when a large volume of air is funnelled through a constricted pathway. To maintain flow continuity the wind must speed up as it passes through the constriction. Examples of this might occur between two towers, in a narrowing street or under a bridge.

Direct Exposure – a location with little upstream shielding for a wind direction of interest. The location will be exposed to the unabated mean wind and gust velocity. Piers and open water frontage may have such exposure.

Windshear- the wind flow is diverted around and over the buildings causing the surface winds to vary along the runway in both magnitude and directions.



6 November 2017

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Property Information



Product	Register Search (CT 5068/957)
Date/Time	25/07/2017 03:36PM
Customer Reference	Salisbury South
Order ID	20170725010250
Cost	\$28.25

REAL PROPERTY ACT, 1985



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 5068 Folio 957

Parent Title(s)	CT 4328/77		
Creating Dealing(s)	RTD 7004603		
Title Issued	15/04/1992	Edition	2
		Edition Issued	21/10/2003

Estate Type

FEE SIMPLE

Registered Proprietor

ENGEL HOLDINGS PTY. LTD. (ACN: 008 127 937)
OF 1700 MAIN NORTH ROAD SALISBURY PLAIN SA 5109

Description of Land

ALLOTMENT 120 DEPOSITED PLAN 30240
IN THE AREA NAMED SALISBURY SOUTH
HUNDRED OF YATALA

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE COMMONWEALTH OF AUSTRALIA (AQ 1515594)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B TO THE MINISTER OF WATER RESOURCES (T 2970787)

SUBJECT TO SERVICE EASEMENT(S) OVER THE LAND MARKED D FOR SEWERAGE PURPOSES TO SOUTH AUSTRALIAN WATER CORPORATION (223LG RPA)

Schedule of Dealings

NIL

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

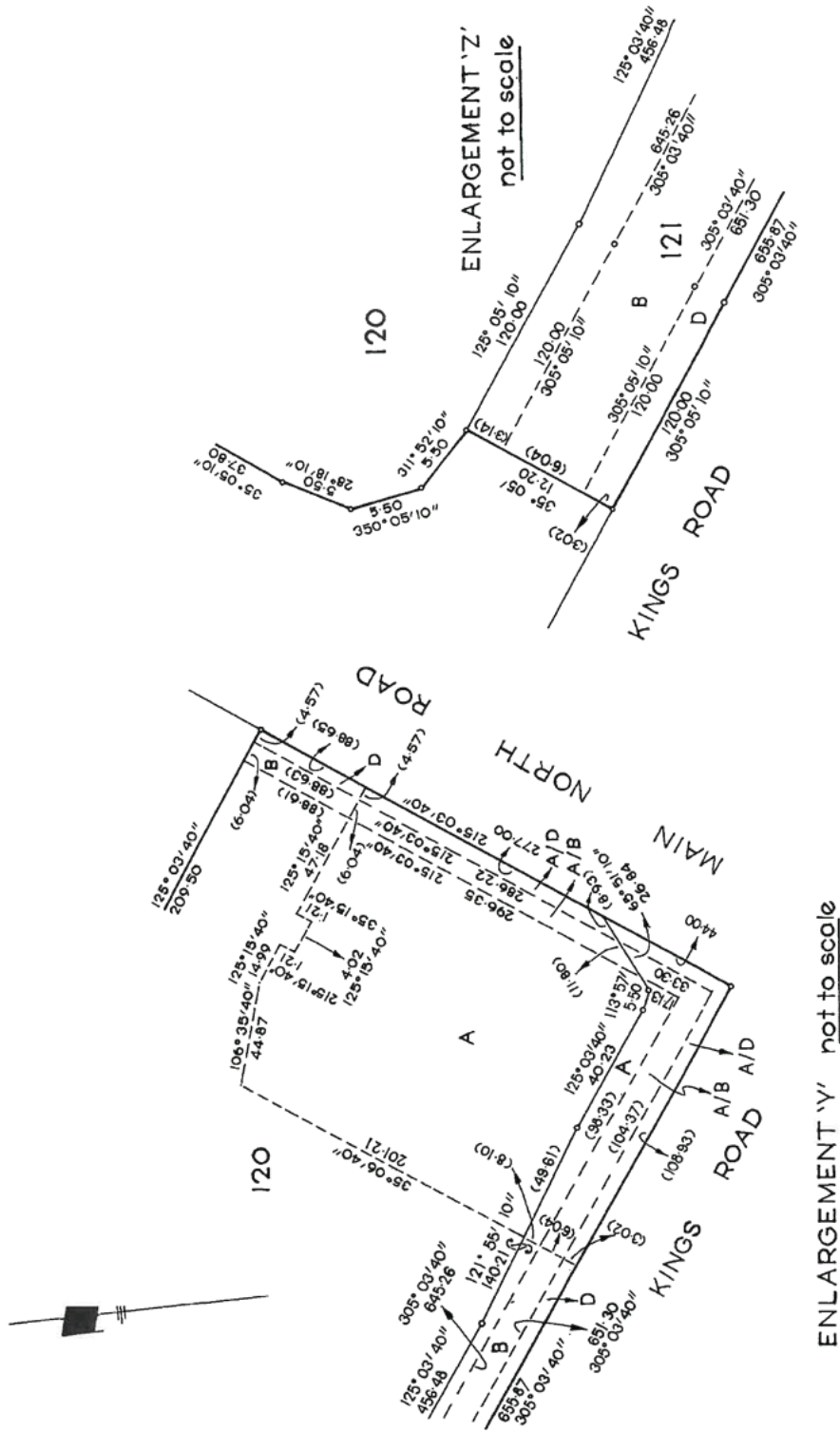
Registrar-General's Notes

CONTROLLED ACCESS ROAD VIDE PLAN 107
CONTROLLED ACCESS ROAD VIDE PLAN 6

Administrative Interests	NIL
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Product	Register Search (CT 5068/957)
Date/Time	25/07/2017 03:36PM
Customer Reference	Salisbury South
Order ID	20170725010250
Cost	\$28.25



ENLARGEMENT 'Y' not to scale



Government of South Australia
Department of Planning,
Transport and Infrastructure

Product	Register Search (CT 5067/646)
Date/Time	08/09/2017 12:52PM
Customer Reference	
Order ID	20170908006538
Cost	\$28.25

REAL PROPERTY ACT, 1986



South Australia

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 5067 Folio 646

Parent Title(s)	CT 4362/533		
Creating Dealing(s)	CONVERTED TITLE		
Title Issued	02/04/1992	Edition 3	Edition Issued 21/10/2003

Estate Type

FEE SIMPLE

Registered Proprietor

NGEL HOLDINGS PTY. LTD. (ACN: 008 127 937)
OF 1700 MAIN NORTH ROAD SALISBURY PLAIN SA 5109

Description of Land

ALLOTMENT 20 DEPOSITED PLAN 27205
IN THE AREA NAMED SALISBURY SOUTH
HUNDRED OF YATALA

Easements

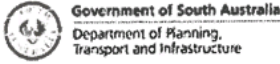
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Schedule of Dealings

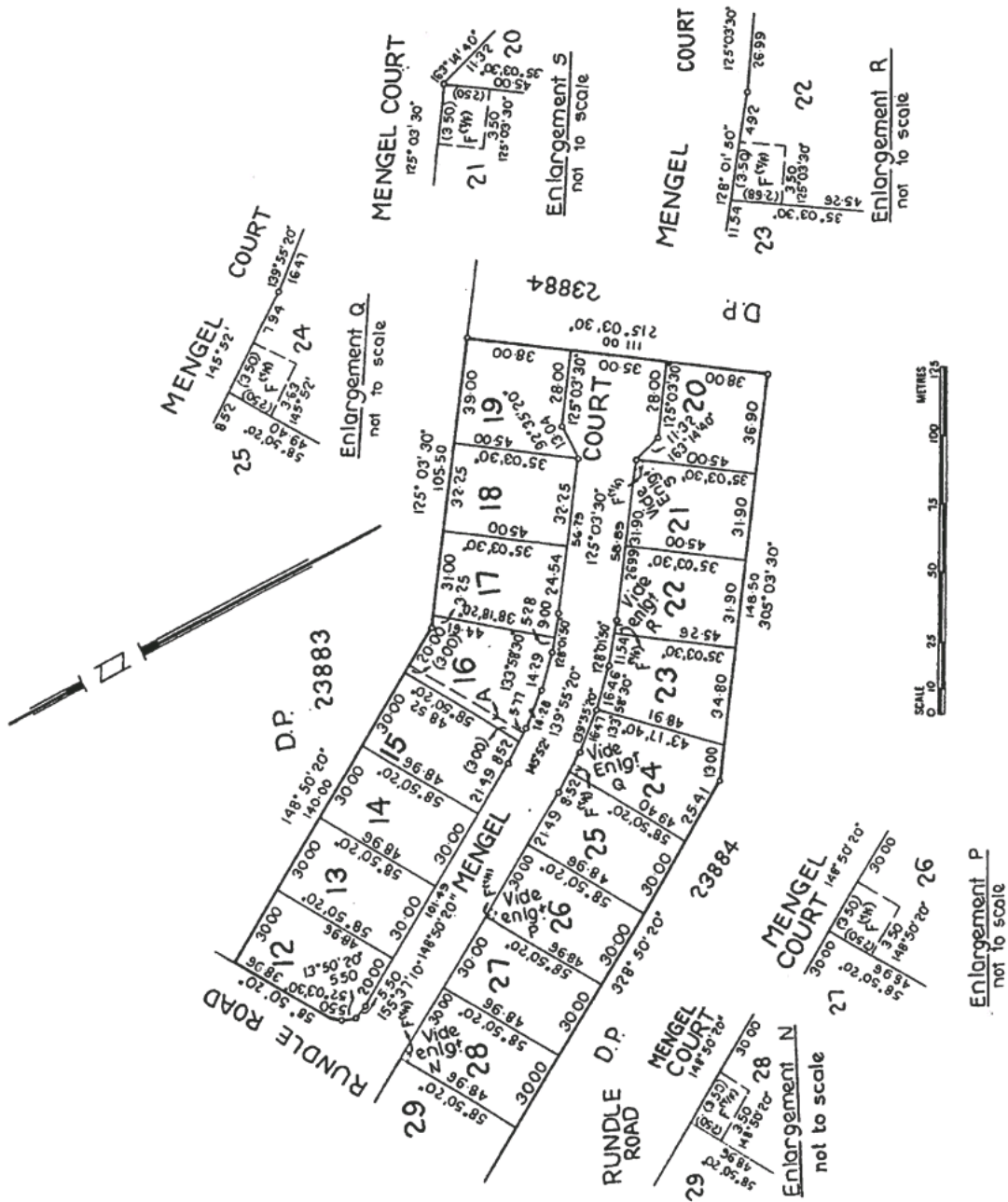
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Notations

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



Product Register Search (CT 5067/646)
 Date/Time 08/09/2017 12:52PM
 Customer Reference
 Order ID 20170908006538
 Cost \$28.25



Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Government of South Australia
Department of Planning,
Transport and Infrastructure

Product	Register Search (CT 5067/647)
Date/Time	08/09/2017 12:52PM
Customer Reference	
Order ID	20170908006549
Cost	\$28.25

REAL PROPERTY ACT, 1986



South Australia

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 5067 Folio 647

Parent Title(s)	CT 4362/534		
Creating Dealing(s)	CONVERTED TITLE		
Title Issued	02/04/1992	Edition 3	Edition Issued 21/10/2003

Estate Type

FEE SIMPLE

Registered Proprietor

NGEL HOLDINGS PTY. LTD. (ACN: 008 127 937)
OF 1700 MAIN NORTH ROAD SALISBURY PLAIN SA 5109

Description of Land

ALLOTMENT 21 DEPOSITED PLAN 27205
IN THE AREA NAMED SALISBURY SOUTH
HUNDRED OF YATALA

Easements

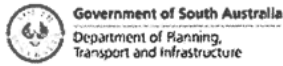
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Schedule of Dealings

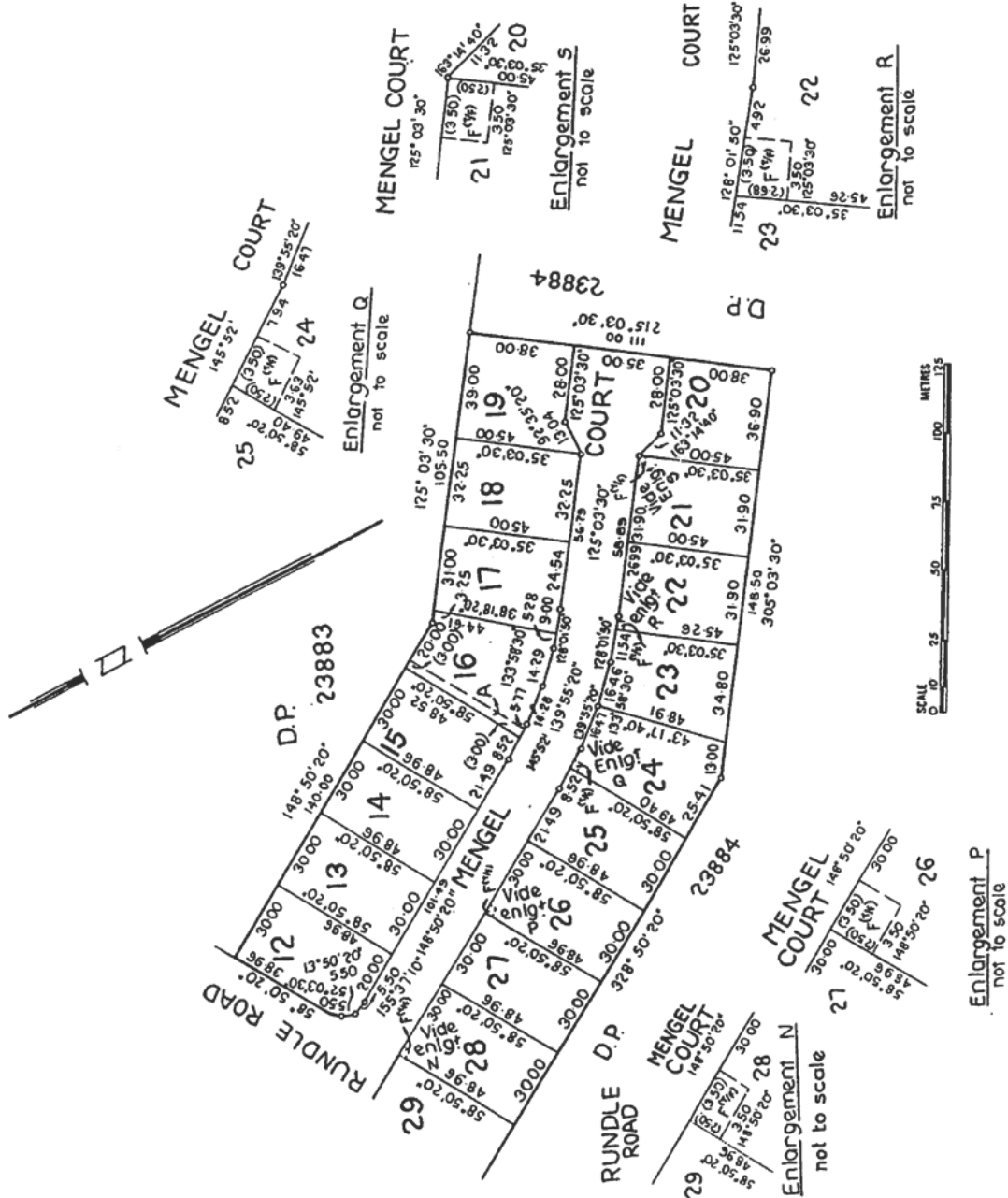
NIL

Notations

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



Product Register Search (CT 5067/647)
 Date/Time 08/09/2017 12:52PM
 Customer Reference
 Order ID 20170908006549
 Cost \$28.25



Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information



Government of South Australia
Department of Planning,
Transport and Infrastructure

Product Register Search (CT 5067/648)
Date/Time 08/09/2017 12:53PM
Customer Reference
Order ID 20170908006557
Cost \$28.25

REAL PROPERTY ACT, 1985



South Australia

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 5067 Folio 648

Parent Title(s) CT 4362/535
Creating Dealing(s) CONVERTED TITLE
Title Issued 02/04/1992 Edition 3 Edition Issued 21/10/2003

Estate Type

FEE SIMPLE

Registered Proprietor

NGEL HOLDINGS PTY. LTD. (ACN: 008 127 937)
OF 1700 MAIN NORTH ROAD SALISBURY PLAIN SA 5109

Description of Land

ALLOTMENT 22 DEPOSITED PLAN 27205
IN THE AREA NAMED SALISBURY SOUTH
HUNDRED OF YATALA

Easements

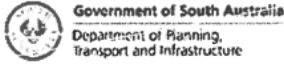
SUBJECT TO SERVICE EASEMENT(S) OVER THE LAND MARKED F(T/F) FOR ELECTRICITY SUPPLY PURPOSES TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (223LG RPA)

Schedule of Dealings

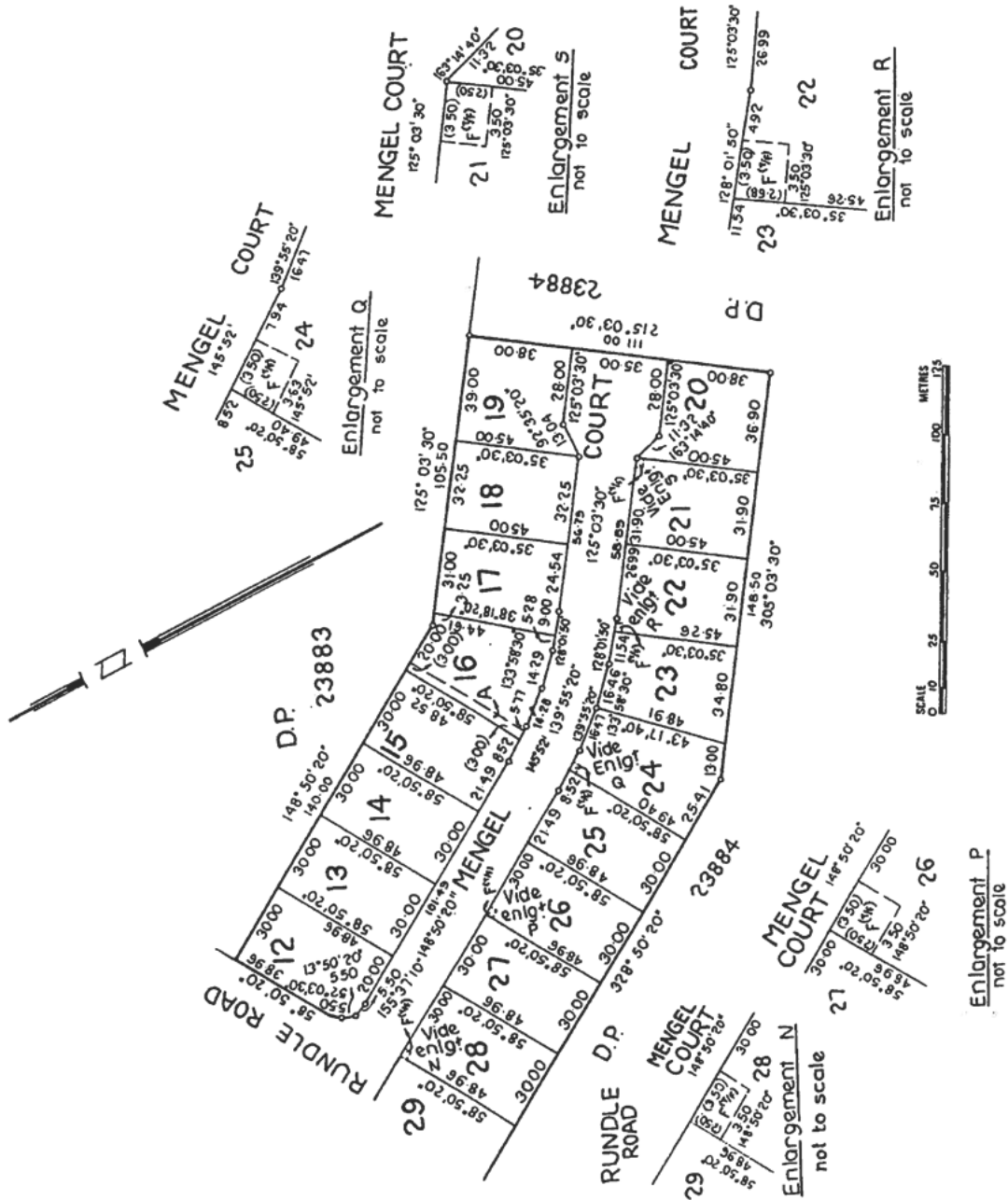
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Notations

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



Product Register Search (CT 5067/648)
Date/Time 08/09/2017 12:53PM
Customer Reference
Order ID 20170908006557
Cost \$28.25



Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

A.A. 1515594

20 FEB 1957

NO. _____

APPLICATION UNDER REAL PROPERTY
(COMMONWEALTH TITLES) ACT 1924.

EASEMENT OVER PORTION OF SECTION 512
HUNDRED OF YATALA COUNTY OF ADELAIDE.


THE COMMONWEALTH OF AUSTRALIA

Applicant.

MEMO A MEMORIAL OF THE WITHIN
INSTRUMENT No. 1515594 WAS
ENTERED IN THE REGISTER BOOK -
VOL. 1595
FOL. 98
THIS 2 DAY OF February
1948 AT 11 AM

Dep. Reg. Genl. 27 AUG 1948

VOL. 2388 FOLIO 189
BALANCE VOLUME 1932 FOLIO 97


 DEP. REG. GENL.
 THE COMMONWEALTH OF AUSTRALIA

H. F. E. WHITLAM,
 Commonwealth Crown Solicitor.
 per. *Herbert Edmund* Solicitor.

CORRECT for the purposes of "The Real
Property Act 1886-1939".

FEES PAID

DATE 2/10/47 TIME 12.20

L.T.O. FEES. 15/-

30/-

ASSURANCE _____

NOTING _____

ADVERTISING _____

NOT PC 1595/98

*CT. reference to land being transferred
Academy plots should be supplied and CT
produced for consideration*

Refer 12/47

*The within mentioned of 2 Vol 1504/23
is now with Application No
1481579. Cont Crown Solicitor
per. *Whitlam*
20.11.1948.*

20 JAN RECP

H. F. E. WHITLAM,
 Commonwealth Crown Solicitor,
 Epworth Building,
 35 Pirie Street,
 ADELAIDE.

THE REAL PROPERTY (COMMONWEALTH TITLES) ACT 1924.

TO

THE REGISTRAR-GENERAL
SOUTH AUSTRALIA

I, KENNETH HAMILTON BAILEY, Solicitor-General of The Commonwealth of Australia hereby pursuant to the Real Property (Commonwealth Titles) Act, 1924 of the State of South Australia APPLY to you to transfer into the name of THE COMMONWEALTH OF AUSTRALIA THE RIGHT at all times for The Commonwealth of Australia its successors and assigns and the owners in Certificate of Title Volume 1503 Folio 23 being portion of and occupiers for the time being of the land being the Parafield Aerodrome Site and as appurtenant thereto to enter into and upon ALL THAT piece of land containing an area of 6 acres 28 perches more or less being part of Section 512 Hundred of Yatala County of Adelaide as shown hachured on the accompanying plan by its workmen servants and others for the purpose of felling cutting and sawing topping and lopping the trees upon the said land as shown hachured abovementioned and which said land is portion of land comprised in Certificate of Title entered in the Register Book Volume 1595 Folio 98 the said Easement having been compulsorily acquired by The Commonwealth of Australia pursuant to the Lands Acquisition Act 1906-1936 of the Commonwealth of Australia as appears by the certified copy of the Notification of Acquisition of an Easement (No. C.L.23941) published in Commonwealth of Australia Gazette No.127 dated the 17th day of July, 1947 herewith.

DATED this 24th day of September One thousand nine hundred and forty-seven.

K. H. Bailey

SOLICITOR-GENERAL OF THE
COMMONWEALTH OF AUSTRALIA

WITNESS:

[Signature]

ACTING FOR SECRETARY ATTORNEY GENERAL'S DEPT.

151594

MEMORANDUM

Adelaide, 16/6/55

To the Registrar-General of Deeds,
Adelaide.

Please deliver to **COMMONWEALTH CROWN SOLICITOR.**

Certificate of Title 2388/189
and after correction in
accordance with the attached

after registration of
COMMONWEALTH OF AUSTRALIA.

to

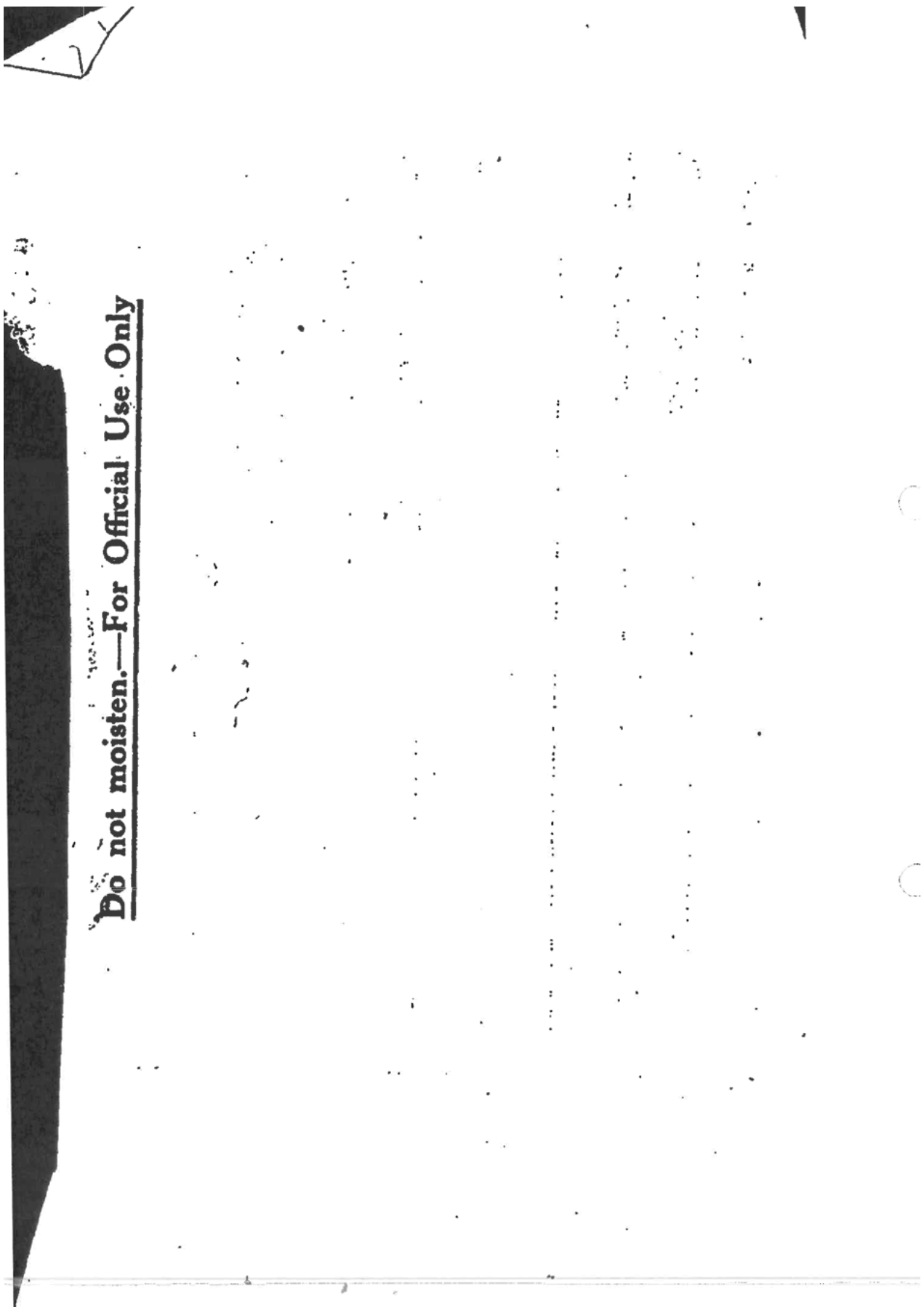
100M-12.58 7059

COMMONWEALTH CROWN SOLICITOR.
Per *Ry & Partners*

ALL THE WITHIN DEEDS RECEIVED

Date 26 JUL 1955

Per Ry & Partners



Do not moisten. — For Official Use Only

1515

Adelaide, 12/4/44

To the Registrar-General of Deeds,
Adelaide.

Please deliver to *Comd Coum Roberts*

Certificate of Title *Vol 797/108*

and *258/89*

after registration of *Applan 11° 1195382*

to *City of Adelaide*

W. D. Dwyer

20M-4.48 11924

ALL THE WITHIN DEEDS RECEIVED.

Date: 24 MAY 1965

W. D. Dwyer

For Mr Brown

Do not Disturb.—For Official Use Only.

[Extract from Commonwealth of Australia Gazette, No. 127, dated 17th July, 1947.]

COMMONWEALTH OF AUSTRALIA.
 The Lands Acquisition Act 1906-1936.
**NOTIFICATION OF THE ACQUISITION OF AN EASEMENT
 BY THE COMMONWEALTH.**

IT is hereby notified and declared by His Excellency the Governor-General acting with the advice of the Federal Executive Council, that the right at all times for the Commonwealth of Australia its successors and assigns and the owners and occupiers for the time being of the land being the Parafield Aerodrome Site and as appurtenant thereto to enter into or upon the land hereunder described, by its workmen servants and others for the purpose of felling cutting and saving topping and lopping the trees upon the said land has been acquired by the Commonwealth under the Lands Acquisition Act 1906-1936 for the following public purpose; namely:— Defence Purposes at Parafield, South Australia.—(C.L.23941.)

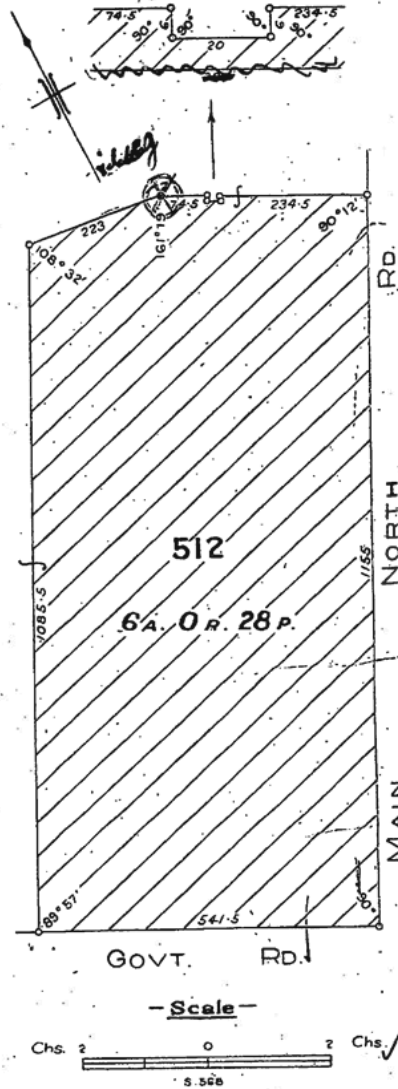
Dated this twenty-fifth day of June, One thousand nine hundred and forty-seven.

W. J. MCKELL
 Governor-General.

By His Excellency's Command,
VICTOR JOHNSON
 Minister of State for the Interior.

DESCRIPTION OF LAND REFERRED TO.

All that piece of land containing an area of 6 aeres 28 perches more or less being part of Section 512 Hundred of Yatala County of Adelaide State of South Australia as shown hachured on plan hereunder: Commencing at the southernmost corner of Section 512 Hundred of Yatala which said corner is the intersection of a northwestern side of the Main North Road with the northeastern side of a government road and bounded thence by part of that side of the lastmentioned road north-westerly 541.5 links thence by lines northeasterly at an internal angle of 80 degrees 57 minutes 1085.5 links southeasterly at an internal angle of 108 degrees 32 minutes 223 links southeasterly at an internal angle of 161 degrees 19 minutes 74.5 links southwesterly at an internal angle of 80 degrees 6 links south-easterly at an external angle of 90 degrees 20 links north-easterly at an external angle of 90 degrees 6 links and south-easterly at an internal angle of 90 degrees 234.5 links thence by part of a northwestern side of the Main North Road aforesaid southwesterly at an internal angle of 90 degrees 12 minutes 1155 links to the point of commencement.



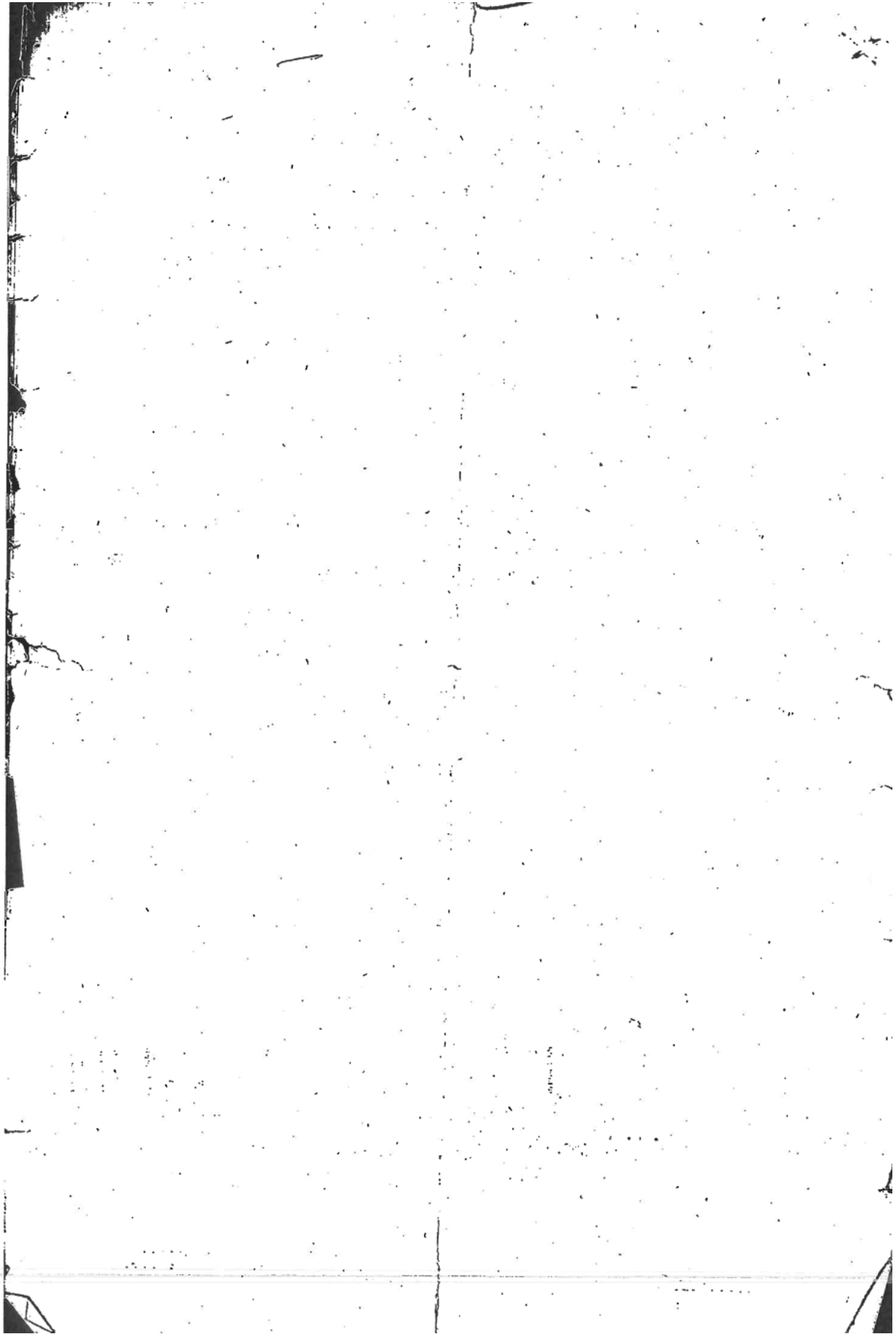
4193a. By Authority: L. F. JOHNSON, Commonwealth Government Printer, Canberra.

