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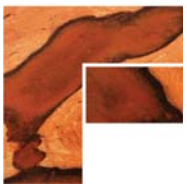

PLYMPTON MIXED USE DEVELOPMENT

AMENDMENT TO DEVELOPMENT REPORT

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DOCUMENT CONTROL

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EXECUTIVE SUMMARY

This is a proposal to construct a mixed use development. The development will comprise retail, commercial and residential development. The retail will comprise a shopping centre containing a full line supermarket, and specialty retail outlets together with appropriate on-site loading and servicing facilities. Office/commercial space will be located above a portion of the retail. Two levels of serviced apartments will be located above the offices/commercial space. At the far north-west corner of the retail building and above the first level car parking spaces will be a further six levels of residential apartments. Two stand-alone four storey residential buildings with dedicated affordable housing product will be located at the south-west and south-east corners of the site respectively. There is proposed to be a total of 108 apartments on site. Car parking will be provided at basement level, at grade and at first floor level.

It is proposed that the development will be staged as follows:

- Stage 1 comprises the basement car park, both the East and West Towers, the supermarket and specialty retail, commercial tenancy and first floor car park. Stage 1 is targeted for completion by 2016, although the East and West Residential Towers **must be completed** by June 2014. (NRAS funding requirement)

- Stage 2 comprises the serviced apartments. Stage 2 is targeted for completion by 2018.

- Stage 3 comprises the North Tower apartments. Stage 3 is targeted for completion by 2021.

Depending on market conditions stages 2 and 3 may be undertaken as one stage.
The proposed development will deliver significant economic, social and environmental benefits at a local and regional level.

The proponent has a track record in the management and development of commercial enterprises and will draw upon this experience to ensure the successful ongoing operation and management of the proposed mixed use development.

The following summary provides an overview of the economic, social and environmental issues and benefits resulting from the proposed major development.

Economic

- This development will create additional employment (including construction employment) and investment in the locality contributing to both direct and indirect economic benefits.

- Based on research and analysis by Property Insights[1] for the Urban Development Institute of Australia, the realisation of this proposal will directly contribute to in the order of 234 full time jobs, almost $2.6 million in additional state and federal taxes, and contribute approximately $8.25 million in wages. Indirectly it will contribute in the order of 413 full time jobs, $5.1 million in state and federal taxes and $31 million in wages.

- As a landmark development in a prominent location it will demonstrate TOD principles and contribute significantly to revitalisation of the locality and the Neighbourhood Centre.

[1] Property Insights, Property development Industry Economic Impact Study – prepared for the UDIA, March 2010.

- Retail floor space within the Plympton Neighbourhood Centre Zone does not meet all the needs of the local catchment in terms of choice and retail range.

- Retail modelling undertaken in respect of the original proposal confirms there is an unmet demand for shopping facilities in the area for both food and non-food items (this would have only increased over the intervening period as shopping expenditure has increased).

- An increase in urban lifestyle facilities including cafés and restaurants will contribute significantly to economic vitality of the area that is midway between the coast and the CBD.

- It will provide increased choice and diversity of housing within the area.

- The development provides for urban consolidation that will optimise efficient economic service provision including transport efficiencies.

- The proposal will support the existing public transport within the locality.

Social

- The opportunity to create a focal point for the local community presently lacking in this locality by creating interactive lifestyle.

- Provision of a significant amount of affordable housing product that is well located with respect to transport, Glenelg and the CBD.

- Providing accommodation including serviced apartments for short term and medium term rental.

- Enhancing car and bicycle use and reducing car parking demand and traffic generation.

- Enhancing retail and leisure opportunities with the careful selection of specialist retail providers focussing on interactive involvement and “meeting places”.

- Improving surveillance and security to address crime prevention through environmental design (CPTED).

- Creating a prominent development that defines the site and locality as the focal centre for Plympton.

- The provision of an attractive sheltered mall space and environment to encourage retail browsing and alfresco dining and the casual contacts that this promotes, thereby strengthening the feeling of being part of a community.

- The mall design effectively creates an internal street which enhances community connectivity and will provide an active community space given the retail/restaurant trading hours.

Environment

- Management of potential noise effects through building design, orientation, materials and treatments as required for plant, service areas and the like.

- Using Ecologically Sustainable Development (ESD) techniques accentuated in the design, construction detail and materials used.

- Enhanced pedestrian and bicycle activity given the proximity to public transport and at grade access through the development to allow easy connection to the nearby tram stop.

- Incorporate best practice energy efficiency and design, water capture and reuse, zero waste principles, passive lighting, heating and cooling features and minimise heat and glare reflection

- Provision of landscaping and green walls.

- A constructed development that incorporates best practice building design.

- A development that is constructed and managed using the ISO 14001 Environmental Management System accreditation and thereby be compatible with the general duty of care required by the Environment Protection Act, 1993.

1. INTRODUCTION

1.1 Background

This Amendment to the Development Report has been prepared in respect to the Plympton Mixed Use Development proposed at the corner of Marion Road and Anzac Highway, North Plympton.

This is a proposal for a shopping centre comprising a full line supermarket, specialty retail outlets, basement and first level car parking, offices and residential development.

On 24 May 2007 the Minister for Urban Development and Planning made a declaration in the South Australian Government Gazette for the proposed development to be assessed as a major Development under the provisions of Section 46 of the Development Act 1993.

As part of this process Guidelines were published by the Development Assessment Commission for the preparation of a Development Report.

The initial Development Report was prepared by QED dated May 2009.

The initial proposal underwent public consultation from 6 July 2009 to 14 August 2009. A total of 11 submissions were received during the consultation period.

The required response report was prepared and submitted to the then Planning SA in September 2009 for consideration as part of the final step of the application process.

An unsigned submission from the former Department of Transport, Energy and Infrastructure (Transport Services) dated 24 September 2009 has been subsequently provided to the proponent.

It is understood that this late submission (in combination with market uncertainty) had the effect of delaying the project, such that the matter was never put forward for a decision.

The proponent remains committed to the project and sought approval from the Minister to continue the process.

In April 2012, following further discussions with DPTI in relation to the submission from Transport Services, DPTI advised the proponent to undertake the modelling as required by Transport Services and to resubmit a revised response document to enable the finalisation of the assessment process.

The proponent has undertaken the further traffic modelling required and refined the design to address issues arising out of the submissions, in particular the submission from Transport Services and, that also provides for a development which is more appropriate to the current economic climate, whilst retaining the inherent character of the original proposal.

In essence, the proposal has been reconfigured to improve the functionality and operation of the site, provide alternative forms of accommodation including affordable rental accommodation, and improve the staging logic of the project to ensure that Council and Government objectives for residential and mixed use development are met as well as improving marketability.

Specifically the revisions and the benefits can be summarised as follows:

- A redesigned built form that results in reduced heights, improved horizontal and vertical articulation by separating the built form into three distinct buildings of varying height and bulk, and providing an enhanced residential interface to Elizabeth Avenue.

- Slightly reduced floor space for the retail and commercial components whilst retaining ability to provide a full line supermarket, and thereby reducing overall car parking demand and traffic generation.

    a) Car parking can therefore be provided for the retail component at a rate higher than the generally accepted standard taking into consideration sharing arrangements with the hotel.

    b) The reconfiguration of the site parking arrangements also enables the car parking associated with the existing Highway Hotel to continue to operate during construction.

- Reconfigured access and parking arrangements on the site to improve legibility for motorists and pedestrians and improve the functionality of the site.

    a) Separated traffic access points and parking on site. Residential and office traffic and parking (first floor) access from Elizabeth Avenue, retail traffic and parking (basement and at grade) and commercial (loading traffic) separate access way to west of site.

    b) Simplified the design and operation of the at grade car parking area.

    c) Improved the stacking area between the Marion Road entry and the basement car park.

    d) Removed the stacked parking loop adjacent the western retail facilities.

    e) Negated the need to reconfigure the median arrangements on Anzac Highway.

    f) Improved and simplified loading arrangements for the retail providing for a range of vehicles.

- Reconfigured the residential components to provide for 108 apartments including dedicated affordable and serviced apartments. Two freestanding groups will be 4 levels with one group (over retail and a car park) to 6 levels, ie a total of 8 levels. The serviced apartments are to be located over two levels above the retail and commercial components of the development.

    a) This provides a clearer split between the tenure of the apartments for car parking purposes and is considered to be realistic from a market perspective including the provision of affordable housing.

    b) The apartment buildings oriented towards Elizabeth Avenue have been reduced in height to four storeys to add to the residential interface on this street.

    c) Provides uses to support the existing public transport networks.

    d) Provides greater certainty for the early development of apartments, as they are not dependent upon the construction of new retail components.

- Provision of affordable housing

a) In line with Government Policy the residential component will include affordable housing. This may be in the form of affordable rental product.

Key changes between the original scheme and the amendment are shown on the plans in **Attachment 1.**

In line with the advice from the DPTI, a fresh response report was prepared and submitted to DPTI in January 2013.

On 24 April 2013, the Department advised the proponent that the Minister has made a determination that the proposal needs to be re-advertised and that the Response Report needs to be recast as an Amendment to the Development Report.

This report is the Amendment to the Development Report.

1.2 Guidelines

The Development Assessment Commission determined in 2009 that the Proposal will be subject to a Development Report process as per Section 46D of the Development Act 1993.

Section 4 of that Guideline document outlines the key topics and issues identified for consideration. These are provided below:

The Proposal

- *The need for the proposed development in terms of the demand for the proposed supermarket, retail outlets, and apartment accommodation.*
- *Describe the sustainable features of the proposed development to the State and local economy.*

Urban Design

- *Describe the sustainable features of the proposed development through the use of Transit Oriented Development (TOD) principles including the enhancement of existing transit stops.*
- *Outline the extent to which the proposed development addresses this landmark location, being the intersection of two arterial roads and the midway point between the City and Glenelg.*
- *Detail the proposed linkages and pedestrian connectivity to the public transport systems, the safety of those connections and the distances between the transit stops.*
- *Outline the objective for the proposed 'urban village' and the enhanced community and social interaction that would be generated.*
- *Describe the relationship of the proposed development to adjacent buildings and its integration with the Highway Inn and neighbouring commercial and residential development.*
- *Indicate measures that would provide safe and convenient pedestrian connections to surrounding areas and in particular access to the Tramway and adjacent streets.*
- *Describe the visual impact of the proposed development on the immediate locality; taking into account the intensity, height and scale of the proposed building and also the effects when viewed from various vantage points, especially along Anzac Highway and Marion Road.*
- *Provide an analysis of the pedestrian 'desire lines' across the site, having regard to the accessibility of open spaces and connectivity between buildings and car parking areas;*
- *Describe the proposed linkages to any existing development including the North Plympton Shopping Centre and any focal points for social interaction.*

- *Describe the streetscape treatment to all publicly visible building elements, having regard to the prominent nature of the site.*
- *Detail the pedestrian interfaces of the proposed buildings and their relationship to the streets and public spaces, including amenity and opportunities for pedestrian interaction.*
- *Provide transverse cross-sections of the proposed building to demonstrate its relationship to the existing Highway and neighbouring residential buildings.*
- *Provide details of the 'screen wall' and any landscaping that bounds the loading area for the proposed supermarket and the residential component on the south-western side.*
- *Provide shadow diagrams to indicate the degree of overshadowing of existing residential development to the south and south west of the site at various times, including winter solstice and summer solstice at 9am, 12pm and 3pm.*
- *Demonstrate the application of CPTED (Crime Prevention through Environmental Design) principles regarding personal and public safety and security issues.*
- *Describe the potential impact of the proposed development on the microclimate of the surrounding buildings and open spaces with reference to overshadowing, wind turbulence and glare/reflection characteristics of external surfaces.*
- *Provide details of construction materials, surface treatments and colours for the proposed development.*
- *Provide screening details for air conditioning plant containment, having regard to visibility from surrounding areas of the upper levels and roofscape.*
- *Describe measures that would maintain privacy and minimise overlooking between apartments.*

Traffic, Parking and Vehicle Movements

- *Detail the existing car parking facilities for the Highway and the car parking spaces for the proposed development.*
- *Describe the existing surrounding traffic movements including any restrictions of traffic movements in the locality, showing the associated points of access and egress and their placement.*
- *Describe the access and egress arrangements for the proposed development and their impact on the operation of Marion Road and Anzac Highway.*
- *Detail the impact on traffic movements from vehicular access to and from the site, including safety and traffic flow considerations.*
- *Detail the relationship of the drive through facility and the proposed bottle shop.*
- *Describe the effect on the public domain of the proposed underground car park in terms of visual impact, ease of access and pedestrian movement.*
- *Provide a traffic and Parking Management Plan that includes movement analysis and the kinds of movement the proposed development will generate.*

Sustainability

- *Describe the ecologically sustainable objectives of the proposed development and the approach and methodology to be used to achieve these objectives, particularly the green building code of Australia.*
- *Describe how a four star rating will be achieved for the proposed shopping centre component.*
- *Describe how a five star rating will be achieved for the proposed residential component.*
- *Provide details on elevations and plans for the energy efficient design elements (on both the residential and commercial components) where alternative renewable energy options are utilised.*

- *Describe how the proposed development would encourage a modal shift from car usage to 'greener' methods of transport, including reduction of car parking requirements and the implementation of the Transit Orientated Development Principles.*
- *Detail the facilities provided for cyclists within the proposed development.*
- *Provide details of the measures to be used to reduce the impact of road traffic noise and emission pollution on the residential component due to its close proximity to a major transport corridor.*
- *Provide details of all landscaping (including surface treatments, street furniture and lighting), including the contribution of the landscaping to the urban forest programme and Water Sensitive urban Design (WSUD).*
- *Describe how a green roof system could be used for rooftop/garden design, including the integration of stormwater management.*

Economic Issues

- *Detail the economic effects of the proposal in terms of local or broader employment generation from construction and on-going commercial activities proposed in the development.*
- *Describe the economic contribution that additional commercial activities would make to the immediate Neighbourhood Centre and broader locality.*
- *Describe the proposed mix of uses and the likely impact these would have on existing commercial activities and site capacity.*

Infrastructure and Environment

- *Detail the location of any existing public utility services (water, sewerage, electricity, gas and communications) and describe how the proposed development will affect those services.*
- *Demonstrate the compatibility between the proposed residential use and the existing and proposed commercial development on the site especially in terms of potential noise disturbance.*
- *Identify any potential sources of asbestos of any proposed demolition and describe the appropriate form of its removal and disposal.*
- *Detail measures for capture and reuse of stormwater and roof run-off, for irrigation purposes and for internal use of flushing toilets.*
- *Indicate the location of the rainwater tanks that would be used.*
- *Identify the procedures for the removal of waste for business and residents.*
- *Identity the opportunities for recycling of waste for business and residents.*
- *Provide a detailed stormwater management plan and indicate on-site detention and quality improvement measures (permeable paving, swales, silt traps, sumps etc.)*

Construction Effects

- *Describe the transport and storage of any construction materials with a view to minimising effects on the local environment.*
- *Provide details of the hours of construction activities.*
- *Describe strategies for ensuring public safety during construction.*
- *Provide a site construction plan and outline strategies to minimise effects on the local environment, especially traffic and noise.*
- *Detail how the environmental impacts of the demolition of the existing buildings and construction of the proposed development will be minimised and mitigated with reference to noise, dust, groundwater, stormwater runoff and reuse, waste disposal and water reuse.*

Operational Effects

- *Provide details of the proposed house of operation of the retail and commercial activities.*
- *Provide and environmental management plan to deal with operational activities.*

Hazards

- *Describe the compatibility of the proposed development with height restrictions associated with Adelaide Airport.*
- *Provide a site history report to ascertain whether the site has any contamination issues, having regard to the proposed residential component.*

Planning and Environmental Legislation and Policies

- *Describe the proposal's consistency with the relevant Development Plan and the Planning Strategy.*
- *Describe the proposal's consistency with the Environment Protection Act, 1993 and the duty of care under this legislation.*
- *Identity any changes that may be required to the zoning of the site.*

A copy of the guidelines is included at **Attachment 2**.

1.3 Key issues raised as part of the consultation process

Given that public consultation has already occurred in relation to the original proposal, these submissions are also being addressed as part of this Amendment to the Development Report.

A total of 12 submissions have been received in response to the proposed Mixed Use Development Proposal. These comprise four from members of the community, one from Adelaide Airport Limited, five from Government Agencies, including SA Health, MFS, SA Water, EPA, and Transport Services and one each from the Cities of West Torrens and Marion. A summary of the submissions and the identified action/response is included at **Attachment 3**.

Three of the four submissions from the community specifically note that the development generally will be a positive addition to the area, subject to consideration of specific matters.

The key issues arising out of the public consultation (both government and non –government) can be summarised as follows:

- Traffic impacts and in particular access and egress, the impacts on Anzac Highway, Marion Road and Elizabeth Avenue;
- Access for pedestrians and cyclists;
- Water and waste water management;
- General planning considerations, ie current zoning, urban development, aesthetics/amenity and whether or not the proposal can be considered to be a Transit Oriented Development (TOD);
- Noise and air quality;
- Building code issues;
- Construction management; and
- Staging

1.4 Pertinent planning framework updates post 2009

1.4.1 "30 Year Plan for Greater Adelaide"

In 2010 the South Australian Government released a new metropolitan planning strategy the "30 Year Plan for Greater Adelaide".

The Plan has been prepared by the Government to provide a framework for the future development of Adelaide.

The main aim of the Plan is to outline how the South Australian Government proposes to balance population and economic growth with the need to preserve the environment and protect the heritage, history and character of Greater Adelaide. The Plan seeks to create inclusive, vibrant and livable communities, while protecting the regional hinterlands and primary production lands and, sustaining natural resources.

The context and vision for the Plan is outlined in detail in Chapters B and C. While it is not intended to reiterate the content of these chapters in any detail, it is worth providing a snapshot of those comments of most relevance to this mixed use development proposal.

The Plan's context provides discussion on a number of main themes including population characteristics, form of new development and employment.

In relation to expected changes to the size and composition of the population within the Greater Adelaide Region the plan sets out the following:

- a total forecast population for Greater Adelaide of 1.85 million people by 2036
- Greater Adelaide's population is older than the Australian average and our share of people aged over 65 is growing faster than the national average:
  - those aged over 65 will increase from 194,000 in 2006 to 407,000 in 2036, a 110 per cent increase
  - the proportion of aged people (over 65 years) in the population will increase from 18 per cent in 2006 to 22 per cent in 2036
  - the number of South Australians aged 85 years or more is projected to increase by 222 per cent by 2036, with those living in non-private accommodation projected to increase by more than 220 per cent from about 10,000 in 2006 to in excess of 31,000 in 2036;
- the three dominant household types in Greater Adelaide (couples with children, couples without children and lone-person households) will comprise about 84 per cent of total occupied private dwellings and of these:
  - lone-person households were the fastest-growing household type in the past decade and are projected to account for 33 per cent of all household types in Greater Adelaide by 2036;
  - lone-person households reflect the ageing of the population and changes in family relationships;
- changes in population dynamics has resulted in the need for more dwellings to accommodate the same number of people - in the 1950s to 1970s, when households were made up of large families, 300 extra homes were needed for

every 1000 extra people; today, 420 homes are required for every 1000 people; and by 2036, 435 homes will be required for every 1000 people.

To meet the demands of a larger population and household needs, the Plan outlines a vision for a ‘new urban form’ including:

- *Concentrating new housing in existing areas*
- *Locating new housing and new jobs in transport corridors:*
  - The Plan contains a detailed strategy to locate the bulk of new housing in established areas around the existing public transport networks and transit corridors to create a transit-connected city;
- *Placing an emphasis on good design and creating unique precincts*
- *Creating vibrant mixed-use precincts*
  - A greater co-location of a greater mixture of building uses (e.g. street facing shops and services located under residential apartments, providing walkable neighbourhoods and easy access to services)
- *Achieving a diversity of dwelling types*
- *Water and energy efficiency*
- *Greenways and a network of open spaces*

The "30 Year Plan for Greater Adelaide" is underpinned by 14 principles.

1. *A compact and carbon efficient city*
2. *Housing diversity and choice*
3. *Accessibility*
4. *World class design and vibrancy*
5. *Social inclusion and fairness*
6. *Heritage and character protection and enhancement*
7. *Healthy, safe and connected communities*
8. *Affordable living*
9. *Climate change and resilience*

Although the Planning Strategy is not an assessment tool it nevertheless sets out the broad directions and outcomes being sought by the Government and should inform planning policy amendments, such as the City of West Torrens (Housing Diversity) Development Plan Amendment that is discussed in more detail below. It also provides relevant direction for a Section 46 application.

1.4.2 City of West Torrens (Housing Diversity) Development Plan Amendment.

The City of West Torrens (Housing Diversity) Development Plan Amendment was released in December 2012 for public consultation with comments being sought until 22 February 2013.

Whilst the Development Plan is not as directly applicable to an assessment pursuant to Section 46 of the *Development Act 1993* as to other assessment processes and, a DPA has no formal policy status unless released pursuant to Section 28 of the *Development Act 1993,* which does not apply to this DPA, it is nevertheless interesting to note the Council's policy intent for this site moving forward in that it generally seeks to encourage the very form of development that is proposed by this project.

This Development Plan Amendment has been prepared as part of a coordinated approach by the Adelaide inner rim metropolitan Councils that seeks to update zoning within the Development Plans, particularly around activity and transport nodes and corridors and seeks to increase densities and activity in line with the "30 Year Plan for Greater Adelaide".

The policy changes to the West Torrens Development Plan proposed in this DPA are summarised in the investigations as:

- Intensifying residential development in select locations;
- Protecting areas of historic conservation and residential character significance;
- Providing employment and services to support the needs of a growing population;
- Introducing the Urban Corridor Zone to encourage corridor development:
  - the Urban Corridor Zone module is proposed to be applied to ……. Anzac Highway (Boulevard and Transit Living policy areas) and …….

Specifically this DPA identifies the majority of this site as proposed for Urban Corridor Zone, Policy Area 34 (Boulevard). This Zone seeks to encourage a range of compatible non-residential land uses and medium and high density residential land uses oriented towards a high frequency public transport corridor. Mixed use buildings are foreshadowed where there may be residential development above lower level commercial and/or retail type development.

Within this policy area, building designs will be flexible and adaptable to accommodate changes in land use and respond to changing economic conditions over time.

The Zone foreshadows services, employment and shopping in close proximity to residential development and the community which they service, promoting a strong pedestrian focus.

The Boulevard Policy Area specifically encourages a mix of land uses that will complement the role of Anzac Highway as a strategic transport route linking central Adelaide with Glenelg.

Residential development in the Urban Corridor Zone is expected to take forms other than traditional detached dwellings, and will create a medium to high density urban environment incorporating residential flat buildings.

The (small) balance of this site, (the most south-westerly corner) is proposed to be zoned Residential Policy Area 18 (medium density). This Residential Zone contemplates predominantly residential development (including affordable housing) with increased densities in close proximity to centres, public transport routes and public open spaces. It also contemplates some smaller scale complementary non-residential development such as offices, shops, consulting rooms and education establishments. The policy area encourages medium density residential development with multistorey residential flat buildings.

Within the Residential Zone, new buildings should provide a highly varied streetscape and strong presence to streets with attention being paid to heat loads, height, bulk, overshadowing and landscaping.

The proposed development is considered to be consistent with the intent of the Urban Corridor Zone.

1.5 Purpose of Amendment to the Development Report

The purpose of a Development Report is to provide a description of the proposal, a statement of the expected environmental, social and economic effects, and comment on the consistency with the relevant Development Plan provisions and Planning Strategy and, related management measures. It is intended to provide the community and assessment agencies with a clear understanding of the proposal to enable an effective assessment process.

Pursuant to Section 46D of the Development Act, 1993, the key element of the legislative process as relevant to this proposal are as follows:

DEVELOPMENT ACT 1993 - SECT 46D
46D—DR process—Specific provisions
(1) This section applies if a DR must be prepared for a proposed development.

(2) The Minister will, after consultation with the proponent—
(a) require the proponent to prepare the DR; or
(b) determine that the Minister will arrange for the preparation of the DR.

(3) The DR must be prepared in accordance with guidelines determined by the Development Assessment Commission under this Subdivision.

(4) The DR must include a statement of—
(a) the expected environmental, social and economic effects of the development;
(b) the extent to which the expected effects of the development are consistent with the provisions of—
(i) any relevant Development Plan; and
(ii) the Planning Strategy; and
(iii) any matters prescribed by the regulations;
(c) if the development involves, or is for the purposes of, a prescribed activity of environmental significance as defined by the Environment Protection Act 1993, the extent to which the expected effects of the development are consistent with—
(i) the objects of the Environment Protection Act 1993; and
(ii) the general environmental duty under that Act; and
(iii) relevant environment protection policies under that Act;
(d) the proponent's commitments to meet conditions (if any) that should be observed in order to avoid, mitigate or satisfactorily manage and control any potentially adverse effects of the development on the environment;
(e) other particulars in relation to the development required—
(i) by the regulations; or
(ii) by the Minister.

(5) After the DR has been prepared, the Minister—
(a) —
(ii) must refer the DR to the relevant council (or councils), and to any prescribed authority or body; and
(iii) may refer the DR to such other authorities or bodies as the Minister thinks fit, for comment and report within the time prescribed by the regulations; and
(b) must ensure that copies of the DR are available for public inspection and purchase (during normal office hours) for at least 15 business days at a place or places determined by the Minister and, by public advertisement, give notice of the availability of copies of the DR and invite interested persons to make submissions to the Minister on the DR within the time determined by the Minister for the purposes of this paragraph.

(6) The Minister must, after the expiration of the time period that applies under subsection (5)(b), give to the proponent copies of all submissions made within time under that subsection.

(7) The proponent may then prepare a written response to—
(a) matters raised by a Minister, the Environment Protection Authority, any council or any prescribed or specified authority or body, for consideration by the proponent; and
(b) all submissions referred to the proponent under subsection (6), and provide a copy of that response to the Minister within the time prescribed by the regulations.

(8) The Minister must then prepare a report (an "Assessment Report) on the matter taking into account—
(a) any submissions made under subsection (5); and
(b) the proponent's response (if any) under subsection (7); and
(c) comments provided by the Environment Protection Authority, a council or other authority or body; and
(d) other comments or matter as the Minister thinks fit.

(9) Copies of the DR, any response under subsection (7) and the Assessment Report must be kept available for inspection and purchase at a place determined by the Minister for a period determined by the Minister.

(10) If a proposed development to which a DR relates will, if the development proceeds, be situated wholly or partly within the area of a council, the Minister must give a copy of the DR, any response under subsection (7) and the Assessment Report to the council.

The purposed of this Amendment to the Development Report is therefore to outline the changes made to the proposal in light of the comments received, updates to the State's planning framework and current market conditions.
This report forms the Amendment to the Development Report document pursuant to Section 46D of the Development Act 1993.

1.6 The Proponent

The proponent is the 'Palmer Group'. This group holds a number of high quality commercial investments throughout metropolitan and regional South Australia.

1.7 Need for the Proposal

The need for the proposal remains largely unchanged from 2009, although there is additional need and focus on the provision of affordable housing.

Adelaide is a city with a growing population. To balance the pressure on green field land for fringe development and, to maximise the benefits of existing infrastructure and services and in particular public transport, Adelaide needs to take advantage of underdeveloped sites within the existing urban area.

Increasing densities provide for more efficient use of land and provides a critical mass to support an increased range of services. Proximity of residents to retail and employment opportunities also reduces the need for private car ownership and provides for an enhanced social fabric as there are more casual encounters between people when moving on foot or by public transport.

The proposed development will provide for a range of housing products including dedicated affordable housing.

The proposed major development is based on achieving the following objectives:

- To maximise the Transit Oriented Development (TOD) opportunities for this strategic site given the proximity to “Go Zone” bus routes and the tram.
- To create an urban lifestyle development with mixed uses comprising – retail, commercial and accommodation that can co-exist with the leisure and recreation facilities on the site.
- To provide retail facilities that respond to local demand, together with an enhanced restaurant/café experience for the local and wider community.
- To create significant built form, density and development amenity that reinforces the prominence of the site and its exposure to the key corridors of Anzac Highway and Marion Road.
- To stimulate further urban renewal along Anzac Highway and Marion Road and provide a model for corridor development elsewhere.

The proposed development supports sustainability through the use of Transit Oriented Development (TOD) and Ecological Sustainable Development (ESD) principles. The benefits derived from this approach include reduced energy consumption, potential for reduced vehicle usage and increased public transport patronage. The new tram rolling stock and upgraded stations and extended line has triggered increased patronage and interest in transport corridors and activities particularly within 500 metres of stations. The subject site is within 200m of the tram stop.

The new supermarket, specialty shopping and commercial opportunities will assist in revitalising the Plympton Neighbourhood Centre. At the same time the provision of additional facilities improves local access and dampens the need for the local community to travel further for their shopping needs.

Household expenditure on retail goods has generally continued to grow providing demand for shopping facilities, and in particular leisure shopping. The retail offers in the immediate vicinity are largely small floor plates by current standards resulting in a lack of full line supermarkets.

A retail study by Alistair Tutte submitted as part of the original proposal supported the need for additional retail in this location.

The Planning Strategy provides targets for population and employment within each region of Greater Adelaide. This site is located within the Western Region where the targets are 83,000 People (42,560 dwellings) and 40,500 jobs.

This proposal will support that achievement of these targets by providing retail floor space to support approximately 188 jobs. In addition, the serviced apartments will support further service industry employment taking the jobs generated on site to over 200.

A total of 108 residential units are proposed for the site comprising 40 dedicated affordable housing units, 26 serviced apartments and 42 open market apartments. These apartments have the potential to provide for a resident on-site population of between approximately 200 and 250 people.

2. KEY ELEMENTS OF REVISED PROPOSAL

2.1 Overview

The site is located in the south west quadrant of the intersection of Marion Road and Anzac Highway and, is just under 2ha in total area. See Figure 2.1.1.

Figure 2.1.1 South-west quadrant site – Anzac Highway and Marion Road

It is bound by Elizabeth Avenue to the south, Anzac Highway to the north, Marion Road to the east and residential properties to the west.

The Highway Hotel is located at the northern extremity of the site fronting to both Anzac Highway and Marion Road and will be retained in its current form and will remain operative with access to car parking for the duration of construction.

The proposal is for a mixed use development comprising, retail, offices/commercial space, apartments and car parking, (basement, at grade and first level). Refer to **Attachment 4**.

The retail on the site will comprise a full line supermarket of approximately 3086m² and notionally seventeen specialty shops with a combined floor area of 1990m². A mezzanine of approximately 296m² will be constructed over the southernmost portion of the supermarket to provide for administration and storage. The supermarket will be accessed via an internal

mall that can be entered via the internal street (promenade), or from the Marion Road frontage. Retail will front Marion Road, and the internal street.

The speciality retail fronting the internal street will comprise a mix of typical shops and may include uses such as a chemist, bakery, hairdresser, clothes shops, bank, post office, florist, newsagent, cafes, restaurants, butcher, fishmonger and grocer etc. Set on a slightly elevated podium above the 'at grade' car park, the resultant decking will provide a safe environment for outdoor dining and an area where plants and the like can be installed to soften the local environment and enhance the aesthetic for diners.

Above the supermarket there will be one level of commercial space and car parking. The focus of the commercial tenants is to be health and allied services and professionals. In accord with the current health policy, this will provide a preventive health precinct. This car parking will predominantly serve the office tenancies at this level as well as the serviced apartments that will sit above the commercial space.

To this end, two levels of serviced apartments are proposed above the commercial space. These are proposed as short term accommodation.

On the corner of Elizabeth Avenue and Marion Road, fronting onto Elizabeth Avenue will be a four level residential apartment building with undercroft car parking beneath. Each of the 16 apartments will have two bedrooms and a balcony of approximately $12m^2$. Apartments will be $68m^2$ to $69m^2$. Pedestrian access will be via a lobby off Elizabeth Avenue access also from the car park.

A similar arrangement is proposed for the south western corner of the site also fronting Elizabeth Avenue. This will be developed with a four level residential apartment building with undercroft car parking beneath. Each of the 24 apartments will have two bedrooms and a balcony of $13m^2$-$14m^2$. The apartments will range in size between $61m^2$ and $73m^2$. Pedestrian access will be via a lobby off Elizabeth Avenue and accessible from the car park.

In the north west corner of the site it is proposed to construct six levels of residential development above the retail at ground level. Levels two to four inclusive will comprise eight two bedroom apartments on each level. Typically these apartments will range in size between approximately $80m^2$ and $85m^2$ plus a balcony between of $8m^2$ to $9m^2$. Levels five to seven will each comprise six, three bedroom apartments including both a family bathroom and en-suite. Typically these range in size between $104m^2$ and $112m^2$ plus balconies ranging between $9m^2$ and $10m^2$. At first floor level 'undercroft' parking will be provided for residents. Pedestrian access will be via the common lobby on level one.

The apartments will total 108 in number. Of these, 40 (those in the East and West towers) will be dedicated affordable product and, a further 26 will be serviced one and two bedroom apartments for short term accommodation. The balance will be apartments for the general residential market.

Access to the basement car park will be via a ramp parallel to Marion Road accessed from the existing site access point. The upper level car park will be accessed via Elizabeth Avenue. A travelator will be provided to enable direct access to the mall from the basement car park.

The East Tower will be accessed from the joint entry with the basement car park, whilst access to the West Tower will be via a dedicated access from Elizabeth Avenue, west of the intersection with Alice Street.

Loading will be via the existing western most entry point along Anzac Highway and will be one way through to Elizabeth Avenue. The design will necessitate trucks to turn east into Elizabeth Avenue to exit the area via Marion Road. The supermarket will have a dedicated loading dock just south of the centre of the loading dock access way. The specialty retail will be loaded from just north of centre of the loading dock access way. A small service lane will run behind the specialty shops to the north of the supermarket and the supermarket itself to ensure much of the hand loading of retail premises is concealed.

Public amenities will be accessed via the internal mall and will remain open to service tenancies that operate beyond traditional shopping hours such as cafes/restaurants.
A full suite of plans and elevations is included at **Attachment 5**.

2.2 Urban Design

The urban design approach has sought to respond to the site's location benefits and facilitate access and connectivity, create a visually prominent development and a vibrant pedestrian place that has a degree of separation from the hotel and which is enhanced by the podium level of the retail facilities.

Anzac Highway, Marion Road and Elizabeth Avenue bound the proposed development. Properties adjacent to the western boundary comprise residential apartments, a dwelling and a fast food retail outlet.

The proposed commercial and retail components will provide a low level podium, which will be screened by the hotel when approached from the east along Anzac Highway and north along Marion Road. The existing streetscape of retail, residential and street landscaping will screen approaches from the south and west along Marion Road and Anzac Highway respectively.

The residential tower located in the northern part of the site will be visually striking when approaching from Anzac Highway in either direction.

Combined with the existing Highway Hotel, the residential tower on Anzac Highway will provide a focal point at the intersection of these two major arterial roads.

The ground floor shopping layout provides easy and effective connection with the adjacent footpath network and transit stops. The street level car park further supports safe and convenient pedestrian linkages through the site and particularly for north-south movements.

The internal "street" (shopping mall) provides a link between the north, east and south transport corridors. It is considered that this will be a lifestyle centre with cafes and restaurants complementing the Highway Hotel.

The design will ensure that all frontages have a street appeal. This will be enhanced by walkways being 500mm (podium) above the, 'at grade' car park, visually setting the activities above the car parking.

Although technically private land, the development is expected to function as a vibrant public place with the internal plazas providing for passive recreation for both residents of the site and nearby locals.

The palette of proposed materials for the building will include precast concrete panels, stone facings, metal panels (composite) and glass. These primary materials will soften with the

use of timber slatted screens to accommodation units, and landscaping to the “at grade” pedestrian and parking areas.

Perimeter landscaping, landscaping within the car parking area, and selected green walls will assist in softening the ground level areas.

2.3 Built Form

The built form has been carefully considered such that the proposal has a strong identity but also sits appropriately with surrounding development and in concert with the exiting Highway architecture.

The accommodation tower located on Anzac Highway will be visually prominent when viewed from Anzac Highway in either direction. These buildings together with the Highway Hotel will provide a focal point for this important intersection of two major roads. The accommodation tower located on the corner of Marion Road and Elizabeth Avenue also provides a lower scale element to the Marion Road view. These two accommodation buildings with the western accommodation tower define the corners of the whole development.

The proposed development will also be visually prominent when approaching from the north and south along Marion Road. The height and scale of the towers will be an increase over the existing built form to the south and west. The reduced scale to Elizabeth Avenue is complementary to the existing residential. The proposed scale provides an appropriate transition to the existing development to the north and east with more intensive activity and height.

2.4 Traffic, Access and Parking

The following access and parking arrangements are proposed.

A ground level and basement car parking is proposed comprising 145 spaces “at grade” and 170 spaces in the basement car park. These two car parks will be accessed as follows:

- Left in only, from Anzac Highway adjacent Bus Stop 11;
- Ingress/egress from Anzac Highway adjacent the proposed retail area; and
- Ingress/egress from Marion Road adjacent the Highway Hotel.

An upper deck car park is proposed above the retail components with ingress/egress from Elizabeth Avenue.

The West (residential) Tower has a car park with 23 spaces including a disabled parking space and is accessed from Elizabeth Avenue.

The East (residential) Tower has a car park with 14 spaces including a disabled space and is accessed also from Elizabeth Avenue. To minimise cross overs the access way is shared (in part) with the access to upper deck.

Access to the site for deliveries and servicing is via a one way access from Anzac Highway to Elizabeth Avenue with two discrete loading docks, one for the specialty retail and one for the supermarket.

The northern most dock servicing the specialty retail is supported by a waiting bay area internal to the site.

A total of 448 car parking spaces are to be provided on the site. This comprises 170 car parking spaces in the basement car park (inclusive of four designated spaces for disabled persons parking), 145 car parking spaces "at grade" (inclusive of six designated spaces for disabled persons parking), and 133 spaces on the first level deck (inclusive of six designated spaces for disabled persons parking).

Extensive provision is made for bicycle parking on site. The proposal includes 13 bike racks with 12 spaces per rack, ie a total of 156 bicycle parking spaces.

2.5 Pedestrian access

Pedestrian access surrounding the subject site will be via existing footpath alignments on Anzac Highway, Marion Road and Elizabeth Avenue including the signalised pedestrian crossings at the Anzac Highway / Marion Road intersection.

Access to the retail stores and supermarket at grade is via a pedestrian promenade. Access to the apartments will be via designated lobbies.

Pedestrian movements in the ground floor car park will be facilitated by appropriate signage and crossing points linking to the Highway Hotel entrance and the pedestrian promenade, and at the Marion Road access point.

Pedestrian access from the basement level is provided via, stairs, a lift and travelator while access from level 1 is via lifts and stairs in the north-west corner, at apartment entry area and at the mezzanine level.

Way finding guides such as signs will show the preferred access between the proposed development and the tram stations which align with transit oriented development and corridor development principles.

The relevant requirements of the *Disability Discrimination Act* (1992), such as the provision of tactile surface indicators will be included as part of the development.

2.6 Affordable housing

Given the location within comfortable walking distance of a range of public transport options, is it proposed to take advantage of this by providing additional affordable housing product on the site.

