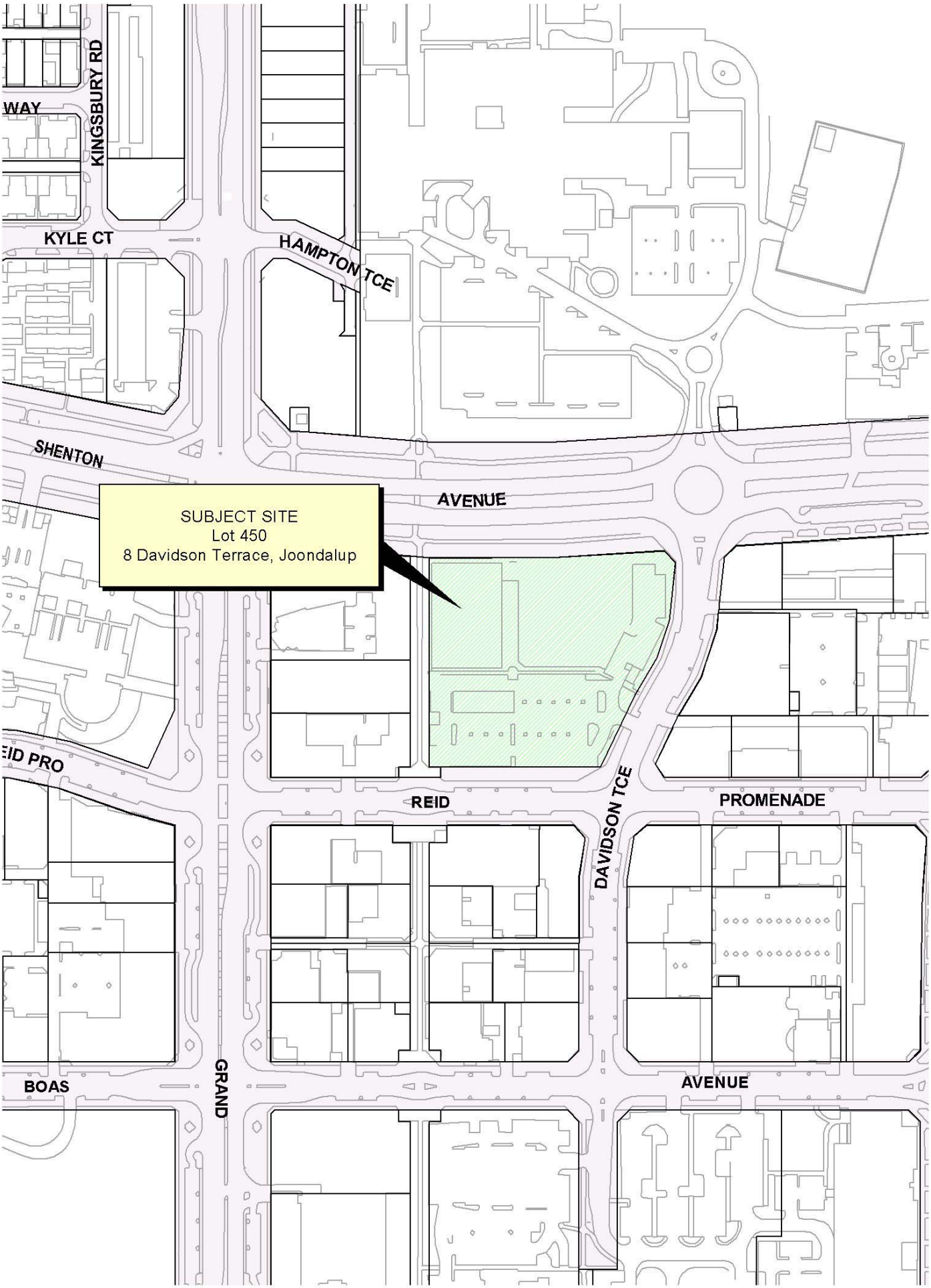

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Prepared by City of Joondalup : Urban Design & Policy, Cartographic Section. 20/03/2006 - djt

Digital Photography : DLI October 2004
Prepared by City of Joondalup : Urban Design & Policy, Cartographic Section. 20/03/2006 - djt

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SENTIENS
COOPER & OXLEY
DECEMBER 2005
PROJECT No. 2309
SCALE 1:500 @ A1
SITE PLAN
DEVELOPMENT APPROVAL SUBMISSION
SK.01
SENTIENS HEALTH
JOONDALUP CAMPUS
SHENTON AVE
DAVIDSON TCE
SHENTON AVE


SENTIENS
DECEMBER 2005
PROJECT No 2309
SCALE 1:200 @ A1
GROUND FLOOR PLAN
DEVELOPMENT APPROVAL SUBMISSION
SK 02
SENTIENS HEALTH
JOONDALUP CAMPUS
EXISTING 3 STOREY BUILDING
DAVIDSON TCE
SHENTON AVE