I, **KENNETH HAMILTON BAILEY**, Solicitor-General of The Commonwealth of Australia **HEREBY CERTIFY** that the writing and plan contained above are a true copy of Notification of Acquisition of an Easement (No. C. L. 23941) published in Commonwealth of Australia Gazette No.127 dated the 17th day of July, 1947.

DATED the 24th day of September One thousand nine hundred and forty-seven.

K. H. Bailey
Solicitor-General of the Commonwealth of Australia.

WITNESS:
[Signature]
 ASSISTANT SECRETARY ATTORNEY GENERAL DEPT.



2970787

MEMORANDUM OF GRANT OF EASEMENT

Yellow Slip NOT ON FILE

ERNEST HERBERT JUST and HERBERT FRITZ JUST Grantors

MINISTER OF WORKS, Grantee.

MEMORANDUM: A Memorial of the within Instrument

No. 2970787 was entered in the Register

Book, Vol. 2771 Folio 1

at 11 am 14 day of January 1969

Dep. Reg. Genl.

K. Bond Registrar-General

Certificate of Registrar-General, Justice of the Peace, etc., before whom instrument may have been registered by the parties thereto.

Appeared before me at Adelaide the 14th day of October

one thousand nine hundred and sixty-eight Ernest Herbert Just and Herbert Fritz Just within described the parties executing the within instrument, being

persons well known to me and did freely and voluntarily sign the same.

(Signed) K. Bond A Justice of the Peace in and for the State of South Australia.

Certificate of Registrar-General, Justice of the Peace, etc., taking declaration of attesting witness.

Appeared before me at the day of one thousand nine hundred and sixty-

of

a person known to me and of good repute, attesting witness to this instrument, and acknowledge signature to the same; and did further declare that

the part executing the same personally known to him within' described the said

that the signature to the said instrument in the handwriting of the said

and that the said did freely and voluntarily sign the same in the presence of him the said

and at the time of sound mind.

(Signed) A Justice of the Peace in and for the State of South Australia.

Correct for the Purposes of the Real Property Act, 1886-1967

Harold C. Kelly SOLICITOR, ADELAIDE.

CROWN INSTRUMENT

NO FEES PAYABLE

FEES PAID

6 JAN 1969 Time 10.45

L.T.O. Fees

Noting

Advertising

VOLUME 189 FOLIO 160 REMAINDER VOLUME

Handwritten notes: Draftsman: see data on X6977, Bal. Cr. Ref. 5/1/69, etc.

STATE CROWN SOLICITOR'S OFFICE,

ADELAIDE.

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information

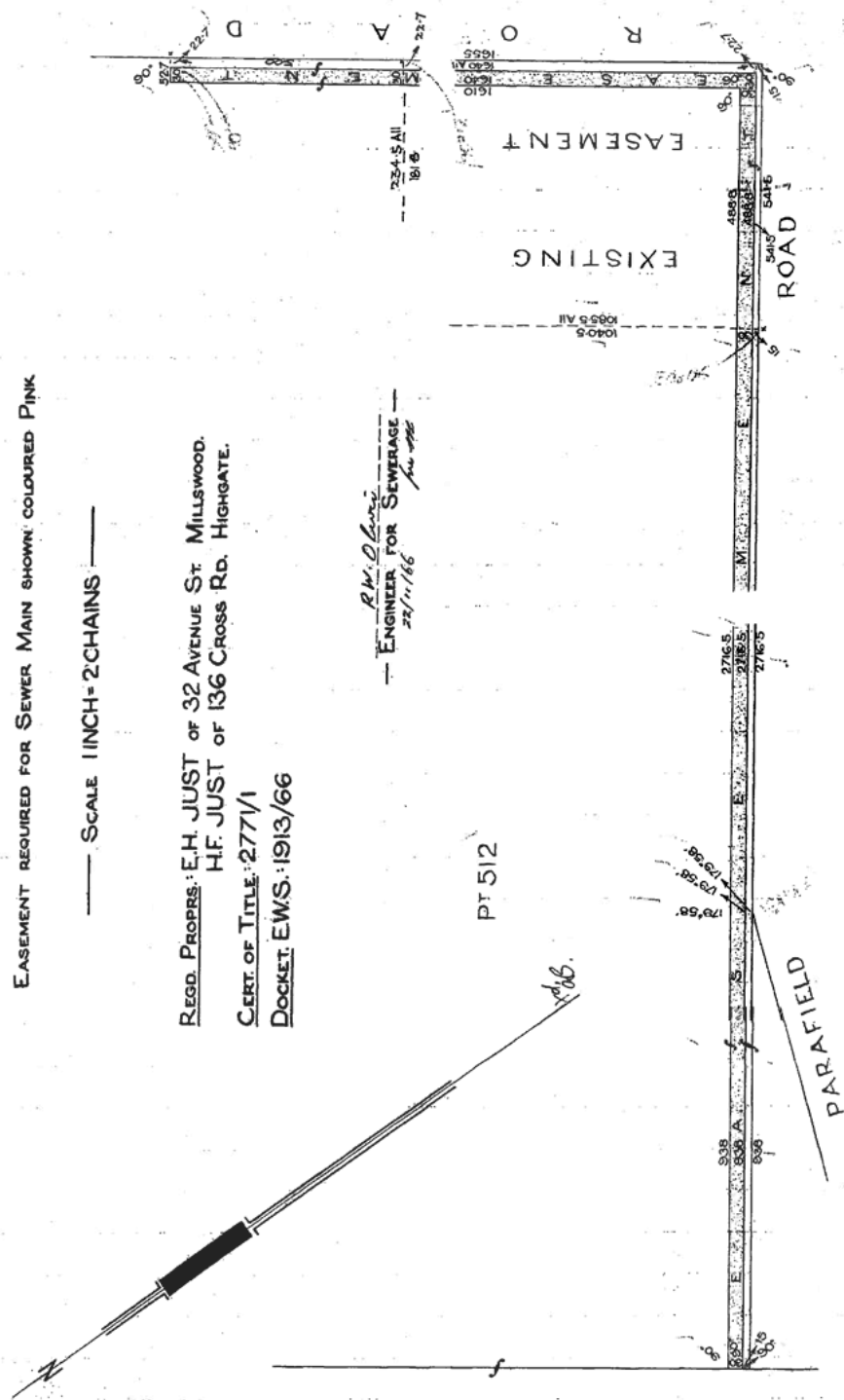
THE ENGINEERING AND WATER SUPPLY DEPARTMENT
ADELAIDE DRAINAGE AREA
HUNDRED OF YATALA
PART SECTION 512

EASEMENT REQUIRED FOR SEWER MAIN SHOWN COLOURED PINK

SCALE 1 INCH = 2 CHAINS

REGD. PROPS. E.H. JUST OF 32 AVENUE ST. MILLSWOOD.
 H.F. JUST OF 136 CROSS RD. HIGHGATE.
 CERT. OF TITLE: 277/1
 DOCKET EWS: 1913/66

R.W. D. Lewis
 ENGINEER FOR SEWERAGE
 22/11/66



2970787

Pursuant to Memorandum of Transfer No. 2970787, Registered on Vol. 2771 Folio 1.

~~NEW CERTIFICATE of TITLE for _____ of the LAND in VOL. _____ FOL. _____~~

MINISTER OF WORKS is entitled subject, etc., or endorsed hereon to a RIGHT OF

WAY AND EASEMENT in through over across and along that piece of land

situated in the HUNDRED OF Yatala COUNTY OF Adelaide

being PORTION of Blk. 512

~~and~~ more particularly delineated and bounded as appears in the plan in the margin hereof and therein coloured blue and marked Easement ✓

WHICH said right of way and easement are more particularly described and set forth in the abovementioned Memorandum of Transfer. ✓

EXCEPT MINERALS. ✓

Which said ~~Section~~ Blk. is delineated in the Public Map of the said Blk. deposited in the Land Office at Adelaide.

RED PIECE IN ABOVE TR.
—COLOR BLUE & MK. "EASMT." ✓

Blk 527/64 NA

Pursuant to Memorandum of Transfer No. _____ Registered on Vol. _____ Folio _____

~~NEW~~ BALANCE CERTIFICATE of TITLE for *from* of the LAND in VOL. 2771 FOL. 124

ERNEST HERBERT JUST of 32 Avenue Street Millwood 5034 and HERBERT FRITZ JUST of 136 Cross Road Highgate 5063 both Master Butchers

are the proprietors of an estate in fee simple,

Ernest Fritz

subject, etc., or endorsed hereon, in that piece *contg. 98 acres 3 rds.* and 31 ppls. on tlts. of land situated in the Hundred of Yatala County of Adelaide being PORTION of Blk. 512

and more particularly delineated and bounded as appears in the plan in the margin hereof and therein coloured green

(COPY ABOVE C.T. AS BDD. & AMOD. IN PENC.)

(SEE BACK)

EXCEPT MINERALS

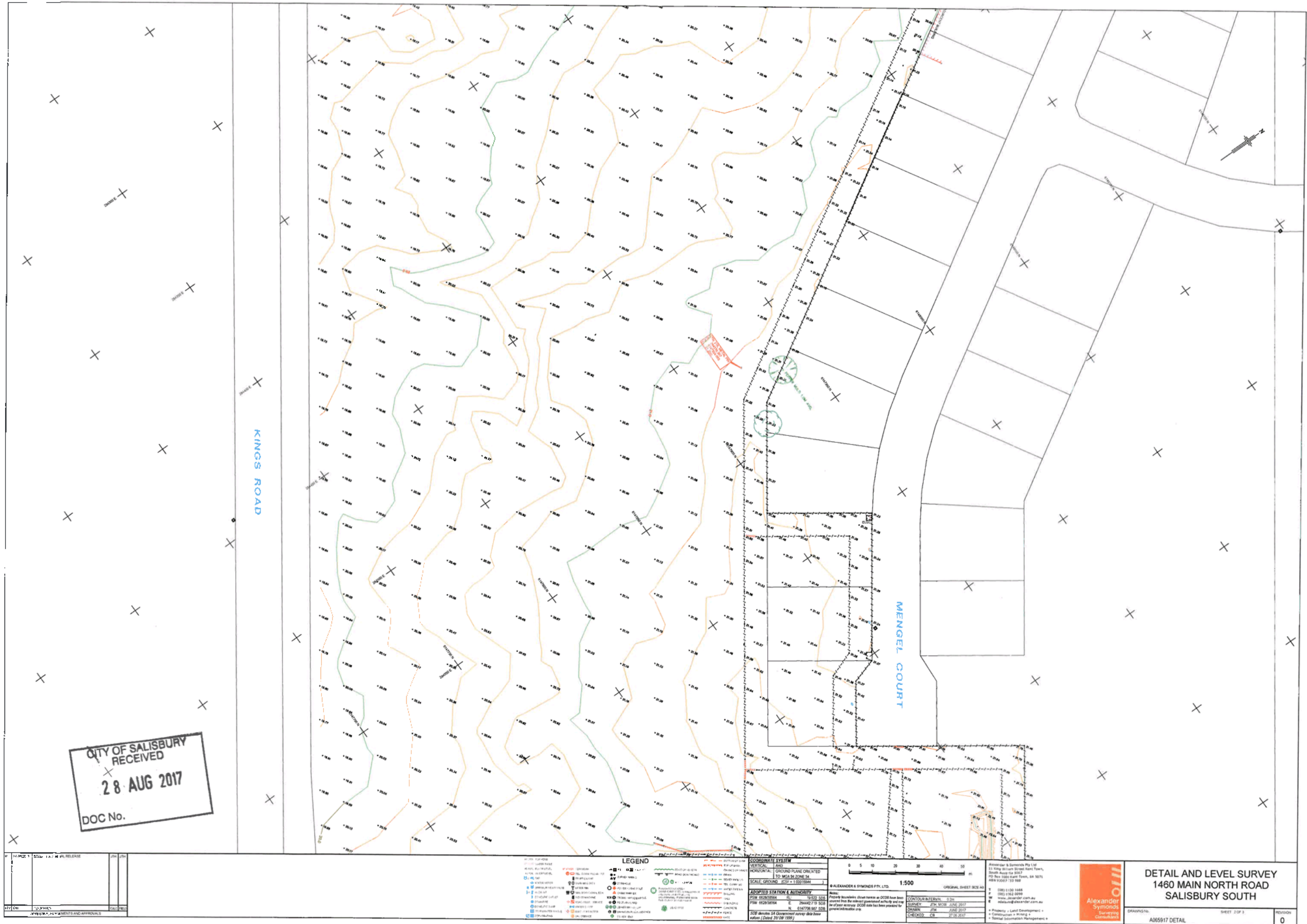
which said ~~Section~~ is delineated in the Public Map of the said 26d deposited in the Land Office, at Adelaide *DIAG. AS ON ABOVE C.T. - SUBT. OVER EXIST. EASMT. - MK. "EASMTS. A & C" - (EASMT. C IS COMMON) TR. 297087. - MK. "EASMTS/B & C."*

[Handwritten signature]

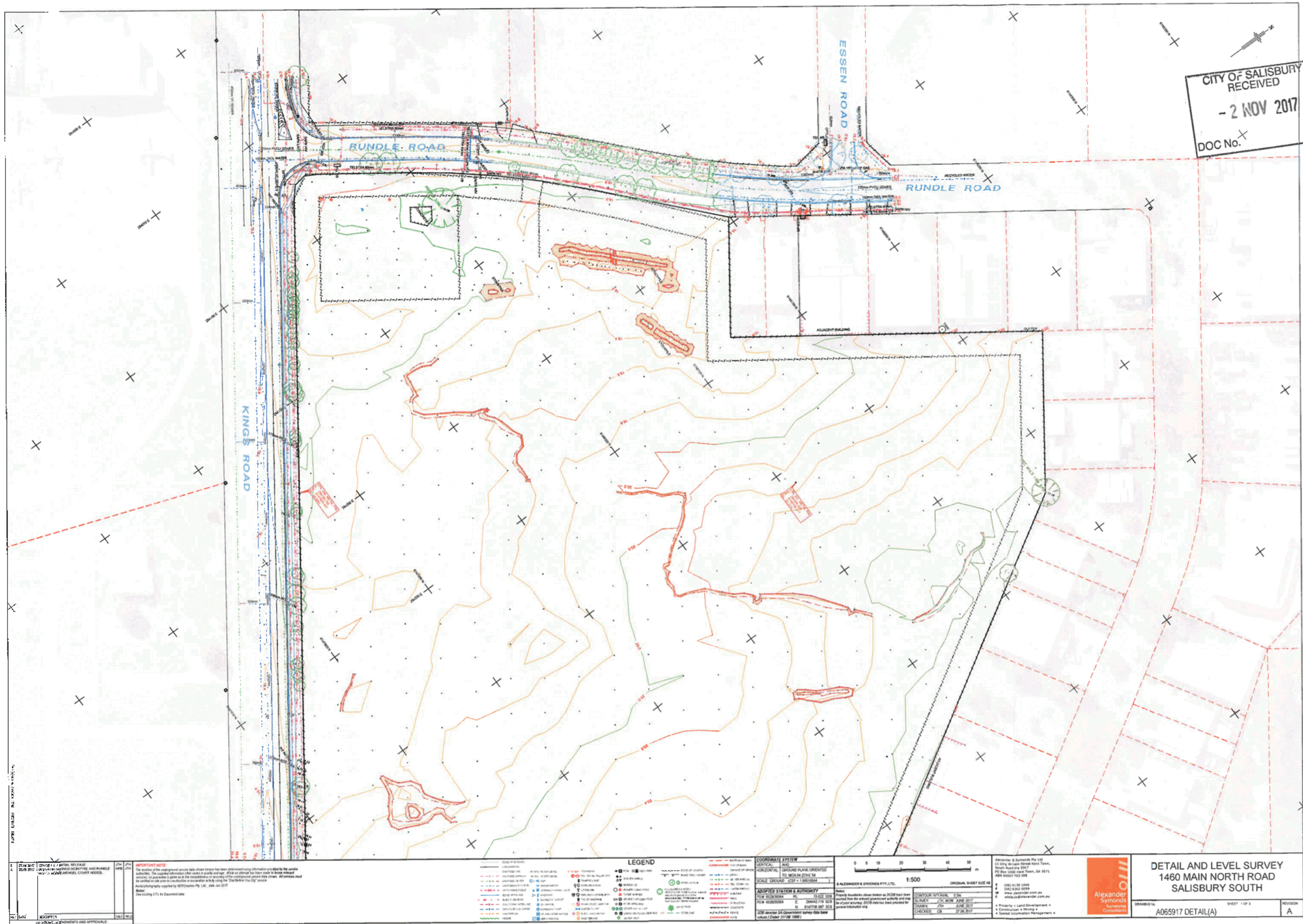
... to ...
...

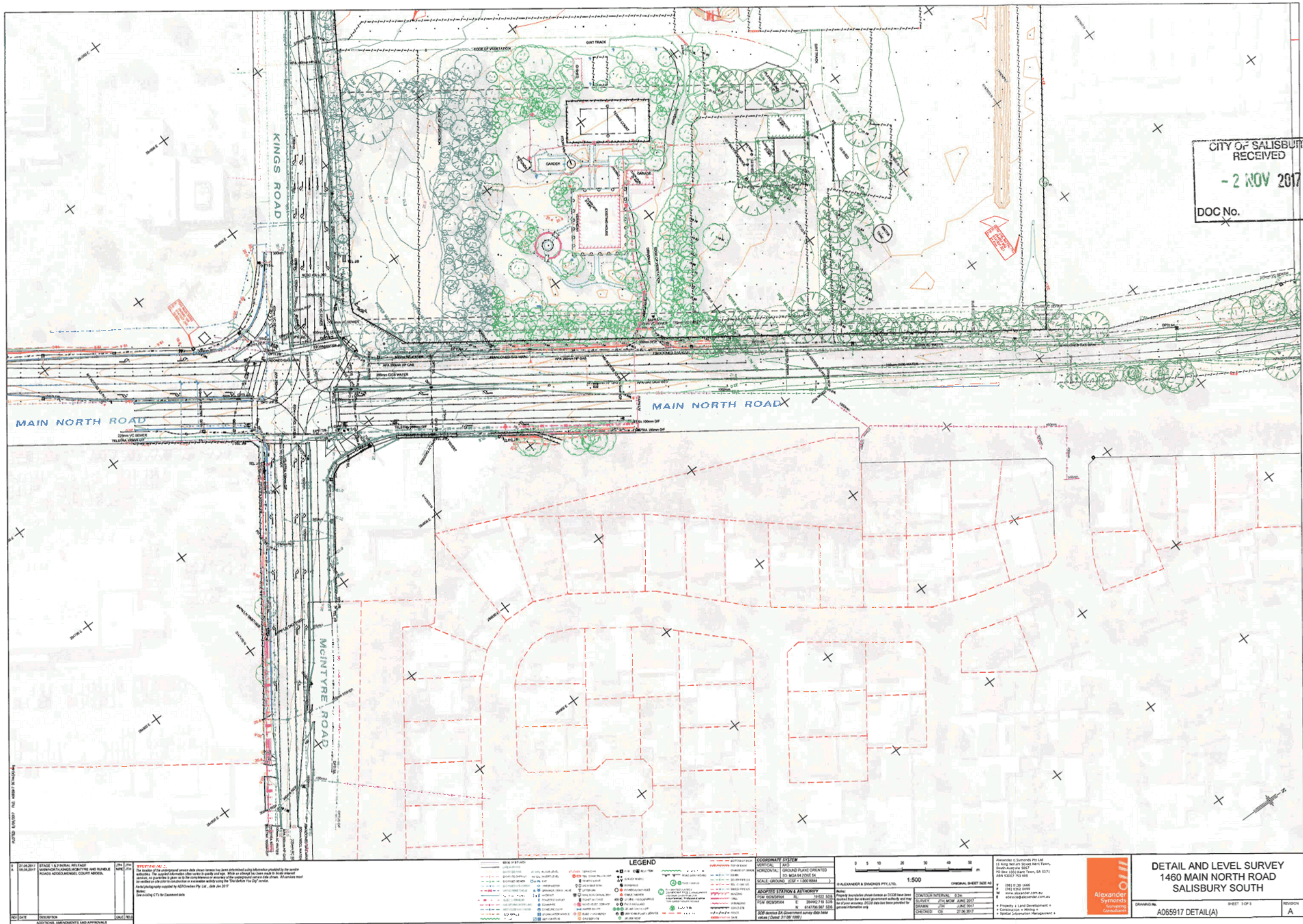
Subj. ^{ALSO} ~~grants~~ to the rt. of w. & east. ~~with conditions~~
grtd. by Memo. of Tr. No. 2970787 ✓
to The ~~E.T.S.A.~~ M. of W. in & over PTN. OF THE
SD. LAND as deld. in the sd. plan & therein
mkd. Easement B & EASMT. C.

Item 5.1.1 - Attachment 1 - Plans, Correspondence, Reports and Property Information









ATTACHMENT 2

Copy of Representations and Applicant's Response to Valid Representations

pw

CATEGORY 2



STATEMENT OF REPRESENTATION
Pursuant to Section 38 of the Development Act

To: City of Salisbury
PO Box 8, SALISBURY SA 5108
Email: representations@salisbury.sa.gov.au

THIS SHEET PROVIDES YOU WITH THE OPPORTUNITY TO MAKE COMMENTS IN RELATION TO A PROPOSED DEVELOPMENT. PLEASE FIND ATTACHED DETAILS OF THE PROPOSED DEVELOPMENT.

Application No:	361/1589/2017/2B
Applicant:	GIC Kings Road Pty Ltd
Location:	1460 Main North Road , Salisbury South SA 5106
Nature of Development:	DEMOLITION OF EXISTING DWELLING AND ASSOCIATED STRUCTURES AND OUTBUILDINGS, REMOVAL OF 40 REGULATED TREES (8 BEING SIGNIFICANT TREES), TRANSPLANTING OF 13 REGULATED TREES, THE CONSTRUCTION OF A MIXED USE RETAIL AND ENTERTAINMENT COMPLEX COMPRISING MAJOR RETAIL SHOPS (2), SPECIALITY RETAIL SHOPS (13), CAFE (1), BULKY GOODS TENANCIES (4), ENTERTAINMENT VENUES (3), INDOOR RECREATION CENTRE (GYMNASIUM), FENCING AND SCREENING STRUCTURES, 3 FAST FOOD RESTAURANTS (WITH ASSOCIATED DRIVE THROUGH FACILITY) TOGETHER WITH ASSOCIATED SITEWORKS, ACCESS/EGRESS TO KINGS ROAD, MAIN NORTH ROAD AND MENGEL COURT, AT-GRADE CAR PARKING AND MANOEUVRING AREAS, LOADING DOCKS, PEDESTRIAN PATHS, WASTE STORAGE AREAS, OUTDOOR SEATING AND LANDSCAPING

YOUR DETAILS: (this information must be provided to ensure that this is a valid representation)

NAME(S): AECOM Australia Pty Ltd - on behalf of Parafield Airport Ltd
ADDRESS: L28, 91 King William Street, Adelaide SA 5000
PHONE NO: [REDACTED] EMAIL: brenton.burman@aecom.com

I am: (please tick one of the following boxes as appropriate)

- The owner/occupier of the property located at: Parafield Airport
- Other (please state):

YOUR COMMENTS:

I/We: (please tick the most appropriate box below)

- Support the proposed development.
- Oppose the proposed development.

Whether you support or oppose this proposal you must provide written reasons below to ensure that this is a valid representation.

See attached submission letter

PTO

Item 5.1.1 - Attachment 2 - Copy of Representations and Applicant's Response to Valid Representations

Regulation 35(e) of the Development Regulations 2008 requires that a representation must indicate a person's desire to be heard. Please note that if you do not indicate that you wish to be heard, it will be taken that you do not wish to be heard by the Panel.

I/We:

- Do not wish to be heard in support of my representation.
 - Wish to be heard in support of my representation, and I will be:
 - Appearing personally,
 - OR**
 - Represented by the following person: Brenton Burman, Planning Consultant, AECOM
- Contact details: **[REDACTED]**

(Please note, matters raised in your written representation will be considered during the assessment and do not need to be repeated at the hearing).

Your written representation must be received by Council no later than 11.59pm on Friday 22nd December 2017, to ensure that it is a valid representation and taken into account.

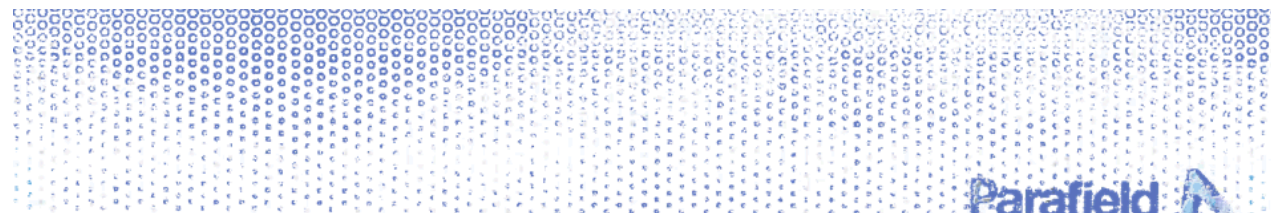
Representor's Declaration:

I am aware that the representation will become a public document as prescribed in the Freedom of Information Act 1991, and will be made available to the applicant, agencies and other bodies pursuant to the Development Act 1993, and may be uploaded to the Council's website as an attachment to the hearing agenda.

Signature:  Date: 21 / 12 / 2017
 On behalf of Parafield Airport Ltd

Please complete this checklist to ensure your representation is valid:

- Name and address of person (or persons).
- If more than one person, details of person making the representation.
- Detail of reasons for making the representation.
- Indication whether or not the person (or persons) wishes to be heard.
- Submitted no later than 11.59pm on **Friday 22nd December 2017.**



22 December 2017

Chief Executive Officer
City of Salisbury
12 James Street
Salisbury SA 5108

Attention: John Harry

Dear John,

**Representation – Development Application 361/1589/2017/2B
1460 Main North Road, Salisbury South**

Parafield Airport Ltd is the leaseholder of the Parafield Airport from the Commonwealth Government. Parafield Airport is located immediately to the south of the land the subject of the above development application.

As an adjoining occupier and long-term leaseholder, Parafield Airport Ltd has been notified of the above Category 2 development application, and has the opportunity to make a representation pursuant to Section 38 of the *Development Act 1996*.

The following representation has been prepared in relation to the proposed development by GIC Kings Road Pty Ltd.

As background, Parafield Airport Ltd submitted letters to the proponent and the City of Salisbury in early October 2017, expressing a number of concerns in relation to the proposed development. The concerns expressed at that time primarily related to the potential impacts of the development on the on-going aviation and safety operations of Parafield Airport.

The application information remains relatively unchanged from what was reviewed in early November, excepting for the following additional information:

- The nature of development proposed is now more comprehensive – and reflects all of the elements of the project
- The application now includes details of the removal of 40 Regulated Trees – including 8 Significant Trees – along with a more detailed landscaping plan
- Speciality Tenancy 8 has been split into two smaller tenancies (both under 200 square metres in area) – for food outlets
- A windshear and turbulence assessment has been undertaken by Vipac

Whilst Parafield Airport Ltd is pleased that additional information has been provided, the additional information is lacking in detailed technical assessment to satisfy the Airport's concerns in relation to the potential impacts of the development on the on-going aviation and safety operations of Parafield Airport.

For clarity and consistency, we have updated the matters raised in our previous correspondence, referencing the additional information provided.

PO Box 652
Salisbury
South Australia 5108

Phone +61 8 8307 5700
Fax +61 8 8281 5006
parafieldairport.com.au

Adelaide Airport
Management Limited
ABN 77 077 201 131
Registered Land Agent 224 839

A wholly owned subsidiary of
Adelaide Airport Limited
ABN 78 075 176 653

Background

During the preparation of the **Mixed Use (Bulky Goods, Entertainment and Leisure) Zone Development Plan Amendment**, Parafield Airport brought to the attention of Council issues relating to the future development of such land on the safety and on-going operations of Parafield Airport.

Parafield Airport Ltd continued to communicate planning and operating concerns to the former owners of the subject land, Engel's, and Colliers International (their selling agent).

Development Plan Provisions

The subject land is located within the **Mixed Use (Bulky Goods, Entertainment and Leisure) Zone** of the Salisbury Council Development Plan and that Development Plan includes a number of provisions relating to ensuring the long-term operational, safety and commercial requirements of airports.

Such provisions reflect the National Airports Safeguarding Framework (NASF) guidelines, which have been embedded into South Australian planning policy.

Specifically, the Development Plan recognises that development adjacent such airports, including Parafield Airport, should:

- Ensure that the height and location of buildings and structures does not adversely affect the long-term operational, safety and commercial requirements of the airport
- Does not create a risk to public safety, in particular in relation to such matters as light glare, air emissions and turbulence, storage of flammable liquids, attraction of birds, reflective surfaces, materials that affect aircraft navigational aids, outdoor lighting, etc
- Takes into consideration the effect of aircraft noise, consistent with Australian Standard AS2022: - Acoustics - Aircraft Noise Intrusion - Building Siting and Construction

Overlay Map Sal/41 Development Constraints within the Development Plan also triggers a referral for 'all development' on the subject land to the Department of Infrastructure and Regional Development (DIRD) for consideration in relation to the height of buildings proposed, and their impact on airport operations. Pursuant to Schedule 8 of the *Development Regulations 2008*, DIRD has power of direction over the decision of the relevant planning authority. We are aware that DIRD has raised numerous concerns in relation to airport safeguarding issues, which do not appear to have been adequately addressed with the additional application information that has recently been provided.

The **Mixed Use (Bulky Goods, Entertainment and Leisure) Zone** also references Concept Plan Map Sal/30 relating to airport building heights and lighting impacts within the Zone. Specifically, the Concept Plan provides added detail in relation to the Obstacle Limitation Surface (OLS) contours, airport building height limitations, and specific zones relating to lighting (including signage).

We note that the proposed development is referenced as expected to be below the Obstacle Limitation Height associated with airport operations at Parafield Airport. Given this is a threshold issue it is pleasing. However, the current application represents 46% of the **Mixed**

Use (Bulky Goods, Entertainment and Leisure) Zone, and that the remainder of the zone is severely compromised by airport safety issues, with any potential development of this land likely to have significant long-term operational and safety impacts to Parafield Airport. The connection of this development with the remainder of the zone given those severe restrictions should be clarified. Consideration also needs to be given to the proposed construction techniques of the identified development, should it be approved, as temporary structures such as cranes can intrude into protected airspace.

A windshear and turbulence assessment has been provided by the applicant, prepared by Vipac. However, no specific modelling or experimental validation has been undertaken to support the conclusion that the current design of the proposed development is appropriate from a windshear and turbulence risk perspective. Vipac, in its report, concludes:

"The assessments provided in this report have been made based on experience of similar situations in Adelaide and around the world. As with any opinion, it is possible that an assessment of wind effects based on experience and without experimental validation may not account for all complex flow interactions in the vicinity."

Appropriate modelling should be undertaken to ensure that the proposed development does not result in any adverse impacts in relation to windshear and turbulence (refer to NASF Guideline B).

Further, the application provides no information to measures proposed to detract birds (both through design and management practices) and, whilst the application includes some lighting detail, no information is provided in relation to signage and advertising structures which may impact on airport operations due to the location, height and luminosity.

It should also be noted that the Salisbury Development Plan incorporates an 'Airport Runway Control Policy Area' at the south-western end of Parafield Airport's two main runways. Whilst this does not impact on the subject land, it demonstrates how the National Airports Safeguarding Framework (NASF) guidelines, including the concept of 'Public Safety Zones', has been further embedded into the Development Plan. It is understood that, following the recent air crash at Essendon Airport, the National Airports Safeguarding Advisory Group (NASAG) is seeking to encourage the introduction of airport 'Public Safety Zones' to all State and Territory planning systems in Australia, which may impose further limitations on the development potential of the subject land.

Commonwealth Regulatory Provisions relating to Protection of Operational Airspace

In addition to the above, Part 12 of the *Airports Act 1996* and the *Airports (Protection of Airspace) Regulations 1996* establishes the legislative framework for the protection of airspace at and around Commonwealth airports. The Act defines any activity resulting in an intrusion into a Commonwealth airport's protected airspace to be a "controlled activity", requiring an approval.

A detailed assessment of the proposed development in relation to such legislation has not been provided as part of the development application.

National Aeronautical Safety Framework

The National Airports Safeguarding Advisory Group (NASAG) has produced the National Airports Safeguarding Framework (NASF) that includes a statement of over-arching principles and a suite of guidelines for land use planning measures associated with airports.

The City of Salisbury is represented on NASAG through the Australian Local Government Association.

The NASF Guidelines are aimed at safeguarding airports and surrounding communities through implementing appropriate planning schemes around airports by providing guidance to decision-makers in all levels of Government.

The seven overarching guidelines are:

- Guideline A: Measures for Managing Impacts of Aircraft Noise
- Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports
- Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports
- Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation
- Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
- Guideline F: Managing the Risk of Intrusions into the Protected Airspace of Airports
- Guideline G: Protecting Aviation Facilities – Communication, Navigation and Surveillance

An update of Guideline B, along with Guideline I relating to helicopter landing facilities, have recently been released for consultation.

It is understood that a further Guideline relating to Public Safety Zones is being finalised for consultation.

As previously mentioned, many of the NASF Guidelines have been incorporated into the South Australian planning system and contained in planning policy in the Salisbury (City) Development Plan.

Aside from the brief reference in relation to Development Plan provisions, the application provides no assessment of the proposed development in relation to the NASF Guidelines and the potential impacts of the proposed development on the ongoing operations of the Parafield Airport.

Other Matters for Consideration

In addition to airport operations, other key provisions within the Salisbury Council Development Plan requiring consideration include ground transport and impacts on retail hierarchy. The projected volume of traffic, upgrading requirements to existing intersections, resolution of queuing and conflict issues and the provision of pick-up and set down areas all require further consideration.

Summary

Whilst the applicant has provided additional information, the current development application still remains deficient in information in relation to airport safety issues and general planning provisions to allow the Salisbury Council Assessment Panel the opportunity to make a proper assessment of the planning merits of the current development application.

We are confident that the Council Assessment Panel will give due regard to the airport safety issues, and the potential impacts that this development will pose on the long-term operational, safety and commercial impacts to Parafield Airport.

We request the opportunity to be heard at the Council Assessment Panel in support of this representation.

Yours sincerely,



Mark Young
Managing Director
Parafield Airport Limited



**STATEMENT OF REPRESENTATION
Pursuant to Section 38 of the Development Act**

To: City of Salisbury
PO Box 8, SALISBURY SA 5108
Email: representations@salisbury.sa.gov.au

THIS SHEET PROVIDES YOU WITH THE OPPORTUNITY TO MAKE COMMENTS IN RELATION TO A PROPOSED DEVELOPMENT. PLEASE FIND ATTACHED DETAILS OF THE PROPOSED DEVELOPMENT.

Application No:	361/1589/2017/2B
Applicant:	GIC Kings Road Pty Ltd
Location:	1460 Main North Road , Salisbury South SA 5106
Nature of Development:	DEMOLITION OF EXISTING DWELLING AND ASSOCIATED STRUCTURES AND OUTBUILDINGS, REMOVAL OF 40 REGULATED TREES (8 BEING SIGNIFICANT TREES), TRANSPLANTING OF 13 REGULATED TREES, THE CONSTRUCTION OF A MIXED USE RETAIL AND ENTERTAINMENT COMPLEX COMPRISING MAJOR RETAIL SHOPS (2), SPECIALITY RETAIL SHOPS (13), CAFE (1), BULKY GOODS TENANCIES (4), ENTERTAINMENT VENUES (3), INDOOR RECREATION CENTRE (GYMNASIUM), FENCING AND SCREENING STRUCTURES, 3 FAST FOOD RESTAURANTS (WITH ASSOCIATED DRIVE THROUGH FACILITY) TOGETHER WITH ASSOCIATED SITEWORKS, ACCESS/EGRESS TO KINGS ROAD, MAIN NORTH ROAD AND MENGEL COURT, AT-GRADE CAR PARKING AND MANOEUVRING AREAS, LOADING DOCKS, PEDESTRIAN PATHS, WASTE STORAGE AREAS, OUTDOOR SEATING AND LANDSCAPING

YOUR DETAILS: (this information must be provided to ensure that this is a valid representation)

NAME(S): PKMC Properties - Peter Kittle
 ADDRESS: 1459 Main North Road Para Hills West
 PHONE NO: 82561212 EMAIL: [REDACTED]

I am: (please tick one of the following boxes as appropriate)

- The owner/occupier of the property located at: as above
- Other (please state):

YOUR COMMENTS:

I/We: (please tick the most appropriate box below)

- Support the proposed development.
- Oppose the proposed development.