Both the West and East Towers are proposed to provide affordable housing that meets the Government Policy definition. NRAS licences are currently being sought to provide this affordable housing in the form of rental affordable housing. In order to meet the terms of NRAS these apartments will need to be completed by December 2014.

The 16 and 24 apartments in the East Tower and West Tower respectively are proposed to meet the terms of the Government's affordable housing policy.

Within the East Tower it is planned to provide 16 apartments, four each on four levels. Apartments will be approximately 68m² to 69m² and have a private balcony of around 12m². Each apartment will comprise two bedrooms, one bathroom, living, dining and kitchen and each will have its own laundry facilities. All apartments will be accessed via a lobby at ground level that will provide access from both Elizabeth Avenue and the undercroft car park.

The car park will be a dedicated car park for the residents with access from Elizabeth Avenue via a common driveway with the ramp to the first floor car park. Fourteen car parking spaces including one dedicated disable space will be available to residents.

The West Tower will provide 24 affordable apartments, six each on four levels. Apartments will range in size from 61m² to 73m² and each will have a private balcony of typically 13m² to 14m², although some will be almost 24m². Each apartment will comprise two bedrooms, a bathroom, kitchen, lounge and dining area with laundry facilities.

The West Tower is also provided with 23 car parking spaces including one dedicated disabled parking space. This tower is also provided with 5 individual storage rooms that are accessible from the car park.

2.7 Serviced apartments

The proposal provides for two levels of serviced apartments above the commercial floor space. The 26 serviced apartments comprise both one bedroom (12) and two bedroom (14) options.

The serviced apartments range in size between 50m² and 70m² and have access to a private balcony space of 12 m² or greater.

The apartments are accessed via a lobby area from the first floor car park.

2.8 Operation

The hours of operation of the retail and commercial components are expected to be similar to other comparable centres with much of the activity concluding by 9pm. Cafes and restaurants may trade later subject to licence conditions.

Servicing and waste management will comply with EPA noise requirements.

2.9 Staging

It is proposed to develop the project in three stages. See Figure 2.1.2 in section 2.1.
Stage 1 comprises the basement car park, both the East and West Towers, the supermarket and specialty retail, commercial tenancy and first floor car park. Stage 1 is targeted for completion by 2016, although the East and West Residential Towers must be completed by December 2014.

Stage 2 comprises the serviced apartments. Stage 2 is targeted for completion by 2018.

Stage 3 comprises the North Tower apartments. Stage 3 is targeted for completion by 2021.

Stages 2 and 3 may be undertaken as one stage.

3. STATEMENT OF EXPECTED ENVIRONEMNTAL, SOCIAL AND ECONOMIC EFFECTS OF THE PROPOSED DEVELOPMENT.

3.1 Transit Orientated Corridor Development Principles

A number of the submissions queried whether the proposed development could be classified as a Transit Oriented Development (TOD).

The "30 Year Plan for Greater Adelaide" places a focus on concentrating development around access to public transport. To this end it identifies two key forms of development that have a symbiotic relationship with public transport, TODs and Transit Corridors.

A transit oriented development (as per the Glossary in the "30 Year Plan for Greater Adelaide") is higher density, mixed use development centred on a major public transport access point. The transit corridors are corridors within 800m of a fixed line mass transit, and/or are characterised by main road access with mass transit such as frequent buses or trains. Similar to the TOD concept, for corridor development the "30 Year Plan for Greater Adelaide" supports the development of mixed uses at higher densities along these corridors. This provides for a positive symbiotic relationship with the transport.

The subject site is very well serviced with public transport. Some 19 different bus routes operate on the roads surrounding the site. These run at frequent intervals and both Marion Road and Anzac Highway are dedicated "Go Zones" with bus services every 15 minutes. The majority provide a connection between the south western suburbs and the CBD via Marion Road and Anzac Highway. However these services also provide connections to other key nodes (including transport nodes) such as the Arndale shopping centre, the Marion shopping centre, Flinders University, Paradise Interchange, Tea Tree Plaza and the Golden Grove village interchange.

The site is also within 200m of the Tram (fixed line mass transit) that connects the Entertainment Centre and Port Road with the CBD and Glenelg.

The proposal has been specifically designed to facilitate pedestrian access through the development at ground level to provide a convenient link with the nearby tram stop.

This proposal takes advantage of this strong public transport by incorporating a variety of forms of residential development, combined with retail and commercial development that provides employment opportunities as well as services.

3.1.1 Residential components

In line with the corridor development philosophy this proposal includes a significant residential component, comprising 82 apartments for private ownership or rental and, 26 short term serviced apartments.

Providing short term accommodation in combination with permanent accommodation recognises the fact that the public transport servicing the site makes this a good hub for short term accommodation, particularly for those people undertaking work placements within the CBD and Flinders University.

In keeping with the intent of corridor developments the residential development of the site achieves a net density of 54 dwellings per hectare, noting that discounting the site area to take account of the other mixed uses would push this density higher. Not only is this density higher than the standard suburban densities within Adelaide but the building forms also provide for variety in the form of apartments, some of which are located above other land uses on the site.

The residential development on-site provides a workforce to take advantage of jobs on the site as well as the public transport that provides good connections to other key employment areas such as major regional activity centres, Flinders University and the CBD.

3.1.2 Affordable housing

Importantly, with NRAS support, this proposal will exceed the Government's targets for affordable housing providing a total of in excess of 29% affordable product.

This affordable product is proposed in the first instance to be provided as affordable rental accommodation rather than the more traditional affordable product for purchase and thereby meeting the demands of this specific rental sector.

3.1.3 Commercial development/employment

The proposal incorporates a variety of commercial development opportunities, including space for retail, cafes, offices, and a range of general commercial activities eg GPs, medical and allied health, personal service establishments and services such as postal facilities. In addition the Highway Hotel is located to the north-east of the site which is a recreation/leisure type land use.

These land uses provide for employment opportunities on the site.

Conservatively, based on floor space and land use types this development is expected to generate in excess of 200 additional FTE jobs. This would be in addition to the existing jobs provided by the Highway Hotel. Furthermore, there will be temporary jobs created on the site as a result of the construction activities.

The proposal therefore is considered to fit well within the terms of a TOD/corridor based development in that it provides for a mix of land uses including higher density residential development that will provide a range of services and employment opportunities to cater for the local population and support the high levels of public transport that currently service this site and locality.

3.2 Urban Design

The urban design approach has been refined since the submission of the original proposal. The amended proposal has sought to respond to the site's locational benefits and surrounding development. The design also seems to facilitate high levels of pedestrian access and connectivity, whilst creating a visually prominent development and vibrant pedestrian place that has an architectural interest provided through the built form, articulation, materials and finishes.

3.2.1 Built Form (height, bulk and scale)

A number of comments were made in respect to the built form of the proposal.

Some submissions to the original proposal expressed support for the height of 8 storeys, others suggested that the bulk was not reasonable particularly from Elizabeth Avenue, and in terms of overshadowing some concern was expressed that it was higher than 3 storeys.

The built form has been revised to introduce greater vertical articulation across the site and restrict the higher residential development to Anzac Highway.

The built form now comprises two stand-alone residential towers of 19m in height, which provide an increased residential presence and scale to Elizabeth Avenue. The central portion of Elizabeth Avenue façade is then lower to the immediate street front (approximately 9m) with the serviced apartments and offices rising a further three levels but set well back (over 45m). Likewise the north tower at seven additional levels will rise behind to the north. Again this tower is over 45m from Elizabeth Avenue.

The profile of the development when viewed from any direction will appear as a collection of buildings on the site of a variety of heights from 5.5m, through 9.1m and 19m to 33.4m. The greatest massing will be generally central and to the north-west, with the towers marking each corner.

With the focus currently placed on infill development at increased densities it is inevitable that building forms, heights and densities will be different to that of the surrounding built forms, and the first example of this is likely to form the starkest contrast.

This proposal has clearly sought to meet the building forms appropriate to a TOD/Corridor Development site whilst seeking to form an appropriate transition to existing development.

The design has regard to issues of overshadowing and is not considered to unduly overshadow existing developments. This is discussed more in section 3.5.8 overshadowing.

Overlooking will be managed through appropriate screening.

3.2.2 Streetscape and Amenity

The building design seeks to provide interest at ground level.

Earlier comments in respect to streetscape and amenity can be summarised as:

- issues pertaining to the treatment frontages, particular southern and western aesthetics of the streetscape and use of materials;
- the bulk and scale of the proposal, combined with minimal setback on Elizabeth Avenue will have a negative impact on streetscape, particularly in relation to wall heights and noise devices utilised for service areas; and
- no streetscape proposals for Elizabeth Avenue as required by the DAC guidelines.

The streetscape to Elizabeth Avenue is to be further developed in the design development stage. It is intended that the southern and western façades will have a variety of materials and textures to provide a residential quality to the façade. Articulation of the southern façade will reduce the perceived height of the walls.

The design and positions of the residential Towers will add a residential vernacular to the northern side of the street.

Following construction the Elizabeth Avenue will require reconstruction of the footpath. Landscaping and streetscape to Elizabeth Avenue will be addressed in consultation with Council.

Elizabeth Avenue will be landscaped and existing street trees will be retained wherever possible and new trees will meet council guidelines for species but Platanus and Pyrus are preferred.

To add interest and detail at the pedestrian level articulation and green walls have been introduced along with architectural plantings associated with the Highway Hotel.

A view of Elizabeth Avenue is included as **Attachment 6.**

3.2.3 Open Space

There is no separate requirement for public open space or recreation land uses associated with TOD style developments however, provision of publicly accessible and user friendly spaces is nevertheless highly desirable.

The proposal includes a public promenade area with cafes that will function as community space. Over time, this is likely to become a culturally important space. The Mall will also provide a hub for community interaction.

For the residents of the site a major linear park with cycling and walking paths is located approximately one block to the north-west across Anzac Highway.

3.2.4 CPTED

The proposal has been designed with the principles of Crime Prevention through Environmental Design in mind.

Throughout the design phase, attention has been paid to maximising the openness of the site, providing good legibility and access ways with good sightliness and no concealment or entrapment points.

The promenade area has been designed to ensure good pedestrian access and safety through shared car and pedestrian spaces, high levels of activity (outdoor dining opportunities area foreseen), passive surveillance and good levels of illumination.

The residential development on the site also increases the levels of passive surveillance.

3.2.5 Landscaping

Landscaping will be further developed and documented as part of the detailed design.

Notwithstanding, the proposal includes green walls, landscaping to the car park and pedestrian areas.

The landscaping will include both hard and soft (vegetative) treatments. Shade trees (Platanus and Pyrus) and planter boxes will be included in the at grade car park. Attention will be paid to the pedestrian promenade.

All species will be selected for micro-climatic properties, locality suitability, safety, and CPTED suitability.

Plants will have an architectural element eg an Agave, Cycad, Viburnum, Yucca, etc to complement the Landscape theme of the Highway Hotel and assist to provide a linked site.

Refer to schedule shown on the drawings.

3.3 Traffic, Access and Parking

The Transport submission included both high level and detailed comments. At the higher level, it requested more detailed modelling be undertaken in relation to the proposal, and in particular required AIMSUN modelling to be undertaken. It also sought increased support for public transport use. It then raised a number of specific matters for consideration such as elements of the car park design, and in particular queried the need for the stacking loop, and manoeuvring of service vehicles on site.

Some of the other submissions raised issues regarding traffic and car parking, particularly in respect to Elizabeth Avenue.

The revised proposal includes a redesigned car park. Specifically now the access points remain unchanged from present, the aisles leading from the entry from Marion Road to the basement car park have been increased in length to accommodation likely queuing, the stacked parking loop has been removed, service vehicles have a dedicated one way access and egress that directs vehicles to the east, and the residential traffic to the site has been largely separated from other visitors to the site.

Aurecon was engaged to review and provide advice on all traffic, access and car parking matters and undertook the additional AIMSUN modelling required by DPTI.

A full copy of the Aurecon Report is included at **Attachment 7**.

3.3.1 Traffic modelling and analysis

In accord with the requirements of DPTI, Aurecon undertook an assessment of the traffic likely to be generated by the proposal and the impacts that this may have on the surrounding road network.

The location of access points to the site from the surrounding arterial network are unchanged from the present.

Access to the ground floor and basement car park is via the following:

- Ingress / egress on Anzac Highway, adjacent the proposed retail area (left in / left out only).
- Left in Ingress only on Anzac Highway adjacent the existing bus stop 11.
- Ingress / egress on Marion Road, adjacent the Highway Hotel (left in / left out only).

Access for the level 1 car park, east and west residential towers is via:

- Ingress / egress on Elizabeth Avenue is provided for the east residential tower car park and level 1 car park
- A separate ingress / egress on Elizabeth Avenue for the west tower residential car park.

Traffic Generation

Traffic generation rates in the assessment have been based on the 'Guide to Traffic Generating Development' (Roads and Traffic Authority (RTA), New South Wales, 2002) which provides an assessment of traffic generation for residential, commercial and retail developments.

Based on these rates Aurecon has calculated the trips shown in Table 3.3.1.

Table 3.3.1 Trip Numbers

Development Type	Number of dwellings or area	Unit	Daily rate per unit	Daily Trips	peak rate per unit	Peak hour Trips	
Serviced1 Bed	12	Dwellings	4.0	48	0.5	6	
Serviced 2 Bed	14	Dwellings	4.0	56	0.5	7	
2 Bed	64	Dwellings	5.00	320	0.5	32	
3 Bed	18	Dwellings	5.00	90	0.5	9	
Supermarket	3085	m²	147.50	3640	13.1	am 81	pm 323
Retail	1925	m²	55.50	855	4.0	am 15	pm 62
Commercial	891	m²	10.00	89	2.00	18	
					Total am	168	
					Total pm	457	

The retail and supermarket uses have had a 20% reduction applied to acknowledge the reduced morning demand, and the close proximity to public transport and shared trips.

The development is considered likely to generate a total of 5098 trips per day with approximately 168 and 457 of these being for the morning and afternoon peaks respectively.

Traffic Distribution

These trips were then notionally distributed having regard to the likely number of movements by land use type in both the morning and afternoon peaks and factoring in likely trip origins and destinations.

This work identified morning and afternoon traffic distributions as is shown in Tables 3.3.2 and 3.3.3 respectively.

Table 3.3.2 Morning Traffic Distribution

	Traffic Volumes IN		Traffic Volumes OUT	
Road Section	**Direction of Travel**	**Traffic Volume**	**Direction of Travel**	**Traffic Volume**
Marion Road north	Southbound	17	Northbound	19
Marion Road south	Northbound	13	Southbound	14
Anzac Highway east	Westbound	5	Eastbound	5
Anzac Highway west	Eastbound	9	Westbound	10
Cross Road east	Westbound	21	Eastbound	23
Cross Road west	Eastbound	21	Westbound	23
Local Road Network	-	17	-	19
Total	-	86	-	94

Table 3.3.3 Afternoon Traffic Distribution

	Traffic Volumes IN		Traffic Volumes OUT	
Road Section	**Direction of Travel**	**Traffic Volume**	**Direction of Travel**	**Traffic Volume**
Marion Road north	Southbound	26	Northbound	25
Marion Road south	Northbound	40	Southbound	40
Anzac Highway east	Westbound	32	Eastbound	49
Anzac Highway west	Eastbound	67	Westbound	16
Cross Road east	Westbound	18	Eastbound	36
Cross Road west	Eastbound	16	Westbound	18
Local Road Network	-	50	-	46
Total	**-**	**249**	**-**	**230**

AIMSUN Modelling

These figures were then modelled using AIMSUN. The base model was calibrated to replicate observed 2011 traffic conditions. The calibration report was approved by DPTI. Modelling was then undertaken as a base case at 2016, the development option at 2016 to understand the impacts of the proposed development, and a draft intervention at 2016.

In summary the findings of the modelling indicate the following.

Model Operation Comparison

A visual comparison of the 2016 base and option models indicates that the traffic operation is similar for all the models and is primarily determined by the operation of the Marion Road / Anzac Highway intersection and to a lesser degree Marion Road / Cross Road intersection and the tram crossing.

In the morning peak period there is little difference in the operation of the two models. Traffic from the development enters the arterial road network satisfactorily and the impact on adjacent roads appears to be minimal. The queue lengths along Anzac Highway and Marion Road are relatively long but do not impact on the operation of the network. For both options the queues on Marion Road in the southbound direction extend back to Mooringe Avenue and block the right turn movement from Mooringe Avenue.

For the afternoon peak the operation of the 2016 base model appears much more congested particularly along Anzac Highway and Marion Road as compared to the morning peak. The queues along Marion Road on the northern approach also extend to Mooringe Avenue and impact on the right turn movement. The option model shows increases in queues and congestion in both directions on Marion Road and in the westbound direction along Anzac Highway and Cross Road. The operation of the junctions that provide access to the proposed development is considered satisfactory. There are queues build-ups on the approaches to Marion Road and Anzac Highway but they dissipate quickly once gaps in traffic occur.

Travel Time Comparisons

The travel times in both directions on the arterial roads (Marion Road, Anzac Highway and Cross Road) were compared for the base and option models.

In the morning peak hour there is little difference (maximum of 10 seconds) between the two models. For the afternoon peak the difference in travel time increases to more than 10% on the following road sections:

- The westbound direction on Anzac Highway.
- The eastbound direction on Cross Road.

The travel times for Cross Road (westbound) and Marion Road (northbound) increase by 9%.

Level of Service Comparisons

The level of service comparison considered the delay and operation of each of the movements at the four key intersections and provided a comparison between the base and option models.

For the morning peak there is no significant difference between the two models.

In the afternoon peak there is an increase in the delay for:

- the right turn from Anzac Highway into Cross Road.
- the right turns from Anzac Highway into Marion Road.
- movements on the eastern Cross Road approach to Marion Road.

There are no discernible differences in the delays in through movements in relation to Marion Road and Anzac Highway.

The modelling indicates only minimal delays to vehicles at the two access points from the development to the arterial road network. Further there are minimal delays to vehicles using Elizabeth Avenue and that there are sufficient gaps in Marion Road traffic flows for vehicles to access Elizabeth Avenue without impacting on through movement along Marion Road.

Sensitivity testing of the Base model operation indicates that an increase of only 5% in demand would provide similar performance to the Option model. This indicates that the Base model is operating close to capacity and only minor fluctuations in demand may result in increases in congestion and delay. However, this increase in congestion and delay may encourage positive changes in travel behaviour such as greater use of public transport and other sustainable modes.

Intervention Treatments

From a review of the model operation the following treatments have been identified to mitigate the impacts of the proposed development:

- Provision of a separate right turn phase in the PM peak at the Marion Road / Anzac Highway intersection for the eastern approach. This improves operation along Anzac Highway in the westbound direction. Note this will also improve safety as currently this movement operates on a filter phase.
- Extend the right turn lane from Anzac Highway west to Marion Road South by approximately 20m. The model showed that vehicles queued in this lane extended beyond the current length.
- Increase the phase times for the right turn movement from Anzac Highway into Cross Road.

Providing these intervention treatments is likely to be a disincentive to people to use public transport and is therefore contrary to TOD/Corridor aims of Government.

3.3.2 Operation of Elizabeth Avenue

Some respondents indicated that Elizabeth Avenue is a busy street impacted by the church and school traffic. It has also been suggested that it is used as a short cut to avoid the Cross Road, Anzac Highway lights. Queries have been raised in relation to the impact of the proposed development on Elizabeth Avenue.

The school and church is located approximately 400 metres west of the proposed development. The location was previously observed during school pick-up times. Some congestion was observed (typical for school sites) which was short-term for a period of approximately 20 minutes. Elizabeth Avenue is 9.5m wide in front of the school which is sufficient to allow parking on both sides of the road, as well as a vehicle passing.

Aurecon's traffic assessment work indicates that for the morning peak a total of 36 vehicles may use the local road network and in the evening peak, this could be 96 vehicles. Importantly, the evening peak 4.15pm to 6pm is largely outside the afternoon peak for the school.

There will be some minor additional traffic using Elizabeth Avenue to access the proposed (largely domestic) development. Elizabeth Avenue has the capacity to carry this traffic.

The loading dock's access way has been designed to require all vehicles exiting the site to do so in an eastward direction to Marion road. As these vehicles will exit in a forward direction it is unlikely that there would be any need for warning devices to be used.

The use of Elizabeth Avenue as a "short cut" route is beyond the scope and impact of this proposal.

3.3.3 Car parking

Aurecon was engaged to provide advice in relation to car parking.

3.3.3.1 Configuration

The proposed development is to provide 448 car parks. The east and west residential tower car parks are located at grade and spaces are proposed to be reserved for residential use. Portions of the level 1 car park are also reserved for residential use (allocated to the north residential tower and the serviced apartments). All other car parking bays are provided for shared use, including employee parking.

The required dimensions of car parking bays and aisle widths are defined in AS/NZ 2890.1:2004 by car park user class. Refer to Table 3.3.4 below for minimum dimension of 90^0 degree car parking.

Table 3.3.4 Minimum Car Park Bay Dimensions by User Class – 90^0 Degree Car Parking

User Class	Car Park Bay Width	Car Park Bay Length	Car Park Aisle Width
1A - Residential, domestic and employee parking	2.4	5.4	5.8
2 Hotels	2.4	5.4	5.8
3A - Short term, high turnover parking at shopping centres	2.6	5.4	6.6
4 Parking for persons with a disability	Widths specified in AS/NZ 2890.6:2009		

The proposal has the following characteristics:

- 90^0 angle parking is proposed for all car parking bays.
- All dedicated car parking bays are 2.6m x 5.4m which complies with the required Class 3A minimum width and length.
- Aisle widths are 6.6m in the basement, ground floor and level 1 car park which complies with the class 3A standard. A one-way aisle is provided in the north-west quadrant of the ground floor car park of 5.8m. This complies with the minimum one-way width.
- All car park bays in the basement car park and level 1 car park meet the required design envelope to be kept clear of columns, walls and obstructions as stipulated in *AS/NZ 2890.1:2004*.
- *AS/NZ 2890.1:2004* stipulates that blind aisles shall extend to a minimum of 1m beyond the last parking space, and the last parking space widened by at least 300mm into the 1m area if it is bounded by a wall or fence. The north-

west, north, west and east blind aisles in the level 1 car park are bounded by the car park wall. The approximate blind aisle clearances are provided as follows:

- North-west – 4.2m
- North - 1.2m
- West -1.9m
- East - 5.4m

Therefore, sufficient room exists to ensure the adjacent end parking bays are provided at a width of 3.0m. This leaves a 3.9m, 0.9m, 1.6m and 5.4m clearance to the car park walls respectively which are sufficient.

- The east and west residential tower car parking bays will be allocated for private residents only. No requirement therefore exist for a separate turnaround bay at the end of the west and east tower car park aisles. The level 1 car park will also be predominantly allocated for private residential and service apartment land uses via controlled access to these spaces. No requirement therefore exits for separate turnaround bays at the end of the north-west, north and west end aisles.
- The entry / exit ramp gradients within the basement and level 1 car park comply with the standards specified in AS/NZ 2890.1:2004.
- Wheel stops are provided within the basement car park, ground floor car park and the level 1 car parking limiting the travel of a vehicle into the parking space. As front-in parking would be likely in the 90° parking bays, wheel stops should be provided at the specified distance as per Table 2.1 in AS/NZ 2890.1:2004 (minimum distance from wheel stop to kerb / wall of 820mm for a 100mm high wheel stop).
- The left in only access point from Anzac Highway is suitable for emergency vehicle access.
- The proposed car parks suitably accommodate the turning paths of the design B99 vehicle and B85 car as required in AS/NZ 2890.1:2004.
- It has been identified that there is limited site distance for vehicles exiting the east tower car park due to the level 1 car park curved ramp. This has been addressed by the provision of a convex mirror.
- Line marking will be provided in the western quadrant of the ground floor car park and adjacent the entrance from the ground floor car park into the basement car park to delineate turning paths of vehicles.
- Appropriate signage and line marking will be provided for vehicles and pedestrians, as indicated in AS/NZ 2890.1:2004.
- The configuration of the ground level car park was an issue raised by DPTI (DTEI) and in particular it was concerned about the stacking distances between the entry off Marion Road and the entry to the basement car park.

The access way has been reconfigured and as such this is no longer an issue.

3.3.3.2 Numbers

Car parking numbers, at 448 off street parks, have been assessed by Aurecon and found to be suitable.

Car parking is proposed at basement, ground floor and level 1 as is show in Table 3.3.5.

Table 3.3.5 Car park numbers by land use

Basement 1 Land Use	Car Parks
Retail / Commercial	166
Retail / Commercial car parking for disabled persons	4
Total	**170**
Ground Floor Land Use	**Car Parks**
East Residential	13
East car parking for disabled persons	1
Retail / Commercial	104
Retail / Commercial car parking for disabled persons	4
West Residential	22
West car parking for disabled persons	1
Total	**145**
Level 1 Land Use	**Car Parks**
North Residential	64
North car parking for disabled persons	2
Retail / Commercial	27
Serviced Apartments	36
Serviced Apartments car parking for disabled persons	4
Total	**133**

Aurecon undertook an assessment of each of the components of the development to ascertain the car parking requirements for each component using the rates shown in Table 3.4.6.

Table 3.3.6 Car parking rates

Land-use	Units or floor area in m²	Rate	Required car parks
Serviced 1 Bed	12	1 per 4 bedrooms	3
Serviced 2 Bed	14	1 per 4 bedrooms	4
2 bed	64	1 per dwelling	64
3+ Bed	18	1.25 per dwelling	23
Supermarket	3085 m²	4.5 per 100m² of GLFA	139
Retail	1925 m²	3 per 100m²of GLFA	58
Commercial	891 m²	3 per 100m²of GLFA	27
Total		317	

Rates for the serviced apartments (taken to be tourist accommodation), the retail (other than the supermarket), and the commercial land uses have been adopted from the DPTI Planning Policy library off-street vehicle parking requirements.

The rate for the supermarket component would be 3 per 100m², pursuant to the Planning Policy Library, however for the purposes of this assessment Aurecon has conservatively used a figure of 4.5 spaces per 100m² in recognition that supermarket retailers have a preference to include slightly higher levels of car parking to support the weekly grocery shop.

The Policy Library does not stipulate rates for a hotel land use and as such a previous Aurecon car parking survey has been used to determine the demand for the Highway Hotel. Surveys of the Highway Hotel car parking demand were undertaken on Friday 31 August 2007 and Saturday 1 September 2007 recently after the Highway Hotel was upgraded. The 2007 surveys indicate 160 car parking spaces are required to cater for combined hotel / mixed use peak demand.

Given the true mixed use nature of this development, a discount of 10% has been applied to the overall demand for the supermarket and the hotel to take into account multiple use visits to the site, and the difference in operating times. No discounts have been applied to the other land use rates.

Applying the discount the new parking calculations for the supermarket and the hotel are 125 and 144 respectively.

This results in a total parking demand of 447 spaces. The provision of 448 spaces is therefore considered appropriate to accommodate the land uses on the site.

3.3.3.3 Reserved Parking

The Building Code of Australia stipulates 1% to 2% of total car parking spaces should be allocated for reserved car parking bays for persons with a disability. A provision of 2% would be considered appropriate; this equates to the provision of nine reserved bays.

AS/NZS 2890.6:2009 requires dedicated parking bays to be 2.4m x 5.4m with the provision of a shared area with a bollard (2.4m x 5.4m) on one side of the bay.

The proposal includes:

- Four reserved bays for persons with a disability (including the required shared areas) located in the ground floor car park. Two are located adjacent to the supermarket / retail mall entry near and two are located at the Highway Hotel entry. The dimensions of these reserved bays and the shared areas are 2.6m x 5.4m.
- One reserved bay for persons with a disability (including the required shared area) located in the west residential tower car park, directly adjacent to the entrance. The dimensions of both the reserved bay and the shared area are 2.5m x 5.4m.
- One reserved bay for persons with a disability (including the required shared area) is located in the east residential tower car park, directly adjacent to the entrance. The dimensions of both the reserved bay and the shared area are 2.4m x 5.4m.
- Four reserved bays for persons with a disability (including the required shared areas) are located adjacent to the basement car park foyer and lifts. The dimensions of these reserved bays and the shared areas are 2.6m x 5.4m.
- Four reserved bays for persons with a disability (including the required shared areas) are located adjacent to the level 1 car park commercial and apartment entry. The dimensions of these reserved bays and the shared areas are 2.6m x 5.4m.

In total, 14 reserved parking bays are provided for persons with a disability which is higher than the calculated demand of nine.

The reserved parking therefore has been assessed by Aurecon to comply with the relevant standards.

3.3.4 Loading

Two proposed loading docks to the west of the subject site are to be accessed via an ingress point on Anzac Highway. The loading docks will be one-way with vehicles exiting via Elizabeth Avenue servicing both the retail shops and the supermarket. A vehicle waiting bay is proposed along the western kerb line before the retail loading bay.

Aurecon undertook vehicle turn path modelling which indicates that sufficient room exists in the service bay to allow a 14m semi-trailer (supermarket deliveries) and a 12.5 rigid vehicle (other retail deliveries) to enter the loading dock from Anzac Highway, reverse into the supermarket or retail loading zone, exit in a forward direction via Elizabeth Avenue and turn left into Marion Road.

3.3.5 Public Transport

DPTI in its comments was keen to see the proposal to support the use of public transport.

A key aspect of public transport use will be the ability of people to find their way to key stops.

Appropriate wayfinding such as signage will be provided to guide access between the proposed development, the tram stops and other public transport.

In particular attention has been paid to providing safe and convenient pedestrian links to Marion Road to provide a direct route southward to tram stop 10 and bus stop 11A, and northward to bus stop 11 on Anzac Highway.

3.3.6 Pedestrian Access

Pedestrian access surrounding the subject site will be via existing footpaths on Anzac Highway, Marion Road and Elizabeth Avenue including the signalised pedestrian crossings at the Anzac Highway / Marion Road intersection. This will facilitate maximum pedestrian safety.

Access to the retail stores and supermarket at grade is via a pedestrian promenade. Bicycle parking along the pedestrian promenade area have been located for convenience and will not impede pedestrian flow.

Pedestrian movements in the ground floor car park will be facilitated by wombat crossings linking to the Highway Hotel entrance and the pedestrian promenade and at the Marion Road access point.

Pedestrian access from basement level will be provided via, stairs, a lift and travelator, while access from level 1 will be via lifts and stairs in the north-west corner, at apartment entry area and at the mezzanine level. Aurecon found that these provisions are considered appropriate for the number of pedestrians expected.
The proposal will meet the relevant requirements of the Disability Discrimination Act (1992), such as the provision of tactile surface indicators. This will be detailed as part of the building rules application.

3.3.7 Cycling

Cycling is to be encouraged for both its health benefits and environmental benefits. In order to encourage cycling, bicycle parking is provided in convenient locations around the site.

The proposed development provides for 156 bicycle parking spaces, with 13 bike racks (12 spaces per rack). Bicycle parking racks are located adjacent the Highway Hotel (3 racks), in the south-west quadrant of the ground floor car park (4 racks) and to the north-east of the mall entry (6 racks)

Using the parking rates for bicycles provided in the DPTI Planning Policy Library, Aurecon calculated the following demand for on-site bicycle parking. Table 3.3.7 below highlights the parking requirements for the retail, commercial and residential land uses.

Table 3.3.7 Bicycle parking rates by land use

Land Use	Rate	Required Bicycle Parks	Visitor Rate	Required Visitor Bicycle Parks
Serviced 1 Bed Serviced 2 Bed	1 for every 20 employees	1	2 for the first 40 rooms plus 1 for every additional 40 rooms	2
2 bed	1 per 4 dwellings	16	1 for every 10 dwellings	6
3+ Bed	1 per 4 dwellings	5	1 for every 10 dwellings	2
Supermarket	1 per 300 sqm of GLFA	10	1 per 600 sqm of GLFA	5
Retail	1 per 300 sqm of GLFA	6	1 per 600 sqm of GLFA	3
Commercial	1 per 200 sqm of GLFA	4	2 plus 1 per 1000 sqm of GLFA	2
Total		43		21
		64		

The Policy Library does not stipulate a bicycle parking rate for hotels and as such The Planning SA Planning Bulletin (2001) 'Parking Rates for Selected Land Uses (Suburban Metropolitan Adelaide)' was used by Aurecon to calculate the Highway Hotel bicycle parking demand. See Table 3.3.8 below. The Planning SA Bulletin stipulates a rate of 1 per 25m² of bar floor area for employees / visitors and 1 per 100m²of lounge / beer garden for both employees and visitors.

Table 3.3.8 Bicycle parking rates for hotels

Licensed Areas	m²	Employee Parking Rate	Employee Parking Requirement	Visitor Parking Rate	Visitor Parking Requirement
Gaming Courtyard	18	1 per 100m² of GFA	1	1 per 100m² of GFA	1
Gaming Room	200	1 per 100m² of GFA	2	1 per 100m² of GFA	2
Function Room	345	1 per 100m² of GFA	3	1 per 100m² of GFA	3
Bistro	120	1 per 100m² of GFA	1	1 per 100m² of GFA	1
Beer Garden	280	1 per 100m² of GFA	3	1 per 100m² of GFA	3
Lounge Bar	170	1 per 100m² of GFA	2	1 per 100m² of GFA	2
Public Bar	136.5	1 per 100m² of GFA	1	1 per 100m² of GFA	1

Licensed Areas	m²	Employee Parking Rate	Employee Parking Requirement	Visitor Parking Rate	Visitor Parking Requirement
Public Bar (Bar Only)	13.5	1 per 25m² of GFA	1	1 per 25m² of GFA	1
TAB (sports Bar)	52.5	1 per 100m² of GFA	1	1 per 100m² of GFA	1
TAB (sports Bar) (Bar Only)	2.5	1 per 25m² of GFA	1	1 per 25m² of GFA	1
Total			14		14
			28		

Based on the above assessment Aurecon concluded that the proposal generates demand for 92 bicycle parking spaces. The provision of 156 spaces well exceeds the anticipated demand.

The design of all bicycle parking will comply with *Australian Standard 2890.3-1993 Bicycle Parking Facilities*.

3.4 Sustainability and Environment

In designing the proposal and emphasis has been placed on long term sustainability and good environmental management.

The submissions received in relation to the original proposal generally highlighted and supported the need to carefully manage the environment and ensure that the project is as sustainable as possible.

3.4.1 Sustainable Design Considerations

The submissions raised some specific issues in respect to the sustainability of the proposal. In particular the formerly proposed roof top garden was supported but it was suggested that it would be more effective if placed on the northern side of the main tower. The need for double glazing was also raised as was the need to investigate the use of solar for electricity and hot water supply.

These are quite specific issues and the majority can be dealt with as part of the building rules consent. Notwithstanding, the general principle of needing to design the project to be as sustainable as possible is acknowledged.

The proposed design has been developed with sustainability principles as fundamental drivers.

At present there is no assessment tool available from the Green Building Council of Australia (GBCA) for a mixed use development such as this. There are however now separate tools applicable for retail centres and multi-unit residential developments.

In order to bring some rigour to the detailed design, a methodology shall be employed whereby every element of the project is tested/challenged for performance from a sustainability standpoint.

Each element of the project will be reviewed for performance under four separate categories:

- Energy Cycle - *(both embodied and operational energy)*
- Resource Consumption - *(this would consider material selection as well as other resources such as water, people, land etc.)*
- Waste Generation - *(this would include construction waste, operational waste as well as pollution generation of all types including noise, water, air etc)*
- Community Impact - *(this would consider the local and wider communities)*

These four tenets shall each individually be acceptable in their effects and be sustainable in the long term. Sustainability in this respect having a simple definition that the consequences of the project will improve human well-being without compromising the local or global environment over the long term.

The building's form, material selection, insulation and shading will be modelled and optimised to provide the best value for money solution. Essentially this process determines the best passive elements that will contribute to the building's ability to maintain comfortable conditions for the occupants and tenants.

The development's active systems will be similarly modelled to deliver an equal level of optimisation. The outcomes of this process will be a development with a substantially reduced carbon footprint, reduced energy and water consumption, minimised pollution and enhanced community acceptance over conventional models.

Particular elements of the design to ensure delivery of a reduced carbon footprint shall include:

- Air quality sensors throughout the underground car park to regulate the exhaust fan speed to maintain acceptable environment within the area when the natural ventilation is insufficient;
- Consideration of low energy LED lighting;
- Movement detectors in the car park area will allow the lighting to dim when there is no movement sensed within the location;
- Indirect evaporative cooling to the retail spaces, delivering savings in the order of 40% over conventional refrigerated air conditioning system;
- CO2 detectors throughout the retail areas to regulate the quality of outside air to suit the occupancy levels experienced by the shopping areas;
- Dependent upon the supermarket lessee, it is intended to link the exhaust from the main cold room and freezer condensers to provide free heating to the retail spaces;
- Ventilated glazed atrium will provide day lighting and enhanced ventilation to the retail mall area, allowing the mall air conditioning to be operated in economy mode at appropriate times of the year;
- Domestic hot water for both the retail and residential spaces shall be sourced from solar systems with gas boosters;
- PV cells for electrical generation will be investigated but incorporation will depend on payback period and available rebates;
- Movement detectors in the common residential area will allow the lighting to dim when there is no movement sensed within the location;
- Cross flow ventilation will be provided to the apartments utilising the external stairs at the end of corridors as a chimney to enhance the ventilation rate through the corridors and from each apartment;
- Connection to the to the common area corridors shall be by means of acoustic, fire rated and dampered transfer ducts;
- Increased thermal mass is to be provided within the apartments by selective use of masonry walling particularly around the wet areas;
- High performance glazing is to be used to the apartments, with occupant controlled shading;
- Additional shading is to be provided by the external balconies to the north and south fenestration; and
- All apartments are orientated north/south where possible to maximise solar penetration and control.

The design will incorporate passive design solutions including provision of waterless urinals, use of recycled water for public toilet flushing, high performance glazing and occupant controlled external shading.

The individual components of the development shall be assessed against the appropriate Green Star tool as and when available. Hence the retail area can be assessed against the Green Building Council's Retail Centre VI and the residential component will use the Multi-Unit residential VI tool.

Particular emphasis shall be given to achieving maximum credit points under the assessment tool for low potable water use, low energy consumption and minimised maximum demand.

All accommodation elements will of course achieve compliance with a 5 star First Rate or Accurate energy assessment; The principals described above will be employed to ensure high outcomes are achieved, with an expectation that it will fall comfortably inside a Residential 5 Star GBCA assessment when it is released.

It is intended that the apartments make benefit of natural ventilation with overhanging balconies providing sun shading on the northern side. Glazing will be solar E for high thermal efficiency. Balconies will also have sliding timber screens for additional sun control and privacy.

3.4.2 Air quality

The requirement to comply with NEPM (Air Quality) Measures 1998 is accepted. In addition air quality and odour monitoring shall be undertaken in accordance with the site DEMP and CEMP, including monitoring within the site and at nearby sensitive receptors. Wind modelling will identify the likely distribution of particulate matter and odours. Sensitive receptors will be identified and background monitoring undertaken prior to construction. The occurrence of incidents will be identified and be appropriately managed to mitigate or minimise the associated impacts.

The legislated EPA requirements regarding the design of the development (ie location of residential dwellings in proximity to two main arterial roadways) will be followed.

