PROPERTY &
CONSULTING
AUSTRALIA

HWY STAGE 2 REDEVELOPMENT

AMENDMENT TO THE DEVELOPMENT REPORT PALMER GROUP

OCTOBER 2017

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DISCLAIMER

INTRODUCTION

This document has been prepared for the Palmer Group to assist with the timely delivery of Stage 2 of the Plympton Mixed Use Development. The proponent, the Palmer Group, is the owner of several contiguous allotments located adjacent to the Highway Hotel at the intersection of Anzac Highway and Marion Road, Plympton.

The development was first declared as a Major Development in May of 2007 and the development application to construct a mixed residential and commercial retail complex was lodged on 2 July 2007.

In January 2009, the Major Development declaration was varied to include an additional property. The total site covers approximately 18,000m^2 and is bounded by Elizabeth Avenue to the south, Anzac Highway to the northwest and Marion Road to the east.

Major development approval for the land has been granted consent, and Stage 1 (West Tower) is under construction, due for completion in early April 2018.

Due to market conditions and opportunities, the approved plans for Stage 2 have been amended by the proponent and the proponent is seeking to ensure the changes are satisfactory and approved in their own right.

As per the amended plans, the development now contains only retail and residential development, without the commercial element.

Stage 1 (West Tower) encompasses a four-storey residential building, with 28 apartments and 25 ground level car parks and is under construction.

Stage 2 incorporates the East Tower, another four-storey residential building with 28 apartments and a retail space consisting of a shopping centre with a full line supermarket and speciality retail outlets with appropriate on-site loading and services facilities, with a total of 365 car parks (including the East Tower Parking).

A summary table of the reserved matters is contained within Appendix 1.

PROPOSED VARIATIONS

Stage 2 of the Plympton Mixed Use Development is generally a combination of the original major development approval for Stages 2 and 3.

Stage 1 (West Tower), currently under construction, had minimal variations to the approved scheme with the inclusion of two additional car parks, moving the total from the approved 23 car parks to 25 car parks in the amended scheme.

Moreover, the approved Stage 4 (North Tower), which encompasses 42 apartments, is not included in the current plans and will become the future Stage 3.

An overview of the proposed variations in Stage 2:

- A reduction in area of specialty shops and reconfiguration.
- An increase in supermarket floor area (227 square metres).
- Deletion of first-floor commercial space.
- Increase first floor car parking in the area originally first floor commercial.
- Deletion of serviced apartments (adjacent to east tower).
- Increase in east tower apartment numbers.
- Removal of basement car parking, whilst partially retaining the basement for supermarket storage.

STAGE 2 APARTMENTS

Displayed in table 1 are the car parking changes in Stage 2, identifying an overall reduction of 14 apartments between the approved and amended schemes. The approved 26 serviced apartments, adjacent to the East Tower, have been removed, giving way for an increase of 12 apartments for the East Tower.

Table 1: Stage 2 Apartment Changes

	APPROVED SCHEME	AMENDED SCHEME	CHANGES
EAST TOWER	16	28	+ 12
SERVICED APARTMENTS	26	0	- 26
TOTAL	42	28	- 14

STAGE 2 CAR PARKING

Displayed in Table 2 are the car parking changes in Stage 2 between the scheme that was previously approved and the amendments made. Overall, there will be a total of 365 car parks in stage 2 with a total reduction of 60 car parks.

Table 2: Stage 2 Car parking Changes

	APPROVED SCHEME	AMENDED SCHEME	CHANGES
GROUND LEVEL	122	160	+38
FIRST FLOOR	133	205	+72
BASEMENT	170	0	- 170
TOTAL	425	365	- 60

STAGE 2 AREAS

There have been several amendments to the area sizes of various elements in Stage 2, with an overall reduction of 2,813 m^2. As indicated in the car parking section above the area for basement car parking has been completely removed, with a smaller portion remaining as a basement storage space.

Moreover, the commercial space approved for the first floor has been permanently deleted and the space makes up a portion of the increased area allocated for first-floor car parking. The amended scheme also shows an increase in the allocated supermarket space.

Table 3: Stage 2 Area Changes

	APPROVED SCHEME	AMENDED SCHEME	CHANGES
SUPERMARKET	3,086 m^2	3,313 m^2	+ 227 m^2
BASEMENT STORAGE	0 m^2	982 m^2	+ 982 m^2
BASEMENT CAR PARKING	5,280 m^2	0 m^2	- 5,280 m^2
GROUND FLOOR SPECIALITY	1,994 m^2	962 m^2	- 1,032 m^2
COMMERCIAL FIRST FLOOR	878 m^2	0 m^2	- 878 m^2
FIRST FLOOR CAR PARK	3,410 m^2	6,230 m^2	+ 2,820 m^2
TOTAL	14,648 m^2	11,487 m^2	- 3,161 m^2

QUERIES FROM DPTI

DISCUSSIONS WITH DPTI – TRAFFIC

A deed agreement is being finalised with DPTI so that all Reserved Matters in relation to arterial road infrastructure are to addressed. The Palmer Group is currently awaiting the finalisation by DPTI Traffic Operations are preparing the Project Definition Report (PDR). After discussions with members of DPTI regarding the traffic issues, namely Marc Hryciuk, George Morias and Brett Williams, the latest responses to the Reserved Matters have been outlined and a site plan provided below.

Marion Road Works to occur in Stage 2:

> Regarding Reserved Matter e(i) closure of two median openings along Marion Road to restrict vehicle movements to and from Mabel Street and Elizabeth Avenue to left in and left out only. This also maximises the right-turn storage length for northbound vehicles on Marion Road into Anzac Highway;

  As per Reserved Matter e(iii) will create a left turn slip lane, approximately 35 metres, into the site's car park from Marion Road.

  The new slip lane will involve the relocation of stobie pole 7 and an investigation into the appropriateness of the associated street light location. It should also be noted that proponent will resolve service pits currently in the footpath that will be located in the new slip lane with relevant stakeholders.

> The proponent will additionally adhere to reserved matter e(vi), to provide Disability Discrimination Act 1992 ('DDA') compliant footpaths.

Anzac Highway works to occur in Stage 3:

> Regarding Reserved Matter e(ii), and DPTI's request for the proponent to consider the physical works required on the median island on Anzac Highway (south-west of Lydia St) to restrict any attempted right-turn manoeuvres out of the site occurring, have identified the modification of the U-turn facility to prohibit the right turn out of the car park and U-turn bay on Anzac Highway for north-east approach.

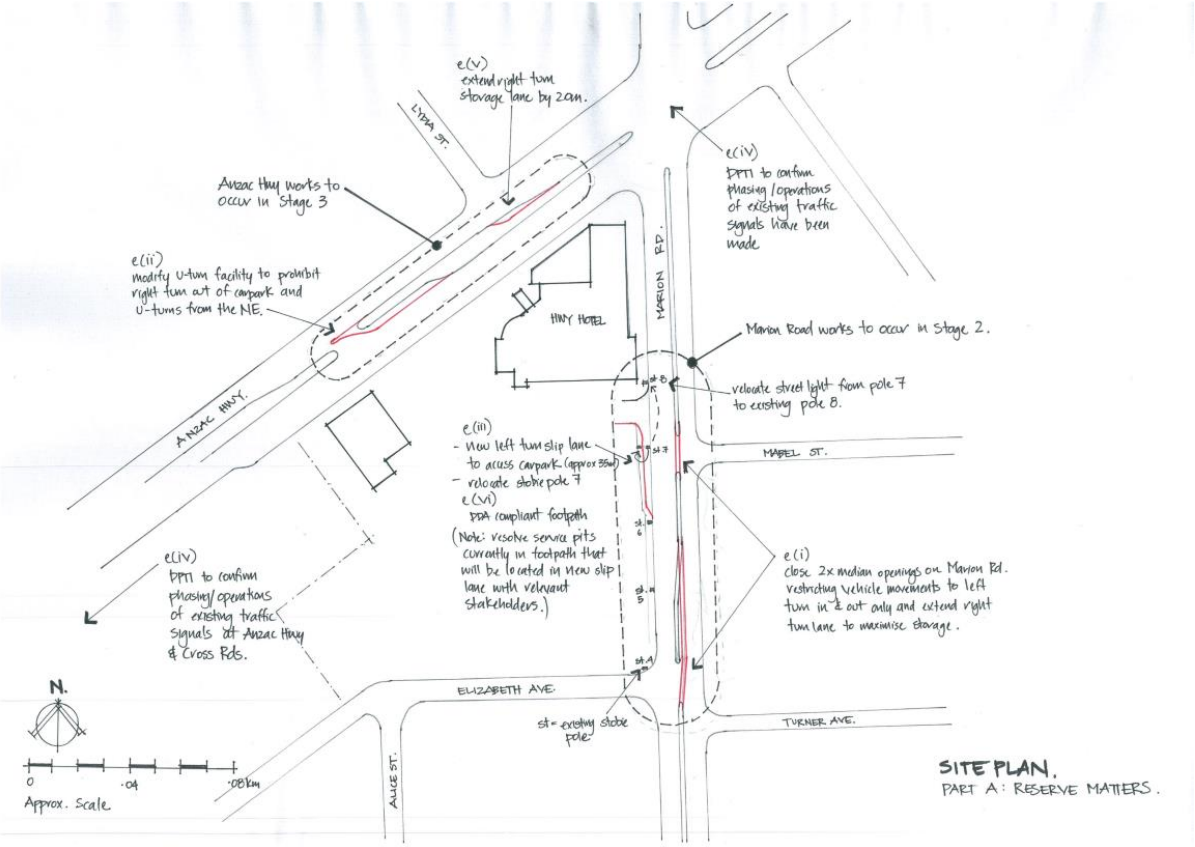
> For Reserved matter e(v) extension of right turn storage lane for vehicles on Anzac Highway entering Marion Road.

Remaining Reserved Matters areas for DPTI to confirm:

- As per Reserved Matter e(iv), proponent has discussed for DPTI to confirm if any changes have been made to the phasing/ operations of existing traffic signals since the original assessment at the Marion Road and Anzac Highway intersection, as well as, the intersection of Anzac Highway and Cross Roads.

- As discussed above for Reserved Matter e(iii), further advice will be provided by DPTI regarding the required relocation of stobie pole 7, on the western side of Marion Road opposite Mable Street, and how this affects the existing street light suspended on a mast-arm. The two options presented include:

    1. Can this light be retained on the same stobie pole that is being relocated, and if so would an extended mast-arm be required?
    2. Can the light be transferred to stobie pole 8, immediately to the north?



NRAS FUNDING AND AFFORDABLE HOUSING

The 20 allocated NRAS credits are to be utilised in the West Tower currently under construction. The East Tower will contain 5 affordable rental apartments to meet the 15% affordable housing requirement. The applicant is currently working through the preparation of the required Land Management Agreements with Jodi Davy, Affordable Housing Planning Leader.

DIMENSIONED AND SCALED DRAWINGS

Please find within Appendix 2 a set of proposed plans and elevations prepared by Folland Panozzo Architects. The plans are to scale and identify height levels. A set of hard copy of A1 plans have been provided to your office.

JOBS CREATION AND SOCIAL AND ECONOMIC VALUE

JOB CREATION

In addition to the estimated 85 jobs created during the construction phase, it is projected that the proposal would directly contribute to approximately 215 ongoing full-time jobs across different fields of employment, including retails sales, management, administration, grounds keeping, maintenance and cleaning.

SOCIAL AND ECONOMIC VALUE

The development has the capacity to generate a range of direct and indirect economic benefits (including increased public revenues at both Local and State Government level in the form of rates, land tax and stamp duty.)

The increase residential density and retail component is predicted to grow the overall patronage of the suburb and will result in community benefits such as improved safety. The mixed use component should also benefit consumers through the increase competition between retailers. The surrounding retail tenancies will also benefit from the increased patronage including nearby banking institutions, laundrette, cafes, hairdresser, dentist, dress shop, supermarket, post office, newsagency, chemist and a service station.

Furthermore, the development supports the Transit Oriented Developments ('TOD') principles, defined in the *30-Year Plan for Greater Adelaide,* as the site is located with proximity to public transport options along key arterial roads encouraging patronage of the public transport system and further increases in population density and retail development in the area.

It is anticipated that the development of the site will set a positive example for future urban regeneration within the locality.

TRAFFIC AND PARKING ASSESSMENT

An updated traffic and parking assessment has been prepared by Circa Traffic Engineers and is contained within Appendix 3.

Based on the proposed provision of 364 parking spaces, the proposal will exceed the minimum requirements identified in the Development Plan (including consideration of the existing hotel and bottle shop uses).

Use	Quantity	Rate	Spaces Required
Hotel	as per previous assessments		144
Non-Residential*	5,891 m^2	3 sp. per 100 m^2	176.73
One Bedroom Apartments	4 units	0.75 per dwelling	3
Two-Bedroom Apartments	24 units	1.0 per dwelling	24
* includes the existing bottleshop		**Total Required**	**348 spaces**

APARTMENT LAYOUTS

Please refer to the plans and elevations within Appendix 2 prepared by Folland Panozzo Architects.

ELIZABETH AVENUE FRONTAGE TREATMENT

Please refer to the attached set of proposal plans and elevations within Appendix 2. The corner of Elizabeth Avenue and Marion Road frontage has been amended to incorporate landscaping to help soften the appearance of the proposal and improve the interface with the residential development to the south.

The properties located on the southern side of Elizabeth Avenue consists of two unit blocks fronting an internal driveway and the South Adelaide Christadelphian Hall. There are no dwellings that directly front the site of the Stage 2 development.

Further, the amended proposal increases the built form setback from the intersection of Elizabeth Avenue and Marion Road to further articulate and soften the appearance of the built form.

VEHICLE ACCESS RAMP

The proposed vehicle access ramp takes vehicles from the at grade car parking area to the rooftop parking area. In relation to the east tower apartments the ramp is between one storey and two storeys below the lowest apartments. Given this separation it is not considered that the vehicle ramp will have any detrimental impact on the proposed or surrounding dwellings in relation to the existing level of residential amenity or traffic noise from Marion Road.

MATERIALS AND COLOURS

Please refer to the materials and finishes schedule prepared by Folland Panozzo Architects within Appendixt 2.

LANDSCAPING

Please refer to Appendix 2 which contains the landscaping plan and schedule prepared by Folland Panozzo Architects with advice from a landscape architect. In addition, please see responses below from Folland Panozzo Architects to queries from DPTI regarding the landscaping:

- How will the green walls be accessed to replace plants or be maintained, some of the locations look inaccessible for maintenance/irrigation?
  - All greenwalls would be trimmed and checked 3 months after installation and then typically on a once or twice-yearly basis as required. The greenwalls at high level on the East Tower are accessible by cherry picker from the level 1 carpark deck and have been detailed showing planters fixed to the precast walls at nominally 3.1 metre intervals up the wall with fixed wires between the planters. All planters will be irrigated and as the creeper is only required to grow up by one floor level in height the greenwall will fill out more quickly as well as allowing individual plants to be easily replaced if required within the planters.
- Could you please confirm that the green wall/vertical garden structures are not encroaching on Council property?
  - The boundary wall along Elizabeth Avenue has recesses formed in it so as to allow the greenwall plants to be planted in-ground on the proponent's property and not on Council land.
- How sustainable are these green walls/vertical gardens given some of the locations?
  - We have taken advice from Ern Ackland of 'Green Cities' with respect to suitable creeper species that are both native and that will suit the direction they're facing, heat loads and wind conditions.
- What's the long-term maintenance to maintain the appearance?
  - As noted above, the creepers in the recessed panels along Elizabeth Aveune can be kept trimmed to the shape of the recess. Greenwalls on the level 1 carpark facing the West Tower and the one alongside the ramp on Marion Road are shown growing on Atlantis Go-wall which allows easy maintenance to the shape of the panels. The East Tower greenwalls will be trained up fixed wires between the planters allowing the them to be trimmed to maintain the rectangular shape.
- How vandal proof are the green walls/vertical gardens on the Elizabeth Avenue supermarket façade?
  - The intent is to plant reasonably established species that will grow into the recessed panels fairly quickly to limit the chances of them being stolen.
- The perspectives show small to medium trees on the roof top garden – a 600-800mm soil depth would be required and then a sufficient supporting structure.
  - Typically, the planters around the perimeter of the East Tower Outdoor Area would be similar to a GRC lightweight planter at 1m high (to act as a balustrade) which is enough depth for the four Ornamental Pear Trees shown. The rest of the general landscaping is low level or ground cover type species. The planters can be packed up at the bottom to reduce the soil depth to around 400-500mm deep which will both suit the selected plant species and keep the overall weight down.
- How does the roof garden drain?

- The concrete structure would be set to suitable drainage falls and be protected by a high-quality waterproofing and root repellent system with a drainage layer such as 'Turf Cell' infilled with gravel. This system ensures minimal movement of gravel across the surface and also prevents it from compacting.

> Is there a landscape architect involved?

- As noted above, we've sought advice from Ern Ackland of 'Green Cities'.

> A species list is required given the different orientations of the green walls/vertical gardens and the different climatic balances (access to light and possible heat loading).

- Species are scheduled on Site Plan SK05 and noted on SK01, SK02 and SK03 in relation to their various locations throughout the site.

> As an alternative, has any thought been given to sculptural relief/materiality instead of green walls/vertical gardens.

- Yes, alternative materials were considered however the landscaping of the site assists in improved water quality, reduced air pollution, increases insulation and reduces the heat island effect so would be the preferred option over hard finishes.

ENERGY EFFICIENCY

The design incorporates several passive design solutions and energy efficiencies through the use of north/south orientation, shading, high performance glazing, solar hot water, a ventilated glazed atrium within the mall area, waterless urinals and the use of recycled water for flushing.

The proposed dwellings are designed to be consistent with relevant residential six-star energy ratings.

WASTE MANAGEMENT

The Stage 1 waste management plan, refer Appendix 4, is being updated by Cook Building and Development to align with the proposed variation in consultation with Council and EPA.