Whether you support or oppose this proposal you must provide written reasons below to ensure that this is a valid representation.

We support local development and believe it will be good for the area.

PTO

Regulation 35(e) of the Development Regulations 2008 requires that a representation must indicate a person's desire to be heard. Please note that if you do not indicate that you wish to be heard, it will be taken that you do not wish to be heard by the Panel.

I/We:

- Do not wish to be heard in support of my representation.
- Wish to be heard in support of my representation, and I will be:

- Appearing personally,

OR

- Represented by the following person:

Contact details:

(Please note, matters raised in your written representation will be considered during the assessment and do not need to be repeated at the hearing).

Your written representation must be received by Council no later than 11.59pm on Friday 22nd December 2017, to ensure that it is a valid representation and taken into account.

Representor's Declaration:

I am aware that the representation will become a public document as prescribed in the Freedom of Information Act 1991, and will be made available to the applicant, agencies and other bodies pursuant to the Development Act 1993, and may be uploaded to the Council's website as an attachment to the hearing agenda.

Signature: 

Date: 20 / 12 / 17

Please complete this checklist to ensure your representation is valid:

- Name and address of person (or persons).
- If more than one person, details of person making the representation.
- Detail of reasons for making the representation.
- Indication whether or not the person (or persons) wishes to be heard.
- Submitted no later than 11.59pm on **Friday 22nd December 2017**.

CATEGORY 2



STATEMENT OF REPRESENTATION
Pursuant to Section 38 of the Development Act

Valid

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YOUR DETAILS: (this information must be provided to ensure that this is a valid representation)

NAME(S): M LEONDIU
ADDRESS: 8 Pierre Rd Modbury SA 5092
PHONE NO: [REDACTED] EMAIL:

I am: (please tick one of the following boxes as appropriate)

- The owner/occupier of the property located at: 104 Rundle Rd Sals Sth
- Other (please state):

YOUR COMMENTS:

I/We: (please tick the most appropriate box below)

- Support the proposed development.
- Oppose the proposed development.

Whether you support or oppose this proposal you must provide written reasons below to ensure that this is a valid representation.

Is ok
.....
.....

PTO

Item 5.1.1 - Attachment 2 - Copy of Representations and Applicant's Response to Valid Representations

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Wish to be heard in support of my representation, and I will be:

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OR

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Signature: *M. LEONDIU*

Date: *13 / 12 / 17*

Please complete this checklist to ensure your representation is valid:

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- If more than one person, details of person making the representation.
- Detail of reasons for making the representation.
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STATEMENT OF REPRESENTATION
Pursuant to Section 38 of the Development Act

CATEGORY 2

Valid

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PO Box 8, SALISBURY SA 5108
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YOUR DETAILS: (this information must be provided to ensure that this is a valid representation)

NAME(S): Leo Leondiou

ADDRESS: 6 Pierre RD Madbury SA 5092

PHONE NO: [REDACTED] EMAIL: [REDACTED]

I am: (please tick one of the following boxes as appropriate)

- The owner/occupier of the property located at: 104 Rundle RD Sals SA
- Other (please state):

YOUR COMMENTS:

I/We: (please tick the most appropriate box below)

- Support the proposed development.
- Oppose the proposed development.

Whether you support or oppose this proposal you must provide written reasons below to ensure that this is a valid representation.

Good 4 area.

14 DEC 2017

PTO

Regulation 35(e) of the Development Regulations 2008 requires that a representation must indicate a person's desire to be heard. Please note that if you do not indicate that you wish to be heard, it will be taken that you do not wish to be heard by the Panel.

I/We:

- Do not wish to be heard in support of my representation.
- Wish to be heard in support of my representation, and I will be:
 - Appearing personally,
 - OR**
 - Represented by the following person:
 - Contact details:

(Please note, matters raised in your written representation will be considered during the assessment and do not need to be repeated at the hearing).

Your written representation must be received by Council no later than 11.59pm on Friday 22nd December 2017, to ensure that it is a valid representation and taken into account.

Representor's Declaration:

I am aware that the representation will become a public document as prescribed in the Freedom of Information Act 1991, and will be made available to the applicant, agencies and other bodies pursuant to the Development Act 1993, and may be uploaded to the Council's website as an attachment to the hearing agenda.

Signature: Leo Leordia..... Date: 13/12/17

Please complete this checklist to ensure your representation is valid:

- Name and address of person (or persons).
- If more than one person, details of person making the representation.
- Detail of reasons for making the representation.
- Indication whether or not the person (or persons) wishes to be heard.
- Submitted no later than 11.59pm on **Friday 22nd December 2017.**



STATEMENT OF REPRESENTATION
Pursuant to Section 38 of the Development Act

Valid

To: City of Salisbury
 PO Box 8, SALISBURY SA 5108
 Email: representations@salisbury.sa.gov.au

THIS SHEET PROVIDES YOU WITH THE OPPORTUNITY TO MAKE COMMENTS IN RELATION TO A PROPOSED DEVELOPMENT. PLEASE FIND ATTACHED DETAILS OF THE PROPOSED DEVELOPMENT.

Application No:	361/1589/2017/2B
Applicant:	GIC Kings Road Pty Ltd
Location:	1460 Main North Road , Salisbury South SA 5106
Nature of Development:	DEMOLITION OF EXISTING DWELLING AND ASSOCIATED STRUCTURES AND OUTBUILDINGS, REMOVAL OF 40 REGULATED TREES (8 BEING SIGNIFICANT TREES), TRANSPLANTING OF 13 REGULATED TREES, THE CONSTRUCTION OF A MIXED USE RETAIL AND ENTERTAINMENT COMPLEX COMPRISING MAJOR RETAIL SHOPS (2), SPECIALITY RETAIL SHOPS (13), CAFE (1), BULKY GOODS TENANCIES (4), ENTERTAINMENT VENUES (3), INDOOR RECREATION CENTRE (GYMNASIUM), FENCING AND SCREENING STRUCTURES, 3 FAST FOOD RESTAURANTS (WITH ASSOCIATED DRIVE THROUGH FACILITY) TOGETHER WITH ASSOCIATED SITEWORKS, ACCESS/EGRESS TO KINGS ROAD, MAIN NORTH ROAD AND MENGEL COURT, AT-GRADE CAR PARKING AND MANOEUVRING AREAS, LOADING DOCKS, PEDESTRIAN PATHS, WASTE STORAGE AREAS, OUTDOOR SEATING AND LANDSCAPING

YOUR DETAILS: (this information must be provided to ensure that this is a valid representation)

NAME(S): *Leo Leondior*

ADDRESS: *G Pierre Rd Modbury SA 5092*

PHONE NO: [REDACTED] EMAIL: [REDACTED]

I am: (please tick one of the following boxes as appropriate)

- The owner/occupier of the property located at: *92 Mundle Rd Sals Stg*
- Other (please state):

YOUR COMMENTS:

I/We: (please tick the most appropriate box below)

- Support the proposed development.
- Oppose the proposed development.

Whether you support or oppose this proposal you must provide written reasons below to ensure that this is a valid representation.

Good 4 Area.

14 DEC 2017 PTO

Item 5.1.1 - Attachment 2 - Copy of Representations and Applicant's Response to Valid Representations

Regulation 35(e) of the Development Regulations 2008 requires that a representation must indicate a person's desire to be heard. Please note that if you do not indicate that you wish to be heard, it will be taken that you do not wish to be heard by the Panel.

I/We:

Do not wish to be heard in support of my representation.

Wish to be heard in support of my representation, and I will be:

Appearing personally,

OR

Represented by the following person:

Contact details:

(Please note, matters raised in your written representation will be considered during the assessment and do not need to be repeated at the hearing).

Your written representation must be received by Council no later than 11.59pm on Friday 22nd December 2017, to ensure that it is a valid representation and taken into account.

Representor's Declaration:

I am aware that the representation **will** become a public document as prescribed in the Freedom of Information Act 1991, and will be made available to the applicant, agencies and other bodies pursuant to the Development Act 1993, and may be uploaded to the Council's website as an attachment to the hearing agenda.

Signature: Leo Leordia.....

Date: 13/12/17

Please complete this checklist to ensure your representation is valid:

Name and address of person (or persons).

If more than one person, details of person making the representation.

Detail of reasons for making the representation.

Declaration whether or not the person (or persons) wishes to be heard.

Submitted no later than 11.59pm on **Friday 22nd December 2017.**

**DEVELOPMENT ACT 1993
CITY OF SALISBURY**

NOTICE OF APPLICATION FOR CATEGORY 2 DEVELOPMENT
Pursuant to Section 38(4) of the Development Act, 1993

An application for development has been lodged with the Council for assessment. The details are as follows:

APPLICATION NO:	361/1589/2017/2B
APPLICANT:	GIC Kings Road Pty Ltd C/- Intro Design Pty Ltd PO Box 207 RUNDLE MALL SA 5000
NATURE OF DEVELOPMENT:	DEMOLITION OF EXISTING DWELLING AND ASSOCIATED STRUCTURES AND OUTBUILDINGS, REMOVAL OF 40 REGULATED TREES (8 BEING SIGNIFICANT TREES), TRANSPLANTING OF 13 REGULATED TREES, THE CONSTRUCTION OF A MIXED USE RETAIL AND ENTERTAINMENT COMPLEX COMPRISING MAJOR RETAIL SHOPS (2), SPECIALITY RETAIL SHOPS (13), CAFE (1), BULKY GOODS TENANCIES (4), ENTERTAINMENT VENUES (3), INDOOR RECREATION CENTRE (GYMNASIUM), FENCING AND SCREENING STRUCTURES, 3 FAST FOOD RESTAURANTS (WITH ASSOCIATED DRIVE THROUGH FACILITY) TOGETHER WITH ASSOCIATED SITEWORKS, ACCESS/EGRESS TO KINGS ROAD, MAIN NORTH ROAD AND MENGEL COURT, AT-GRADE CAR PARKING AND MANOEUVRING AREAS, LOADING DOCKS, PEDESTRIAN PATHS, WASTE STORAGE AREAS, OUTDOOR SEATING AND LANDSCAPING
LOCATION:	1460 Main North Road , Salisbury South SA 5106
CERTIFICATE OF TITLE:	CT-5068/957
ZONE:	Mixed Use (Bulky Goods, Entertainment and Leisure)

The application may be examined at the Office of the Council located at 12 James Street, Salisbury during normal business hours (8.30am – 5pm Monday to Friday) and on Council's web site at www.salisbury.sa.gov.au . Any person or body may make representations in writing, or by email development@salisbury.sa.gov.au, concerning this application and should address their representation to the Chief Executive Officer at PO Box 8, Salisbury or representations@salisbury.sa.gov.au. Representations must be received **no later than Friday 22nd December 2017**.

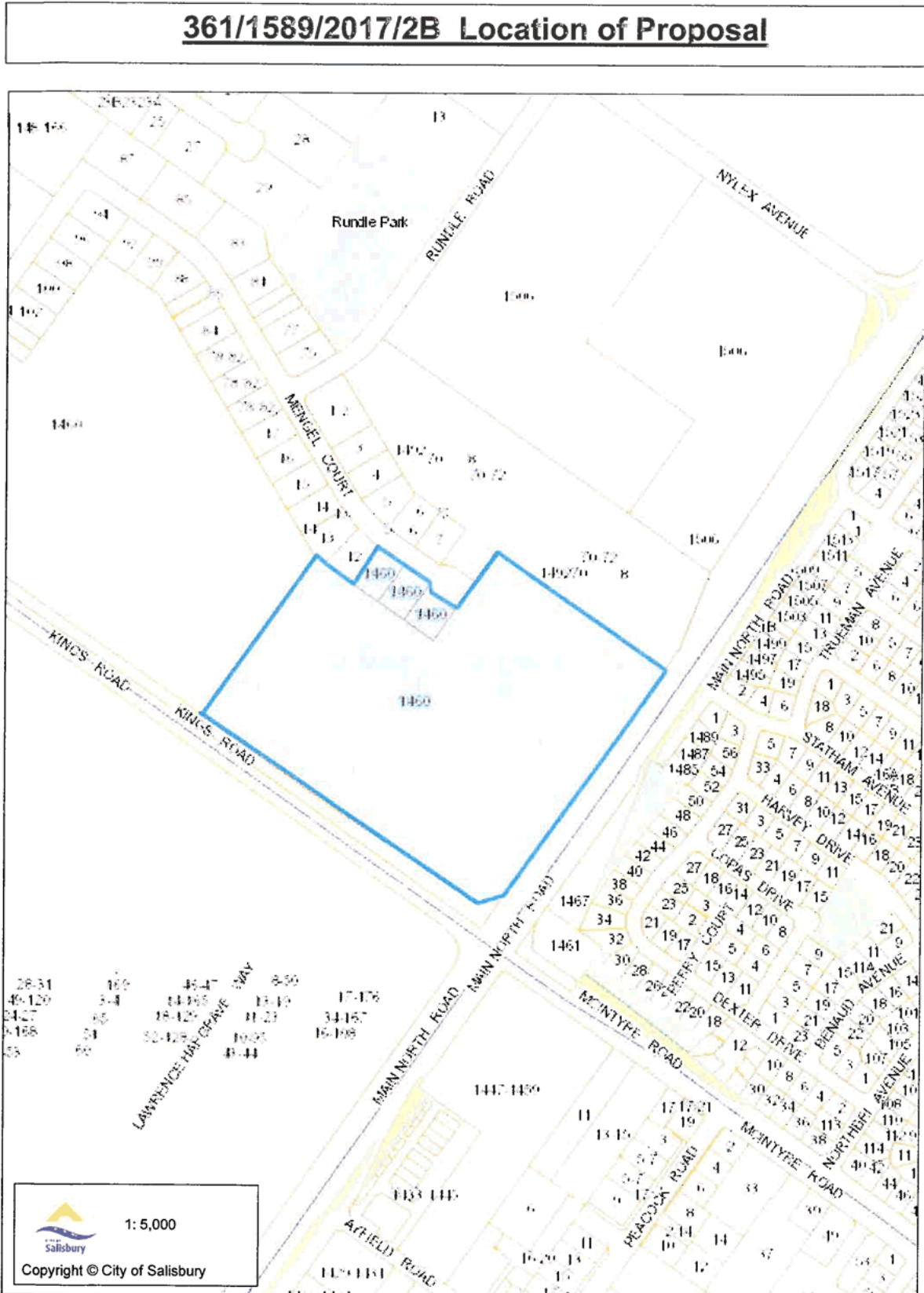
Each person making a submission should indicate whether they wish to appear personally, or be represented by another party, in support of their submission. Please note that should you nominate to be heard in support of your representation, you will be required to attend a Development Assessment Panel meeting held at the Council offices, scheduled on the fourth Tuesday of each month at 6.00pm (unless otherwise advised).

Please note that pursuant to Section 38(8) of the Development Act, a copy of each representation received will be forwarded to the applicant to allow them to respond to all representations received.

This development is classified as a Category 2 development under the Development Act. Please be aware that there is no right of appeal against Council's decision.

Signed: Aaron Curtis, Team Leader
Date: 8 December 2017

THIS IS THE FIRST AND ONLY PUBLICATION OF THIS NOTICE



Item 5.1.1 - Attachment 2 - Copy of Representations and Applicant's Response to Valid Representations



City of Salisbury
ABN 82 615 416 895

12 James Street
PO Box 8
Salisbury SA 5108
Australia

Telephone 08 8406 8222
Facsimile 08 8281 5466
city@salisbury.sa.gov.au

TTY 08 8406 8596
(for hearing impaired)

www.salisbury.sa.gov.au

CATEGORY 2

8 December 2017

To: The Owner/Occupier

Dear Sir/Madam

Application No: 361/1589/2017/2B
Location: 1460 Main North Road , Salisbury South SA 5106
Nature of Development: DEMOLITION OF EXISTING DWELLING AND ASSOCIATED STRUCTURES AND OUTBUILDINGS, REMOVAL OF 40 REGULATED TREES (8 BEING SIGNIFICANT TREES), TRANSPLANTING OF 13 REGULATED TREES, THE CONSTRUCTION OF A MIXED USE RETAIL AND ENTERTAINMENT COMPLEX COMPRISING MAJOR RETAIL SHOPS (2), SPECIALITY RETAIL SHOPS (13), CAFE (1), BULKY GOODS TENANCIES (4), ENTERTAINMENT VENUES (3), INDOOR RECREATION CENTRE (GYMNASIUM), FENCING AND SCREENING STRUCTURES, 3 FAST FOOD RESTAURANTS (WITH ASSOCIATED DRIVE THROUGH FACILITY) TOGETHER WITH ASSOCIATED SITWORKS, ACCESS/EGRESS TO KINGS ROAD, MAIN NORTH ROAD AND MENGEL COURT, AT-GRADE CAR PARKING AND MANOEUVRING AREAS, LOADING DOCKS, PEDESTRIAN PATHS, WASTE STORAGE AREAS, OUTDOOR SEATING AND LANDSCAPING

Enclosed is a Notice for the above proposed development, which is located near your property.

Council are interested in your views on the proposed development.

In addition to the plans enclosed, further documentation relating to the proposal is also available on the council website via the following link:

www.salisbury.sa.gov.au/Build/Planning_Building_and_Forms/Advertised_Development_Applications

The decision whether to approve, refuse or approve with conditions, is based on an assessment of the proposal against the provisions within the City of Salisbury Development Plan. It is important to note that all comments raised, both in support of, and objecting to the proposed development, will be taken into account when assessing the application.

Please note that Australia Post has recently changed its delivery charges and timeframes meaning that correspondence may take longer to receive than anticipated. To ensure your representation is received within the statutory timeframe, you may want to consider delivering your submission electronically, direct by submission at the counter or otherwise via Express Post.

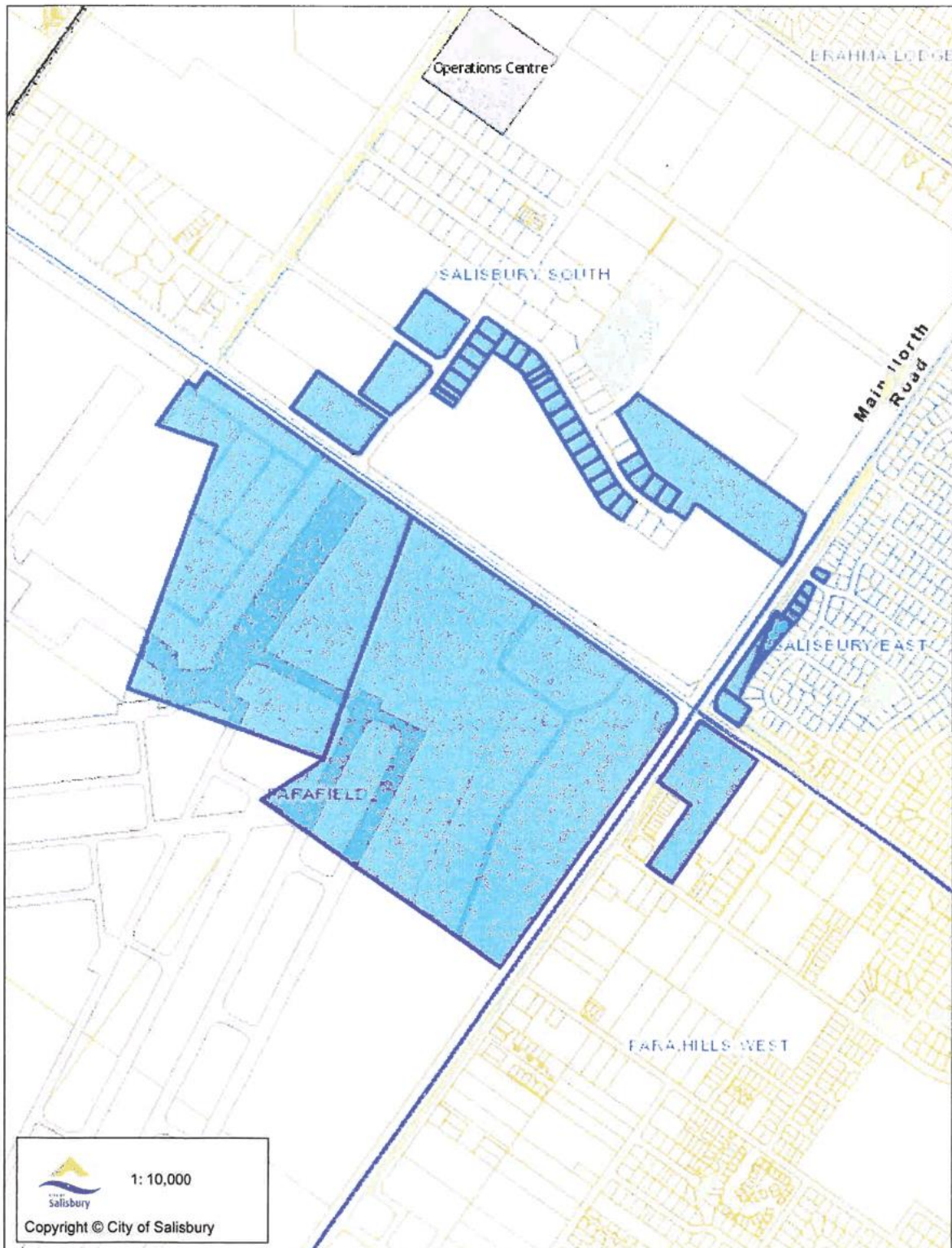
I would be happy to assist you with the consideration of the proposed development. If you have any queries or would like further information, please do not hesitate to contact me.

Yours faithfully

A handwritten signature in blue ink, appearing to be "H. Smith".

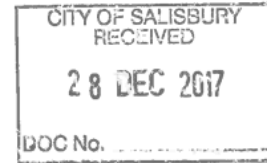
Development Services
Telephone: (08) 8406 8358
Fax: (08) 8281 5466
Email: representations@salisbury.sa.gov.au

361/1589/2017/2B Affected Properties Notified



Item 5.1.1 - Attachment 2 - Copy of Representations and Applicant's Response to Valid Representations

INTRO



28 December 2017

Aaron Curtis
Team Leader - Planning
Development Services
City of Salisbury

Via email: ACurtis@salisbury.sa.gov.au

Intro Design Pty Ltd
L11 44 Weymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.au

intro.com.au

Dear Aaron,

RE: Kings Junction Shopping Centre – Response to Representations

Intro act on behalf of GIC Kings Road Pty Ltd (the applicant) with respect to the proposed development at the corner of Kings Road and Main North Road, Salisbury South.

This correspondence has been prepared in response to the Category 2 representations received on 28 December 2017. In total five submissions were received, namely:

- Parafield Airport Ltd;
- PKMC Properties - Peter Kittle;
- M Leondiou; and
- L Leondiou (x2).

I note that the applications by PKMC properties, M Leondiou and L Leondiou are in support of the application. To this end, I respond to the remaining representation below:

PARAFIELD AIRPORT LTD

ISSUE: DEVELOPMENT ON THE BALANCE ON THE LAND

The proponent is not proposing any development on the balance of the land at this stage. Any future development would be the subject of a new application and Parafield Airport Ltd would maintain their ability to review and comment upon the future plans.

ISSUE: NO SPECIFIC MODELLING OR EXPERIMENTAL VALIDATION FOR WINDSHEAR AND TURBULENCE

A windshear and turbulence analysis has been provided to give council comfort that the proposed development will not have a deleterious effect on the operation of the Parafield Airport site.

Activating human space

INTRO

Intro Design Pty Ltd
L11 44 Waymouth Street
PO Box 207 Runcle Mall
Adelaide SA 5030

T +61 (0)8 8410 0453
info@intro.com.co

intro.com.co

The proponent has developed on the Parafield Airport Commercial Precinct land and is acutely aware of the issues of developing in proximity to an airfield.

The proponent and their technical advisors, will resolve the technical issues with Parafield Airport Ltd in a collaborative manner and recommends this becomes a condition of consent.

ISSUE: BIRD DETRACTION MEASURES

The proponent will investigate a range of management procedures to detract from birds flocking to the area. This will be done in consultation with Parafield Airport Ltd.

ISSUE: ADVERTISING STRUCTURES

The proponent is not proposing any advertising signage as part of this application. Any future development for advertising signage would be the subject of a new application and Parafield Airport Ltd would maintain their ability to review and comment upon the future plans. The proponent is cognisant of the issues surrounding light interference and will ensure that advertising signage satisfies the legislative criteria.

ISSUE: COMMONWEALTH REGULATORY PROVISIONS

Any assessment of the proposed development against the *Airports Act 1996* and the *Airports (protection of Airspace) Regulations 1996* does not form part of the legislative requirements within the *Development Act 1993*. The Department of Infrastructure and Regional Development will undertake a separate assessment concurrently.

ISSUE: NASF GUIDELINE ASSESSMENT

We acknowledge the NASF Guidelines. The proponent and their technical advisors will resolve the technical issues with Parafield Airport Ltd in a collaborative manner and recommends this becomes a condition of consent.

ISSUE: GROUND TRANSPORT, TRAFFIC VOLUMES, QUEING AND CONFLICT ISSUES

We thank Parafield Airport Ltd for their concerns regarding the surrounding road network. We will work with the Department of Transport to ensure that all road based traffic issues are resolved.

ISSUE: IMPACTS ON RETAIL HIERARCHIES

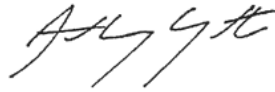
We thank Parafield Airport Ltd for their concerns regarding retail hierarchies. I note the Zoning is appropriate for the proposed development and supports the quantum and type of retailing envisaged.

INTRO

I trust that the response to the representations received is sufficient for you to continue your assessment.

Should you require further information, please do not hesitate to contact the undersigned on 0402 424 403.

Yours sincerely



Anthony Gatti
Senior Planning Advisor

Intro Design Pty Ltd
L11 44 Waymouth Street
PO Box 207 Rundle Mall
Adelaide SA 5000

T +61 (0)8 8410 0453
info@intro.com.au

intro.com.au

ATTACHMENT 3

Invalid submissions made by persons not notified of development

Michael DiMauro & Associates
BARRISTERS & SOLICITORS



- Telephone (08) 8212 3000
- Facsimile (08) 8212 3666
- Level 13, 90 King William St, Adelaide, SA 5000
- P.O. Box 3011 Rundle Mall SA 5000

18 December 2017



Mr John Harry
Chief Executive Officer
City of Salisbury
12 James Street
SALISBURY SA 5108

Attention: Mr Terry Sutcliffe, General Manager City Development

By Post to the address above and by Email to tsutcliffe@salisbur.sa.gov.au

Dear Mr Harry
Development Application – 361-1589-2017

I refer to my previous letter dated 25 October 2017 in relation to this application and reiterate that I act for the owners of the Parabanks Shopping Centre in relation to the above-mentioned application.

As per my previous letter, I have taken advice from Mr Michael Roder SC as to the development and whether the development is seriously at variance with the Development Plan.

I have also received an advice in relation to the proposed development from an expert consultant planner, Mr Phillip Brunning.

Having taken those advices, I am instructed to reiterate my previous submissions on the following:

Seriously at Variance

Section 35(2) of the *Development Act* provides that:-

“...a development that is assessed by a relevant authority as being seriously at variance with the relevant Development Plan must not be granted consent”.

U

A.B.N. 62 670 434 495

Accordingly, section 35(2) of the Act has the effect that the Council has no power or jurisdiction to grant approval in the event that it assesses the development as being seriously at variance with the Development Plan.

As Mr Brunning's advice points out, even if the Council did not assess the proposal as being seriously at variance with the Development Plan, the Council should refuse this proposal on the basis that it does not sufficiently comply with the provisions of the Plan to warrant consent.

In particular, even if the proposal were not adjudged to be seriously at variance with the Plan, the Council should not consent to the development where it does not comply with clearly expressed planning principles unless there is good planning reason to do so.¹

However, in this case, it is clear that the Council does not have power to grant consent and the proposal is seriously at variance with the Development Plan. Any assessment by the Council that the proposal was not seriously at variance with the Development Plan would be legally unreasonable.

As the advice of Mr Brunning establishes, there are two main areas in which this proposal is seriously at variance with the Development Plan. First, insofar as it provides for or allows the development of the centre with its main retail anchors being a traditional full line supermarket together with a store such as a K-Mart it is entirely contrary to the Centres provisions of the Plan.

Secondly, and as a corollary of the first departure, the proposal in its current form would permit the development of the centre in a way which is inconsistent with the desired character of the zone and the reason for its creation. Furthermore, it would frustrate the achievement of the Zone objectives especially the express and specific desire for a single large retail tenancy with a floor area in the order of 10,000- 15,000m² selling a majority of non-food stuff items for bulk purchase by individuals and business (such as a Costco style development).

The proposal is completely inconsistent with the desire of the Plan and would frustrate its objective. In those circumstances the proposal must be seriously at variance with the Plan.

The nature of the development

Mr Brunning has inspected the Council file.

I note that importantly, the proposal does not involve a large single floor plate with a floor area between 10,000 to 15,000m² as desired. Accordingly, it does not involve such a shop which predominantly sells goods other than foodstuffs in bulk to customers including small and medium business.

¹ Gawler v Impact Investments 2007 SASC 356 at [22], [32-33],[79-81]

Accordingly it conflicts with the desired character of the zone and both Objective 1 and Objective 2 of the Zone Provisions.

Instead the proposal involves two larger style tenancies, of 6,205m² and 3,910 m² respectively.

The proposal does not identify or limit the use of those facilities.

Mr Brunning has been advised that the identity of the two major retail tenants are understood to be K-Mart and Coles.

Significantly, whether that was the intention or not, the proposal in its current form would permit the development of those premises in that way or in a way which would be even more offensive to the provisions of the Plan.

The proposal must be assessed on the basis of what could be constructed pursuant to the approval.²

Accordingly, the proposal contains a substantial retail element of the kind which would be found in a traditional retail centre, perhaps of a district order. The proposal as a whole is consistent with the kind of development that one might see in the core of a retail centre and its periphery.

Accordingly, the proposal is clearly at odds with the relevant provisions of the Centre's Plan referred to in Mr Brunning's report. Further, it is likely to frustrate the achievement of the Centres policy Objectives of the Plan.

A corollary of this is that, not surprisingly, the proposal involves a serious and important departure from the particular provisions of the Plan relating to this zone. It would be surprising if the Zone provisions provided for such development which was fundamentally inconsistent with Council wide centres policy. The Zone provisions do not envisage such a development

The correct approach is to distil the overall "thrust" and intention from the relevant Zone provisions.³

Once this task is undertaken, it is clear that the proposal is fundamentally inconsistent with those provisions.

The purpose of the Plan, as revealed particularly in the Objectives and the Desired Character Statement is to provide an **alternative and unique** form of retail model involving the provision of a large "Costco" style store with a floor area of 10-15,000m². The purpose is to

² See *Remibisi v City of Salisbury* [2008] SAERDC 83

³ *Mitcham v Freckmann* (2000) 76 SASR 145

4

provide an **alternative** for the retailing of items in **bulk** not only for retail customers, but for **small and medium businesses**.

A proposal which instead provides for or permits a K-Mart and a Coles supermarket is entirely at odds with the clearly and specifically stated policy intent and would frustrate and impede the achievement of the development envisaged for the Zone.

When that is understood, it is clear that the proposal is seriously at variance with the provisions of the Development Plan.⁴

Further, even if the view were taken that for some reason that the desired objective was not achievable, that would not have the consequence that the development could be approved. It would simply mean that consideration might be given to a Plan Amendment Report.⁵

As the proposal reflects an ‘**important**’ departure from the Development Plan and it involves something which is plainly not **slight or trifling**, it is seriously at variance with it.⁶

The proposal offends and compromises the achievement of Objective 1 in that it proposes or permits a supermarket which is not a form of development envisaged in Objective 1 and is a form of development which should be located in a retail core of a centre.

The proposal offends and impedes the realisation of Objective 2 in that the development clearly does not contribute to the desired character of the zone in that:-

1. The proposal involving or permitting a supermarket and a K-Mart could not be described as a “**unique specialist centre**”;
2. The proposal involves a supermarket which is not envisaged as part of the desired character;
3. The retail components of the proposal do not offer an “**alternative model**” to that typically found in traditional centres. To the contrary, the proposal for a supermarket, a K-Mart with bulky goods outlets at the periphery is entirely consistent with facilities provided in the core or periphery of neighbourhood, district and regional centres.

Critically, the proposal does not include the development of “**a single large floor plate**” shop with a floor area between 10,000m² and 15,000m² predominantly selling non-food stuffs.

Accordingly it does not provide what could properly be described as “**an alternative retail model** for **small and medium businesses** and individuals to purchase products in **bulk**”.

⁴ *Mar Mina v City of Marion & Another* (2008) SASC 120; *Alexandra Council v Strath Hub Pty Ltd* (2003) SASC 302 at para. 35.

⁵ See *Alexandrina Council* at [39].

⁶ See *Mar Mina* at [33].

The clearly expressed thrust of the Plan cannot be subverted by providing two smaller retail stores which provide traditional retail facilities.

Clearly the very purpose of, and premise upon, which the zone was created will not be achieved if this development is approved.

Accordingly, it is not open to the Council to conclude that the proposal is otherwise than seriously at variance with the Development Plan. The Council has no jurisdiction or power to approve the proposed development.

This submission is made without prejudice to any further submissions that might be made upon any further notification by the Council of the proposed development.

Yours faithfully



Michael DiMauro
Direct Line (08) 8212 3000
Direct Fax (08) 8212 3666
Direct Email mdimauro@mdmalaw.com.au

Salisbury 0451 011



Town Planning
Development Advice
Strategic Management

18 December 2017

Mr John Harry
Chief Executive Officer
City of Salisbury
12 James Street
SALISBURY SA 5108

Attention: Mr Aaron Curtis, Team Leader

Dear John,

Development Application 361/1589/2017

I refer to the Development Application by GIC Kings Road Pty Ltd that seeks Development Plan Consent to establish a shopping and leisure complex with ancillary car parking and landscaping on land at 1460 Main North Road, Salisbury South. I understand that this application is undergoing Category 2 notification procedures.

I have been engaged by the DiMauro Group of Companies to provide the following advice for your consideration as such relates to Development Plan policy and the objects of the Development Act, 1993 being the *proper, orderly and efficient planning and development in the State*.

The DiMauro Group of Companies, as owners of the Parabanks Shopping Centre, consider it necessary to make submissions in respect to the proposed development in so far it presents a significant threat to the future success of their shopping centre and the Salisbury Town Centre more generally.

The town planning opinions I express below should be read in conjunction with the legal submission by MDMA Law which is informed by advice taken from Mr Michael Roder, SC. As you will note, copies of both submissions have been provided to the Mayor and Councilors, together with the Member for Ramsay.

For the reasons outlined below, I say that Council ought to form the view that the proposal is *seriously at variance* with the relevant Development Plan and must not grant consent to this application. My Client reserves its rights in relation to the commencement of review proceedings in this regard.

Fundamentally, I say that the proposal amounts to a *de facto* centre that would compromise the function and integrity of the hierarchy of centres otherwise sought by the Development Plan, which seeks as I understand it, spatial distribution of retail shopping and supporting facilities in a rational and economic manner.

Phillip Brunning & Associates

ABN 49 118 903 021

26 Wakeham Street
Adelaide SA 5000
Telephone 08 8232 5586
Mobile 0407 019 748
phil@phillipbrunning.com



More particularly, I set out those policies expressed within the General Section of the Development Plan that relate to Centres and Retail Development, noting that the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone provides more specific guidance in relation to the nature and form of development sought in this location.