The basement car park will have fixed open ventilation below the raised podium of the supermarket and retail spaces. This will vary around the site from 500mm to 1200mm depending on the site contours. Supplementary ventilation may be required if the natural ventilation is insufficient to meet AS 1668.

Café exhaust will be provided to specific exhaust shafts to roof level in accordance with the relevant standards. The exact location of the shafts will be determined during detailed design and comply with AS 1668. Correct ventilation and odour exhausting will ensure odour is disbursed and not creating adverse effects.

3.4.3 Noise

The development design will effectively manage noise generated from onsite activities because the enclosed nature of the shopping and the enclosed services court. Plant and equipment will similarly be enclosed and noise from plant will be mitigated through noise attenuation design measures.

Outdoor dining is likely to occur on the site however, this is unlikely to generate noise above the background traffic noise. Features such as awnings, umbrellas and

landscaping will assist to mitigate noise to diners from surrounding uses noting however, that this is a mixed use development located along two major traffic routes and therefore some noise when outside is to be anticipated.

With much of the parking contained within the basement minimal potential noise generation is likely from patrons exiting the site. Occupant amenity at night will be maintained by managing the at grade car park with security personnel and after hours video surveillance. In line with many sites that operate extended hours, signs can be placed in the car park areas reminding people to respect the neighbours.

Service vehicle access to the north of the site is located between retail and existing take away food/restaurant. To the south it will be located between the new western apartment complex and the supermarket. The western apartment complex will be designed to include noise attenuation features, and will be elevated above the delivery access way. Only two apartments on each level face east and these are designed to ensure that the balconies predominantly face north and south respectively. The living areas are also positioned to shield the bedrooms. This building will shield the adjoining western neighbours. Deliveries and servicing of the site will comply with EPA Noise requirements.

Further, accommodation unit design will achieve a high level of noise attenuation so that low internal noise levels are achieved. These treatments may include enhanced ceilings and floors to minimise noise transmission, double glazing and enclosed or low noise air conditioning equipment.

The level one commercial component is likely to comprise office related activities that will not create adverse noise effects. Commercial operating hours would typically occur between 8.00am and 6.00pm during weekdays and possibly Saturday depending on final tenant(s).

There is not expected to be any adverse effects from aircraft noise. The Australian Standard in relation to Acoustics – Aircraft Noise Intrusion –Building and Construction provides relevant guidelines. The Australian Noise Exposure Forecast (ANEF) system is a method of predicting exposure to aircraft noise.

Housing including serviced apartments is considered to be an acceptable use in a zone of less than 20 ANEF. The subject site (whilst located in proximity to the flight path for 12/30 runway) falls outside the ANEF 20-25 contour and thus requires no special treatment measures. External walls and windows will be designed and constructed with appropriate levels of noise attenuation to ensure the accommodation units enjoy a “residential” quality amenity.

3.4.4 Stormwater, water and WSUD

Stormwater and water management generally were amongst the issues raised in some submissions. Specifically submissions noted:

- a desire for water reuse;
- support for purposed WSUD measures;
- the need for the proponent to enter into discussions with City of West Torrens, City Assets Department to discuss effective and well integrated stormwater management system; and

- A correction is required in relation to the reference to a 150mm sewer pipe along Marion Road which should be 525mm.

The design of stormwater collection will acknowledge Water Sensitive Urban Design principles and will encompass all aspects of integrated urban water cycle management including water supply, sewage and stormwater management and address the sustainability of the water environment. This will be designed in conjunction with Council.

Council requirements relating to flooding will be carefully considered to ensure that the development will not be subject to the inflow of floodwaters. This is a key requirement given the development has a basement level.

Capturing and discharging of external floodwaters is not a viable option. The best way to ensure that this is not a problem is careful grading of the external areas, to create "bunds", and stop the inflow of stormwater (an example of this system being adopted is the RAA Building at Mile End. The entry points off Richmond Road were treated by the creation of levees and bunds).

Council policy seeks to limit the post development 100-year ARI stormwater discharge to, the equivalent 5-year ARI pre-development discharge. The development will be designed to address these requirements.

Stormwater detention by itself will not suffice, and will need supplementation by other means as discussed below.

The initial stormwater flows may be taken out the street kerb and water table. It is estimated that four will be allowed, with two fronting Anzac Highway and two fronting Marion Road. These will probably be limited to a peak discharge of 20 l/s. The balance of the stormwater will need to be contained, and released at a rate not exceeding the 5-year ARI pre-development discharge.

Potential stormwater treatments that will be examined, and implemented in varying degrees include:

- The use of permeable paving.
- Underground Storage tanks (capacity in order of 100,000 litres). This tank will be located under the down ramp in the basement car park, can act as a temporary storage buffer, and a permanent storage buffer for water reuse. The stormwater that is collected from the pavements will require some quality treatment, to reduce the levels of rubbish and oils (water collected from the roof areas will not require any treatment). This only applies to stormwater that is for irrigation re-use. Stormwater re-use for internal building usage will require treatment to satisfy the requirements of the EPA Class 2 standards.
- The use of swales can act as conduits, and to some extent stormwater retention/detention. Swales can be further enhanced by introducing selected planting that act as natural filters.
- It is acknowledged that there may not be sufficient space for the creation of formal swales. However, all external landscaping beds and general garden areas have the potential to become swales, simply by depressing the central point of these areas.

Water quality treatment will be carefully considered to ensure that all stormwater for reuse, and excess stormwater exiting the site, is clean and treated to appropriate levels.

Options that are considered appropriate for this development (in addition to the above) include:

- Gross Pollutant Traps. These devices may be installed at the outlet end of the stormwater discharge lines. Whilst these devices may not remove oils and fine sediments, they do remove 98% of hard refuse.
- Oil and plate separators. These devices, as the name suggest, remove oils and fine suspended solids.
- Design of all paved areas shall be undertaken to ensure "first flush" principles are considered.
- This design principle is based on the premise that the majority of pollutants contained within paved areas are washed away with the first 5mm of any rainfall event.

With these practices, the development will achieve best practice water sensitive design outcomes.

During the detailed design phase opportunities for additional specific WSUD elements and reuse (such as capture and reuse for toilet flushing) will be considered and included as possible.

3.4.5 Waste Management

Waste removal for business will be via rubbish skips located in the service area. These skips will be removed by commercial contractor on a regular basis. All paper and cardboard will be recycled and placed in the on site compactus. Material will be bailed and removed as required but generally weekly as a minimum.

Businesses will be encouraged to promote green purchasing that avoids unnecessary packaging, give preference to products with recycled content.

Recycling for the business area will be enforced with all paper and cardboard to be placed in the compactus. Glass and plastic will be separated into discrete receptacles.

Waste removal for apartments will be via a third party collection. It is intended that residential waste will be stored in multi coloured four wheel 660 litre garbage bins located at ground level with access for removal by contractor. It is anticipated that 10 (coloured) bins will be provided for general waste and 2 (coloured) bins for recyclable materials. These will be moved to the general ground floor loading area using the goods lift for commercial removal on a weekly basis.

3.4.6 Site Contamination

Enquiries further to the site history report prepared by GHD indicate that it is considered relatively unlikely that there is any contamination on the site. Previous geotechnical work by Coffey Geotechnics in 2008, included drilling boreholes to 19.35m depth. This report gave no indication of contamination indicators such as odours, staining, ash, cinders or buried waste. GHD has advised that if ash is present is it likely to be the top 300mm of soil.

In order to ensure the issue of contamination is addressed, an intrusive instigation will be undertaken at the site including the testing of excavated material. Reports of the testing will be provided to the appropriate authorities and, as required appropriate levels of remediation performed.

3.4.7 Wind Tunnelling

The proposed development provides a two storey podium with low rise towers (four storey) to the west and east. The serviced apartments and commercial development in the centre of the development again is lower rise. The Anzac Highway apartments are eight storeys above ground level but with a relatively small footprint towards the prevailing winds. These are located above retail.

The varied height and low podium components are not anticipated to increase adverse wind effects. The orientation the various residential components again do not have large footprints and it is anticipated will produce limited impacts on adjoining properties whilst providing a degree of screening to the landscaped car park between the new development and the Highway.

The proposal is not expected to create significant changes to the current microclimatic conditions.

3.4.8 Light Overspill

All lighting design will conform to the relevant Australian Standards.

Specifically the at grade car park lighting will also be managed with down cast lighting to avoid light spill to nearby residential properties.

Light spillage particularly from security lighting has been considered and will be managed (angled and screened) to avoid adverse impacts.

3.4.9 Overshadowing

Shadow modelling undertaken in respect of the project, indicates that there will be minimal shadowing of adjoining properties during the winter solstice (at least 3 hours of direct sunlight to the major portion of the open space area); weather statistics indicating the likely number of cloudy days either side of the winter solstice further reduces the effect of overshadowing.

A copy of the shadow modelling is included as **Attachment 8**.

3.4.10 Building Code Requirements

Submissions highlighted the need for the proposal to comply with the Building Code of Australia and in particular in relation to fire related matters in accordance with all the relevant standards. Liaison with the MFS during design phase is encouraged.

The design as is required by the Development Act, 1993 will be developed with documentation in accordance with the Building Code of Australia and relevant Australian and New Zealand standards. This process will be coordinated with the project certifier and as part of the process. Consultation will occur with the MFS SA in respect to the solutions developed, operation requirements and other requirements.

3.4.11 Construction Environment Management Plan

The City of West Torrens has requested that a Construction Environment management Plan be provided that outlines the potential impacts on the Council's infrastructure.

A draft CEMP was provided in the original Development Report.

A final Construction Environment Management Plan (CEMP) will be prepared as part of the construction contract. Construction management together with the ongoing operational management will be undertaken within this framework as outlined below.

There are three existing retail shops, four detached dwellings and four residential units that will be demolished on the site. No obvious asbestos is contained within these buildings; however construction drawings and specifications will contain appropriate clauses for the identification and safe removal and disposal of hazardous material discovered on site during demolition.

All materials transported to site will be done so with minimal packaging required for safe transportation to site. All goods will have unnecessary packaging removed at the point of pick-up. Materials transported to site will be done on an as required basis to ensure minimal storage at the construction site.

On site waste will be segregated and reused at the point of generation where practical. Segregated waste will transport to a resource recovery/recycling facility.

Normal construction hours will be 0700 am to 1630 pm Monday to Saturday. Any noise generating activities will take place during these times. Overtime may be worked during the construction programme but will be subject to approval of the superintendent and all noise generation activities must be within the above time zones, and comply with the EPA noise policy.

The site will have safety hoardings around the construction zone with safe footpath access maintained at all times. During times of vehicle access to the site, the contractor will maintain appropriate traffic controls.

In terms of traffic impacts the CEMP will address the need for the development phase to provide for the continued operation of the Highway Hotel and limit any impacts on the operation of the arterial road network.

Key elements for managing traffic impacts during construction will include the need to stage works, and consider the access needs and time of works. For example deliveries and work vehicles will be directed to the site in the manner that will cause the least disruption to surrounding residential properties and traffic using the surrounding arterials. This may require some balancing and understanding that the development will not be impact free. The impacts will however be minimised. The plan will need to address how the excavated material will be removed, how deliveries are made to the site and how the existing parking can be maintained during the construction phase. It is noted that this will be simpler with the revised proposal that does not require any excavation of the existing car park area.

A site construction plan will be developed with the successful contractor to minimise the impact of noise and traffic impacts.

The contractor will observe and comply with all the environmental requirements that apply to the area in which the contractor's activities are to be carried out, including

(without limitation) dust control, noise and vibration, waste management and storage of hazardous material as detailed below.

Dust control and sediment management

The contractor must take all steps to prevent nuisance caused by dust. Watering must be used where necessary to reduce dust created by the works. Generally water shall be recycled suitable for use in dust suppression. Where possible stormwater on the site shall be collected and used for this purpose.

Stormwater collection and storage is described in previous sections. Managing dust during ongoing operations will probably be undertaken by a contractor using street sweeping machinery. Water can be drawn from the site storage tanks to fill the street sweeper tanks as part of the normal cleaning/sweeping dust suppression process used around the world.

Sediment management would occur through straw bales, geotech fabric and physical barriers. These techniques would be specified in the CEMP.

The contractor will be required to comply with NEPM (Air Quality) Measures 1998 and monitoring of air quality will be required by the CEMP, including monitoring within the site and at nearby sensitivity receptors. Wind modelling will identify the likely distribution of particulate matter and odours. Sensitive receptors are to be identified and background monitoring undertaken prior to construction.

Noise and Vibration

The contractor must take all practicable precautions to minimise noise arising out of or resulting from the activity associated with the work. The contractor must ensure that noise producing equipment used on the job utilises the most advanced technology applicable to minimise noise levels, and that the use of noisy equipment is limited to only necessary application in the performance of the construction task. Construction noise will be managed under the CEMP in accordance with the relevant standards.

Background noise assessment will be undertaken prior to construction this will inform both the design and construction plan.

Disposal of wastes and refuse

The contractor will be responsible for the proper disposal of all solid, liquid and gaseous wastes in accordance with all statutory requirements and EPA guidelines.

Refuse arising from the execution of work (including food scraps and the like) must be removed from the site. Refuse must not be dropped free, but hoppers and shutters, chutes or refuse buckets must be used. All hoppers, chutes or buckets for refuse must be covered or be of such design as to fully confine the material and prevent dissemination of dust.

No motor vehicles shall leave the site laden with any material unless it is loaded in a manner that will prevent discharge or dropping of any materials. The contractor must ensure that the wheels, tracks and body of all parts and equipment leaving the site are free of mud and contaminates.

Trucking

No motor vehicles must leave the site laden with any material unless it is loaded in a manner that will prevent the discharge or dropping of any materials. The contractor must ensure that the wheels, tracks and body of all parts and equipment leaving the site are free of mud and contaminates.

Stormwater runoff

Stormwater runoff will be captured and filtered for storage and reuse. Excess water will be discharged into the existing stormwater system if not required for reuse.

Hazardous materials on site

If at any time the contractor discovers the presence on site of any material containing or likely to contain a substance defined or listed in the National Occupational Health and Safety Commission Guidance Note for Determining and Classifying a Hazardous Substance [NOHSC:30011 (1991)] it must:

a) not disturb the material under any circumstance;

b) contact the Superintendent and inform the Superintendent of the existence of the material on site; and

c) ensure that all persons are protected from exposure to the material until the nature of the material has been competently determined.

The Superintendent must inspect the site and must issue directions to the contractor in respect to further action to be taken.
All such materials upon the site must if so directed by the Superintendent be treated or removed in accordance with the requirements of Worksafe Australia "Code of Practice" for the safe removal of such materials and any other Act or Ordinance in South Australia that relate to the removal of such materials.

3.5 Economic Issues

It is considered that this proposal will have a positive and significant impact on the State's economy.

The proponent has finance and is ready to pursue the project to meet the deadline imposed as part of the NRAS licencing conditions.

The proposal will create significant amounts of employment. This includes both long term full time employment in the retail and commercial premises along with construction jobs during the building phase. The project will also add to the investment in the locality contributing to both direct and indirect economic benefits.

Based on research and analysis by Property Insights[2] for the Urban Development Institute of Australia, the realisation of this proposal will directly contribute to in the order of 234 full time jobs, almost $2.6 million in additional state and federal taxes, and contribute approximately $8.25 million in wages. Indirectly it will contribute in the order of 413 full time jobs, $5.1 million in state and federal taxes and $31 million in wages.

[2] Property Insights, Property development Industry Economic Impact Study – prepared for the UDIA, March 2010.

As a landmark development in a prominent location this project will demonstrate TOD principles and contribute significantly to revitalisation of the locality and the Neighbourhood Centre in particular which is at present tired, run down and underperforming. The retail floor space within the Plympton Neighbourhood Centre Zone does not meet all the needs of the local catchment in terms of choice and retail range.

Retail modelling undertaken in respect of the original proposal confirms there is unmet demand for shopping facilities in the area for both food and non-food items.

The development will also lead to a more urban lifestyle expanding the apartment living experience to date largely only experienced in the CBD. Facilities including cafés and restaurants will contribute significantly to economic vitality of the area that is midway between the coast and the CBD.

The development will contribute significantly to the affordable housing product enabling a new generation to engage in the housing market.

The development provides for urban consolidation that will optimise efficient economic service provision including transport efficiencies. The proposal will support the existing public transport within the locality.

3.6 Infrastructure

Infrastructure servicing the proposal remains unchanged. It is however noted that sewer pipe located in Marion Road has a diameter of 525mm.

3.7 Planning and Environmental Policies and Legislation

This section addresses issues of planning policy. This is largely unchanged from the original proposal with the exception of the key changes since 2009 outlined at section 1.4 above.

Notwithstanding a number of submissions raised comments that are broadly categorised as matters of planning policy. The key issues can be summarised as follows:

- Proposal doesn't comply with provisions in Development Plan such as height and retail floor space and would be non-complying.
- Unclear how the proposal fits within the centres hierarchy;
- Demand for retail not demonstrated, including impacts on Kurralta Park and Harbour Town Woolworths;
- Proposal being for short term accommodation will not increase residential population within Council area;
- Need to demonstrate demand for short term accommodation; and
- Interface with the surrounding residential development;

3.7.1 Current Development Plan Policy and Section 46

This development proposal has been afforded status pursuant to Section 46 of the *Development Act 1993*, as being of major social, economic or environmental significance. Typically such projects are not appropriately contemplated by current Development Plan policy making one of the more traditional assessment processes inadequate for a complete assessment.

Section 46 provides for a specific assessment process to be followed, including, in this instance, the preparation of a Development Report and this Amendment to the Development Report prepared in accord with and, that addresses the matters set out

in the Guidelines document issued by the Development Assessment Commission. To this end the assessment of the proposal is a merit based assessment based on the specifics of the proposal.

The Development Plan is therefore accorded less relevance in such an assessment than would otherwise be the case.

Notwithstanding, a development proposal that is of a type listed as non-complying pursuant to the Development Plan is not automatically refused planning approval. Following the non-complying assessment process non-complying development applications can be approved.

The fact that this application might trigger the non-complying process if not considered pursuant to Section 46, does not make it an inappropriate form of development for the site.

The proposal is generally in accord with the Government's published strategic directions as well as Council's draft new zoning. It also includes neighbourhood centre level retail which is contemplated by the current policy.

3.7.2 Impacts of retail floor space

Of key significance to this assessment is that the proposal is in accord with strategic government policy in that it provides for a corridor development at the intersection of two strategic transport routes being Anzac Highway and Marion Road. To this end the proposal will provide for increased population density to support the surrounding public transport and provide for employment.

The Development Plan library within South Australia sets out a hierarchy of centres with the CBD being pre-eminent, followed by regional centres, district centres, town centres, and local centres. Previously this hierarchy included neighbourhood centres, between the level of a district centre and a local centre. The current zoning for most of the site, although not directly relevant to this assessment is Neighbourhood Centre Zone. Neighbourhood level centres typically have a floor area of between 1500m² and 6,000m². At 5076m² this falls well within the recognised extent of a neighbourhood centre.

A retail assessment was undertaken as part of the initial Development Report prepared in relation to this proposal. Modelling was undertaken in respect of a redevelopment of the site to provide a total of 6,500m² of retail floor space. This modelling concluded that redevelopment of the centre would have an impact of less than 2.3% on existing centre which is not considered to be significant.

This modelling did not take into account the Woolworths that has been subsequently constructed at Harbour Town. Harbour Town is typically a quite specific form of retailing (brand direct outlets) and is almost 4km from the subject site, and to the west of Tapley's Hill Road. Its specific retail pull is such that it is likely to attract custom from the wider metropolitan area. Notwithstanding the supermarket is likely to trade essentially based on a primary and secondary catchment similar to other supermarkets with some secondary shopping by persons primarily visiting the site for brand direct outlet shopping. In such a location it would not fall within the direct (Primary) catchment of the new centre and accordingly is unlikely to be impacted by the proposed development.

Notwithstanding, the proposal has now been scaled down by 22% to provide a total of 5076m² of retail floor area, including a full line supermarket of some 3086m². It is considered that this level of retailing can be supported on the site without undue impact on existing centres.

Further, the retailing activity on the site will complement the operation of the site as vibrant mixed use corridor precinct.

3.7.3 Demand for short term accommodation

The original proposal provided that all apartments would be used for short term residential development.

The amended proposal includes 26 serviced apartments for short term accommodation.

This land use has been included on the site in recognition of its location close to the CBD and being well connected by major public transport links to other key employment centres.

Figures from the SA Tourism Commission[3] (hotels, motels, guest houses and serviced apartments) for the year ended June 2012, show that Adelaide currently has 7255 rooms (considering establishments of 15 or more rooms). Demand for rooms is 1,800,000 room nights per annum. This was an increase of 2.7% over the previous 12 months and equates to an occupancy rate of 71%. Although occupancy was down 1% from the previous 12 months, revenue and takings both increased.

Refurbished and new tourism product is also a key priority for the South Australian Tourism Commission as stated in its documents and Annual Report.

This project will add high quality new accommodation product to the State's supply.

3.7.4 Population targets

The "30 Year Plan for Greater Adelaide" sets population targets for each region. The subject site is located within the Western Region. Within corridors in the western region as a whole, a target of 33,060 new dwellings and a population of 62,100 persons is identified.

This is a comparatively small infill site of 2 hectares, but will nevertheless contribute in the order of 180 new permanent residents to the City of West Torrens. In addition, the serviced apartments will contribute a continual, albeit not permanent, population of in the order of up to 52 people. Thus the site has the capacity to provide ongoing residential accommodation for some 200 – 250 people.

3.7.5 Interface with existing residential development and residential zone

A small portion of the site is currently zoned residential. This covers the smaller allotments to south western corner fronting onto Elizabeth Avenue.

The Residential Zone within the vicinity of the Elizabeth Avenue frontage is a mix of detached dwelling and groups of units and in predominantly single storey.

[3] South Australian Tourism Commission, Accommodation Annual Results – Hotels, Motels, Guest Houses and service apartments (with 15 or more rooms) year ended 2012.

Opposite the site at the corner of Elizabeth Avenue and Marion Road is a group of four single storey ground level units. These derive access from a central driveway from Elizabeth Avenue and consequently the two units closest to the site each have a side wall (setback about 6-8m) facing the site with one window in each.

The next property along to the west on the corner of Alice Street and Elizabeth Avenue is the South Adelaide Christadelphian Hall and is non-residential. It is also largely side facing to Elizabeth Avenue.

Further west on the western corner of Alice Street is another single storey group of units, four face onto Alice Street. A small unit fronts on to Elizabeth Avenue. Beyond this to the west (and west of the site) is another group of single storey units side facing to Elizabeth Avenue.

A single storey singe detached dwelling is located on the site to the immediate west of and abutting the subject land and west beyond that are single storey, single detached dwellings.

To the west fronting on to Anzac Highway is a three storey residential flat building.

A Catholic school is located within the Residential Zone at the end of Elizabeth Avenue.

Under the revised proposal, both corners of the site along Elizabeth Avenue will be developed with four storey residential buildings with undercroft car parking. This has been scaled down from the original proposal to have a more residential feel. These residential uses are complementary to the residential development within Elizabeth Avenue. Resident's movements and activities will be similar to those in the surrounding dwellings.

These building forms will have a residential vernacular.

Shadow diagrams show that shadowing will occur in June and this will be most pronounced in the morning, with shadows decreasing as the sun rises in the sky during the afternoon. Notwithstanding each property will receive over 3hrs of direct sunlight at the winter solstice.

Access to the site has been designed to seek to minimise conflict between the commercial operations on the site and the surrounding residential development.

3.8 Public Consultation Responses

The public/agency comments received in respect to the first round of consultation have been identified and a summary table prepared as per section 1.3.

In addition the key aspects of the submissions have been dealt with in more detail through section 3.0 above.

Notwithstanding it is considered that the following issues that have not been covered elsewhere are worthy of further discussion.

3.8.1 Proximity to Adelaide Airport

Although no objection to the project was raised on these grounds the submissions noted the need for the proposal to have regard to the height limitations for the site based on the Adelaide Airport Obstacle Limitation Surface.

The submission also noted that Adelaide Airport Limited will require 48 hours' notice of any cranes to be erected on the site and that the assessment of cranes may also need to be conducted by the Civil Aviation Safety Authority (CASA).

Restrictions may also be applied to lighting on the site which will need to be shielded from aircraft flight paths.

Based on an assessment of the Civil Aviation Safety Authority Manual of Standards (MOS) Part 139 the inner horizontal surface of the Obstacle Limitation Surface (OLS) for a Precision Approach Category 1 Airfield is 45m above the runway height and extends for a radius of 4000m. With a runway height of nominally 3.5m AHD (Adelaide Airport), the inner horizontal surface height is 48.5m AHD. PANS-OPS surface at the location of the proposed development is 62.5m AHD.

With a site level of 15m AHD at the proposed construction location, the permissible maximum height to not breach the OLS is 33.5m whilst the PANS-OPS surface criteria allows a height of 47.5m.

The revised proposal is 33m. This tallest building on the site is therefore below the OLS for the site.

Notwithstanding, the need for additional referrals and approvals is noted and, all approvals as required from AAL and /or CASA will be obtained.

3.8.2 Concern about the likely late night trading and weekends.

The opening hours of the existing Highway Hotel are not proposed to alter as part of this proposal and as such conditions remain unchanged.

3.8.3 Underground power on the site and surrounds.

All new services will be either underground or concealed within the structure with no changes proposed to the current street conditions.

3.8.4 Public notification didn't clearly identify true nature of the project.

It was contended that further community consultation should be undertaken in order to achieve quality development in this locality.

The development was advertised by the Assessing Authority and is considered to reflect the nature of the proposal.

This further round of public consultation (that is not specifically required by the legislation) should fully address this matter.

4. COMMITMENT TO CONDITIONS

The Palmer Group will abide any reasonable Conditions applied to an approval that are applied in order to avoid, mitigate or satisfactorily manage and control any potentially adverse effects of the development on the environment.

In addition the Palmer Group will abide by the requirements of all legislation application to the development and operation of the site.

5. CONCLUSION

In conclusion the original proposal was generally supported via the consultation process. Comments were received in respect to specific issues such as traffic movements, car parking, environmental issues and design.

The refinement of the design has enabled the proposal to now address many of the matters identified. Specifically the project provides a corridor development that will comprise a mix of uses leading to a vibrant community and centre.

The development will support the use and patronage of surrounding public transport and traffic impacts can be managed.

The design provides for a landmark development that appropriately transitions from typical suburban development to more responsive corridor development – sensitively increasing the density on the site.

The building form maximises the visual interest and minimises intrusions from the perspective of visual amenity, scale, bulk, overlooking and overshadowing.

The development will employ green building design techniques and provide a benchmark for future corridor developments.

The development will lead to the attainment of Government objectives through increasing population, providing affordable housing, increasing services and walkability, support public transport use and provide for increased sustainability.

CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

ATTACHMENT 1

KEY CHANGES

ANZAC HIGHWAY

EXISTING HIGHWAY

MARION RD

ELIZABETH ST

STAIRS
Not Enclosed

RETAIL
477.89

RETAIL
132.07

RETAIL
110.36

STAIRS
14.56

FOYER
46.40

LIFTS
6.00

RETAIL
145.28

BIKE RACKS

WAITING BAY

EXISTING NEIGHBOURING BUILDING

EXISTING NEIGHBOURING BUILDING

DEVELOPMENT BOUNDARY LINE

DEVELOPMENT BOUNDARY LINE

RETAIL
91.75

RETAIL
85.69

RETAIL
79.84

RETAIL
88.87

FOYER
19.69

STAIRS

LIFTS

UTILITY
36.13

RETAIL
80.91

RETAIL
82.48

SERVICE
106.60

SUPERMARKET
3085.79

TOILETS
66.41

RETAIL
13.65

RETAIL
70.29

MALL
430.24

RETAIL
53.55

RETAIL
105.57

STAIRS

SERVICE
15.68

RETAIL
78.11

RETAIL
66.85

RETAIL
113.73

RETAIL
117.33

3273

RAMP DOWN

CONVEX MIRROR

1:10

EAST TOWER PARKING

RAMP UP

1:12

RAMP UP

EAST TOWER

1:12

RAMP UP

WEST TOWER PARKING

WEST TOWER

WEST TOWER PARKING

SCREENING GATE

DN

STAIRS

UP

UP

UP

UP

UP

UP

UP

UP

UP

UP

UP

UP

UP

- AMENITIES
- CARPARK
- FOYER
- HIGHWAY
- LIFTS
- MALL
- PLANT/UTILITY
- RETAIL
- SERVICE
- STAIRS
- SUPERMARKET
- PEDESTRIAN PAVEMENT

0 2500 5000 7500 10000 12500mm
SCALE 1:250 AT ORIGINAL SIZE

N

PRELIMINARY

A004 Highway Development

15.05.2013 -REV 0

RETAIL GROUND FLOOR

GHD CONNOR HOLMES
A FYFE COMPANY

EXISTING HIGHWAY

ANZAC HIGHWAY

MARION RD

SUPERMARKET/RETAIL
DEVELOPMENT

WEST TOWER

EAST TOWER

ELIZABETH ST

LEGEND

- 2009 PROPOSAL GROUND LEVEL
- 2009 PROPOSAL LEVEL 1
- 2012 PROPOSAL GROUND LEVEL
- 2012 PROPOSAL LEVEL 1
- 2009 ROADWAYS
- 2012 ROADWAYS

0 2500 5000 7500 10000 12500mm
SCALE 1:250 AT ORIGINAL SIZE

N

PRELIMINARY

A500 Highway Development

15.05.2013 -REV B

PROPOSAL COMPARISON GROUND

GHD CONNOR HOLMES A FYFE COMPANY

EXISTING HIGHWAY

ANZAC HIGHWAY

MARION RD

SUPERMARKET/RETAIL
DEVELOPMENT

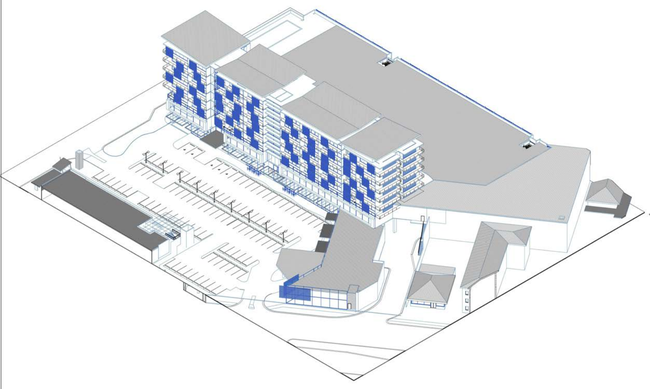
WEST TOWER

EAST TOWER

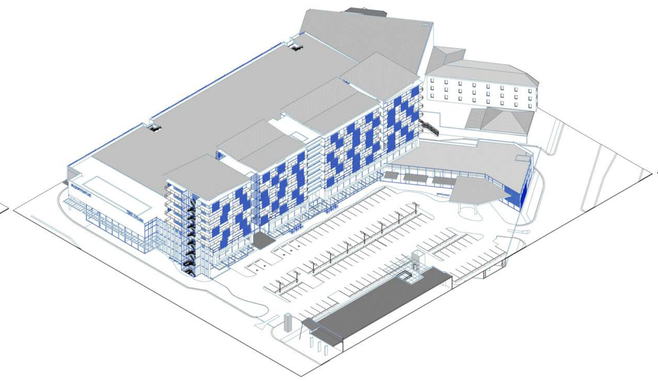
ELIZABETH ST

LEGEND

- 2009 PROPOSAL GROUND LEVEL
- 2009 PROPOSAL LEVEL 1
- 2012 PROPOSAL GROUND LEVEL
- 2012 PROPOSAL LEVEL 1
- 2009 ROADWAYS
- 2012 ROADWAYS



VIEW A



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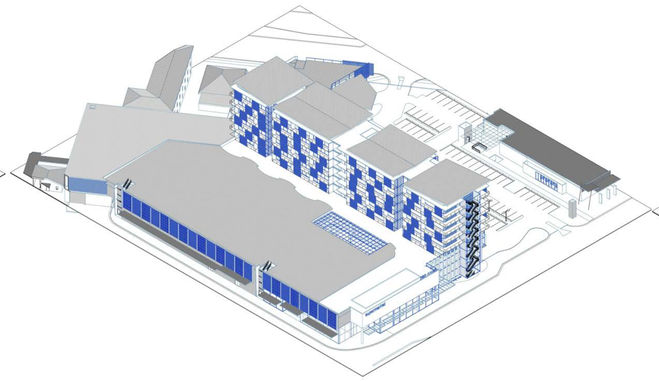

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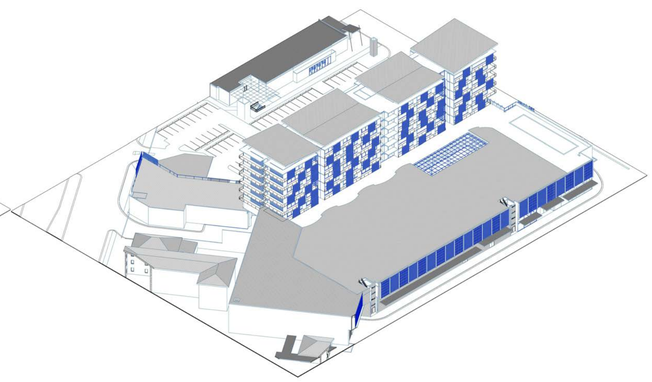
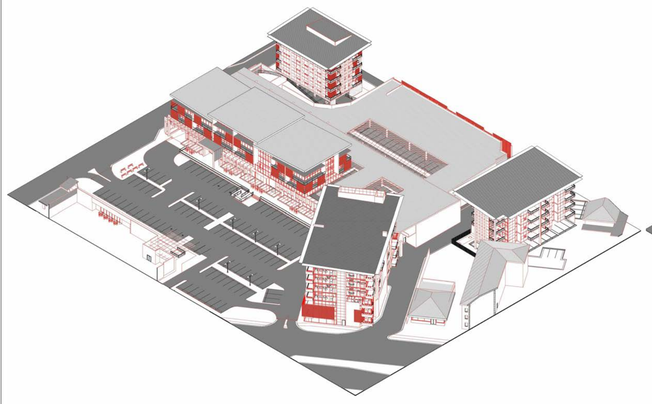
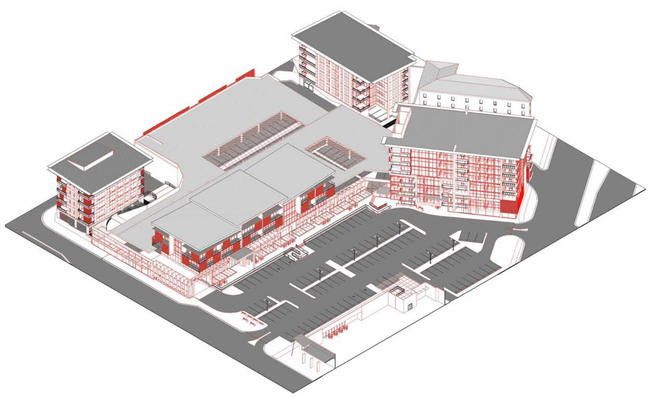


VIEW D

2009 PROPOSAL



VIEW A



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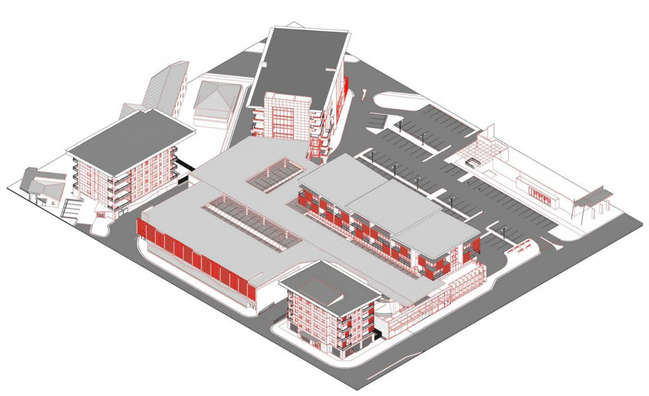

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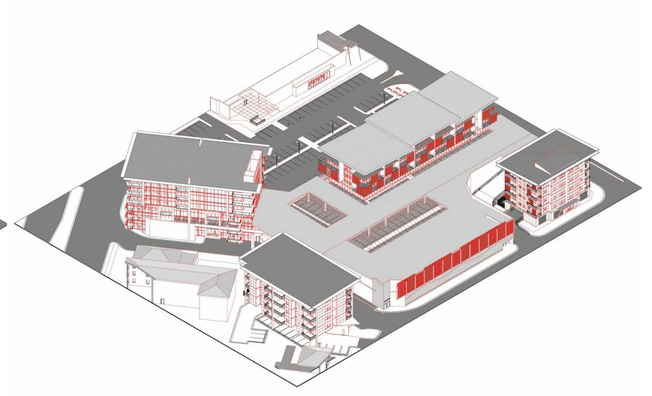

VIEW D

2012 PROPOSAL

CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

ATTACHMENT 2

DEVELOPMENT ASSESSMENT COMMISSION GUIDELINES

Development Act 1993

Guidelines

for the preparation of a
DEVELOPMENT REPORT

Shopping Centre and Residential Apartment Complex at the corner of Anzac Highway and Marion Road, North Plympton

Proposal by Palmer Group

Development Assessment Commission

Guidelines

for the preparation of a
DEVELOPMENT REPORT

Shopping Centre and Residential Apartment Complex at the corner of Anzac Highway and Marion Road, North Plympton

Proposal by Palmer Group

Planning SA

Primary Industries and Resources SA

136 North Terrace, Adelaide
GPO Box 1815
South Australia 5001

Development Assessment Commission
South Australia

www.planning.sa.gov.au/dac

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CONTENTS

1 BACKGROUND

1.1 The Minister for Urban Development and Planning is assessing the environmental, social and economic impacts of the proposal by the Palmer Group (trading as Highway Inn Properties Pty Ltd), for a Shopping Centre and Residential Apartment Complex at North Plympton. The subject land is more particularly described as the south-western corner of the intersection bounded by Anzac Highway, Marion Road and Elizabeth Avenue, North Plympton with the western boundary following property boundaries as shown in the site plan in Appendix B. The proposed development is underpinned by Transit Orientated Development principles as its location is at the junction of two bus routes and is in close proximity to the Glenelg Tramway.

1.2 On 24 May 2007, the Minister for Urban Development and Planning made a declaration in *The South Australian Government Gazette* for the proposed development to be assessed as a Major Development under the provisions of Section 46 of the *Development Act 1993* (the Act).

1.3 The proposal is to construct at the 1.7 hectare site, a shopping centre plus basement car parking with residential apartments up to 10 storeys in height overall, as shown in Appendix B.