Refuse collection for the Stage 2 residential apartments ('east tower') will be undertaken in the small car park accessed via Elizabeth Avenue. The three parallel spaces will be designated as 'loading zone' during weekday mornings (7am to 12noon or similar) to allow refuse collection to be undertaken. At other times, general parking will be permitted within these spaces. The area has been designed to accommodate small rigid vehicles up to 7.2 m in length. Such provisions will allow for a range of refuse collection vehicles to be utilised. For instance, Veolia and Cleanaway waste collection contractors have a variety of small refuse collection vehicles between 6.4 m and 7.2 m in length which could be utilised to the service the site. Figure 5 illustrates the turnaround movement associated with a 7.2 m truck within the small car park.

GROUND WATER CONTAMINATION

The Environmental Site Assessment, August 2017 report prepared by Greencap outlines the groundwater investigation at the site. Three groundwater wells (MW01, MW02 and MW03) have been installed at the site. MW01 and MW02 were installed to target any potential contamination moving onto the site from the existing and former service station sites and MW03 was installed within the proposed basement area to assess the depth to groundwater.

No contamination indicators (such as hydrocarbon odours or sheens) were noted in any of the monitoring wells during the well installation, development or sampling.

Additionally, the groundwater showed no elevated results when compared with the water quality criteria nominated in the South Australian Environment Protection (Water Quality) Policy 2003 (EPP) for any of the analytes tested.

Greencap noted that the samples collected from the groundwater monitoring wells MW01 to MW03 did however report elevated concentrations above the laboratory's limit of reporting for a number of volatile halogenated compounds. Based on the available historical information, the likelihood of the use of solvents at the site is considered to be low.

However, due to the elevated solvents reported above background concentrations, the SA EPA will be notified in accordance with Section 83A of the Environment Protection Act.

CONSTRUCTION PROGRAM

From receipt of revised Stage 2 approval (based on assumption 1st December and assuming it aligns with ok to proceed with project) Cook Building and Development anticipate the following.

- Design development and documentation 4 months. December 2017 to end of March 2018 possibly mid-April depending on summer break by consultants.
- Commence civil works on site end March 2018 - excavation /piles/ basement walls and slab ready for ground level slab 3 months works complete end June 2018
- Start retail construction beginning early July 2018 (10 -12 months total build finalise overlapped with commencement East tower residential)
- Start residential early February 2019 (6 months with some overlap with retail)
- Complete retail between April and June 2019
- Complete residential between July and Sept 2019.

It is critical that this project can be delivered in a timely fashion in accordance with the above program to meet commercial agreement deadlines by the end of June 2019.

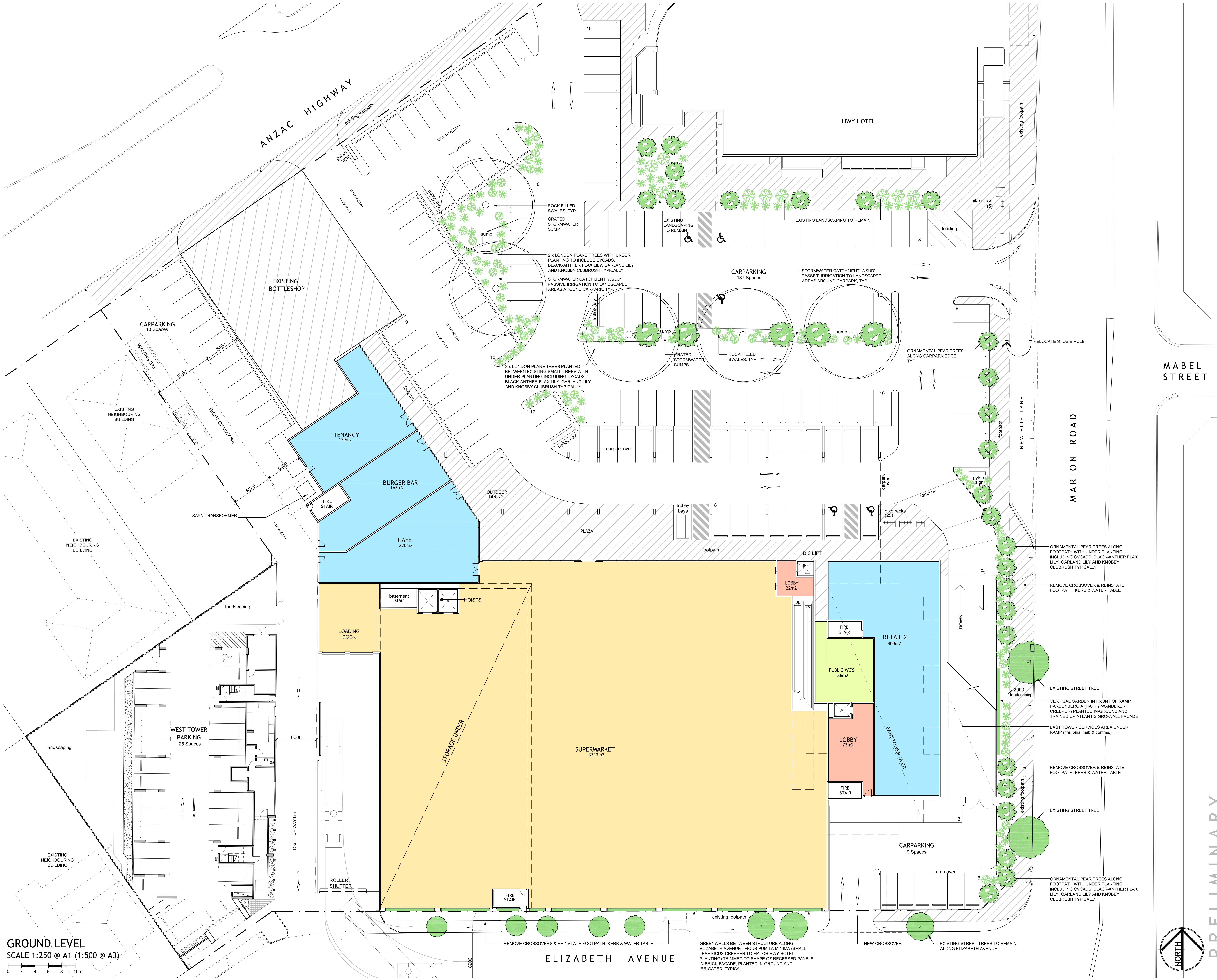
APPENDIX 1 – RESERVED MATTERS

RESERVE MATTER	REFERENCE IN APPLICATION DOCUMENTS	COMMENTRY
(a) detailed design plans and drawings for all structures on site for approval by the Minister for Planning. The final designs, plans and drawings must show the layout of the structures on the site cross-sections as well as elevations and drawings for each component of the development and the sustainability measures proposed by the proponent;	Plans and elevation are provided in Appendix 2.	Please refer to the proposal plans and elevations prepared by Folland Panozzo Architects
(b) a Building Sustainability Plan that includes details of the objectives and measures to be implemented to achieve energy and water efficiencies, the use of recycled materials, minimisation of emissions and waste minimisation/recycling for the proposed development. This would need to be shown on the plans and elevations where applicable. The Plan must include targets and measures as well as an analysis using a Green Star Rating Tool;	Noted	The Stage 1 Building Sustainability Plan is being updated by Cook Building and Development which will be forwarded to DPTI once finalised.
(c) a legally binding agreement, under Section 57 of the Development Act 1993, between the proponent and the Minister for Housing and Urban Development (or his delegate) dedicating a portion of the residential apartments to the provision of affordable rental housing such that 15% of the total residential development will meet the 'affordable housing criteria' as determined by the Minister in Regulation 4 of the South Australian Housing Trust Regulations 2010 (as amended by further notice from time to time). A Plan shall be prepared, to the reasonable satisfaction of Renewal SA, for the development showing the proposed location of the 15% of dwellings that will meet the affordable housing criteria;	The applicant is finalising the most appropriate mechanism with the Affordable Housing team to then establish the legally binding agreement with the Minister for housing and Urban Development.	The proposed development achieves the required 15% affordable housing criteria.
(d) a Waste Management Plan for each component of the development, prepared to the reasonable satisfaction of Zero Waste, the Environment Protection Authority and City of West Torrens Council;	Noted	The Waste Management Plan is currently being updated by Cook Building and Development for Stage 2. The Waste Management Plan will be provided to DPTI once completed.
(e) a Developer Agreement with the Department of Planning, Transport and Infrastructure for the required works. The works shall include (but not be limited to) the following:	Noted	The applicant is finalising the agreement with the Department of Planning, Transport and Infrastructure

RESERVE MATTER	REFERENCE IN APPLICATION DOCUMENTS	COMMENTRY
(i) vehicle movements to and from Marion Road at Elizabeth Avenue and Mabel Street be restricted to left turn in and left turn out only by closing the median openings on Marion Road. As part of this work, the right turn lane on Marion Road for vehicles turning right into Anzac Highway to head east shall be extended to maximize storage at this location;	Refer site plan	Works included as part of variation.
(ii) vehicle movements at the two-way access point to the car park on Anzac Highway shall be restricted to left turn in, left turn out and right turn in only. Right turn out movements shall not be permitted to occur in any form. To accommodate right-in movements, the U-turn facility shall be modified to prohibit U-turns from the north-east or, in the event that the design cannot entirely prohibit the above movements, the U-turn on Anzac Highway shall be closed entirely and access restricted to left turn in and left turn out only;	Refer site plan	Works included as part of variation.
(iii) a left turn deceleration lane shall be provided at the Marion Road access to the car park. This shall be designed in accordance with the Austroads Guide to Road Design Part 4A and Department of Planning, Transport and Infrastructure standards;	Refer site plan	Works included as part of variation
(iv) a separate right turn phase shall be provided at the Marion Road/Anzac Highway intersection for the eastern approach. Additionally, the phase times for the right turn movement from Anzac Highway into Cross Road shall be increased. These modifications shall be to the satisfaction of the Department of Planning, Transport and Infrastructure at the cost of the developer. This shall be undertaken prior to occupation of the development;		The applicant is working with the Department of Planning, Transport and Infrastructure to determine if this is still required.
(v) the right turn lane on Anzac Highway western approach shall be extended by a minimum of 20 metres;	Refer site plan	Works included as part of variation.
(vi) sufficient land shall be set aside along the Marion Road and Anzac Highway property frontages to accommodate the required road works and to provide Disability Discrimination Act 1992 ('DDA') compliant footpaths (any new or relocated footpath must be no narrower than the existing footpaths). All land required from the site to facilitate this requirement shall be vested to road at no cost to Council or the Department of Planning, Transport and Infrastructure;	Refer site plan	Works included as part of variation.
(vii) all road works and improvements required to accommodate the proposed development shall be designed and constructed to the satisfaction of the Department of Planning, Transport and Infrastructure with all costs (design, construction and project management) being borne by the developer. With regards to the design, the developer is required to seek approval for the	Noted	The applicant is finalising the agreement with the Department of Planning, Transport and Infrastructure

RESERVE MATTER	REFERENCE IN APPLICATION DOCUMENTS	COMMENTRY
concept plan from the Department of Planning, Transport and Infrastructure's Metropolitan Region, Senior Access Management Engineer, Catherine Magraith on telephone (08) 8226 8325, before undertaking any detailed design work. All road works and improvements shall be completed prior to occupation of the development;		
(viii) the five car parking spaces on the southern side and the eight spaces on the northern side of the Marion Road access aisle shall be removed from the proposal to minimize conflict adjacent to the Marion Road access point; and	Refer site plan	Works included as part of variation.
(ix) the three car parking spaces immediately south of the two-way access point on Anzac Highway shall be removed from the proposal to minimize conflict adjacent to the Anzac Highway access point;	Refer site plan	Works included as part of variation.
(f) a Traffic and Parking Management Plan, prepared to the reasonable satisfaction of the Department of Planning, Transport and Infrastructure and City of West Torrens Council, including legally binding agreements between the proponent and the responsible road authority for any necessary works and arrangements;	The Traffic and Parking Management Plan has been provided to Council for review.	The applicant is finalising the agreement with the Department of Planning, Transport and Infrastructure for the works required.
(g) a detailed Landscaping Plan for the site;	Refer to landscaping plan	The landscaping plan now contains specific plant species and locations proposed with advice from a landscape architect.
(h) a detailed Stormwater Management Plan prepared to the reasonable satisfaction of the Environment Protection Authority and City of West Torrens Council; and	The Stormwater Management Plan has been provided to Council for review.	The Stormwater Management Plan was prepared in consultation with the City of West Torrens as per Stage 1 of the development.
(i) a Construction Environmental Management and Monitoring Plan for the pre-construction and construction phases prepared to the reasonable satisfaction of the Environment Protection Authority and the City of West Torrens Council.	Noted	Cook Building and Development is updating the Construction Environment Management and Monitoring Plan for Stage 2 and will be provided to DPTI once finalised.

APPENDIX 2 – PLANS AND ELEVATIONS


ANZAC HIGHWAY
existing footpath
pylon sign
EXISTING BOTTLESHOP
CARPARKING
13 Spaces
WAITING BAY
RIGHT OF WAY 6m
EXISTING NEIGHBOURING BUILDING
SAPN TRANSFORMER
TENANCY
179m2
BURGER BAR
163m2
CAFE
220m2
FIRE STAIR
OUTDOOR DINING
PLAZA
footpath
HWY HOTEL
EXISTING LANDSCAPING TO REMAIN
EXISTING LANDSCAPING TO REMAIN
bike racks (5)
loading
ROCK FILLED SWALES, TYP.
GRATED STORMWATER SUMP
2 x LONDON PLANE TREES WITH UNDER PLANTING TO INCLUDE CYCADS, BLACK-ANTHER FLAX LILY, GARLAND LILY AND KNOBBY CLUBRUSH TYPICALLY
STORMWATER CATCHMENT 'WSUD' PASSIVE IRRIGATION TO LANDSCAPED AREAS AROUND CARPARK, TYP.
CARPARKING
137 Spaces
3 x LONDON PLANE TREES PLANTED BETWEEN EXISTING SMALL TREES WITH UNDER PLANTING INCLUDING CYCADS, BLACK-ANTHER FLAX LILY, GARLAND LILY AND KNOBBY CLUBRUSH TYPICALLY
GRATED STORMWATER SUMPS
ROCK FILLED SWALES, TYP.
ORNAMENTAL PEAR TREES ALONG CARPARK EDGE, TYP.
RELOCATE STOBIE POLE
trolley bay
carpark over
trolley bays
bike racks (25)
ramp up
NEW SLIP LANE
MARION ROAD
MABEL STREET
ORNAMENTAL PEAR TREES ALONG FOOTPATH WITH UNDER PLANTING INCLUDING CYCADS, BLACK-ANTHER FLAX LILY, GARLAND LILY AND KNOBBY CLUBRUSH TYPICALLY
REMOVE CROSSOVER & REINSTATE FOOTPATH, KERB & WATER TABLE
EXISTING STREET TREE
VERTICAL GARDEN IN FRONT OF RAMP, HARDENBERGIA (HAPPY WANDERER CREEPER) PLANTED IN-GROUND AND TRAINED UP ATLANTIS GRO-WALL FACADE
EAST TOWER SERVICES AREA UNDER RAMP (fire, bins, msb & comms.)
REMOVE CROSSOVER & REINSTATE FOOTPATH, KERB & WATER TABLE
EXISTING STREET TREE
ORNAMENTAL PEAR TREES ALONG FOOTPATH WITH UNDER PLANTING INCLUDING CYCADS, BLACK-ANTHER FLAX LILY, GARLAND LILY AND KNOBBY CLUBRUSH TYPICALLY
DIS LIFT
LOBBY
22m2
FIRE STAIR
PUBLIC WC'S
86m2
RETAIL 2
400m2
LOBBY
73m2
EAST TOWER OVER
FIRE STAIR
DOWN
UP
2000 landscaping
CARPARKING
9 Spaces
ramp over
basement stair
HOISTS
LOADING DOCK
STORAGE UNDER
SUPERMARKET
3313m2
ROLLER SHUTTER
FIRE STAIR
WEST TOWER PARKING
25 Spaces
landscaping
RIGHT OF WAY 6m
existing footpath
REMOVE CROSSOVERS & REINSTATE FOOTPATH, KERB & WATER TABLE
GREENWALLS BETWEEN STRUCTURE ALONG ELIZABETH AVENUE - FICUS PUMILA MINIMA (SMALL LEAF FICUS CREEPER TO MATCH HWY HOTEL PLANTING) TRIMMED TO SHAPE OF RECESSED PANELS IN BRICK FACADE, PLANTED IN-GROUND AND IRRIGATED, TYPICAL
NEW CROSSOVER
EXISTING STREET TREES TO REMAIN ALONG ELIZABETH AVENUE
ELIZABETH AVENUE
NORTH
PRELIMINARY

GROUND LEVEL
SCALE 1:250 @ A1 (1:500 @ A3)

rev #	date	description
K	30.10.17	landscaping detail amended
J	05.10.17	carpark & bike parking numbers amended
H	19.09.17	issued to DPTI

folland architects panozzo

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project
HIGHWAY DEVELOPMENT
STAGE 2
ANZAC HIGHWAY
PLYMPTON, SA

drawing title
ground level

job #	dwg #	issue #
2015 1510	SK 01	K
date	scales	drawn by
30/10/17	1:250	js/am

BUILDERS AND CONTRACTORS ARE TO VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING ANY WORK AND PREPARING SHOP DRAWINGS. IF IN DOUBT ASK FOR CLARIFICATION.