OBJECTIVES

- 1 Shopping, administrative, cultural, community, entertainment, educational, religious and recreational facilities located in integrated centres.
- 5 Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.
- 6 Development of centres outside of Greater Adelaide in accordance with the following hierarchy:
 - (a) Regional Centre
 - (b) District Centre
 - (c) Town Centre (for smaller towns with a single centre zone)
 - (d) Local Centre (subsidiary centres for towns with a regional or district centre).

PRINCIPLES OF DEVELOPMENT CONTROL

Retail Development

- 10 A shop or group of shops with a gross leaseable area of greater than 250 square metres should be located within a centre zone.
- 11 A shop or group of shops with a gross leaseable area of less than 250 square metres should not be located on arterial roads unless within a centre zone.
- 12 A shop or group of shops located outside of zones that allow for retail development should:
 - (a) be of a size and type that will not hinder the development, function or viability of any centre zone
 - (b) not demonstrably lead to the physical deterioration of any designated centre
 - (c) be developed taking into consideration its effect on adjacent development.

The Development Plan states very clearly that a shop or group of shops located outside of a centre zone should “*not demonstrably lead to the physical deterioration of any existing centre zone*”. On my review of the application documents, no analysis in this regard has been provided by the Applicant.

As I understand it, the proposal comprises:

- a full line supermarket of 3910 m²;
- a discount department store of 6205 m²;
- four bulky goods tenancies totaling 2900 m²;
- thirteen specialty shops totaling 5936 m²;
- three restaurants totaling 760 m²;
- three leisure and entertainment uses totaling 7600 m²; and
- an indoor fitness centre of 605 m².

I also understand that the proposal necessitates the removal of 40 regulated trees.

Prior to expressing my view in relation to the proposal having regard to the specific provisions of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone, it think it informative to refresh our understanding of the policy intent behind the establishment of this zone in the first place.

As you would be aware, Council initiated the Salisbury South Mixed Use Bulky Goods – Retail Outlet, Entertainment and Leisure Precinct Development Plan Amendment (DPA) in May 2013 which was subsequently authorised by the Minister for Planning in December 2014. This was a developer funded DPA.



The rationale for rezoning this industrial land at the north western corner of Main north Road and Kings Road was to enable large format retail outlets, entertainment, leisure and recreation facilities on this strategically located and highly accessible site for the convenience and amenity of visitors as a regional attraction for northern Adelaide.

The economic analysis commissioned by Council in support of this DPA assessed the likely impacts on existing centres including the Salisbury Town Centre on the basis of large floor plate (predominately non food) retailing, not conventional supermarket and specialty retailing within smaller tenancies.

It is understood that the proponent and funder of this DPA, Commercial and General were seeking to establish a Costco or similar facility together with supporting bulky goods outlets and a range of entertainment/recreational uses. While this development did not proceed, the tailored policy framework remains in place.

With this in mind, it is appropriate to carefully consider the following policies expressed for the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone which will be used to guide the assessment of the application currently before Council, in particular that which relates to envisaged uses and form of development.

OBJECTIVES

- 1 A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises.
- 2 Development that contributes to the desired character and objectives of the zone.

DESIRED CHARACTER

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages. There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

The entertainment, leisure and recreation component is anticipated to include a range of indoor uses including cinema, rock climbing, health and fitness club, ten pin bowling, day spa, skate park and potentially a wave pool facility.

Development comprising on site manufacturing within a tenancy must have shop front sales and display area for the products on site and is to be a minor component of the zone.

Development will occur in a co-ordinated, integrated and holistic manner to achieve an efficient layout; minimise access points to Kings Road and Main North Road; minimise the length of driveways; and maximise pedestrian accessibility.

Development should occur so that expected land uses are developed concurrently to avoid the establishment of standalone land uses. Particularly the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses in order to ensure the mixed-use activities for the zone are achieved.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 The following forms of development are envisaged in the zone:
 - leisure and entertainment venues, including indoor recreation with a maximum total floor area in the order of 20 000 square metres across the zone
 - bulky goods outlet and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18 000 square metres across the zone
 - shops (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15 000 square metres per tenancy with a maximum total floor area across the zone in the order of 46 000 square metres
 - restaurants with a maximum total floor area in the order of 1200 square metres across the zone.

- 3 A minimum of 25 per cent of the total floor area should comprise entertainment, leisure and recreation land uses at any time across the zone, until such time that 20 000 square metres total floor area of leisure and entertainment land uses has been developed.

Consistent with the intent and rationale for the establishment of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone, policies expressed within the Development Plan state that retailing is to be in the form of bulky goods outlets and/or of large floor plates selling predominantly non-foodstuffs.

The desired character statement goes onto to say that this zone will be developed as a unique specialist centre, and will include a single large floor plate shop with a floor area between 10 000 square metres and 15 000 square metres and that up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs.

The desired character statement should not be interpreted as providing for up to 45 percent of the total retail floor area able to be used for the display and sale of foodstuffs. A single large floor plate shop such as a supermarket, which is predominantly for the display and sale of foodstuffs is a serious departure from this policy.

Most profoundly, the desired character statement makes it clear that this shop (singular) will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk. I fail to see how the mode of retailing proposed may reasonably be described as *unique* or *alternative*.

Apart from inclusion of several entertainment and recreational activities (no doubt in an endeavour by the Applicant to achieve greater alignment with the policy), the proposed development is very much conventional retailing of a scale and nature akin to a neighbourhood or possibly a district shopping centre.

While the corporate identity of the respective retailers is not specified in the application documents, it is understood that the supermarket operator is to be Coles and the Discount Department Store is to be K-Mart. As Council would be aware, such uses typically reside within a centre zone, not a bulky goods facility.

I think it entirely appropriate that Council requests the Applicant to be more forthcoming in respect to the corporate identity of the intended retailers so that an informed assessment may be made as to the actual nature of the use proposed. It is simply not acceptable to refer to these large shops as simply 'Major Retail 1 & 2'.

All of these matters lead me to believe that the proposal is seriously at variance with Development Plan policy and certainly does not display sufficient planning merit to warrant consent given the level of divergence away from clearly stated policies. It certainly could not be reasonably described as '*orderly and economic*'.



I would encourage Council to consider the economic and social implications arising from the approval of this development on established centres such as Salisbury Town Centre, not only in the more immediate term as result of some 16,000 square metres of conventional retailing, but that which the Zone may ultimately provide for.

If Council views conventional retailing as being acceptable in this location, then it stands to reason that this or other proponents may seek over time to achieve additional floor area up to the 46,000 square metres within the balance of the Zone, as suggested by Principle of Development Control 1.

Acknowledging that the Australian Government Productivity Commission and the Australian Competition and Consumer Commission (ACCC) advocate greater flexibility in town planning policies to reduce barriers to entry for new and emerging modes of retailing, such should not be construed as recommending total deregulation.

It is my opinion that there continues to be place for order and structure in planning policy when it comes to the spatial distribution and function of retail shopping and centre zones. Despite any suggestion to the contrary, this paradigm continues to be enshrined within current Development Plan policy which should be observed.

From an assessment point of view, I think it would border on reckless professional behaviour to proceed without the benefit of an expert retail impact assessment. If the Applicant is not inclined to provide such, then I think it incumbent upon Council to commission such a body of work for its consideration.

In summary, I am of the view that the proposal:

- is not a 'unique specialist centre';
- will not offer an 'alterative retail model';
- is not in accord with the 'hierarchy' of centers sought by the Development Plan;
- will 'hinder the development, function and viability of existing centres'

...and is therefore *seriously at variance* with the Development Plan.

As provided for, I seek the opportunity to appear before Council's Assessment Panel in order to speak further to these matters when this application is determined.

Yours faithfully

PHILLIP BRUNNING & ASSOCIATES PTY LTD

PHILLIP BRUNNING RPIA
Registered Planner

cc galdridge@salisbury.sa.gov.au
icaruso@salisbury.sa.gov.au
bgill@salisbury.sa.gov.au
dbalaza@salisbury.sa.gov.au
dpilkington@salisbury.sa.gov.au
icaruso@salisbury.sa.gov.au
jwoodman@salisbury.sa.gov.au
sbedford@salisbury.sa.gov.au
dbryant@salisbury.sa.gov.au

sreardon@salisbury.sa.gov.au
rzahra@salisbury.sa.gov.au
rcook@salisbury.sa.gov.au
greynolds@salisbury.sa.gov.au
bbrug@salisbury.sa.gov.au
swhite@salisbury.sa.gov.au
cbuchanan@salisbury.sa.gov.au
dproleta@salisbury.sa.gov.au
ramsay@parliament.sa.gov.au

Michael DiMauro & Associates
BARRISTERS & SOLICITORS

- Telephone (08) 8212 3000
- Facsimile (08) 8212 3666
- Level 13, 90 King William St, Adelaide, SA 50
- P.O. Box 3011 Rundle Mall SA 5000

25 October 2017

Mr John Harry
Chief Executive Officer
12 James Street
SALISBURY SA 5108



Attention: Mr Terry Sutcliffe, General Manager City Development

By Post to the address above and by Email to: tsutcliffe@salisbury.sa.gov.au

Dear Mr Harry

Development Application – 361-1589-2017

I have been instructed to write to you on behalf of the DiMauro Group of Companies, the owners of the Parabanks Shopping Centre in relation to the abovementioned application.

I have taken advice from Michael Roder SC as to the correct categorisation of the development and whether the development is seriously at variance with the Development Plan.

I have also received an advice in relation to the proposed development from an expert consultant planner, Mr Brunning.

Having taken that advice, I am instructed to make submissions as follows:

Categorisation

I am informed by Mr Brunning, who has reviewed the relevant documentation supporting the application, that it will be necessary to remove a number of regulated trees from the land in order to undertake the proposed development.

Accordingly, it is necessary for Council to determine that the nature of the development includes the removal of regulated trees.

That this is the case has been put beyond any doubt by the decision of Justice Blue in *Parabanks Shopping Centre Pty Ltd v The City of Salisbury and Another* (2013) SASC 168 at [203]:

“I find that in December 2012 when it granted development plan consent, the council was unaware of the existence of the regulated tree. If it had been aware, it ought to have determined that the nature of the development encompassed removal of regulated trees. However, its failure to do so in

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A.B.N. 62 670 434 495

*ignorance of the existence of the regulated trees does not render the grant of development plan consent invalid”.*¹

The proposed development includes the removal of regulated trees.

The removal of regulated trees is not assigned to Category 1 by either the Development Plan or Schedule 9 of the Development Regulations.

The Zone provisions in Council’s Development Plan purport to assign all forms of development which are not listed as Category 1 development to Category 2.

Assuming, for present purposes, that this is a valid assignation under the Act, (whilst reserving our rights on that issue), it would follow, that because one element of the development falls within Category 2, that the development as a whole is at least a Category 2 development and requires public notification.

Seriously at Variance

Section 35(2) of the *Development Act* provides that:-

“...a development that is assessed by a relevant authority as being seriously at variance with the relevant Development Plan must not be granted consent”.

Accordingly, section 35(2) of the Act has the effect that the Council has no power or jurisdiction to grant approval in the event that it assesses the development as being seriously at variance with the Development Plan.

As Mr Brunning’s advice points out, even if the Council did not assess the proposal as being seriously at variance with the Development Plan, the Council should refuse this proposal on the basis that it does not sufficiently comply with the provisions of the Plan to warrant consent.

In particular, even if the proposal were not adjudged to be seriously at variance with the Plan, the Council should not consent to the development where it does not comply with clearly expressed planning principles unless there is good planning reason to do so.²

However, in this case, it is clear that the Council does not have power to grant consent and the proposal is seriously at variance with the Development Plan. Any assessment by the Council that the proposal was not seriously at variance with the Development Plan would be legally unreasonable.

As the advice of Mr Brunning establishes, there are two main areas in which this proposal is seriously at variance with the Development Plan. First, insofar as it provides for or allows the development of the centre with its main retail anchors being a traditional full line

¹ Emphasis is added in this advice unless otherwise stated

² *Gawler v Impact Investments* 2007 SASC 356 at [22], [32-33],[79-81]

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supermarket together with a store such as a K-Mart it is entirely contrary to the Centres provisions of the Plan.

Secondly, and as a corollary of the first departure, the proposal in its current form would permit the development of the centre in a way which is inconsistent with the desired character of the zone and the reason for its creation. Furthermore, it would frustrate the achievement of the Zone objectives especially the express and specific desire for a **single** large retail tenancy with a floor area in the order of 10,000- 15,000m² selling a majority of non-food stuff items for bulk purchase by individuals and business (such as a Costco style development).

The proposal is completely inconsistent with the desire of the Plan and would frustrate its objective. In those circumstances the proposal must be seriously at variance with the Plan.

The nature of the development

Mr Brunning has inspected the Council file.

I note that importantly, the proposal does not involve a large single floor plate with a floor area between 10,000 to 15,000m² as desired. Accordingly, it does not involve such a shop which predominantly sells goods other than foodstuffs in bulk to customers including small and medium business.

Accordingly it conflicts with the desired character of the zone and both Objective 1 and Objective 2 of the Zone Provisions.

Instead the proposal involves two larger style tenancies, of 6,205m² and 3,910 m² respectively.

The proposal does not identify or limit the use of those facilities.

Mr Brunning has been advised that the identity of the two major retail tenants are understood to be K-Mart and Coles.

Significantly, whether that was the intention or not, the proposal in its current form would permit the development of those premises in that way or in a way which would be even more offensive to the provisions of the Plan.

The proposal must be assessed on the basis of what could be constructed pursuant to the approval.³

Accordingly, the proposal contains a substantial retail element of the kind which would be found in a traditional retail centre, perhaps of a district order. The proposal as a whole is

³ See *Remibisi v City of Salisbury* [2008] SAERDC 83

consistent with the kind of development that one might see in the core of a retail centre and its periphery.

Accordingly, the proposal is clearly at odds with the relevant provisions of the Centre's Plan referred to in Mr Brunning's report. Further, it is likely to frustrate the achievement of the Centres policy Objectives of the Plan.

A corollary of this is that, not surprisingly, the proposal involves a serious and important departure from the particular provisions of the Plan relating to this zone. It would be surprising if the Zone provisions provided for such development which was fundamentally inconsistent with Council wide centres policy. The Zone provisions do not envisage such a development

The correct approach is to distil the overall "thrust" and intention from the relevant Zone provisions.⁴

Once this task is undertaken, it is clear that the proposal is fundamentally inconsistent with those provisions.

The purpose of the Plan, as revealed particularly in the Objectives and the Desired Character Statement is to provide an **alternative and unique** form of retail model involving the provision of a large "Costco" style store with a floor area of 10,000-15,000m². The purpose is to provide an **alternative** for the retailing of items in **bulk** not only for retail customers, but for **small and medium businesses**.

A proposal which instead provides for or permits a K-Mart and a Coles supermarket is entirely at odds with the clearly and specifically stated policy intent and would frustrate and impede the achievement of the development envisaged for the Zone.

When that is understood, it is clear that the proposal is seriously at variance with the provisions of the Development Plan.⁵

Further, even if the view were taken that for some reason the desired objective was not achievable, that would not have the consequence that the development could be approved. It would simply mean that consideration might be given to a Plan Amendment Report.⁶

As the proposal reflects an '**important**' departure from the Development Plan and it involves something which is plainly not **slight or trifling**, it is seriously at variance with it.⁷

⁴ *Mitcham v Freckmann* (2000) 76 SASR 145

⁵ *Mar Mina v City of Marion & Another* (2008) SASC 120; *Alexandra Council v Strath Hub Pty Ltd* (2003) SASC 302 at para. 35.

⁶ See *Alexandrina Council* at [39].

⁷ See *Mar Mina* at [33].

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The proposal offends and compromises the achievement of Objective 1 in that it proposes or permits a supermarket which is not a form of development envisaged in Objective 1 and is a form of development which should be located in a retail core of a centre.

The proposal offends and impedes the realisation of Objective 2 in that the development clearly does not contribute to the desired character of the zone in that:-

1. The proposal involving or permitting a supermarket and a K-Mart could not be described as a “**unique specialist centre**”;
2. The proposal involves a supermarket which is not envisaged as part of the desired character;
3. The retail components of the proposal do not offer an “**alternative model**” to that typically found in traditional centres. To the contrary, the proposal for a supermarket, a K-Mart with bulky goods outlets at the periphery is entirely consistent with facilities provided in the core or periphery of neighbourhood, district and regional centres.

Critically, the proposal does not include the development of “**a single large floor plate shop** with a floor area between 10,000m² and 15,000m² predominantly selling non-food stuffs.

Accordingly it does not provide what could properly be described as “**an alternative retail model for small and medium businesses** and individuals to purchase products in **bulk**”.

The clearly expressed thrust of the Plan cannot be subverted by providing two smaller retail stores which provide traditional retail facilities.

Clearly the very purpose of, and premise upon, which the zone was created will not be achieved if this development is approved.

Accordingly, it is not open to the Council to conclude that the proposal is otherwise than seriously at variance with the Development Plan. The Council has no jurisdiction or power to approve the proposed development.

This submission is made without prejudice to any further submissions that might be made upon any further notification by the Council of the proposed development.

Yours faithfully



Michael DiMauro

Direct Line (08) 8212 3000
Direct Fax (08) 8212 3666
Direct Email mdimauro@mdmalaw.com.au

Salisbury 0451 010

25 October 2017

Mr John Harry
Chief Executive Officer
City of Salisbury
12 James Street
SALISBURY SA 5108

Attention: Mr Terry Sutcliffe, General Manager City Development



Town Planning
Development Advice
Strategic Management

27 OCT 2017

Dear John,

Development Application 361/1589/2017

I refer to the above mentioned Development Application by GIC Kings Road Pty Ltd lodged on 30 August 2017 that seeks Development Plan Consent to establish a shopping and leisure complex with ancillary car parking and landscaping on land at 1460 Main North Road, Salisbury South.

I have been engaged by the DiMauro Group of Companies to provide the following advice for your consideration as such relates to Development Plan policy and the objects of the Development Act, 1993 being the *proper, orderly and efficient planning and development in the State*.

The DiMauro Group of Companies, as owners of the Parabanks Shopping Centre, consider it necessary to make submissions in respect to the proposed development in so far it presents a significant threat to the future success of their shopping centre and the Salisbury Town Centre more generally.

The town planning opinions I express below should be read in conjunction with the legal submission by MDMA Law which is informed by advice taken from Mr Michael Roder, SC. We are of the view that Council ought to assign this application Category 2 for the purpose of Section 38 and undertake the necessary public notice procedure.

For the reasons outlined below, I say that Council ought to form the view that the proposal is *seriously at variance* with the relevant Development Plan and must not grant consent to this application. My Client reserves its rights in relation to the commencement of review proceedings in this regard.

Fundamentally, I say that the proposal amounts to a de facto centre that would compromise the function and integrity of the hierarchy of centres otherwise sought by the Development Plan, which seeks as I understand it, spatial distribution of retail shopping and supporting facilities in a rational and economic manner.

Phillip Brunning & Associates

ABN 40 118 993 621

26 Wakeham Street
Adelaide SA 5000
Telephone 08 8232 5686
Mobile 0407 019 748
phill@phillipbrunning.com



More particularly, I set out those policies expressed within the General Section of the Development Plan that relate to Centres and Retail Development, noting that the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone provides more specific guidance in relation to the nature and form of development sought in this location.

OBJECTIVES

- 1 Shopping, administrative, cultural, community, entertainment, educational, religious and recreational facilities located in integrated centres.
- 5 Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.
- 6 Development of centres outside of Greater Adelaide in accordance with the following hierarchy:
 - (a) Regional Centre
 - (b) District Centre
 - (c) Town Centre (for smaller towns with a single centre zone)
 - (d) Local Centre (subsidiary centres for towns with a regional or district centre).

PRINCIPLES OF DEVELOPMENT CONTROL

Retail Development

- 10 A shop or group of shops with a gross leaseable area of greater than 250 square metres should be located within a centre zone.
- 11 A shop or group of shops with a gross leaseable area of less than 250 square metres should not be located on arterial roads unless within a centre zone.
- 12 A shop or group of shops located outside of zones that allow for retail development should:
 - (a) be of a size and type that will not hinder the development, function or viability of any centre zone
 - (b) not demonstrably lead to the physical deterioration of any designated centre
 - (c) be developed taking into consideration its effect on adjacent development.

The Development Plan states very clearly that a shop or group of shops located outside of a centre zone should “*not demonstrably lead to the physical deterioration of any existing centre zone*”. On my review of the application documents, no analysis in this regard has been provided by the Applicant.

As I understand it, the proposal comprises:

- a full line supermarket of 3910 m²;
- a discount department store of 6205 m²;
- four bulky goods tenancies totaling 2900 m²;
- thirteen specialty shops totaling 5936 m²;
- three restaurants totaling 760 m²;
- three leisure and entertainment uses totaling 7600 m²; and
- an indoor fitness centre of 605 m².

I understand that it will be necessary to remove a number of *regulated trees* from the land for which no supporting information has been provided by the Applicant. As per the submission by MDMA Law, due to the proposal resulting in a tree damaging activity, Category 2 notification should be undertaken.

Prior to expressing my view in relation to the proposal having regard to the specific provisions of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone, it think it informative to refresh our understanding of the policy intent behind the establishment of this zone in the first place.



As you would be aware, Council initiated the Salisbury South Mixed Use Bulky Goods – Retail Outlet, Entertainment and Leisure Precinct Development Plan Amendment (DPA) in May 2013 which was subsequently authorised by the Minister for Planning in December 2014. This was a developer funded DPA.

The rationale for rezoning this industrial land at the north western corner of Main north Road and Kings Road was to enable large format retail outlets, entertainment, leisure and recreation facilities on this strategically located and highly accessible site for the convenience and amenity of visitors as a regional attraction for northern Adelaide.

The economic analysis commissioned by Council in support of this DPA assessed the likely impacts on existing centres including the Salisbury Town Centre on the basis of large floor plate (predominately non food) retailing, not conventional supermarket and specialty retailing within smaller tenancies.

It is understood that the proponent and funder of this DPA, Commercial and General were seeking to establishment a Costco or similar facility together with supporting bulky goods outlets and a range of entertainment/recreational uses. While this development did not proceed, the tailored policy framework remains in place.

With this in mind, it is appropriate to carefully consider the following policies expressed for the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone which will be used to guide the assessment of the application currently before Council, in particular that which relates to envisaged uses and form of development.

OBJECTIVES

- 1 A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises.
- 2 Development that contributes to the desired character and objectives of the zone.

DESIRED CHARACTER

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages. There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

The entertainment, leisure and recreation component is anticipated to include a range of indoor uses including cinema, rock climbing, health and fitness club, ten pin bowling, day spa, skate park and potentially a wave pool facility.

Development comprising on site manufacturing within a tenancy must have shop front sales and display area for the products on site and is to be a minor component of the zone.



Development will occur in a co-ordinated, integrated and holistic manner to achieve an efficient layout; minimise access points to Kings Road and Main North Road; minimise the length of driveways; and maximise pedestrian accessibility.

Development should occur so that expected land uses are developed concurrently to avoid the establishment of standalone land uses. Particularly the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses in order to ensure the mixed-use activities for the zone are achieved.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 The following forms of development are envisaged in the zone:
 - leisure and entertainment venues, including indoor recreation with a maximum total floor area in the order of 20 000 square metres across the zone
 - bulky goods outlet and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18 000 square metres across the zone
 - shops (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15 000 square metres per tenancy with a maximum total floor area across the zone in the order of 46 000 square metres
 - restaurants with a maximum total floor area in the order of 1200 square metres across the zone.

- 3 A minimum of 25 per cent of the total floor area should comprise entertainment, leisure and recreation land uses at any time across the zone, until such time that 20 000 square metres total floor area of leisure and entertainment land uses has been developed.

Consistent with the intent and rationale for the establishment of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone, policies expressed within the Development Plan state that retailing is to be in the form of bulky goods outlets and/or of large floor plates selling predominantly non-foodstuffs.

The desired character statement goes onto to say that this zone will be developed as a unique specialist centre, and will include a single large floor plate shop with a floor area between 10 000 square metres and 15 000 square metres and that up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs.

The desired character statement should not be interpreted as providing for up to 45 percent of the total retail floor area able to be used for the display and sale of foodstuffs. A single large floor plate shop such as a supermarket, which is predominantly for the display and sale of foodstuffs is a serious departure from this policy.

Most profoundly, the desired character statement makes it clear that this shop (singular) will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk. I fail to see how the mode of retailing proposed may reasonably be described as *unique* or *alternative*.

Apart from inclusion of several entertainment and recreational activities (no doubt in an endeavour to achieve greater alignment with the policy), the proposed development is very much conventional retailing of a scale and nature akin to a neighbourhood or possibly a district shopping centre.

While the corporate identity of the respective retailers is not specified in the application documents, it is understood that the supermarket operator is to be Coles and the Discount Department Store is to be K-Mart. As Council would be aware, such uses typically reside within a centre zone, not a bulky goods facility.



I think it entirely appropriate that Council requests the Applicant to be more forthcoming in respect to the corporate identity of the intended retailers so that an informed assessment may be made as to the actual nature of the use proposed. It is simply not appropriate to refer to these large shops as 'Tenancy 1' and 'Tenancy 2'.

All of these matters lead me to believe that the proposal is *seriously at variance* with Development Plan policy and certainly does not display sufficient planning merit to warrant consent given the level of divergence away from clearly stated policies. It certainly could not be reasonably described as '*orderly and economic*'.

I would encourage Council to consider the economic and social implications arising from the approval of this development on established centres such as Salisbury Town Centre, not only in the more immediate term as result of some 16,000 square metres of conventional retailing, but that which the Zone may ultimately provide for.

If Council views conventional retailing as being acceptable in this location, then it stands to reason that this or other proponents may seek over time to achieve additional floor area up to the 46,000 square metres within the balance of the Zone, as suggested by Principle of Development Control 1.

Acknowledging that the Australian Government Productivity Commission and the Australian Competition and Consumer Commission (ACCC) advocate greater flexibility in town planning policies to reduce barriers to entry for new and emerging modes of retailing, such should not be construed as recommending total deregulation.

It is my opinion that there continues to be place for order and structure in planning policy when it comes to the spatial distribution and function of retail shopping and centre zones. Despite any suggestion to the contrary, this paradigm continues to be enshrined within current Development Plan policy which should be observed.

Yours faithfully

PHILLIP BRUNNING & ASSOCIATES PTY LTD

A handwritten signature in black ink, appearing to be 'P Brunning', is written over a circular stamp. The signature is written in a cursive style.

PHILLIP BRUNNING RPIA
Registered Planner

Ref: 17ADL-0397

15 November 2017

Mr Terry Sutcliffe
City of Salisbury
PO Box 8
SALISBURY SA 5108

Email: tsutcliffe@salisbury.sa.gov.au



Suite 12
154 Fullarton Road
ROSE PARK SA 5067

08 8333 7999
www.urps.com.au
ABN 55 640 546 010

Dear Terry

Development at 1460 Main North Road, Salisbury South (DA361/1589/2017)

Introduction

I make this submission in respect to the above proposal by GIC Kings Road Pty Ltd for the construction of a shopping and leisure complex with ancillary car parking and landscaping at 1460 Main North Road, Salisbury South.

The Taplin Group (herein after "Taplin") has requested I comment on the above, in particular its performance against the Development Plan policy most relevant to this site.

Our knowledge of this matter was provided by the representatives of DiMauro Group of Companies, whose interests are similar to that of my client insofar as they are concerned about the proposal giving rise to serious impacts on the commercial viability of their retail trading.

As you may be aware, Taplin are the present owners of the Mawson Central Shopping Centre. The Mawson Central Shopping Centre includes a Woolworths supermarket and a lawful approval for an ALDI supermarket facility.

The size of the proposed Kings Road supermarket facility is of a scale such that we have serious concerns with how this proposal may undermine the viability of the supermarkets at Mawson Central, and the potential serious negative social and economic impacts this may cause. This proposal is clearly contrary to a range of general and specific zone policies as discussed below.

Background

As Council will appreciate, the Development Plan policies affecting this site were introduced into Council's Development Plan on 18 December 2014, via the City of Salisbury Mixed Use (Bulky Goods, Entertainment and Leisure) Zone Development Plan Amendment (DPA).

shaping great communities

The Investigations section of the DPA were supported by numerous retail analysis reports. Council also commissioned its own independent retail planning investigations. It is our understanding that the vast majority of these reports concluded that significant food retailing on the subject site would have a significant detrimental impact on a number of centres, including the Salisbury City Centre and the Mawson Lakes Centre.

The DPA was instituted on the stated objective that large scale food retailing (as is currently being proposed) would not be incorporated within the Mixed Use (Bulky Good, Entertainment and Leisure) Zone. In part, that is the reason why the zone was not defined as a "centre".

To ensure a full and proper assessment is made of this development application, we request that Council identify, review and release all the specialist retail investigations associated with this DPA.

Such information will clearly illustrate the likely impact on food retailing within the mentioned centres, contrary to the provisions of the existing Development Plan.

General – Centres and Retail Development

Development Plan policies seek to manage the proper establishment of retail development so as to ensure such development does not "....*demonstrably lead to the physical deterioration of any designated centre*".

In addition, the Development Plan also reconfirms a centre hierarchy to ensure the equitable distribution of services and goods that ultimately benefit the total Council community.

Approval of the proposed development will significantly undermine the Development Plan's General Centres and Retail Development policies and is particularly at odds with the following Objectives and Principles of Development Control:

Objective 5

Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.

Objective 6

Development of centres outside of Greater Adelaide in accordance with the following hierarchy:

- (a) Regional Centre
- (b) District Centre
- (c) Town Centre (for smaller towns with a single centre zone)
- (d) Local Centre (subsidiary centres for towns with a regional or district centre).

Principles 10 and 12

A shop or group of shops with a gross leaseable area of greater than 250 square metres should be located within a centre zone.

A shop or group of shops located outside of zones that allow for retail development should:

- (a) be of a size and type that will not hinder the development, function or viability of any centre zone
- (b) not demonstrably lead to the physical deterioration of any designated centre
- (c) be developed taking into consideration its effect on adjacent development.

(my underline)

Fundamentally, the scale of the proposed food-retailing is at odds with Council's centre hierarchy and contrary to the justification for the zone promoted by the mentioned DPA. The DPA investigations specifically noted that no large-scale food retailing was to occur within the zone.

Zone Policies

The land falls within the Mixed Use (Bulky Good, Entertainment and Leisure) Zone (refer Zone Map Sal/4). The subject zone does not envisage the form of development proposed which includes a large format supermarket selling predominantly foodstuffs.

This view is supported by the below zone policies.

Objective 1

A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

Objective 2

Development that contributes to the desired character and objectives of the zone.

Desired Character

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages. There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

Development should occur so that expected land uses are developed concurrently to avoid the establishment of standalone land uses. Particularly the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses in order to ensure the mixed-use activities for the zone are achieved.

...

Principles 1 and 3

The following forms of development are envisaged in the zone:

- leisure and entertainment venues, including indoor recreation with a maximum total floor area in the order of 20 000 square metres across the zone
- bulky goods outlet and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18 000 square metres across the zone

- shops (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15 000 square metres per tenancy with a maximum total floor area across the zone in the order of 46 000 square metres
- restaurants with a maximum total floor area in the order of 1200 square metres across the zone.

(my underline)

By contrast to that which is proposed, and in addition to its desire for entertainment/leisure uses and service trade, the subject zone has a clear desire for bulky goods outlets and large floorplate retail use selling predominantly non-foodstuffs.

It is clear the zone sets out to offer a different retail experience to consumers to that which is typically found in centres offering a “unique specialist centre” distinct from typical neighbourhood or district centre type zones. This policy setting offers an opportunity for the sale of foodstuffs but within a large floor plate shop and only up to 45 per cent of this tenancy.

Such well-defined land use criteria have not been met by the proposal with the provision of a supermarket development (more particularly we understand a Coles in the order of 3,910 square metres in floor area) and is therefore clearly at odds with the zone objectives.

Given the significant ramifications of the proposed development on existing centres (that provide a range of social and economic benefits), and the clear intention of Development Plan policies, the application should be refused.

At the very least, a comprehensive and independent retail and planning analysis from a suitably qualified professional/s should be provided that references how existing Development Plan policy has been achieved which can demonstrate that those important investigations previously undertaken to inform the DPA are now without merit.

Conclusion

The subject proposal is very clearly at odds with the specific land use policy of the zone and also the General Section policies regarding centre development.

Without appropriate retail modelling, we have serious concerns about how the proposal will affect the viability of the Mawson Central Shopping Centre.

The application should be refused in the manner presented.

Yours sincerely



Matthew King RPIA
Director

Mr Aaron Curtis
Team Leader Planning
Development Services
City of Salisbury
12 James Street
SALISBURY SA 5108

Attention: Mr Terry Sutcliffe, General Manager City Development

Dear Aaron,

RE: Development Application 361/1589/2017, 1460 Main North Road, Salisbury South

I refer to the above stated Development Application which was lodged with Council by GIC King Road Pty Ltd on 30 August 2017.

Green Light Planning Solutions and Botten Levinson Lawyers, on behalf of our client 83 Saints Road Nominees, have been engaged to provide advice for your consideration in relation to this application as it relates to the City of Salisbury Development Plan and the Development Act, 1993.

The planning opinions outlined below should be read in conjunction with the legal advice prepared by Mr Tom Game, Botten Levinson lawyers. We are of the opinion that the proposal is '*seriously at variance*' with Council's Development Plan and as such consent cannot be granted. My client reserves their rights in regard to this opinion and future review proceedings available to them.

My client has taken the significant and unusual step of sending a copy of this advice to each of Council's elected members in light of the active role the Council has played in retail planning policy over many years, culminating in their selection and the ultimate rezoning of the new Saints Road neighbourhood shopping centre to service Salisbury Plain and the surrounding environs.

Background

The City of Salisbury has played a very dynamic role in retail policy development over many years, dating back to the mid 2000's with a variety of studies and investigations of an economic and retail nature including studies by Hassell, URPS and Alistair Tuttle Pty Ltd and ultimately SGS Economics and Planning.

Importantly the studies identified the need for a new neighbourhood centre to serve the local retail needs of the Salisbury Heights and Salisbury East communities and surrounding locality. It was found that a considerable number of residents from the Salisbury area were shopping more frequently at the Golden Grove District Centre in the City of Tea Tree Gully for their weekly shopping needs and not being properly serviced by a conveniently accessible neighbourhood shopping centre.

Council resolved to support the establishment of a new Neighbourhood Centre Zone to attract residents back to shopping within their communities, provide convenience and choice to customers and keep local retail spending within the local area.

In August 2008, Council commissioned investigations undertaken by SGS Economics and Planning to determine the best site and location to service the retail shopping demands

The Saints Road site was selected as the preferred site because of its location, lack of site constraints and accessibility by arterial roads and public transport.

PO Box 158 Kensington Park SA 5068

M 0406 124 977

E greenlight@internode.on.net

Since then my client has been required to undertake another separate rezoning for their neighbourhood centre zoned land and has been through several development applications and the signing of two land management agreements (LMA's) with Council to cap or limit the size of their neighbourhood centre regardless of any future policy change.

The LMA was put in place, as we understand, to ensure the impact on any surrounding retail centres was contained and minimised, in particular the Salisbury Town Centre and Parabanks.

Yet with the approval for the Council selected Neighbourhood Centre at Saints Road only issued in November 2017 and before construction has commenced, Council is considering a proposal for a new retail centre of close to 20,000m² of retail and bulky goods shops as part of a Stage 1 development just over 2.0 kilometers to the immediate south of the Saints Road site.

I understand no economic impact assessment or retail catchment demand study has been undertaken as part of this Kings Road application.

Why is this the case when this type of rigor around retail impacts was required of the proponents of the Saints Road neighbourhood centre as part of their application following the approval of the retail limit expansion DPA for their site? In this case, the applicant was required to undertake an economic impact assessment and retail analysis to be submitted as part of the development application post the rezoning of the land at 83 Saints Road.