EXISTING 3 STOREY BUILDING
SENTIENS
DECEMBER 2005
PROJECT No 2309
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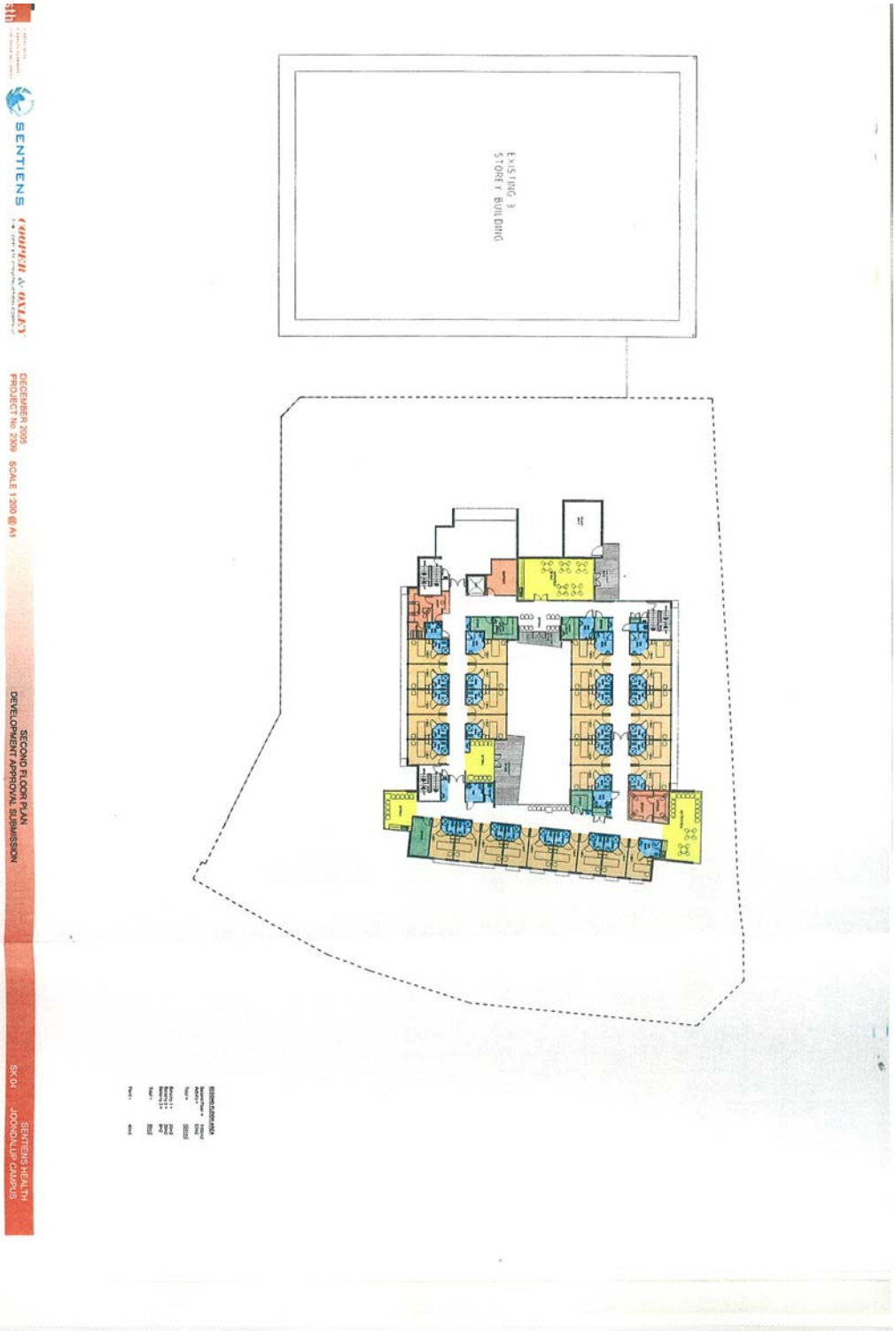
DEVELOPMENT APPROVAL SUBMISSION
SK-03
SENTIENS HEALTH
JOONDALUP CAMPUS


EXISTING 3 STOREY BUILDING
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PROJECT No 2309 SCALE 1:200 @ A1
SECOND FLOOR PLAN
DEVELOPMENT APPROVAL SUBMISSION
SK-04
SENTIENS HEALTH
JOONDALUP CAMPUS


NORTH ELEVATION - SHENTON AVE
SOUTH ELEVATION
EAST ELEVATION - DAVIDSON TCE
WEST ELEVATION
BUILDING ELEVATIONS
DEVELOPMENT APPROVAL SUBMISSION
SK-05
SENTIENS HEALTH
JOONDALUP CAMPUS
SENTIENS
DECEMBER 2005
PROJECT No. 2309
SCALE 1:200 @ A1

NORTH ELEVATION
SOUTH ELEVATION
EAST ELEVATION - DAVIDSON TCE
EXISTING
3 STOREY
BUILDING
WEST ELEVATION
SENTIENS
COOPER & OXLEY
DECEMBER 2005
PROJECT No 2309
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ELEVATIONS - CARPARK
DEVELOPMENT APPROVAL SUBMISSION
SENTIENS HEALTH
SK.08 JOONDALUP CAMPUS

SENTIENS PRIVATE HOSPITAL

December 2005

Reference 706.091

Issue 1

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1	16/12/05	Final	David Read		David Caddy	

CONTENTS

INTRODUCTION

Sentiens Health is a renowned health care provider concentrating on mental health care, including psychiatric assessment, case management and clinical psychology services. Whilst they have been operating in West Perth for a number of years, Sentiens currently do not have a facility to cater for the areas north of Perth and are interested in establishing a facility within the Joondalup City Centre. The site selected is one within close proximity to public transport and within an inner city environment where uses such as community medical facilities, residential and commercial uses are promoted and actively encouraged by the relevant authorities. Sentiens have therefore selected Lot 450 on the corner of Davidson Terrace and Shenton Avenue Joondalup, (No 8 Davidson Terrace) directly opposite the Joondalup Hospital for their development.

Sentiens are looking to establish a significant health care facility on the site with Stage 1 of the development involving the creation of a 60 bed care facility, medical suites and a multi-level car park to complement the existing three storey office building already on the site. The proposed medical development will comprise a three storey building located in the north-east portion of the site near the corner of Davidson Terrace and Shenton Avenue.

Well-respected architects Silver Thomas Hanley have designed the development. This report has been prepared by *The Planning Group* in conjunction with *Shawmac Consulting Engineers* to support the development application. The report describes the site, the relevant planning controls, details how the development complies with those controls and comprehensively justifies any minor variations required to suit the relatively unique development proposed.

SITE DETAILS

The subject site is bound by Shenton Avenue to the north, Davidson Terrace to the east, and Reid Promenade to the south and a pedestrian access way to the west. The site is located in the northern portion of the Joondalup City Centre. A Location Plan is provided as **Figure 1.**

The site comprises all of the land on Certificate of Title Volume 1840, Folio 613 being part of Lot 450, portion of Swan Location 3324 on Diagram 75369. A copy of the Certificate of Title can be seen in **Appendix 1.** The site is owned by Kingston Develco Pty Ltd, but is under contract to Sentiens Pty Ltd to purchase with a caveat on the title lodged on 9 August 2005 to protect Sentiens interest in the land.