FIRST LEVEL

SCALE 1:250 @ A1 (1:500 @ A3)

0 2 4 6 8 10m

rev #	date	description
H	30.10.17	landscaping details amended
G	05.10.17	carpark & bike parking numbers amended
F	19.09.17	issued to DPTI

folland panozzo architects

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project

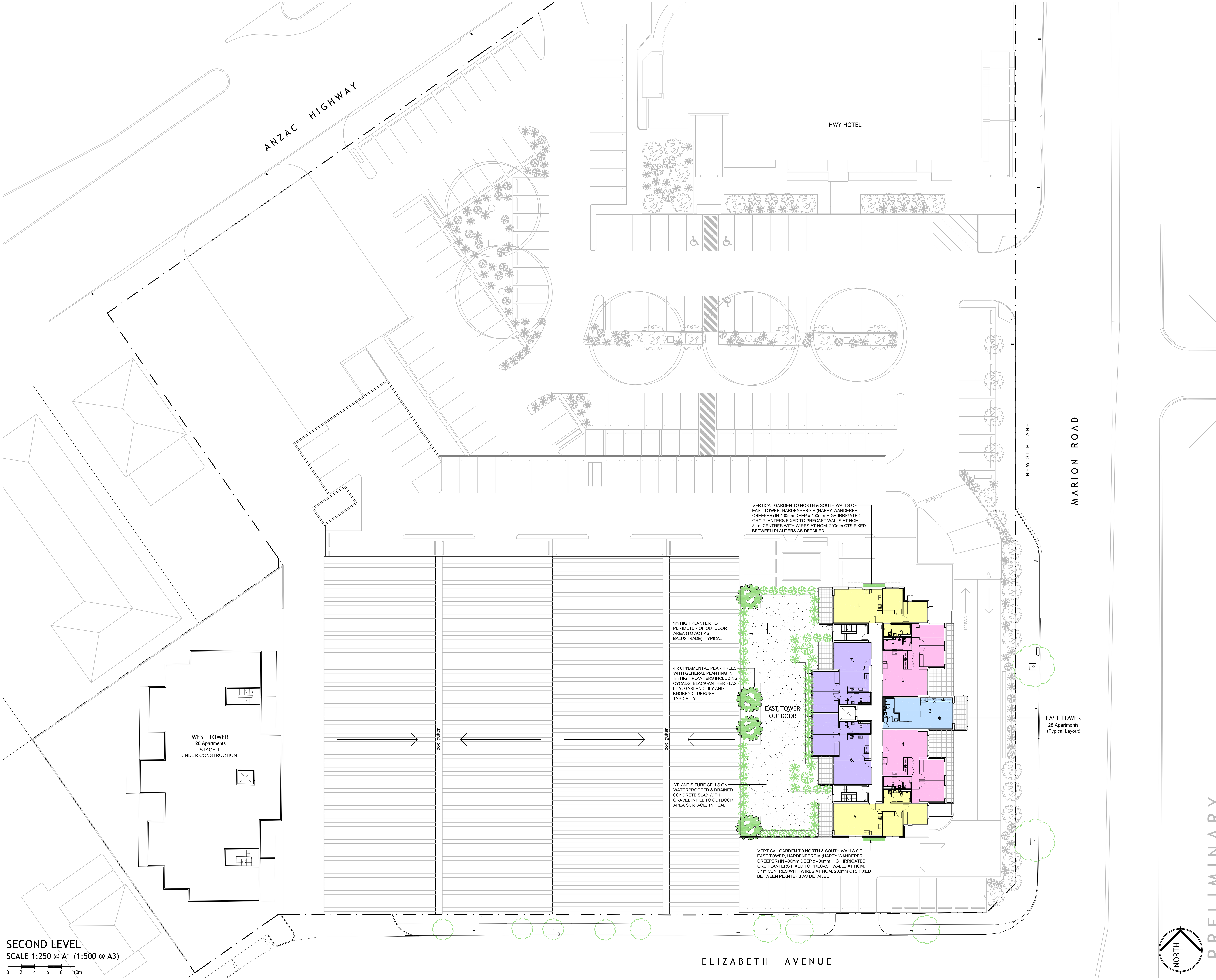
HIGHWAY DEVELOPMENT STAGE 2 ANZAC HIGHWAY PLYMPTON, SA

PRELIMINARY

drawing title: first level

job #	dwg #	issue #
2015 1510	SK 02	H
date	**scales**	**drawn by**
30/10/17	1:250	js/am

BUILDERS AND CONTRACTORS ARE TO VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING ANY WORK AND PREPARING SHOP DRAWINGS. IF IN DOUBT ASK FOR CLARIFICATION.


ANZAC HIGHWAY
HWY HOTEL
NEW SLIP LANE
MARION ROAD
ELIZABETH AVENUE
WEST TOWER
28 Apartments
STAGE 1
UNDER CONSTRUCTION
box gutter
box gutter
EAST TOWER OUTDOOR
1m HIGH PLANTER TO PERIMETER OF OUTDOOR AREA (TO ACT AS BALUSTRADE), TYPICAL
4 x ORNAMENTAL PEAR TREES WITH GENERAL PLANTING IN 1m HIGH PLANTERS INCLUDING CYCADS, BLACK-ANTHER FLAX LILY, GARLAND LILY AND KNOBBY CLUBRUSH TYPICALLY
ATLANTIS TURF CELLS ON WATERPROOFED & DRAINED CONCRETE SLAB WITH GRAVEL INFILL TO OUTDOOR AREA SURFACE, TYPICAL
VERTICAL GARDEN TO NORTH & SOUTH WALLS OF EAST TOWER, HARDENBERGIA (HAPPY WANDERER CREEPER) IN 400mm DEEP x 400mm HIGH IRRIGATED GRC PLANTERS FIXED TO PRECAST WALLS AT NOM. 3.1m CENTRES WITH WIRES AT NOM. 200mm CTS FIXED BETWEEN PLANTERS AS DETAILED
VERTICAL GARDEN TO NORTH & SOUTH WALLS OF EAST TOWER, HARDENBERGIA (HAPPY WANDERER CREEPER) IN 400mm DEEP x 400mm HIGH IRRIGATED GRC PLANTERS FIXED TO PRECAST WALLS AT NOM. 3.1m CENTRES WITH WIRES AT NOM. 200mm CTS FIXED BETWEEN PLANTERS AS DETAILED
1.
2.
3.
4.
5.
6.
7.
EAST TOWER
28 Apartments
(Typical Layout)
DOWN
UP
NORTH
0 2 4 6 8 10m

SECOND LEVEL
SCALE 1:250 @ A1 (1:500 @ A3)

rev #	date	description
G	30.10.17	landscaping details amended
F	19.09.17	issued to DPTI

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269 brighton road
somerton park sa 5044
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ABN 56 100 862 879

project

HIGHWAY DEVELOPMENT
STAGE 2
ANZAC HIGHWAY
PLYMPTON, SA

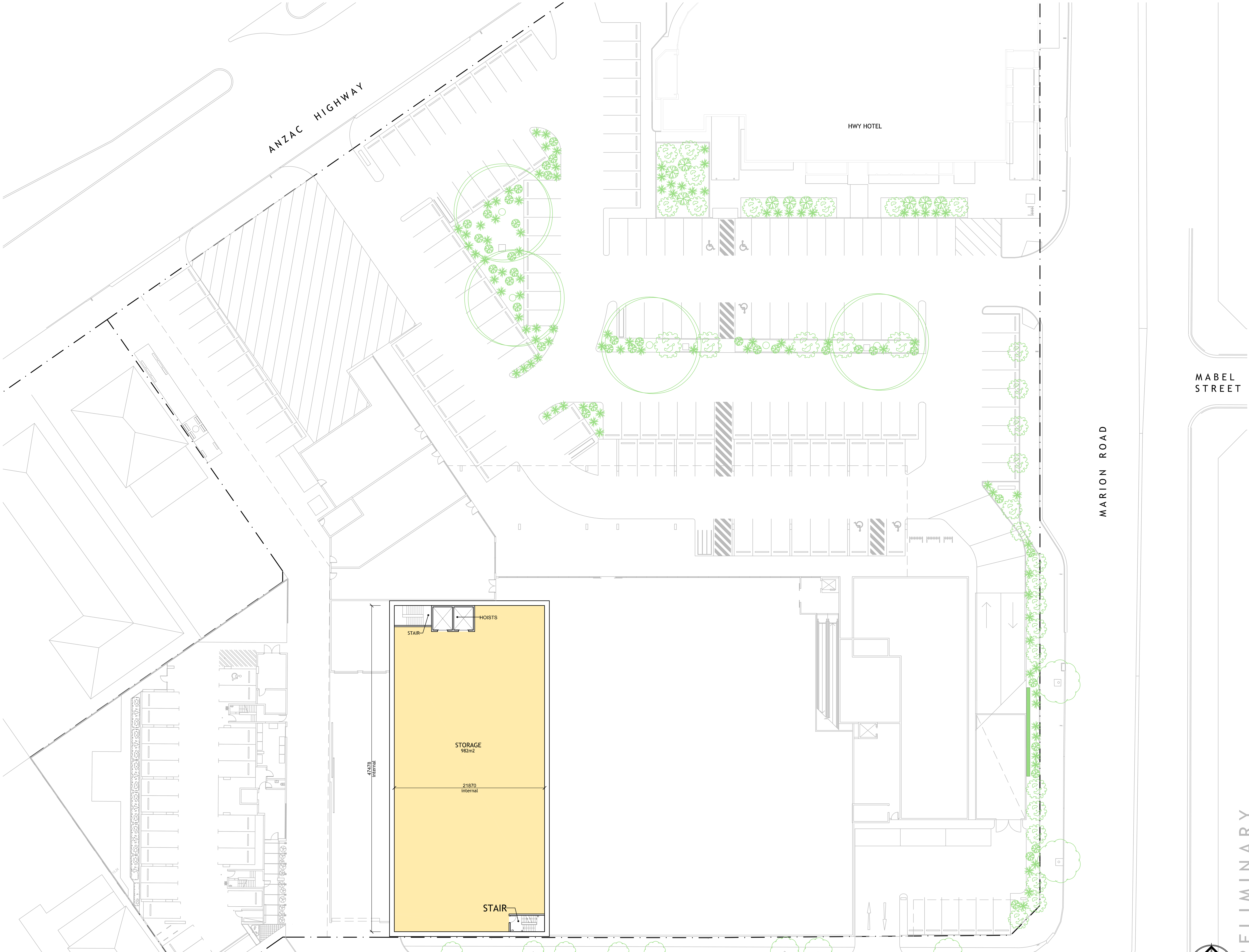
PRELIMINARY

drawing title

second level

job #	dwg #	issue #
2015 1510	SK 03	G
date	**scales**	**drawn by**
30/10/17	1:250	js/am

BUILDERS AND CONTRACTORS ARE TO VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING ANY WORK AND PREPARING SHOP DRAWINGS. IF IN DOUBT ASK FOR CLARIFICATION.



BASEMENT LEVEL
SCALE 1:250 @ A1 (1:500 @ A3)
0 2 4 6 8 10m

rev #	date	description
E	30.10.17	landscaping details amended
D	19.09.17	issued to DPTI

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project

HIGHWAY DEVELOPMENT
STAGE 2
ANZAC HIGHWAY
PLYMPTON, SA

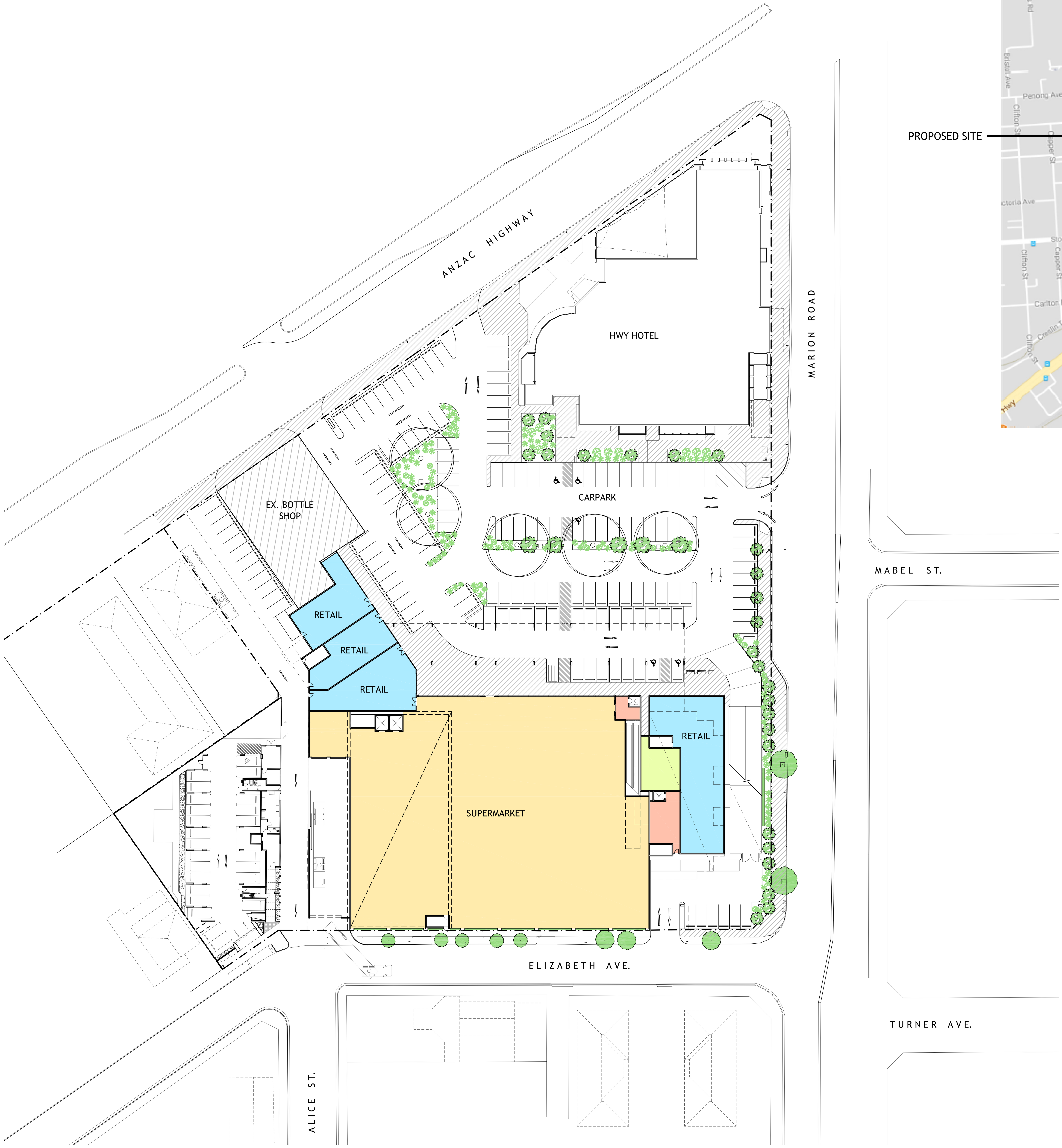
drawing title

basement level

job #	dwg #	issue #
2015 1510	SK 04	E

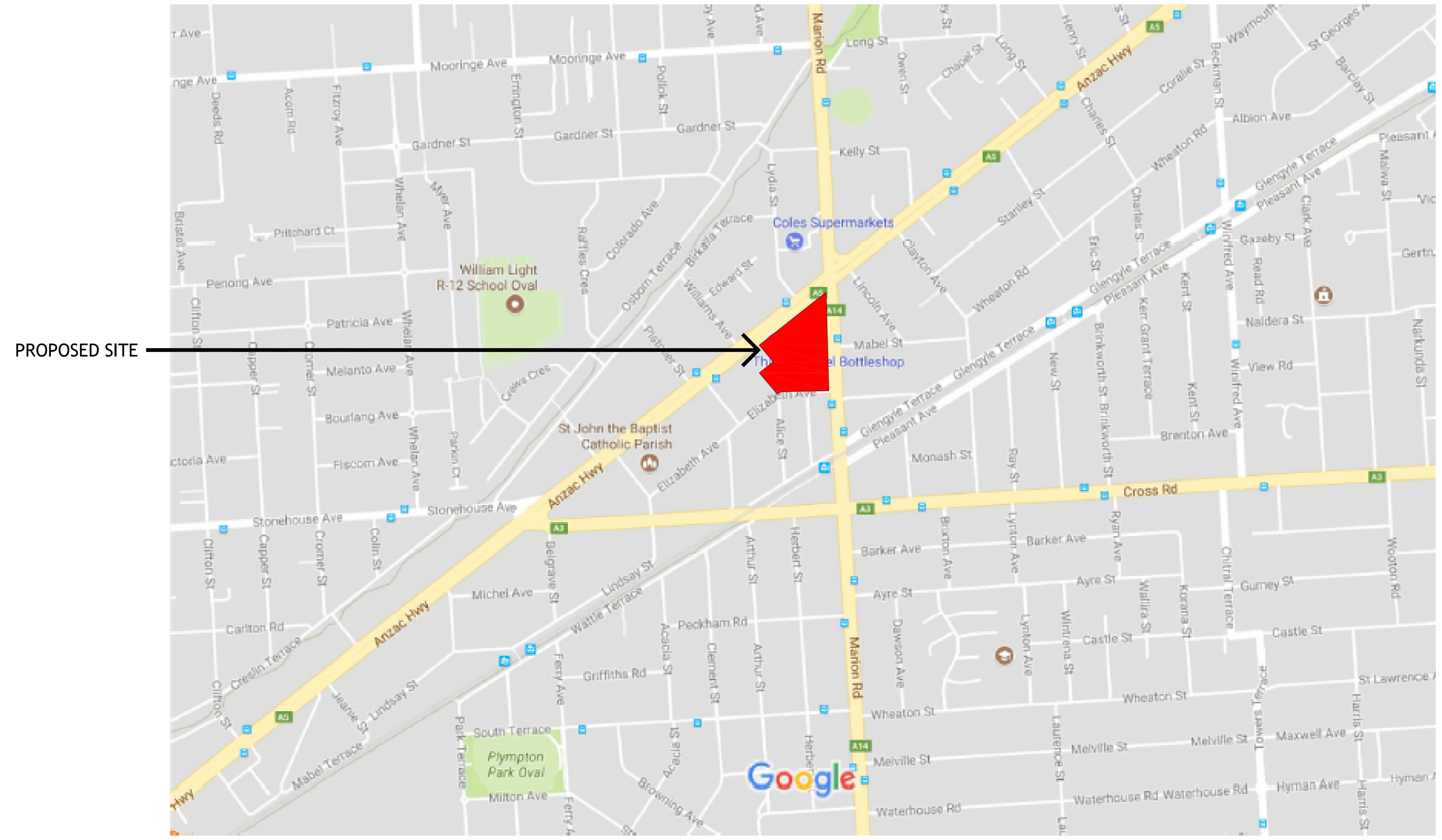
date	scales	drawn by
30/10/17	1:250	js/am

BUILDERS AND CONTRACTORS ARE TO VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING ANY WORK AND PREPARING SHOP DRAWINGS. IF IN DOUBT ASK FOR CLARIFICATION.