This appears to be somewhat of an oversight and in the absence of any economic and retail assessment by the applicant, the Council has no choice but to undertake its own retail demand study to ascertain if in fact a regional size retail development of this magnitude can be justified in this locality.

It is important to note that the Kings Road site was available for the Council to consider when undertaking its investigations on the most appropriate location for a new neighbourhood centre for the City of Salisbury some years ago.

It was not selected by the Council.

There is no doubt that this proposal, if approved, will have a significant and profound impact on my client's centre especially the independent Foodland supermarket and therefore the other tenancies by reducing potential patronage. This is a real risk to the viability of the neighbourhood shopping centre the Council decided was required in this location.

City of Salisbury Mixed Use (Bulky Goods, Entertainment and Leisure) Zone DPA

As Council would be aware, the Development Plan policy affecting this site was introduced into Council's Development Plan in December 2014 via the above stated DPA. The Investigations undertaken as part of the DPA were supported by a variety of retail analysis and demand impacts reports. In addition, Council undertook its own independent retail investigations.

The DPA was supported on the basis that **large scale food retailing** (as is now proposed) **would not be incorporated** within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone

It would now appear that this proposal is an alternate means to obtaining a centre on this site which is totally unsatisfactory.

The 2014 Mixed Use (Bulky Goods, Entertainment and Leisure) Zone DPA which has given rise to this development proposal made a number of comments in the Statement of Investigations in relation to traditional retail and future retail on the site.

It was never intended that the Kings Road site become a site for traditionally convenience retailing such as is now proposed as part of this application.

The following extracts from the Investigations in 2014 demonstrate this.....

Council seeks to investigate rezoning the site to facilitate development of a significant mixed use precinct which is proposed to include a combination of land uses including:

PO Box 158 Kensington Park SA 5068

M: 0406 124 977

E: greenlight@internode.on.net

- *Entertainment, Leisure and Recreation precinct potentially including a cinema complex, indoor wave pool, indoor rock climbing, ten pin bowling and bmx/skate centre)*
- *bulky goods (e.g. a home improvement superstore)*
- *outlet retail comprising premium outlet shops with a minimum floor area of 200 square metres*
- *'bulky retail' component providing a large format (minimum 10,000 square metres floor area), warehouse style shop providing bulk purchasing of a limited number of brand name products for small and medium businesses and individuals (with a limit of no more than 45% of products being foodstuff)*

*The DPA has been drafted to ensure that the site supports a number of diverse facilities that are **not focused around traditional retailing**, but rather on innovative and premium outlet retailing and ELR services (see below).*

The investigations were undertaken with the assumption that site will be developed as a unique land use mix as a lifestyle, retail and leisure destination with a number of broad elements including:

- bulky goods/home improvement.*
- fuel filling, restaurant and takeaway.*
- outlet retail.*
- bulky retail.*
- entertainment, leisure and recreation (ELR).*

*Unlike traditional centres this centre **will not contain supermarket(s)** predominantly for the sale of foodstuffs and smaller speciality shops (less than 180 square metres) that usually make up a large part of the retail mix of a town centre*

And finally, **Minimal food sales as no proposed supermarket (food retailing be an ancillary use);**

Yet this proposal is all but convenience retailing with the developer's own media release making reference to a Coles supermarket and K-Mart retail shop.

This is critical, as Council would appear to be relying on the previous DPA retail policy work to inform their retail views now, rather than undertaking a review of its most recent independent retail assessment and demand analysis to ascertain if the catchment can support and sustain a regional size traditional retail centre without demonstrably leading to the physical deterioration of any existing centre zone. This is paramount given the Statement of Investigations that informed the current Development Plan explicitly stated that it was **not focused on traditional retailing and no supermarket was proposed.**

Demand for a shopping centre of this size is unsubstantiated and the commercial viability impact on the Saints Road neighbourhood centre and higher order discretionary spending retail centres such as Hollywood Plaza and Parabanks will be significant.

Therefore, in our opinion, Council must as an urgent priority, commission a review of its most recent economic and retail impacts report to ensure that a full and proper assessment of this development application is made before the application can progress any further

An independent retail analysis and catchment demand assessment (which incorporates the floor area approved for Saints Road in November 2017) is the only means by which the Council can be sure that this proposal is;

1. of a size and type that will not hinder the development, function or viability of any centre zone;
2. not demonstrably lead to the physical deterioration of any designated centre;

PO Box 158 Kensington Park SA 5068

M 0406 124 977

E greenlight@internode.on.net

Centres and Development

The Council's Development Plan expresses a number of objectives and principles of development control in relation to centres and seeks to manage the development of retail centres to ensure that development does not "demonstrably lead to the physical deterioration of any designated centre".

Importantly, the Development Plan also calls for the development of centres with a hierarchy based function to ensure each type of centre provides goods and services commensurate with its role.

If Council is to approve this proposal, there is no question it will significantly and detrimentally impact upon other centres and will be at odds with the the Development Plan's General Centres and Retail Development policies and more specifically the following Objectives and PDC's.

Objective 5

Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.

Objective 6

Development of centres outside of Greater Adelaide in accordance with the following hierarchy:

- (a) Regional Centre*
- (b) District Centre*
- (c) Town Centre (for smaller towns with a single centre zone)*
- (d) Local Centre (subsidiary centres for towns with a regional or district centre).*

Retail Development

Principles

- 10 *A shop or group of shops with a gross leaseable area of greater than 250 square metres should be located within a centre zone.*
- 12 *A shop or group of shops located outside of zones that allow for retail development should:
 - (a) be of a size and type that will not hinder the development, function or viability of any centre zone*
 - (b) not demonstrably lead to the physical deterioration of any designated centre*
 - (c) be developed taking into consideration its effect on adjacent development**

The proposal is not aligned with the Council wide section of the Development Plan and is manifestly at odds with the type of development outlined in the DPA Investigations. The Development Plan is clear that shops or group of shops greater than 250 square metres should be located within a centre zone.

OBJECTIVES 1

- 1 *A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises.*
- 2 *Development that contributes to the desired character and objectives of the zone.*

DESIRED CHARACTER

PO Box 158 Kensington Park SA 5068

M 0406 124 977

E greenlight@internode.on.net

The zone will be developed as a unique specialist centre accommodating a **mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.**

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages.

There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to **offer an alternative model to that typically found in traditional centres** by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a **single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs.** This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an **alternative retail model to smaller tenancies found within other centres.**

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 The following forms of development are envisaged in the zone:
 - leisure and entertainment venues, including indoor recreation with a maximum total floor area in the order of 20 000 square metres across the zone
 - bulky goods outlet and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18 000 square metres across the zone
 - shops (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15 000 square metres per tenancy with a maximum total floor area across the zone in the order of 46 000 square metres
 - restaurants with a maximum total floor area in the order of 1200 square metres across the zone.
- 3 A minimum of 25 per cent of the total floor area should comprise entertainment, leisure and recreation land uses at any time across the zone, until such time that 20 000 square metres total floor area of leisure and entertainment land uses has been developed.

The desired character clearly states that "the retail components are envisaged to **offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model**".

The proposal does not adhere to the zone and desired character, it completely ignores the zone provisions which clearly seek entertainment/leisure and service trade uses in conjunction with bulky goods and **a single large floor plate retail use that is predominantly non –food-stuffs.**

The lack of detail with respect to the proposal is also perplexing, with the applicant labelling retail shops as Tenancy 1 and Tenancy 2 as opposed to being upfront as to the type of retail shop occupying to space. The proposal does not offer an alternative retail model to a traditional centre, with developer lead media reporting a Coles supermarket of some 3,900 square metres and a separate tenancy understood to be K-Mart of some 6,200 m2 being proposed.

This proposal is quite simply retail with no detail, it is fundamentally at odds with the Council wide and zone provisions and Council has no option but to refuse this application.

PO Box 158 Kensington Park SA 5068

M 0406 124 977

E greenlight@internode.on.net

Summary

Council has undertaken an enthusiastic role over many years in developing its retail policies and retail policy framework.

There is precedent for retail proponents needing to undertake economic impacts assessment and retail catchment analysis and modelling as part of their development applications post the rezoning of land for retail land uses, as has been required of the Saints Road Neighbourhood Centre.

There is also precedent for Council to undertake their own independent analysis and review of that work in order to form their own views as to the needs of and impacts on the broader retail catchment.

An independent retail analysis and catchment demand assessment (which incorporates the floor area approved for Saints Road in November 2017) is the only means by which the Council can be sure that this proposal is;

1. of a size and type that will not hinder the development, function or viability of any centre zone;
2. not demonstrably lead to the physical deterioration of any designated centre;

This has not occurred here which is most surprising given the size and magnitude of this retail development proposed outside of a designated centre zone.

Council has also made additional requirements of other proponents in terms of requiring them to sign land management agreements capping the size of their retail developments regardless of future policy changes as is the case for Saints Road Neighbourhood Centre.

Notwithstanding the above, the proposals fails to meet the requirements of the Council's Development Plan policies and is fundamentally at odds with the Development Plan.

Council must as an urgent priority, commission a review of its most recent retail and catchment modelling (likely the SGC Economics and Planning report) to ensure that a full and proper assessment of this development application is made before the application can progress any further.

If Council requires any further information, or wishes to discuss the matter further, please contact the undersigned on telephone 0406 124 977.

Yours sincerely



Amanda Price-McGregor
managing principal
green light planning solutions

19 December 2017

Cc Mayor Gillian Aldridge
Cc City of Salisbury Elected members

PO Box 158 Kensington Park SA 5068

M 0406 124 977

E greenlight@internode.on.net



Our ref: THG/217216

20 December 2017

Ms Amanda Price-McGregor
Green Light Planning Solutions
PO Box 158
KENSINGTON PARK SA 5068

By email: greenlight@internode.on.net

Dear Amanda

DA 361/1589/2017 - Kings Junction Shopping Centre - 1460 Main North Road, Salisbury South

You have sought my advice on whether the above proposal is "seriously at variance"¹ with the Council's Development Plan.

For the reasons that follow it is my opinion that the proposed development is indeed seriously at variance with the Development Plan and must not be granted consent.

Seriously at variance – the test

Section 35(2) of the *Development Act* prohibits a relevant authority from granting consent to a development that is, in the opinion of that authority, seriously at variance with the relevant Development Plan.

Firstly, it "requires an examination on what is the essential thrust and objective of the Development Plan... so far as they apply to the land the subject of the intended development and its locality".²

As stated by Justice Debelle in the Supreme Court decision of *Mar Mina (SA) Pty Ltd v City of Marion & Anor*,³ the degree of departure from the Development Plan must not be merely trifling, it must be "an important or grave departure in either quantity or degree"⁴.

Although the Development Plan is a practical guide, calling for practical application, it does not follow that "its objectives and principles may be ignored because it may seem

¹ Development Act 1993, section 35(2).

² *Mar Mina (SA) Pty Ltd v City of Marion & Anor* [2008] SASC 120.

³ [2008] SASC 120.

⁴ *Ibid.* See also *Hayes v DAC (No 4)* (1997) 95LGERA 7 at 25

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BL Lawyers Pty Ltd trading as Botten Levinson Lawyers ABN 36 611 397 265 ACN 611 397 265

Level 1 Barling Building
28 Franklin Street, Adelaide
GPO Box 1042, Adelaide SA 5001
t. 08 8212 9777
f. 08 8212 8098
e. info@blawyers.com.au
www.blawyers.com.au

convenient to do so in a particular case".⁵ Nor should the relevant authority justify ignoring particularly problematic objectives and principles on the basis that they cannot be or are unlikely to be achieved. If this is the case, then the only course of action is for the relevant planning authority to initiate an appropriate Development Plan Amendment:

*Nor is it any answer to ignoring the Objective and the Principles of Development Control to say that the Objective of the plan cannot be or is unlikely to be achieved. On the evidence before him it was not open to the Commissioner to make such a finding. But even if it were, it is not open to a planning authority to ignore the essential thrust and objective of the Plan. If the view is taken that for some reason the objective is not achievable, it is for the relevant planning authority to decide upon an amendment to the Plan after due preparation and consideration of a Plan Amendment Report in accordance with the requirements of Part 3 of the Development Act, and after the sort of consultation that the legislation requires. The perceived inability of the Development Plan to be carried out is no reason to ignore it in respect of a particular application for development.*⁶

The Development Plan

The relevant provisions of the Development Plan are discussed in detail in your planning report and it is unnecessary to repeat them.

The subject site is located in the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone.

The clear intention seems to have been that the Zone would, in addition to entertainment and leisure activities accommodate retail tenancies not necessarily suited to or typically found in traditional centres.

The particular point of contention in this matter arises from the inclusion in the proposal of two unrestricted "major" retail tenancies with floor areas of 3,910m² and 6,205m², understood to be a supermarket and a discount department store. Questions also arise about the 13 "specialty" tenancies comprising some 5,821 square metres.

The Desired Character for the Zone states that:

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

It is abundantly clear that this statement relates to a "Costco" type model of "bulky" or high volume sales directed particularly to small and medium businesses.

In respect of the specialty tenancies, the Desired Character states that:

⁵ *Alexandrina Council v Strath Hub Pty Ltd* [2003] SASC 382 at [27].

⁶ *Strath Hub*, *Ibid* at [39].

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares.

The Development Plan contains clear direction about the location and distribution of shopping facilities within the Council area. It is sufficient to note that:

1. Shopping facilities should be located in integrated centres;
2. Centres should be developed in accordance with a hierarchy based on function;
3. Shops (or groups of shops) with a gross leaseable area of greater than 250 square metres should be located within a centre zone;
4. The development of shops outside of zones that allow retail development should:
 - a. be of a size and type that will not hinder the development, function or viability of any centre zone;
 - b. not demonstrably lead to the physical deterioration of any designated centre;
5. A supermarket is an envisaged use in the District Centre Zone, Neighbourhood Centre Zone and Urban Core zones⁷.
6. A discount department store is an envisaged use in the District Centre Zone and Urban Core Zone.

The proposed development

I have undertaken an inspection of the proposal plans and documents at the Council. I have also viewed the material distributed as part of the Category 2 notification of the development.

The proposed development comprises:

1. Two "major retail" tenancies of 3,910m² and 6,205m²;
2. 13 "specialty retail" tenancies
3. Four bulky goods tenancies;
4. Three "leisure" tenancies;
5. Gymnasium; and
6. Three fast food restaurants with drive-through facilities;

The application involves a gross leaseable area of 30,136 square metres.

⁷ Refer Urban Core (Salisbury) Zone and Urban Core Zone described in the Plan as a "district level centre" and "a District Centre" respectively.

Very little detail is given about the nature of the two major retail tenancies, other than their description in the application as “retail anchors”. That detail is important where, as here, the Development Plan seeks a very specific type of use:

In the absence of any attempt to define or restrict the use which may be made of those tenancies, it must be assumed that approval is sought for any form of large floorplate retail to occur within those tenancies. The application must be assessed on that basis.

Of course, it is the substance of an application and not its form that is determinative⁸.

The description of the major retail tenancies as “retail anchors” is consistent with media statements by the applicant that the development will include a Coles (3,910m² tenancy) and a K-Mart (6,205m² tenancy).

The applicant appears to acknowledge that the Development Plan seeks a very particular form of retail, stating that the Costco type operation that was envisaged in 2014 is “no longer a feasible option”.

The applicant also (weakly in my view) argues that if the retail anchors (Coles and K-Mart) are considered together, they involve the sale of less than 38% foodstuffs.

It is clear from the application documents that what is being applied for in the major retail tenancies is, in substance, likely to be a supermarket and a discount department store.

Similar comments can be made in respect of the specialty tenancies. It is clear that the Development Plan seeks a very particular type of shops, namely “a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares”⁹. However, the letter from the applicant dated 2 November 2017 states that the 13 specialty tenancies are proposed to be a “shop” simpliciter. It is arguable therefore that no restriction is proposed on what type of shop may be established in the tenancies, noting the particularly broad definition of “shop” in the *Development Regulations*.

Although not relevant to this advice, I note that detail about the entertainment and leisure facilities (one of the key features of the Zone) is particularly lacking. Given that leisure activities can take many forms (there are passing references to a cinema, bowling facility, childrens’ active play space, trampolines, rock climbing and a health and fitness club) it is difficult to assess the suitability of the spaces which have generically been allocated to those uses.

Likewise, the floor area of proposed restaurants ought to be clarified, noting that although the development occupies only half of the Zone it potentially uses 950 square metres of the 1200 square metres of restaurants permissible across the Zone.

Discussion

The question of seriously at variance has been considered by the Supreme Court in the context of shopping centres and facilities on a number of occasions. Of particular

⁸ *Eliza Jane Investments Pty Ltd v City of Playford* (2009) SASC 260

⁹ Some of these outlets would correctly be characterised as retail showrooms or bulky goods outlets.

relevance is the decision of the Full Court in *R v The City of Munno Para: Ex parte John Weeks Pty Ltd and Anor*¹⁰. The facts in that case and the reasoning of Chief Justice King were summarised by Judge Cole in the recent ERD Court decision of *Bates v Holdfast Bay*¹¹:

In John Weeks case the Full Court of the Supreme Court dealt with an application for the judicial review of a decision in relation to a proposed shopping complex. The relevant Development Plan set out a hierarchy of zones which provided for the development of a shopping complex of the magnitude of the proposed development in Zone E, and a small portion of the shops proposed, together with some carparking, were to be sited in Zone E. However, the shopping complex proposed was to be sited predominantly in Zone F, which the Development Plan designated as a zone for major wholesaling, warehousing and non-retailing services.¹² The shopping complex, in fact, was proposed to occupy most of Zone F, so that little remained of that zone for the accommodation of the purposes provided for it in the Development Plan. In deciding that the proposed development was seriously at variance with the relevant provisions of the Development Plan pursuant to s 47(9) of the Planning Act 1982, King CJ said¹³:

It is therefore necessary to consider whether the consent under review is seriously at variance with the provisions of the Development Plan. I think that it must be so regarded. I do not take that view merely because retail shopping is not included as one of the objectives of the zone F in which the proposed development is mainly located. Retail activities are not a prohibited use for zone F; and, even if they were, the Act provides in s 47(6) machinery for consent to a development involving a prohibited use. There may be minor retail developments, or developments of which retailing is a minor or incidental part, in a zone not intended for retailing, which, although at variance with the plan, could not be regarded as seriously at variance with it. The seriousness of the departure from the plan in the present case, to my mind, arises largely from the magnitude of the proposed shopping centre. It is a major retail shopping centre, and the proposal is that it be located in a zone whose objectives consist of commercial and service activities and do not include retail activities. The proposed development is a departure from the plan of such magnitude, in my opinion, that observance of the planning regime imposed by the Act requires that, to accommodate it, there be an amendment to the plan. Such an amendment would be subject to the scrutiny and procedures prescribed by the Act for such an amendment. I think that consent to such a proposal is at serious variance with the provisions of the Development Plan and therefore invalid.

The role and importance of the centres hierarchy was discussed by His Honour Justice Debelle in *Hayes v DAC* where the court found that a supermarket which exceeded the prescribed retail floor area for a Neighbourhood Centre Zone by 1000 square metres was seriously at variance.

A perusal of the City of West Torrens Development Plan discloses that it intends to create a hierarchy of shopping centres, which is consistent with the hierarchy of shopping centres in that part of the Development Plan which

¹⁰ (1987) 46 SASR 400

¹¹ [2017] SAERDC 40

¹² (1987) 46 SASR 400 at p 408 per White J.

¹³ (1987) 46 SASR 400 at pp 403-404.

applies to the metropolitan area of Adelaide. At the apex of that hierarchy are regional shopping centres.¹⁴

Debelle J ultimately concluded that the development was seriously at variance with the Development Plan, having regard to the spirit and intent of the Development as a whole.

In reaching this conclusion, I have had regard to the whole of the Development Plan and not simply to Principle 4. The Development Plan descends to relatively specific detail when prescribing the floor areas for this Zone. It also describes the floor areas for other Neighbourhood Centre Zones. That is consistent with seeking to maintain a balance between these zones and with seeking to maintain the hierarchy of Centre Zones¹⁵.

The present proposal involves over 10,000 square metres of retail development of a kind that is not envisaged in the Zone and which is plainly more appropriately located in a Centre Zone (of a District or Regional order). That figure is in the order of 16,000 square metres if the 'specialty' tenancies are included. It is to be noted that elsewhere the Development Plan is highly prescriptive about the permissible floor areas of shops and supermarkets. Experiences at the Saints Road Neighbourhood Centre serve as an obvious example.

The proposed inclusion of over 10,000 (and potentially up to 16,000) square metres of unrestricted retail development amounts to a very significant departure in both quantity and degree. The departure is of such a magnitude that it clearly has the potential to disrupt the centres hierarchy and distribution of shopping centres that has otherwise evolved in the Council area. The application in effect proposes the creation of a District or Regional Centre without any of the rigorous policy assessment associated with a DPA.

It is also to be noted that such a proposal would ordinarily be the subject of a mandatory referral to the State Planning Commission, giving that body a power of direction on the proposal¹⁶.

It is telling that the applicant seems to accept that the proposed supermarket and discount department store are not what is sought by the Zone through the (curious) comment that "the proposal does not preclude a single large format shop being established on the balance of the allotment"¹⁷. If that is the case, the question must be asked, what possible support is there in the Zone for the establishment of a supermarket and discount department store?

As has been observed by the Supreme Court in the cases cited above, the proposed development is so fundamentally at odds with the Development Plan that unless and until there is a Development Plan Amendment, it cannot proceed in its current form. It is no answer for an applicant to simply assert that achieving the clear intent of the zone is no longer feasible.

¹⁴ *Joy Hayes & Ors v Development Assessment Commission, Corporation of the City of West Torrens and Prizac Developments Pty Ltd* (No. 4) (1997) 95LGERA 7 at 29

¹⁵ *Ibid* at 29-30

¹⁶ *Development Regulations 2008*, Schedule 8, Clause 13.

¹⁷ Letter from Intro to Aaron Curtis, 2 November 2017

Conclusion

This application represents an important and grave departure from the Development Plan in both quantity and degree. The inclusion of over 10,000 square metres of unrestricted large floor plate retail development (in the likely form of a supermarket and discount department store) and 5,821 square metres of unrestricted other shop tenancies flies in the face of the centres hierarchy and the carefully planned distribution of centres throughout the Council area and metropolitan Adelaide. It is fundamentally at odds with the clearly expressed direction of the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone. In my view the proposed development is seriously at variance with the Development Plan.

Accordingly, it is not open to the Council to grant consent to the development in its current form.

Any decision by the Council to the contrary could be challenged in the ERD Court by an owner or occupier of adjoining land, or in the Supreme Court on judicial review by any affected party.

Yours faithfully



Tom Game
BOTTEN LEVINSON
Mob: 0419 809 361
Email: thg@bllawyers.com.au

thg:p217216_005.docx

ATTACHMENT 4

Schedule 8 referral responses

In reply please quote 2017/01920/01
Enquiries to Paul Bennett
Telephone (08) 7109 7355



Government of South Aust
Department of Planning,
Transport and Infrastructure

12 December 2017

Mr Aaron Curtis
City of Salisbury
PO Box 8
SALISBURY SA 5108

**SAFETY AND SERVICE –
Traffic Operations**

GPO Box 1533
Adelaide SA 5001

Telephone: 61 8 8226 8221
Facsimile: 61 8 8226 8330

ABN 92 366 288 135

Dear Mr Curtis

20 DEC 2017

SCHEDULE 8 - REFERRAL RESPONSE

Development No.	361/1589/17
Applicant	GIC Kings Road Pty Ltd
Location	1460 Main North Road (portion of Lot 120 in DP30240, corner Kings Road), Salisbury South
Proposal	Shopping and leisure complex

I refer to my letter of 10 November 2017, regarding the above development application forwarded to the Safety and Service Division of the Department of Planning, Transport and Infrastructure (DPTI) in accordance with Section 37 of the *Development Act 1993*.

This letter is provided to amend two paragraphs of that previous letter.

Metropolitan Adelaide Road Widening Plan

In the previous letter, it was stated that:

"It is proposed to reduce the requirement along the Main North Road frontage to 9.5 metres together with the corner cut-off. Accordingly, DPTI requires that all development (including buildings, carparking, drainage swales etc.) be located clear of a strip of land 9.5 metres in width along the Main North Road frontage and the Main North Road/Kings Road corner cut-off."

This paragraph shall be replaced with the following:

"It is proposed to reduce the requirement along the Main North Road frontage to 9.5 metres together with the corner cut-off. Accordingly, DPTI requires that all development (including buildings, drainage swales etc.), with the exception of car parking and low level landscaping, be located clear of a strip of land 9.5 metres in width along the Main North Road frontage and the Main North Road/Kings Road corner cut-off."

It is noted that should DPTI acquire the MARWP land, it remains the owner's responsibility to ensure that adequate car parking would remain to meet the appropriate requirements, and no additional compensation will be provided by DPTI to counter the loss of car parking/landscaping."

This amendment will provide the opportunity (as requested by the proponent) to construct car parking on land reserved under MARWP.

Proposed Access Arrangements

In the previous letter, it was stated that:

"Whilst DPTI is not convinced of the need for an 'emergency access' to Main North Road, as access is available via the proposed access to Main North Road and Engel Court, DPTI considers that the remaining number of proposed access points and the movements proposed at those access points are generally appropriate to the form and scale of development proposed. However, whilst DPTI is prepared to consider the proposed arrangements as a basis for further assessment, the final acceptability and detailed design of the proposed access points is subject to the further traffic assessment detailed above being completed to DPTI's satisfaction and any alterations to the access designs and/or locations being implemented. Furthermore, it should be noted that the existing access and deceleration lane on Kings Road located just to the east of the existing Kings Road/Horrie Miller Drive junction will need to be removed and remediated to the satisfaction of DPTI as part of the final design of the Kings Road/Horrie Miller Drive signalised intersection."

This paragraph shall be replaced with the following:

"DPTI considers that the number of proposed access points and the movements proposed at those access points are generally appropriate to the form and scale of development proposed. It is noted that the 'emergency access' proposed to Main North Road at the northern boundary of the site should be constructed/managed in such a manner that it is utilised for emergency access only, and is not used as a general access for other vehicles."

Whilst DPTI is prepared to consider the proposed arrangements as a basis for further assessment, the final acceptability and detailed design of the proposed access points is subject to the further traffic assessment detailed above being completed to DPTI's satisfaction and any alterations to the access designs and/or locations being implemented. Furthermore, it should be noted that the existing access and deceleration lane on Kings Road located just to the east of the existing Kings Road/Horrie Miller Drive junction will need to be removed and remediated to the satisfaction of DPTI as part of the final design of the Kings Road/Horrie Miller Drive signalised intersection."

This amendment to accept an emergency access to Main North Road on the northern boundary is in response to the proponent's advice that the South Australian Metropolitan Fire Service (SAMFS) require contiguous access around the adjacent building. The proponent has advised that without this access, they will be unable to satisfy SAMFS requirements and achieve building rules consent.

Yours sincerely



CHIEF OPERATING OFFICER

For **COMMISSIONER OF HIGHWAYS**

A copy of the decision notification form should be forwarded to dpti.developmentapplications@sa.gov.au

In reply please quote 2017/01920/01, Process ID: 479520
 Enquiries to Matthew Henderson
 Telephone 0419 747 010
 Facsimile (08) 8226 8330
 E-mail dpti.luc@sa.gov.au



Government of South Australia
 Department of Planning,
 Transport and Infrastructure

10 November 2017

**SAFETY AND SERVICE –
 Traffic Operations**

GPO Box 1533
 Adelaide SA 5001

Telephone: 61 8 8226 8222
 Facsimile: 61 8 8226 8330

ABN 92 366 288 135

Mr Aaron Curtis
 City of Salisbury
 PO Box 8
 SALISBURY SA 5108

Dear Mr Curtis

22 NOV 2017

SCHEDULE 8 - REFERRAL RESPONSE

Development No.	361/1589/17
Applicant	GIC Kings Road Pty Ltd
Location	1460 Main North Road (portion of Lot 120 in DP30240, corner Kings Road), Salisbury South
Proposal	Shopping and leisure complex

I refer to the above development application forwarded to the Safety and Service Division of the Department of Planning, Transport and Infrastructure (DPTI) in accordance with Section 37 of the *Development Act 1993*. The proposed development involves development adjacent a main road as described above.

The following response is provided in accordance with Section 37(4)(b) of the *Development Act 1993* and Schedule 8 of the *Development Regulations 2008*.

PROPOSED DEVELOPMENT

The development proposal is for a shopping and leisure complex comprising:

- 15,751 m² of retail floor space;
- 2,900 m² of bulky goods retail floor space;
- 7,600 m² of 'leisure' floor space; and
- Three 'pad sites', understood to be set aside for fast food restaurants.

SITE AND SURROUNDING ROADS

The subject development is proposed within the eastern half of Lot 120 in DP 30240 at the north-western quadrant of the Main North Road/Kings Road signalised intersection, with the western boundary of the subject development proposed to align with the Kings Road/Horrie Miller Drive junction. The site also has road frontage to Mengel Court. Main North Road and Kings Road are arterial roads under the care, control and management of DPTI. Mengel Court is a local road under the care, control and management of the City of Salisbury.

Main North Road is classified as a Major Traffic Route, Primary Freight Route and Major Cycling Route under DPTI's *A Functional Hierarchy for South Australia's Land Transport Network*. The adjacent section of Main North Road has an AADT of approximately 47,100 vehicles per day (4.0% commercial vehicles) and a posted speed limit of 80 km/h.

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Kings Road is classified as a Primary Freight Route under DPTI's *A Functional Hierarchy for South Australia's Land Transport Network*. The adjacent section of Kings Road has an AADT of approximately 29,200 vehicles per day (4.0% commercial vehicles) and a posted speed limit of 60 km/h.

CONSIDERATION

Control of Access

The site abuts sections of Main North Road and Kings Road that were proclaimed controlled-access roads pursuant to Part 2A of the *Highways Act 1926* on 22 December 1960 and 19 September 1991. Departmental records show that there are four authorised means of access to enable persons and vehicles to directly enter or leave the controlled-access roads from/to this site. These are described as follows:

Main North Road

- 4.5 metres in width, located centrally at a point 52.5 metres south of the northern property boundary.
- 4.5 metres in width, located centrally at a point 176.1 metres south of the northern property boundary.

Kings Road

- 5.3 metres in width, located centrally at a point 64.7 metres north-west of the southern corner of the property.
- 5.0 metres in width, located centrally at a point 267.8 metres north-west of the southern corner of the property.

Metropolitan Adelaide Road Widening Plan

The Metropolitan Adelaide Road Widening Plan shows a possible requirement for a strip of land up to 20.0 metres in width from the Main North Road frontage of this site for possible future road purposes. Additionally, the Plan makes provision for a strip of land up to 4.5 metres in width from portion of the Main North Road frontage, together with additional land from the Main North Road/Kings Road corner, for the possible future upgrading of the Main North Road/Kings Road intersection. The consent of the Commissioner of Highways under the Metropolitan Adelaide Road Widening Plan Act is therefore required to all new building works located on or within 6.0 metres of the possible requirements.

It is proposed to reduce the requirement along the Main North Road frontage to 9.5 metres together with the corner cut-off. Accordingly, DPTI requires that all development (including buildings, carparking, drainage swales etc.) be located clear of a strip of land 9.5 metres in width along the Main North Road frontage and the Main North Road/Kings Road corner cut-off.

Infrastructure Deed/Land Management Agreement

Lot 120 in DP 30240 is subject to a Road Infrastructure Design and Delivery Deed (*the Deed*) between Engel Holdings Pty Ltd (the owner) and the Minister for Transport and Infrastructure and Commissioner of Highways, as well as a Land Management Agreement (*the LMA*) between the Minister for Planning, the Minister for Transport and Infrastructure and Engel Holdings Pty Ltd. Although the applicant (GIC Kings Road Pty Ltd) is not a signatory to the Deed or LMA, the LMA stipulates that it is incumbent on the owner to ensure that occupiers and persons having enjoyment of the site also comply with the terms of the Deed.

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The Deed sets out requirements for upgrades to the arterial road network in conjunction with the development of the subject land, access to serve development upon the subject land, and the form of development upon the subject land. The Deed also contains the below stipulations with regard to development authorisations:

- 4.2 The Owner acknowledges and agrees that (without limiting the obligation set out in clause 4.1) the Owner may make an application:
 - 4.2.1 to enable the deposit of a Plan of Division creating allotments in relation to any portion of the Land, or
 - 4.2.2 for development authorisation from the relevant authority under the Development Act for a development (other than land division), that involves construction of buildings and structures and requires building rules consent (as those terms are defined in the Development Act), on any portion of the Land.

provided that the Owner does not seek determination of any such applications in isolation to this Deed until:

 - 4.2.3 the Owner completes the Detailed Road Analysis; and
 - 4.2.4 the parties agree the Traffic Intervention Plan; and
 - 4.2.5 the parties have executed the Final Deed.
- 4.1.3 the Detailed Analysis must consider the Development of the entire Land, including the various stages of the Development;

Annexure 1 of the Deed stipulates a number of road infrastructure objectives that relate to traffic investigations required to underpin development of the subject land and the upgrading of the Main North Road/Kings Road intersection and Kings Road/Horrie Miller Avenue intersection.

In view of the above, the department requires appropriate conditions in any approval given to ensure the intent of the deed is implemented. Conditions relating to the Detailed Road/Traffic Analysis, the resultant Traffic Intervention Plan and the final detailed design of the agreed access points to both Main North Road and Kings Road (Final Deed) will need to be considered.

Road Upgrades/Transport Impact Assessment

DPTI has reviewed the Transport Impact Assessment (TIA) by GTA Consultants dated 29 August 2017. DPTI is concerned that the level of assessment provided does not provide sufficient basis upon which DPTI can assess the direct impact of the proposed development on the surrounding arterial road network and the necessary upgrades to mitigate the impacts. In order to facilitate the development process, DPTI is working with the applicant and their traffic consultant to develop principles and performance criteria to ensure that the traffic impacts of the proposed development and the future development of the remainder of the site on the adjacent arterial road network (e.g. the adjacent sections of Main North Road and Kings Road, as well as the Main North Road/Kings Road intersection and Kings Road/Horrie Miller Drive intersection) are appropriately modelled and that appropriate traffic interventions are implemented to mitigate the impacts.

As well as the impacts of the proposed development on the Thursday pm peak traffic period, the modelling will need to consider the impacts on the Saturday development peak. The modelling will also need to assess the impacts on the Main North Road/Kings Road intersection and the Kings Road/Horrie Miller Drive intersection, as well as the potential network interaction between these two intersections given the close spacing of approximately 350 metres. Furthermore, the modelling will need to consider the future development of the remainder of the site.

Whilst DPTI considers that it will ultimately be possible for the development to be approved with some alteration to the proposal as referred, additional assessment of the traffic impacts of the proposal are likely to be required to enable a final determination to be made regarding location

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and design of the proposed access arrangements and any necessary road works external to the site.

It should be noted that the road upgrades required to accommodate the development, including the installation of signals for the additional leg at the Kings Road/Horrie Miller Avenue intersection, the deceleration and acceleration lanes road along the Main North Road frontage of the site, and the provision of footpath to the satisfaction of Council, are likely to require land from the site to be dedicated as road. This should be undertaken at no cost to DPTI and Council following definition of the upgrade requirements.

Proposed Access Arrangements

It is proposed to alter the access arrangements serving the subject land to accommodate the proposed development. The proposal plans show:

- A signalised access point forming a fourth leg of the existing Kings Road/Horrie Miller Drive junction.
- An unsignalised access to/from Main North Road located about a point approximately 162 metres north of the Main North Road/Kings Road intersection. This access is proposed to be provided with deceleration and acceleration lanes and would operate on a left-in, left-out basis.
- An 'emergency only' access to Main North Road located adjacent the northern boundary of the site.
- Service vehicle access to/from Mengel Court.