1.3.1 The proposal will comprise the following;

- In the order of up to eight levels of residential apartments with associated car parking;
- A supermarket in the order of 3,250 m^2 floor space;
- In the order of 1,500 m^2 floor space of speciality retail shopping outlets incorporating cafes and restaurants;
- Public car parking spaces dispersed at street level and at basement level to serve the existing Highway Inn and the proposed development;
- Dedicated car parking for the residential apartments;
- Demolition of existing retail tenancies on Marion Road;
- Demolition of four residential properties on Elizabeth Avenue, which border the site to the South;
- A pedestrian plaza at street level between the retail elements and the Highway Inn;
- The use of contemporary architecture to invigorate the surrounding, under-utilised land;
- The creation of a new streetscape for Elizabeth Avenue; to enhance amenity, safety and security through passive surveillance and increased activity;

- Enhanced streetscape links and shared-use paths linking the development to the Marion Road tram stop (approximately 120 metres to the South), upgraded bus shelters, provision of secure cycle storage; and linkages to the extensive cycle routes in the area;

- Sustainability features in order to achieve at least a 4 star Design rating for the shopping centre;

- Sustainability features in order to achieve a 5 star Design rating for the residential apartments; and

- Retention of the Highway Inn Hotel.

1.4 The Development Assessment Commission (Commission) has now determined that the 'Highway Inn' proposal will be subject to the processes and procedures of a Development Report (DR), as set out in Section 46D of the Act.

1.5 The Palmer Group (the proponent) has been advised by the Minister for Urban Development and Planning that a DR is required to assist the Governor in assessing the environmental, social and economic impacts of the proposal. A DR is a document that describes what the proponent wants to do, what the impacts will be and how the proponent plans to manage the impacts.

1.6 The Commission has prepared these Guidelines based on the significant issues relating to the proposed development. These Guidelines identify the potential effects of the proposal and the matters that should be addressed in the DR.

1.7 An opportunity for public comment will occur when the completed DR is released. At that time, an advertisement will be placed in the *Advertiser* and *Guardian Messenger* newspaper to indicate where the DR document is available and the length of the public exhibition period. During this time written submissions can be made to the Minister for Urban Development and Planning.

1.8 The Commission's role in the assessment process is now fulfilled. The Minister will continue with the assessment process under Section 46 of the Act, from this point. The object of Section 46 is to ensure that matters affecting the environment, the community or the economy to a significant extent, are fully examined and taken into account in the assessment of this proposal.

1.9 The documentation and the analyses from the assessment process will then be used by the Governor in the decision-making process under Section 48 of the Act, to decide whether the proposal can be approved and, if so, the conditions that will apply.

2 THE DEVELOPMENT REPORT PROCESS

2.1 A DR, as defined in Section 46 of the Act, includes a description and analysis of issues relevant to the development and the means by which those issues can be addressed.

2.2 The DR should detail the expected environmental, social and economic effects of the development. The DR must consider the extent to which the expected effects of the development are consistent with the provisions of any relevant Development Plan, the Planning Strategy and any matter prescribed by the Regulations under the Act. The DR should state the proponent's commitments to meet conditions (if any) to avoid, mitigate or satisfactorily control and manage any potential adverse impacts of the development on the environment. Further to this, any other particulars required by the Minister must be considered.

2.3 In preparing the DR, the proponent should bear in mind the following aims of the DR and public review process:

2.3.1 To provide a source of information from which interested individuals and groups may gain an understanding of the proposal, the need for the proposal, the alternatives, the environment which would be affected, the impacts that may occur and the measures to be taken to minimise these impacts.

2.3.2 To provide a forum for public consultation and informed comment on the proposal.

2.3.3 To provide a framework within which decision-makers may consider the environmental aspects of the proposal in parallel with economic, technical and other factors.

2.4 Following the release of these Guidelines (Section 46D Appendix A):

2.4.1 The DR must be prepared by the proponent in accordance with these Guidelines.

2.4.2 On completion of the DR, the report is submitted to the Minister for public release.

2.4.3 The DR is referred to the City of West Torrens Council and to any prescribed authority or body and other relevant authorities or bodies for comment.

2.4.4 Public exhibition of the DR document by advertisement is undertaken for at least 15 business days and written submissions are invited.

2.4.5 Copies of the submissions from the public, Council and other relevant agencies will be given to the Palmer Group soon after closing of the public comment period.

2.4.6 The proponent may prepare a written response, in a 'Response Document', to the matters raised by the Minister, and Council or any prescribed or specified authority or body, and the public. The proponent is given 10 business days to provide this Response Document to the Minister.

2.4.7 The Minister then prepares an Assessment Report taking into account any submissions and the proponent's Response. Comments from the Council or other authority or body may be considered as the Minister thinks fit.

2.4.8 The Assessment Report and the Response Document will be kept available for inspection and purchase at a place determined by the Minister for a period determined by the Minister. Availability of each of these documents will be notified by advertisements in *The Advertiser* and *Guardian Messenger* newspapers.

2.4.9 A copy of the DR, any Response Document prepared by the proponent and the Assessment Report will be given to the Council.

2.4.10 When a proposal is subject to the DR process, the Governor is the relevant decision maker under Section 48 of the Act and must have regard to:

- Provisions of the appropriate Development Plan and Regulations
- If relevant, the Building Rules
- The Planning Strategy
- DR and the Assessment Report
- If relevant, the *Environment Protection Act 1993*.

2.4.11 The Governor can indicate at any time, and prior to completion of the assessment process, that the development will not be granted authorisation. This may occur if it is clear that the development is inappropriate or cannot be managed properly. This is commonly referred to as an "early no."

3 THE DEVELOPMENT REPORT DOCUMENT

3.1 The Guidelines set out the major issues associated with the proposal and their degree of significance as determined by the Commission. It describes each issue and then outlines the way that these issues should be dealt with in the DR.

3.2 In these Guidelines, the terms 'description' and 'discussion' should be taken to include both quantitative and qualitative material as practicable and meaningful. Similarly, adverse and beneficial effects should be presented in quantitative and/or qualitative terms as appropriate.

3.3 The main text of the DR should be clear and precise and presented in terms that are readily understood by the general reader. Technical details should be included in the appendices so that the DR forms a self-contained entity.

3.4 The document should give priority to the major issues associated with the proposal. Matters of lesser concern should be dealt with only to the extent required to demonstrate that they have been considered to assist in focussing on the major issues.

3.5 THE DR SHOULD PROVIDE THE FOLLOWING:

3.5.1 SUMMARY

A concise summary should be provided of the matters set out in Section 46D of the Act, including all aspects covered under the headings set out in the Guidelines below, in order for the reader to obtain a quick but thorough understanding of the proposal and all its effects.

3.5.2 INTRODUCTION

The introduction to the DR should briefly cover the following:

- Background to and objectives of the proposed development
- Details of the proponent
- Staging and timing of the proposal
- Relevant legislative requirements and assessment process
- Purpose and description of the DR process

3.5.3 NEED FOR THE PROPOSAL

This section of the DR should contain a brief statement of the objectives of, and justification for, the proposal, including:

- the specific objectives the proposal is intended to meet;

- expected regional, state or national benefits and costs (including those that cannot be adequately described in monetary or physical terms, eg. effects on cultural and aesthetic amenity); and

- a summary of environmental, economic and social arguments to support the proposal, including the consequences of not proceeding with the proposal.

3.5.4 DESCRIPTION OF THE PROPOSAL

The description of the proposal should cover its construction and operation, and include the location and layout of the structures and infrastructure availability and requirements.

- North, South, East and West elevations of the building and 3-D perspectives from Marion Road, Anzac Highway and Elizabeth Avenue.

- A site plan and floor plans including the proposed apartment layouts and associated car parking.

- Details of any communal facilities for the apartments, in the form of shared open space, laundry areas, recreational facilities, storage areas.

- Recycling and waste management arrangements.

- The process and timing of the construction.

3.6 THE DEVELOPMENT REPORT MUST INCLUDE THE FOLLOWING:

3.6.1 ASSESSMENT OF EXPECTED ENVIRONMENTAL, SOCIAL AND ECONOMIC EFFECTS

The assessment of effects should include all issues identified in Section 4 of these Guidelines.

3.6.2 CONSISTENCY WITH GOVERNMENT POLICY

The Act requires the DR to state its consistency with the relevant Development Plan and Planning Strategy.

3.6.3 AVOIDANCE, MITIGATION, MANAGEMENT AND CONTROL OF ADVERSE EFFECTS

The proponent's commitments to meet conditions to avoid, mitigate, satisfactorily manage and/or control any potentially adverse impacts of the development on the physical, social or economic environment must be clearly identified.

3.7 ADDITIONAL INFORMATION

3.7.1 Sources of Information

The sources of information (eg reference documents, literature searches, research projects, authorities consulted) should be fully referenced. Where judgments are made, or opinions given, these will need to be clearly identified

as such, and the basis on which these judgments or opinions are made will need to be justified. The expertise of those making the judgement, including the qualifications of consultants and authorities, should also be provided.

3.7.2 Appendices

Technical and additional information relevant to the DR that is not included in the text should be included in the appendices (maps, graphs, tables, photographs, report etc). A glossary may also be appropriate.

The design of the proposal should be flexible enough to incorporate changes to minimise any impacts highlighted by this evaluation or by post-operation monitoring programs, if applicable.

3.7.3 Other

Appropriate plans, drawings and elevations are needed for the decision to be made and as much information as possible should be provided.

4 THE MAIN ISSUES

4.1 THE PROPOSAL

4.1.1 Need for the proposed development in terms of the demand for the proposed supermarket, retail outlets and apartment accommodation.

4.1.2 Describe the sustainability benefits of the proposed development to the State and to the local community.

4.2 URBAN DESIGN

4.2.1 Describe the sustainable features of the proposed development through the use of Transit Orientated Development (TOD) principles including the enhancement of existing transit stops.

4.2.2 Outline the extent to which the proposed development addresses this landmark location, being the intersection of two arterial roads and the midway point between the City and Glenelg.

4.2.3 Detail the proposed linkages and pedestrian connectivity to the public transport systems, the safety of those connections and the distances between transit stops.

4.2.4 Outline the objectives for the proposed ‘urban village’ and the enhanced community social interaction that would be generated.

4.2.5 Describe the relationship of the proposed development to adjacent buildings and its integration with the Highway Inn and neighbouring commercial and residential development.

4.2.6 Indicate measures that would provide safe and convenient pedestrian connections to surrounding areas and in particular, access to the Tramway and adjacent streets.

4.2.7 Describe the visual impact of the proposed development on the immediate locality; taking into account the intensity, height and scale of the proposed building and also the effects when viewed from various vantage points, especially along Anzac Highway and Marion Road.

4.2.8 Provide an analysis of the pedestrian ‘desire lines’ across the site, having regard to the accessibility of open spaces and connectivity between buildings and car parking areas.

4.2.9 Describe the proposed linkages to existing development including the North Plympton Shopping Centre and any focal points for social interaction.

4.2.10 Describe the streetscape treatments to all publicly visible building elements, having regard to the prominent nature of the site.

4.2.11 Detail the pedestrian interfaces of the proposed building and their relationship to the streets and public spaces, including amenity and opportunities for pedestrian interaction.

4.2.12 Provide transverse cross-sections of the proposed building to demonstrate its relationship to the existing Highway Inn and neighbouring residential buildings.

4.2.13 Provide details of the 'screen wall' and any landscaping that bounds the loading area for the proposed supermarket and the residential component on the southwestern side.

4.2.14 Provide shadow diagrams to indicate the degree of overshadowing of existing residential development to the south and south west of the site at various times, including winter solstice and summer solstice at 9.00am, 12.00 noon and 3.00pm.

4.2.15 Demonstrate the application of CPTED (Crime Prevention through Environmental Design) principles regarding personal and public safety and security issues.

4.2.16 Describe the potential impact of the proposed development on the microclimate of the surrounding buildings and open spaces with reference to overshadowing, wind turbulence and glare/reflection characteristics of external surfaces.

4.2.17 Provide details of the construction materials, surface treatments and colours for the proposed development.

4.2.18 Provide screening details for air conditioning plant containment, having regard to visibility from surrounding areas of the upper levels and roofscape.

4.2.19 Describe measures that would maintain privacy and minimise overlooking between the apartments.

4.3 TRAFFIC, PARKING AND VEHICLE MOVEMENTS

4.3.1 Detail the existing car parking facilities for the Highway Inn and the car parking spaces for the proposed development.

4.3.2 Describe the existing surrounding traffic movements including any restrictions on traffic movements in the locality, showing the associated points of access and egress and their placement.

4.3.3 Describe the access and egress arrangements for the proposed development and their impact on the operation of Marion Road and Anzac Highway.

4.3.4 Detail the impact on traffic movements from the vehicular access to and from the site, including safety and traffic flow considerations.

4.3.5 Detail the relationship of the drive through facility and the proposed bottle shop.

4.3.6 Describe the effect on the public domain of the proposed underground car park in terms of visual impact, ease of access and pedestrian movement.

4.3.7 Provide a Traffic and Parking Management Plan that includes movement analysis and the kinds of movement the proposed development will generate.

4.4 SUSTAINABILITY

4.4.1 Describe the ecologically sustainable objectives of the proposed development and the approach and methodology to be used to achieve these objectives, particularly the Green Building Code of Australia.

4.4.2 Describe how a four star rating will be achieved for the proposed shopping centre component.

4.4.3 Describe how a five star rating will be achieved for the proposed residential component.

4.4.4 Provide details on the elevations and plans for the energy efficient design elements (on both the residential and commercial components) where alternative renewable energy options would be utilised.

4.4.5 Describe how the proposed development would encourage a modal shift from car usage to 'greener' methods of transport, including the reduction of car parking requirements and the implementation of Transit Orientated Development principles.

4.4.6 Detail the facilities provided for cyclists within the proposed development.

4.4.7 Provide details of the measures to be used to reduce the impact of road traffic noise and emission pollution on the residential component due to its proximity to a major transport corridor.

4.4.8 Provide details of all landscaping (including surface treatments, street furniture and lighting), including the contribution of the landscaping to the Urban Forest program and Water Sensitive Urban Design (WSUD).

4.4.9 Describe how a green roof system could be used for rooftop/garden design, including the integration of stormwater management.

4.5 ECONOMIC ISSUES

4.5.1 Detail the economic effects of the proposal in terms of local or broader employment generation from construction and on-going commercial activities proposed in the development.

4.5.2 Describe the economic contribution that additional commercial activities would make to the immediate Neighbourhood Centre and broader locality.

4.5.3 Describe the proposed mix of uses and the likely impact these would have on existing commercial activities and site capacity.

4.6 INFRASTRUCTURE AND ENVIRONMENT

4.6.1 Detail the location of any existing public utility services (water, sewerage, electricity, gas and communications) and describe how the proposed development will affect these services.

4.6.2 Demonstrate the compatibility between the proposed residential use and the existing and proposed commercial development on the site, especially in terms of potential noise disturbance.

4.6.3 Identify any potential sources of asbestos of any proposed demolition and describe the appropriate form of its removal and disposal.

4.6.4 Detail measures for capture and reuse of stormwater and roof run-off, for irrigation purposes and for the internal use of flushing toilets.

4.6.5 Indicate the location of the rainwater tanks that would be used.

4.6.6 Identify the procedures for the removal of waste for business and residents.

4.6.7 Identify the opportunities for recycling of waste for business and residents.

4.6.8 Provide a detailed stormwater management plan and indicate onsite detention and quality improvement measures (permeable paving, swales, silt traps, sumps etc).

4.7 CONSTRUCTION EFFECTS

4.7.1 Describe the transport and storage of any construction materials with a view to minimising effects on the local environment.

4.7.2 Provide details of the hours of operation of construction activities.

4.7.3 Describe strategies for ensuring public safety during construction.

4.7.4 Provide a site construction plan and outline strategies to minimise effects on the local environment, especially traffic and noise.

4.7.5 Detail how the environmental impacts of the demolition of the existing buildings and construction of the proposed development will be minimised and mitigated, with reference to:

- Noise;
- Dust;
- Groundwater;
- Stormwater runoff and reuse;

- Waste disposal;
- Water reuse;

4.8 OPERATIONAL EFFECTS

4.8.1 Provide details of the proposed hours of operation of retail and commercial activities.

4.8.2 Provide an environmental management plan to deal with operational activities.

4.9 HAZARDS

4.9.1 Describe the compatibility of the proposed development with height restrictions associated with the operations of Adelaide Airport.

4.9.2 Provide a site history report to ascertain whether the site has any contamination issues, having regard to the proposed residential component.

4.10 PLANNING AND ENVIRONMENTAL LEGISLATION AND POLICIES

4.10.1 Describe the proposal's consistency with the relevant Development Plan and the Planning Strategy

4.10.2 Describe the proposal's consistency with the *Environment Protection Act, 1993* and the duty of care under this legislation.

4.10.3 Identify any changes that may be required to the zoning of the site.

APPENDIX A

Development Act, Section 46D:

DR process—Specific provisions

(1) This section applies if a DR must be prepared for a proposed development.

(2) The Minister will, after consultation with the proponent—

(a) require the proponent to prepare the DR; or

(b) determine that the Minister will arrange for the preparation of the DR.

(3) The DR must be prepared in accordance with guidelines determined by the Development Assessment Commission under this Subdivision.

(4) The DR must include a statement of—

(a) the expected environmental, social and economic effects of the development;

(b) the extent to which the expected effects of the development are consistent with the provisions of—

(i) any relevant Development Plan; and

(ii) the Planning Strategy; and

(iii) any matters prescribed by the regulations;

(c) if the development involves, or is for the purposes of, a prescribed activity of environmental significance as defined by the *Environment Protection Act 1993*, the extent to which the expected effects of the development are consistent with—

(i) the objects of the *Environment Protection Act 1993*; and

(ii) the general environmental duty under that Act; and

(iii) relevant environment protection policies under that Act;

(ca) if the development is to be undertaken within the Murray-Darling Basin, the extent to which the expected effects of the development are consistent with—

(i) the objects of the *River Murray Act 2003*; and

(ii) the *Objectives for a Healthy River Murray* under that Act; and

(iii) the general duty of care under that Act;

(cb) if the development is to be undertaken within, or is likely to have a direct impact on, the Adelaide Dolphin Sanctuary, the extent to which the expected effects of the development are consistent with—

(i) the objects and objectives of the *Adelaide Dolphin Sanctuary Act 2005*; and

(ii) the general duty of care under that Act;

(d) the proponent's commitments to meet conditions (if any) that should be observed in order to avoid, mitigate or satisfactorily manage and control any potentially adverse effects of the development on the environment;

(e) other particulars in relation to the development required—

(i) by the regulations; or

(ii) by the Minister.

(5) After the DR has been prepared, the Minister—

(a) —

(i) must, if the DR relates to a development that involves, or is for the purposes of, a prescribed activity of environmental significance as defined by the *Environment Protection Act 1993*, refer the DR to the Environment Protection Authority;

(ia) must, if the DR relates to a development that is to be undertaken within the Murray-Darling Basin, refer the DR to the Minister for the River Murray;

(ib) must, if the DR relates to a development that is to be undertaken within, or is likely to have a direct impact on, the Adelaide Dolphin Sanctuary, refer the DR to the Minister for the Adelaide Dolphin Sanctuary;

(ii) must refer the DR to the relevant council (or councils), and to any prescribed authority or body; and

(iii) may refer the DR to such other authorities or bodies as the Minister thinks fit,

for comment and report within the time prescribed by the regulations; and

(b) must ensure that copies of the DR are available for public inspection and purchase (during normal office hours) for at least 15 business days at a place or places determined by the Minister and, by public advertisement, give notice of the availability of copies of the DR and invite interested persons to make submissions to the Minister on the DR within the time determined by the Minister for the purposes of this paragraph.

(6) The Minister must, after the expiration of the time period that applies under subsection (5)(b), give to the proponent copies of all submissions made within time under that subsection.

(7) The proponent may then prepare a written response to—

(a) matters raised by a Minister, the Environment Protection Authority, any council or any prescribed or specified authority or body, for consideration by the proponent; and

(b) all submissions referred to the proponent under subsection (6),

and provide a copy of that response to the Minister within the time prescribed by the regulations.

(8) The Minister must then prepare a report (an ***Assessment Report***) on the matter taking into account—

(a) any submissions made under subsection (5); and

(b) the proponent's response (if any) under subsection (7); and

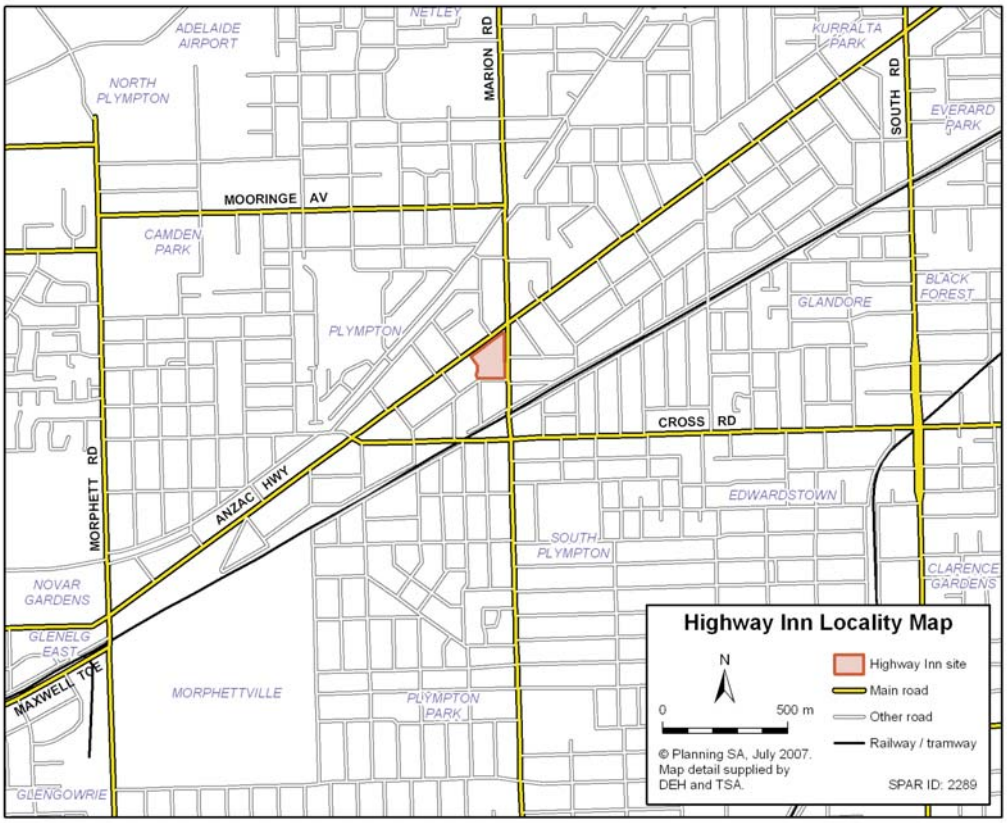
(c) comments provided by the Environment Protection Authority, a council or other authority or body; and

(d) other comments or matter as the Minister thinks fit.

(9) Copies of the DR, any response under subsection (7) and the Assessment Report must be kept available for inspection and purchase at a place determined by the Minister for a period determined by the Minister.

(10) If a proposed development to which a DR relates will, if the development proceeds, be situated wholly or partly within the area of a council, the Minister must give a copy of the DR, any response under subsection (7) and the Assessment Report to the council.

Appendix B Locality Plan and Site Plan



CONNOR HOLMES
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ATTACHMENT 3

SUMMARY OF THE SUBMISSION AND THE IDENTIFIED ACTION/RESPONSE

No.	Contact Details	Areas of Concern	Action / Response
1.	*Kay Heffernan* 28 Elizabeth Ave, Plympton 5039	Overall support however concerned with Traffic issues and suggests ways to overcome	• Extensive modelling of traffic has been undertaken to ensure traffic implications are manageable • Site exit for deliveries configured to ensure exit via Marion Road • Traffic from site unlikely to impact school children • Rat run is beyond the scope of this project
		Preferable for trucks exit with a turn left onto Marion Road	
		Traffic flow already busy	
		Risk to school children with additional traffic – school drop off/pick-up restricts traffic movement	
		Elizabeth Road used as 'rat run' from Cross Rd to avoid lights	
		A chicane should be constructed on eastern end of Elizabeth Ave to slow/restrict traffic	
2.	*Arthur Mangos* 2 Walsh St, Netley 5037	Elizabeth St entrance to Marion Rd should have a slip lane to the car park entry	• Modelling does not show need for a chicane • Overpass for tram is beyond the scope of this project • Traffic modelling has been undertaken that demonstrates access to Marion Road is appropriate, as are traffic flows on Marion Road, Elizabeth Avenue and Anzac Highway • Power will be undergrounded on site. Beyond the site is beyond the scope of this project • Apartments will be attenuated for noise and heat loads • WSUD is included • Green star ratings will be sought and development will employ principles and techniques for sustainability • Rubbish for apartments will be via third party collection; recycling will be incorporated • Rubbish for commercial and retail will be via private contractor • Site not intended to be a park and ride facility
		Tram should have an overpass to improve traffic flow	
		Increased traffic congestion on Marion Road	
		Provide underground power to site	
		Slow points on Elizabeth Avenue	
		Double glazing windows on apartments is necessary	
		Water reuse	
		Solar energy should be investigated	
		Garbage collection not be 120L bins but larger 'hippo' receptacles	
		Traffic impact assessment on locality should be essential	
		On-site parking should be restricted so that car park is not used for 'park and ride' style facility, all day parking	

No.	Contact Details	Areas of Concern	Action / Response
3.	*Toni Pope* 30 Elizabeth Ave, Plympton 5038	Overall support however concerned with Traffic issues and suggests ways to overcome.	• Traffic impacts have been assessed to be appropriate along Elizabeth Ave as only a small percentage of traffic is likely to use this street west of Alice Street. • School pick up will not be impacted. • Majority of traffic will not use Elizabeth Ave, no additional treatments are required.
		Safety of school from St Johns the Baptist Catholic School.	
		School pick up/drop off restricts traffic.	
		Vehicles should not be permitted at the western end of Elizabeth St make Elizabeth St a dead end at Maynard St or alternatively provide a chicane between Maynard and Alice Streets.	
4.	*DB Bayliss &* *JK Van Den Broeke* 40 Elizabeth St, Plympton 4038	Public notification was misleading, did not clearly identify true nature of project	• Notification is not a process for the proponent, however full details of proposal were available • Extensive traffic modelling has been undertaken that shows little negative impacts on the performance of all intersections and roads • Driveway access for the service lane will direct trucks east to Marion Road • School will not be impacted by proposal • Development meets the definition of a Corridor Development • Parking has been assessed and deemed to be adequate • Proposal provides an appropriate transition to higher density development in accord with the "30 Year Plan for Greater Adelaide" • Site will be more active than at present, however this is considered to be appropriate for the type of development and the locality • Plaza spaces and other public spaces will be provided • Apartments will have private open space in the form of balconies • Collection of rubbish
		Excess traffic in already congested location	
		Marion Road access point provides only for north bound traffic and will cause congestion at other intersections ie Cross Roads, the tram crossing, Elizabeth Ave and Anzac Highway	
		How will the requirement that service vehicles turn left to Marion Rd be managed?	
		Safety and congestion issues associated with existing school	
		Safety and congestion issues associated with additional vehicle movements for new residences	
		Development is not a TOD development, will lead to overcrowding on existing public transport systems	
		Lack of car parking provided for apartments, lack of parking for employees of new development	
		Hours of operation – potential to lead to the area being 'permanently busy'	
		Visual impact of proposal, out of character and likely to set precedent	
		No recreation or open space provided	
		Setbacks to Elizabeth Avenue, insufficient, have a negative impact upon the streetscape	
		Elizabeth Avenue exit will be noisy and unattractive	

No.	Contact Details	Areas of Concern	Action / Response
		Rubbish collection should be confined within the development	
		More community consultation required to achieve quality development in this locality	
5.	*South Australian Metropolitan Fire Service* Randall Figg	Development needs to comply with BCA requirements (details in submission)	• Proposal will accord with BCA requirements and MFS will be consulted
		Suggests liaison with Department during design phase	
6.	*SA Health* Dr Tony Sherbon	No comments after reading the rapid health analysis of the report	• No action required
7.	*SA Water Corporation* Anne Howe Chief Executive	Notes that description of sewer pipe on Marion Road is incorrect, the diameter is 525mm not 150mm as identified	• Pipe dimension corrected • Water management will be via SA Water & WSUD • Pollution will be managed • Infrastructure will be determined in conjunction with SA Water
		Response is general comment pertaining to water supply, wastewater and the general interests of SA Water Corporation	
		• Provision of Water Supply	
		• Protection of Groundwater	
		• Protection of Surface Water	
		• Provision of Infrastructure	
8.	*Environment and Conservation Portfolio*		
	Department for Environment and Heritage	No Comment	
	Department of Water, Land, Biodiversity and Conservation	Generally supportive of proposal Roof garden is a good initiative but more effective to the north of the main tower (although restricted by site parameters) Question the label of TOD particularly in terms of short term residential nature of serviced apartments	• Roof garden to be reconsidered as part of detailed design. Green walls included. • Permanent residential component has been increased. • Consider that the proposal meets the terms of a Corridor Development and is in accord with the “30 Year Plan for Greater Adelaide”.

No.	Contact Details	Areas of Concern	Action / Response
	EPA	Air Quality	• All relevant environmental legislation will be complied with • A construction environment management plan will be prepared. This will deal with all issues raised • Any site contamination will be addressed appropriately. Early indication is that the site is not unduly contaminated.
		• Impacts of air quality during demolition and construction phase should comply with relevant legislation	
		• Separation distances should comply with relevant legislation	
		• Odour impacts and ventilation proposes are acceptable	
		Noise	
		• Ensure noise levels comply with EPA standards for mixed use development	
		• Must achieve internal noise level requirements	
		• Reference to commercial use incorporating music	
		• Construction and Demolition Management Plan required	
		Site Contamination	
		• Limited references to site contamination	
		• Contamination risks with service stations in the vicinity	
		• Demonstrate site suitability with due consideration to contamination issues	
		• Site auditors to be used	
		Water Quality	
		• Statement in Development Report 4.4.2 page 26 is unclear	
		• Support WSUD measures	
		Waste Management	• Construction Environmental Management Plan will address all issues of waste during construction. • Building sustainability will be embraced including consideration of embodied energy.
		• Proponent is encouraged to segregate construction and demolition waste on site	
		• A Waste Management Plan should be included within the CEMP	

No.	Contact Details	Areas of Concern	Action / Response
		• Asbestos should not be processed or reused on site	• Green Star Rating tools will be used. • Recycling will occur during and post construction.
	ZERO Waste SA	Minimise waste in construction phase where possible	
		Design buildings for future adaptability	
		Reuse materials and recycled materials	
		Provide sufficient space to accommodate all outdoor waste	
		Green Star Rating tools are now available, at the time of the Development Report they were not (4.1.3 page 21)	
		Audit requirements in 4.4.3 are to be amended, waste management is to include design considerations and recycling considerations	
9.	*City of West Torrens*	Residential land does not appear to form part of the proposal	• Proposal now has a major residential component with the serviced apartments playing a more minor role. This will add to resident population in the City of West Torrens. • Proposal accords with corridor provisions in "30 Year Plan for Greater Adelaide" and will support public transport • Streetscapes to Elizabeth Avenue will be determined in consultation with Council. • The interface with existing residential are managed and the greater concentration of residential development in and adjacent the residential zone further mitigates the interface. • Stormwater will be discussed with Council at the detailed design/building rules stage. • A Construction Environment Management Plan will be prepared. • Design has been amended to improve traffic and manoeuvring and no longer requires changes to median along Anzac Highway. • Further detailed traffic analysis and modelling has been undertaken that demonstrates little negative impact on surrounding road networks. • The Urban Design seeks to introduce a residential vernacular to the apartment buildings and provide an overall transition to higher density residential development. Overshadowing diagrams have been prepared that show overshadowing is not unreasonable and meets recognised requirements.
		No 'recreational' or 'residential' land uses in this development. These are essential in a TOD unclear how fits definition of TOD	
		Proposal does not add to the residential population as suggested within Council's Development Plan. Zone encourages higher density residential development.	
		No streetscape proposals for Elizabeth Avenue, as required by DAC guidelines	
		Encroachment into Residential Zone and impacts upon amenity of existing residents	
		Applicant should enter discussion with City Assets Department to integrate effective stormwater management system.	
		Council request the CEMP	
		Traffic increase and congestion particularly Marion Road and Anzac Highway	
		TIS does not deal with issues on Elizabeth Avenue and other residential streets in locality	
		Concern over amendment of Anzac Highway median location	

No.	Contact Details	Areas of Concern	Action / Response
		Internal congestion in basement car park near entry due to parking aisle way location	• Tourism accommodation figures indicate growth in visitation nights. • Rubbish collection for the apartments will be via private collection. Shared bin use and communal storage will be required to minimise bin numbers. Commercial collection arrangements will be put in place for office, commercial and retail premises. • Demand exists in the area for a full line supermarket. Retail analysis indicates that the proposal will not unduly impact existing centres. Retail floor space has been reduced. • Section 46 assessment being undertaken. "30 Year Plan for Greater Adelaide" has changed priorities and focus for development. Proposal largely accords with proposed policy included in Council's DPA that has recently been released for consultation. • Pedestrian and bicycle access has been considered. Pedestrians have safe and logical pathways around centre and to neighbouring public transport. Cycle parking has been provided at above standard rates.
		Relocation of Marion Road bus stop is supported. Applicant should seek comment from DTEI regarding the operation of this.	
		Urban Design considerations, character of Elizabeth Avenue, overshadowing, design linkages with nearby land uses.	
		Demand for short term/tourist accommodation not demonstrated	
		Garbage collection	
		Demand for retail – Shopping Centre not demonstrated.	
		Variations between proposal and existing development plan what action is to be taken regarding this (Section 30 Review, City of West Torrens Strategic Directions).	
		Stormwater	
		Traffic Impacts – not minor increases, traffic issues already compounded by tram	
		Pedestrian and Bicycle Access	
10	*City of Marion*	West Torrens City, Neighbourhood Centre (Plympton) concept plan suggest commercial activities take place in policy area 11 and retail in policy area 10.	• The proposal is being assessed pursuant to Section 46 and is neither complying nor non-complying and is to be assessed on its merits. This response report demonstrates that the proposal warrants approval. • Retail floor area has been the subject of a demand/supply analysis. • The height of the overall development has been modified such that there is much vertical articulation. The height provides an appropriate transaction to the new planning directions without undue overshadowing or overlooking, the bulk and scale are considered appropriate given the high levels of articulation and material selection. • Traffic modelling and analysis has been undertaken that demonstrates there is little negative impact on the surrounding road network.
		Does not satisfy height requirement.	
		Proposed retail floor area is non-complying in Policy Area 11	
		How does proposal fit in with 'centre hierarchy'>	
		Centres should not be separated, as this one is.	
		Are the proposed entry/exit points located on Marion Road and Anzac Highway acceptable?	
		Traffic on Elizabeth Avenue to have detrimental impact on adjoining properties.	
		Loading and unloading area to have detrimental impact on adjacent residential properties.	

No.	Contact Details	Areas of Concern	Action / Response
		No setback to Elizabeth Avenue bulk and scale of proposal	• The loading access and bays have been redesigned and are not considered to impact negatively on adjoining residential properties. • The site will be landscaped with shade trees in the car park and landscape beds and planter boxes. Species will be selected for drought tolerance and micro-climatic impacts.
		Dwellings located south of the development will be unreasonable over shadowed.	
		No landscape or lighting plan.	
11.	*Adelaide Airport*	No objection to proposal	• Proposed development does not penetrate Adelaide Airport Obstacle Limitation Surface. • Application and consultation will be undertaken for cranes and lighting.
		Development does not penetrate the Adelaide Airport Obstacle Limitation Surface	
		Crane operation are subject to separate application	
		Restrictions to lighting illumination may apply.	
12.	*Transport Services DPTI (formerly DTEI)*		• Proposal has been revised and slightly scaled down. • Extensive modelling has been undertaken and this demonstrates minimal impacts on the surrounding road network. • DPTI approved base model. • Proposal now including predominantly permanent residents (80%) with serviced apartments comprising 20%. Analysis has been undertaken on this basis. • Can parking discount of only 10% has been applied and justified and only applies to supermarket/hotel, not to any other land use. • Footpaths will be reinstated • All traffic improvements will be designed appropriately • Crash data has been reviewed and this confirms the majority of crashes are at intersections of Marion Road/Anzac Highway • Only 7 crashes between 2007 and 2011 out of 128 (5%) were associated with this property • The supermarket is likely to attract the biggest service vehicles. Typically these would be ??m in length.
	Traffic Modelling	Required additional traffic modelling of all intersections including a micro simulation model	
	Parking	Sought justification of discount parking rate.	
		Sought sensitivity analysis re permanent residential apartments vs serviced apartments	
	Access v Road Issues	Supports proposal to relocate bus stops on Anzac Highway	
		Require DDA compliant footpaths	
		Supports deceleration lane but needs to be designed to appropriate standards	
		Require review of crash data	
		Site should accommodate 19m long services	
		Supports kerb widening to increase radius of curve Elizabeth Avenue/Marion Road	
		Don't support U-turn gap in Anzac Highway	
		Median closure at Mabel Street	

No.	Contact Details	Areas of Concern	Action / Response
		Questions proposed stacking loop	• Service vehicles will be able to turn from Elizabeth Avenue to Marion Road. • U-turn gap to Anzac Highway removed from proposal. Existing arrangements to remain unchanged. • Stacking loop is removed • At grade car park has been redesigned to overcome identified issues. • Both AS 2890.2-2002 and NZ 2896.1:2004 will be complied with. • DPTI will be consulted with respect to any work that alters DPTI road. • Redesigned proposal includes 108 apartments. 80% of which are permanent residential. • Centre will promote use of public transport and general activity. • Proposal meets Corridor Development principles as per "30 Year Plan for Greater Adelaide". • Pedestrian connectivity to public transport stops has been designed into the proposal. Furthermore signage to direct people and assist use of public transport is proposed. • Any further public transport use initiatives would be discussed with DPTI. • Car park has been amended to facilitate and encourage pedestrian and cyclist movements. • Directional and support signage is proposed. • As far as is practicable direct links are proposed to public transport.
		Doesn't support design of at grade car park	
		Parking spaces to accord with NZ 2890.1:2004 and AS 2890.2-2002.	
		Any resultant roadworks to be designed and construction to satisfaction of DPTI	
	Road Widening	Up to 45m may be required from Anzac Highway and Marion Road frontages, together with land from the Anzac Highway/Marion Road corner for possible future upgrade. Additionally a 4.5m x 4.5m cut off is required from Marion Road/Elizabeth Avenue. Building work within the corner of this require approval from the Commissioner of Highways. Consent can be anticipated.	
		Preliminary investigations indicate it is unlikely that land will be required from the site.	
	Advertising	Signs need to be simple and not result in distractions or confusion of motorists.	
	Public Transport	Supports in principle directions for a mixed use development, consistent with TOD principles, does not improve attractiveness of public transport or provide medium or high density residential development.	
		Developers identified potential to "build on further opportunities to enhance pedestrian connectivity between site and surrounding transport networks and would work with the relevant authorities to ensure an integrated solution". Additional clarity is sought.	