Pt Lot 450 is 1.2438ha in area with a frontage of 122 metres to Shenton Avenue, 132 metres to Davidson Terrace, 89 metres to Reid Promenade and 108 metres to the pedestrian access way on the western boundary. A Site Plan is provided as **Figure 2.**

The northeastern portion of the site contains a three-storey office building tenanted by the Disability Services Commission. This building was approved in April 1988 and has a gross floor area of 5,100m^2. The southern portion of the site contains an existing 199 bay car park accessed via Davidson Terrace. The northwestern portion of the site is currently remnant bush vegetation that is to be cleared to facilitate the development that is the subject of this report. An Aerial Photo is provided as **Figure 3.**

The southern portion of the site is relatively flat but the northwestern portion of the site that will be developed slopes from a high point of RL 50.93 near the southeast corner of the existing building down to a low point of RL 48.028 in the north-east corner of the site on the corner of Davidson Terrace and Shenton Avenue. This equates to a fall of 2.9 metres over the proposed development site.

Photos of the existing site can be seen in **Appendix 2.**

Pt Lot 450 has numerous locational benefits for such a facility, being within a 6 minute walk (550m) of the Joondalup train station/bus interchange, having excellent access to existing (and proposed) bus routes along Grand Boulevard and Shenton Avenue and being located directly across the road from the Joondalup Health Campus. The site also benefits from the numerous amenities provided within the Joondalup City Centre.

Figure 1: Location Plan

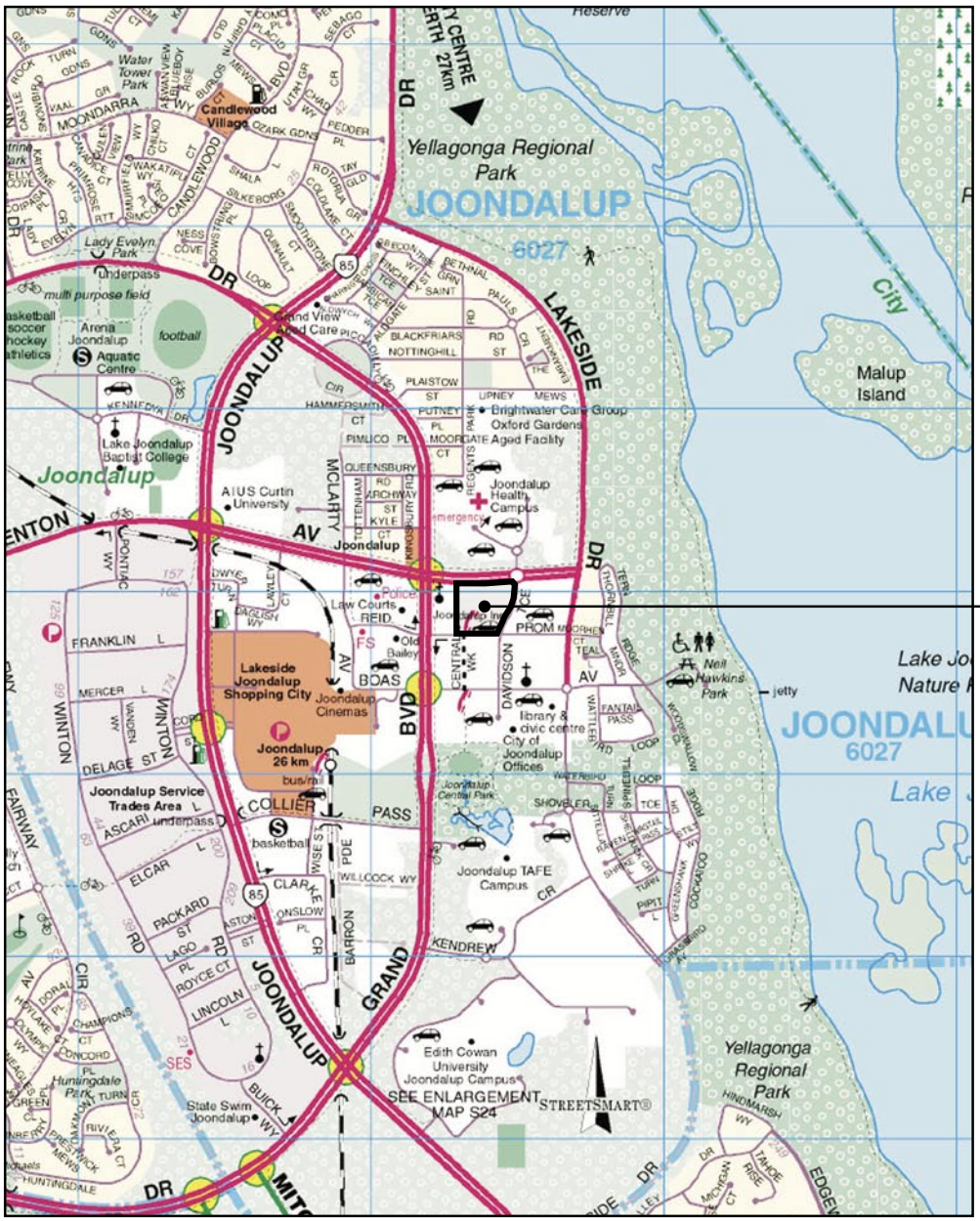
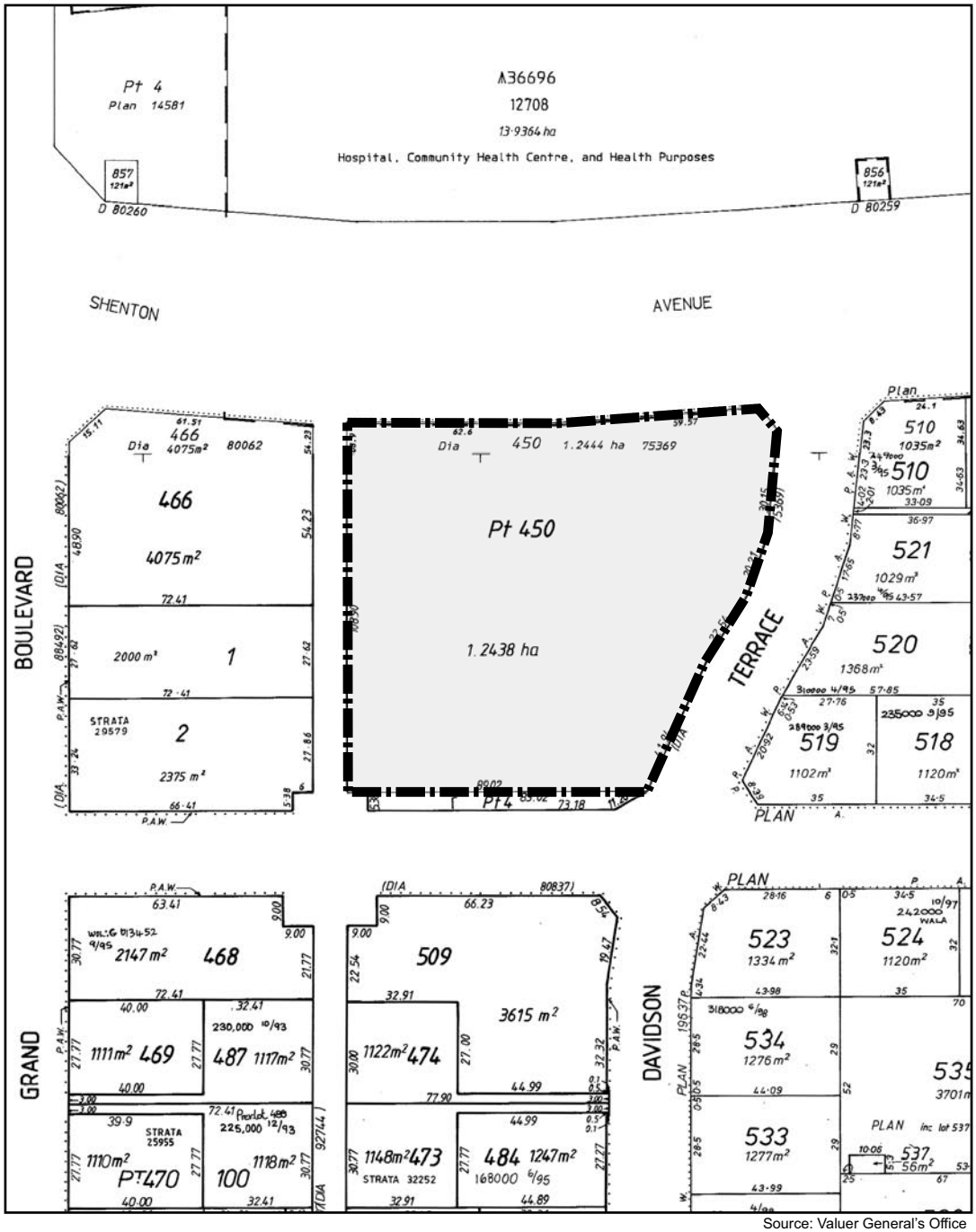