SITE PLAN

SCALE 1:500 @ A1 (1:1000 @ A3)



Map data ©2017 Google Australia 200 m

LOCATION PLAN

N.T.S.

rev #	date	description
C	30.10.17	landscaping detail amended
B	05.10.17	carpark & bike parking numbers amended
A	19.09.17	issued to DPTI

APARTMENT SCHEDULE		
West Tower	7 per floor x 4 levels 2 bed apartments = 24 1 bed apartments = 4	28 Apartments
East Tower	7 per floor x 4 levels 2 bed apartments = 24 1 bed apartments = 4	28 Apartments
	TOTAL	56 Apartments

LANDSCAPE SCHEDULE
TREES - STREET & CARPARK
Platanus - (Ornamental / London Plane) Plyrus - (Ornamental Pear)
DRYLAND GARDEN BEDS & GROUND COVERS
Cycadales - (Cycad) Viburnum Dianella Revoluta - (Black-Anther Flax Lily) Calostemma Purpureum - (Garland Lily) Ficinea Nodosa - (Knobby Clubrush)
VERTICAL GARDENS
Hardenbergia - (Happy Wanderer - Creeper) Ficus Pumila Minima - (Small Leaf Ficus - Creeper)

PARKING SCHEDULE		
Type	Level	Number
Retail	Ground	159
Apartments (West)	Ground	25
Retail	First	185
Apartments (East)	First	20
	TOTAL	389

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project

HIGHWAY DEVELOPMENT STAGE 2 ANZAC HIGHWAY PLYMPTON, SA

PRELIMINARY

drawing title

site plan

job #	dwg #	issue #
2015 1510	SK 05	C
date	**scales**	**drawn by**
30/10/17	1:500	js/am

NORTH

BUILDERS AND CONTRACTORS ARE TO VERIFY ALL DIMENSIONS AND LEVELS ON SITE BEFORE COMMENCING ANY WORK AND PREPARING SHOP DRAWINGS. IF IN DOUBT ASK FOR CLARIFICATION.

THE PRECINCT – APARTMENTS

Apartment living at The HWY Precinct

Materials & Finishes

KITCHEN BENCHTOP
STONE
White Storm

KITCHEN OVEN
Euro Electric Oven

BEDROOM
CARPET - TWIST PILE
Tuftmaster Carpets

DRYER
Euro 6kg Capacity

KITCHEN SPLASHBACK
SUBWAY TILE
Textured White

KITCHEN DISHWASHER
Euro Place Setting

CORRIDORS
CARPET - TWIST PILE
Tuftmaster Carpets

EXTERIOR TILE
Matte Charcoal

LIVING AREAS
LAMINATE FLOORING
Vs Soft Oak Natural

BATHROOM + LAUNDRY
FLOOR TILE
Matte Grey

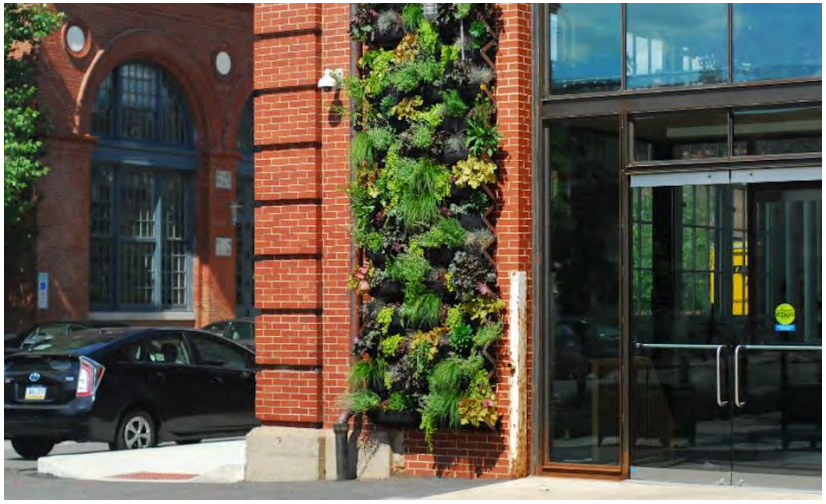
AIRCONDITIONING
Hitachi Split System

INTERIOR WALL PAINT
Dulux Acrylic White

THE PRECINCT – ANZAC HWY

Examples of combined Retail and Apartment living

Greenwalls & Timber Screening to enhance Apartments and Retail facades



External Finishes & Textures include render, brick, timber and steel featuring industrial style references

Market style feel to Supermarket & Retail

APPENDIX 3 – TRAFFIC AND PARKING ASSESSMENT

THE HIGHWAY MIXED-USE DEVELOPMENT
292-304 ANZAC HIGHWAY, PLYMPTON

TRANSPORT & PARKING REPORT

OCTOBER 2017
Our reference: 16051

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Document Control

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Client	The Palmer Group
Client Contact	Martin Palmer

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1.0	29 Sep 17	Draft for review	BNW/TAW	BNW
1.1	5 Oct 17	For submission	BNW/TAW	BNW

TABLE OF CONTENTS

1. INTRODUCTION

CIRQA has been engaged by The Palmer Group to provide traffic consultancy advice for Stage 2 of the "Highway" mixed-use development project at 292-304 Anzac Highway, Plympton.

The proposed mixed-use development comprises the construction of new retail shops and residential apartments (in addition to the existing hotel and bottleshop uses and the Stage 1 residential apartments currently under construction). The site will be serviced by a large at-grade car park in addition to first floor parking. Parking will be provided for residents, staff and visitors. Vehicular access to/from the site will be provided via crossovers on ANZAC Highway, Marion Road and Elizabeth Avenue.

Traffic and parking assessments were prepared by QED (in 2009) and Aurecon (in 2013) for previous development applications associated with the overall development. This report provides an update of the previous assessments (with a particular focus on the Stage 2 component). This report includes a review of parking requirements associated with the proposal as well as traffic impacts on the adjacent road network.

2. BACKGROUND

2.1 SUBJECT SITE

The subject site comprises of 292-304 ANZAC Highway, 410, 412, 414 and 416 Marion Road and 1, 3, 5, 7 and 9 Elizabeth Avenue, Plympton. The site is bounded by ANZAC Highway and commercial businesses to the north, Marion Road, commercial businesses and residential dwellings to the east, Elizabeth Avenue and residential dwellings to the south and residential dwellings and commercial businesses to the west. The City of West Torrens' Development Plan identifies that the majority of the site is located within the Urban Corridor Zone, with 1, 3, 5, 7 and 9 Elizabeth Avenue, located within a Residential Zone.

Site 292-304 ANZAC Highway is currently occupied by the Highway Hotel and associated Thirsty Camel drive-through bottle shop whilst the remaining sites are currently unoccupied. Vehicle access to the subject land is currently provided via three crossovers on ANZAC Highway, four crossovers on Marion Road and six crossovers on Elizabeth Avenue. Pedestrian access is provided via the site's street frontages (i.e. from ANZAC Highway, Marion Road and Elizabeth Avenue). Figure 1 illustrates the subject site, access points and adjacent road network.

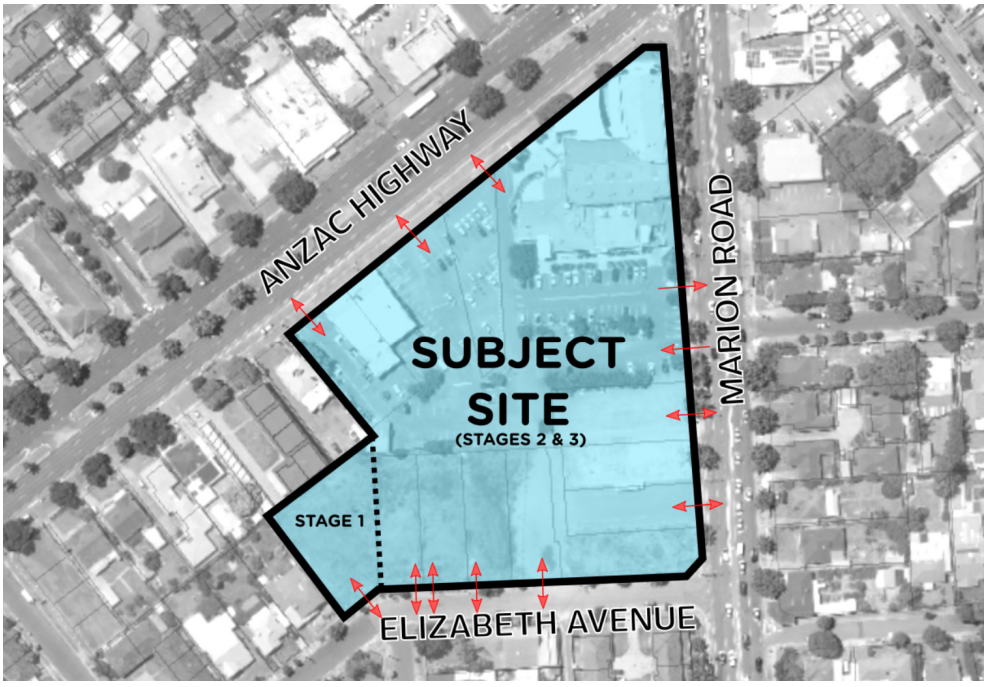

Figure 1 - Subject site, existing access points and surrounding road network

2.2 ADJACENT TRANSPORT NETWORKS

2.2.1 ACTIVE TRANSPORT

In the vicinity of the subject site, pedestrian movements are accommodated within the road verges on sealed footpaths. These are provided on ANZAC Highway, Marion Road and Elizabeth Avenue. Controlled crossing movements are facilitated across all legs of the ANZAC Highway/Marion Road intersection, with two-stage movements occurring across ANZAC Highway. Pedestrian movements are also facilitated across Elizabeth Avenue (at the Marion Road/Elizabeth Avenue intersection). Pedestrian ramps are provided at all crossing locations.

Cyclist movements are accommodated on ANZAC Highway within dedicated bicycle lanes provided for both directions of travel. On-street bicycle lanes are also provided on Marion Road approaches to the ANZAC Highway/Marion Road intersection. Bicycle movements are accommodated on the Elizabeth Avenue under a standard "shared" arrangement, requiring cyclists to ride within a traffic lane. This would also occur where bicycle lanes are not provided and would typically occur in the outside traffic lanes (which are wider than that of the inside traffic lane).

2.2.2 PUBLIC TRANSPORT

Numerous public transport services operate within close vicinity of the subject site. Bus services operate along ANZAC Highway and Marion Road with Stop 11 (ANZAC Highway) and Stop 11 (Marion Road) located on both sides of the road, providing connectivity to Adelaide's CBD and suburbs. Primary bus services operating along ANZAC Highway and Marion Road include:

- Route 263;
- Route 265;
- Route H20;
- Route 100;
- Route 101;
- Route 245;
- Route 248; and
- Route M44.

Other public transport services operating within close proximity (approximately 240 m) include the tram service operating between Glenelg and the Adelaide Entertainment Centre via the Adelaide CBD.

2.2.3 ROAD NETWORK

ANZAC Highway is an arterial road under the care and control of the Department of Planning, Transport and Infrastructure (DPTI). Adjacent to the subject site, ANZAC Highway comprises three traffic lanes in each direction, separated by a wide raised central median. On-street parking is not permitted adjacent the site on ANZAC Highway, however a time dependant Taxi Zone operates between 12:15 am and 6:00 am.

In the vicinity of the subject site, DPTI traffic data indicates that ANZAC Highway has an Annual Average Daily Traffic (AADT) volume of 30,900 vehicles per day (vpd), of which approximately 3.0% are classified as commercial vehicles. A speed limit of 60 km/h applies on ANZAC Highway adjacent the subject site.

Marion Road is an arterial road under the care and control of DPTI. According to DPTI traffic data, Marion Road has an AADT of 33,300 vpd (of which approximately 5.0% are commercial vehicles) adjacent the subject site. This section of Marion Road is subject to a speed limit of 60 km/h. Adjacent to the subject site, Marion Road comprises two traffic lanes in each direction, separated by a raised central median. On-street parking is not permitted on Marion Road adjacent the subject site.

Elizabeth Avenue is a local road under the care and control of the City of West Torrens. Elizabeth Avenue comprises a single traffic lane in each direction, with unrestricted on street parking permitted on both sides of the road. Elizabeth Avenue is subject to a default urban speed limit of 50km/h.

Immediately northeast of the subject site, ANZAC Highway and Marion Road intersect at a signalised intersection. All turning movements are accommodated at the intersection, with right turn movements (from ANZAC Highway) uncontrolled during peak hours. Separated deceleration lanes are provided for all turning movements with the exception of left-turn movements from Marion Road south (accommodated via a high-angle left turn).

Southeast of the subject site, Marion Road intersects with Elizabeth Avenue at a priority controlled (Give Way) T-intersection (with Elizabeth Avenue forming the minor leg). All

turning movements are accommodated with a right-turn deceleration/storage area provided for right turn movements from Marion Road.

2.3 PREVIOUS DEVELOPMENT PROPOSALS

Previous applications associated with the redevelopment of the subject site have been approved by (the then) Development Assessment Commission. As part of the previous applications, detailed traffic and parking assessments were prepared by QED in 2009 and Aurecon in 2013. The more recent (2013) application comprised the following uses (as identified in Aurecon's report):

- 26 serviced apartments (12 one-bedroom and 14 two-bedroom units);
- a 'north tower' apartment building with 24 two-bedroom units and 18 three-bedroom units;
- an 'east tower' apartment building with 16 two-bedroom units;
- a 'west tower' apartment building with 24 two-bedroom units;
- a 3,085 m^2 supermarket;
- 1,925 m^2 of specialty retail tenancies;
- 890 m^2 of commercial floor area; and
- 448 parking spaces servicing the overall development.

Stage 1 of the development comprised the 'west tower' apartment building for which construction has commenced.

The Aurecon report included discussion of detailed Aimsun microsimulation modelling that was undertaken to identify the traffic impacts of the proposed redevelopment. As a result of further negotiations with representatives of DPTI, a number of road infrastructure interventions were identified and set as reserve matters for the approval of the application. The agreed interventions are:

- construction of a new left turn deceleration lane for the proposed (sole) access on Marion Road. Provision of a realigned, DDA-compliant footpath and associated services works will also be required to accommodate the left turn lane. This intervention was identified as being required for Stage 2 of the overall development (the currently proposed stage);
- closure of two existing median openings on Marion Road which will restrict movements into and out of both Mabel Street and Elizabeth Avenue to left-in/left-

out only. This intervention was identified as being required for Stage 2 of the overall development (the currently proposed stage);

- extension of the existing right turn storage lane by 20 m on the western Anzac Highway approach to its intersection with Marion Road. This intervention was identified as being required for Stage 3 of the overall development (the 'north tower' apartment building);
- modification of the existing U-turn facility opposite the site on Anzac Highway to prevent both right turn movements out of the subject site's car park and U-turns from the north-east. Right-in movements (as well as left-in/left-out) at the associated access point will be retained. This intervention was identified as being required for Stage 3 of the overall development (the 'north tower' apartment building).

3. PROPOSED DEVELOPMENT

The proposed redevelopment of the HIGHWAY site is proposed to be undertaken in three stages. Stage 1, which comprises 28 residential apartments within the south-western corner of the site, is currently under construction. Stage 2 forms the current proposal and is detailed further below. Stage 3 is anticipated to comprise residential apartments and/or serviced apartments (and will be subject to further design and assessment as part of a separate, future application).

The current proposal (and this report) relates to the Stage 2 component of the overall development. The existing hotel and bottleshop (634 m^2 floor area) will be retained on-site (in addition to the Stage 1 residential tower currently under construction). The Stage 2 proposal comprises the following:

- 28 residential apartments (4 one-bedroom apartments and 20 two-bedroom apartments);
- a supermarket comprising a 3,313 m^2 gross floor area plus 982 m^2 back-of-house/storage area; and
- specialty retail tenancies totalling 962 m^2 gross floor area.

The Stage 2 site (and existing hotel and bottleshop) will be serviced by 364 parking spaces in a combination of ground-level and first floor parking. Car parking will comply with the "*Australian/New Zealand Standard for Parking Facilities - Part 1: Off-Street Car Parking*" (AS/NZS 2890.1:2004) in that:

- angled spaces associated with retail or hotel use will be at least 2.7 m wide and 5.4 m long with an adjacent aisle width of at least 6.2 m;
- parallel spaces (associated with resident visitor use) will be 2.3 m wide and lengths between 5.4 m and 6.6 m (depending on whether the space is an 'unobstructed', 'intermediate', or 'obstructed' space); and
- angled parking spaces associated with residential and staff use will be at least 2.4 m wide and 5.4 m long with an adjacent aisle width of at least 5.8 m.

Five parking spaces (included within the above total) will be provided for use by persons with disabilities. These spaces (and the adjacent shared areas) will comply with the "*Australian/New Zealand Standard for Parking Facilities - Part 6: Off-street Parking for People with Disabilities*" (AS/NZS 2890.6:2009).

The small car park for resident visitors accessed via Elizabeth Avenue will contain nine spaces in a single blind aisle. No dedicated turnaround bay has been proposed, however the aisle is wider than required by the Standard and turnaround movements will be possible within the aisle. Such an arrangement therefore conforms with the requirements of AS/NZS 2890.1:2004. Figure 2 illustrates the turnaround movement for a B99 vehicle.