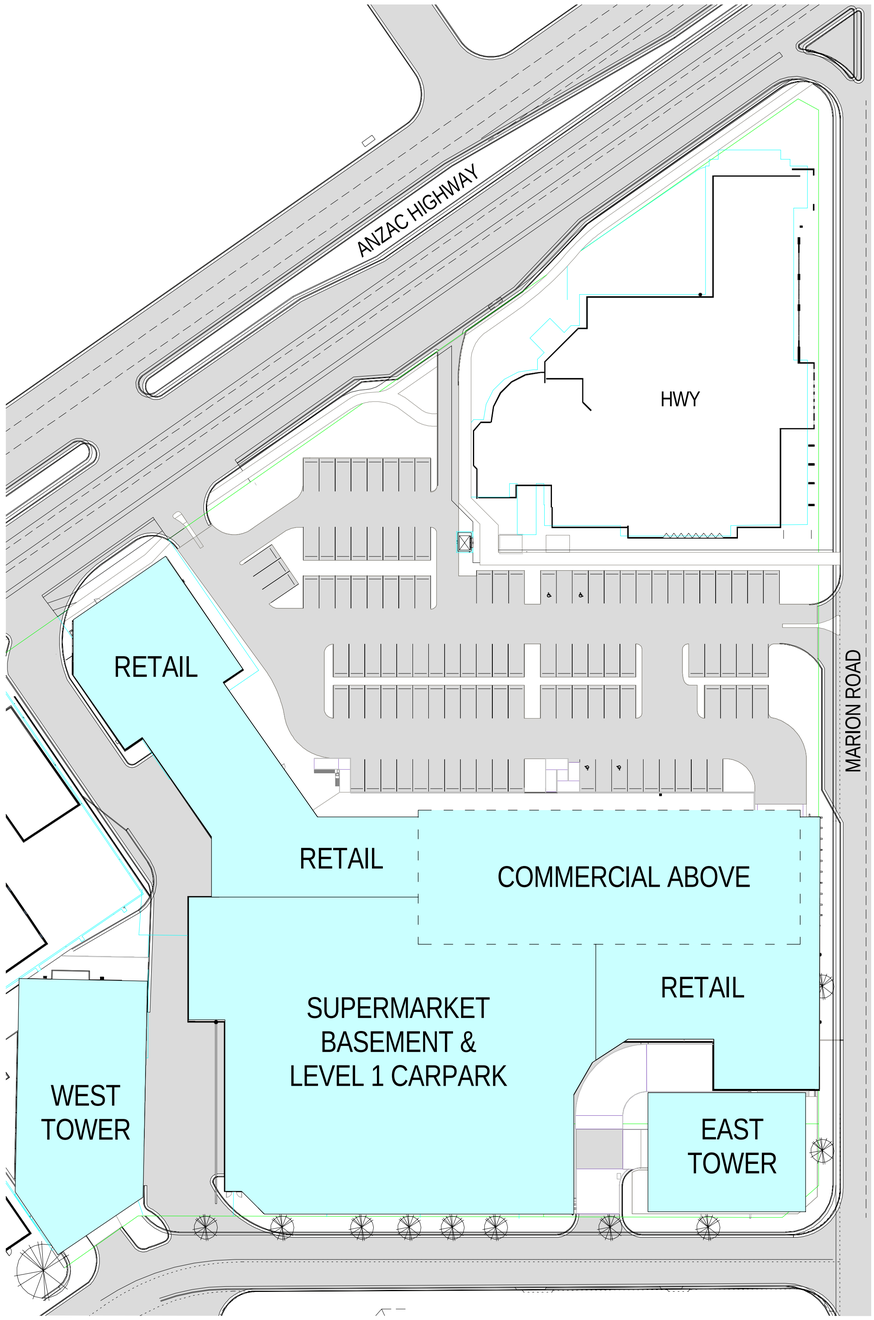
No.	Contact Details	Areas of Concern	Action / Response
	Cycling and Walking	Design characteristics of transit-supportive environments include the importance of high-quality walking environments through pedestrian-friendly designs. The site is located within a short walking distance to the tram, however, there are no obvious direct linkages or design references from the site to the tram stop for pedestrians or cyclists. The proposal would benefit from enhancing physical connections between retail, residential and public transport, with more consideration being given to the walkability of the site as a whole. The dominance/scale of the outdoor car parking area would appear to hinder the accessibility of cyclists and pedestrians to the retail areas by those who approach from Marion Road and Anzac Highway. The car park should be amended to incorporate additional safe and direct paths for cyclists and pedestrians and crossing points should be designed to highlight the presence of pedestrians and cyclists.	• Pedestrians will be encouraged to cross with the lights for maximum safety. • Bicycle facilities will be provided and parking exceeds required amounts. Locations are spread for maximum convenience. • Directional and way finding signs to public transport will be provided. • OLS is noted and met.
		DTEI is concerned that the subject development does not adequately address the issue of pedestrian movement and safety at this location. Current experience shows that pedestrians generally do not cross Marion Road at the pedestrian crossings to access the bus stops on the eastern side of the road. Rather, they cross uncontrolled and store in the existing median at this location. Given that the development will result in an increase in pedestrians at this location, consideration must be given to appropriately managing pedestrian movements across Marion Road.	
		It is also noted that the interaction between the proposed development and the existing shopping complex to the north has not been considered, particularly from a pedestrian perspective. It is likely that the proposed development would result in an increase in pedestrian movements between the northern and southern side of Anzac Highway. Given the width of the existing pedestrian facilities at this location, the existing storage within the central median for pedestrians may be insufficient for the increased pedestrian volumes. This issue needs to be reviewed by the developer/consultants with appropriate measures to ensure that pedestrian safety is not compromised.	

No.	Contact Details	Areas of Concern	Action / Response
		The Traffic Impact Assessment successfully includes sufficient secure bicycle parking and end of trip facilities. Visitor bicycle parking rails are well positioned for passive surveillance. The location of secure bicycle parking for residents and employees is not indicated on the plans and featuring this in the report is encouraged. The bicycle parking facilities, should be designed in accordance with Australian Standard 2890.3-193 and the AUSTROADS, Guide to Traffic Engineering Practice Part 14 – Bicycles	
		The report indicates the scale of signage to advertise retail development. The development is encouraged to feature directional and way finding signage that indicates the short walking distance/time to the tram stop and bus stops.	
	Air Safety	Site is under the inner horizontal surface of the Obstacle Limitation Surface (OLS) for AA. Developer should note height restrictions apply.	

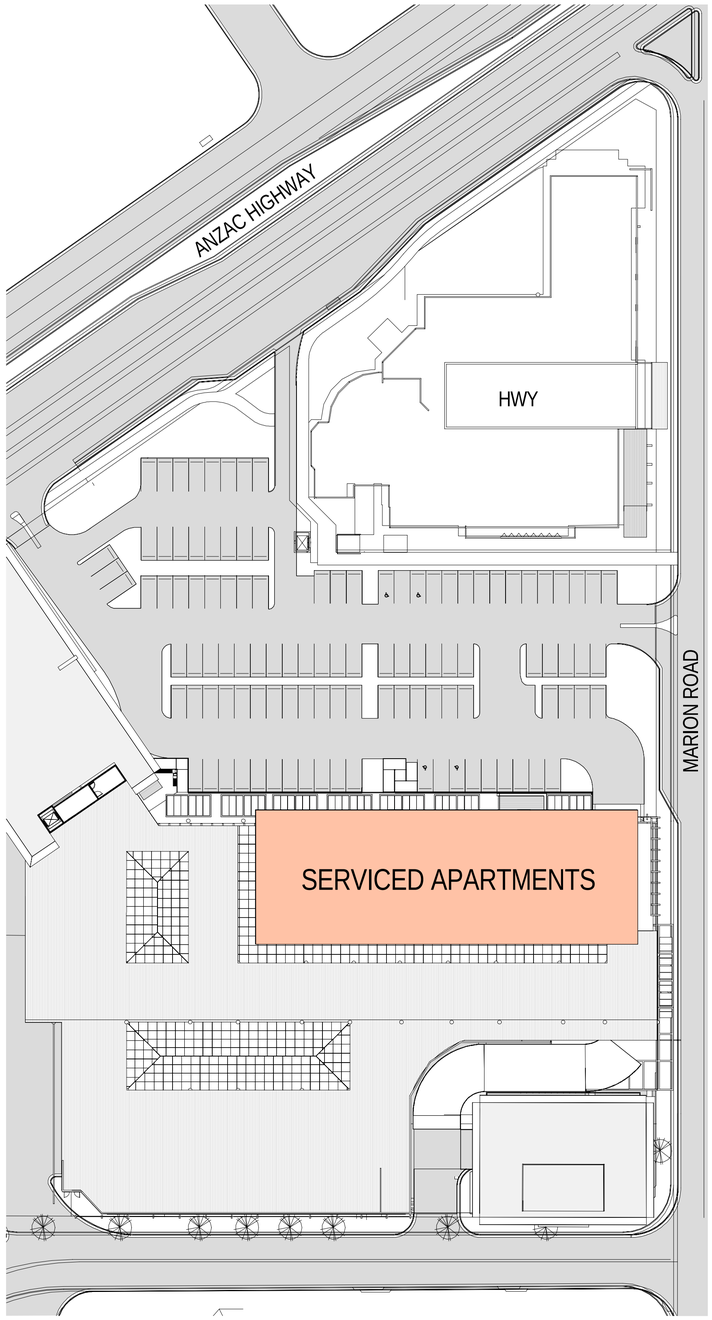
CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

ATTACHMENT 4

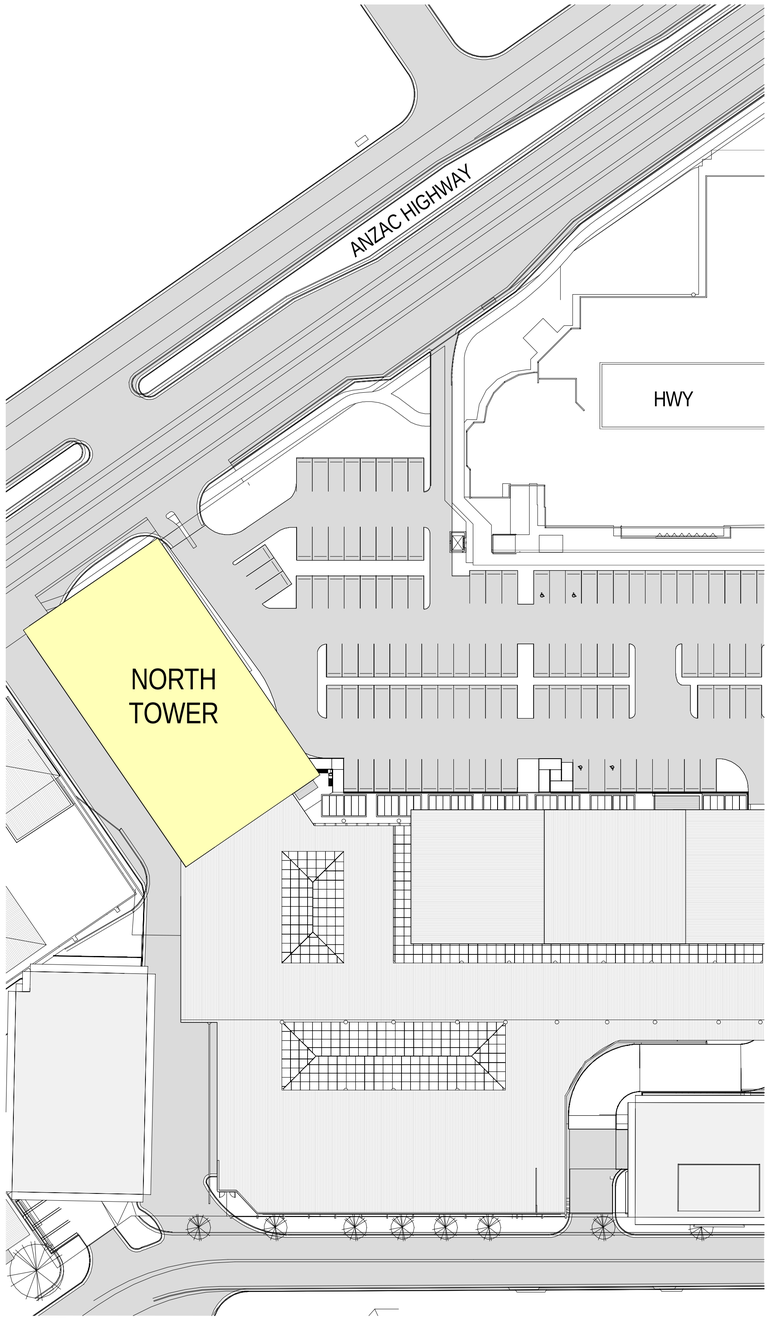
STAGING PLAN – A020



STAGE 1



STAGE 2



STAGE 3

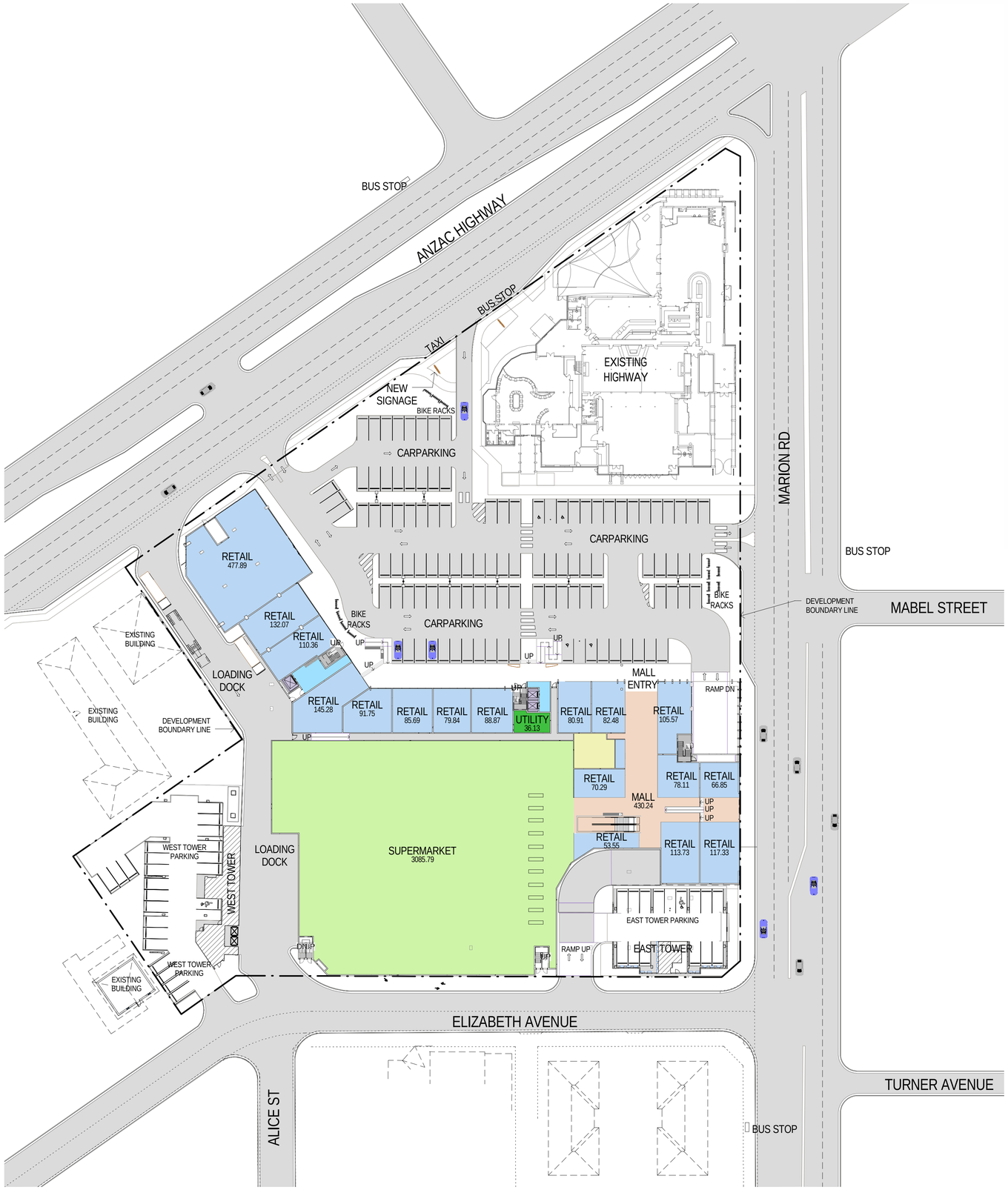
PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

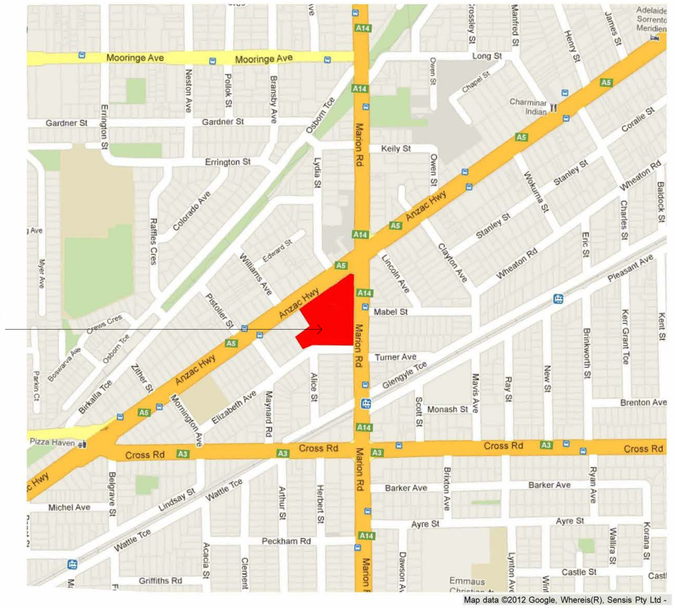
ATTACHMENT 5

PLANS AND ELEVATIONS



SITE PLAN
SCALE 1 : 500

PROPOSED SITE



LOCATION PLAN
NOT TO SCALE

Apartment Schedule

Serviced Apartments	13 per floor x 2 levels 1 bed apartments - 12 2 bed apartments - 14	26 Apartments
North Tower	8 per floor x 3 levels 2 bed apartments - 24	24 Apartments
	6 per floor x 3 levels 2 bed apartments - 18	18 Apartments
East Tower	4 per floor x 4 levels 2 bed apartments - 16	16 Apartments
West Tower	6 per floor x 4 levels 2 bed apartments - 24	24 Apartments
	TOTAL	108 Apartments

Apartments per Bed Numbers

1 Bed Apartments	12	(12 Serviced)
2 Bed Apartments	78	(14 Serviced)
3 Bed Apartments	18	(12 Serviced)
TOTAL	108 Apartments	(26 Serviced)

Landscape Schedule

TREES - STREET & CARPARK
PLATANUS - (Ornamental/London Plane)
PYRUS - (Ornamental Pear)

DRYLAND GARDEN BEDS
CYCADALES - (Cycad)
VIBURNUM
YUCCA
DIANELLA REVOLUTA (Black-Anther Flax Lily)

GROUND COVER
CALOSTEMMA PURPUREUM - (Garland Lily)

0 5 10 15 20 25 m
SCALE 1:500 AT ORIGINAL SIZE

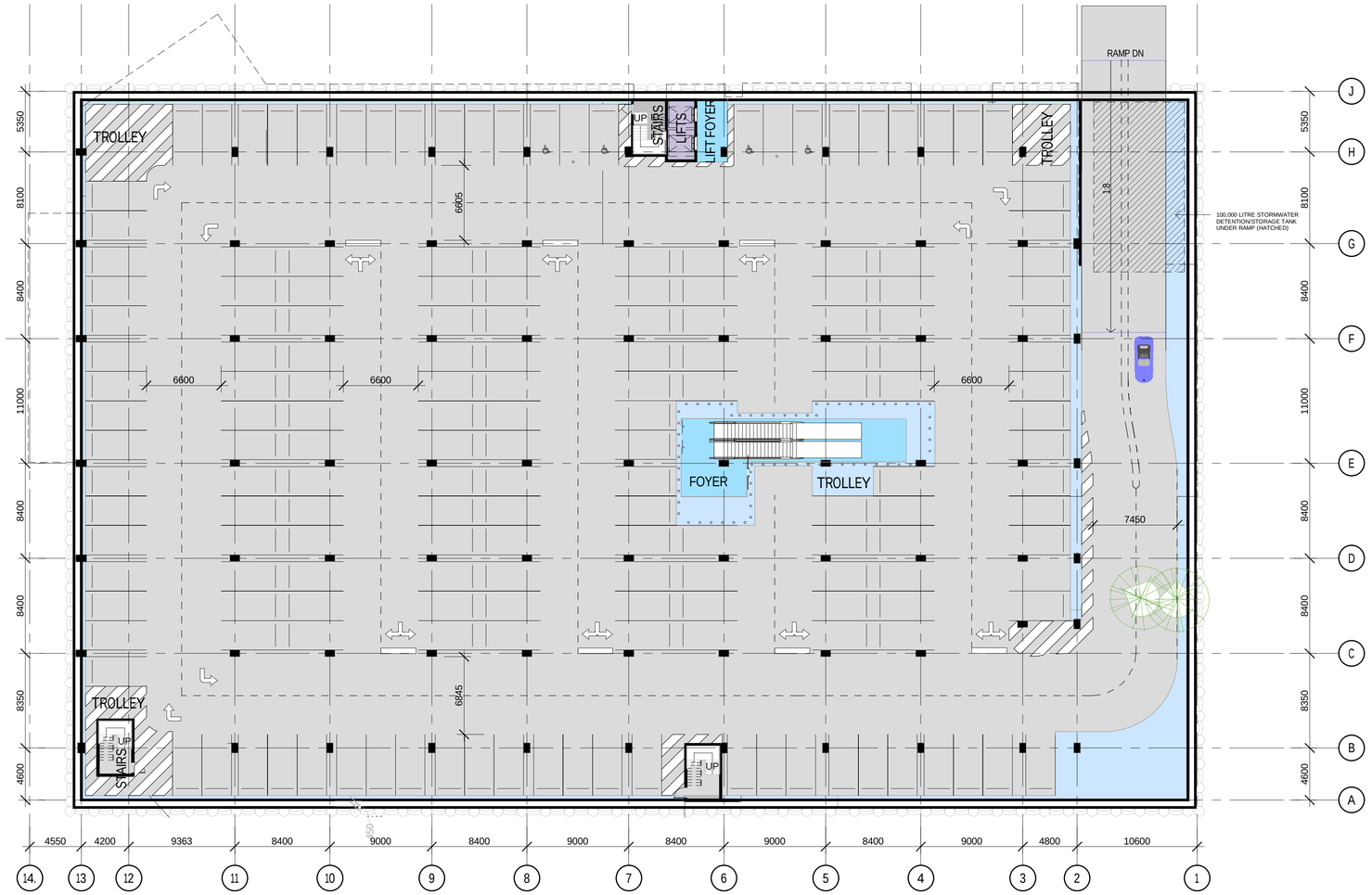
N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

ROOM SCHEDULE		
Occupancy	Level	AREA
AMENITIES	GROUND FLOOR	66
AMENITIES	LEVEL 1	38
		105
COMMERCIAL	LEVEL 1	878
		878
FOYER	BASEMENT 1	109
FOYER	GROUND FLOOR	66
FOYER	LEVEL 1	42
		217
LIFTS	BASEMENT 1	12
LIFTS	GROUND FLOOR	20
LIFTS	LEVEL 1	20
		53
MALL	GROUND FLOOR	430
		430
PLANT/UTILITY	GROUND FLOOR	36
PLANT/UTILITY	LEVEL 1	138
		174
RETAIL	GROUND FLOOR	1994
		1994
SERVICE	GROUND FLOOR	122
SERVICE	LEVEL 1	50
		172
STAIRS	BASEMENT 1	40
STAIRS	GROUND FLOOR	57
STAIRS	LEVEL 1	69
		166
SUPERMARKET	GROUND FLOOR	3086
		3086
SUPERMARKET STORE	LEVEL 1	296
		296
		7571

PARKING SCHEDULE		
Type	Level	Number
Retail/Comm 5.4 x 2.6m	BASEMENT 1	166
Retail/Comm DDA	BASEMENT 1	4
170		170
East 5.4 x 2.5 (Residential)	GROUND FLOOR	13
East DDA	GROUND FLOOR	1
Retail/Comm 5.4 x 2.6m	GROUND FLOOR	104
Retail/Comm DDA	GROUND FLOOR	4
West 5.4 x 2.5 (Residential)	GROUND FLOOR	22
West DDA	GROUND FLOOR	1
145		145
North 5.4 x 2.6 (Residential)	LEVEL 1	64
North DDA	LEVEL 1	2
Retail/Comm 5.4 x 2.6m	LEVEL 1	27
Serv Apart 5.4 x 2.6 (Res)	LEVEL 1	36
Serv Apart DDA	LEVEL 1	4
133		133
Grand total		448



0 2500 5000 7500 10000 12500mm
SCALE 1:250 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

ANZAC HIGHWAY

EXISTING HIGHWAY

MARION RD

ELIZABETH ST

STAIRS
Not Enclosed

RETAIL
477.89

RETAIL
132.07

RETAIL
110.36

STAIRS
14.56

LIFTS
6.00

FOYER
46.40

BIKE RACKS

WAITING BAY

EXISTING NEIGHBOURING BUILDING

EXISTING NEIGHBOURING BUILDING

DEVELOPMENT BOUNDARY LINE

RETAIL
145.28

RETAIL
91.75

RETAIL
85.69

RETAIL
79.84

RETAIL
88.87

FOYER
19.69

STAIRS

LIFTS

UTILITY
36.13

RETAIL
80.91

RETAIL
82.48

SERVICE
106.60

6000

SUPERMARKET
3085.79

TOILETS
66.41

7500

RETAIL
13.65

RETAIL
70.29

MALL
430.24

RETAIL
105.57

STAIRS

SERVICE
15.68

RETAIL
78.11

RETAIL
66.85

RETAIL
53.55

RETAIL
113.73

RETAIL
117.33

3273

CONVEX MIRROR

1:10

EAST TOWER PARKING

RAMP UP

1:12

RAMP UP

EAST TOWER

RAMP DOWN

DEVELOPMENT BOUNDARY LINE

WEST TOWER PARKING

WEST TOWER

WEST TOWER PARKING

SCREENING GATE

DN

STAIRS

UP

1:12

RAMP UP

A
A012

B
A013

B
A013

UP

5350

8100

8400

11000

8400

8400

8350

4600

a11 a10 a9 a8 b10 b9 b8 b7 b6 b12

8700 8700 5800 4850 9055 8400 8600 8600

14. 13 12 11 10 9 8 7 6 5 4 3 2 1

4550 13563 8400 9000 8400 9000 8400 9000 8400 9000 4800 10600

J H G F E D C B A

AMENITIES
CARPARK
FOYER
HIGHWAY
LIFTS
MALL
PLANT/UTILITY
RETAIL
SERVICE
STAIRS
SUPERMARKET

0 2500 5000 7500 10000 12500mm
SCALE 1:250 AT ORIGINAL SIZE

N

PRELIMINARY

A004 Highway Development 17.01.2013 -REV L RETAIL GROUND FLOOR

GHD CONNOR HOLMES A FYFE COMPANY

ANZAC HIGHWAY

MARION RD

STAIRS
Not Enclosed

UTILITY ROOM
71.49

STAIRS
14.56

LIFTS
8.06

FOYER
42.20

UP

UP

UP

UP

DN

STAIRS

LIFT

APARTMENTS ENTRY
44.24

COMMERCIAL
288.83

COMMERCIAL
588.87

UTILITY
66.81

CARPARK

17 BAYS

WEST TOWER

6602

RAMP DOWN

1:5

1:10

CONVEX MIRROR

1:10

RAMP DOWN

EAST TOWER

DN

STAIRS

MEZZANINE
295.74

AC
9.26

FE
18.41

SERVICE
5.60

STAIRS
13.31

a11 a10 a9 a8 b10 b9 b8 b7 b6 b12

J H G F E D

4550 13563 8400 9000 8400 9000

14. 13 12 11 10 9 8 7 6 5 4 3 2 1

0 2500 5000 7500 10000 12500mm

SCALE 1:250 AT ORIGINAL SIZE

N

- AMENITIES
- CARPARK
- COMMERCIAL
- FOYER
- LIFTS
- PLANT/UTILITY
- RETAIL
- SERVICE
- STAIRS
- SUPERMARKET
- SUPERMARKET STORE

CARPARKING LEGEND

PARKING SPACE ALLOCATION

C - COMMERCIAL PARK
N - NORTH TOWER PARK
S - SERVICED APARTMENT PARK

PRELIMINARY

A005 Highway Development

17.01.2013 -REV L

COMMERCIAL FIRST FLOOR PLAN

GHD CONNOR HOLMES A FYFE COMPANY

	DEMOLITION SCHEDULE	AREAS
1	RETAIL SHOPS (2)	1239
2	HOUSES (3)	601
3	FLATS (3)	417
4	SHED (1)	36
	TOTAL	2293 SQ M

ANZAC HIGHWAY

ACCESS

EXISTING BOTTLE SHOP

PROPOSED CHAIN MESH SECURITY FENCE

EXISTING SHED
TO REMAIN

PROPOSED CHAIN MESH SECURITY FENCE

ACCESS

PROPOSED CHAIN MESH SECURITY FENCE

3

3

3

4

LOT 96
5560 / 492

2

LOT 95
5077 / 46

2

LOT 94
5427 / 767

2

LOT 93
5374 / 188

1

LOT 90
5457 / 209

EXISTING CAR PARK

LOT 91
5104 / 703

ACCESS

PROPOSED CHAIN MESH SECURITY FENCE

1

LOT 92
??? / ???

MARION ROAD

PROPOSED ENTRY / EXIT GATES

PROPOSED CHAIN MESH SECURITY FENCE

ACCESS

ACCESS ACCESS

DEMOLITION ACCESS

ACCESS

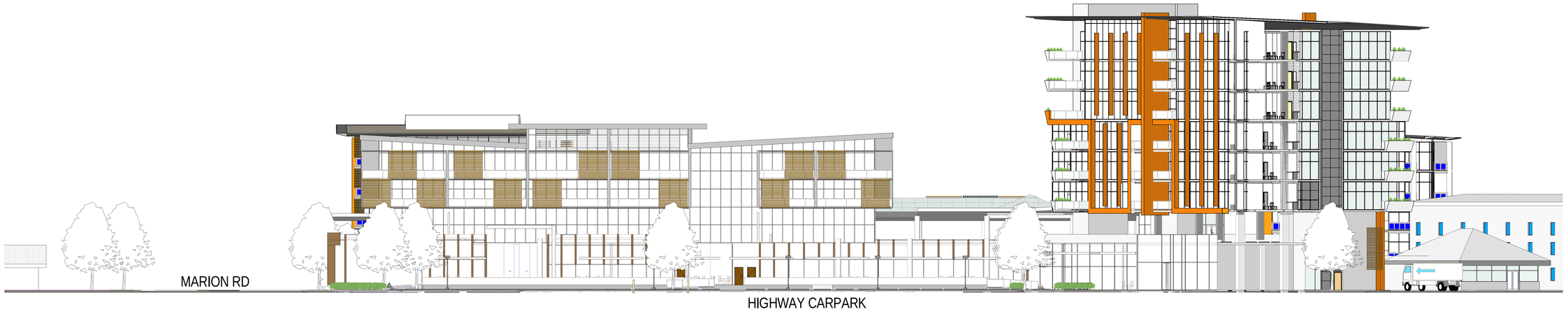
ELIZABETH AVENUE

ACCESS

N

0 2000 4000 6000 8000 10000mm
SCALE 1:200 AT ORIGINAL SIZE

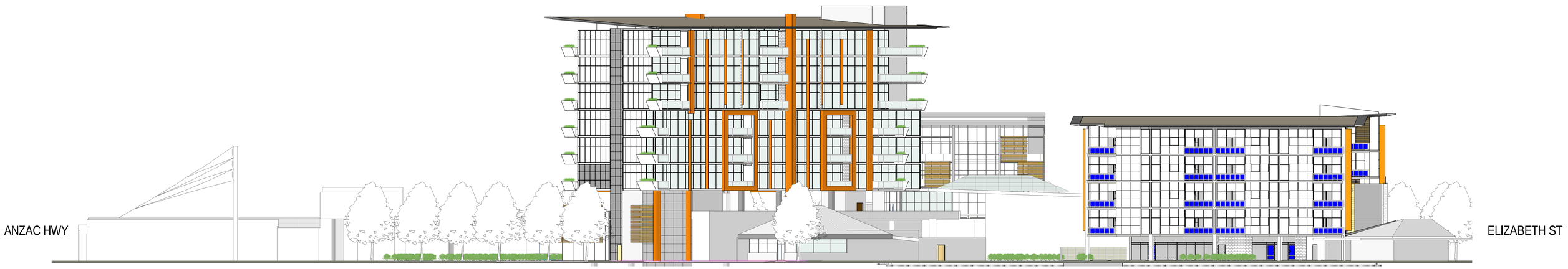
SOUTH ELEVATION
SCALE1 : 250



NORTH ELEVATION
SCALE1 : 250

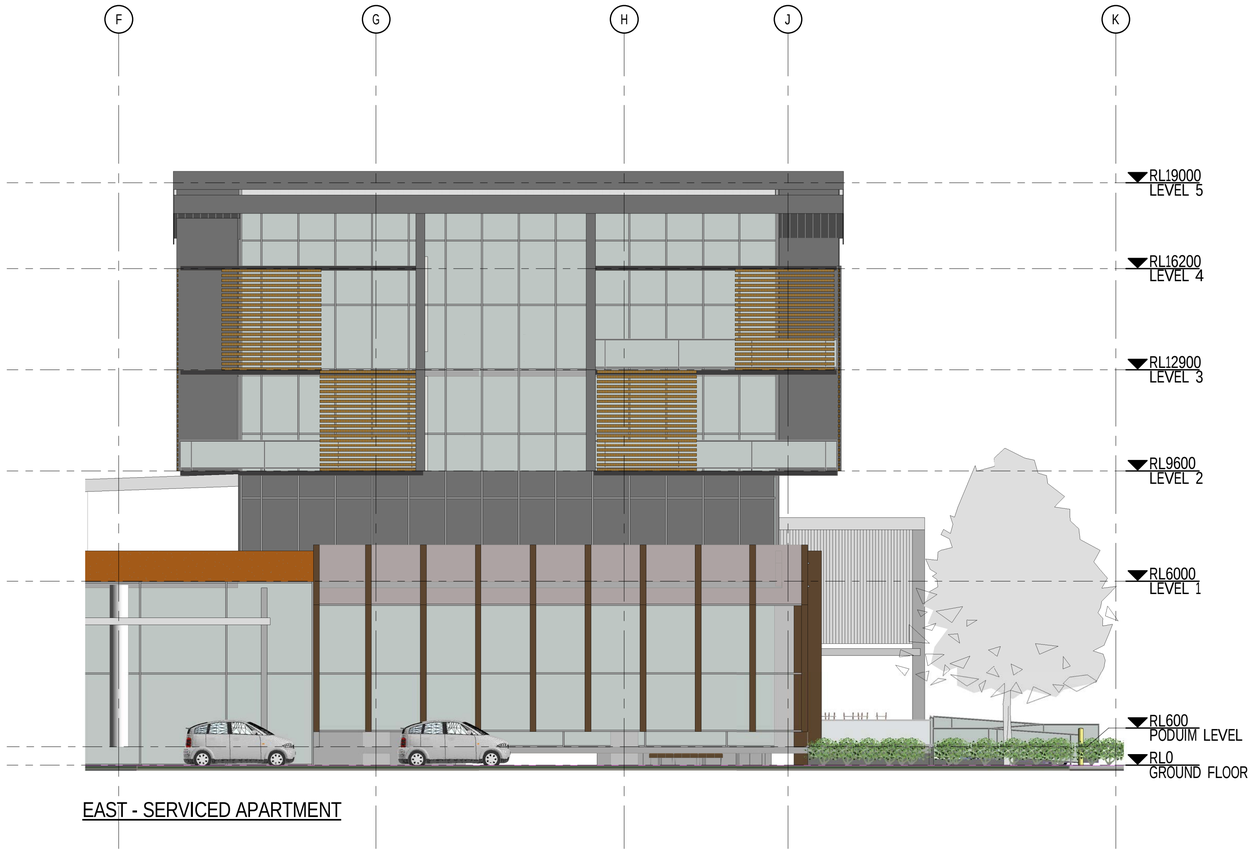
PRELIMINARY

EAST ELEVATION
SCALE1 : 250

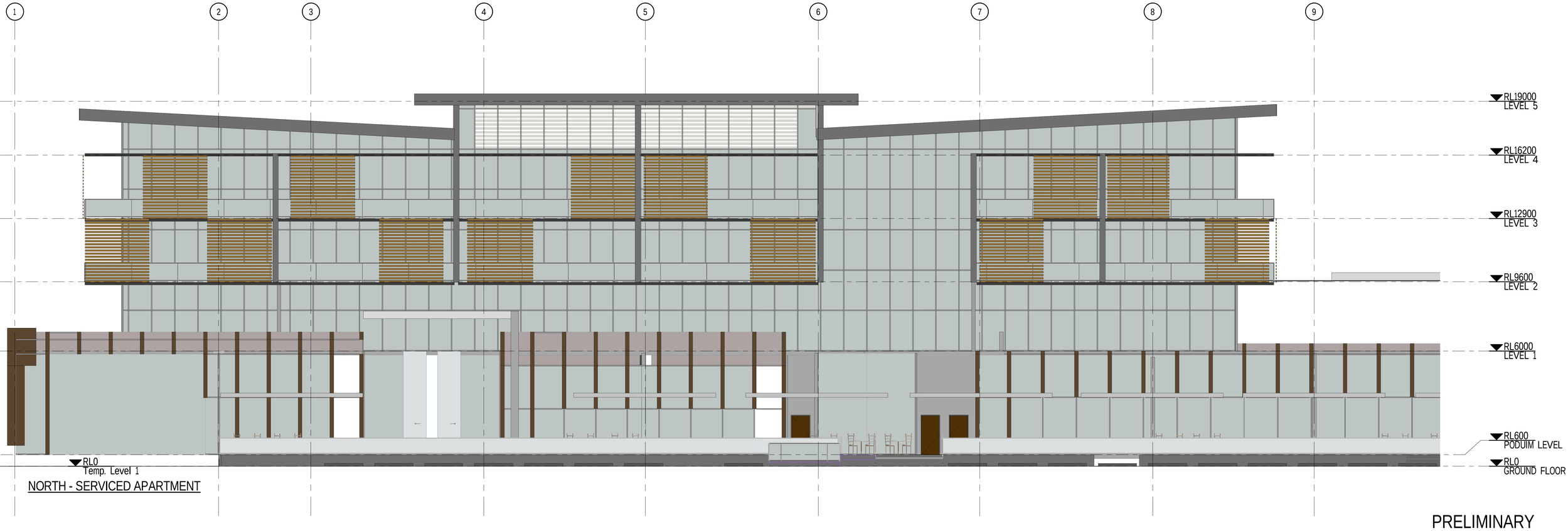


WEST ELEVATION
SCALE1 : 250

PRELIMINARY



EAST - SERVICED APARTMENT

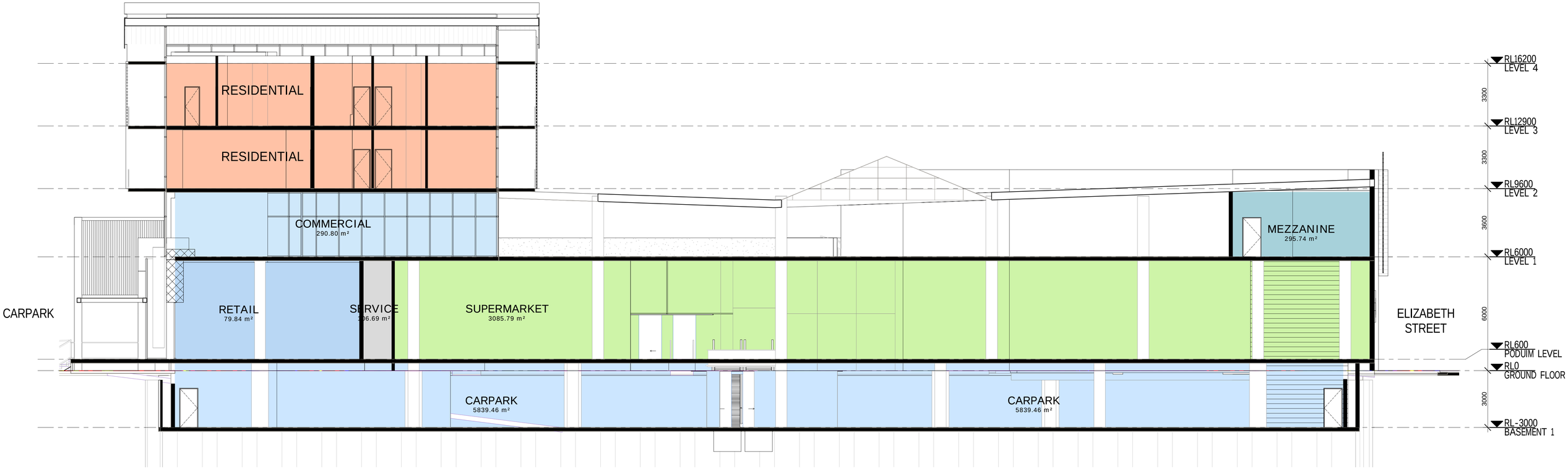


NORTH - SERVICED APARTMENT

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

AMENITIES
CARPARK
COMMERCIAL
FOYER
LIFTS
PLANT/UTILITY
RETAIL
SERVICE
STAIRS
SUPERMARKET
SUPERMARKET STORE
RESIDENTIAL



1 / A004 A — SCALE 1 : 100

0 1000 2000 3000 4000 5000 mm
SCALE 1:100 AT ORIGINAL SIZE

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

AMENITIES
CARPARK
FOYER
HIGHWAY
LIFTS
MALL
PLANT/UTILITY
RETAIL
SERVICE
STAIRS
SUPERMARKET

1 / A004 B
SCALE 1 : 200

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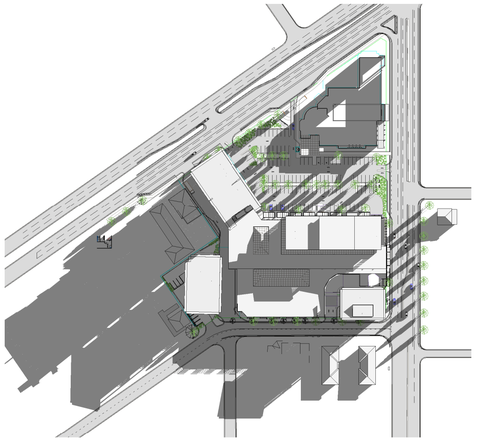
SCALE 1:100 AT ORIGINAL SIZE