FIGURE 2: SITE PLAN



Source: Valuer General's Office

Subject Site

Figure 3: Aerial Photo

Source: DLI

Subject Site

CURRENT PLANNING CONTROLS

METROPOLITAN REGION SCHEME

The subject land is zoned 'Central City Area' under the provisions of the Metropolitan Region Scheme. A 'hospital' and 'medical centre' are both uses that would be compatible with a 'Central City Area' zoning.

CITY OF JOONDALUP TOWN PLANNING SCHEME NO.2

The subject land is within lands governed by the City of Joondalup pursuant to the City of Joondalup District Zoning Scheme No. 2 as amended 11 April 2005 ('the Scheme'). Under the Scheme the land is zoned "Centre Zone" for which its purpose is to *'accommodate existing and proposed businesses that cater for the diverse needs of the community in an integrated and attractive manner'*. Development in the Joondalup City Centre is guided by the Joondalup City Centre Development Plan and Manual ('the Manual'). It is this Manual that prescribes the development standards and controls for the area, with the Scheme providing clarification on matters not defined in the Manual.

JOONDALUP CITY CENTRE DEVELOPMENT MANUAL (FEBRUARY 1995)

The City Centre Manual encourages flexibility to facilitate a mixture of compatible land uses being provided throughout the city centre and therefore each use is assessed upon its merits against the desired objectives for the precinct. The land use plan within the Manual indicates that the subject site is suitable for "General City Uses", which includes residential, medical suites and community service facilities. For the purpose of the Scheme, the main proposed uses would best be classed as a combination of a 'medical centre' (as it involves two or more consultants and ancillary services) and a 'hospital' as it involves a place where people are admitted for medical treatment or care. Whilst both of these uses are considered to be comparable with 'Medical Suites' advocated by the Manual, the Manual does not specifically advocate a 'hospital' being established on the site.

The plot ratio specified for the site is 1.0. The Manual is silent on car parking for 'medical suite' type activities, but clarification is provided by the Scheme, which requires a 'hospital' to be provided 1 car bay per 3 patients, plus 1 car space to be provided for each staff member on duty. A 'medical centre' requires 5 car parking bays to be provided for each practitioner. It should be noted, however, that clause 4.8.2 of the scheme allows Council the discretion to determine a general car parking standard that shall apply irrespective of the development proposed.

The Manual encourages development to provide a continuous urban wall to street frontages (excepting entries and forecourts) and where a development has frontages to more than one street 'a landscaped urban wall' can be provided. Colonnades or awnings are encouraged over walkways and any adverse impacts over street spaces should be minimized. Setbacks from side boundaries should be minimized and buildings must be contained within a 60 degree height plane from a point 13.5 metres above natural ground level at a mid point along the boundary.

The Manual encourages a variety of building styles to provide a richness and character to the street space. Each building should reflect integrity of form and rhythm and address the street(s) to which it fronts. The corners of buildings should articulate and reinforce the corner with one of the main aims of the built form to provide an urban edge to the street. This can also be achieved by ancillary structures and landscaping to give the impression of a built form. The roofscape must be treated as an integral part of the building with all mechanical plant and equipment screened from public view.

Active uses are encouraged on the ground floor with at least 50% of the area of the ground floor façade to be glazed with the use of dark or reflective glazing being discouraged. Uses such as cafes and active uses should be provided and blank walls avoided.

Building entrances need to have a clear identity, be accessible directly from the street with points of access from car parking areas clearly defined. Where a level change from pavement to interior exists, provision must be made for ramped access. The policy advocates the ground floor level being finished at the pedestrian level, except for sloping sites where the policy states that the average finished floor level should not be higher than 600mm with no part being higher than 1.2 metres above the pavement level. Variations of up to 900mm can be granted if the ground floor activities significantly enhance the street activity.

Passive solar design is also encouraged where the glazing of north and south facades should not exceed 75% of the area of the façade and generally not exceed 50% of the east and west facing facades. Glazed areas on east and west facing facades should be protected from direct summer solar gain.