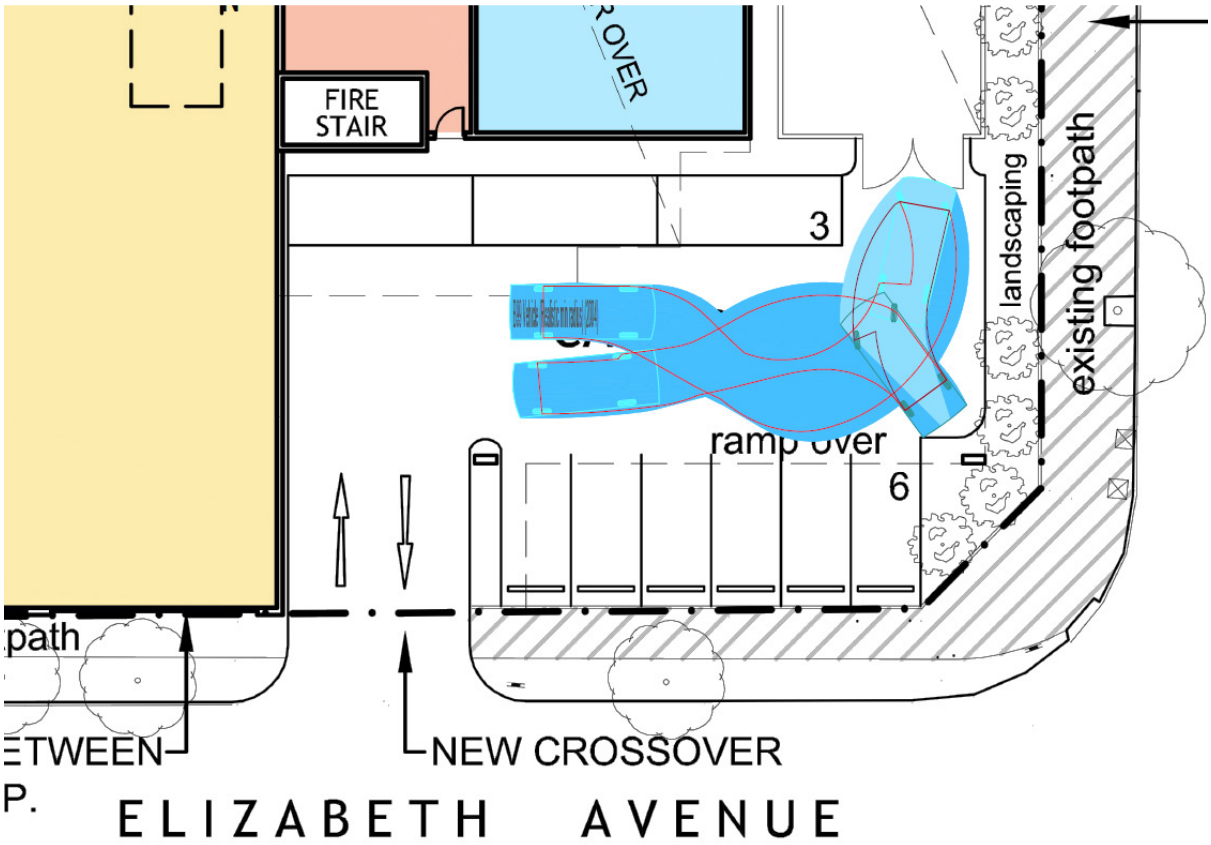

Figure 2 -Turnaround for resident visitor car park (B99 vehicle)

A total of 42 bicycle parking spaces will be provided throughout the site for use by residents, staff and patrons/visitors.

The access arrangements for the site are as originally proposed and approved for the previous applications associated with the site. Access to the subject site is proposed via three two-way crossovers on ANZAC Highway, one two-way crossover on Marion Road and two two-way crossovers on Elizabeth Avenue (the western crossover will be egress only). This will result in the removal of seven crossovers to the adjacent road network (three on Marion Road and four on Elizabeth Avenue). Figure 3 illustrates the proposed access points connecting the development to the adjacent road network.

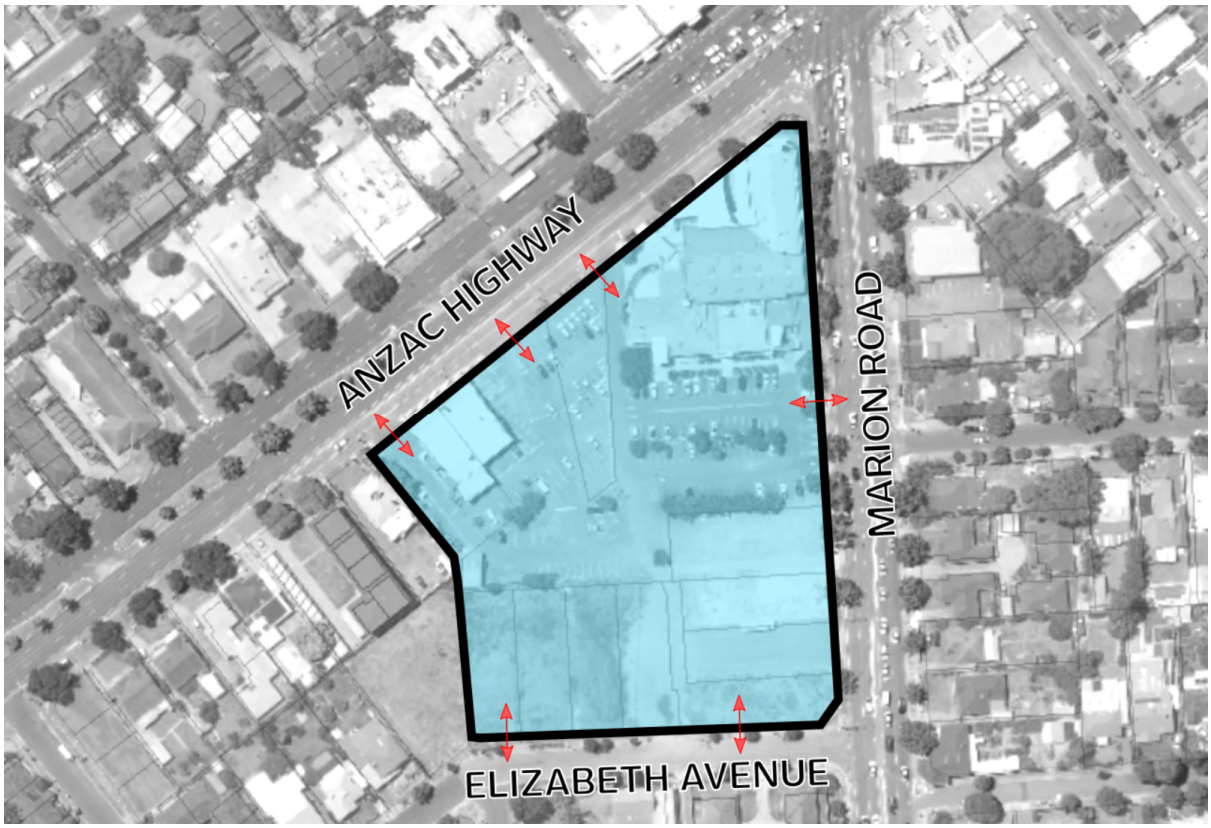

Figure 3 - Proposed access connecting the site to the adjacent road network

The ramp between the ground and first floor parking areas will comply with the requirements of AS/NZS 2890.1:2004, in that a maximum gradient of 1 in 5 will be provided with appropriate transitions at each end.

Commercial vehicle movements associated with all retail and the residential apartment tower (the largest expected vehicle being a 19.0 m semi-trailer) will be accommodated via the westernmost access point on ANZAC Highway and the westernmost access point (of the Stage 2 proposal) on Elizabeth Avenue. Such vehicles will be required to enter the site via ANZAC Highway and exit the site onto Elizabeth Avenue (to travel east towards Marion Road). Such an arrangement is consistent with that previously approved for the overall development. The supermarket's loading area will comprise two loading bays. The western bay will accommodate semi-trailers, while the eastern bay will be for rigid vehicles only (up to 12.5 m HRVs). Figure 4 illustrates a 19.0 m semi-trailer accessing and travelling through the subject site. The parking spaces adjacent the commercial vehicle access route will be designated for staff use only.

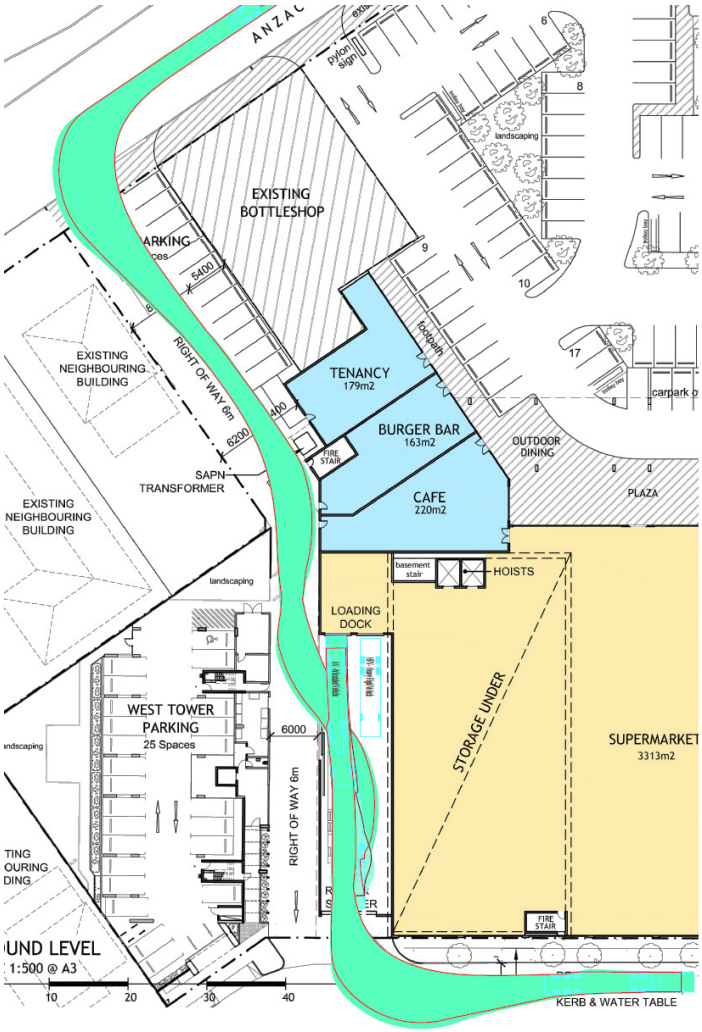

Figure 4 - Turn path for a 19.0 m semi-trailer to access the supermarket's loading area

In addition, delivery and refuse collection vehicles associated with the existing Highway Hotel will be required to access the subject site via Anzac Highway and Marion Road (as per current arrangements).

Refuse collection for the Stage 2 residential apartments ('east tower') will be undertaken in the small car park accessed via Elizabeth Avenue. The three parallel spaces will be designated as 'loading zone' during weekday mornings (7am to 12noon or similar) to allow refuse collection to be undertaken. At other times, general parking will be permitted within these spaces. The area has been designed to accommodate small rigid vehicles up to 7.2 m in length. Such provisions will allow for a range of refuse collection vehicles to be utilised. For instance, Veolia and Cleanaway waste collection contractors have a variety of small refuse collection vehicles between 6.4 m and 7.2 m in length which could be

utilised to the service the site. Figure 5 illustrates the turnaround movement associated with a 7.2 m truck within the small car park.

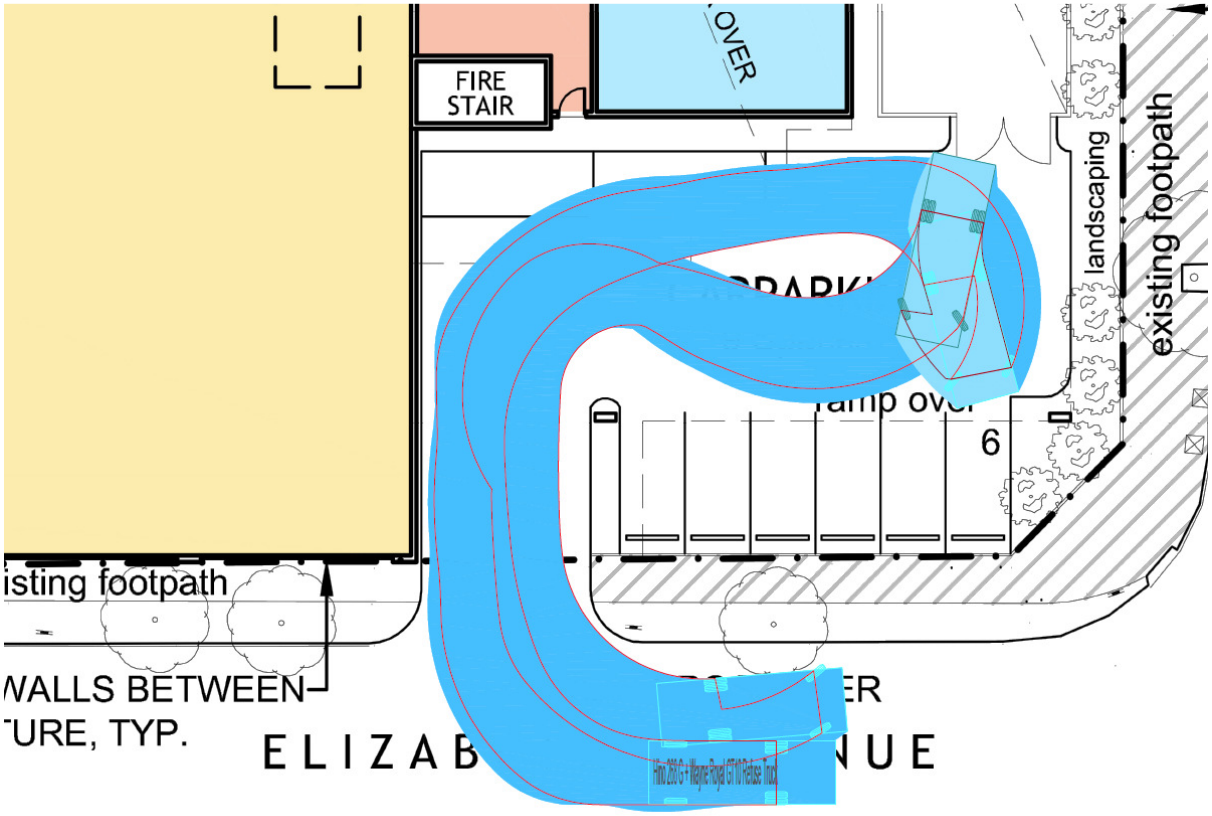

Figure 5 – A 7.2 m long refuse collection vehicle turn path for residential refuse collection

4. PARKING ASSESSMENT

4.1 VEHICLE PARKING

The City of West Torrens' Development Plan identifies the following vehicle parking rates relevant to the proposed development (Urban Corridor Zone rates):

- non-residential development (excluding tourist accommodation) – 3 to 5 spaces per 100 m^2 of gross leasable floor area; and
- residential flat buildings – 0.75 spaces per one-bedroom dwelling and 1.0 space per two-bedroom dwelling plus 0.25 visitor spaces per dwelling.

In addition to the above, given the hotel and bottleshop will share the primary parking areas with the Stage 2 components, these uses have been included in the following assessment. It is noted that the previous Aurecon studies identified a requirement for 160 spaces for the existing hotel during peak overlap periods with a further 10% discount to account for shared trips with other proposed uses. This level of provision (144 spaces) has been adopted for the following assessment. Table 1 summarises the minimum parking requirements based in the Urban Corridor Zone rates identified in Council's Development Plan.

Table 1 - Minimum parking requirement associated with the Stage 2 proposal

Use	Quantity	Rate	Spaces Required
Hotel	as per previous assessments		144
Non-Residential*	5,891 m^2	3 sp. per 100 m^2	176.73
One Bedroom Apartments	4 units	0.75 per dwelling	3
Two-Bedroom Apartments	24 units	1.0 per dwelling	24
		Total Required	**348 spaces**

* includes the existing bottleshop

Based on the proposed provision of 364 parking spaces, the proposal will exceed the minimum requirements identified in the Development Plan (including consideration of the existing hotel and bottleshop uses).

4.2 BICYCLE PARKING

Council's Development Plan identifies the following bicycle parking rates relevant to the subject development:

- residential – one bicycle parking space for every four dwellings for residents plus one visitor space for every ten dwellings for visitors; and

- **shop** – one bicycle parking space for every 300 m^2 of gross leasable floor area for employees, plus one visitor space for every 600 m^2 of gross leasable floor area for shoppers.

Table 2 summarises the bicycle parking requirements associated with the proposed use (including the existing bottleshop).

Table 2 - Bicycle parking requirements based on the Development Plan

Use	Quantity	Rate	Spaces Required
Shop (Staff)*	5,891 m^2	1 sp. per 300 m^2	19.6
Shop (Customer)*	5,891 m^2	1 sp. per 600 m^2	9.8
Apartments (Resident)	28 units	1 per 4 dwellings	7
Apartments (Visitor)	28 units	1 per 10 dwellings	2.8
		Total Required	**40 spaces**

* includes the existing bottleshop

It is proposed to provide 42 bicycle parking spaces across the site. Such a provision will meet the requirements of the Development Plan.

5. TRAFFIC ASSESSMENT

As noted above, the previous Aurecon report provided a detailed analysis of traffic impacts associated with the redevelopment of the subject site. It is not considered that detailed re-analysis of the proposal is warranted given the development yields are similar to that previously proposed. Nevertheless, a review of the peak hour traffic generation associated with the currently proposed yields has been undertaken.

Given the previous rates utilised by Aurecon were accepted for assessment of the redevelopment, these have been adopted to provide consistency between the two assessments. The rates and assumptions adopted by Aurecon were as follows:

- 13.1 pm peak hour trips per 100 m^2 floor area for the supermarket (with only 25% of this rate generated in the am peak hour);
- 4.0 peak hour trips per 100 m^2 floor area for the retail tenancies (with only 25% of this rate generated in the am peak hour);
- 0.5 peak hour trips per apartment dwelling; and
- a trip reduction discount of 20% for supermarket and retail use given the mixed-use and transit-oriented development considerations previously detailed by Aurecon.

On the basis of the above, an updated traffic generation assessment has been prepared for the redevelopment (including Stages 1, 2 and 3). It should be noted that the Stage 3 yields are not finalised at the time of writing and may change. However, this provides a consistent assessment against the previous Aurecon generation forecasts. Table 3 summarises the updated traffic generation assessment.