PRELIMINARY



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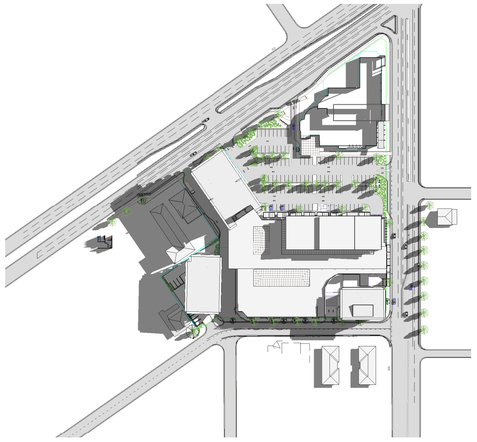
SCALE 1 : 2000



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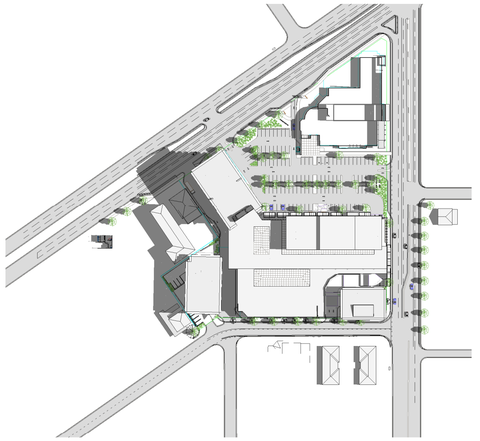

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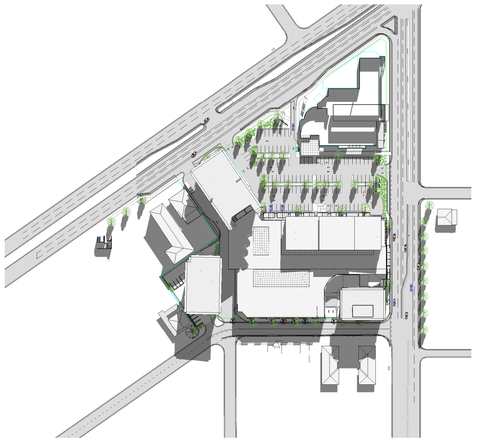
SCALE 1 : 2000



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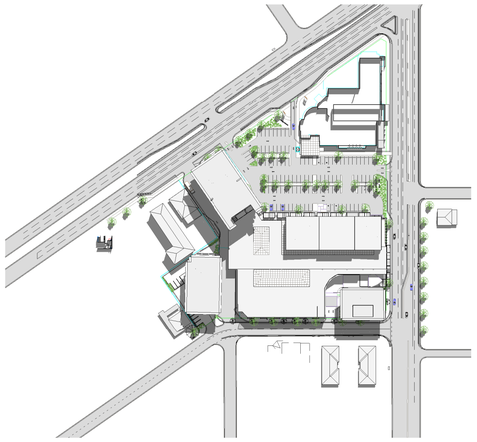

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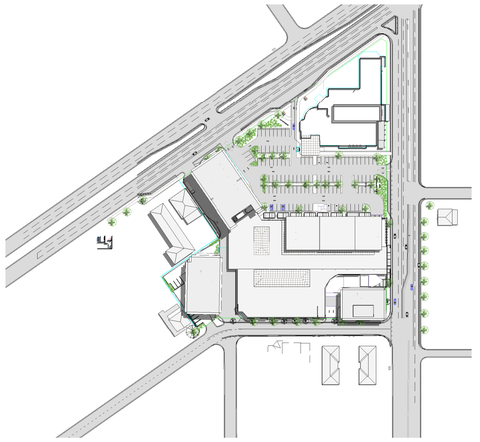
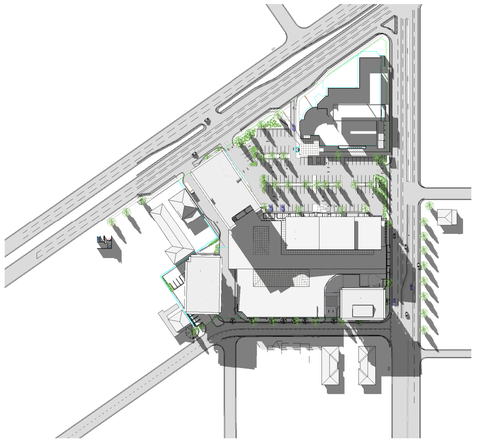
SCALE 1 : 2000



- SHADOWS - DEC 22 - 12 NOON
SCALE 1 : 2000



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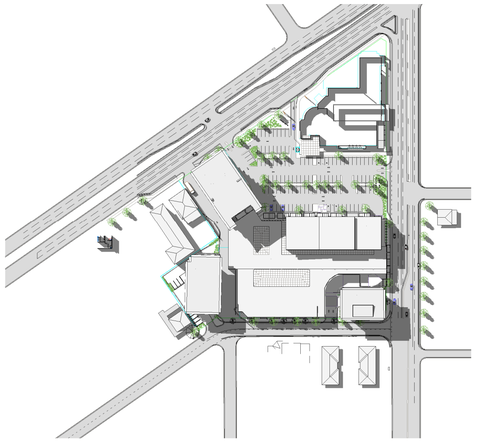
SCALE 1 : 2000

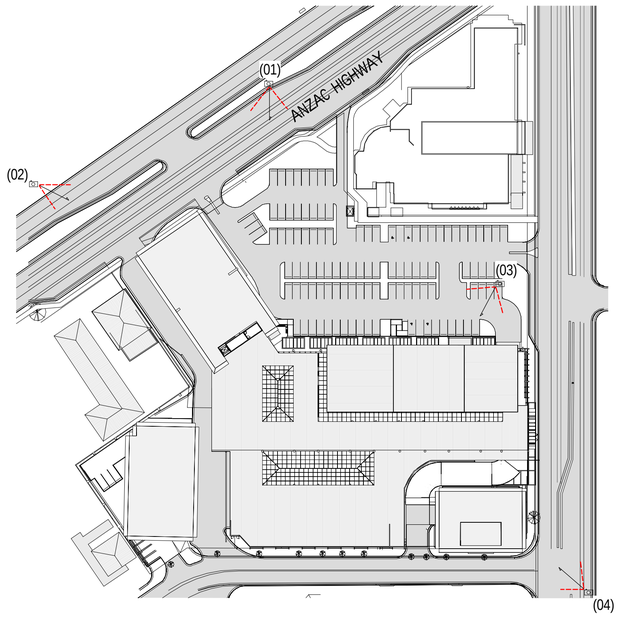


- SHADOWS - SEPT 22 - 3 PM
SCALE 1 : 2000

- SHADOWS - DEC 22 - 3 PM
SCALE 1 : 2000

PRELIMINARY

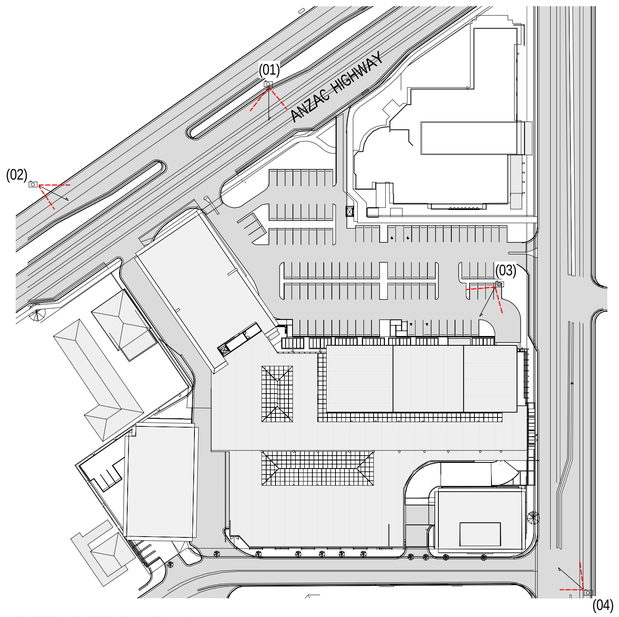
(01) Anzac Hwy - Entry



PERSPECTIVE KEY PLAN

(02) Anzac Hwy - Looking East

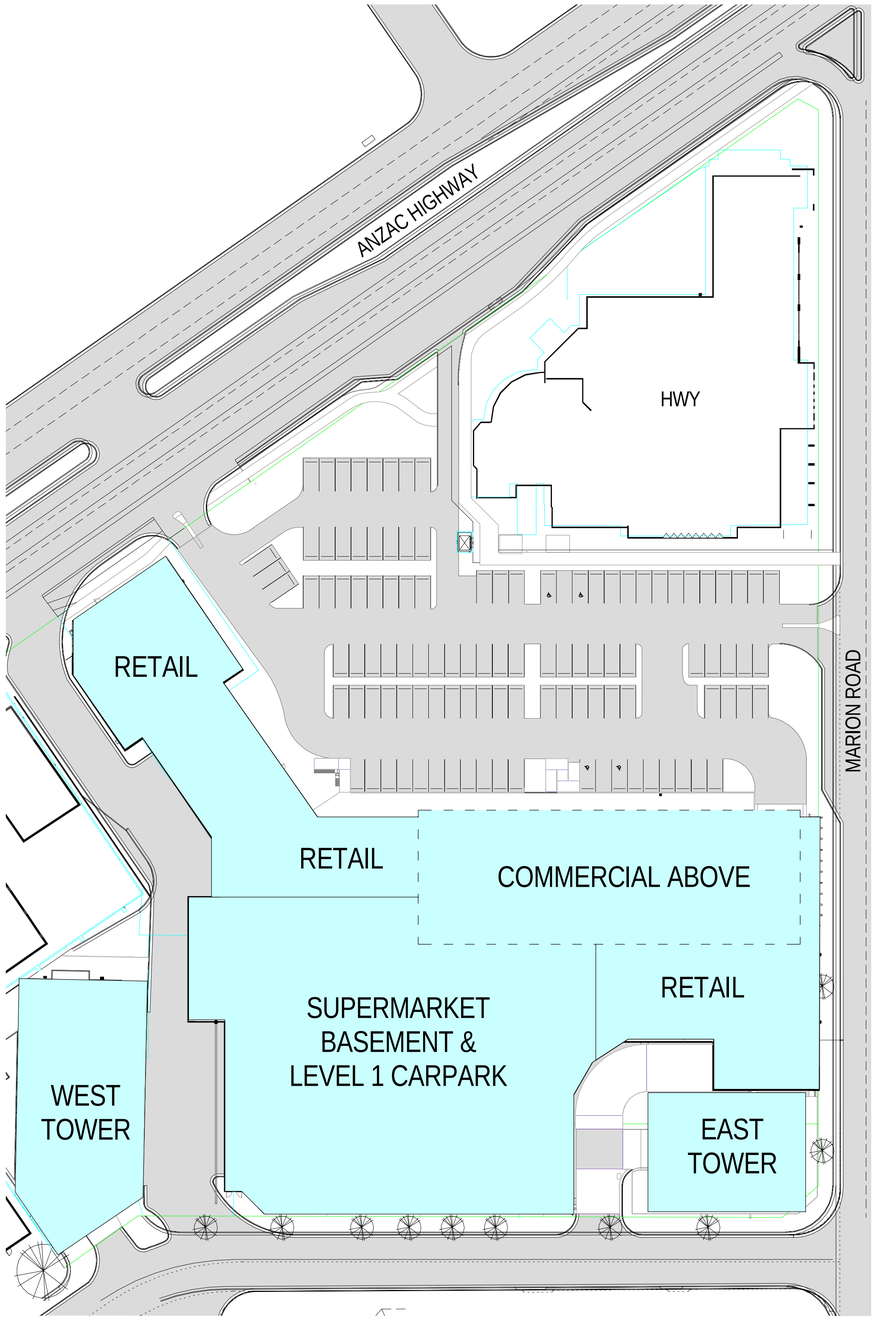
(03) Carpark/Serviced Apartments



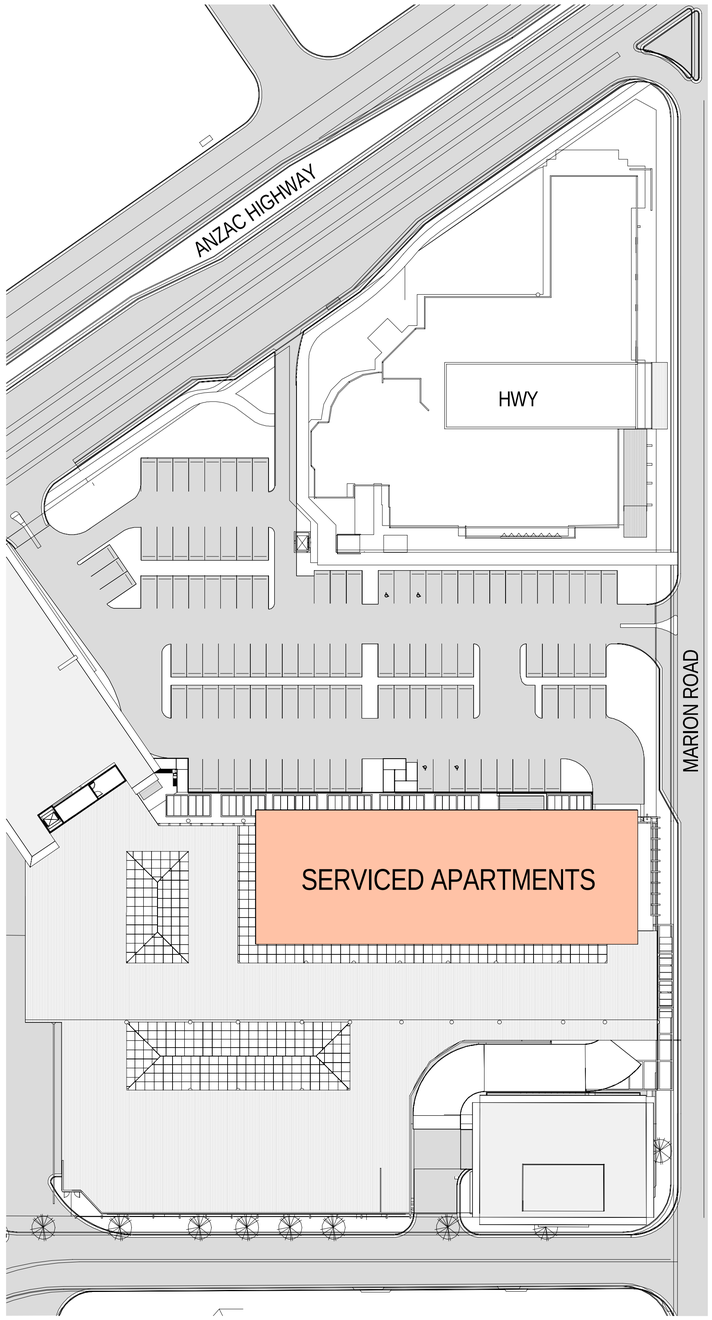
PERSPECTIVE KEY PLAN.

(04) Marion Rd - Elizabeth St

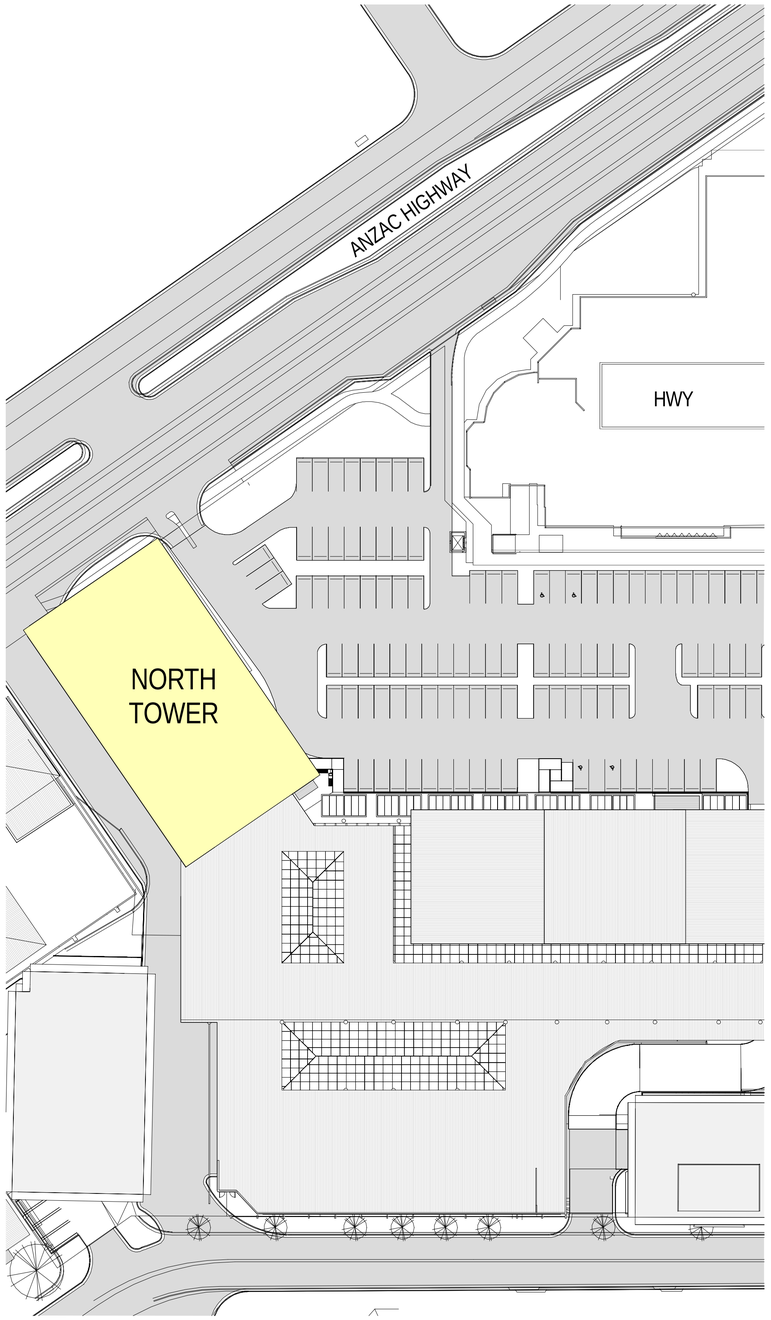
PRELIMINARY



STAGE 1



STAGE 2



STAGE 3

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

	DEMOLITION SCHEDULE	AREAS
1	RETAIL SHOPS (2)	1239
2	HOUSES (3)	601
3	FLATS (3)	417
4	SHEDS (2)	108
	TOTAL	2365 SQ M

ANZAC HWY

ACCESS

EXISTING BOTTLE SHOP

CHAIN MESH FENCE

ACCESS

4

4

3

3

3

2

2

2

1

EXISTING CAR PARK

1

ACCESS

MARION ROAD

ACCESS

ELIZABETH STREET

A100 Highway Development

17.01.2013 -REV A

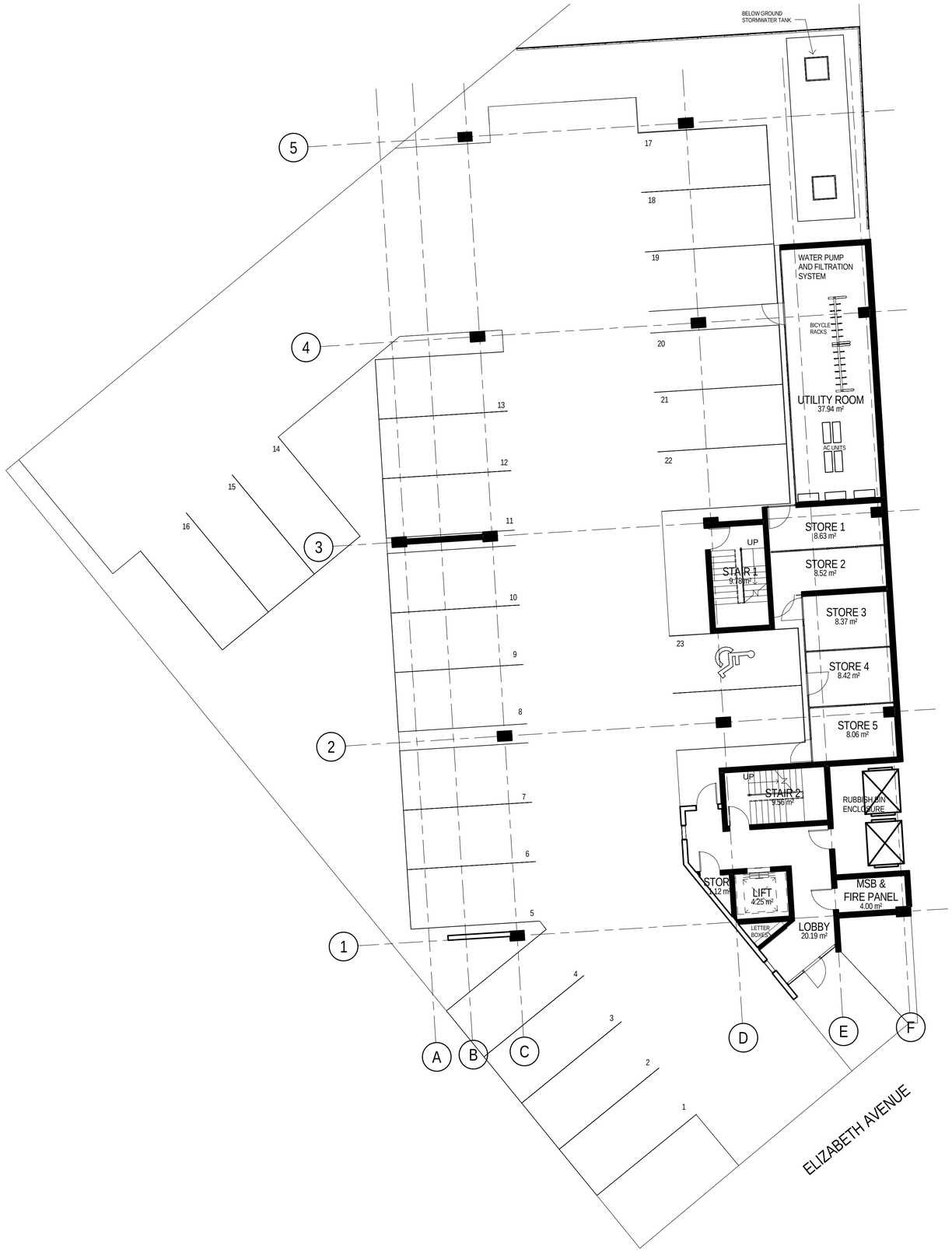
DEMOLITION PLAN

0 2500 5000 7500 10000 12500mm

SCALE 1:250 AT ORIGINAL SIZE

GHD CONNOR HOLMES A EYRE COMPANY

N



GROUND FLOOR PLAN
SCALE 1 : 100

0 1000 2000 3000 4000 5000 mm
SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

FLOOR PLAN LEVELS 1 TO 4

SCALE 1 : 100

0 1000 2000 3000 4000 5000mm

SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

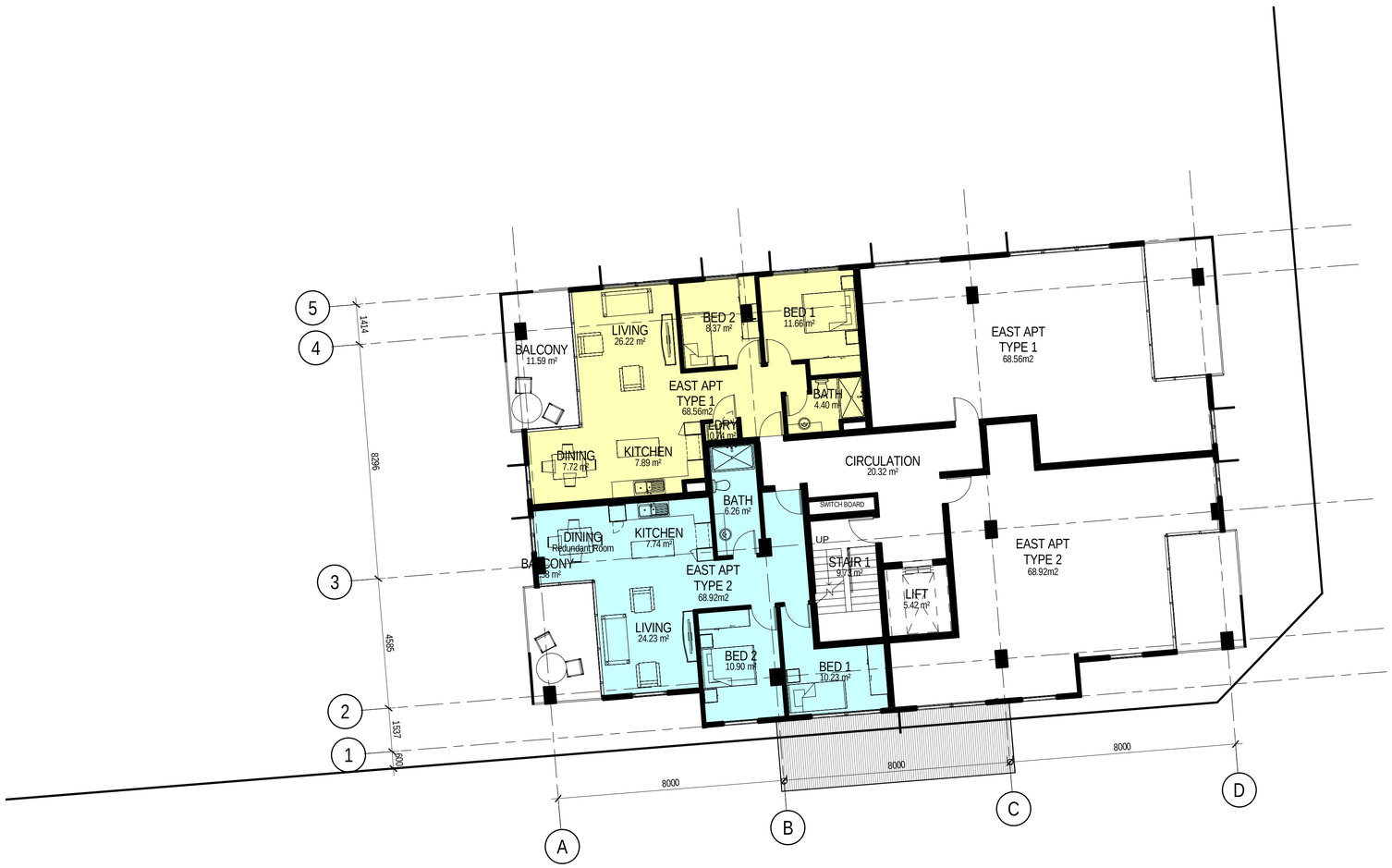
GROUND FLOOR PLAN
SCALE 1 : 100

0 1000 2000 3000 4000 5000mm
SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY



FLOOR PLAN LEVELS 1 TO 4

SCALE 1 : 100

0 1000 2000 3000 4000 5000mm

SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

FLOOR PLAN LEVELS 2 TO 4

SCALE 1 : 100

0 1000 2000 3000 4000 5000mm

SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

FLOOR PLAN LEVELS 5 TO 7

SCALE 1 : 100

0 1000 2000 3000 4000 5000 mm

SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

AMENITIES
CARPARK
COMMERCIAL
FOYER
LIFTS
PLANT/UTILITY
RETAIL
SERVICE
STAIRS
SUPERMARKET
SUPERMARKET STORE

STAIRS
DN
DN
LIFTS
APARTMENTS ENTRY
44.24
COMMERCIAL
288.83
COMMERCIAL
588.87
STAIRS
17.44
UTILITY
66.81
5 DDA BAYS
14 BAYS
J
H
G
F
9
8
7
6
5
4
3
2
1

0 1000 2000 3000 4000 5000 mm
SCALE 1:100 AT ORIGINAL SIZE

N

PRELIMINARY

0 1000 2000 3000 4000 5000mm
SCALE 1:100 AT ORIGINAL SIZE

N

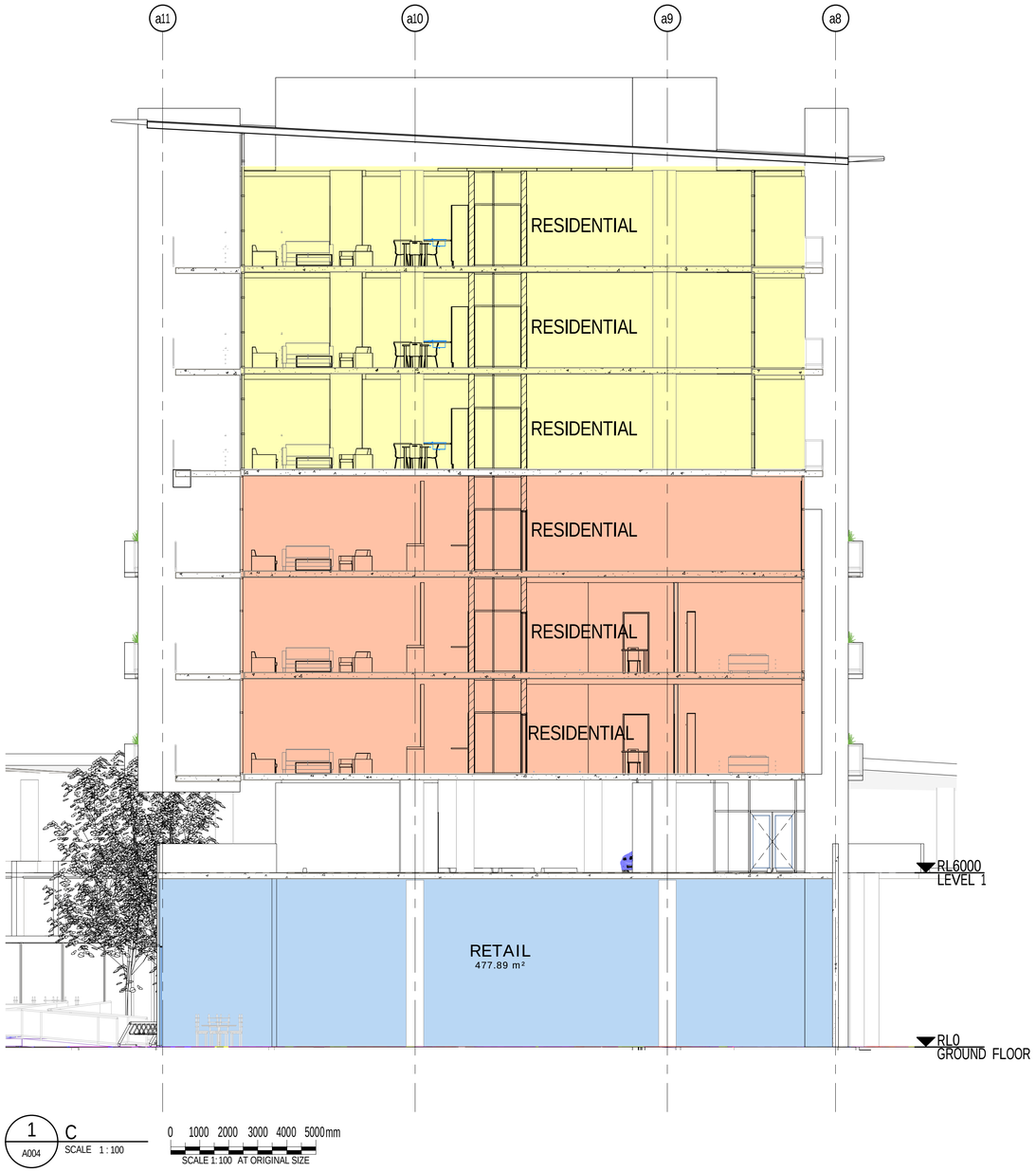
PRELIMINARY

GHD CONNOR HOLMES A FYFE COMPANY

CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

ATTACHMENT 6

SKETCH VIEW OF ELIZABETH AVENUE



- APARTMENTS ENTRY
- CARPARK
- COMMERCIAL
- MEZZANINE
- RETAIL
- ROOFTOP CARPARKING
- SERVICE
- STAIRS
- SUPERMARKET
- TOILETS

View from Marion Road View Looking West

View from Elizabeth Ave Looking East

High Level View Looking East

CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

ATTACHMENT 7

TRAFFIC REPORT

aurecon

Project: Plympton Mixed Use Development

Traffic and Parking Assessment

Reference: 228015

Prepared for: The Palmer Group

Revision: 2

16 January 2013

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Current Revision		**2**				

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Appendices

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1. Introduction

Aurecon have been engaged by the Palmer Group to prepare a traffic and parking assessment pertaining to the proposed mixed use development located in Plympton, Adelaide. Refer to **Figure 1** for the location of the subject site.

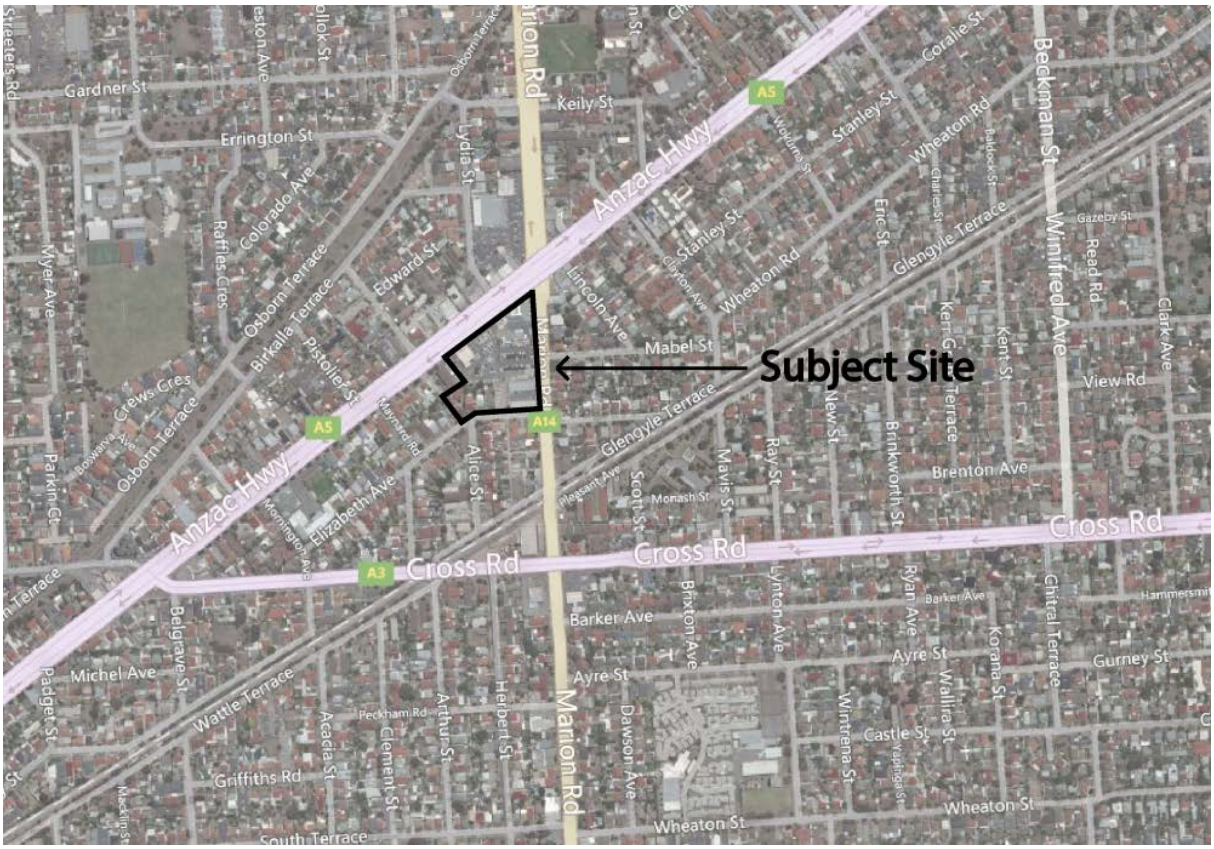


Figure 1 |Site Location

The proposed development is mixed use, comprising residential apartments, serviced apartments, a supermarket, retail shops and commercial areas. Car parking is proposed over three levels, including bicycle parking at grade. The development site also includes the existing Highway Hotel.