Whilst DPTI is not convinced of the need for an 'emergency access' to Main North Road, as access is available via the proposed access to Main North Road and Engel Court, DPTI considers that the remaining number of proposed access points and the movements proposed at those access points are generally appropriate to the form and scale of development proposed. However, whilst DPTI is prepared to consider the proposed arrangements as a basis for further assessment, the final acceptability and detailed design of the proposed access points is subject to the further traffic assessment detailed above being completed to DPTI's satisfaction and any alterations to the access designs and/or locations being implemented. Furthermore, it should be noted that the existing access and deceleration lane on Kings Road located just to the east of the existing Kings Road/Horrie Miller Drive junction will need to be removed and remediated to the satisfaction of DPTI as part of the final design of the Kings Road/Horrie Miller Drive signalised intersection.

Stormwater

The proposal plans show swales along the Main North Road and Kings Road property frontages. It is unclear whether the swale along the Main North Road frontage is intended to accommodate road run-off from the unkerbed section of Main North Road. It is also noted that a small section of the Kings Road frontage is also unkerbed. Consideration needs to be given to whether the proposed swales have sufficient capacity for road run-off and whether any widening of Main North Road or Kings Road along the property frontage should include the installation of kerb and gutter in consultation with DPTI and Council.

Building Finishes

With respect to building materials and finishes, it will be necessary to ensure that all materials and finishes do not result in glare or other effects that will result in the discomfort or impairment of road users.

CONCLUSION

DPTI does not object in-principle to the intent of the proposed development (i.e. the mix of land uses, the scale of the proposed development – subject to additional traffic analysis and the provision of access to/from the arterial road network in some form). However, there are a number of aspects of the Road Infrastructure Design and Delivery Deed over the subject land that remain outstanding. In particular, the principles and performance criteria mentioned above, Detailed Road/Traffic Analysis for the whole site, the agreed Traffic Intervention Plan and the Final Deed will need to be resolved to the satisfaction of DPTI prior to full development approval.

In view of the above, should Council determine to issue Development Plan Consent for the proposal in its current form, the following conditions, including some directed conditions, should be imposed:

In accordance with Schedule 8 of the *Development Regulations 2008*, Council is directed to apply the following conditions to any approval granted:

1. The development shall have a single left-in, left-out access point on Main North Road. The access shall be provided with channelised turning treatments (left turn deceleration lane and acceleration lane) to the satisfaction of the Commissioner of Highways. No additional access (including emergency access) to Main North Road shall be permitted.
2. The development shall have a single point of access to Kings Road, which shall be fully integrated into the existing Kings Road/Horrie Miller Drive signalised junction, thus converting the junction to a four-way signalised intersection.
3. The required roadworks to provide safe access to Main North Road and Kings Road shall be completed to the satisfaction of the Commissioner of Highways, with all costs being borne by the applicant. These works shall be completed prior to the operation of the development.
4. All development, including swales, car parking and structures, shall be set back clear of a strip of land 9.5 metres in width along the Main North Road frontage and Main North Road/Kings Road corner cut-off. A final plan reflecting this requirement shall be submitted to the satisfaction of the Commissioner of Highways prior to Development Approval.
5. All obsolete crossovers (and/or any portion thereof) shall be reinstated to upright kerb and gutter at the applicant's expense prior to operation of the development.
6. The obsolete access to Kings Road and associated left turn deceleration lane located just to the east of the existing Kings Road/Horrie Miller Drive junction shall be removed and remediated to the satisfaction of the Commissioner of Highways.
7. All vehicles shall enter and exit the site in a forward direction.

Furthermore, it is recommended that Council apply the following conditions in the interests of road safety:

1. Prior to development approval being granted, the applicant shall undertake the following to the satisfaction of the Commissioner of Highways:
 - a. Traffic assessment, including modelling of the traffic impacts on the adjacent arterial road network caused by the subject development and the development of the whole site.
 - b. A Traffic Intervention Plan to mitigate the traffic impacts of the proposed development (Stage 1) and the development of the whole site. The applicant will be required to fund

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the traffic interventions required as a direct result of the traffic impacts of the proposed development.

- c. A final Deed with DPTI for the delivery of traffic interventions required as a direct result of the traffic impacts of the development of the site.
2. A final concept design of the access arrangements, including the traffic interventions identified as a direct result of the proposed development (Stage 1) and any land that will need to be vested to road associated with the interventions associated with Stages 1 and 2, to ensure existing verge widths are maintained following the traffic interventions for both Stages 1 and 2. All land required for the interventions shall be dedicated to road at no cost to the Commissioner of Highways or Council.
3. A Traffic Management Plan for the construction period of the development shall be produced to the satisfaction of the Commissioner of Highways and Council prior to the commencement of construction. This plan shall detail the types, volumes and distributions of traffic and how they will be managed. All traffic movements shall be in accordance with this plan.
4. All car parking and internal manoeuvring areas shall be in accordance with AS/NZS 2890.1:2004 and 2890.6:2009.
5. All commercial vehicle facilities shall be designed in accordance with AS 2890.2-2002.
6. All materials and finishes shall not be permitted to result in glare or other effects that will result in the discomfort or impairment of road users.
7. Stormwater run-off shall be collected on-site and discharged without jeopardising the integrity and safety of the adjacent roads. Any alterations to the road drainage infrastructure required to facilitate this shall be at the applicant's cost.

The following notes provide important information for the benefit of the applicant and are required to be included in any approval:

- The site abuts sections of Main North Road and Kings Road that were proclaimed controlled-access roads pursuant to Part 2A of the *Highways Act 1926* on 22 December 1960 and 19 September 1991 respectively.

Upon the construction of the access points to the site, the applicant must contact Mr Daniel Sladic, Traffic Access Officer, Traffic Operations on (08) 8226 8277 or via email at Daniel.Sladic@sa.gov.au to apply for the issue of permits for the approved access points associated with this development. The existing four authorised access points will be revoked.

- The Metropolitan Adelaide Road Widening Plan shows a possible requirement for a strip of land up to 20.0 metres in width from the Main North Road frontage of this site for possible future road purposes. Additionally, the Plan makes provision for a strip of land up to 4.5 metres in width from portion of the Main North Road frontage, together with additional land from the Main North Road/Kings Road corner, for the possible future upgrading of the Main North Road/Kings Road intersection. The consent of the Commissioner of Highways under the Metropolitan Adelaide Road Widening Plan Act is therefore required to all new building works located on or within 6.0 metres of the possible requirements.

Should the final design of the development result in encroachments within the above areas, the attached form and three copies of the approved plans should be submitted to DPTI for consent purposes.


- The subject site is subject to a Road Infrastructure Design and Delivery Deed (*the Deed*) between Engel Holdings Pty Ltd (the owner) and the Minister for Transport and Infrastructure

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and Commissioner of Highways, as well as a Land Management Agreement (*the LMA*) between the Minister for Planning, the Minister for Transport and Infrastructure and Engel Holdings Pty Ltd. Although the applicant (GIC Kings Road Pty Ltd) is not a signatory to the Deed or LMA, the LMA stipulates that it is incumbent on the owner to ensure that occupiers and persons having enjoyment of the site also comply with the terms of the Deed. Consequently, in accordance with the terms of the above agreements, the applicant must not seek Development Approval until all of the requirements of the Deed are met to the satisfaction of the Commissioner of Highways and Minister for Transport.

Yours sincerely



CHIEF OPERATING OFFICER

For **COMMISSIONER OF HIGHWAYS**

A copy of the decision notification form should be forwarded to dpti.developmentapplications@sa.gov.au

#11996017



Australian Government
Department of Infrastructure and Regional Development

Mr Aaron Curtis
Team Leader - Planning
City of Salisbury
PO Box 8
SALISBURY SA 5108

Dear Mr Curtis

Re: 361/1589/1B: 1460 Main North Road, Salisbury South

Thank you for referring the above mentioned Development Application (DA) to the Department of Infrastructure and Regional Development (the Department) on 14 September 2017.

The proposed site is in very close proximity to Parafield Airport, directly underneath the Runway 03R/12L centreline and within 400m of the runway threshold. As a result, continued consultation with Parafield Airport is critical.

Based on the information provided, the Department does not support this DA as it appears to be incompatible with the ongoing safe operation of the airport and is inconsistent with a number of National Airports Safeguarding Framework (NASF) Guidelines. The Department is concerned that developing a site this close to the runways may have a number of impacts on aircraft operations and public safety, as outlined below.

Building Generated Windshear and Turbulence

Structures in the vicinity of runway ends can generate wind effects that may create risks to aircraft during take-off and landing.

NASF Guideline B defines an area around runway ends, within which buildings should be assessed for potential wind effects and risk to aircraft.

The site defined in the DA falls entirely within the assessment trigger area for the northern end Runway 03R/21L, and is partly within the assessment trigger areas for the other three runways. An updated NASF Guideline B is currently out for public consultation and can be found at:

<www.infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/public_consultation_nasf>.

The Department recommends that a detailed wind assessment is conducted and advice is sought from the Civil Aviation Safety Authority to confirm any windshear/turbulence assessment.

GPO Box 594 Canberra ACT 2601 Australia • Telephone: 02 6274 7111 • Facsimile: 02 6257 2505
Website: www.infrastructure.gov.au • ABN 86 267 354 017

Airspace Intrusions

The Department notes that Salisbury Council is consulting Parafield Airport about this development and that Parafield Airport is providing details to Council of the relevant airspace above the site.

We recommend the proponent of this development continue to advise Parafield Airport of the planned final height of the building as well as any associated crane activities to ensure that any approvals required under the Airports (Protection of Airspace) Regulations 1996 are obtained.

Unacceptable Noise Levels

The site defined in the DA falls largely within the Parafield Airport ANEF 30 contour, however there is a significant portion of the site within the ANEF 35 contour.

The Salisbury Council Development Plan states that development within areas affected by aircraft noise should be consistent with Australian Standard AS 2021:2015, *Acoustics – Aircraft Noise Intrusion – Building Siting and Construction*.

Any commercial development within the 30 contour should be designed such that internal noise levels inside commercial buildings (shops, supermarkets, showrooms) remain below 75 decibels during aircraft overflight, in accordance with Table 3.3 of AS 2021:2015. AS 2021:2015 prescribes that commercial-use buildings are unacceptable within the ANEF 35 contour.

Risk to Public Safety

Accidents on take-off and landing are most likely to occur within one kilometre of runway ends. The National Airports Safeguarding Advisory Group is currently developing a new NASF Guideline on 'Public Safety Zones' (PSZ) immediately beyond runway ends, with the aim of restricting future development that may increase the number of people on the ground in these higher-risk areas.

The draft Guideline was circulated for targeted consultation on 3 October and the period for comments closes on 31 October. Both the City of Salisbury and Parafield Airport received a copy of the draft. The proximity of the proposed site to the northern ends of the runways at Parafield Airport would appear likely to place it within a PSZ, regardless of the methodology chosen. Based on the current draft Guideline, it would be inappropriate to develop a commercial and leisure complex within the site, as such a development would significantly increase the number of people present within the PSZ.

Thank you for the opportunity to comment. In considering the proposal, I urge the City of Salisbury to consider closely the issues raised.

Yours sincerely



Sharyn Owen
Director, Airport Safeguarding
Aviation Environment Branch

10/10/2017

ATTACHMENT 5

Internal referral responses

Access and Inclusion

- *The plans do not appear to provide for a taxi and private vehicle short stay zone for drop off / pick up for persons with impaired mobility*
- *The surfaces for all pedestrian crossings across driveways should have a different surface treatment in terms of luminance contrast and tactile design;*
- *Where can vulnerable pedestrians shelter when waiting for a taxi?*
- *Well-designed and suitably located street furniture should be provided.*

Development Engineering – Traffic

- *The two-way internal circulating roadway provides vehicular connectivity between Kings Road and Main North Road. Traffic management will be required to maintain low vehicle speeds (ie. 10km/h) and to discourage vehicles using the site as a means of short-cut between Kings Road and Main North Road. Small-diameter roundabouts should be installed at the series of internal junctions.*
- *The internal roadway junction nearest to bulky goods tenancy 4 should be modified to avoid queuing of the roadway and potential for rear-end collisions, due to the proximity to the bend in the internal road. Right turns should be prevented.*
- *At the eastern end of the main two-way internal circulating roadway, the two 'T-junctions' and connecting roadway should be redesigned to incorporate controls to prevent vehicles from driving across line-marking into the opposing lane. Line-marking is not considered to be sufficient to manage two-way flows in this location given the expected number of traffic movements. For example, a section of raised median to both delineate and separate opposing vehicle movements and right-turn vehicle movements may be required. Use of signage such as "keep left at all times" should also be considered. Further redesign of this section of roadway will be required to Council's satisfaction.*
- *Bus stop 43 located in Main North Road will be subject to modification/relocation and an upgrade to DDA Standards. Having regard to the proposed location for the left out only taper to Main North Road, there is likely to be conflict with the bus stop. The development does not provide for any pedestrian connection between the internal development and the bus stop. Further design detail will be required as to how pedestrian connection between the internal footpath network and the bus stop is achieved.*
- *The two car parking spaces surrounded by reserve near "Restaurant 03" should be deleted.*
- *Linemarking and/or signage will be required at the 3-way intersection near "Restaurant 03" to clearly define the hierarchy and rights of way.*
- *The turning template associated with the "Zambrero restaurant" on page 20 of the GTA Consultants report shows that it will necessitate manoeuvring across 7 designated car parking spaces. In the absence of confirmed operating hours for the fast food restaurants, which may operate 24 hours, there is no assurance that these spaces will be vacant and consequently this manoeuvre may not be workable.*
- *Vehicle movement between the back of house areas associated with bulky goods tenancy 1 and retail tenancies 3 and 10-13 inclusive should be closed off from the adjacent public car park.*
- *A Traffic Control Layout shall be prepared for the internal circulating road network, car park and back of house loading areas as part of the detailed design documentation and shall be Approved by Council, prior to Development Approval.*
- *It is unclear how deliveries associated with bulky goods tenancy 4 will take place, given the absence of a dedicated loading area associated with this tenancy.*
- *Final design detail shall be provided in respect of new access points to Mengel Court.*

Development Engineering – Stormwater

- *The stormwater design broadly works but additional detail is required for further assessment. Detailed stormwater plans and accompanying design calculations will be required and must be Approved by Development Engineering, prior to Development Approval.*
- *The portion of 675mm pipe west of Leisure 1 building may be made redundant. This pipe may be able to connect to the Kings Road stormwater main at this point (reduction in 75m of underground pipe).*
- *Detailed plans will need to show how the headwall or letter box pit at the head of the 675mm pipe will capture all of the potential flows along Main North Road. Local shaping of the verge is expected to be necessary.*
- *It is unclear if the site allows for overland flow if water was to enter the site from Main North Road (near Major Retail 2) due to pipe blockage.*
- *Stormwater infrastructure in the entrance driveway will work during low flow events. During major events, the swale in the centre of Main North Road will be at capacity and stormwater will pass the site and continue south along Main North Road.*
- *Drainage within the site is not shown on the latest set of FMG plans. It is understood the fast food precinct will be designed to drain stormwater to a side entry pit and separate connection to the Kings Road stormwater main. This should be provided on the final set of stormwater plans for approval.*
- *A final civil siteworks plan/civil working drawings will be required for the development which shall detail final levels and grades for all buildings, roadways, car parking, manoeuvring areas, kerbing, footpaths, stormwater pipes, drains, retaining walls etc.*

Development Engineering – Water Quality

- *The use of “gross pollutant traps” for primary treatment of surface stormwater is acceptable in-principle, however, further information is required in respect to secondary treatment, ie. filtering of pollutants such as oil and grease which can be achieved by way of an oil and grease arrestor or landscape treatments such as filtering beds. The final details for primary and secondary treatment must be resolved as a Reserved Matter, if the application is granted Development Plan Consent.*

Environmental Health

- *The structure and design of any food premises must be constructed in compliance with the Food Act 2001 and Food Safety Standard 3.2.3;*
- *Any high risk manufactured water systems which may include cooling water systems shall be installed and maintained in accordance with the South Australian Public Health (Legionella) Regulations 2013.*
- *If any swimming or spa pool is installed as part of the entertainment venue, it must be installed and maintained in accordance with the South Australian Public Health (General) Regulations 2013.*

Landscape Design

- *Final tree spaces for planting adjacent the main internal access road should achieve an appropriate clearance for maximum height vehicles using the road;*
- *Use of species that do not conflict with aircraft operations in terms of height;*
- *How will the swale and associated plantings be protected from errant vehicles that might enter the swale;*
- *How will retention of existing trees and other significant vegetation be incorporated into the overall landscaping plan.*

Property Services

- *Should any works be required on Council land that fall outside of the DPTI work, footpath connections and street tree planting, for example, structures affixed to or overhanging Council road reserve, approval must be obtained from Council under the Local Government Act 1993 and will be subject to an annual agreement.*

Tree Services

- *Two trees in Mengel Court next to the proposed access point adjacent allotment 22 have been approved for removal at cost.*

Urban Policy

- *The Department for Infrastructure and Regional Development (DIRD) letter refers to a draft version of the relevant guideline for Building Generated Windshear and Turbulence. Preparation of a wind assessment was accepted as part of the DPA preparation.*
- *Proposed ANEF contours under the 2017 draft Parafield Airport masterplan is based in the forecast for 2037. Noise affected areas will transition to the new contour over time as the airport operations change. The new masterplan modelling shows that the whole of the Kings Road site will range from 20 to above 35 ANEF. Reference to AS 2021 identifies the land uses deemed suitable for various ANEF levels. An acoustic consultant can advise on what level of building treatment is needed to meet the necessary noise levels. The modelled new contours as part of the draft masterplan were not foreseen in the Kings Road DPA.*
- *The Public Safety Draft Guidelines have not been agreed or adopted by the State or Federal Government. Under the Kings Road DPA, it was noted that “The risk of an individual person being killed or seriously injured within the development site, even when Parafield Airport is operating at its ultimate capacity, is in the order of 1.0×10^{-6} or less (1 in million). This is a significantly lower level of risk than the levels of individual risk used to define Public Safety Zone dimensions in the Queensland Government SPP 1/02 or those adopted in the UK Public Safety Zone policy”. The DIRD letter does not acknowledge or reference the Kings Road DPA investigations and is at conflict with the DPA findings.*
- *The OLS effectively controls the buildings able to locate at the runway alignments and many other controls were put into planning policy such as in respect of lighting.*

ATTACHMENT 6

Development Plan extracts



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Please refer to the Salisbury Council page at www.sa.gov.au/developmentplans to see any amendments not consolidated.



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Transport and Infrastructure

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Building near Airfields

OBJECTIVES

- 1 Development that ensures the long-term operational, safety, commercial and military aviation requirements of airfields (airports, airstrips and helicopter landing sites) continue to be met.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 The height and location of buildings and structures should not adversely affect the long-term operational, safety, commercial and military aviation requirements of airfields.
- 2 Buildings and structures that exceed the airport building heights as shown on Overlay Maps – Development Constraints or *Concept Plan Map Sal/1 – Edinburgh Defence Airfield Defence (Area Control) Regulations* should not be developed unless a safety analysis determines that the building/structure does not pose a hazard to aircraft operations.
- 3 Development in the vicinity of airfields should not create a risk to public safety, in particular through any of the following:
 - (a) lighting glare
 - (b) smoke, dust and exhaust emissions
 - (c) air turbulence
 - (d) storage of flammable liquids
 - (e) attraction of birds
 - (f) reflective surfaces (eg roofs of buildings, large windows)
 - (g) materials that affect aircraft navigational aids.
- 4 Outdoor lighting within 6 kilometres of an airport should be designed so that it does not pose a hazard to aircraft operations.
- 5 Development that is likely to increase the attraction of birds should not be located within 3 kilometres of an airport used by commercial and military aircraft. If located closer than 3 kilometres the facility should incorporate bird control measures to minimise the risk of bird strikes to aircraft. Such development includes, but is not limited to, aquaculture, farming, food processing plants, water treatment and storage structures, non-food garbage landfill and food garbage disposal.
- 6 Development within areas affected by aircraft noise should be consistent with *Australian Standard AS2022: - Acoustics - Aircraft Noise Intrusion - Building Siting and Construction*.

RAAF Base Edinburgh

Building Heights

- 7 Buildings and structures should not exceed the airport building heights as shown on *Concept Plan Map Sal/1 – Edinburgh Defence Airfield Defence (Area Control) Regulations*.

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General Section
Building near Airfields

Noise Affected Areas

- 8 Development within areas affected by aircraft noise should be located such that:
- dwellings, caravan parks, educational establishments, pre-schools, child-care, consulting rooms, hospitals and nursing homes are not located within the 25 or greater ANEF contour of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#)
 - hotels, motels, hostels, community centres and indoor recreation centres are not located within the 30 or greater ANEF contour of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#)
 - shops and offices are not located within the 35 or greater ANEF contour of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#).
- 9 Development within areas affected by aircraft noise should comply with noise attenuation levels referenced in Table 3.3 "Indoor Design Sound Levels for Determination of Aircraft Noise Reduction" of AS2022-2000—such development includes:
- dwellings, caravan parks, educational establishments, pre-schools, child-care, consulting rooms, hospitals and nursing homes within the 20 to 25 ANEF contours of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#)
 - community centres and indoor recreation centres within the 20 to 30 ANEF contours of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#)
 - hotels, motels and hostels within the 25 to 30 ANEF contours of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#)
 - shops and offices within the 25 to 35 ANEF contours of the Edinburgh Airfield as shown on [Concept Plan Map Sal/2 - Edinburgh Defence Airfield Aircraft Noise Exposure](#).

Lighting

- 10 Outdoor lighting (excluding lighting ancillary to a residential land use) located within the extraneous lighting zones A, B, C and D shown on [Concept Plan Map Sal/3 - Edinburgh Defence Airfield Lighting Constraints](#) should not emit light with intensities above the horizontal greater than those specified in the following table:

Extraneous lighting zone	Maximum intensity of light permitted above the horizontal
Zone A	No upward light permitted
Zone B	Up to 50 candelas per square metre
Zone C	Up to 150 candelas per square metre
Zone D	Up to 450 candelas per square metre

Centres and Retail Development

OBJECTIVES

- 1 Shopping, administrative, cultural, community, entertainment, educational, religious and recreational facilities located in integrated centres.
- 2 Centres that ensure rational, economic and convenient provision of goods and services and provide:
 - (a) a focus for community life
 - (b) safe, permeable, pleasant and accessible walking and cycling networks.
- 3 The provision of a safe pedestrian environment within centres which gives high priority to pedestrians, public and community transport.
- 4 Increased vitality and activity in centres through the introduction and integration of housing.
- 5 Centres developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.
- 6 Development of centres outside of Greater Adelaide in accordance with the following hierarchy:
 - (a) Regional Centre
 - (b) District Centre
 - (c) Town Centre (for smaller towns with a single centre zone)
 - (d) Local Centre (subsidiary centres for towns with a regional or district centre).
- 7 The central business district of the City of Adelaide providing the principal focus for the economic, social and political life of Greater Adelaide and the State.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development within centres should:
 - (a) integrate facilities within the zone
 - (b) allow for the multiple use of facilities and the sharing of utility spaces
 - (c) allow for the staging of development within the centre
 - (d) be integrated with public and community transport.
- 2 Development within centres should be designed to be compatible with adjoining areas. This should be promoted through landscaping, screen walls, centre orientation, location of access ways, buffer strips and transitional use areas.
- 3 Development within centres should provide:
 - (a) public spaces such as malls, plazas and courtyards

- (b) street furniture, including lighting, signs, litter bins, seats and bollards, that is sited and designed to complement the desired character
 - (c) unobtrusive facilities for the storage and removal of waste materials
 - (d) public facilities including toilets, infant changing facilities for parents, seating, litter bins, telephones and community information boards
 - (e) access for public and community transport and sheltered waiting areas for passengers
 - (f) lighting for pedestrian paths, buildings and associated areas
 - (g) a single landscaping theme
 - (h) safe and secure bicycle parking
- 4 Development should be designed to minimise energy consumption for lighting, heating, cooling and ventilation.
- 5 A single architectural theme should be established within centres through:
- (a) constructing additions or other buildings in a style complementary to the existing shopping complex
 - (b) renovating the existing shopping complex to complement new additions and other buildings within the centre
 - (c) employing a signage theme.
- 6 The design of undercroft or semi-basement car parking areas should not detract from the visual quality and amenity of adjacent pedestrian paths, streets or public spaces.
- 7 Undercroft or semi-basement car parking areas should not project above natural or finished ground level by more than 1 metre.

Arterial Roads

- 8 Centres should develop on one side of an arterial road or in one quadrant of an arterial road intersection.
- 9 Centre development straddling an arterial road should:
- (a) concentrate on one side of the arterial road or one quadrant of the arterial road intersection
 - (b) minimise the need for pedestrian and vehicular movement from one part of the centre to another across the arterial road.

Retail Development

- 10 A shop or group of shops with a gross leaseable area of greater than 250 square metres should be located within a centre zone.
- 11 A shop or group of shops with a gross leaseable area of less than 250 square metres should not be located on arterial roads unless within a centre zone.
- 12 A shop or group of shops located outside of zones that allow for retail development should:
- (a) be of a size and type that will not hinder the development, function or viability of any centre zone
 - (b) not demonstrably lead to the physical deterioration of any designated centre

Salisbury Council
General Section
Centres and Retail Development

(c) be developed taking into consideration its effect on adjacent development.

13 Bulky goods outlets should only be located in centres, commercial and bulky goods zones.

14 Bulky goods outlets located within centres zones should:

- (a) complement the overall provision of facilities
- (b) be sited towards the periphery of those centres where the bulky goods outlet has a gross leaseable area of 500 square metres or more.

Crime Prevention

OBJECTIVES

- 1 A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable.
- 2 Buildings should be designed to overlook public and communal streets and public open space to allow casual surveillance.
- 3 Development should provide a robust environment that is resistant to vandalism and graffiti.
- 4 Development should provide lighting in frequently used public spaces including those:
 - (a) along dedicated cyclist and pedestrian pathways, laneways and access routes
 - (b) around public facilities such as toilets, telephones, bus stops, seating, litter bins, automatic teller machines, taxi ranks and car parks.
- 5 Development, including car park facilities should incorporate signage and lighting that indicate the entrances and pathways to, from and within sites.
- 6 Landscaping should be used to assist in discouraging crime by:
 - (a) screen planting areas susceptible to vandalism
 - (b) planting trees or ground covers, rather than shrubs, alongside footpaths
 - (c) planting vegetation other than ground covers a minimum distance of two metres from footpaths to reduce concealment opportunities.
- 7 Site planning, buildings, fences, landscaping and other features should clearly differentiate public, communal and private areas.
- 8 Buildings should be designed to minimise and discourage access between roofs, balconies and windows of adjoining dwellings.
- 9 Public toilets should be located, sited and designed:
 - (a) to promote the visibility of people entering and exiting the facility (eg by avoiding recessed entrances and dense shrubbery that obstructs passive surveillance)
 - (b) near public and community transport links and pedestrian and cyclist networks to maximise visibility.
- 10 Development should avoid pedestrian entrapment spots and movement predictors (eg routes or paths that are predictable or unchangeable and offer no choice to pedestrians).

Salisbury Council
General Section
Crime Prevention

- 11 Development should be designed to maximise surveillance of open space, pedestrian routes, centres and residential areas by:
- (a) orienting the frontages and entrances of buildings towards the public street
 - (b) avoiding screens, high walls, carports and landscaping that obscure direct views to public areas
 - (c) placing the entrances of buildings opposite each other across a street, or group entrances of multiple dwelling developments onto a commonly visible area to provide maximum mutual surveillance
 - (d) arranging living areas, windows, access ways and balconies to overlook open space and recreation areas and provide observation points to all areas of a site, particularly entrances and car parks.

Design and Appearance

OBJECTIVES

- 1 Development of a high architectural standard that responds to and reinforces positive aspects of the local environment and built form.
- 2 Roads, open spaces, buildings and land uses laid out and linked so that they are easy to understand and navigate.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 The design of a building may be of a contemporary nature and exhibit an innovative style provided the overall form is sympathetic to the scale of development in the locality and with the context of its setting with regard to shape, size, materials and colour.
- 2 Buildings should be designed and sited to avoid creating extensive areas of uninterrupted walling facing areas exposed to public view.
- 3 Buildings should be designed to reduce their visual bulk and provide visual interest through design elements such as:
 - (a) articulation
 - (b) colour and detailing
 - (c) small vertical and horizontal components
 - (d) design and placing of windows
 - (e) variations to facades.
- 4 Where a building is sited on or close to a side boundary, the side boundary wall should be sited and limited in length and height to minimise:
 - (a) the visual impact of the building as viewed from adjoining properties
 - (b) overshadowing of adjoining properties and allow adequate sun light to neighbouring buildings.
- 5 Building form should not unreasonably restrict existing views available from neighbouring properties and public spaces.
- 6 Transportable buildings and buildings which are elevated on stumps, posts, piers, columns or the like, should have their suspended footings enclosed around the perimeter of the building with brickwork or timber, and the use of verandas, pergolas and other suitable architectural detailing to give the appearance of a permanent structure.
- 7 The external walls and roofs of buildings should not incorporate highly reflective materials which will result in glare to neighbouring properties or drivers.
- 8 Structures located on the roofs of buildings to house plant and equipment should form an integral part of the building design in relation to external finishes, shaping and colours.
- 9 Building design should emphasise pedestrian entry points to provide perceptible and direct access from public street frontages and vehicle parking areas.

Salisbury Council
General Section
Design and Appearance

- 10 Development should provide clearly recognisable links to adjoining areas and facilities.
- 11 Buildings, landscaping, paving and signage should have a co-ordinated appearance that maintains and enhances the visual attractiveness of the locality.
- 12 Buildings (other than ancillary buildings or group dwellings) should be designed so that their main façade faces the primary street frontage of the land on which they are situated.
- 13 Where applicable, development should incorporate verandas over footpaths to enhance the quality of the pedestrian environment.
- 14 Development should be designed and sited so that outdoor storage, loading and service areas are screened from public view by an appropriate combination of built form, solid fencing and/or landscaping.
- 15 Outdoor lighting should not result in light spillage on adjacent land.
- 16 Balconies should:
 - (a) be integrated with the overall architectural form and detail of the building
 - (b) be sited to face predominantly north, east or west to provide solar access
 - (c) have a minimum area of 2 square metres.

Development Adjacent Heritage Places

- 17 The design of multi-storey buildings should not detract from the form and materials of adjacent State and local heritage places listed in [Table Sal/4 - State Heritage Places](#).
- 18 Development on land adjacent to a State or local heritage place, as listed in [Table Sal/4 - State Heritage Places](#) should be sited and designed to reinforce the historic character of the place and maintain its visual prominence.

Overshadowing

- 19 The design and location of buildings should enable direct winter sunlight into adjacent dwellings and private open space and minimise the overshadowing of:
 - (a) windows of habitable rooms
 - (b) upper-level private balconies that provide the primary open space area for a dwelling
 - (c) solar collectors (such as solar hot water systems and photovoltaic cells).

Visual Privacy

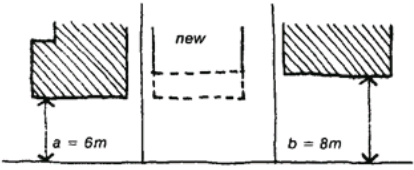
- 20 Development should minimise direct overlooking of habitable rooms and private open spaces of dwellings through measures such as:
 - (a) off-setting the location of balconies and windows of habitable rooms with those of other buildings so that views are oblique rather than direct
 - (b) building setbacks from boundaries (including building boundary to boundary where appropriate) that interrupt views or that provide a spatial separation between balconies or windows of habitable rooms
 - (c) screening devices (including fencing, obscure glazing, screens, external ventilation blinds, window hoods and shutters) that are integrated into the building design and have minimal negative effect on residents' or neighbours' amenity.
- 21 Permanently fixed external screening devices should be designed and coloured to complement the associated building's external materials and finishes

Building Setbacks from Road Boundaries

22 The setback of buildings from public roads should:

- (a) be similar to, or compatible with, setbacks of buildings on adjoining land and other buildings in the locality
- (b) contribute positively to the streetscape character of the locality
- (c) not result in or contribute to a detrimental impact upon the function, appearance or character of the locality.

23 Except where specified in a particular zone, policy area or precinct, the main face of a building should be set back from the primary road frontage in accordance with the following table:

Setback difference between buildings on adjacent allotments	Setback of new building
Up to 2 metres	The same setback as one of the adjacent buildings, as illustrated below:  <p style="text-align: center;"><i>When $b > a \geq 2$, setback of new dwelling = a or b</i></p>
Greater than 2 metres	At least the average setback of the adjacent buildings.

- 24 Except where specified in a particular zone, policy area, or precinct, buildings and structures should be set back from road boundaries having regard to the requirements set out in [Table Sal/1 - Building Setbacks from Road Boundaries](#).
- 25 Except where specified in a zone, policy area or precinct, the setback of development from a secondary street frontage should reflect the setbacks of the adjoining buildings and other buildings in the locality.
- 26 Development likely to encroach within a road widening setback under the *Metropolitan Adelaide Road Widening Plan Act 1972* should be set back sufficiently from the boundary required for road widening.

Salisbury Council
General Section
Energy Efficiency

Energy Efficiency

OBJECTIVES

- 1 Development designed and sited to conserve energy.
- 2 Development that provides for on-site power generation including photovoltaic cells and wind power.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should provide for efficient solar access to buildings and open space all year around.
- 2 Buildings should be sited and designed:
 - (a) to ensure adequate natural light and winter sunlight is available to the main activity areas of adjacent buildings
 - (b) so that open spaces associated with the main activity areas face north for exposure to winter sun.

On-site Energy Generation

- 3 Development should facilitate the efficient use of photovoltaic cells and solar hot water systems by:
 - (a) taking into account overshadowing from neighbouring buildings
 - (b) designing roof orientation and pitches to maximise exposure to direct sunlight.
- 4 Public infrastructure and lighting, should be designed to generate and use renewable energy.

Hazards

OBJECTIVES

- 1 Maintenance of the natural environment and systems by limiting development in areas susceptible to natural hazard risk.
- 2 Development located away from areas that are vulnerable to, and cannot be adequately and effectively protected from the risk of natural hazards.
- 3 Critical community facilities such as hospitals, emergency control centres, major service infrastructure facilities, and emergency service facilities located where they are not exposed to natural hazard risks.
- 4 Development located and designed to minimise the risks to safety and property from flooding.
- 5 Development located to minimise the threat and impact of bushfires on life and property.
- 6 Expansion of existing non-rural uses directed away from areas of high bushfire risk.
- 7 The environmental values and ecological health of receiving waterways and marine environments protected from the release of acid water resulting from the disturbance of acid sulphate soils.
- 8 Protection of human health and the environment wherever site contamination has been identified or is suspected to have occurred.
- 9 Appropriate assessment and remediation of site contamination to ensure land is suitable for the proposed use and provides a safe and healthy living and working environment.
- 10 Minimisation of harm to life, property and the environment through appropriate location of development and appropriate storage, containment and handling of hazardous materials.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should be excluded from areas that are vulnerable to, and cannot be adequately and effectively protected from, the risk of hazards.
- 2 Development located on land subject to hazards as shown on the *Overlay Maps - Development Constraints* should not occur unless it is sited, designed and undertaken with appropriate precautions being taken against the relevant hazards.
- 3 There should not be any significant interference with natural processes in order to reduce the exposure of development to the risk of natural hazards.

Flooding

- 4 Development should not occur on land where the risk of flooding is likely to be harmful to safety or damage property.
- 5 Development should not be undertaken in areas liable to inundation by tidal, drainage or flood waters **unless the development can achieve all of the following:**
 - (a) it is developed with a public stormwater system capable of catering for a 1-in-100 year average return interval flood event
 - (b) buildings are designed and constructed to prevent the entry of floodwaters in a 1-in-100 year average return interval flood event.

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Hazards

- 6 Development, including earthworks associated with development, should not do any of the following:
- (a) impede the flow of floodwaters through the land or other surrounding land
 - (b) increase the potential hazard risk to public safety of persons during a flood event
 - (c) aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood
 - (d) cause any adverse effect on the floodway function
 - (e) increase the risk of flooding of other land
 - (f) obstruct a watercourse.