Table 3 - Updated traffic generation assessment

Use	Qty	Rate	AM Trips	PM Trips
Supermarket	4295 m^2	13.1	112.5	450.1
Specialty Retail	1,596 m^2	4	12.8	51.1
Apartment Dwellings	98	0.5	49.0	49.0
Total			**175 trips**	**550 trips**

The above table indicates that the am peak hour generation associated with the proposal will be very similar to that previously identified by Aurecon (168 am trips). There is however an increase of approximately 90 trips identified in the pm peak hour (457 pm peak hour trips were previously identified by Aurecon). This is due to the extent of

additional floor area associated with the supermarket. However, the additional area primarily relates to storage and back-of-house areas which would be likely to generate traffic at a lower rate than adopted above.

In comparison to the above, it is noted that DPTI's "Trip generation rates for assessment of development proposals" guide identifies a recommended trip generation rate of 6.74 trips per 100 m^2 floor area for shopping centres. If this rate was applied to the overall shopping centre (supermarket plus retail tenancies), the total pm peak hour generation of the overall redevelopment would be 447 peak hour trips. This is below that previously forecast by Aurecon.

In addition to the above, the forecasts volumes will be distributed to/from the surrounding road network. The movements will be distributed to 13 different turning movements across the various access points and on to the adjacent roads and intersections. Even if the higher pm peak hour forecast identified above was realised, the increase in volumes compared to that previously identified would only be in the order 5 to 10 trips for each movement . Such a difference is minimal. Additionally, as noted above, it is anticipated that the generation will not be as high as the theoretical forecast.

On the basis of the above, it is considered that the traffic impacts associated with the overall redevelopment (including the current Stage 2 proposal) will be similar to that previously identified by Aurecon. The road infrastructure interventions previously identified and agreed to are considered appropriate to address the additional traffic generation.

6. SUMMARY

The proposal comprises Stage 2 of the "Highway" mixed-use development and includes construction of a retail/commercial uses and residential apartments. The existing hotel and bottleshop will also be retained on-site (as well as the Stage 1 apartments under construction).

The site is well serviced by active (walking and cycling) facilities and public transport services which will minimise reliance on private motor vehicles.

Access to the parking areas will be provided via Anzac Highway, Marion Road and Elizabeth Avenue (as previously approved for the subject site). The development will be serviced by parking areas containing 364 vehicle parking spaces (in total). A total of 42 bicycle spaces will also be provided. The proposed level of parking exceeds the minimum parking provision requirements of Council's Development Plan. The design of the access and parking aspects of the proposed development comply with the requirements of the relevant Australian Standard.

An update of the previous traffic generation and distribution assessment undertaken by Aurecon has been undertaken based on the currently proposed yields. The assessment suggests that the am peak hour volumes are similar to that forecast previously, however an increase in pm peak hour trips has been (conservatively) identified. Once dispersed to the various access movements the increase is minimal. The previously identified road infrastructure interventions are considered to be appropriate to address the additional traffic generated by the proposal.

APPENDIX 4 – STAGE 1 CONSTRUCTION, ENVIRONMENTAL AND WASTE MANAGEMENT PLANS

cook BUILDING AND DEVELOPMENT
135 Greenhill Road Unley SA | 5061
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CEMMP
HIGHWAY WEST TOWER- HIGHWAY INN PROPERTIES
ELIZABETH AVENUE, SOUTH PLYMPTON (Rev B 31/01/17)

OVERVIEW

This Construction Environmental Management and Monitoring Plan (EMP) was developed by Cook Building and Development in regards to the reserved matters part (h), as set out in the gazette issued 21/12/2015 addressed to The Palmer Group. This CEMMP is a document that addresses site specific issues, risks and necessary prevention methods in relation to stormwater and environmental matters associated with the preconstruction and construction phases being undertaken by Cook Building and Development in conjunction with the Palmer Group. This plan will be managed by Cook Building and Development project and site managers and adhered too by all contractors, sub-contractors and other site personnel through the entire duration of the project. Project goals, issues arising and potential hazards will be formally discussed during regular meetings and site inductions which will be compulsory for all individuals working on the project and providing workers with all the information necessary to successfully undertake this plan in its entirety.

DESCRIPTION OF PROJECT, LOCATION and SENSITIVE RECEIVERS

PROJECT DESCRIPTION- The construction of a building with a 700sq/m footprint consisting of a ground level carpark and four storeys of apartments (28 total)
PROJECT LOCATION- 9 Elizabeth Avenue, South Plympton.
PROJECT TIMELINES- Construction planned to start in early January, 2017 and estimated construction time to total between Forty to Fifty weeks and completed by January 2018.
SITE HOURS- Monday to Saturday 7am – 5pm.
RECEIVING ENVIRONMENT- The existing area is of a mixed use, consisting of residential dwellings, low rise flats, duplexes, vacant land, a fast food outlet, a bottle shop, a carpark and a hotel.
SENSITIVE RECEIVERS- The site has a residential home on the Western Boundary, a low rise flat complex on the Northern Boundary, vacant land to the East and on the opposite side of the road (South) there are additional residential homes. (See below)

North

South

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PROJECT GOALS

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CONTRACTOR OBLIGATIONS

All contractor personnel working on the project will be required to attend an onsite orientation/induction provided by the Senior Project Manager or Site Manager before working at the jobsite where the Environmental and Waste Management Plans will be detailed in full. Any newly employed, promoted or transferred personnel shall undertake the same process during their site induction. All employees will receive orientation prior to starting work.
All Contractors/workers will fully understand their obligations and sign off agreeing to the site policies and rules prior to commencing any work onsite.
All Sub-Contracts between Cook Building and Developments P/L and Contractors will have adherence to the EMP and WMP listed in the “special conditions” section of the contract

IMPLEMENATION

•The EMP shall be deemed a binding commitment by all parties who will undertake work on the project with the intent of sound environmental management and to cooperate and enforce the specifications contained wherein and where necessary.
• Work shall at all times be approached with due concern for the natural and social environment.
• Management and site procedures shall be directed towards minimising environmental impact and or damage in all aspects of the work that is to be undertaken.
• Project and Site Management personnel shall furthermore establish appropriate management structures and communication forums through the means of site inductions and regular site meetings to discuss, reiterate and document potential issues arising and the prevention methods which are to be put in place.

PROCESS

The process to be undertaken to achieve project goals are as follows and broken down into their respective categories.

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ENVIRONMENTAL MANAGEMENT PLAN
HIGHWAY WEST TOWER- HIGHWAY INN PROPERTIES
ELIZABETH AVENUE, SOUTH PLYMPTON

OVERVIEW

This Environmental Management Plan (EMP) was developed by Cook Building and Development in regards to the reserved matters part h, as set out in the gazette issued 21/12/2015 addressed to The Palmer Group. This EMP is a document that addresses site specific issues, risks and necessary prevention methods in relation to stormwater and environmental matters associated with the preconstruction and construction phases being undertaken by Cook Building and Development in conjunction with the Palmer Group. This plan will be managed by Cook Building and Development project and site managers and adhered too by all contractors, sub-contractors and other site personnel through the entire duration of the project. Project goals, issues arising and potential hazards will be formally discussed during regular meetings and site inductions which will be compulsory for all individuals working on the project and providing workers with all the information necessary to successfully undertake this plan in its entirety.

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The overall objective of the Environmental Management Plan is to adhere to all acceptable and relevant EPA guidelines throughout the duration of the build. This will be achieved by outlining procedures for the sound management of environmental issues relating to the execution of all construction work associated with this project. Cook Building and Development provides specifications for the management of activities that have the potential to impact negatively on the environment as outlined in this EMP. Through proactive measures and regular site meetings with workers we aim to minimise the environmental impact in all aspects of construction work through the engagement of sound and effective practices.

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PROCESS

The process to be undertaken to achieve project goals are as follows and broken down into their respective categories.

STORMWATER

To prevent stormwater contamination and pollution the following prevention measures will be put in place.
• Where appropriate provide temporary or permanent modification to the gradient of surface terrain (soil or crushed stone berms etc.) in order to minimize the flow of stormwater into or out of excavated or otherwise disturbed areas.
• On site flushing of empty concrete trucks or dumping excess concrete will be prohibited. However, the truck chute may be flushed at a designated location on site where solidified waste which is solid will be disposed of in the correct manner as set out in the waste management plan.
• Socks will be used in the gutters surrounding the site to capture any silt or sediment flowing in the stormwater. With regular visual inspection of the socks any excess build up will be manually cleaned in the means of sweeping and shovelling excess build up away.
• On site cleaning of painting materials will be prohibited.

NOISE POLLUTION

In the interest of neighbouring properties and those within the surrounding areas all reasonable and practicable measures will be taken to minimise noise at all times. These measures include, but are not limited to the following.
• Operation of power equipment, machinery and radio restricted to the hours of 7am – 5pm on weekdays and Saturday.
• All work undertaken on a Sunday will be done in devoid of power tools.
• Noisy equipment will be located so that their impact on neighbouring properties is minimised when possible.
• Bathroom pods have been manufactured off site minimising, the construction noise made during the process of building 28 bathrooms.
• Building walls to be used to screen noise for neighbouring properties when possible.

DUST MANAGEMENT

To prevent the spread of dust during the pre-construction and construction phase the following measures will be put in place.
• Where appropriate perimeter fencing will be enclosed in shade cloth to prevent the spread of dust.
• Delivery area for trucks to be constantly monitored and washed down when required with silt traps placed in the gutter to catch the sediment before entering any road side entry pits.
• During excavation phases the site will be watered down.

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STORMWATER

To prevent stormwater contamination and pollution, the following prevention measures will be put in place.

WORKER EDUCATION
- All workers will be inducted when commencing onsite for the first time. At that point, they will educated in the purpose of the EMP and their role in maintaining its intent. Workers will be updated on any changes to the EMP during toolbox meetings from time to time or as the topic becomes necessary due to EMP upgrades, incidents or complacency towards the EMP in executing their roles onsite.

ADJACENT SITE RUNOFF
- Where appropriate provide temporary or permanent modification to the gradient of surface terrain (soil or crushed stone berms etc.) in order to minimize the flow of stormwater into or out of excavated or otherwise disturbed areas.

SITE PROTECTION
- A crushed rock driveway, hardstand, laydown area and worker carpark will be established from the first day of the project to eliminated contamination to the adjoining streets.
- The main building base and paved areas rubble will be placed from the commencement of site works, along with installing permanent retaining walls, eliminating topsoil exposure to erosion and stormwater runoff to neighbouring properties.

TOPSOIL EROSION CONTROL
- Imported topsoil will be delivered and spread just prior to laying instant turf to eliminate erosion from wind and water.

CONTROLLING WATER MOVEMENT
- Prior to the roof iron being installed, the retention/detention tank stormwater system will be installed. All downpipes will be permanently installed at the earliest possible time to prevent captured water run-off damage.
- Sand filled socks will be used in the gutters surrounding the site to capture any silt or sediment flowing into the stormwater side entry pits. Regular visual inspection of the socks any excess build up will be manually cleaned in the means of sweeping and shovelling excess build up away.

POLLUTANT CONTROL
- On site cleaning of painting tolls and materials will be prohibited.
- On site flushing of empty concrete trucks or dumping excess concrete will be prohibited. However, the truck chute may be flushed at a designated location on site where solidified waste which when solid will be disposed of in the correct manner as set out in the waste management plan.
- All vehicle and machinery re-fuelling will be done off site.

INSPECTION
- The Project Site Team will undertake daily site inspections with Safety and Environment checklists and a weekly site check with the Senior Project Manager in attendance. This ensures that all Safety, Waste and Environmental Plans are being adhered to, plans are updated if necessary and site condition changes are anticipated.

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AIR QUALITY and DUST MANAGEMENT (Site and Roadway)

To prevent the spread of dust during the pre-construction and construction phase the following measures will be put in place.

- Where appropriate perimeter fencing will be enclosed in shade cloth to prevent the spread of dust.

- Delivery area for trucks to be constantly monitored and cleaned when required with silt traps placed in the gutter to catch the sediment before entering any road side entry pits.

- Daily written Site Inspection Checklists conducted by the Site Manager include inspections of the roadways. Corrective actions are recorded and entered into our electronic Site Management system. The Senior Project Manager is notified and then responsible to make ensure the corrective action is closed out in an appropriate timeframe. Please note, corrective actions can include sweeping, removal by shovel and or mechanical sweeper if necessary.

- During excavation phases the site will be watered down and material delivered to site will be at optimum moisture content. (OMC)

- The external walls of the building have been designed as pre-cast concrete. This allows the early installation of windows after the walls are erected, therefore a greater containment of building dust is achieved. The interior will be swept regularly and good housekeeping standards employed to maintain a positive and healthy work environment.

- The work site, new building and worker accommodation buildings will strictly be managed as a NON SMOKING.

- Soil stockpiles will not be used on the site, we will deliver and spread imported top soil just prior to the placement of grass turf.

- Excavators will be used to dig the footings, they will side cast directly into dump trucks. The excavators will place spoil material into the dump trucks, rather than drop the material into them. The dump trucks will dampen the material with water and cover all loads prior to leaving site. This will minimise wind-borne dust.

- All works/activities due to be performed on windy days will be assessed on their merits. Any works at high risk of air-borne pollutants will be re programmed for more suitable conditions.

- All areas designated for vehicular movement will be covered in crushed rock and maintained by dampening to avoid wheel generated dust.

SITE CONTAMINATION

All site management staff are well trained in observing excavation works and identifying contaminants if present. If potential site contaminants are located on site during construction, we will notify the EPA immediately, and, if the contaminants are within the vicinity of underground water or an aquifer, we will also notify the EPA in writing

Soil tests have been conducted to a depth of 4-6metres. The testing produced topsoil, upper clay, lower clay and Hindmarsh clay only. Acid Sulphate soils do not exist on the site.

The previous use of the site has been residential and no history of underground tanks.

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HAZADOUS CHEMICALS AND WASTE

There will be no hazardous chemicals used on site during the build thus a bunded area for storage is not required and all vehicle refuelling will be done off site.

The site was previously used as a residential home site, as it was demolished prior to occupation, we will be observant during footing and other excavations for asbestos remnants or other pollutants. If found, our contractors and site staff are instructed to stop work immediately and call suitably qualified asbestos removal contractors capable of remediating the polluted area.

WASTE FILL

We will not be importing waste fill to the site at all.

WASTE MANAGEMENT

All waste management procedures will be followed in accordance to the Waste Management Program which was developed with waste minimization principles incorporated into all activities to take place on the build to ensure the greatest of environmental benefits and to see 90% of all waste generated on site to be recycled. All wastes generated on site must be properly separated, contained and disposed of. Recycling, waste avoidance and minimisation shall be carried out as far as is practicable. See separated plan

RECORDS, COMMUNICATION and COMPLAINT RESOLUTION

Complaints register will be maintained with the following information recorded

- Name and address of any complainant
- Time and date of complaint received
- Description of complaint
- Activities and any associated equipment that gave cause to the complaint
- Action taken to resolve the issues leading to the complaint
- Date and time the complaint was resolved and documented complainants level of satisfaction with the actions to resolve the issue

The Senior Project Manager will be responsible for managing complaints and communication. Name and contact details will be listed on the project signboard.

As the project is excavating to a maximum depth of 1 metre, but mainly 600mm, the majority of earth moving is spreading of imported crushed rock. As this is low risk to noise and air-borne pollution, we will notify all neighbours of the intended works and approx. duration together with contact details of the Senior Project Manager for complaints

REPORTING

Any incidents that require reporting (in particular noise and dust) will be done so in the correct manner to the EPA.

Peter Corrie
Senior Project Manager

cook BUILDING AND DEVELOPMENT
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NOISE POLICY

In the interest of neighbouring properties and those within the surrounding areas all reasonable and practicable measures will be taken to minimise noise at all times. These measures include, but are not limited to the following;

HOURS OF OPERATION

- Operation of power equipment, machinery and radio restricted to the hours of 7am – 5pm on weekdays and Saturday.

- All work undertaken on a Sunday will be done in devoid of power tools.

- Excessively noisy equipment will be used only after 9am

- Night works will not be permitted

RESPONSIBLE PERSONS

(a) If the activity is undertaken by or for the owner of the construction site, the owner
(b) If the activity is undertaken by or for the occupier of the construction site, the occupier
(c) If there is a contractor performing the work, the contractor
(d) If there is a head contractor for the work, the head contractor

NOISE CONTROL MEASURES

- Only machinery with fitted mufflers will be used onsite

- Noisy equipment will be located so that their impact on neighbouring properties is minimised when possible.

- Ensure that all maintenance and repairs to machinery and their noise limiting devices are up to date prior to use.

- Use lifting equipment and employ material handling measures to place materials quietly and to avoid dropping materials and minimise impact noise.

- Bathroom pods have been manufactured off site minimising, the construction noise made during the process of building 28 bathrooms.

- Prefabrication of all external walls and columns off site. On site assembly only

- Prefabrication of all roof steel structure off site. On site assembly only

- Shutting or throttling down equipment when not in use.

- Building walls to be used to screen noise for neighbouring properties when possible.

- Radio use will be kept to low levels as a safety and nuisance control measure.

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ENVIRONMENTAL MANAGEMENT PLAN
HIGHWAY WEST TOWER- HIGHWAY INN PROPERTIES
ELIZABETH AVENUE, SOUTH PLYMPTON

OVERVIEW

This Environmental Management Plan (EMP) was developed by Cook Building and Development in regards to the reserved matters part h, as set out in the gazette issued 21/12/2015 addressed to The Palmer Group. This EMP is a document that addresses site specific issues, risks and necessary prevention methods in relation to stormwater and environmental matters associated with the preconstruction and construction phases being undertaken by Cook Building and Development in conjunction with the Palmer Group. This plan will be managed by Cook Building and Development project and site managers and adhered too by all contractors, sub-contractors and other site personnel through the entire duration of the project. Project goals, issues arising and potential hazards will be formally discussed during regular meetings and site inductions which will be compulsory for all individuals working on the project and providing workers with all the information necessary to successfully undertake this plan in its entirety.

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REPORTING

Any incidents that require reporting will be done so in the correct manner to the EPA.

Peter Corrie
Senior Project Manager

HIGHWAY APARTMENTS WEST STAGE 1
ELIZABETH AVENUE, PLYMPTON

STORMWATER MANAGEMENT PLAN

The following outlines the key requirements to manage the disposal of stormwater from the post development site.