This report details the traffic, parking, cycling and pedestrian impacts of the proposed development within the development site and the external road network.

Traffic modelling has been undertaken utilising Aimsun, a microscopic traffic simulation software and an accompanying Aimsun Traffic Modelling Report is currently being prepared by Aurecon for the Department for Planning, Transport and Infrastructure (DPTI). A summary of the key impacts on the adjacent road network is included in **Section 5.3**.

This Traffic and Parking Assessment supersedes Aurecon / QED's previous assessment of the site for the Palmer Group, 'Traffic Impact Assessment' dated May 2009.

2. Existing Conditions Assessment

2.1 Site Location

The subject site is located abutting Marion Road, Anzac Highway and Elizabeth Avenue in the suburb of Plympton, West Torrens, and includes adjacent the existing Highway Hotel and Thirsty Camel Bottle Shop.

The surrounding arterial roads, Marion Road, Anzac Highway and Cross Road are under the care and control of DPTI. The remaining streets surrounding the subject site are local streets under the care and control of the City of West Torrens.

The subject site is located in the Neighbourhood Centre Zone, Plympton Policy Area 16 as stipulated in the West Torrens Development Plan (consolidated 2 February 2012), hereafter referred to as the Development Plan. A portion of the site (the allotments along the south-west boundary on Elizabeth Avenue) are zoned Residential, Policy Area 21.

Existing use of the site includes:

- The Highway Hotel.
- Thirsty Camel Bottle Shop.
- Car parking.
- Residential buildings.
- Disused buildings.

The site is located adjacent retail and commercial land use on Anzac Highway and Marion Road and residential land uses to the west of the site. The Glenelg to Entertainment Centre tram service is located approximately 200m south of the site, intersecting Marion Road.

2.2 Existing Off-Street Parking

Approximately 230 off-street car parking spaces are provided for the Highway Hotel and Thirsty Camel Bottle Shop on the existing site.

2.3 Existing On-Street Parking

The existing on-street restrictions for the roads that bound the development are as follows:

- Anzac Highway south east kerb line – Clearway adjacent existing Highway Hotel (No Standing 4:30pm – 6:30pm Monday to Friday), Bus Zone adjacent existing bus stop 11 and a Taxi Zone adjacent the existing Thirsty Camel Bottle Shop.
- Marion Road west kerb line – No Stopping anytime.
- Elizabeth Avenue both kerb lines – no restrictions, car parking permitted on both kerb lines.

2.4 Adjacent Road Network and Site Access

Traffic operating performance was not analysed for 2011 / 2012 conditions because this was modelled with Aimsun and assessed at 2016, the base year for the development assessment, refer to **Section 5.3**.

Anzac Highway and Marion Road intersect adjacent the subject site at a major signalised intersection. Anzac Highway is a six lane divided arterial road with a bike lane on both directions and Marion Road a four lane divided road, with both carriageways separated by raised central medians.

U-turns are permitted for both westbound and eastbound vehicles from an opening in the central median on Anzac Highway adjacent the subject site. Right turns into the subject site and from the existing car park into Anzac Highway eastbound are not permitted. Three driveways on Anzac Highway provide access to the existing car park from the acceleration lane which runs from the Marion Road intersection past the subject site. The access immediately south of the Thirsty Camel Bottle Shop is used for vehicle egress only.

Three access points for the existing car park are located on Marion Road, two are separated ingress and egress points located opposite Mabel Street while a third left in / out only access is located adjacent the disused buildings on the site.

Elizabeth Avenue is a two lane local road which provides access for the existing residential properties located on site, and connects Cross Road and Marion Road via Maynard Road and Mornington Avenue.

2.4.1 Arterial Road Traffic Volumes and Intersection Turning Movements

Average annual daily traffic (AADT) and intersection turning movements has been obtained from DPTI for the following arterial road intersections surrounding the subject site.

- Anzac Highway / Marion Road.
- Anzac Highway / Cross Road / Stonehouse Avenue.
- Marion Road / Cross Road.

AADT is summarised in **Table 2.1** below (Refer to **Appendix A** for turning movement summaries).

Table 2.1 | AADT

Road Section	AADT (two-way)	Year of Count
Anzac Highway – east of Marion Road	37,400	2011
Anzac Highway – west of Marion Road	31,500	2011
Anzac Highway – south of Cross Road and Stonehouse Avenue	32,600	2007
Marion Road – north of Anzac Highway	27,700	2011
Marion Road – between Anzac Highway and Cross Road	30,050*	2011
Marion Road – south of Cross Road	34,900	2011
Cross Road – west of Marion Road	13,200	2011
Cross Road – east of Marion Road	18,000	2011

**average taken from Anzac Highway / Marion Road and Marion Road / Cross Road intersection 2011 counts*

2.4.2 Local Road Traffic Volumes

Local road turning traffic volumes and speed counts have been recorded for the following roads:

- Elizabeth Avenue – West of Marion Road.
- Glengyle Terrace – West of Marion Road.
- Maynard Road – North of Cross Road.
- Mornington Avenue – North of Cross Road.
- Mornington Avenue – South of Anzac Highway.

Refer to **Appendix B** for local road traffic volume and speed summaries.

In addition, turn count surveys were conducted at the following intersections in the morning (7:30 - 9:00) and evening (4:00 – 6:00) peak:

- Mornington Avenue / Cross Road / Lindsay Street intersection – 7 August 2012.
- Elizabeth Avenue / Marion Road intersection – 7 August 2012.
- Highway Hotel and Thirsty Camel Bottle Shop access / Anzac Highway – 9 August 2012
- Highway Hotel access / Marion Road – 9 August 2012.

Refer to **Appendix C** for turn count survey data.

2.5 Crash History

The following crash history for the five year period between 2007 and 2011 in the immediate vicinity of the subject site has been provided to Aurecon by DPTI. The data has been summarised in **Table 2.2**. below.

Table 2.2 | Crash History

Location	Injury	Property Damage Only
Anzac Highway – between Williams Avenue and Marion Road	4 (1*)	15
Marion Road / Anzac Highway Intersection	23 (3*)	84
Marion Road between Mabel Street and Anzac Highway	0	2

(*) Indicates the number of hit pedestrian injuries

As per **Table 2.2**, the largest number of crashes occurred at the Anzac Highway / Marion Road intersection. The primary crash type was rear end, either resulting in injury or property damage only. For the traffic volumes along Anzac Highway and Marion Road, this crash history is not considered to be significant.

The Road Crash Information Unit of DPTI has provided Aurecon with a Crash Diagram of Anzac Highway, between Maynard Road and Lydia Street. No crashes are specifically related to vehicle ingress / egress at the access points for the Highway Hotel aside from one crash which resulted in property damage only (due to reversing without due care) near the Thirsty Camel Bottle Shop.

The Road Crash Information Unit of DPTI has advised that there are no discerning problems with the mid-block crashes recorded on Marion Road, adjacent Mabel Street in relation to the Highway Hotel entry and departure areas. Only rear end crashes approaching the intersection are recorded.

2.6 Sustainable Transport Modes

2.6.1 Public Transport

The Adelaide Metro public transport system operates 19 different bus routes on the surrounding road network. The majority of these bus services connect the south-western suburbs to the Adelaide CBD via Anzac Highway and Marion Road, running at frequent intervals.

Bus Stop 11 on Anzac Highway for westbound buses is located in front of the Highway Hotel with the stop for eastbound buses located directly across the road. Bus stop 11A for northbound buses is located south of Elizabeth Avenue on Marion Road, in close proximity to the subject site. The Marion Road bus stop 11A for southbound buses is located further down, adjacent Glengyle Terrace.

Most bus routes connect to other public transport nodes such as, Arndale Centre Interchange, Marion Interchange, Flinders University, Kensington, Paradise Interchange, Tea Tree Plaza Interchange and Golden Grove Village Interchange. Anzac Highway and Marion Road are 'Go Zones' with bus services running every 15 minutes from 8am to 6pm. Outside of these periods the frequency is reduced or terminated. Refer to **Appendix D** for further information on existing bus services.

The subject site is in close proximity (approximately 200m) to Marion Road Stop 10 on the Glenelg - Entertainment Centre Tram Line.

The eastbound tram stop is located to the east of Marion Road and the westbound stop to the west. A signalised pedestrian and cyclist crossing on Marion Road provides access to both tram stops.

On this basis, it is considered that the subject site has good access to public transport, in keeping with a 'transit corridor' as defined in the 30-Year Plan for Greater Adelaide.

2.6.2 Pedestrians

Pedestrian access to the existing site is provided by footpaths adjacent to the Marion Road and Anzac Highway access points. Signalised pedestrian crossings are located on each approach at the Marion Road / Anzac Highway Intersection.

2.6.3 Cycling

Marked on-street bicycle lanes are provided on Anzac Highway, Marion Road and Cross Road (aside from the section between Cross Road and Anzac Highway and in front of the existing shopping centre north of Anzac Highway).

These bike lanes connect the subject site to the Westside Bikeway which is an off road sealed path that runs parallel to Anzac Highway (following an open space corridor).

3. Proposed Development

The proposed development comprises of multi-storey residential apartments, serviced apartments, a supermarket, retail and commercial land uses. Multilevel car parking is proposed at basement, ground level and level 1 including bicycle parking facilities. It is proposed that the construction of the development will be staged.

Analysis of the proposed development is based on GHD architectural drawings A002 Site Plan, A003 Retail Basement, A004 Retail Ground Floor and A005 Retail First Floor Plan (refer to the body of the report). Areas shown on GHD plans are calculated as Gross Leasable Floor Area (GLFA).

3.1 Proposed Land Use

As per GHD Plan A002 Site Plan (refer to the body of the report) the proposed development comprises of the following components.

Table 3.1 | Proposed Land Use

Land Use	Apartment Schedule / Sqm	Stage
Serviced Apartments	12 (1 bed apartments) 14 (2 bed apartments)	Stage 2
North Tower	24 (2 bed apartments) 18 (3 bed apartments)	Stage 3
East Tower	16 (2 bed apartments	Stage 1
West Tower	24 (2 bed apartments)	Stage 1
Ground floor supermarket	3085 sqm	Stage 1
Ground floor retail	1925 sqm	Stage 1
Commercial	890 sqm	Stage 2

**Sqm of the supermarket retail and commercial land uses has been rounded to the nearest integer*

It is expected that the stages will be completed by approximately:

- Stage 1 – 2016.
- Stage 2 – 2021.
- Stage 3 – 2021.

3.2 Proposed Car Parking

Car parking is proposed at basement, ground floor and level 1.**Table 3.2** provides the proposed provision of car parking, as per GHD Plan A003 Retail Basement (refer to the body of the report).

Table 3.2 | Proposed Car Parking

Basement 1 Land Use	Provided
Retail / Commercial	166
Retail / Commercial car parking for disabled persons	4
Total	**170**

Ground Floor Land Use	Provided
East Residential	13
East car parking for disabled persons	1
Retail / Commercial	104
Retail / Commercial car parking for disabled persons	4
West Residential	22
West car parking for disabled persons	1
Total	**145**
Level 1 Land Use	**Provided**
North Residential	64
North car parking for disabled persons	2
Retail / Commercial	27
Serviced Apartments	36
Serviced Apartments car parking for disabled persons	4
Total	**133**
Combined Provided	**448**

It is noted that the parking provided on the site will be shared between the proposed development and the existing Highway Hotel. The required car parking and bicycle parking for the hotel has therefore been considered in **Section 4** Parking Assessment.

3.3 Proposed Access

Access to the ground floor and basement car park is via the following:

- Ingress / egress on Anzac Highway, adjacent the retail area (left in / left out only).
- Left in Ingress only on Anzac Highway adjacent the existing bus stop 11.
- Ingress / egress on Marion Road, adjacent the Highway Hotel (left in / left out only).

Access for the level 1 car park, east and west residential towers is via:

- Ingress / egress on Elizabeth Avenue is provided for the east residential tower car park and level 1 car park.
- A separate ingress / egress on Elizabeth Avenue for the west tower residential car park.

3.4 Loading Dock

Two proposed loading docks to the west of the subject site are accessed via an ingress point on Anzac Highway. The loading docks will be one-way with vehicles exiting via Elizabeth Avenue servicing both the retail shops and the supermarket. As per GHD Plan A004 Retail Ground Floor (refer to the body of the report) a vehicle waiting bay is proposed along the western kerb line before the retail loading bay.

4. Car Parking / Loading and Pedestrian Access Assessment

The parking assessment in this section provides an analysis of the car parking and bicycle parking demands generated by the proposed development, the proposed car parking provisions and layout, reserved car parking and bicycle parking provisions. The proposed loading dock access and pedestrian access for the proposed development are also considered in this section.

Assessment of the proposed car parking layout is based on compliance with *Australian/New Zealand Standard 2890:*

- Parking Facilities Part 1 – Off-Street Car Parking (AS/NZ 2890.1:2004).
- Parking Facilities Part 6 – Off-Street Parking for People with Disabilities (AS/NZ 2890.6:2009).

4.1 Car Parking Provisions

Parking rates used to ascertain the parking demand of the proposed development are based on the South Australian Planning Policy Library Version 6, released September 2011, hereafter referred to as the Policy Library. The car parking rates stipulated in the Policy Library represent the best available guide to car parking rates for mixed use development. The Policy Library car parking rates for each land use of the proposed development and associated demand are shown in **Table 4.1**.

Table 4.1 | Proposed Demand

Land Use	No. of Apts.	GLFA	Rate	Required Parks
Serviced 1 Bed	12		1 per 4 bedrooms*	3
Serviced 2 Bed	14		1 per 4 bedrooms*	4
2 bed	64		1 per dwelling*	64
3+ Bed	18		1.25 per dwelling*	23
Supermarket		3085	4.5 per 100 sqm of GLFA	139
Retail		1925	3 per 100 sqm of GLFA*	58
Commercial		891	3 per 100 sqm of GLFA*	27
Total				**317**

Totals may not sum exactly due to rounding

**indicates the minimum rate stipulated in the Policy Library for a 'core area'*

Minimum car parking rates stipulated in the Policy Library have been applied to the proposed land uses which reflects the close proximity to public transport to the subject site with good levels of service. However, the car parking rate for the supermarket has been increased from the minimum to 4.5 per 100 sqm of GLFA accounting for estimated demand. The supermarket rate is based on new unpublished Aurecon research which indicates the minimum rate for a shop within a centre should be 4.5 per 100 sqm of GFLA.

The car parking rates for the serviced apartments are based on 'tourist accommodation' as described in the Policy Library. It is considered that tourist accommodation and serviced apartments share the same characteristics and therefore a similar car parking demand.

The Policy Library does not stipulate rates for hotel land use and as such a previous Aurecon car parking survey has been used to determine the demand for the Highway Hotel. Surveys of the Highway Hotel car parking demand were undertaken on Friday 31 August 2007 and Saturday 1 September 2007 recently after the Highway Hotel was upgraded. The 2007 surveys indicate 160 car

parking spaces are required to cater for combined hotel / mixed use peak demand (refer to **Appendix B** for the Highway Hotel survey data).

A shared use discount of 10% has been applied to the proposed supermarket and Highway Hotel parking demands respectively considering shared land use.

A 10% discount yields a parking demand of 125 for the supermarket and 144 for the Highway Hotel which results in a total car parking demand of **447**, one less than the proposed provision of **448**.

No further car parking discounts have been applied to the other proposed land uses as it is considered that the car parking rate cannot be reduced beyond the Policy Library minimum rate.

4.2 Car Park Layout

The proposed development is to provide 448 car parks. The east and west residential tower car parks are located at grade and spaces are reserved for residential use. Portions of the level 1 car park are also reserved for residential use (allocated to the north residential tower and the serviced apartments). All other car parking bays are provided for shared use, including employee parking.

The required dimensions of car parking bays and aisle widths are defined in AS/NZ 2890.1:2004 by car park user class. Refer to **Table 4.2** below for minimum dimension of 90^0 degree car parking.

Table 4.2 | Minimum Car Park Bay Dimensions by User Class – 90^0 Degree Car Parking

User Class	Car Park Bay Width	Car Park Bay Length	Car Park Aisle Width
1A - Residential, domestic and employee parking	2.4	5.4	5.8
2 - Hotels	2.4	5.4	5.8
3A - Short term, high turnover parking at shopping centres	2.6	5.4	6.6
4 – Parking for persons with a disability	Widths specified in AS/NZ 2890.6:2009 (see **Section 4.3** below)		

Note: When land uses share parking, the largest applicable dimension (Class 3A) applies

Analysis of GHD Plans A002 Site Plan, A003 Retail Basement, A004 Retail Ground Floor and A005 Retail First Floor Plan (refer to the body of the report) indicates:

- 90^0 angle parking is proposed for all car parking bays.
- All dedicated car parking bays are 2.6m x 5.4m which complies with the required Class 3A minimum width and length.
- Aisle widths are 6.6m in the basement, ground floor and level 1 car park which complies with the class 3A standard. A one-way aisle is provided in the north-west quadrant of the ground floor car park of 5.8m. This complies with the minimum one-way width.
- All car park bays in the basement car park and level 1 car park meet the required design envelope to be kept clear of columns, walls and obstructions as stipulated in *AS/NZ 2890.1:2004*.
- *AS/NZ 2890.1:2004* stipulates that blind aisles shall extend to a minimum of 1m beyond the last parking space, and the last parking space widened by at least 300mm into the 1m area if it is bounded by a wall or fence. The north-west, north, west and east blind aisles in the level 1 car park are bounded by the car park wall. The approximate blind aisle clearances are provided as follows:
  - North-west – 4.2m

- North - 1.2m
- West -1.9m
- East 5.4m

Therefore, sufficient room exists to ensure the adjacent end parking bays are provided at a width of 3.0m. This leaves a 3.9m, 0.9m, 1.6m and 5.4m clearance to the car park walls respectively which are sufficient.

- The east and west residential tower car parking bays will be allocated for private residents only. No requirements therefore exist for a separate turnaround bay at the end of the west and east tower car park aisles. The level 1 car park will also be predominantly allocated for private residential and service apartment land uses via controlled access to these spaces. No requirement therefore exits for separate turnaround bays at the end of the north-west, north and west end aisles.
- Entry / exit ramp gradients within the basement and level 1 car park comply with the standards specified in *AS/NZ 2890.1:2004*.
- Wheel stops are provided within the basement car park, ground floor car park and the level 1 car parking limiting the travel of a vehicle into the parking space. As front-in parking would be likely in the 90° parking bays, wheel stops should be provided at the specified distance as per Table 2.1 in *AS/NZ 2890.1:2004* (minimum distance from wheel stop to kerb / wall of 820mm for a 100mm high wheel stop).
- The left in only access point from Anzac Highway is suitable for emergency vehicle access.
- The proposed car parks suitably accommodate the turning paths of the design B99 vehicle and B85 car as required in *AS/NZ 2890.1:2004*.
- It has been identified that there is limited site distance for vehicles exiting the east tower car park due to the level 1 car park curved ramp. This has been addressed by the provision of a convex mirror (refer to GHD Plan A005 Retail First Floor Plan (refer to the body of the report)).
- Linemarking will be provided in the western quadrant of the ground floor car park and adjacent the entrance from the ground floor car park into the basement car park to delineate turning paths of vehicles (refer to GHD Plan A002 Site Plan (refer to the body of the report)).
- Appropriate signage and linemarking should be provided for vehicles and pedestrians, as indicated in *AS/NZ 2890.1:2004*.

The anticipated parking demand of 447 is accommodated on site by the provision of 170 car parks at basement level (including the provision of 4 reserved bays for persons with a disability), 145 car parks at ground level (including the provision of 6 reserved bays for persons with a disability) and 133 car parks on level 1 (including the provision of 6 reserved bays for persons with a disability), i.e. the total spaces provided (448) exceeds the demand.

4.3 Reserved Car Parking

The Building Code of Australia stipulates 1 to 2% of total car parking spaces should be allocated for reserved car parking bays for persons with a disability. 2% provision would be considered appropriate which equates to the provision of nine reserved bays.

AS/NZS 2890.6:2009 requires dedicated parking bays to be 2.4m x 5.4m with the provision of a shared area with a bollard (2.4m x 5.4m) on one side of the bay.

As indicated on GHD Plan A002 Site Plan (refer to the body of the report):

- Four reserved bays for persons with a disability (including the required shared areas) are located in the ground floor car park. Two are located adjacent to the supermarket / retail mall entry near and two are located at the Highway Hotel entry. The dimensions of these reserved bays and the shared areas are 2.6m x 5.4m.

- One reserved bay for persons with a disability (including the required shared area) is located in the west residential tower car park, directly adjacent to the entrance. The dimensions of both the reserved bay and the shared area are 2.5m x 5.4m.
- One reserved bay for persons with a disability (including the required shared area) is located in the east residential tower car park, directly adjacent to the entrance. The dimensions of both the reserved bay and the shared area are 2.4m x 5.4m.

As indicated on GHD Plan A003 Retail Basement (refer to the body of the report):

- Four reserved bays for persons with a disability (including the required shared areas) are located adjacent to the basement car park foyer and lifts. The dimensions of these reserved bays and the shared areas are 2.6m x 5.4m.

As indicated on GHD Plan A005 Retail First Floor Plan (refer to the body of the report):

- Four reserved bays for persons with a disability (including the required shared areas) are located adjacent to the level 1 car park commercial and apartment entry. The dimensions of these reserved bays and the shared areas are 2.6m x 5.4m.

This complies with the requirements outlined above.

It is noted that the proposed provision complies with the requirements stipulated in the Development Plan (even though this does not apply for this development). *Table We/To2 Off-Street Parking Requirements* in the Develop Plan states '1 space for development with a total of 10 to 25 parking spaces and 1 space per 25 spaces thereafter to a maximum of 5 spaces.' is required for car parking for persons with a disability.

In total, 14 reserved parking bays are provided for persons with a disability which is higher than the calculated demand of nine.

4.4 Bicycle Parking

The Policy Library stipulates bicycle parking rates, specifically for development in mixed use zones. The bicycle parking rates and associated demand is shown in **Table 4.3**.

Table 4.3 | Bicycle Parking Demand

Land Use	Rate	Required Bicycle Parks	Visitor Rate	Required Visitor Bicycle Parks
Serviced 1 Bed	1 for every 20 employees	1*	2 for the first 40 rooms plus 1 for every additioanl 40 rooms	2
Serviced 2 Bed				
2 bed	1 per 4 dwellings	16	1 for every 10 dwellings	6
3+ Bed	1 per 4 dwellings	5	1 for every 10 dwellings	2
Supermarket	1 per 300 sqm of GLFA	10	1 per 600 sqm of GLFA	5
Retail	1 per 300 sqm of GLFA	6	1 per 600 sqm of GLFA	3
Commercial	1 per 200 sqm of GLFA	4	2 plus 1 per 1000 sqm of GLFA	2
Total		**43**		**21**
		64		

Totals may not sum exactly due to rounding

*Serviced apartment calculation based on the assumption that there will be 20 employees or less

The Policy Library does not stipulate a bicycle parking rate for hotels and as such The Planning SA Planning Bulletin (2001) 'Parking Rates for Selected Land Uses (Suburban Metropolitan Adelaide)' has been used to calculate the Highway Hotel bicycle parking demand (shown in **Table 4.4**). The Planning SA Bulletin stipulates a rate of 1 per 25 sqm of bar floor area for employees / visitors and 1 per 100 sqm of lounge / beer garden for both employees and visitors.

Table 4.4 | Hotel Bicycle Parking Demand

Licensed Areas	Sqm	Employee Parking Rate	Employee Parking Requirement	Visitor Parking Rate	Visitor Parking Requirement
Gaming Courtyard	18	1 per 100 sqm of GFA	1	1 per 100 sqm of GFA	1
Gaming Room	200	1 per 100 sqm of GFA	2	1 per 100 sqm of GFA	2
Function Room	345	1 per 100 sqm of GFA	3	1 per 100 sqm of GFA	3
Bistro	120	1 per 100 sqm of GFA	1	1 per 100 sqm of GFA	1
Beer Garden	280	1 per 100 sqm of GFA	3	1 per 100 sqm of GFA	3
Lounge Bar	170	1 per 100 sqm of GFA	2	1 per 100 sqm of GFA	2
Public Bar	136.5	1 per 100 sqm of GFA	1	1 per 100 sqm of GFA	1
Public Bar (Bar Only)	13.5	1 per 25 sqm of GFA	1	1 per 25 sqm of GFA	1
TAB (sports Bar)	52.5	1 per 100 sqm of GFA	1	1 per 100 sqm of GFA	1
TAB (sports Bar) (Bar Only)	2.5	1 per 25 sqm of GFA	1	1 per 25 sqm of GFA	1
Total			**14**		**14**
			28		

Totals may not sum exactly due to rounding

The above demands yield a total bicycle parking demand of 92 spaces (64+28).

The proposed development meets the requirements above, as shown on GHD Plan A002 Site Plan (refer to the body of the report) sufficient bicycle parking is provided at grade. 156 bicycle parking spaces are provided from 13 bike racks (12 spaces per rack) which is higher than the calculated demand of 92. Bicycle parking racks are located adjacent the Highway Hotel (3 racks), on the footpath in the south-west quadrant of the ground floor car park (4 racks) and to the north-east of the mall entry (6 racks).

It is noted that each of the residential towers have their own bicycle storage included within their footprint.

The design of bicycle parking should comply with *Australian Standard 2890.3-1993 Bicycle Parking Facilities*.

4.5 Loading Dock / Deliveries / Refuse Collection

Vehicle turn path modelling indicates sufficient room exists in the service bay to allow a 14m semi-trailer (supermarket deliveries) and a 12.5 rigid vehicle (other retail deliveries) to enter the loading dock from Anzac Highway, reverse into the supermarket or retail loading zone, exit via Elizabeth Avenue and turn left into Marion Road. It is noted that vehicles stored in the waiting bay area will be required to store in close proximity to the western kerb, ensuring sufficient room for vehicles turning left from Anzac Highway into the loading docks.

4.6 Pedestrian Access

Pedestrian access surrounding the subject site will be via existing footpaths on Anzac Highway, Marion Road and Elizabeth Avenue including the signalised pedestrian crossings at the Anzac Highway / Marion Road intersection. Access to the retail stores and supermarket at grade is via a pedestrian promenade. Bicycle parking along the pedestrian promenade area is located appropriately and will not impede pedestrian flow.

Pedestrian movements in the ground floor car park are facilitated by wombat crossings linking to Highway Hotel entrance and the pedestrian promenade and at the Marion Road access point. It is anticipated the wombat crossing line marking will be shown on Plans at the detailed design stage.

Pedestrian access from basement level is provided via, stairs, a lift and travelator while access from level 1 is via lifts and stairs in the north-west corner, at apartment entry area and at the mezzanine level. These provisions are considered appropriate for the number of pedestrians expected.

Appropriate wayfinding such as signage will guide access between the proposed development and the tram stations which align with TOD principles.

It should be ensured that the proposal meets the relevant requirements of the Disability Discrimination Act (1992), such as the provision of tactile surface indicators which will be show at the detailed design stage.

5. Traffic Assessment

The traffic assessment considers the traffic generation of the site, the distribution of traffic to and from the adjacent road network and the ingress / egress access proposed for the site.

5.1 Traffic Generation

The proposed development will generate traffic on the external road network, with each land use generating traffic at different rates.

The 'Guide to Traffic Generating Development' (Roads and Traffic Authority (RTA), New South Wales, 2002) provides an assessment of traffic generation for residential, commercial and retail developments.

Trip rates for both daily and peak traffic from the RTA guide can be used to calculate the traffic generated by the proposed development which is additional to existing traffic currently generated by the site.

Peak trip rates for the supermarket and retail land use have been reduced by 15% respectively from the RTA guide to reflect 2006 research conducted by the Western Australian Planning Commission in the 'Transport Assessment Guidelines for Developments, Volume 5 - Technical Appendix'. This research suggests trip rates can be reduced from the RTA guide to reflect the trend towards longer shopping hours, e.g. Sunday trading and because the RTA trip generation surveys were carried out (early 90's).

The trip rates applied to each land use of the proposed development and associated traffic generation are summarised in **Table 5.1**.

Table 5.1 | Traffic Generation

Development Type	Number of dwellings or GLFA	Unit	Daily rate per unit or per 100 sqm	Daily Trips	peak rate per unit	Peak Hour Trips	
Serviced1 Bed	12	Dwellings	4.0	48	0.5	6	
Serviced 2 Bed	14	Dwellings	4.0	56	0.5	7	
2 Bed	64	Dwellings	5.00	320	0.5	32	
3 Bed	18	Dwellings	5.00	90	0.5	9	
Supermarket	3085	sqm	147.50	(4550) 3640**	13.1	**AM*** (101) 81**	**PM** (404) 323**
Retail	1925	sqm	55.50	(1068) 855**	4.0	**AM*** (19) 15**	**PM** (77) 62**
Commercial	891	sqm	10.00	89	2.00	18	
					Total AM	**168**	
					Total PM	**457**	

Totals may not sum exactly due to rounding.

*The trips generated by the supermarket and retail land uses have been reduced by 75% in the morning peak hour to account for reduced AM demand at this time.

A 20% trip reduction has been applied to the supermarket and retail land uses, see explanation below. Trip values prior to the 20% reduction are shown in (brackets) in **Table 5.1 above.

The justification for a 20% reduction in the traffic generation is as follows:

- The proposed development can be considered a 'transit orientated development' (TOD) due to the close proximity of good quality public transport (tram services and bus Go Zones).
- Information regarding reductions in traffic generation based on TOD principles for the Bowden TOD development (refer to Parsons Brinkerhoff Report, Bowden Urban Village – Provision of Traffic and Parking Advice, Section 10).
- Shared land uses of the proposed development.
- Not all traffic generated would be new vehicles generated by the site. Existing passing traffic would utilise the proposed development.

The calculation of traffic generation for the proposed development indicates 5098 trips per day could be generated, with approximately 168 trips during the AM peak and 457 trips during the PM peak.

5.2 Traffic Distribution

Detailed traffic distribution has been calculated for both the AM and PM peak to inform the Aimsun traffic modelling using the following methodology:

- Calculate the trips generated by the proposed development including the difference between traffic generated in the AM, and traffic generated in the PM (refer to **Table 5.1**)
- Calculate the percentage of vehicles entering or exiting the subject site using the following distribution percentages:
  - AM:
    - Residential and serviced apartments 30% in, 70% out.
    - Supermarket and retail, 50% in, 50% out.
    - Commercial, 80% in, 20% out.
- PM in / out distribution is opposite of AM.
- Calculate the associated distribution of traffic from the following key routes (residential / retail and supermarket distribution percentages are calculated different, factoring in different trip origins and destinations – e.g. trips to and from the Adelaide CBD and local area catchment trips):
  - Marion Road north.
  - Marion Road south.
  - Anzac Highway west.
  - Anzac Highway east.
  - Cross Road east.
  - Cross Road west.
- Assumed 20% of the total trip distribution both in and out of the modelled network for each peak period, would travel along the local road network.
  - 10 zones chosen to spread the residential trip distribution.
    - 7 zones external to the modelled network; 3 zones internal.
    - 20% of the overall in/out trip distribution for the relevant peak period, split evenly between the 10 zones, regardless whether internal or external.
    - 20% reduced from key arterial routes according to proximity to the 7 external zone link; however, proportion redistributed to internal zone links reduced from all key arterial routes.

The increases in traffic volumes (base compared to development option) for the arterial roads and local roads surrounding the site are summarised in **Table 5.2** for the AM peak **Table 5.3** for the PM peak.

Table 5.2 | AM Peak Hour Traffic Distribution

Road Section	Traffic Volumes IN		Traffic Volumes OUT	
	Direction of Travel	Traffic Volume	Direction of Travel	Traffic Volume
Marion Road north	Southbound	17	Northbound	19
Marion Road south	Northbound	13	Southbound	14
Anzac Highway east	Westbound	5	Eastbound	5
Anzac Highway west	Eastbound	9	Westbound	10
Cross Road east	Westbound	21	Eastbound	23
Cross Road west	Eastbound	21	Westbound	23
Local Road Network	-	17	-	19
Total	**-**	**86**	**-**	**94**

**total distributed traffic from Table 5.1 may not sum exactly due to rounding*

Table 5.3 | PM Peak Hour Traffic Distribution

Road Section	Traffic Volumes IN		Traffic Volumes OUT	
	Direction of Travel	Traffic Volume	Direction of Travel	Traffic Volume
Marion Road north	Southbound	26	Northbound	25
Marion Road south	Northbound	40	Southbound	40
Anzac Highway east	Westbound	32	Eastbound	49
Anzac Highway west	Eastbound	67	Westbound	16
Cross Road east	Westbound	18	Eastbound	36
Cross Road west	Eastbound	16	Westbound	18
Local Road Network	-	50	-	46
Total	**-**	**249**	**-**	**230**

**total distributed traffic from Table 5.1 may not sum exactly due to rounding*

Refer to the **Section 5.3** below for a summary of the Aimsun traffic modelling which provides a summary of traffic modelling and the impacts of the proposed development on the external road network.

5.3 Traffic Modelling (AIMSUN)

The Aimsun modelling comprises two parts; the first is the development of a base model with the second part identifying and testing of options. The models have been developed to reflect both the morning and evening peak periods and with fixed route capability. This provides an additional level of confidence regarding the model operation in calibration and more importantly option testing.

The extent of the modelled network extends from the subject site to Marion Road (north of Mooringe Avenue and south of Cross Road), Anzac Highway (east of the Marion Road intersection and West of Cross Road / Stonehouse Avenue) and Cross Road (between Anzac Highway and Winifred Avenue).

5.3.1 Base Model

Stage 1 of this process was the development of a fully calibrated / validated base Aimsun model reflecting existing traffic conditions. The subsequent stages assess the future probable schemes and associated traffic generation/ growth associated with the Plympton redevelopment.

The base Aimsun model has been developed reflecting traffic conditions in the morning period, 07:30-09:30 and evening period, 16:15 -18:00, replicating observed traffic conditions for the year 2011.

The road network was constructed and calibrated utilising the Aimsun microscopic traffic simulation software. Detailed coding of lane and junction descriptions were developed using aerial photographs of the region, on-street measurements and knowledge of the network operation. During the calibration process (refer to separate Calibration and Validation Report, dated 29 October 2012 which has been signed off by DPTI) model parameters have been adjusted to improve model operation.

The analysis concludes that the Aimsun model is appropriately calibrated/ validated reflecting existing conditions for both peak periods. Therefore it is considered that the model is a suitable tool to analyse the performance and connectivity issues and to test the proposed actions associated with the local road network within the study area.

5.3.2 Future Scenarios

The following future scenarios have been assessed for this study:

- 2016 Base.
- 2016 Option 1.
- 2016 Draft Intervention Case.

5.3.3 Future Traffic Demands

The future traffic demands for the 2016 base model were determined from DPTI's MASTEM model. For the 2016 option model, the traffic demands were based on the development profile provided by Connor Holmes for the proposed site.

The generated traffic (168 and 457 two-way trips in the AM and PM peak hour respectively) was assigned to each of the zone centroids within the proposed development. The distribution of traffic was based on the consultant's evaluation (refer to **Section 5.1** and **Section 5.2**). These additional demands were then added to the 2016 Base model to provide the origin / destination trip matrix for the Aimsun assessment.

5.3.4 Aimsun Modelling Outcomes

Model Operation Comparison

A visual comparison of the 2016 Base and Option models indicates that the traffic operation is similar for all the models and is primarily determined by the operation of the Marion Road / Anzac Highway intersection and to a lesser degree Marion Road / Cross Road intersection with the tram crossing.

In the AM peak period there is little difference in the operation of the two models. Traffic from the development enters the arterial road network satisfactorily and the impact on adjacent roads appears to be minimal. The queue lengths along Anzac Highway and Marion Road are relatively long but do not impact on the operation of the network. For both options the queues on Marion Road in the southbound direction extend back to Mooringe Avenue and block the right turn movement from Mooringe Avenue.

For the PM peak the operation of the 2016 Base model appears much more congested particularly along Anzac Highway and Marion Road compared to the AM peak. The queues along Marion Road on the northern approach also extend to Mooringe Avenue and impact on the right turn movement. The Option model shows significant increases in queues and congestion in both directions on Marion Road and in the westbound direction along Anzac Highway and Cross Road. The increase appears to be disproportionate to the increase in traffic volumes, particularly on Cross Road. The operation of the junctions that provide access to the proposed development is considered satisfactory. There are build-up of queues on the approaches to Marion Road and Anzac Highway but they dissipate quickly once gaps in traffic occur.

Travel Time Comparisons

The travel times in both directions on the arterial roads (Marion road, Anzac Highway and Cross Road) were compared for the base and option models.

In the AM peak hour there is little difference (maximum of 10 seconds) between the two models. For the PM peak the difference in travel time are considered significant (greater than 10%) on the following road sections:

- The westbound direction on Anzac Highway, approximately 90 seconds.
- The eastbound direction on Cross Road, approximately 35 seconds.

In addition the travel times for Cross Road (westbound) and Marion Road (northbound) increase by 9%, approximately 45 and 35 seconds respectively.

Level of Service Comparisons

The level of service comparison considered the delay and operation of each of the movements at the four key intersections and provided a comparison between the Base and Option models.

For the AM peak there is no significant difference between the two models.

In the PM peak there are a number of movements where the delay has increased significantly. The locations where the increase is considered significant are indicated below:

- The right turn from Anzac Highway into Cross Road.
- Both right turns form Anzac Highway into Marion Road.

- All movements on the eastern Cross Road approach to Marion Road.

It should be noted that for the Marion Road and Anzac Highway through movements, the queues along these two roads are such that there was no discernible difference reported by Aimsun in the delays between the two options.

Changes on Local Streets

The modelling indicates that the development would result in the following changes in traffic on Elizabeth Avenue, Maynard Road and Mornington Avenue (south):

- Small increases in traffic in absolute terms.
- Approximately the same change in the AM and PM peak periods.

This is regarded as being an insignificant impact.

Summary of Operation

The review of the operation of the 2016 Base and Option models indicates that there is little difference in operation for the AM peak period. However, there are significant differences in the 2016 PM peak period with significant increases in queue lengths on Anzac Highway westbound at Marion Road and westbound on Cross Road. The modelling has indicated there are minimal delays to vehicles at the two access points from the development to the arterial road network. Further there are minimal delays to vehicles using Elizabeth Avenue and that there are sufficient gaps in Marion Road traffic flow for vehicles to access Elizabeth Avenue without impacting on through movement along Marion Road.