Bushfire

- 7 The following bushfire protection principles of development control apply to development of land identified as General, Medium and High bushfire risk areas as shown on the *Bushfire Protection Area BPA Maps - Bushfire Risk*.
- 8 Development in a Bushfire Protection Area should be in accordance with those provisions of the *Minister's Code: Undertaking development in Bushfire Protection Areas* that are designated as mandatory for Development Plan Consent purposes.
- 9 Buildings and structures should be located away from areas that pose an unacceptable bushfire risk as a result of one or more of the following:
- (a) vegetation cover comprising trees and/or shrubs
 - (b) poor access
 - (c) rugged terrain
 - (d) inability to provide an adequate building protection zone
 - (e) inability to provide an adequate supply of water for fire-fighting purposes.
- 10 Residential, tourist accommodation and other habitable buildings should:
- (a) be sited on the flatter portion of allotments and avoid steep slopes, especially upper slopes, narrow ridge crests and the tops of narrow gullies, and slopes with a northerly or westerly aspect
 - (b) be sited in areas with low bushfire hazard vegetation and set back at least 20 metres from existing hazardous vegetation
 - (c) have a dedicated and accessible water supply available at all times for fire fighting.
- 11 Extensions to existing buildings, outbuildings and other ancillary structures should be sited and constructed using materials to minimise the threat of fire spread to residential, tourist accommodation and other habitable buildings in the event of bushfire.
- 12 Buildings and structures should be designed and configured to reduce the impact of bushfire through using simple designs that reduce the potential for trapping burning debris against the building or structure, or between the ground and building floor level in the case of transportable buildings.
- 13 Land division for residential or tourist accommodation purposes within areas of high bushfire risk should be limited to those areas specifically set aside for these uses.

- 14 Where land division does occur it should be designed to:
- (a) minimise the danger to residents, other occupants of buildings and fire fighting personnel
 - (b) minimise the extent of damage to buildings and other property during a bushfire
 - (c) ensure each allotment contains a suitable building site that is located away from vegetation that would pose an unacceptable risk in the event of bushfire
 - (d) ensure provision of a fire hazard separation zone isolating residential allotments from areas that pose an unacceptable bushfire risk by containing the allotments within a perimeter road or through other means that achieve an adequate separation.
- 15 Vehicle access and driveways to properties and public roads created by land division should be designed and constructed to:
- (a) facilitate safe and effective operational use for fire-fighting and other emergency vehicles and residents
 - (b) provide for two-way vehicular access between areas of fire risk and the nearest public road.
- 16 Olive orchards should be located and developed in a manner that minimises their potential to fuel bushfires.

Salinity

- 17 Development should not increase the potential for, or result in an increase in, soil and water salinity.
- 18 Preservation, maintenance and restoration of locally indigenous plant species should be encouraged in areas affected by dry land salinity.
- 19 Irrigated horticulture and pasture should not increase groundwater-induced salinity.

Acid Sulfate Soils

- 20 Development and activities, including excavation and filling of land, that may lead to disturbance of potential or actual acid sulfate soils (including land identified on the *Overlay Maps – Development Constraints*) should be avoided unless such disturbances are managed in a way that effectively avoids the potential for harm or damage to any of the following:
- (a) the marine and estuarine environment
 - (b) natural water bodies and wetlands
 - (c) agricultural or aquaculture activities
 - (d) buildings, structures and infrastructure
 - (e) public health.
- 21 Development, including primary production, aquaculture activities and infrastructure, should not proceed unless it can be demonstrated that the risk of releasing acid water resulting from the disturbance of acid sulfate soils is minimal.

Site Contamination

- 22 Development, including land division, should not occur where site contamination has occurred unless the site has been assessed and remediated as necessary to ensure that it is suitable and safe for the proposed use.

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Hazards

Containment of Chemical and Hazardous Materials

- 23 Hazardous materials should be stored and contained in a manner that minimises the risk to public health and safety and the potential for water, land or air contamination.
- 24 Development that involves the storage and handling of hazardous materials should ensure that these are contained in designated areas that are secure, readily accessible to emergency vehicles, impervious, protected from rain and stormwater intrusion and other measures necessary to prevent:
 - (a) discharge of polluted water from the site
 - (b) contamination of land
 - (c) airborne migration of pollutants
 - (d) potential interface impacts with sensitive land uses.

Landslip

- 25 Development, including associated cut and fill activities, should not lead to an increased danger from land surface instability or to the potential of landslip occurring on the site or on surrounding land.
- 26 Development on steep slopes should promote the retention and replanting of vegetation as a means of stabilising and reducing the possibility of surface movement or disturbance.
- 27 Development in areas susceptible to landslip should:
 - (a) incorporate split level designs to minimise cutting into the slope
 - (b) ensure that cut and fill and heights of faces are minimised
 - (c) ensure cut and fill is supported with engineered retaining walls or are battered to appropriate grades
 - (d) control any erosion that will increase the gradient of the slope and decrease stability
 - (e) ensure the siting and operation of an effluent drainage field does not contribute to landslip
 - (f) provide drainage measures to ensure surface stability is not compromised
 - (g) ensure natural drainage lines are not obstructed.

Infrastructure

OBJECTIVES

- 1 Infrastructure provided in an economical and environmentally sensitive manner.
- 2 Infrastructure, including social infrastructure, provided in advance of need.
- 3 Suitable land for infrastructure identified and set aside in advance of need.
- 4 The visual impact of infrastructure facilities minimised.
- 5 The efficient and cost-effective use of existing infrastructure.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should not occur without the provision of adequate utilities and services, including:
 - (a) electricity supply
 - (b) water supply
 - (c) drainage and stormwater systems
 - (d) waste disposal
 - (e) effluent disposal systems
 - (f) formed all-weather public roads
 - (g) telecommunications services
 - (h) social infrastructure, community services and facilities
 - (i) gas services.
- 2 Development should only occur where it provides, or has access to, relevant easements for the supply of infrastructure.
- 3 Development should incorporate provision for the supply of infrastructure services to be located within common service trenches where practicable.
- 4 Development should not take place until adequate and co-ordinated drainage of the land is assured.
- 5 Development in urban areas should not occur without provision of an adequate reticulated domestic quality mains water supply and an appropriate waste treatment system.
- 6 In areas where no reticulated water supply is available, buildings whose usage is reliant on a water supply should be equipped with an adequate and reliable on-site water storage system.
- 7 Electricity infrastructure should be designed and located to minimise its visual and environmental impacts.
- 8 Development and landscaping within 25 metres of the 275 kV overhead electricity lines should ensure that all clearances and safety restrictions are met.

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Infrastructure

- 9 In urban areas, electricity supply serving new development should be installed underground.
- 10 Utilities and services, including access roads and tracks, should be sited on areas already cleared of native vegetation. If this is not possible, their siting should cause minimal interference or disturbance to existing native vegetation and biodiversity.
- 11 Utility buildings and structures should be grouped with non-residential development where possible.
- 12 Development in proximity to infrastructure facilities should be sited and be of a scale to ensure adequate separation to protect people and property.

Interface between Land Uses

OBJECTIVES

- 1 Development located and designed to minimise adverse impact and conflict between land uses.
- 2 Protect community health and amenity from adverse impacts of development.
- 3 Protect desired land uses from the encroachment of incompatible development.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:
 - (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants
 - (b) noise
 - (c) vibration
 - (d) electrical interference
 - (e) light spill
 - (f) glare
 - (g) hours of operation
 - (h) traffic impacts.
- 2 Development should be sited and designed to minimise negative impacts on existing and potential future land uses desired in the locality.
- 3 Development adjacent to a Residential Zone should be designed to minimise overlooking and overshadowing of adjacent dwellings and private open space.
- 4 Residential development adjacent to non-residential zones and land uses should be located, designed and/or sited to protect residents from potential adverse impacts from non-residential activities.
- 5 Sensitive uses likely to conflict with the continuation of lawfully existing developments and land uses desired for the zone should be designed to minimise negative impacts.
- 6 Non-residential development on land abutting a residential zone should be designed to minimise noise impacts to achieve adequate levels of compatibility between existing and proposed uses.

Noise Generating Activities

- 7 Development that emits noise (other than music noise) should include noise attenuation measures that achieve the relevant *Environment Protection (Noise) Policy* criteria when assessed at the nearest existing noise sensitive premises.
- 8 Development with the potential to emit significant noise (e.g. industry) should incorporate noise attenuation measures that prevent noise from causing unreasonable interference with the amenity of noise sensitive premises.

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Interface between Land Uses

- 9 Outdoor areas (such as beer gardens or dining areas) associated with licensed premises should be designed or sited to minimise adverse noise impacts on adjacent existing or future noise sensitive development.
- 10 Development proposing music should include noise attenuation measures that achieve the following desired noise levels:

Noise level assessment location	Desired noise level
Adjacent existing <i>noise sensitive development</i> property boundary	Less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum and Less than 5 dB(A) above the level of background noise ($LA_{90,15min}$) for the overall (sum of all octave bands) A-weighted level
Adjacent <i>land</i> property boundary	Less than 65dB(Lin) at 63Hz and 70dB(Lin) in all other octave bands of the sound spectrum or Less than 8 dB above the level of background noise ($L_{90,15min}$) in any octave band of the sound spectrum and 5 dB(A) overall (sum of all octave bands) A-weighted level

Air Quality

- 11 Development with the potential to emit harmful or nuisance-generating air pollution should incorporate air pollution control measures to prevent harm to human health or unreasonable interference with the amenity of sensitive uses within the locality.
- 12 Chimneys or exhaust flues associated with commercial development (including cafes, restaurants and fast food outlets) should be designed to ensure they do not cause a nuisance or health concerns to nearby sensitive receivers by:
- incorporating appropriate treatment technology before exhaust emissions are released to the atmosphere
 - ensuring that the location and design of chimneys or exhaust flues maximises dispersion and takes into account the location of nearby sensitive uses.

Rural Interface

- 13 The potential for adverse impacts resulting from rural development should be minimised by:
- not locating horticulture or intensive animal keeping on land adjacent to townships
 - maintaining an adequate separation between horticulture or intensive animal keeping and townships, other sensitive uses and, where desirable, other forms of primary production.
- 14 Traffic movement, spray drift, dust, noise, odour and the use of frost fans and gas guns associated with primary production should not lead to unreasonable impact on adjacent land uses.
- 15 Existing primary production and mineral extraction should not be prejudiced by the inappropriate encroachment of sensitive uses such as urban development.
- 16 Development that is adjacent to land used for primary production (within either the zone or adjacent zones) should include appropriate setbacks and vegetative plantings designed to minimise the potential impacts of chemical spray drift and other impacts associated with primary production.

- 17 New urban development should provide a buffer of at least 40 metres wide (inclusive of any fuel break, emergency vehicle access or road) separating urban and rural activities.
- 18 Development located within 300 metres of facilities for the handling, transportation and storage of bulk commodities should:
 - (a) not prejudice the continued operation of those facilities
 - (b) be located, designed and developed having regard to the potential environmental impact arising from the operation of such facilities and the potential extended hours of operation.

Landscaping, Fences and Walls

OBJECTIVES

- 1 The amenity of land and development enhanced with appropriate planting and other landscaping works, using locally indigenous plant species where possible.
- 2 Functional fences and walls that enhance the attractiveness of development.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should incorporate open space and landscaping and minimise hard paved surfaces in order to:
 - (a) complement built form and reduce the visual impact of larger buildings (eg taller and broader plantings against taller and bulkier building components)
 - (b) enhance the appearance of road frontages
 - (c) screen service yards, loading areas and outdoor storage areas
 - (d) minimise maintenance and watering requirements
 - (e) enhance and define outdoor spaces, including car parking areas
 - (f) maximise shade and shelter
 - (g) assist in climate control within and around buildings
 - (h) minimise heat absorption and reflection
 - (i) maintain privacy
 - (j) maximise stormwater re-use
 - (k) complement existing vegetation, including native vegetation
 - (l) contribute to the viability of ecosystems and species
 - (m) promote water and biodiversity conservation.
- 2 Landscaping should:
 - (a) include the planting of locally indigenous species where appropriate
 - (b) be oriented towards the street frontage
 - (c) result in the appropriate clearance from powerlines and other infrastructure being maintained.
- 3 Landscaping should not:
 - (a) unreasonably restrict solar access to adjoining development
 - (b) cause damage to buildings, paths and other landscaping from root invasion, soil disturbance or plant overcrowding

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Landscaping, Fences and Walls

- (c) introduce pest plants
 - (d) increase the risk of bushfire
 - (e) remove opportunities for passive surveillance
 - (f) increase leaf fall in watercourses
 - (g) increase the risk of weed invasion
 - (h) obscure driver sight lines
 - (i) create a hazard for train or tram drivers by obscuring sight lines at crossovers.
- 4 Fences and walls, including retaining walls, should:
- (a) not result in damage to neighbouring trees
 - (b) be compatible with the associated development and with existing predominant, attractive fences and walls in the locality
 - (c) enable some visibility of buildings from and to the street to enhance safety and allow casual surveillance
 - (d) incorporate articulation or other detailing where there is a large expanse of wall facing the street
 - (e) assist in highlighting building entrances
 - (f) be sited and limited in height, to ensure adequate sight lines for motorists and pedestrians especially on corner sites
 - (g) in the case of side and rear boundaries, be of sufficient height to maintain privacy and/or security without adversely affecting the visual amenity or access to sunlight of adjoining land
 - (h) be constructed of non-flammable materials.

Natural Resources

OBJECTIVES

- 1 Retention, protection and restoration of the natural resources and environment.
- 2 Protection of the quality and quantity of South Australia's surface waters, including inland, *marine and estuarine* and underground waters.
- 3 The ecologically sustainable use of natural resources including water resources, including *marine waters*, ground water, surface water and watercourses.
- 4 Natural hydrological systems and environmental flows reinstated, and maintained and enhanced.
- 5 Development consistent with the principles of water sensitive design.
- 6 Development sited and designed to:
 - (a) protect natural ecological systems
 - (b) achieve the sustainable use of water
 - (c) protect water quality, including receiving waters
 - (d) reduce runoff and peak flows and prevent the risk of downstream flooding
 - (e) minimise demand on reticulated water supplies
 - (f) maximise the harvest and use of stormwater
 - (g) protect stormwater from pollution sources.
- 7 Storage and use of stormwater which avoids adverse impact on public health and safety.
- 8 Native flora, fauna and ecosystems protected, retained, conserved and restored.
- 9 Restoration, expansion and linking of existing native vegetation to facilitate habitat corridors for ease of movement of fauna.
- 10 Minimal disturbance and modification of the natural landform.
- 11 Protection of the physical, chemical and biological quality of soil resources.
- 12 Protection of areas prone to erosion or other land degradation processes from inappropriate development.
- 13 Protection of the scenic qualities of natural and rural landscapes.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should be undertaken with minimum impact on the natural environment, including air and water quality, land, soil, biodiversity, and scenically attractive areas.
- 2 Development should ensure that South Australia's natural assets, such as biodiversity, water and soil, are protected and enhanced.

3 Development should not significantly obstruct or adversely affect sensitive ecological areas such as creeks, wetlands, estuaries and significant seagrass and mangrove communities.

4 Development should be appropriate to land capability and the protection and conservation of water resources and biodiversity.

Water Sensitive Design

5 Development should be designed to maximise conservation, minimise consumption and encourage re-use of water resources.

6 Development should not take place if it results in unsustainable use of surface or underground water resources.

7 Development should be sited and designed to:

(a) capture and re-use stormwater, where practical

(b) minimise surface water runoff

(c) prevent soil erosion and water pollution

(d) protect and enhance natural water flows

(e) protect water quality by providing adequate separation distances from watercourses and other water bodies

(f) not contribute to an increase in salinity levels

(g) avoid the water logging of soil or the release of toxic elements

(h) maintain natural hydrological systems and not adversely affect:

(i) the quantity and quality of groundwater

(ii) the depth and directional flow of groundwater

(iii) the quality and function of natural springs.

8 Water discharged from a development site should:

(a) be of a physical, chemical and biological condition equivalent to or better than its pre-developed state

(b) not exceed the rate of discharge from the site as it existed in pre-development conditions.

9 Development should include stormwater management systems to protect it from damage during a minimum of a 1-in-100 year average return interval flood.

10 Development should have adequate provision to control any stormwater over-flow runoff from the site and should be sited and designed to improve the quality of stormwater and minimise pollutant transfer to receiving waters.

11 Development should include stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure the carrying capacities of downstream systems are not overloaded.

12 Development should include stormwater management systems to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system.

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Natural Resources

- 13 Stormwater management systems should preserve natural drainage systems, including the associated environmental flows.
- 14 Stormwater management systems should:
- (a) maximise the potential for stormwater harvesting and re-use, either on-site or as close as practicable to the source
 - (b) utilise, but not be limited to, one or more of the following harvesting methods:
 - (i) the collection of roof water in tanks
 - (ii) the discharge to open space, landscaping or garden areas, including strips adjacent to car parks
 - (iii) the incorporation of detention and retention facilities
 - (iv) aquifer recharge.
- 15 Where it is not practicable to detain or dispose of stormwater on site, only clean stormwater runoff should enter the public stormwater drainage system.
- 16 Artificial wetland systems, including detention and retention basins, should be sited and designed to:
- (a) ensure public health and safety is protected
 - (b) minimise potential public health risks arising from the breeding of mosquitoes.

Water Catchment Areas

- 17 Development should ensure watercourses and their beds, banks, wetlands and floodplains are not damaged or modified and are retained in their natural state, except where modification is required for essential access or maintenance purposes.
- 18 No development should occur where its proximity to a swamp or wetland will damage or interfere with the hydrology or water regime of the swamp or wetland.
- 19 A wetland or low-lying area providing habitat for native flora and fauna should not be drained, except temporarily for essential management purposes to enhance environmental values.
- 20 Along watercourses, areas of remnant native vegetation, or areas prone to erosion, that are capable of natural regeneration should be fenced off to limit stock access.
- 21 Development such as cropping, intensive animal keeping, residential, tourism, industry and horticulture, that increases the amount of surface run-off should include a strip of land at least 20 metres wide measured from the top of existing banks on each side of a watercourse that is:
- (a) fenced to exclude livestock
 - (b) kept free of development, including structures, formal roadways or access ways for machinery or any other activity causing soil compaction or significant modification of the natural surface of the land
 - (c) revegetated with locally indigenous vegetation comprising trees, shrubs and other groundcover plants to filter run-off so as to reduce the impacts on native aquatic ecosystems and to minimise soil loss eroding into the watercourse.

- 22 Development resulting in the depositing of an object or solid material in a watercourse or floodplain or the removal of bank and bed material should not:
- (a) adversely affect the migration of aquatic biota
 - (b) adversely affect the natural flow regime
 - (c) cause or contribute to water pollution
 - (d) result in watercourse or bank erosion
 - (e) adversely affect native vegetation upstream or downstream that is growing in or adjacent to a watercourse.
- 23 The location and construction of dams, water tanks and diversion drains should:
- (a) occur off watercourse
 - (b) not take place in ecologically sensitive areas or on erosion-prone sites
 - (c) provide for low flow by-pass mechanisms to allow for migration of aquatic biota
 - (d) not negatively affect downstream users
 - (e) minimise in-stream or riparian vegetation loss
 - (f) incorporate features to improve water quality (eg wetlands and floodplain ecological communities)
 - (g) protect ecosystems dependent on water resources.
- 24 Irrigated horticulture and pasture should not increase groundwater-induced salinity.
- 25 Development should comply with the current *Environment Protection (Water Quality) Policy*.

Biodiversity and Native Vegetation

- 26 Development should retain existing areas of native vegetation and where possible contribute to revegetation using locally indigenous plant species.
- 27 Development should be designed and sited to minimise the loss and disturbance of native flora and fauna, including marine animals and plants, and their breeding grounds and habitats.
- 28 Native vegetation should be conserved and its conservation value and function not compromised by development if the native vegetation does any of the following:
- (a) provides an important habitat for wildlife or shade and shelter for livestock
 - (b) has a high plant species diversity or includes rare, vulnerable or endangered plant species or plant associations and communities
 - (c) provides an important seed bank for locally indigenous vegetation
 - (d) has high amenity value and/or significantly contributes to the landscape quality of an area, including the screening of buildings and unsightly views
 - (e) has high value as a remnant of vegetation associations characteristic of a district or region prior to extensive clearance for agriculture
 - (f) is growing in, or is characteristically associated with a wetland environment.

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General Section
Natural Resources**

- 29 Native vegetation should not be cleared if such clearing is likely to lead to, cause or exacerbate any of the following:
- (a) erosion or sediment within water catchments
 - (b) decreased soil stability
 - (c) soil or land slip
 - (d) deterioration in the quality of water in a watercourse or surface water runoff
 - (e) a local or regional salinity problem
 - (f) the occurrence or intensity of local or regional flooding.
- 30 Development that proposes the clearance of native vegetation should address or consider the implications that removing the native vegetation will have on the following:
- (a) provision for linkages and wildlife corridors between significant areas of native vegetation
 - (b) erosion along watercourses and the filtering of suspended solids and nutrients from run-off
 - (c) the amenity of the locality
 - (d) bushfire safety
 - (e) the net loss of native vegetation and other biodiversity.
- 31 Where native vegetation is to be removed, it should be replaced in a suitable location on the site with locally indigenous vegetation to ensure that there is not a net loss of native vegetation and biodiversity.
- 32 Development should be located and occur in a manner which:
- (a) does not increase the potential for, or result in, the spread of pest plants, or the spread of any non-indigenous plants into areas of native vegetation or a conservation zone
 - (b) avoids the degradation of remnant native vegetation by any other means including as a result of spray drift, compaction of soil, modification of surface water flows, pollution to groundwater or surface water or change to groundwater levels
 - (c) incorporates a separation distance and/or buffer area to protect wildlife habitats and other features of nature conservation significance.
- 33 Development should promote the long-term conservation of vegetation by:
- (a) avoiding substantial structures, excavations, and filling of land in close proximity to the trunk of trees and beneath their canopies
 - (b) minimising impervious surfaces beneath the canopies of trees
 - (c) taking other effective and reasonable precautions to protect both vegetation and the integrity of structures and essential services.
- 34 Horticulture involving the growing of olives should be located at least:
- (a) 500 metres from:
 - (i) a national park
 - (ii) a conservation park

(iii) a wilderness protection area

(iv) the edge of a substantially intact stratum of native vegetation greater than 5 hectares in area

(b) 50 metres from the edge of stands of native vegetation 5 hectares or less in area.

35 Horticulture involving the growing of olives should have at least one locally indigenous tree that will grow to a height of at least 7 metres sited at least every 100 metres around the perimeter of the orchard.

Soil Conservation

36 Development should not have an adverse impact on the natural, physical, chemical or biological quality and characteristics of soil resources.

37 Development should be designed and sited to prevent erosion.

38 Development should take place in a manner that will minimise alteration to the existing landform.

39 Development should minimise the loss of soil from a site through soil erosion or siltation during the construction phase of any development and following the commencement of an activity.

Orderly and Sustainable Development

OBJECTIVES

- 1 Orderly and economical development that creates a safe, convenient and pleasant environment in which to live.
- 2 Development occurring in an orderly sequence and in a compact form to enable the efficient provision of public services and facilities.
- 3 Development that does not jeopardise the continuance of adjoining authorised land uses.
- 4 Development that does not prejudice the achievement of the provisions of the Development Plan.
- 5 Development abutting adjoining Council areas having regard to the policies of that Council's Development Plan.
- 6 Urban development contained within existing townships and settlements and located only in zones designated for such development.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should not prejudice the development of a zone for its intended purpose.
- 2 Land outside of townships and settlements should primarily be used for primary production and conservation purposes.
- 3 The economic base of the region should be expanded in a sustainable manner.
- 4 Urban development should form a compact extension to an existing built-up area.
- 5 Ribbon development should not occur along the coast, water frontages or arterial roads shown in *Overlay Maps - Transport*.
- 6 Development should be located and staged to achieve the economical provision of public services and infrastructure, and to maximise the use of existing services and infrastructure.
- 7 Where development is expected to impact upon the existing infrastructure network (including the transport network), development should demonstrate how the undue effect will be addressed.
- 8 Vacant or underutilised land should be developed in an efficient and co-ordinated manner to not prejudice the orderly development of adjacent land.

Salisbury Council
General Section
Regulated Trees

Regulated Trees

OBJECTIVES

- 1 The conservation of regulated trees that provide important aesthetic and/or environmental benefit.
- 2 Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:
 - (a) significantly contributes to the character or visual amenity of the locality
 - (b) indigenous to the locality
 - (c) a rare or endangered species
 - (d) an important habitat for native fauna.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should have minimum adverse effects on regulated trees.
- 2 A regulated tree should not be removed or damaged other than where it can be demonstrated that one or more of the following apply:
 - (a) the tree is diseased and its life expectancy is short
 - (b) the tree represents a material risk to public or private safety
 - (c) the tree is causing damage to a building
 - (d) development that is reasonable and expected would not otherwise be possible
 - (e) the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree.
- 3 Tree damaging activity other than removal should seek to maintain the health, aesthetic appearance and structural integrity of the tree.

Significant Trees

OBJECTIVES

- 1 The conservation of significant trees, in Metropolitan Adelaide, that provide important aesthetic and environmental benefit.
- 2 The conservation of significant trees in balance with achieving appropriate development.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should preserve the following attributes where a significant tree demonstrates at least one of the following attributes:
 - (a) makes an important contribution to the character or amenity of the local area; or
 - (b) is indigenous to the local area and its species is listed under the *National Parks and Wildlife Act 1972* as a rare or endangered native species
 - (c) represents an important habitat for native fauna
 - (d) is part of a wildlife corridor of a remnant area of native vegetation
 - (e) is important to the maintenance of biodiversity in the local environment
 - (f) forms a notable visual element to the landscape of the local area.
- 2 Development should be undertaken so that it has a minimum adverse effect on the health of a significant tree.
- 3 Significant trees should be preserved, and tree-damaging activity should not be undertaken, unless:
 - (a) in the case of tree removal, where at least one of the following apply:
 - (i) the tree is diseased and its life expectancy is short
 - (ii) the tree represents an unacceptable risk to public or private safety
 - (iii) the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area
 - (b) the tree is shown to be causing or threatening to cause substantial damage to a substantial building or structure of value
 - (c) all other reasonable remedial treatments and measures have been determined to be ineffective
 - (d) it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.
 - (e) in any other case, any of the following circumstances apply:
 - (i) the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree
 - (ii) the work is required due to unacceptable risk to public or private safety

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Significant Trees

- (iii) the tree is within 20 metres of a residential, tourist accommodation or habitable building and is a bushfire hazard within a Bushfire Prone Area
- (iv) the tree is shown to be causing or threatening to cause damage to a substantial building or structure of value
- (v) the aesthetic appearance and structural integrity of the tree is maintained
- (vi) it is demonstrated that all reasonable alternative development options and design solutions have been considered to prevent substantial tree-damaging activity occurring.

- 4 Development involving ground work activities such as excavation, filling, and sealing of surrounding surfaces (whether such work takes place on the site of a significant tree or otherwise) should only be undertaken where the aesthetic appearance, health and integrity of a significant tree, including its root system, will not be adversely affected.
- 5 Land should not be divided or developed where the division or development would be likely to result in a substantial tree-damaging activity occurring to a significant tree.

Siting and Visibility

OBJECTIVES

- 1 Protection of scenically attractive areas, particularly natural, rural and coastal landscapes.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should be sited and designed to minimise its visual impact on:
 - (a) the natural, rural or heritage character of the area
 - (b) areas of high visual or scenic value, particularly rural and coastal areas
 - (c) views from the coast, near-shore waters, public reserves, tourist routes and walking trails
 - (d) the amenity of public beaches
- 2 Buildings should be sited in unobtrusive locations and, in particular, should:
 - (a) be grouped together
 - (b) where possible be located in such a way as to be screened by existing vegetation when viewed from public roads.
- 3 Buildings and structures on land outside of urban areas should be designed to minimise their visual impact in the landscape, in particular:
 - (a) the profile of buildings should be low and the rooflines should complement the natural form of the land
 - (b) the mass of buildings should be minimised by variations in wall and roof lines and by floor plans which complement the contours of the land
 - (c) large eaves, verandas and pergolas should be incorporated into designs so as to create shadowed areas that reduce the bulky appearance of buildings.
- 4 The nature of external surface materials of buildings should not detract from the visual character and amenity of the landscape.
- 5 The number of buildings and structures on land outside of urban areas should be limited to that necessary for the efficient management of the land.
- 6 Driveways and access tracks should be designed and surfaced to blend sympathetically with the landscape and to minimise interference with natural vegetation and landforms.
- 7 Development should be screened through the establishment of landscaping using locally indigenous plant species:
 - (a) around buildings and earthworks to provide a visual screen as well as shade in summer, and protection from prevailing winds
 - (b) along allotment boundaries to provide permanent screening of buildings and structures when viewed from adjoining properties and public roads
 - (c) along the verges of new roads and access tracks to provide screening and minimise erosion.

Transportation and Access

OBJECTIVES

- 1 A comprehensive, integrated, affordable and efficient air, rail, sea, road, cycle and pedestrian transport system that will:
 - (a) provide equitable access to a range of public, community and private transport services for all people
 - (b) ensure a high level of safety
 - (c) effectively support the economic development of the State
 - (d) have minimal negative environmental and social impacts
 - (e) maintain options for the introduction of suitable new transport technologies.
- 2 Development that:
 - (a) provides safe and efficient movement for all motorised and non-motorised transport modes
 - (b) ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles
 - (c) provides off street parking
 - (d) is appropriately located so that it supports and makes best use of existing transport facilities and networks.
- 3 A road hierarchy that promotes safe and efficient transportation in an integrated manner throughout the State.
- 4 Provision of safe, pleasant, accessible, integrated and permeable pedestrian and cycling networks.
- 5 Safe and convenient freight movement throughout the State.

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 Land uses arranged to support the efficient provision of sustainable transport networks and encourage their use.

Movement Systems

- 2 Development should be integrated with existing transport networks, particularly major rail and road corridors as shown on *Location Maps* and *Overlay Maps - Transport*, and designed to minimise its potential impact on the functional performance of the transport networks.
- 3 Transport corridors should be sited and designed so as to not unreasonably interfere with the health and amenity of adjacent sensitive land uses.
- 4 Roads should be sited and designed to blend with the landscape and be in sympathy with the terrain.

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General Section
Transportation and Access

- 5 Land uses that generate large numbers of visitors such as shopping centres and areas, places of employment, schools, hospitals and medium to high density residential uses should be located so that they can be serviced by existing transport networks and encourage walking and cycling.
- 6 Development generating high levels of traffic, such as schools, shopping centres and other retail areas, entertainment and sporting facilities, should incorporate passenger pick-up and set down areas. The design of such areas should ensure interference to existing traffic is minimised and give priority to pedestrians, cyclists and public and community transport users.
- 7 The location and design of public and community transport set-down and pick-up points should maximise safety and minimise the isolation and vulnerability of users.
- 8 Development should provide safe and convenient access for all anticipated modes of transport including cycling, walking, public and community transport, and motor vehicles.
- 9 Development at intersections, pedestrian and cycle crossings, and crossovers to allotments should maintain or enhance sightlines for motorists, cyclists and pedestrians to ensure safety for all road users and pedestrians.
- 10 Driveway crossovers affecting pedestrian footpaths should maintain the level of the footpath.
- 11 Development should discourage commercial and industrial vehicle movements through residential streets and adjacent other sensitive land uses such as schools.
- 12 Industrial/commercial vehicle movements should be separated from passenger vehicle car-parking areas.
- 13 Development should make sufficient provision on site for the loading, unloading and turning of all traffic likely to be generated.

Cycling and Walking

- 14 Development should ensure that a permeable street and path network is established that encourages walking and cycling through the provision of safe, convenient and attractive routes with connections to adjoining streets, paths, open spaces, schools, public and community transport stops and activity centres.
- 15 Development should provide access, and accommodate multiple route options, for cyclists by enhancing and integrating with:
 - (a) open space networks, recreational trails, parks, reserves and recreation areas
 - (b) Adelaide's Metropolitan Open Space System.
- 16 Cycling and pedestrian networks should be designed to be permeable and facilitate direct and efficient passage to neighbouring networks and facilities.
- 17 New developments should give priority to and not compromise existing designated bicycle routes.
- 18 Where development coincides with, intersects or divides a proposed bicycle route or corridor, development should incorporate through-access for cyclists.
- 19 Developments should encourage and facilitate cycling as a mode of transport by incorporating end-of-journey facilities including:
 - (a) showers, changing facilities, and secure lockers
 - (b) signage indicating the location of bicycle facilities

(c) secure bicycle parking facilities provided at the rate set out in *Table Sal/3 - Off Street Bicycle Parking Requirements*.

20 Pedestrian facilities and networks should be designed and provided in accordance with relevant provisions of the *Australian Standards and Austroads Guide to Traffic Engineering Practice Part 13*.

21 Cycling facilities and networks should be designed and provided in accordance with the relevant provisions of the *Australian Standards and Austroads Guide to Traffic Engineering Practice Part 14*.

Access

22 Development should have direct access from an all weather public road.

23 Development should be provided with safe and convenient access which:

(a) avoids unreasonable interference with the flow of traffic on adjoining roads

(b) provides appropriate separation distances from existing roads or level crossings

(c) accommodates the type and volume of traffic likely to be generated by the development or land use and minimises induced traffic through over-provision

(d) is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.

24 Development should not restrict access to publicly owned land such as recreation areas.

25 The number of vehicle access points onto arterial roads shown on *Overlay Maps - Transport* should be minimised, and where possible access points should be:

(a) limited to local roads

(b) shared between developments.

26 The number of access points for cyclists and pedestrians onto all adjoining roads should be maximised.

27 Development with access from roads with existing or projected traffic volumes exceeding 6000 vehicles per day should be sited to avoid the need for vehicles to reverse on to or from the road.

28 Development with access from arterial roads or roads as shown on *Overlay Maps - Transport* should be sited to avoid the need for vehicles to reverse on to or from the road.

29 Driveways, access tracks and parking areas should be designed and constructed to:

(a) follow the natural contours of the land

(b) minimise excavation and/or fill

(c) minimise the potential for erosion from run-off

(d) avoid the removal of existing vegetation

(e) be consistent with *Australian Standard AS 2890 Parking facilities*.

Access for People with Disabilities

30 Development should be sited and designed to provide convenient access for people with a disability.

31 Where appropriate and practical, development should provide for safe and convenient access to the coast and beaches for disabled persons.

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Transportation and Access

Vehicle Parking

- 32 Development should provide off-street vehicle parking and specifically marked disabled car parking places to meet anticipated demand in accordance with [Table Sal/2 - Off Street Vehicle Parking Requirements](#) or [Table Sal/2A - Off Street Vehicle Parking Requirements for Designated Areas](#) (whichever applies) unless an agreement is reached between the Council and the applicant for a reduced number of parking spaces where one of the following applies:
- a financial contribution is paid into the Council Car Parking Funds specified by the Council, in accordance with the gazetted rate per car park associated with the 'Car Park Fund Areas' identified on [Concept Plan Map Sal/27 - Salisbury District Centre Car Park Fund Area](#), [Concept Plan Map Sal/29 - Ingle Farm District Centre Car Park Fund Area](#) and [Concept Plan Map Sal/32 - Mawson Lakes Town Centre Car Parking Fund Area](#)
 - it can be demonstrated that fewer car parks would be required to meet the car parking needs associated with the development.
- 33 Development should be consistent with [Australian Standard AS 2890 Parking facilities](#).
- 34 Vehicle parking areas should be sited and designed in a manner that will:
- facilitate safe and convenient pedestrian linkages to the development and areas of significant activity or interest in the vicinity of the development
 - include safe pedestrian and bicycle linkages that complement the overall pedestrian and cycling network
 - not inhibit safe and convenient traffic circulation
 - result in minimal conflict between customer and service vehicles
 - avoid the necessity to use public roads when moving from one part of a parking area to another
 - minimise the number of vehicle access points to public roads
 - avoid the necessity for backing onto public roads
 - where reasonably possible, provide the opportunity for shared use of car parking and integration of car parking areas with adjoining development to reduce the total extent of vehicle parking areas and the requirement for access points
 - not dominate the character and appearance of a site when viewed from public roads and spaces
 - provide landscaping that will shade and enhance the appearance of the vehicle parking areas.
- 35 Vehicle parking areas should be designed to reduce opportunities for crime by:
- maximising the potential for passive surveillance by ensuring they can be overlooked from nearby buildings and roads
 - incorporating walls and landscaping that do not obscure vehicles or provide potential hiding places
 - being appropriately lit
 - having clearly visible walkways.
- 36 Where parking areas are not obviously visible or navigated, signs indicating the location and availability of vehicle parking spaces associated with businesses should be displayed at locations readily visible to customers.