This Stormwater Management Plan has been prepared in response to the Council request and information provided in their email dated 31st January 2017.

The principles of this Stormwater Management Plan are set out in the enclosed report as they relate to:

- Stormwater management and flooding
- Quality of water
- On site detention and concentrated discharge and
- Overland flows

This document is to be read in conjunction with the following documents:

- Drawing 160193-C01 and C02 Rev B
- Stormwater Calculations Pages 485-488 dated 31st October 2016 and supplementary calculations 489-491 dated 31 January 2016.

The current stormwater approach has designed for a permitted discharge from the post development site for a 1 in 5 ARI event and a 1 in 100 ARI to be limited to the pre-development site discharge flow for a 1 in 5 ARI event and 1 in 100 year event respectively.

For the purposes of run off flow definition for the existing site we have accounted for previous existing roof areas, pavements, and landscaping areas.

The existing site features included a total site area of approximately 1,400 m^2 of which approximately 550 m^2 was roofed area, 180 m^2 paved area, and 670 m^2 is landscaping.

The post development features are:

- New roofed building area – 900 m^2
- New (exposed) sealed car parking – 250 m^2
- New landscaped area – 250 m^2

STORM WATER MANAGEMENT AND FLOODING

In general terms the stormwater management from the sealed areas of the post development situation include the following:

- Collection of roof stormwater run-off to be discharged into the rainwater tank system at the west of the site which serve a dual detention and retention function. The detention component then discharges in a controlled manner to the kerb and water table on Elizabeth Avenue.
- The storm water collected from the small number of external on-grade car parks and the western landscaped/paved areas will be captured at ground level and after being detained in the car park surface depression it then gets pumped to the kerb and water table discharge point on Elizabeth Avenue.
- The proposed finished floor level for the ground floor of the building is 13.65 with the top of kerb at Elizabeth Avenue being approximately 13.35.

CONCENTRATED STORMWATER DISCHARGE AND DETENTION

In order to manage the discharge of stormwater from the site in larger storm events the arrangement of storage tanks are proposed to control the detention volumes over and above the pre-development 1in 5 and 1 in 100 year events for the developed site. These include:

- Roof area run off – approximately 22,000L in 7 off 6,5000L above ground detention tanks shared with 20,000L retention volume, with a release of 10l/s via gravity drainage to Elizabeth Avenue.
- On-grade southern car parking run-off and western landscaping areas – surface depression storage of approximately 5,400L with a release of 5l/s through pumped means to street.

QUALITY OF WATER

The present conditions on the site offer no measures to cleanse the water run-off from the site.

The roof water will remain unmixed and clean when it discharges to street via the storage tank system.

Due to the small number of exposed car parks there is no proposal for a gross pollutant device. However, if required by Council these surface areas can pass through a small in-line gross pollutant trap (eg Ecosol Stormpit 10L Class 2) so that it is treated prior to controlled release to Elizabeth Avenue.

OVERLAND FLOWS

In larger storm events above 1:100 ARI, over flows from the storage tanks and car parking areas will be directed towards and along the undercroft car parking and discharge directly onto the roadway, as is the current situation.

ISSUES DURING CONSTRUCTION

The management of stormwater during construction will be under constant monitoring by the appointed contractor.

The contractor will be employed to maintain erosion control measures on site and to minimise run-off from the site which may contain fine earth particles. Any deleterious material that washes off site will be required to be cleaned up by the contractor.

Prepared by

Adam McMillan
COMBE PEARSON REYNOLDS PTY LTD

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email: admin@cprengineers.com.au

JOB NO.: 160193
DATE: 31.10.16
DESIGN: ASm
SHEET 485 OF

CIVIL DESIGN

SITE AREA = 1400 m²

EXISTING ROOF = 295 + 241 + 12 = 550m²

EXISTING PAVED = 26m² + 110m² + 43m² = 180m²

EXISTING LANDSCAPING = 670m²

NEW BUILDING ROOF = 900m²

NEW SITE PAVING = 250m²

" " LANDSCAPING = 250m²

HOLD BACK 1:100 ARI EVENT WITH PRE DEVELOPMENT OUTFLOW LIMIT. (15 l/s PER OUTLET TO STREET.

Combe Pearson Reynolds Pty Ltd
PO Box 2832, KENT TOWN SA 5071
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Ph: (08) 8332 1344 Fax: (08) 8332 1044

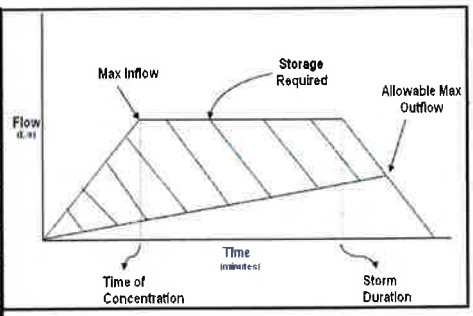
COMBE PEARSON REYNOLDS
CONSULTING ENGINEERS

Job No:	160193
Date :	1/11/16
Design:	ABM

Roof Plan Area	550 m^2	**Paving Area**	180
Roof Pitch	3 degrees	**Run-Off Coefficient**	0.9
Run-Off Coefficient	1		
		Additional Catchment	670
		Run-Off Coefficient	0.35

Storm Design Recurrence Interval	100 years	
Time of Concentration	10.0 minutes	Based on (AR&R 1987)
Max Allowable Outflow	0 L/s	

Duration (Minutes)	Intensity (mm/h)	Inflow (L/s)	Inflow Volume (m^3)	Max Storage (m^3)
5	186	49.76	14.93	14.93
10	136	36.38	21.83	21.83
15	110	29.43	26.48	26.48
20	94	25.15	30.17	30.17
25	82	21.94	32.90	32.90
30	73	19.53	35.15	35.15
35	66.5	17.79	37.36	37.36
40	61	16.32	39.16	39.16
50	53	14.18	42.53	42.53
55	49	13.11	43.25	43.25
60	45	12.04	43.33	43.33
65	41	10.97	42.77	42.77
70	37	9.90	41.57	41.57
75	33	8.83	39.72	39.72
80	29	7.76	37.24	37.24
85	25	6.69	34.11	34.11
90	21	5.62	30.33	30.33
Minimum Tank Size			43.33 m^3	



Storage required based on volume (Inflow - Outflow)

PREDEVELOPMENT OUTFLOW 1:100 36 l/s MAX FROM SITE.

Outlet Orifice Design	
Approximate head above outlet	0.5 m water
Max allowable outflow	0 m^3/s
Discharge Velocity	3.13 m/s
Approx Pipe area	0.000 mm^2
Approx Pipe Diameter	0.00 mm

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487

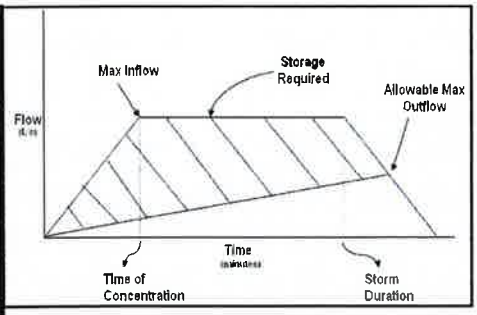
Job No: 160193
Date : 1/11/16
Design: ABM

Roof Plan Area	900 m^2	**Paving Area**	0
Roof Pitch	3 degrees	**Run-Off Coefficient**	0.9
Run-Off Coefficient	1		
		Additional Catchment	0
		Run-Off Coefficient	0.35

Storm Design Recurrence Interval 100 years
Time of Concentration 10.0 minutes Based on (AR&R 1987)
Max Allowable Outflow 10 L/s

Duration (Minutes)	Intensity (mm/h)	Inflow (L/s)	Inflow Volume (m^3)	Max Storage (m^3)
5	186	47.90	14.37	9.87
10	136	35.02	21.01	15.01
15	110	28.33	25.49	17.99
20	94	24.21	29.05	20.05
25	82	21.12	31.67	21.17
30	73	18.80	33.84	21.84
35	66.5	17.12	35.96	22.46
40	61	15.71	37.70	22.70
50	53	13.65	40.94	22.94
55	49	12.62	41.64	22.14
60	45	11.59	41.71	20.71
65	41	10.56	41.17	18.67
70	37	9.53	40.02	16.02
75	33	8.50	38.24	12.74
80	29	7.47	35.84	8.84
85	25	6.44	32.83	4.33
90	21	5.41	29.20	-0.80

Minimum Tank Size	22.94 m^3



Storage required based on volume (Inflow - Outflow)

1:100 ARI ROOF RUN (VIA TANK) & GRAVITY TO STREET @ 10 l/s.

Outlet Orifice Design	
Approximate head above outlet	1 m water
Max allowable outflow	0.01 m^3/s
Discharge Velocity	4.43 m/s
Approx Pipe area	2257.618 mm^2
Approx Pipe Diameter	53.61 mm

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COMBE PEARSON REYNOLDS
CONSULTING ENGINEERS

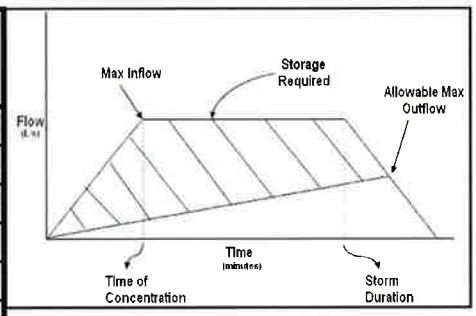
Job No:	160193
Date :	1/11/16
Design:	ABM

Roof Plan Area	0 m^2	**Paving Area**	250
Roof Pitch	3 degrees	**Run-Off Coefficient**	0.9
Run-Off Coefficient	1		
		Additional Catchment	250
		Run-Off Coefficient	0.35

Storm Design Recurrence Interval	100 years	
Time of Concentration	10.0 minutes	Based on (AR&R 1987)
Max Allowable Outflow	5 L/s	

Duration (Minutes)	Intensity (mm/h)	Inflow (L/s)	Inflow Volume (m^3)	Max Storage (m^3)
5	186	16.17	4.85	2.60
10	136	11.82	7.09	4.09
15	110	9.56	8.61	4.86
20	94	8.17	9.81	5.31
25	82	7.13	10.69	5.44
30	73	6.35	11.42	5.42
35	66.5	5.78	12.14	5.39
40	61	5.30	12.73	5.23
50	53	4.61	13.82	4.82
55	49	4.26	14.06	4.31
60	45	3.91	14.09	3.58
65	41	3.56	13.90	2.65
70	37	3.22	13.51	1.51
75	33	2.87	12.91	0.16
80	29	2.52	12.10	-1.40
85	25	2.17	11.09	-3.16
90	21	1.83	9.86	-5.14

Minimum Tank Size	**5.44** m^3



Storage required based on volume (Inflow - Outflow)

PUMPED AREAS 1:100 ARI @ 5l/s PUMP RATE ⇒ 5.4m3 PONDING IN CAR PARK ZONE. (97m² @ 100 mm DEPTH) ✓.

Outlet Orifice Design	
Approximate head above outlet	1 m water
Max allowable outflow	0.005 m^3/s
Discharge Velocity	4.43 m/s
Approx Pipe area	1128.809 mm^2
Approx Pipe Diameter	37.91 mm

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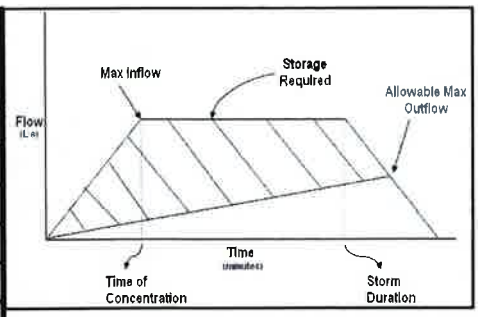
Job No:	160193
Date :	1/11/16
Design:	ABM

Roof Plan Area	550 m^2	**Paving Area**	180
Roof Pitch	3 degrees	**Run-Off Coefficient**	0.25
Run-Off Coefficient	0.25		
		Additional Catchment	670
		Run-Off Coefficient	0.25

Storm Design Recurrence Interval	100 years	
Time of Concentration	10.0 minutes	Based on (AR&R 1987)
Max Allowable Outflow	0 L/s	

Duration (Minutes)	Intensity (mm/h)	Inflow (L/s)	Inflow Volume (m^3)	Max Storage (m^3)
5	186	18.34	5.50	5.50
10	136	13.41	8.05	8.05
15	110	10.85	9.76	9.76
20	94	9.27	11.12	11.12
25	82	8.09	12.13	12.13
30	73	7.20	12.96	12.96
35	66.5	6.56	13.77	13.77
40	61	6.02	14.44	14.44
50	53	5.23	15.68	15.68
55	49	4.83	15.95	15.95
60	45	4.44	15.98	15.98
65	41	4.04	15.77	15.77
70	37	3.65	15.32	15.32
75	33	3.25	14.64	14.64
80	29	2.86	13.73	13.73
85	25	2.47	12.57	12.57
90	21	2.07	11.18	11.18
Minimum Tank Size			**15.98 m^3**	



Storage required based on volume (Inflow - Outflow)

FOR WHOLE SITE AT 0.25 RUN OFF COEFFICIENT OUTFLOW IS 14 l/s FOR 100 YEAR ARI.

(DESIGNED OUTFLOW FOR DEVELOPED SITE UNDER 100 ARI IS 10 l/s + 5 l/s = 15 l/s ∴ ACCEPT).

Outlet Orifice Design	
Approximate head above outlet	0.5 m water
Max allowable outflow	0 m^3/s
Discharge Velocity	3.13 m/s
Approx Pipe area	0.000 mm^2
Approx Pipe Diameter	0.00 mm

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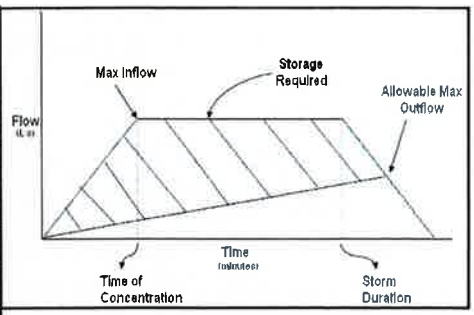
Job No: 160193
Date : 1/11/16
Design: ABM

Roof Plan Area	550 m^2	**Paving Area**	180
Roof Pitch	3 degrees	**Run-Off Coefficient**	0.25
Run-Off Coefficient	0.25		
		Additional Catchment	670
		Run-Off Coefficient	0.25

Storm Design Recurrence Interval 5 years
Time of Concentration 10.0 minutes Based on (AR&R 1987)
Max Allowable Outflow 0 L/s

Duration (Minutes)	Intensity (mm/h)	Inflow (L/s)	Inflow Volume (m^3)	Max Storage (m^3)
5	81	7.99	2.40	2.40
10	60	5.92	3.55	3.55
15	49.1	4.84	4.36	4.36
20	42.1	4.15	4.98	4.98
25	37.1	3.66	5.49	5.49
30	33.4	3.29	5.93	5.93
35	30.5	3.01	6.32	6.32
40	28.1	2.77	6.65	6.65
50	24.4	2.41	7.22	7.22
55	22.7	2.24	7.39	7.39
60	21	2.07	7.45	7.45
65	19.3	1.90	7.42	7.42
70	17.6	1.74	7.29	7.29
75	15.9	1.57	7.06	7.06
80	14.2	1.40	6.72	6.72
85	12.5	1.23	6.29	6.29
90	10.8	1.06	5.75	5.75

Minimum Tank Size	**7.45 m^3**



Storage required based on volume (Inflow - Outflow)

1:5 PREDEVELOPMENT SITE @ 0.25 COEFFICIENT ⇒ 6 l/s PERMITTED

Outlet Orifice Design	
Approximate head above outlet	0.5 m water
Max allowable outflow	0 m^3/s
Discharge Velocity	3.13 m/s
Approx Pipe area	0.000 mm^2
Approx Pipe Diameter	0.00 mm

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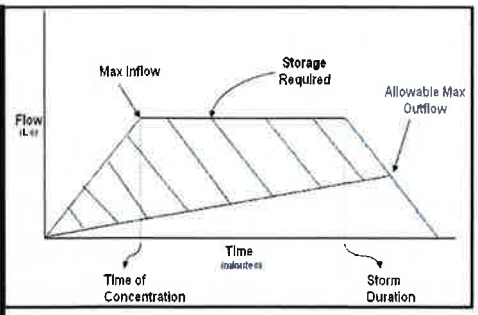
Ph: (08) 8332 1344 Fax: (08) 8332 1044

Job No:	160193
Date :	1/11/16
Design:	ABM

Roof Plan Area	900 m^2	**Paving Area**	0
Roof Pitch	3 degrees	**Run-Off Coefficient**	0.25
Run-Off Coefficient	1		
		Additional Catchment	0
		Run-Off Coefficient	0.25

Storm Design Recurrence Interval	5 years	
Time of Concentration	10.0 minutes	Based on (AR&R 1987)
Max Allowable Outflow	0 L/s	

Duration (Minutes)	Intensity (mm/h)	Inflow (L/s)	Inflow Volume (m^3)	Max Storage (m^3)
5	81	20.86	6.26	6.26
10	60	15.45	9.27	9.27
15	49.1	12.64	11.38	11.38
20	42.1	10.84	13.01	13.01
25	37.1	9.55	14.33	14.33
30	33.4	8.60	15.48	15.48
35	30.5	7.85	16.49	16.49
40	28.1	7.24	17.37	17.37
50	24.4	6.28	18.85	18.85
55	22.7	5.85	19.29	19.29
60	21	5.41	19.47	19.47
65	19.3	4.97	19.38	19.38
70	17.6	4.53	19.03	19.03
75	15.9	4.09	18.42	18.42
80	14.2	3.66	17.55	17.55
85	12.5	3.22	16.42	16.42
90	10.8	2.78	15.02	15.02
Minimum Tank Size				19.47 m^3



Storage required based on volume (Inflow - Outflow)

ROOF AREA FOR 5 l/s TO PUMP ALLOWANCE ALLOWING 1 l/s TO TANKS FOR ROOF RUN-OFF

⇒ REQUIRE 19000L STORAGE (HAVE 22,000 L)

∴ OK

Outlet Orifice Design	
Approximate head above outlet	0.5 m water
Max allowable outflow	0 m^3/s
Discharge Velocity	3.13 m/s
Approx Pipe area	0.000 mm^2
Approx Pipe Diameter	0.00 mm

cook BUILDING AND DEVELOPMENT
Suite 11 | 77-79 King William Road Unley SA | 5061
P 8357 3862 | **F** 8357 8547 | **ABN** 40 102 279 881

WASTE MANAGEMENT PLAN
HIGHWAY WEST TOWER – HIGHWAY INN PROPERTIES
ELIZABETH AVE, PLYMPTON

OVERVIEW

This construction waste management plan was developed by Cook Building and Development in regards to the reserved matters, part D as set out in the gazette issued 21/12/2015 addressed to The Palmer Group. This plan will be managed by Cook Building and Development staff as project managers and site managers and adhered too by all contractors, sub-contractors and other site personnel through the entire construction phase of this project. Project managers and site managers will oversee this waste management plan as well as regularly discussing goals and issues with subcontractors during meetings and site inductions which will be compulsory for each individual working on the project providing workers with all the information necessary to successfully undertake this plan in its entirety.