Sensitivity testing of the Base model operation indicates that an increase of only 5% in demand would provide similar performance to the Option model. This indicates that the Base model is operating close to capacity and only minor fluctuations in demand may result in increases in congestion and delay. However, this increase in congestion and delay may encourage positive changes in travel behaviour such as greater use of public transport and other sustainable modes.

5.3.5 Intervention Treatments

From a review of the model operation the following treatments have been identified to mitigate the impacts of the proposed development:

- Provision of a separate right turn phase in the PM peak at the Marion Road / Anzac Highway intersection for the eastern approach. This improves operation along Anzac Highway in the westbound direction. Note this will also improve safety as currently this movement operates on a filter phase.
- Extend the right turn lane from Anzac Highway west to Marion Road South by approximately 20m. The model showed that vehicles queued in this lane extended beyond the current length.
- Increase the phase times for the right turn movement from Anzac Highway into Cross Road.

These improvements were modelled and have improved the overall performance of the road network. Refer to the Aimsun Traffic Modelling Report for detailed modelling results for this project.

5.4 Construction Management

The impacts on traffic access during construction will need to be carefully managed with the contractor to provide for continued operation of the Highway Hotel and limit impacts on the operation of the arterial road network.

At this point, there is insufficient information to determine the impacts in detail. However a key requirement during the detailed design and construction phase would be to provide a detailed Construction Management Plan that identifies and mitigates impacts during construction activities.

Key components of this plan, to be developed by the contractor, would address issues such as staging of the works, access requirements and times of works. Further this plan will need to consider amongst others how excavated material is removed, deliveries are made to the site and how access can be maintained to existing activities (primarily parking) on the site.

It is expected that construction traffic will be less than traffic generated from the development when completed and the movements can be satisfactorily managed without causing significant impacts.

6. Summary

This report has assessed the traffic and parking impacts of the proposed development on adjacent external road network. An analysis of the proposed development in accordance with relevant standards has found:

- The proposed car parking layout complies with *Australian/New Zealand Standard 2890.1:2004 Parking Facilities Part 1 – Off-Street Car Parking* and *Australian/New Zealand Standard 2890.6:2009 Off-Street Car Parking for People with Disabilities.*
- The provision of car parking is as follows:
  - 170 car parks at basement level (including the provision of 4 reserved bays for persons with a disability).
  - 145 car parks at ground level (including the provision of 6 reserved bays for persons with a disability).
  - 133 car parks on level 1 (including the provision of 6 reserved bays for persons with a disability).
- The total number of car parks proposed (448) sufficiently caters for the demand of 447 as per South Australian Policy Library Version 6 and the 2007 Aurecon car park survey.
- The total number of bicycle parking (156) at grade sufficiently caters for the demand as per the South Australian Policy Library Version 6 and the South Australian Planning Bulletin. Each of the residential towers has a provision for bicycle storage facilities included within their footprint.
- The predicted daily traffic generation of the proposed development is 5098, with approximately 168 trips during the AM peak and 457 trips during the PM peak.
- The Aimsun modelling of the Base model indicates the adjacent road network is currently operating close to capacity.
- The Aimsun modelling for the Option model in the AM peak indicates:
  - Queue lengths increase along Marion Road and Anzac Highway; however, they do not adversely affect network operation.
  - Impact on the adjacent road network from vehicles exiting the proposed development is minimal.
  - There are minimal increases in travel time.
- The Aimsun modelling for the Option model in the PM peak indicates there is a general worsening of network operation due to the following:
  - Increases in queues and congestion for both directions of Marion Road and westbound on Anzac Highway and Cross Road.
  - Increase in unreleased vehicles entering the arterial road network.
  - More than a 10% increase in travel time for the westbound section of Anzac Highway and the eastbound section of Cross Road.
  - Reduced level of service for the following sections:
    - The right turn from Anzac Highway into Cross Road.
    - Both right turns form Anzac Highway into Marion Road.
    - All movements on the eastern Cross Road approach to Marion Road.
- Operations of the junctions which provide access to the proposed development are considered satisfactory in the PM Option model, with only minor queuing observed.
- The modelling has indicated changes on local streets are insignificant.
- The following intervention treatments have been identified from the Aimsun modelling to mitigate the traffic impacts of the proposed development:
  - Provision of a separate right turn phase at the at the Marion Road / Anzac Highway intersection for the eastern approach.

  - Extension of the Anzac Highway west approach right turn lane to 20m.
  - Increase the phase times for the right turn movement from Anzac Highway into Cross Road.
- The proposed loading bays are considered appropriate for deliveries to the proposed development. Vehicle turn path modelling indicates sufficient room exits to allow a 14m semi-trailer and 12.5m rigid vehicle to access the proposed development for deliveries associated with the proposed supermarket and retail land uses.
- Pedestrian access to the supermarket and retail areas is considered appropriate on the ground level via the pedestrian promenade including the provision of wombat crossings. Access from the basement car park is provided via lifts, stairs or a travelator while pedestrian access for level 1 is via the apartment entry, mezzanine floor or lifts in the north–west corner. The external pedestrian network provides suitable and safe access between the subject site and surrounding public transport.
- A Construction Management Plan will need to be developed to address issues such as staging of the works, access requirements and times of works.

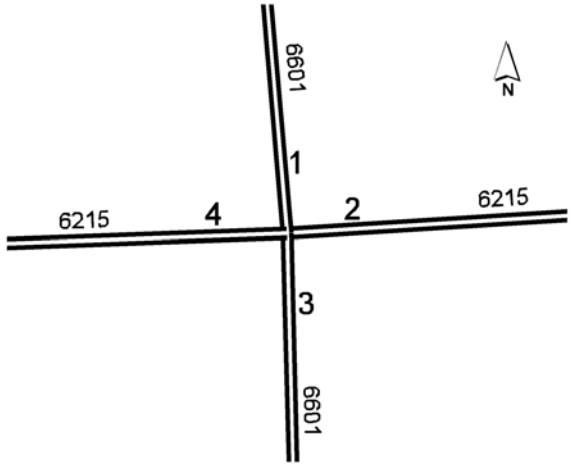
The proposed development satisfies the relevant traffic access and movement, pedestrian access, bicycle access and car parking layout and provisions. The proposed development is therefore supported on traffic engineering, parking, pedestrian and cycling movement grounds. This requires intervention treatments as detailed in **Section 5.3.5** to minimise effects of traffic performance on the arterial road network.

Appendix A
DPTI Intersection Turning Volumes

Department for Transport, Energy and Infrastructure
Vehicle Turning Movement Survey

Intersection of: MARION RD / CROSS RD
Locality: PLYMPTON PARK
AMG Reference: TG767276
Date of Count: 29/11/2011 Day: Tuesday
Weather: Dry Control: SIGNALS
Survey Status:

Arm	Road Number - Name
1	6601 - MARION ROAD
2	6215 - CROSS ROAD
3	6601 - MARION ROAD
4	6215 - CROSS ROAD



	Arm	1			2			3			4		
	Exit Arm	2 (L)	3	4 (R)	3 (L)	4	1 (R)	4 (L)	1	2 (R)	1 (L)	2	3 (R)
11 hour totals	Cars	**1007**	**9623**	**192**	**2154**	**4178**	**1397**	**993**	**9950**	**1856**	**226**	**2945**	**1479**
	CV	**89**	**498**	**20**	**69**	**107**	**81**	**21**	**535**	**59**	**11**	**97**	**35**
	Total	**1096**	**10121**	**212**	**2223**	**4285**	**1478**	**1014**	**10485**	**1915**	**237**	**3042**	**1514**
AM Peak hour (07:45)	Cars	**58**	**585**	**7**	**97**	**455**	**121**	**93**	**1280**	**157**	**93**	**389**	**138**
	CV	**18**	**46**	**0**	**2**	**8**	**7**	**3**	**46**	**8**	**0**	**13**	**2**
	Total	**76**	**631**	**7**	**99**	**463**	**128**	**96**	**1326**	**165**	**93**	**402**	**140**
PM Peak hour (17:00)	Cars	**98**	**1515**	**28**	**361**	**581**	**139**	**124**	**847**	**200**	**6**	**321**	**201**
	CV	**3**	**21**	**1**	**4**	**3**	**3**	**0**	**35**	**0**	**1**	**4**	**3**
	Total	**101**	**1536**	**29**	**365**	**584**	**142**	**124**	**882**	**200**	**7**	**325**	**204**

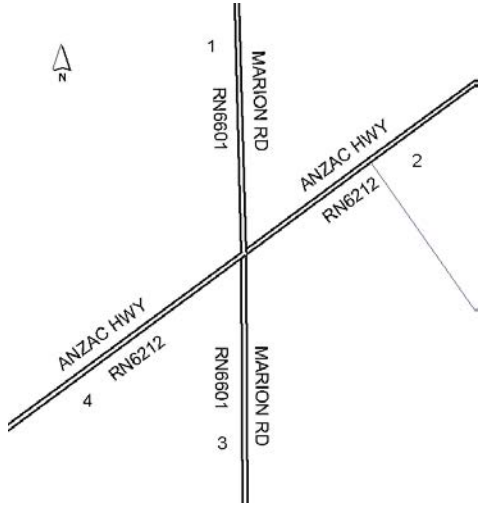
		1	2	3	4
One-way Flows	11 Hour Totals	**(IN) 11429 (OUT) 12200**	**(IN) 7986 (OUT) 6053**	**(IN) 13414 (OUT) 13858**	**(IN) 4793 (OUT) 5511**
	AM Peak Hour	**11:45 921 06:45 1818**	**08:00 719 07:45 643**	**06:45 1937 11:15 1043**	**07:45 635 08:00 580**
	PM Peak Hour	**16:45 1687 16:45 1034**	**17:00 1091 16:30 659**	**16:45 1219 16:45 2117**	**15:00 583 17:00 737**
Two-way Flows	AM Peak Hour	**06:45 2358**	**08:00 1352**	**06:45 2574**	**08:00 1214**
	PM Peak Hour	**16:45 2721**	**17:00 1717**	**16:45 3336**	**17:00 1273**
All Vehicles	11 Hour Totals	**23629 5.2% CV**	**14039 3.6% CV**	**27272 4.5% CV**	**10304 2.8% CV**
	Estimated AADT	**30200 SF(1.00) ZF(1.28)**	**18000 SF(1.00) ZF(1.28)**	**34900 SF(1.00) ZF(1.28)**	**13200 SF(1.00) ZF(1.28)**

AADT - Annual Average Daily Traffic SF - Seasonal Factor ZF - Zone Factor CV - Commercial Vehicles

Department for Transport, Energy and Infrastructure
Vehicle Turning Movement Survey

Intersection of: MARION RD / ANZAC HWY
Locality: PLYMPTON
AMG Reference: TG766280
Date of Count: 29/11/2011 Day: Tuesday
Weather: Dry Control: SIGNALS
Survey Status:

Arm	Road Number - Name
1	6601 - MARION ROAD
2	6212 - ANZAC HIGHWAY
3	6601 - MARION ROAD
4	6212 - ANZAC HIGHWAY



	Arm	1			2			3			4		
	Exit Arm	2 (L)	3	4 (R)	3 (L)	4	1 (R)	4 (L)	1	2 (R)	1 (L)	2	3 (R)
11 hour totals	Cars	**881**	**7590**	**1929**	**2552**	**9259**	**1171**	**213**	**7679**	**3642**	**1363**	**10582**	**431**
	CV	**41**	**440**	**83**	**180**	**297**	**47**	**7**	**365**	**210**	**82**	**333**	**12**
	Total	**922**	**8030**	**2012**	**2732**	**9556**	**1218**	**220**	**8044**	**3852**	**1445**	**10915**	**443**
AM Peak hour (07:45)	Cars	**79**	**552**	**148**	**172**	**633**	**49**	**4**	**944**	**623**	**126**	**1796**	**11**
	CV	**3**	**61**	**7**	**16**	**43**	**1**	**2**	**27**	**25**	**5**	**22**	**0**
	Total	**82**	**613**	**155**	**188**	**676**	**50**	**6**	**971**	**648**	**131**	**1818**	**11**
PM Peak hour (16:45)	Cars	**61**	**1134**	**349**	**288**	**1476**	**78**	**16**	**693**	**296**	**103**	**780**	**28**
	CV	**1**	**15**	**6**	**9**	**11**	**4**	**0**	**21**	**22**	**7**	**21**	**1**
	Total	**62**	**1149**	**355**	**297**	**1487**	**82**	**16**	**714**	**318**	**110**	**801**	**29**

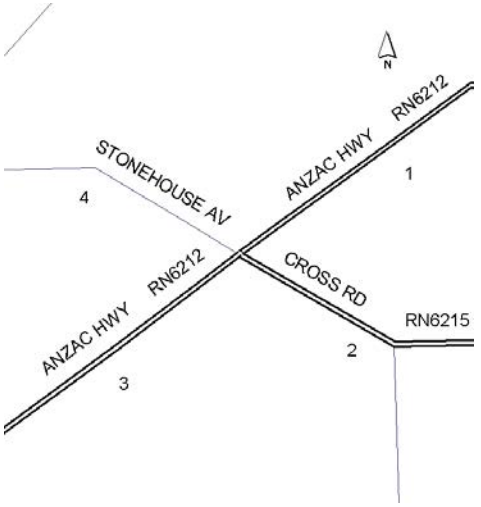
		1	2	3	4
One-way Flows	11 Hour Totals	**(IN) 10964 (OUT) 10707**	**(IN) 13506 (OUT) 15689**	**(IN) 12116 (OUT) 11205**	**(IN) 12803 (OUT) 11788**
	AM Peak Hour	**11:30 911 06:30 1458**	**11:45 1094 07:30 2553**	**07:00 1860 11:30 926**	**07:45 1960 11:45 925**
	PM Peak Hour	**16:30 1584 14:45 983**	**17:00 1959 15:00 1267**	**16:45 1048 16:30 1522**	**14:45 1080 17:00 1949**
Two-way Flows	AM Peak Hour	**07:15 2043**	**07:45 3462**	**07:15 2493**	**08:00 2821**
	PM Peak Hour	**16:45 2472**	**17:00 3152**	**16:45 2523**	**17:00 2918**
All Vehicles	11 Hour Totals	**21671 4.9% CV**	**29195 3.8% CV**	**23321 5.2% CV**	**24591 3.3% CV**
	Estimated AADT	**27700 SF(1.00) ZF(1.28)**	**37400 SF(1.00) ZF(1.28)**	**29900 SF(1.00) ZF(1.28)**	**31500 SF(1.00) ZF(1.28)**

AADT - Annual Average Daily Traffic SF - Seasonal Factor ZF - Zone Factor CV - Commercial Vehicles

Department for Transport, Energy and Infrastructure
Vehicle Turning Movement Survey

Intersection of: ANZAC HWY / CROSS RD / STONEHOUSE AV
Locality: PLYMPTON
AMG Reference: TG760275
Date of Count: 12/12/2007 Day: Wednesday
Weather: Dry Control: SIGNALS
Survey Status:

Arm	Road Number - Name
1	6212 - ANZAC HIGHWAY
2	6215 - CROSS ROAD
3	6212 - ANZAC HIGHWAY
4	Stonehouse Av



	Arm	1			2			3			4		
	Exit Arm	2 (L)	3	4 (R)	3 (L)	4	1 (R)	4 (L)	1	2 (R)	1 (L)	2	3 (R)
11 hour totals	Cars	**170**	**8921**	**791**	**2681**	**2014**	**97**	**242**	**9800**	**2299**	**821**	**2283**	**257**
	CV	**5**	**387**	**42**	**72**	**69**	**2**	**1**	**335**	**83**	**44**	**71**	**6**
	Total	**175**	**9308**	**833**	**2753**	**2083**	**99**	**243**	**10135**	**2382**	**865**	**2354**	**263**
AM Peak hour (07:45)	Cars	**10**	**514**	**88**	**264**	**284**	**10**	**62**	**1620**	**226**	**104**	**266**	**19**
	CV	**0**	**39**	**2**	**7**	**12**	**1**	**0**	**27**	**5**	**8**	**14**	**1**
	Total	**10**	**553**	**90**	**271**	**296**	**11**	**62**	**1647**	**231**	**112**	**280**	**20**
PM Peak hour (17:30)	Cars	**13**	**1435**	**106**	**324**	**220**	**7**	**13**	**752**	**225**	**98**	**303**	**40**
	CV	**0**	**13**	**5**	**4**	**0**	**0**	**1**	**10**	**1**	**2**	**1**	**1**
	Total	**13**	**1448**	**111**	**328**	**220**	**7**	**14**	**762**	**226**	**100**	**304**	**41**

		1	2	3	4
One-way Flows	11 Hour Totals	**(IN) 10316 (OUT) 11099**	**(IN) 4935 (OUT) 4911**	**(IN) 12760 (OUT) 12324**	**(IN) 3482 (OUT) 3159**
	AM Peak Hour	**11:30 1034 07:30 1819**	**08:15 601 07:45 521**	**07:30 1991 11:30 1257**	**08:00 421 07:45 448**
	PM Peak Hour	**17:30 1572 14:00 976**	**16:45 557 15:45 669**	**14:00 1128 17:30 1817**	**17:00 499 17:15 361**
Two-way Flows	AM Peak Hour	**07:45 2423**	**08:00 1105**	**07:45 2784**	**07:45 860**
	PM Peak Hour	**17:30 2441**	**16:00 1180**	**17:30 2819**	**16:45 842**
All Vehicles	11 Hour Totals	**21415 3.8% CV**	**9846 3.1% CV**	**25084 3.5% CV**	**6641 3.5% CV**
	Estimated AADT	**27800 SF(1.00) ZF(1.30)**	**12800 SF(1.00) ZF(1.30)**	**32600 SF(1.00) ZF(1.30)**	**8600 SF(1.00) ZF(1.30)**

AADT - Annual Average Daily Traffic SF - Seasonal Factor ZF - Zone Factor CV - Commercial Vehicles

Appendix B
Local Road Traffic Volume and Speed Data

Speed & Volume Summary

Consultant:	Austraffic	**Classification:**	Aust Roads94
Street Name:	Mornington Ave	**Survey Start Date:**	06 / 08 / 2012
Location:	South of Anzac Hwy	**Survey Finish Date:**	12 / 08 / 2012
Suburb:	Plympton	**Speed Zone:**	

Weekday Speed & Volume Data (5 days)				
		Travel Direction		
		Combined	Northbound	Southbound
Weekdays Average (24hr Volume)		636 vpd	234 vpd	402 vpd
Ave. Peak Hour AM	08:00	89 vpd	34 vpd	55 vpd
Ave. Peak Hour PM	15:00	78 vpd	23 vpd	55 vpd
Speeds	85th Percentile	40.4 km/h	41.2 km/h	39.9 km/h
	Average	31.1 km/h	31.3 km/h	31.0 km/h

7 Day Speed & Volume Data				
		Travel Direction		
		Combined	Northbound	Southbound
7 Day Average (24hr Volume)		568 vpd	211 vpd	357 vpd
Ave. Peak Hour AM	08:00	68 vpd	26 vpd	43 vpd
Ave. Peak Hour PM	15:00	63 vpd	18 vpd	44 vpd
Speeds	85th Percentile	40.6 km/h	41.3 km/h	40.1 km/h
	Average	31.5 km/h	31.6 km/h	31.5 km/h

Notes / Observations:

Speed & Volume Summary

Consultant:	Austraffic	**Classification:**	Aust Roads94
Street Name:	Mornington Ave	**Survey Start Date:**	06 / 08 / 2012
Location:	North of Cross Rd	**Survey Finish Date:**	12 / 08 / 2012
Suburb:	Plympton	**Speed Zone:**	

Weekday Speed & Volume Data (5 days)				
		Travel Direction		
		Combined	Northbound	Southbound
Weekdays Average (24hr Volume)		932 vpd	408 vpd	523 vpd
Ave. Peak Hour AM	08:00	186 vpd	122 vpd	64 vpd
Ave. Peak Hour PM	15:00	108 vpd	32 vpd	76 vpd
Speeds	85th Percentile	31.3 km/h	30.8 km/h	31.7 km/h
	Average	25.7 km/h	25.3 km/h	25.9 km/h

7 Day Speed & Volume Data				
		Travel Direction		
		Combined	Northbound	Southbound
7 Day Average (24hr Volume)		840 vpd	362 vpd	478 vpd
Ave. Peak Hour AM	08:00	140 vpd	92 vpd	49 vpd
Ave. Peak Hour PM	15:00	89 vpd	34 vpd	62 vpd
Speeds	85th Percentile	31.6 km/h	31.1 km/h	31.9 km/h
	Average	25.9 km/h	25.8 km/h	26.0 km/h

Notes / Observations:

Speed & Volume Summary

Consultant:	Austraffic	**Classification:**	Aust Roads94
Street Name:	Maynard Rd	**Survey Start Date:**	06 / 08 / 2012
Location:	South of Anzac Hwy	**Survey Finish Date:**	12 / 08 / 2012
Suburb:	Plympton	**Speed Zone:**	

Weekday Speed & Volume Data (5 days)				
		Travel Direction		
		Combined	Northbound	Southbound
Weekdays Average (24hr Volume)		330 vpd	201 vpd	129 vpd
Ave. Peak Hour AM	08:00	62 vpd	51 vpd	11 vpd
Ave. Peak Hour PM	15:00	61 vpd	48 vpd	12 vpd
Speeds	85th Percentile	41.4 km/h	41.9 km/h	40.6 km/h
	Average	34.7 km/h	35.3 km/h	33.7 km/h

7 Day Speed & Volume Data				
		Travel Direction		
		Combined	Northbound	Southbound
7 Day Average (24hr Volume)		286 vpd	165 vpd	121 vpd
Ave. Peak Hour AM	08:00	45 vpd	37 vpd	8 vpd
Ave. Peak Hour PM	15:00	48 vpd	37 vpd	13 vpd
Speeds	85th Percentile	41.2 km/h	41.9 km/h	40.3 km/h
	Average	34.6 km/h	35.3 km/h	33.6 km/h

Notes / Observations:

Speed & Volume Summary

Consultant:	Austraffic	**Classification:**	Aust Roads94
Street Name:	Maynard Rd	**Survey Start Date:**	06 / 08 / 2012
Location:	North of Cross Rd	**Survey Finish Date:**	12 / 08 / 2012
Suburb:	Plympton	**Speed Zone:**	

Weekday Speed & Volume Data (5 days)				
		Travel Direction		
		Combined	Northbound	Southbound
Weekdays Average (24hr Volume)		66 vpd	54 vpd	12 vpd
Ave. Peak Hour AM	08:00	10 vpd	9 vpd	0 vpd
Ave. Peak Hour PM	14:00	7 vpd	6 vpd	2 vpd
Speeds	85th Percentile	36.4 km/h	39.0 km/h	24.6 km/h
	Average	29.1 km/h	30.7 km/h	21.8 km/h

7 Day Speed & Volume Data				
		Travel Direction		
		Combined	Northbound	Southbound
7 Day Average (24hr Volume)		60 vpd	48 vpd	12 vpd
Ave. Peak Hour AM	08:00	7 vpd	7 vpd	2 vpd
Ave. Peak Hour PM	14:00	6 vpd	4 vpd	2 vpd
Speeds	85th Percentile	36.0 km/h	38.7 km/h	24.9 km/h
	Average	28.6 km/h	30.4 km/h	21.3 km/h

Notes / Observations:

Speed & Volume Summary

Consultant:	Austraffic	**Classification:**	Aust Roads94
Street Name:	Glengyle Tce	**Survey Start Date:**	06 / 08 / 2012
Location:	West of Marion Rd	**Survey Finish Date:**	12 / 08 / 2012
Suburb:	Plympton	**Speed Zone:**	

Weekday Speed & Volume Data (5 days)				
		Travel Direction		
		Combined	Eastbound	Westbound
Weekdays Average (24hr Volume)		119 vpd	59 vpd	61 vpd
Ave. Peak Hour AM	11:00	8 vpd	4 vpd	4 vpd
Ave. Peak Hour PM	14:00	11 vpd	5 vpd	5 vpd
Speeds	85th Percentile	32.8 km/h	33.4 km/h	32.3 km/h
	Average	26.7 km/h	27.0 km/h	26.4 km/h

7 Day Speed & Volume Data				
		Travel Direction		
		Combined	Eastbound	Westbound
7 Day Average (24hr Volume)		110 vpd	53 vpd	57 vpd
Ave. Peak Hour AM	11:00	8 vpd	4 vpd	5 vpd
Ave. Peak Hour PM	14:00	10 vpd	6 vpd	6 vpd
Speeds	85th Percentile	33.2 km/h	33.8 km/h	32.7 km/h
	Average	27.1 km/h	27.4 km/h	26.8 km/h

Notes / Observations:

Speed & Volume Summary

Consultant:	Austraffic	**Classification:**	Aust Roads94
Street Name:	Elizabeth Ave	**Survey Start Date:**	06 / 08 / 2012
Location:	West of Marion Rd	**Survey Finish Date:**	12 / 08 / 2012
Suburb:	Plympton	**Speed Zone:**	

Weekday Speed & Volume Data (5 days)				
		Travel Direction		
		Combined	Eastbound	Westbound
Weekdays Average (24hr Volume)		557 vpd	295 vpd	262 vpd
Ave. Peak Hour AM	08:00	86 vpd	65 vpd	20 vpd
Ave. Peak Hour PM	15:00	56 vpd	32 vpd	24 vpd
Speeds	85th Percentile	44.1 km/h	44.7 km/h	43.4 km/h
	Average	35.6 km/h	36.0 km/h	35.2 km/h

7 Day Speed & Volume Data				
		Travel Direction		
		Combined	Eastbound	Westbound
7 Day Average (24hr Volume)		521 vpd	275 vpd	245 vpd
Ave. Peak Hour AM	08:00	65 vpd	49 vpd	16 vpd
Ave. Peak Hour PM	15:00	50 vpd	28 vpd	28 vpd
Speeds	85th Percentile	44.0 km/h	44.8 km/h	43.1 km/h
	Average	35.4 km/h	35.9 km/h	34.8 km/h

Notes / Observations:

Appendix C
Turn Count Survey Data

aurecon Turn Count Survey Data

Mornington Avenue / Cross Road / Lindsay Street intersection – 7 August 2012						
Turning Movemetns	Left turn from Mornington Avenue to Cross Road	Right turn from Mornington Avenue onto Cross Road	Left turn from Cross Road onto Mornington Avenue	Right turn from Cross Road onto Mornington Avenue	Straight through from Mornington Avenue onto Lindsay Street	Straight through from Lindsay Street onto Mornington Avenue
AM	75	4	46	75	1	10
PM	85	12	22	27	10	6
Total Movements	AM	211		PM	162	

Elizabeth Avenue / Marion Road intersection – 7 August 2012.					
Turning Movemetns	Left turn from Marion Road onto Elizabeth Avenue	Right turn from Elizabeth Avenue onto Marion Road	Right turn from Marion road onto Elizabeth Avenue	Left turn from Elizabeth Avenue onto Marion Road	U-turn from Marion Road southbound to Marion Road northbound
AM	10	9	11	82	0
PM	5	3	19	21	2
Total Movements	AM	112		PM	50

Highway Hotel and Thirsty Camel Bottle Shop access / Anzac Highway – 9 August 2012								
Turning Movements	left turn from Thirsty Camel access onto Anzac Highway	Left turn from Anzac Highway into Thirsty Camel access	Left turn from Highway Hotel access onto Anzac Highway	Left turn from Anzac Highway into Highway Hotel access	Right turn from Anzac Highway into Thirsty Camel access	U-turn on Anzac Highway - eastbound to westbound (adjacent Thirsty Camel)	Right turn from Thirsty Camel access to Anzac Highway eastbound	U-turn on Anzac Highway - westbound to eastbound (adjacent Highway Hotel)
AM	6	1	1	6	7	3	2	9
PM	23	64	32	73	43	17	15	54
Total Movements	AM	35			PM	321		

Highway Hotel access / Marion Road – 9 August 2012						
Turning Movements	Left turn from Highway Hotel access to Marion Road	Right turn from Marion Road to Highway Hotel access	Straight through from Mabel Street to Highway Hotel access	Left turn from Marion Road to Highway Hotel access	Left turn from Car Park access (adjacent shops) to Marion Road	Left turn from Marion Road into Car Park access (adjacent shops)
AM	0	0	0	8	1	1
PM	12	3	6	24	0	3
Total Movements	AM	10		PM	41	

*** AM Peak is recorded from 7:30AM to 9:00AM and PM Peak is recorded from 4:00PM to 6:00PM.**

Appendix D
Existing Bus Routes

Bus Route	Origin / Destination	Origin / Destination	Route through Study Area	Frequency	
				Monday to Friday	Saturday & Sunday (incl. Public Holidays)
100	Arndale Centre Interchange	Glen Osmond	Marion Road and Cross Road	Every 15 to 30 minutes	Every hour
100p	Arndale Centre Interchange	Plympton	Marion Road.	Every 30 minutes to an hour	-
100k	Arndale Centre Interchange	Kensington	Marion Road and Cross Road	Once a day (school oriented)	-
101	Arndale Centre Interchange	Flinders University	Marion Road	Every hour (AM to Flinders/PM to Arndale only)	-
262	Marion Centre Interchange	Adelaide CBD	Anzac Highway	Every 15 minutes to an hour (no midday service)	-
N262	Marion Centre Interchange	Adelaide CBD	Anzac Highway	-	Every hour
263	Marion Centre Interchange	Adelaide CBD	Anzac Highway	Every 30 minutes to an hour (only midday and evening service)	Every hour
265	Marion Centre Interchange	Adelaide CBD	Anzac Highway	Every 15 to 30 minutes	Every hour
265g	Marion Centre Interchange	Glenelg Interchange	Anzac Highway	Twice a day (5pm to 6pm service, to Marion only)	-
265w	Marion Centre Interchange	Sommerton Park	Anzac Highway	Every 30 minutes to an hour (evening service, to Marion only)	Every hour (evening service, to Marion only)
H20	Paradise Interchange	Glenelg Interchange	Marion Road and Anzac Highway	Every 15 to 30 minutes	Every hour
H20c**	Paradise Interchange	Glenelg Interchange	Marion Road and Anzac Highway	limited (early morning service)	-

Bus Route	Origin / Destination	Origin / Destination	Route through Study Area	Frequency	
				Monday to Friday	Monday to Friday
H20r	Paradise Interchange	Richmond	Marion Road and Anzac Highway	limited (early morning service)	-
245	Hove	Adelaide CBD	Marion Road	Every 15 minutes (AM to city/PM to Hove only)	-
248	Marion Centre Interchange	Adelaide CBD	Marion Road	Every 30 minutes	Every hour
248f	Marion Centre Interchange	Adelaide CBD	Marion Road	Every 15 minutes (7am to 8.30am service, to City only & 5pm to 6pm s	-
M44	Marion Centre Interchange	Golden Grove Village Interchange	Anzac Highway and Marion Road	Every 15 minutes	Every 15 to 30 minutes
M44g	Marion Centre Interchange	Adelaide CBD	Anzac Highway and Marion Road	Every 30 minutes (evening only)	Every 30 minutes (evening only)
M44t	Marion Centre Interchange	Tea Tree Plaza Interchange	Anzac Highway and Marion Road	-	Every 30 minutes
M44c	Marion Centre Interchange	Adelaide CBD	Anzac Highway and Marion Road	Every 15 minutes (7am to 9am only)	-

Appendix E
Aurecon 2007 Highway Hotel Survey

Surveys were undertaken on Friday 31 August 2007 between 4.00pm – 9.00pm and Saturday 1 September between 10.00am – 2.00pm to capture the peak traffic movements and identify occupation of parking spaces at the existing Highway Hotel and bottle shop. A summary of the survey outcome is discussed below.

Friday 31 August, 2007

The peak traffic for the hotel was counted between 6.30pm and 7.30pm with 291 vehicles entering and 233 vehicles leaving the site within this hour. This results in a traffic generation rate of 525 vehicles in the peak hour for hotel patronage.

It is estimated that the peak hour for the proposed retail development would be on a Thursday between 5.00pm and 6.00pm. This peak hour does not coincide with the peak hour for hotel patronage. The traffic generated for the hotel between 5.00pm and 6.00pm was 230 vehicles (147 vehicles entered the site and 82 vehicles exited the site).

Of the traffic generated between 5.00pm and 6.00pm, the following distribution was recorded:

- 35% entered the site and 65% exited during this period.
- Of the entering vehicles; 50% were from Anzac Hwy and 50% from Marion Road.
- Of the exiting vehicles, 55% exited onto Anzac Hwy and 45% to Marion Road.

During the survey period, the hotel car park was at full capacity by 6.30pm and parking spilled into the car park at the rear, near the Marion Road shops. During the estimated peak hour for the proposed development (5.00pm – 6.00pm), the maximum number of spaces occupied was 124 at any one time (60% capacity).

Saturday 1 September, 2007

The peak hour recorded on Saturday was between 1.00pm and 2.00pm. During this time, 80 vehicles entered and 70 vehicles exited the site, resulting in a traffic generation rate of 150 vehicles in the hour.

The peak hour on a Saturday for a retail development is generally between 11.00am – 12.00pm. This did not coincide with the existing Saturday peak for the Hotel and bottle shop.

The car park did not reach full capacity during the period of the survey.

Although at the expected retail peak period of 6.00pm, 120 cars were attributed to the hotel, the number increased significantly at 6:30pm. 160 was taken as a conservative peak demand to cover the possible transition period

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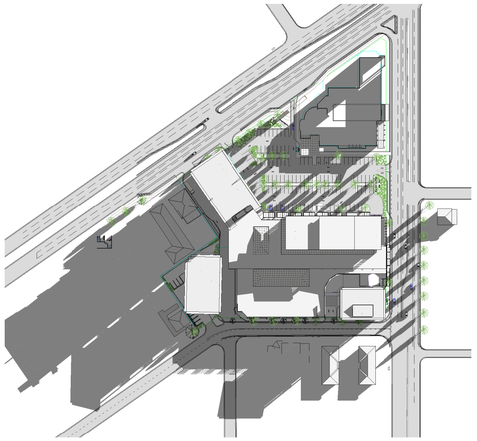
CONNOR HOLMES
PROPERTY SERVICES
A FYFE COMPANY

ATTACHMENT 8
SHADOW MODELLING



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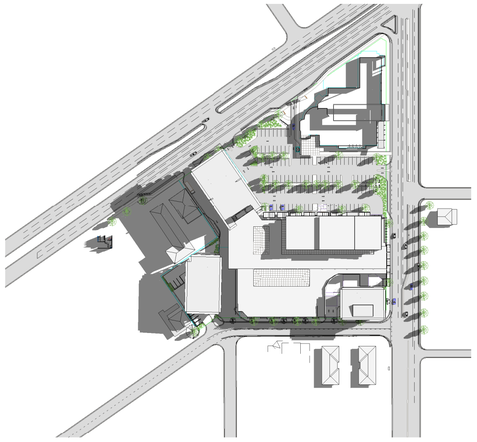

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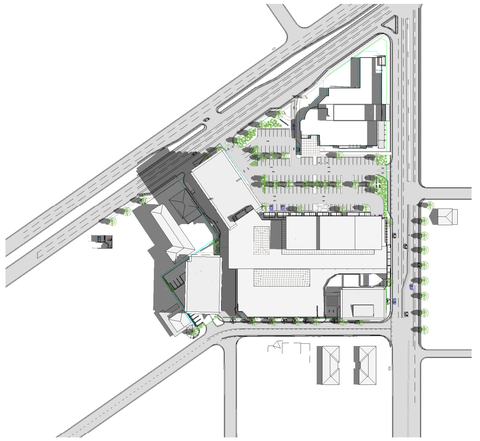

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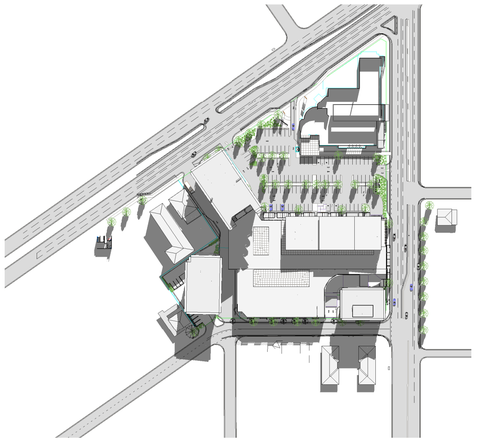

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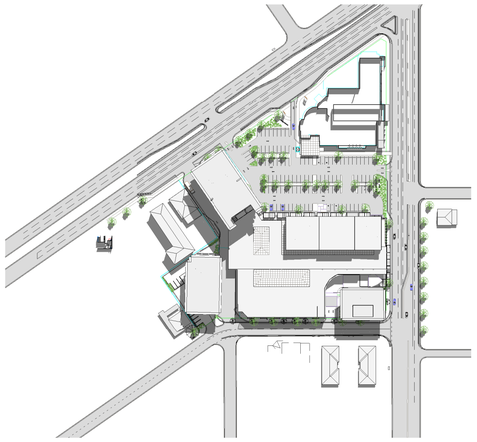

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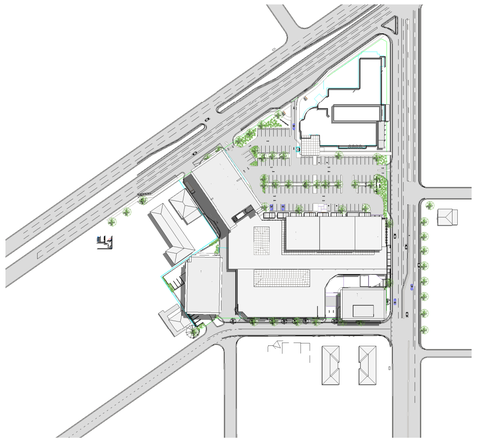

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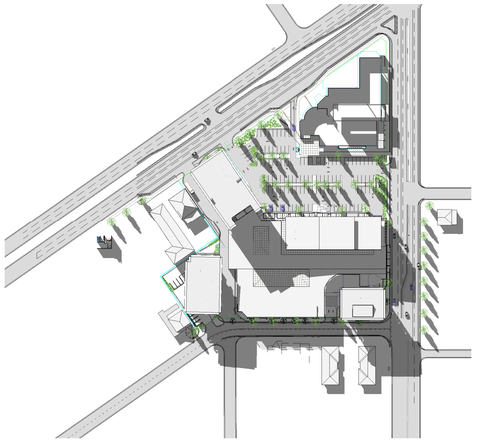

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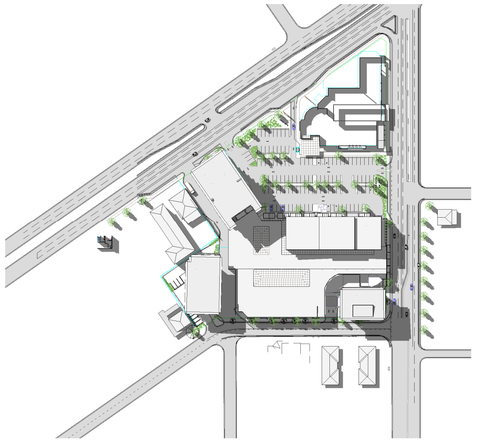

- SHADOWS - SEPT 22 - 3 PM
SCALE 1 : 2000

- SHADOWS - DEC 22 - 3 PM
SCALE 1 : 2000

PRELIMINARY