All signage must be of a high quality and integrated within the building design and character and shall not obscure windows or architectural details.

Other detailed design elements should include:

- Clear sight lines to all vehicle access ways;
- Minimal overshadowing over public squares and parks;
- Minimal overlooking of adjoining private open space or windows of residential properties;
- Provision of durable an appropriate public art, free standing or on a façade;
- Provision of waste areas hidden from the street, loading areas, emergency vehicle access and screening of all services;
- Lighting of buildings;
- Crime prevention through environmental design initiatives;
- Landscaping; and
- A variety of durable and appropriate building materials and colours.

All of these issues are addressed in detail in the assessment section of this report.

PROPOSED DEVELOPMENT

The proposed development comprises two parts. Firstly, a three storey building with a small at-grade car parking area and secondly, a large multiple storey car parking facility to be used by staff and clients of the new facility and the existing office development. The car parking area is to contain a total of 250 car parking bays, including 6 disabled bays. The three storey building is to comprise a private hospital and medical suites where individuals can receive treatment for both mental and physical ailments. A port cochere is provided adjacent to the car park at the entrance to the hospital to allow for patients to embark and disembark under cover, with a separate service area being located at the rear of the building. Access to the new car park and service area is via a single crossover onto Davidson Terrace, with the existing crossover immediately to the south to remain to provide access to the main car parking area. A3 copies of the plans can be seen in **Appendix 3.**

The site falls significantly from a high point adjacent to the existing building down to the northeast corner of the site. As there is a primary need for the two buildings to have the same floor levels, given it is eventually intended for both buildings to be connected to provide one comprehensive medical facility in the future, the fall in the land necessitates the north easternmost portion of the development to be raised above ground level. Whilst it was previously proposed for this level change to be addressed by the creation of a raised 'civic entry' with access via a series of steps, following discussions with Council staff the architect has now revised the design to lower the ground floor tenancies facing Davidson Terrace so that they have an enhanced relationship with the street. However, as Davidson Terrace itself is on a slope, it is not possible for an entirely at grade development to be provided for the entire length of the development abutting the footpath adjoining the site.

Given it is still an operational requirement for the hospital and medical suites to be provided at the same level as the existing building, it is proposed that a raised entry be provided to the medical suites with entry to the reception and waiting area provided either by stairs or via a disabled access ramp in the northeast corner of the site.

The northern portion of the building is elevated above pavement level so that the staff amenities and communal kitchen are elevated above the street to provide surveillance over the existing verge landscaping into the public domain and to ensure that the building has a clear presence in the street. The existing extensive landscaping in the verge will also soften the appearance of the proposed retaining wall.

The ground floor of the development is to contain a mixture of uses predominantly based on medical treatment and care with general practitioner suites in the eastern and northern portions of the floor and a hospital on the central and western portions of the floor. The eastern portion of the building fronting Davidson Terrace is single storey and will contain a variety of allied health uses associated with a medical centre, including uses such as a pharmacy, radiologist, pathologist, dieticians, occupational therapists etc. with the exception of the southern tenancy which is proposed to be a cafe.

All in all the development will accommodate a range of psychiatric and psychological related services and infrastructure, along with the medical suites for private practitioners, general practitioners and allied health professionals, all in a single integrated facility. The three level hospital component will comprise targeted suites for psychiatrists, psychologists, occupational therapists, general practitioners and possibly dieticians and exercise physiologists, inpatient suite psychiatric beds and outpatient treatment suites, ECT/Day procedure unit group rooms, recreational lounges and an internet lounge. The general practitioners will share the ECT/ Day procedure unit with the psychiatric hospital.

In the first instance it is intended that there will be seven general practitioner consulting rooms in the north east portion of the ground floor with provision being made for another four to be added in the future. These 'GP suites' will be serviced by a waiting area and staff amenities area in the north east portion of the development.

The main entry to the hospital is located directly adjacent to the car park on the southern side of the building. This entry opens up into a waiting room and reception area. To the right of the reception area is a series of group counselling rooms and behind the reception is a computer program training area and internet lounge which will mainly be used to educate patients on how to use Sentiens self assessment program. On the northern side of the ground floor are the communal dining and kitchen areas that will service hospital patients. All service areas are on the northeast side of the building where they are screened from view from the public domain. The two upper floors contain 30 single bedrooms per floor, each with their own en-suite. Each floor also has four communal sitting/activity areas, utility rooms, cleaner's rooms, and office support areas. Lift access is provided to all floors via a central lift core in the south-western portion of the development, with secondary access and egress available via a stairwell in the south eastern portion of the development.

The elevations provide a combination of fine and coarse grain detail that reflect the building's locational environment and the commercial/civic nature of the premises. The northern elevation contains single storey elements at each end with a three storey component in the centre. Each component is well articulated and detailed with the northern façade containing more coarse grain detail commensurate with the largely vehicle dominated environment on Shenton Avenue. The central three storey element on the northern facade is framed in a dominant white box element that sits proud of the glazed curtain wall. The ground and first floor of the central portion of the northern elevation is then broken up with a series of white box elements that sit proud of the façade and contrast with the grey rendered elements of the remainder of the façade. These white boxes not only provide character to the façade, but also solar protection from the summer sun. The most notable feature of the northern façade is however, the artistic brightly coloured robust vertical blades located along the length of the façade that increase in height and frequency as they near the corner of Davidson Terrace and Shenton Avenue. These artworks add considerable interest to the façade and assist in celebrating the corner of Davidson Terrace and Shenton Avenue.

The fall of the land and the need to maintain the floors of the development at the same level as the existing building, result in the creation of a retaining wall that has a maximum height of two metres at its eastern end. This wall is then provided with a one metre high open aspect fencing above that will enable surveillance to be provided over the public domain whilst clearly demarcating between public and private space. The support posts for the fencing have been designed to overhang the retaining wall to add further detail to the wall, with the highest part of the wall near Davidson Terrace being broken up with a planter. It should be noted that the majority of this wall will be screened from public view due to the location of existing landscaping within the road verge that is located between the site and the footpath and between the footpath and the carriageway.