DESCRIPTION OF PROJECT

The construction of a building with a 700sq/m footprint consisting of a ground floor carpark and four storeys of apartments (28 total) to be built on Elizabeth Avenue, South Plympton with construction planned to start in early January, 2017 and estimated construction time to last between Forty to Fifty weeks and due for completion by January 2018.

PROJECT GOALS

The overall goal of the project is to recycle a minimum of 90% of all waste created on site and minimize the amount of waste that is returned to landfill. All of the building waste shall be separated from general waste and disposed into three separate bins that will be arranged by Cook Building and Development to be picked up by private contractors with monthly and an overall reports provided which include a precise breakdown of all waste taken off site.

IMPLEMENTATION

The Waste Management Hierarchy as described in the Zero Waste SA Act 2004 refers to the following order of priority;(a) Avoidance of the production of waste; and

(b) Minimisation of the production of waste; and
(c) Reuse of waste; and
(d) Recycling of waste; and
(e) Recovery of energy and other resources from waste; and
(f) Treatment of waste to reduce potentially degrading impacts; and
(g) Disposal of waste in an environmentally sound manner,

are pursued in order with, first, avoidance of the production of waste, and second, to the extent that avoidance is not reasonably practicable, minimisation of the production of waste, and third, to the extent that minimisation is not reasonably practicable, reuse of waste, and so on.

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IMPLEMENTATION cont.

The waste management plan will be distributed to all outside parties undertaking work on the site through a hard copy by way as formalizing part of the written contract between Cook Building and Development and all sub-contractors. As mentioned previously it will also formalize part of all induction and regular site meetings which is where the project goals and the necessary process to obtain these goals will be reiterated to all workers on the site. The basis of this discussion will include, but not limited to the following:

- Waste Management Plan Requirements
- Review of the Waste Management Plan process
- Locations of all the bins
- Bin labelling and the correct segregation of materials into the corresponding bin
- Discussion regarding the importance of placing waste into the correct bin
- Reminder of contractual obligation in regards to waste and recycling

WASTE MINIMISATION

The following measures will be taken to ensure the minimal amount of waste is created on site.

- The building has been modulated to suit building materials sizes therefore reducing the amount of off-cuts and left over waste.
- Bathrooms have been pre-fabricated off site and transported in as pods reducing the waste for twenty-eight bathrooms down to an absolute minimum.
- All concrete precast walls and columns have been planned to be manufactured off site, therefore reducing site waste.
- All structural steel fabrication will be off site, therefore reducing site waste.
- Any materials identified on site as reusable will be stored until they can be used again or until they are deemed no longer reusable in which case they will be disposed of correctly by following the proceeding process.
- Left over delivery pallets will be donated to local charity wood working hobby groups.

PROCESS

1. Provided on site will be three bins labelled “Masonry”, “Cardboard and Paper”, and “Steel and Metal”. See ‘diagram 1’ for the breakdown of each bins eligible contents.

2. As the ground floor is constructed these bins will be accessible by foot to all workers and the contents will be monitored by the Project and Site Management Staff.

3. As the higher levels are constructed and bins are hard to access via foot three chutes will be provided leading to each the bins making the separation of the products simple and time effective from each floor.

4. All workers on site will be required to eat in the designated lunch room provided so general waste, or domestic waste will be restricted to the one area where green wheelie bins will be provided. Part 5.3.2 of the Waste Minimisation and Recycling Services document as part of West Torrens Council Policy states,

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"While it is not a core responsibility of Council to collect waste generated by the activities of business, industrial and commercial properties, a limited kerbside waste and recycling collection service will be provided to encourage correct disposal and recycling of domestic-type waste (e.g. from staff lunchrooms)". With this in mind, the pickup of general or domestic waste as part of Waste Management Plan would be undertaken by the West Torrens Council.

5. All eligible ten cent refundable containers will also be kept separate and taken to a recycling depot.

6. Additional to the three bins provided for the separation of building waste will be another bin for gyprock offcuts alone. Cook Building and Development will undertake talks with Jefferies Soil and Mulch about the pickup of this bin with its contents to be recycled and used in garden mulch.

7. The three bins labelled "Masonry", "Cardboard and Paper", and "Steel and Metal" will be arranged to picked up by private contractors on a necessity basis therefore a scheduled pickup will not be arranged.

8. Issues arising and progress discussions will formalise part of the daily site start up meetings held between Project & Site Management and workers.

REPORTING

As part of the removal process by the private contractors we will be receiving monthly and annual reports as to the amounts of waste (weight) which has been taken off site and recycled as opposed to being taken to landfill.

Diagram 1.

METAL & STEEL	MASONRY	CARDBOARD & PAPER
Rebar	Concrete	Wood
Metal Roofing/Flashings	Bricks	Cardboard Boxes
Formwork Offcuts	Tiles	Paper
Pipe & Tube Offcuts and Waste		Recyclable Plastic

Peter Corrie

Senior Project Manager

RR COMMERCIAL CONSULTANTS

Your Resource Recovery Manager

18th November 2016

Cook Building & Development Pty Ltd
135 Greenhill Road
UNLEY SA 5061
Attention: Mr Peter Corrie

Dear Peter,

I would like to thank Cook Building & Development for giving RR Commercial Consultants the opportunity to assist with your waste management, environmental, budgetary and compliance goals for the Highway Apartments.

RR Commercial Consultants are an independent South Australian based company that works only for our customers and has no affiliation with any service supplier that we may recommend or employ.

Our extensive industry knowledge and significant supplier network allows us to achieve Environmental and cost savings by identifying our clients specific waste collection needs and sourcing suppliers that match these requirements. These services are then purchased at reduced cost with the savings passed directly to our clients.

Recommendations:

RR Commercial's recommendations have addressed the following:

- Maximised collection and reuse of recyclable items
- Minimised collection of waste to landfill items
- Tenants ability to reduce contamination with clear signage and images to assist non English speaking tenants
- Service time frames that comply with EPA and local council regulations
- Tenant waste separation and collection education
- Bin cleaning, to ensure the waste bins are fee of odour

Proposed services and service cost – Highway apartments

Waste type	Details	Cost*
General waste	5 x 660ltr bins, serviced 2 x per week	$18 per empty
Organic recycling	5 x 240ltr bins, serviced weekly	$12 per empty
Kitchen tidy	1 x 6ltr kitchen tidy, 1 x bin per annum	$35 per bin
Bio degradable bin liners	1 x box of 100/6ltr bags	$35 per box
Bottles & can recycling	1 x 1 cubic meter crate, serviced on call	No charge
Bin cleaning	Bin cleaning of either 660ltr or 240 ltr, monthly	$15 per bin

**Costs are current costs and will vary at time of development completion and exclude GST*

General waste

It is recommended that 5 x 660ltr MGB's (mobile garbage bins) are supplied for the collection of general waste (landfill) and to be serviced twice per week however, if waste volumes increase these bins can be serviced up to 6 days per week or more bins can be introduced to ensure waste volume requirements are met.

These bins will be serviced between 7.30am and 4.30pm Monday to Friday and 8am to 2pm on Saturdays. Sunday servicing can be arranged if required (extra service charges may apply).

Organic recycling

It is recommended that 5 x 240ltr MGB's are supplied for the collection of food waste (recycled) and be serviced once per week however, if waste volumes increase these bins can be serviced up to 5 x per week Monday to Friday or more bins be introduced to ensure waste volume requirements are met.

These bins will be serviced between 7.30am and 4.30pm Monday to Friday.

To assist the tenants with the hygienic collection and transportation of food waste, the introduction of food collection kitchen tidy's and bio degradable bin liners are recommended. This enables the tenant to collect food waste in food preparation areas and transport the full bags to the organic recycling bins in the waste collection area.

Bottle & can recycling

It is recommended that a one cubic meter crate be supplied for the collection of bottles and cans. This crate can be serviced on call with 24 hours' notice required. Service timeframes are between 8.30am and 4pm Monday to Friday.

Signage

RR Commercial will supply signage that will be located within the waste collection area. Signage will list all waste services provided to the site and have clear images of waste items that are commonly disposed within an apartment environment. Signage will also have RR Commercial's contact details for tenants to contact for advice on waste items that require specialised disposal options.

All bins supplied will also have clear signage to ensure reduced contamination and increased recycling.

Tenant education

To ensure landfill items are minimised and recycling items are maximised, RR Commercial will provide educational packages and group training sessions for tenants. These details should be included in the tenant's occupation documentation. Packages and training sessions will be developed in conjunction the Highway Apartments Developers.

RR Commercial will ensure that the waste collection area is user friendly and supply service alternatives as they become available.

Bin cleaning

To avoid odours within the waste collection area it is recommended that all bins be cleaned on a monthly basis. Cleaning the bins will not only eliminate odours it will reduce the build-up of bacteria.

Suppliers and disposal locations

All suppliers and disposal locations that RR Commercial employ to complete the recommended services comply with all State and Federal operational regulations and are Quality Endorsed companies.

Other services provided by RR Commercial

As part of the RR Commercial the Highway Apartments Developers have access to Environmental reporting, updates on new waste disposal options or technologies as well as continued cost reviews to ensure the best possible rate for service is ongoing.

Service Methodology

Please see attached.

If you have any questions regarding our recommendations please contact me on the details below.

Yours faithfully,

Trent Kotz *Dip EnvSc*
General Manager
RR Commercial Consultants

Your
Resource Recovery
Manager

SERVICE DELIVERY PLAN – METHODOLOGY FOR WASTE COLELCTION SERVICES/HIGHWAY APARTMENTS

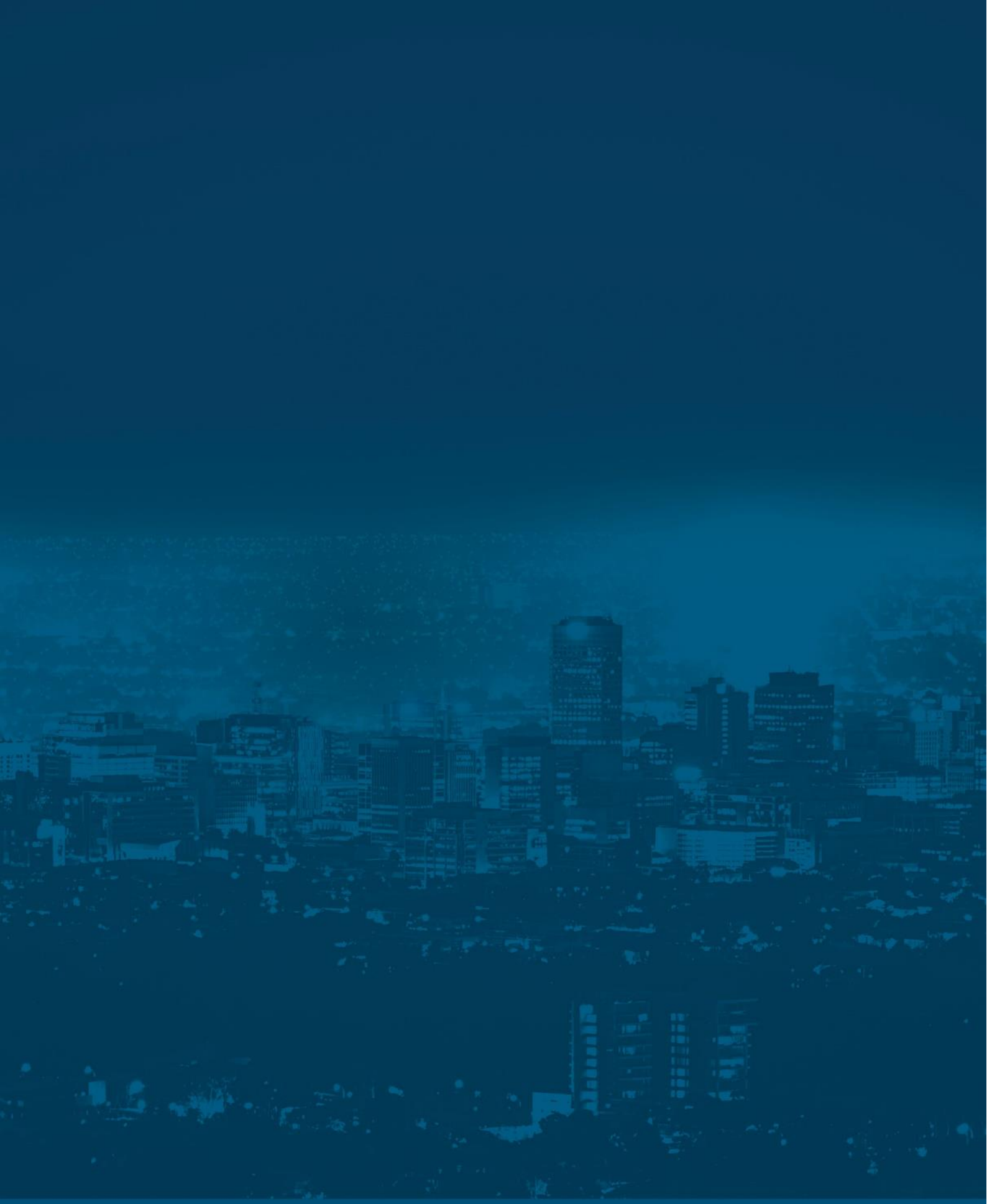
RR Commercial has developed the following methodology for the waste & recycling collection service activities for the Highway apartment development, Plympton SA. This explains the processes and procedures of what will happen when MGB waste/recyclables are serviced and the communication between service drivers, on-road management/supervisors supplier administration personnel and RR Commercial.

SERIAL	PROCESS / OPERATIONAL STEP	DESCRIPTION	SUPPORTING DOCUMENTATION
1	Report to Depot-supplier	Driver reports to depot	- Quality Plan - Emergency Guide
2	Collect Daily Instructions-supplier	Driver to collect daily Instruction Sheet detailing further collection information	- Quality Plan - Workplace Agreement - Daily Instruction Sheet - Emergency Guide
3	Complete pre-drive daily vehicle check-supplier	Driver to perform pre-drive daily vehicle check in accordance with instructions	- Quality Plan - Workplace Agreement - Pre-drive Work Instruction - Safe Work Practices for rear loader compactors - Driver Check Sheet
4	Commence scheduled daily run	Commence scheduled daily run to collect designated MGBs from Highway apartments, Plympton	- Quality Plan - Workplace Agreement - Collection Schedule - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Emergency Guide
5	Transport to designated disposal area	Collection vehicle to transport collected material to designated disposal facility	- Quality Plan - Workplace Agreement - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Emergency Guide - Weighbridge dockets

SERIAL	PROCESS / OPERATIONAL STEP	DESCRIPTION	SUPPORTING DOCUMENTATION
6	Return to scheduled collection run	Driver to return to scheduled daily run to collect designated MGBs from tenements in allocated areas	- Quality Plan - Workplace Agreement - Collection Schedule - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Emergency Guide
7	Liaise with Depot and other drivers-supplier	Drivers to communication with office personnel and other drivers via two-way radio and mobile phone advising status of run, complaints from residents directly to them, incidents, accidents, any other concerns	- Quality Plan - Workplace Agreement - Collection Schedule - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Emergency Guide
8	Refuel	Driver to refuel collection vehicle as required but before reserve fuel area is entered	- Quality Plan - Workplace Agreement - Collection Schedule - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Emergency Guide - Vehicle Cost Analysis Report - Vehicle pre-drive work instructions - Vehicle post-drive work instructions

SERIAL	PROCESS / OPERATIONAL STEP	DESCRIPTION	SUPPORTING DOCUMENTATION
9	Return to Depot	Driver is to return to the collection vehicle to the designated depot at end of the scheduled collection run. Vehicle to be parked in allotted area.	- Quality Plan - Workplace Agreement - Collection Schedule - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Emergency Guide - Vehicle post-drive work instructions
10	Complete post-drive daily check-supplier/RR Commercial	Driver to carry out daily post-drive vehicle check according to work instructions	- Quality Plan - Workplace Agreement - Collection Schedule - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Emergency Guide - Vehicle post-drive work instructions
11	Complete & submit maintenance report-supplier/RR Commercial	Driver to submit to Workshop Manager completed Defect Vehicle Report daily	- Quality Plan - Workplace Agreement - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Emergency Guide
12	Complete and submit documentation to office-Supplier/RR Commercial	Driver to submit completed documentation to office as required	- Quality Plan - Workplace Agreement - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Daily Instruction Sheet - Driver Check Sheet (monthly) - Vehicle Cost Analysis (monthly) - Emergency Guide

SERIAL	PROCESS / OPERATIONAL STEP	DESCRIPTION	SUPPORTING DOCUMENTATION
13	Complete and submit Incident / Accident Reports as required- Supplier/RR Commercial	Driver to submit completed incident / accident reports to office as required	- Quality Plan - Workplace Agreement - Safe Work Practices for rear loader compactor - Procedure for collection of MGBs - Emergency Guide - Incident / Accident Report



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