- 37 Parking areas that are likely to be used during non daylight hours should provide floodlit entrance and exit points and site lighting directed and shaded in a manner that will not cause nuisance to adjacent properties or users of the car park.
- 38 Parking areas should be sealed or paved in order to minimise dust and mud nuisance.
- 39 To assist with stormwater detention and reduce heat loads in summer, vehicle parking areas should include soft (living) landscaping.
- 40 Parking areas should be line-marked to indicate parking bays, movement aisles and direction of traffic flow.

Vehicle Parking for Residential Development

- 41 On-site vehicle parking should be provided having regard to:
- (a) the number, nature and size of proposed dwellings
 - (b) proximity to centre facilities, public and community transport within walking distance of the dwellings
 - (c) the anticipated mobility and transport requirements of the likely occupants, particularly groups such as aged persons.
- 42 Vehicle parking areas servicing more than one dwelling should be of a size and location to:
- (a) serve users, including pedestrians, cyclists and motorists, efficiently, conveniently and safely
 - (b) provide adequate space for vehicles, including emergency service vehicles, to manoeuvre between the street and the parking area
 - (c) reinforce or contribute to attractive streetscapes.

Vehicle Parking for Mixed Use and Corridor Zones

- 43 Loading areas and designated parking spaces for service vehicles should:
- (a) be provided within the boundary of the site
 - (b) not be located in areas where there is parking provided for any other purpose.
- 44 Vehicle parking spaces and multi-level vehicle parking structures within buildings should:
- (a) enhance active street frontages by providing land uses such as commercial, retail or other non-car park uses along ground floor street frontages
 - (b) complement the surrounding built form in terms of height, massing and scale
 - (c) incorporate facade treatments along major street frontages that are sufficiently enclosed and detailed to complement neighbouring buildings consistent with the desired character of the locality.
- 45 In mixed use buildings, the provision of vehicle parking may be reduced in number and shared where the operating hours of commercial activities complement the residential use of the site.

Undercroft and Below Ground Garaging and Parking of Vehicles

- 46 Undercroft and below ground garaging of vehicles should only occur where envisaged in the relevant zone or policy area or precinct and ensure:
- (a) the overall height and bulk of the undercroft structure does not adversely impact on streetscape character of the locality or the amenity of adjacent properties

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- (b) vehicles can safely enter and exit from the site without compromising pedestrian or cyclist safety or causing conflict with other vehicles
 - (c) driveway gradients provide for safe and functional entry and exit
 - (d) driveways and adjacent walls, fencing and landscaping are designed to provide adequate sightlines from vehicles to pedestrians using the adjacent footpath
 - (e) openings to undercroft areas are integrated with the main building so as to minimise visual impact
 - (f) landscaping, mounding and/or fencing is incorporated to improve its presentation to the street and to adjacent properties
 - (g) the overall streetscape character of the locality is not adversely impaired (e.g. visual impact, building bulk, front setbacks relative to adjacent development).
- 47 In the case of undercroft and below ground car parks where cars are visible from public areas, adequate screening and landscaping should be provided.

Waste

OBJECTIVES

- 1 Development that, in order of priority, avoids the production of waste, minimises the production of waste, reuses waste, recycles waste for reuse, treats waste and disposes of waste in an environmentally sound manner.
- 2 Development that includes the treatment and management of solid and liquid waste to prevent undesired impacts on the environment including, soil, plant and animal biodiversity, human health and the amenity of the locality.

PRINCIPLES OF DEVELOPMENT CONTROL

- 1 Development should be sited and designed to prevent or minimise the generation of waste (including wastewater) by applying the following waste management hierarchy in the order of priority as shown below:
 - (a) avoiding the production of waste
 - (b) minimising waste production
 - (c) reusing waste
 - (d) recycling waste
 - (e) recovering part of the waste for re-use
 - (f) treating waste to reduce the potentially degrading impacts
 - (g) disposing of waste in an environmentally sound manner.
- 2 The storage, treatment and disposal of waste materials from any development should be achieved without risk to health or impairment of the environment.
- 3 Development should avoid as far as practical, the discharge or deposit of waste (including wastewater) onto land or into any waters (including processes such as seepage, infiltration or carriage by wind, rain, sea spray, stormwater or by the rising of the water table).
- 4 Untreated waste should not be discharged to the environment, and in particular to any water body.
- 5 Development should include appropriately sized area to facilitate the storage of receptacles that will enable the efficient recycling of waste.
- 6 Development that involves the production and/or collection of waste and/or recyclable material should include designated collection and storage area(s) that are:
 - (a) screened and separated from adjoining areas
 - (b) located to avoid impacting on adjoining sensitive environments or land uses
 - (c) designed to ensure that wastes do not contaminate stormwater or enter the stormwater collection system
 - (d) located on an impervious sealed area graded to a collection point in order to minimise the movement of any solids or contamination of water

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Waste

- (e) protected from wind and stormwater and sealed to prevent leakage and minimise the emission of odours
- (f) stored in such a manner that ensures that all waste is contained within the boundaries of the site until disposed of in an appropriate manner.

Wastewater

- 7 The disposal of wastewater to land should only occur where methods of wastewater reduction and reuse are unable to remove the need for its disposal, and where its application to the land is environmentally sustainable.
- 8 Wastewater lagoons should not be sited in any of the following areas:
 - (a) within land subject to a 1-in-100 year average return interval flood event
 - (b) within 50 metres of the top of the bank of a watercourse
 - (c) within 500 metres of the coastal high water mark
 - (d) where the base of the lagoon would be below any seasonal water table.
- 9 Artificial wetland systems for the storage of treated wastewater, such as wastewater lagoons, should be:
 - (a) sufficiently separated from adjoining sensitive uses to minimise potential adverse odour impacts
 - (b) sited and designed to minimise potential public health risks arising from the breeding of mosquitoes.

Waste Treatment Systems

- 10 Development that produces any sewage or effluent should be connected to a waste treatment system that complies with (or can comply with) the relevant public and environmental health legislation applying to that type of system.
- 11 The methods for, and siting of, effluent and waste storage, treatment and disposal systems should minimise the potential for environmental harm and adverse impacts on:
 - (a) the quality of surface and groundwater resources
 - (b) public health
 - (c) the amenity of a locality
 - (d) sensitive land uses.
- 12 Waste treatment should only occur where the capacity of the treatment facility is sufficient to accommodate likely maximum daily demands including a contingency for unexpected high flows and breakdowns.
- 13 Any on-site wastewater treatment system/ re-use system or effluent drainage field should be located within the allotment of the development that it will service.
- 14 A dedicated on-site effluent disposal area should not include any areas to be used for, or could be reasonably foreseen to be used for, private outdoor open space, driveways, car parking or outbuildings.
- 15 The spreading or discharging of treated liquid or solid waste onto the ground should only occur where the disposal area consists of soil and vegetation that has the capacity to store and use the waste without contaminating soil or surface or ground water resources or damaging crops.

- 16 Stock slaughter works, poultry processors, saleyards, piggeries, cattle feedlots, milking sheds, milk processing works, fish processing works, wineries, distilleries, tanneries and fellmongeries, composting works, waste or recycling depots and concrete batching works should have a wastewater management system that is designed so as not to discharge wastes generated by the premises:
- (a) into any waters
 - (b) onto land in a place where it is reasonably likely to enter any waters by processes such as:
 - (i) seepage
 - (ii) infiltration
 - (iii) carriage by wind, rain, sea spray, or stormwater
 - (iv) the rising of the watertable.
- 17 Winery waste management systems should be designed to ensure:
- (a) surface runoff does not occur from the wastewater irrigation area at any time
 - (b) wastewater is not irrigated onto waterlogged areas, land within 50 metres of a creek, or swamp or domestic or stock water bore, or land subject to flooding, steeply sloping land, or rocky or highly permeable soil overlaying an unconfined aquifer
 - (c) wastewater is not irrigated over an area which is within 50 metres of any residence on neighbouring land or 10 metres of any type of publicly owned land
 - (d) wastewater is released using low trajectory low pressure sprinklers, drip irrigators or agricultural pipe, and is not sprayed more than 1.5 metres into the air or in fine droplets if there is a potential for the spread of diseases from the wastewater
 - (e) stormwater run-off from areas which are contaminated with grape or grape products is drained to winery waste management systems during vintage periods
 - (f) stormwater from roofs and clean hard paved surfaces is diverted away from winery waste management systems and disposed of in an environmentally sound manner or used for productive purposes.

Salisbury Council
 Zone Section
 Mixed Use (Bulky Goods, Entertainment and Leisure) Zone

Mixed Use (Bulky Goods, Entertainment and Leisure) Zone

Refer to the [Map Reference Tables](#) for a list of the maps that relate to this zone.

OBJECTIVES

- 1 A zone primarily accommodating entertainment and leisure activities, bulky goods outlets, larger floorplate retail (selling predominantly non-foodstuffs) and service trade premises.
- 2 Development that contributes to the desired character and objectives of the zone.
- 3 Built form that exhibits a high standard of design and the use of quality materials and finishes.
- 4 Landscaping that improves the amenity of the locality and reduces the visual impact of large car parking areas.
- 5 Development that ensures the on-going operational and safety requirements of Parafield Airport are met.

DESIRED CHARACTER

The zone will be developed as a unique specialist centre accommodating a mix of entertainment and leisure activities, bulky goods outlets, large floorplate retail (selling predominantly non-foodstuffs) and service trade premises.

The zone will accommodate some larger format bulky goods and 'bulky retail' and retail outlets, with potential for standalone restaurants and integrated petrol filling station in proximity to Kings Road and Main North Road frontages. There is capacity for a diverse range of tenancies to be established within the zone, and the retail components are envisaged to offer an alternative model to that typically found in traditional centres by way of their larger floor area and retail model.

It is envisaged that the zone will include the development of a single large floorplate shop with a floor area between 10 000 square metres and 15 000 square metres or thereabouts. Up to 45 percent of the total floor space of this tenancy may include the display and sale of foodstuffs. This shop will provide an alternative retail model for small and medium businesses and individuals to purchase products in bulk.

The retail outlet component is envisaged to comprise a premium outlet centre offering leading brands of fashion, sports, cosmetics, electronics and homewares. Each tenancy will generally be 200 square metres or more to provide an alternative retail model to smaller tenancies found within other centres.

The entertainment, leisure and recreation component is anticipated to include a range of indoor uses including cinema, rock climbing, health and fitness club, ten pin bowling, day spa, skate park and potentially a wave pool facility.

Development comprising on site manufacturing within a tenancy must have shop front sales and display area for the products on site and is to be a minor component of the zone.

Development will occur in a co-ordinated, integrated and holistic manner to achieve an efficient layout; minimise access points to Kings Road and Main North Road; minimise the length of driveways; and maximise pedestrian accessibility.

Development should occur so that expected land uses are developed concurrently to avoid the establishment of standalone land uses. Particularly the entertainment, recreation and leisure land uses should be developed concurrently with retail and bulky good land uses in order to ensure the mixed-use activities for the zone are achieved.

Main North Road and Kings Road function as major traffic and freight routes. These roads have also been proclaimed controlled-access roads to protect their role and function. The role of these roads is to provide safe, efficient and reliable movement throughout the day for all vehicles, including heavy freight. Subsequently, access points will be limited along Main North Road and Kings Road in order to ensure the operation and safety of these roads is maintained. Access/egress points will be located to maximise road safety and efficiency whilst facilitating staged development and with consideration to the ultimate development across the site. Additional access to land within the zone north of Kings Road will be via Rundle Road. Traffic control devices, including a fully integrated signalised four-way intersection at Kings Road and Horrie Miller Drive, may be required to ensure safe and convenient access which avoids unreasonable interference with flow of traffic on adjoining roads. Service vehicles will use Rundle Road and Mengel Court.

Pedestrian pathways will be well lit and designed to be visually prominent. Safe pedestrian crossing points will be established at the Kings Road / Horrie Miller Drive intersection and Main North Road / Kings Road intersection. Car parks should be sited and designed to facilitate a direct visual connection to the front of tenancies to facilitate safe and convenient pedestrian movement with maximum opportunity for passive surveillance. Generously dimensioned designated pedestrian routes will be developed between car parking areas and buildings. They will be clearly defined by appropriately designed landscaping, pavement treatment, lighting and street furniture.

Buildings will be well designed, sited and developed to complement each other. Buildings should be visually attractive and incorporate articulation, high quality materials, texture and colour, and finished in materials with a low reflective index. Building access points will be visually prominent from car parking areas.

Buildings facing onto public roads or thoroughfares should avoid large expanses of solid unarticulated walling or blank facades and incorporate landscaping or detailed design enhancements to soften their appearance. Buildings should be placed as close as possible to street boundaries with frontage car parking and landscaping subject to setback requirements by the Commissioner of Highways and prescribed Obstacle Limitation Surfaces which inform building height allowances and siting of buildings.

Development will incorporate design and layout that minimises adverse operational impacts on the Parafield Airport in terms of building heights, lighting glare, turbulence, windshear and bird attraction.

Service areas and loading bays will be positioned to the rear or side of tenancies and should incorporate separate vehicle access. These areas will be screened from general public view.

Outdoor lighting, advertising displays and advertisements throughout the zone will be uniform, consistent and integrated into building design. The use of well-designed integrated signage is encouraged at main access points, to present a positive statement on Kings Road, Main North Road, and the intersection of Kings Road and Main North Road.

Landscaping will be used extensively along site boundaries and within car parking and public areas to provide shade, enhance amenity and mitigate building bulk and scale.

Landscaping and development should be designed to incorporate Water Sensitive Urban Design and provide for on-site stormwater retention and detention.

The retention, removal or relocation of Regulated or Significant Trees should enhance the amenity and safety of the zone and augment landscaping features across the zone.

Parts of the zone are known to be contaminated and should not be developed until it is demonstrated that the land is suitable for its intended use.

Salisbury Council
 Zone Section
 Mixed Use (Bulky Goods, Entertainment and Leisure) Zone

PRINCIPLES OF DEVELOPMENT CONTROL

Land Use

- 1 The following forms of development are envisaged in the zone:
 - leisure and entertainment venues, including indoor recreation with a maximum total floor area in the order of 20 000 square metres across the zone
 - bulky goods outlet and service trade premise that comprise only indoor displays with a maximum total floor area in the order of 18 000 square metres across the zone
 - shops (excluding bulky goods outlets and restaurants) with a minimum total floor area in the order of 200 square metres and a maximum in the order of 15 000 square metres per tenancy with a maximum total floor area across the zone in the order of 46 000 square metres
 - restaurants with a maximum total floor area in the order of 1200 square metres across the zone.
- 2 The total maximum gross leasable floor area across the zone should be in the order of 77 900 square metres and a maximum total floor area in the order of 85 200 square metres.
- 3 A minimum of 25 per cent of the total floor area should comprise entertainment, leisure and recreation land uses at any time across the zone, until such time that 20 000 square metres total floor area of leisure and entertainment land uses has been developed.
- 4 Restaurants should complement the zone and each tenancy should have a maximum floor area in the order of 450 square metres with the exception of standalone restaurants.
- 5 Cafes and take away food premises should:
 - (a) be ancillary to other land uses across the zone
 - (b) complement the zone as an integrated establishment
 - (c) have a maximum floor area in the order of 450 square metres per tenancy with the exception of standalone premises that have a main road frontage.
- 6 A childcare facility should only be developed where it is ancillary to and in association with a bulky goods outlet, service trade premises, entertainment and/or leisure activity development.
- 7 Development listed as non-complying is generally inappropriate.

Airport Operational Considerations

- 9 Buildings, advertising signs and structures should not adversely affect by way of their height, form and location, the operational, safety and commercial requirements of Parafield Airport.
- 10 Buildings and structures should not penetrate the prescribed Obstacle Limitation Surface shown in *Concept Plan Map Sal/30 - Airport Building Heights and Lighting Plan*.
- 11 Development and associated lighting (including signage) should be designed in accordance with the lighting plan detailed on *Concept Plan Map Sal/30 - Airport Building Heights and Lighting Plan* which requires:

Zone	Maximum intensity of light permitted at 3° above the horizontal
Zone A	maximum intensity of a light source is 0 candela
Zone B	maximum intensity of a light source is 50 candela
Zone C	maximum intensity of a light source is 150 candela
Zone D	maximum intensity of a light source is 450 candela

Form and Character

- 12 Development should be consistent with the desired character for the zone.
- 13 Vehicle loading areas should be provided to enable customers to collect large items from a dedicated and easily accessible customer collection area(s).
- 14 Development should contribute to the creation of an attractive precinct through extensive tree planting, landscaping and retention of existing trees and other significant vegetation subject to having regard for airport safety considerations.
- 15 Development should provide landscaped areas comprising at least 10 per cent of the site area, incorporating a minimum width of 3 metres.
- 16 Development adjacent the Industry Zone should incorporate:
- (a) a minimum 3 metre building setback from the zone boundary
 - (b) visual and acoustic buffer treatments
 - (c) screened or obscured building openings.
- 17 Development should ensure that all vehicular movement and location of site access promotes safe and convenient traffic flows both within and onto the adjacent road network.
- 18 Advertisements and/or advertising hoardings should:
- (a) only be provided at the rate of one free standing advertisement on each arterial road frontage and one at the intersection of Kings Road and Main North Road
 - (b) be located in close proximity to the major entry points or major intersections.
- 19 Advertisements attached to buildings should:
- (a) not cover more than 15 per cent of a single wall face
 - (b) where the building contains more than one tenancy, a maximum of one wall mounted advertisement per tenancy.
 - (c) integration of innovative advertising in architectural designs is required.

Non-complying Development

Development (including building work, a change in the use of land, or division of an allotment) for the following is non-complying:

Form of Development	Exceptions
Adult entertainment premises	
Adult products and service premises	
Cemetery	
Community centre	
Crematorium	
Dwelling	
Educational establishment	

Salisbury Council
Zone Section
Mixed Use (Bulky Goods, Entertainment and Leisure) Zone

Form of Development	Exceptions
Farming	
Fuel depot	
General industry	
Horse keeping	
Horticulture	
Hostel	
Hospital	
Hotel	
Motel	
Motor repair station	
Nursing home	
Residential flat building	
Road transport terminal	
Special industry	
Stock slaughter works	
Tourist accommodation	
Transport depot	
Waste reception, storage, treatment or disposal	
Wrecking yard	

Public Notification

Categories of public notification are prescribed in Schedule 9 of the *Development Regulations 2008*.

Further, the following forms of development (except where the development is non-complying) are designated:

Category 1	Category 2
Any development which consists of any of the following: <ul style="list-style-type: none"> (a) bulky goods outlet (b) cafe (c) entertainment venue (d) indoor recreation centre (e) petrol filling station (f) restaurant (g) service trade premises (h) shops with a gross leasable floor area greater than 200 square metres (i) take away food shop. 	All forms of development not listed as Category 1.

Table Sal/2 - Off Street Vehicle Parking Requirements

The following vehicle parking requirements do not apply:

- (a) to the Mixed Use (Bulky Goods, Entertainment, Leisure) Zone except where the form of development is light industry whereby the rates for Industry, warehouse, stores are applicable
- (b) to development that is subject to the requirements in [Table Sal/2A - Off Street Vehicle Parking Requirements for Designated Areas](#).

Form of Development	Number of Required Car Parking Spaces
Accommodation	
Aged Care / retirement home	1 space per unit
Serviced apartment	1 space per unit plus 1 space per employee
Motel	1 space per unit
Commercial	
Bulky goods outlet	3 spaces per 100 square metres of gross leasable floor area
Cinema	1 space per 4 cinema seats
Hotel	1 space per 2 square meters of floor area available to the public
Public bar	1 space per 6 square metres of floor area available to the public
Lounge or beer garden	1 space per 2 machines
Gaming room	1 space per 25 square metres, with a minimum of 4 spaces per office
Office	Greater of 1 space for every 3 seats or 1 space for every 15 square metres of dining area
Restaurant	3 spaces per 100 square metres
Service trade premises	7 spaces per 100 square metres of gross leasable area for shops outside of centre zones 5 spaces per 100 square metres of gross leasable area for shops within centre zones
Shop	
Community/civic	
Child care centre	1 space per 4 children
Community centre	10 spaces per 100 square metres of total floor area
Library	4 spaces per 100 square metres
Place of worship	Greater of 1 space for every 3 seats or every 3 attendees
Dwellings	

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Table Section
Table Sal/2 - Off Street Vehicle Parking Requirements

Form of Development	Number of Required Car Parking Spaces
Detached dwelling Semi Detached Dwelling Row Dwelling	2 spaces per dwelling, one of which is to be covered
Residential flat building Multiple dwelling Group dwelling	1 space per dwelling, plus 0.5 on-site visitor car parking spaces per dwelling
Industry, warehouses, stores	
Office component	1 space per 30 square metres
Plus	Plus
Non-office component	
Up to 200 square metres	1 space per 50 square metres
Plus 200-2000 square metres	1 additional space for every 75 square metres
Plus greater than 2000 square metres	1 additional space for every 150 square metres
Or	Or
For labour intensive industries, inclusive of office component (whichever ever is greater)	0.75 car parking spaces per employee
Medical	
Consulting room	10 per 100 square metres of total floor area, with a minimum of 3 spaces per tenancy
Hospital	2.5 spaces per bed
Nursing home	1 space for every 4 beds
The following vehicle parking requirements apply to development specifically within the Mixed Use (Bulky Goods, Entertainment and Leisure) Zone :	
Form of Development	Minimum number of required vehicle parking spaces
All forms of development (except Light Industry)	3 spaces per 100 square metres of gross leasable floor area

Table Sal/2A - Off Street Vehicle Parking Requirements for Designated Areas

Table Sal/2A - Off Street Vehicle Parking Requirements for Designated Areas

Interpretation

- 1 The vehicle parking rates table applies to Designated Areas listed below except where:
 - (a) any applicable condition(s) is/are not met
 - (b) the zone provisions require a lesser amount of on-site vehicular parking spaces than the amount determined using the vehicle parking rates table below.

Designated Areas

- 2 The following are Designated Areas:

Designated Area	Conditions
District Centre Zone	Any part of the development site is located in accordance with at least one of the following:
Local Centre	
Neighbourhood Centre Zone	(a) within 200 metres of any section of road reserve along which a bus service operates as a high frequency public transit service ⁽²⁾
Mixed Use (Bulky Goods, Entertainment and Leisure) Zone	(b) within 400 metres of a bus interchange ⁽¹⁾ that is part of a high frequency public transit service ⁽²⁾
Urban Core (Salisbury) Zone	(c) within 400 metres of an O-Bahn interchange ⁽¹⁾
	(d) within 400 metres of a passenger rail station ⁽¹⁾ that is part of a high frequency public transit service ⁽²⁾
	(e) within 400 metres of a passenger tram station ⁽¹⁾
	(f) within 400 metres of the Adelaide Parklands.

⁽¹⁾ Measured from an area that contains any platform(s), shelter(s) or stop(s) where people congregate for the purpose waiting to board a bus, tram or train, but does not include areas used for the parking of vehicles

⁽²⁾ A high frequency public transit service is a route serviced every 15 minutes between 7.30am and 6.30pm Monday to Friday and every 30 minutes at night, Saturday, Sunday and public holidays until 10pm.

Applicable off-street vehicular parking requirements

- 3 Development should provide off-street vehicle parking in accordance with the table(s) below. A lesser number of parking spaces may be provided based on the nature of the development and parking conditions in the wider locality (but not limited to) the following:
 - (a) the development is a mixed use development with integrated (shared) parking where the respective peak parking demands across the range of uses occurs at different times
 - (b) the development is sited in a locality where the respective peak demands for parking for the range of uses (existing and proposed) occurs at different times and suitable arrangements are in place for the sharing of adjoining or nearby parking areas
 - (c) the development involves the retention and reuse of a place of heritage value, where the provision of on-site parking is constrained

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Table Section

Table Sal/2A - Off Street Vehicle Parking Requirements for Designated Areas

- (d) suitable arrangements are made for any parking shortfall to be met elsewhere or by other means (including a contribution to a car parking fund)
- (e) generous on-street parking and/or public parking areas are available and in convenient proximity, other than where such parking may become limited or removed by future loss of access, restrictions, road modifications or widening
- (f) the site of the development is located within distances specified in the conditions applicable to Designated Areas for at least two different public transit modes.

VEHICLE PARKING RATES TABLES

Table 1: Non-residential development excluding tourist accommodation

Location of development	Desired minimum number of vehicle parking spaces	Maximum number of vehicle parking spaces
All <i>Designated Areas</i> (unless otherwise stated)	3 spaces per 100 square metres of gross leasable floor area	6 spaces per 100 square metres of gross leasable floor area

Table 2: Residential and Tourist Accommodation

Location of development	Type of development	Desired minimum number of required vehicle parking spaces	Maximum number of vehicle parking spaces
Urban Core (Salisbury) Zone (subject to associated conditions in provision 2)	Residential development	1 space per residential dwelling	2 spaces per residential dwelling
Urban Core (Salisbury) Zone (subject to associated conditions in provision 2)	Serviced Apartments and Tourist Accommodation	1 space per 3 beds, or 1 space per room plus 1 per employee (whichever is greater)	No maximum

Table Sal/3 - Off Street Bicycle Parking Requirements

Table Sal/3 - Off Street Bicycle Parking Requirements

Form of development	Employee/resident (bicycle parking spaces)	Visitor/shopper (bicycle parking spaces)
Residential component of multi-storey building/residential flat building	1 for every 4 dwellings	1 for every 10 dwellings
Office	1 for every 200 square metres of gross leasable floor area	2 plus 1 per 1000 square metres of gross leasable floor area
Shop	1 for every 300 square metres of gross leasable floor area	1 for every 600 square metres of gross leasable floor area
Tourist accommodation	1 for every 20 employees	2 for the first 40 rooms plus 1 for every additional 40 rooms





NOTE: Airport Building Heights should be read in conjunction with concept plan map showing heights for Edinburgh Defence Airfield

Airport Building Heights
 Referral to Commonwealth Secretary
 for Dept. of Transport and Regional Services

Zone A All Structures
 Zone C All Structures Exceeding 15 metres above existing ground level

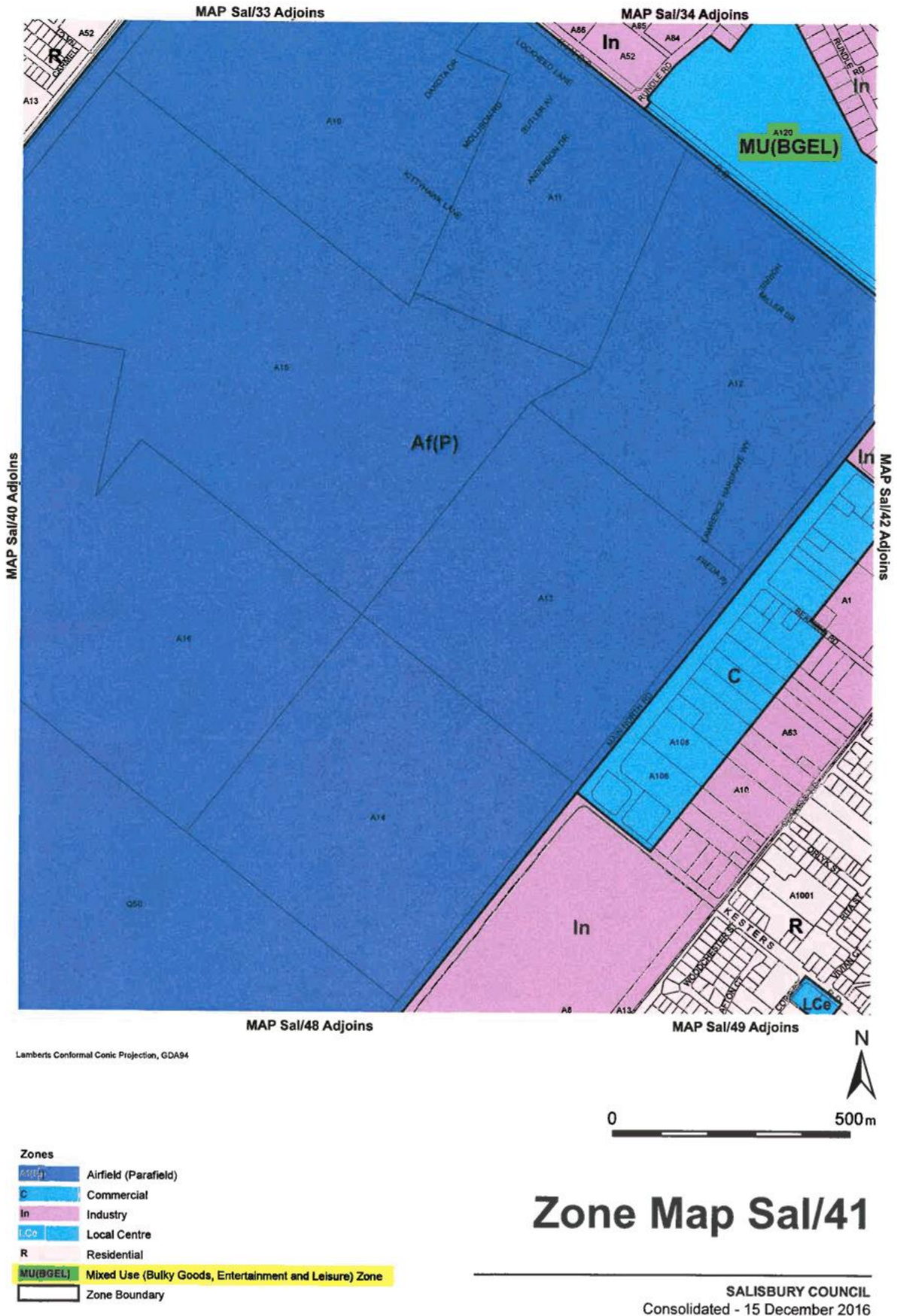
Overlay Map Sal/41

DEVELOPMENT CONSTRAINTS

 Airport Building Heights

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Item 5.1.1 - Attachment 6 - Development Plan extracts





Location Map Sal/42

- School
- Post Office
- Police Station
- Local Reserves

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NOTE: Airport Building Heights should be read in conjunction with concept plan map showing heights for Edinburgh Defence Airfield

Airport Building Heights
Referral to Commonwealth Secretary
for Dept. of Transport and Regional Services

Zone A All Structures
Zone C All Structures Exceeding 15 metres above existing ground level

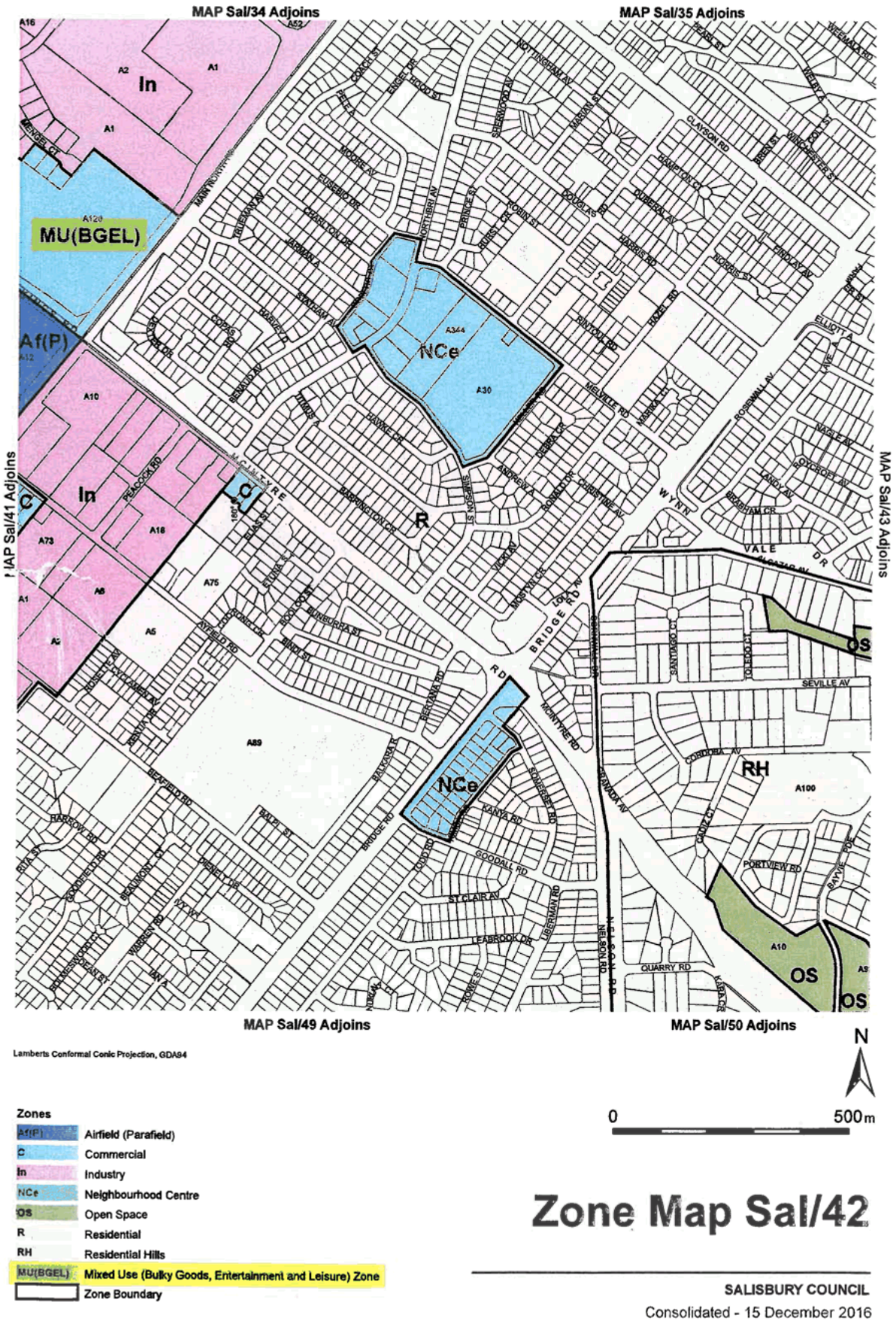


Overlay Map Sal/42 DEVELOPMENT CONSTRAINTS

 Airport Building Heights

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Referral to the Department of Infrastructure and Regional Development is required for all structures as per Overlay Map Sal/41 Development Constraints. The Obstacle Limitation Surface (OLS) contours and lighting zones on this plan provide a guide for allowable development height and intensity of light sources.

- 100 OLS Values in Australian Height Datum (AHD)
- OLS Contour Boundary
- 20m Indicative ground level in AHD. Note: Ground level varies throughout the site area and accurate ground level in AHD would need to be confirmed.
- * — Concept Plan Boundary

Note: Approval is required under the Commonwealth Airports Act 1996 for structures and the like that penetrate prescribed air space (as defined in the Airports Act 1996).

Development and associated lighting (including signage) should be designed to ensure that light levels at angles greater than 3° above the horizontal are in accordance with the lighting following zones:

- Zone A = maximum intensity of a light source is 0 candela measured at 3° above the horizontal
- Zone B = maximum intensity of a light source is 50 candela measured at 3° above the horizontal
- Zone C = maximum intensity of a light source is 150 candela measured at 3° above the horizontal
- Zone D = maximum intensity of a light source is 450 candela measured at 3° above the horizontal

Concept Plan Map Sal/30 MIXED USE (BULKY GOODS, ENTERTAINMENT AND LEISURE) ZONE AND AIRPORT BUILDING HEIGHTS AND LIGHTING PLAN

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