The eastern façade contains a single storey element with a curved lightweight verandah roof over the upper level walkway. The verandah roof is supported via series of vertical metal columns that protrude beyond the roof and vary in height to provide a fine grain detail and add further interest to the facade. The ground floor under the awning is all 'shop front' glazing with the glazing at the upper levels being provided in 'boxed' window awnings which return to the northern side of the window and add coarse grain interest to the façade. The southern portion of the eastern façade contains two horizontal windows, completely 'boxed' to enhance their appearance. The most interesting aspect to the eastern elevation is however, the southern portion of this façade where an angular roof form is proposed with inset glass and access ramp designed to be at the same angle as the roof. The roof form of this section also sits proud of the glass to reinforce the angular design of this portion of the façade ensuring a high level of interest is provided. The northern portion of this façade has been increased in height to help provide a corner statement with a vertical bank of horizontal corner windows provided to emphasize the height of the corner.

The southern elevation largely reflects the northern elevation with the exception of the covered entrance in the western portion of the façade, which comprises of an awning that overhangs the roadway and highlights the entrance to the hospital. The eastern portion of the southern façade contains the angular roofed section which will provide a covered alfresco dining area for a café.

Whilst the western façade will be largely screened from view by the existing building, a variety of building materials and varied setbacks still ensure that a highly detailed and well-articulated façade is provided. A mixture of materials has been used in the facades including glass, steel, rendered masonry and smooth and split faced bricks.

The roofscape of the development largely comprises a flat roof hidden behind parapets with the exception of the dominant roof form at the eastern end of the development. Here a significant 'v' shaped winged roof is proposed with extensive eaves of varying width that will be clearly visible in the streetscape and add a high level of coarse grain detail in the facades.

RATIONALE FOR THE SERVICE

Sentiens Health has identified considerable mental health delivery deficit in the north metropolitan area. The development of Sentiens Joondalup campus reflects the growing population and health care requirement of the north metropolitan area of the Perth mental health market. This specific region serves as a considerable catchment area of referring general practitioners and consulting psychiatrists. A large proportion of acute, private in-patient beds are located in the central Perth metropolitan area, leaving demand in the north largely unmet.

PLANNING ASSESSMENT

METROPOLITAN REGION SCHEME

The subject land is zoned 'Central City Area' under the provisions of the Metropolitan Region Scheme. A 'hospital' or 'medical centre' is a use that is consistent with the 'Central City Area' zoning. Under the 2002 Notice of Delegation, the WAPC has delegated authority to the City of Joondalup to determine the application.

CITY OF JOONDALUP TOWN PLANNING SCHEME NO.2

Under the Scheme the land is zoned "Centre Zone", the intent of which is to accommodate existing and proposed businesses that cater for the diverse needs of the community in an integrated and attractive manner. The uses for the Joondalup City Centre are guided by the Joondalup City Centre Development Plan and Manual. In terms of the uses prescribed by the Scheme, the proposal includes 'hospital', 'medical centre', 'restaurant' and 'shop'.

The proposed uses on the majority of the ground floor and the upper levels are classed as a 'hospital' as it involves people being admitted for care. The hospital involves a 60 bedroom facility, but also includes group therapy rooms and training rooms where patients will also receive treatment.

In addition to the hospital, there are also a series of general practitioner and consultants rooms to be located in the northern and eastern portions of the development, with larger tenancies fronting on to Davidson Terrace that are to accommodate ancillary uses such as radiologists, occupational therapists and pathologists. This portion of the development is classed as a 'Medical Centre' as it involves more than two consultants.

A 112m^2 'Pharmacy' is proposed to abut Davidson Terrace. This use is best classed as a 'shop' under the Scheme. The southern tenancy facing Davidson Terrace is proposed to be a café which is classed as a 'restaurant' under the Scheme.

How the proposed uses are consistent with the preferred uses advocated by the Manual is detailed below.

JOONDALUP CITY CENTRE DEVELOPMENT MANUAL (FEBRUARY 1995)

A compliance summary matrix is provided as follows:

Matter	Standard	Provided	Compliance	Comments
Use	General City Uses • Medical Suites • Leisure and Entertainment	'Hospital', 'Medical Centre', 'Shop' & 'Restaurant'	Yes	The hospital and medical centre uses are generally considered compatible with medical suites advocated by the guidelines. The restaurant compatible with leisure and entertainment uses.
Plot Ratio	1.0 (12,438m^2)	Existing Building = approx. 4000m^2, proposed building = 4517m^2, Car park deck and ramp = 2890m^2 Total 11407 m^2 or 0.91	Yes	The exact plot ratio of the existing building will need to be confirmed by Council.
Car Parking	Hospital: (1 per 3 patients, plus one per staff member on duty. 60 beds = 20 bays plus 15 bays for the 15 staff = 35 bays. Medical Centre: (5 per practitioner). 10 practitioners = 50 bays. Restaurant: (Greater of 1 per 5m^2 of dining or 1 per 4 seats) = 178m^2 dining = 36 bays Office: (1 per 30m^2 NLA) 5,100 = 170 bays Pharmacy (shop) 7 per 100m^2 (112m^2 = 8 bays. Total Required = 299.	250 bays provided	No	Refer Report
Setbacks	'Urban wall to the street	Northern setbacks to Shenton Avenue of 2.8m to 8m Eastern setbacks to Davidson Terrace of 3.5m to 6m	No	Northern setbacks are generally in line with the existing building. Eastern setbacks accommodate level change whilst still allowing direct street access.
Height	60 degree height plane from a point 13.5 metres at natural ground level at a mid point along the boundary.	Maximum Height 12.5m	Yes	

Matter	Standard	Provided	Compliance	Comments
Built Form	Richness and character to the street.	Very well articulated and detailed facades and a clear design intent. Active uses to the street, canopies over the walkways, clear entrances, variety of materials and colours and service and plant areas screened from view.	Yes	
Passive Solar Design	Extensive north facing glazing, minimal east, west and south glazing	North facing glass windows with protection provided by eaves and awnings. Minimal openings to east and west and all protected.	Yes	The western façade is protected by the existing adjoining building.

Land Use

The City Centre Manual ('the Manual') encourages flexibility and a mixture of land uses throughout the city where each individual use will be treated on its merits as to how it helps the City achieve the objectives for the Central Business District. The land use policies also advocate Council's objectives to encourage a vibrant city centre by providing a 24 hour use, integration of retail activities and a concentration of commercial and retail activity to reinforce the City's unique identity.

The subject site is designated to encourage "General City Uses" such as offices, retail, accommodation (as distinct from 'residential'), leisure and entertainment, community service facilities and medical suites. The proposed uses are directly compatible with Council's desired intent for the precinct. The hospital use provides 'accommodation', 'medical suites' and the 24 hour use specifically encouraged by the Manual's policies. Existing uses on the site are offices also as advocated by the Manual. The pharmacy and café are consistent with the 'leisure' and 'retail' activities advocated by the Manual.

The development as a whole provides the community service facilities as encouraged by the Manual. The proposed uses combined with the design of the building with windows that overlook the public domain, together with kitchen and dining facilities facing the street, the development will ensure activation and surveillance over both Shenton Avenue and Davidson Terrace.

The uses proposed are also compatible with neighbouring residential uses, with the type of hospital proposed not requiring regular emergency ambulance visits, or involving any use which has the potential to adversely impact on amenity. It should also be noted that the medical facilities proposed complement those uses in the Joondalup Hospital located directly opposite Shenton Avenue to the north of the site.

The proposed development therefore accommodates a variety of uses, all of which are directly compatible, are uses that are advocated by the Manual for the site and will all enhance the diversity of uses within the town centre.

Plot Ratio

The plot ratio specified by the Manual for the site is 1.0. With a site area of 12,438m^2 a plot ratio floor area of 12,438m^2 is permitted. The proposed plot ratio floor area is 7407m^2 (including the car parking deck). *The Planning Group* has been unable to ascertain from Council the plot ratio floor area of the existing building, but Council has advised that it has a gross floor area of 5,100m^2. Assuming that approximately 80% of this floor area is plot ratio then the plot ratio of the office building is approximately 4000m^2 (subject to verification from Council). This equates to a total plot ratio area of 11407m^2 or 0.91, less than the 1.0 maximum specified by the Manual.

Car Parking

As the Manual is silent on car parking for 'medical suite' type activities, the car parking requirements are specified by the Scheme. For a hospital with 60 beds and 15 staff, 20 bays are required. For the medical centre component, Sentiens propose up to 10 practitioners (which includes the currently proposed and future GP's) that under the Scheme would require 50 car parking bays. For the 122m^2 pharmacy, 8 bays are required and for the 178m^2 of the café available for dining (including the alfresco area) 36 bays would be required. The total car parking required for the new development is therefore 129 bays. When this is combined with the 170 bays required for the existing 5100m^2 office (@ 1 bay per 30m^2) a total of 299 bays are required and only 250 bays proposed, 49 bays short.

Under clause 4.8.2 of the Scheme, Council has the discretion to determine a general car parking standard that shall apply irrespective of the development proposed in cases where Council considers it to be appropriate.

Given clause 4.8.2 and that the car parking required by the Scheme appears to be onerous for such a development where there are no visitors for hospital patients and where persons attending one of the facilities are also likely to attend another one of the facilities on the same site, *Shawmac Traffic Consultants and Engineers* were engaged to comment on the number of bays and safety aspects of the parking facility. A copy of their report can be seen in Attachment 2.

It is considered that the minor car parking shortfall is justified and warrants support based on:

- The car parking ratio for 'hospital' specified by Council's Scheme is for a public or private hospital where people are admitted for physical care and treatment. These hospitals are distinctly different in operation to a psychiatric hospital. The whole intent of the psychiatric hospital is to remove people from their everyday environment and influences. Visitors are strongly discouraged as it interrupts their treatment. Sentiens have also experienced that there is a stigma often attached to mental health care and patients generally don't want to receive visitors whilst in care. This therefore results in a significantly less amount of car parking being required.

- The majority of staff and patients will either be dropped off to the facility or will catch public transport with the site being within a 5 minute walk (600m) of the Joondalup rail station, 380m walk from the Grande Boulevarde bus station, bus stops being located abutting the site and Council is believed to be currently investigating the establishment of a 'CAT' Bus system.

- There will be a large percentage of reciprocal uses where one client is likely to visit more than one of the uses as part of any one visit. The GP clinics, hospital and allied medical facilities such as the physiotherapist will partially rely on referrals from each other where patients may receive two services in the one visit. The pharmacy is also largely reliant on visits after patient have seen their GP or consultant practitioner to fill prescriptions and the proposed cafe will largely be utilised by existing office staff, hospital staff and patients and those attending the medical centre;

- The cafe involves a significant alfresco dining area to provide activation and life to the street. Alfresco dining areas are often located within the Council's road verge where Council does not require car parking as Council uses this as a mechanism of encouraging alfresco dining to promote life and animation on the street. In this instance the al-fresco dining area is located within the private property due to the change of levels. Should car parking be required for the alfresco dining component of the development of the development then it is likely that the developer will merely remove this requirement to avoid having to pay cash-in-lieu for parking. This would be detrimental to the development and its contribution to the diversity of the city centre;

- The development with the level of parking proposed helps achieve the objectives of the Scheme in that helps support a safe, efficient and effective transport system by not providing an over supply of parking thus encouraging greater use of the public transport system, a more sustainable mode of transport;

- The existing development is occupied by the Disability Services Commission, which has a vast number of 'pool' cars that are not generally available for staff to commute to and from work. These 'pool' cars consume a vast amount of bays in addition to workers vehicles. As it is eventually intended for the Disability Services Commission to relocate from the site, another office use, or an expansion of the proposed medical use would not generate the same demand for car parking.

- The Shawmac report identified that only 241 bays would be required based on the RTA Guide to Traffic Generating Developments for the uses proposed excluding the reciprocal parking for this site, or taking into account that the hospital is a psychiatric hospital where there are no visitor bays required. A copy of the Shawmac report can be seen in Appendix 4.

Based on the above it is considered that the minor car parking fall should be supported by Council. It should be noted that should the Council require cash-in-lieu the project will simply be unviable and the project not proceed.

Setbacks and Heights

The Manual encourages development to provide a continuous urban wall to street frontages whilst ensuring that any adverse environmental impacts over the street are minimized. Setbacks should therefore be minimal (excepting entries and forecourts). The Manual also encourages the provision of pedestrian shelter over walkways, and where a development has frontage to more than one street, the urban wall can be continued through either a built or landscaped form.

The subject building is located abutting both Shenton Avenue and Davidson Terrace. With regard to Shenton Avenue, this street is a major distributor road which has limited pedestrian movements, but significant vehicle movements. The development has therefore been set back generally in line with the existing building on the site, a set back of approximately 3.6 metres. This consistent setback with minimal distances between the buildings ensures that the two developments will provide a consistent urban wall when viewed from the street.

It is important to note that the footpath in Shenton Avenue is not located on the property boundary. This shows a clear intent that it was never intended for the development to provide an urban wall at the property boundary to Shenton Avenue as the development will always be set back from the footpath with no potential to provide awnings over the footpath for pedestrian shelter. It is therefore considered more desirable from an urban design point of view for a greater setback to be provided to the building so that it does not dominate or over power pedestrians on the street, but ensure it is not set back too far so that the building still has a presence in the street and is still able to facilitate surveillance over the public domain.

The proposed building has been set back from Shenton Avenue between 2.8 and 8 metres, with the three-storey component being setback at 8 metres so that the building still has a presence in the street, but does not overpower the pedestrian domain. This setback is also consistent with the position adopted by the City of Joondalup on other developments facing Shenton Avenue which are all set back from the street. The single storey elements at each end have been set closer to the street to continue the ‘urban wall’ set by the existing office development. It is considered that the varied setbacks enable a well articulated façade to be provided that addresses the street and adds significantly to the character and aesthetics of the street. It should also be noted that the Manual enables developments with two frontages to provide a landscaped

solution to the secondary street. It is intended for landscaping to be installed in the setback area to combine with the retaining wall and verge planting so that the appearance of the urban wall specified by the policy will be provided.

With regard to the set backs to Davidson Terrace, the previously discussed fall in the land and the requirement to have the floor levels the same as the existing building will result in the finished floor level of the building being some 2.4 metres above the level of the pavement at its lowest point. The architect has carefully considered this level change and has deliberately located the easternmost tenancies facing Davidson Terrace 1.25 metres below the remainder of the ground floor. Whilst this enables these tenancies to be level, to ensure that the car parking area remains level for appropriate disabled access from the car park the fall of the land means that five steps are required in order to access these tenancies from the northern part of Davidson Terrace. A lengthy disabled access ramp is also required near the corner of the development to provide disabled access to the reception area of the medical suites.

This level change and the need to provide steps and ramps has resulted in the building needing to be setback from the street front to accommodate the steps within the property boundary. An awning has therefore been provided over the walkway at the upper level do not only provide shelter for pedestrians, but also to protect the entries of these tenancies from the elements. This solution enables the development to provide the active façade to the street and provide shelter for pedestrians as advocated by the guidelines.

For the setback to the southern property boundary a two metre setback has been provided to ensure that a landscaped urban walling can be provided to soften the decked car park and to ensure that the decked car park does not cast a significant winter shadow over the adjoining footpath. Again it should be noted that the footpath is not located on the property boundary, showing a clear intent that an urban wall on the property boundary is not required. Given the landscape solution will create the perceived urban wall it is considered that the setback requirements of the guidelines for this secondary street are satisfied.

In terms of height, buildings must be contained within a 60-degree height plane from a point 13.5 metres above natural ground level at a mid point along the boundary. The maximum height of the building at its tallest point above natural ground level is only 12.5metres. The building is therefore located fully within the height plane.

Design In Context

The subject site is located on the northern edge of the Town Centre District with Shenton Avenue being the northern boundary. The subject development integrates very well with the adjoining development as the land to the north contains the Joondalup Health Campus. Given the hospital is set so far back from Shenton Avenue, there is no potential for the built forms to be integrated. The proposed setback of the subject hospital from Shenton Avenue respects the lack of built form development on the opposite side of Shenton Avenue but is not set back so far so the building does not have a presence in the street.

The development will also form a rich urban vista when viewed from the exit to the hospital and west along Davidson Terrace with the vertical art works at the ground level and raised corner treatment celebrating the intersection, whilst the winged roof with the extensive eave overhang over the eastern portion of the hospital providing a high level of coarse grain detail drawing people towards the built form.

The nil setbacks on the corner of Davidson Terrace and Shenton Avenue with the vertical artworks also help create a northern gateway into the city centre. These features combine with the variety of materials, colours and well detailed and articulated built form to provide a rich development that clearly announces the intersection and provides a landmark development that will help orientate pedestrians and motorists.

The development also addresses both Davidson Terrace and Shenton Avenue with a fine grain detail provided to acknowledge the pedestrian environment on Davidson Terrace and the more coarse grain detail to acknowledge the vehicle dominated environment on Shenton Avenue. The development allows for natural surveillance to be provided over both streets and the proposed car parking area. Given the 24 a day hospital use, the development will enable a high level of perceived security to be provided over the public domain.

The development has been very well designed by well respected architects *Silver Thomas Hanley* and with the rhythmic facades and the proposed built form integrity, the development will make a very positive contribution to the Joondalup City Centre.

Active Facades

The proposed development provides the active facades as desired by the Manual, given that the tenancies facing Davidson Terrace have now been lowered to now only be marginally above the level of the footpath. These tenancies are all active uses including a pharmacy and a café with alfresco dining providing activity and life on the street. The ground floor facades to Davidson Terrace are also entirely glass ensuring that the activities within the building can be viewed from the street optimizing the interaction between the streetscape and building interior and providing the animation desired by the guidelines. This glazing includes there being no window sills with the glazing being full height as required by the Manual.

Whilst no basement car parking is to be provided, the development seeks to provide a balance between the amount of car parking required without providing an over supply of parking. The development does, however, necessitate the provision of a decked car parking facility. Car parks by their very nature are often considered as unsightly structures, but in this instance the decked car park presents as a built form to the street which provides the rhythm and urban edge desired by the policy. Open walled portions of the ground floor have been provided in addition to visually permeable screening and balustrading to enable surveillance from the car park over Reid Promenade and vice versa.

Entrances and Access

The two uses, medical centre and hospital, are both provided with a distinct entrance. The medical centre entrance is distinguished from the remainder of the façade by the steps leading up to the entry point which is then capped by a raised awning at a different level than the remainder of the awning on the façade. The hospital entrance is signified by the robust port cochere that extends over the driveway to provide a clear entry statement that can be viewed from Davidson Terrace and the car parking area to the south.

The medical centre foyer has a strong visual relationship with the street and whilst it has to be located at the same level as the hospital higher than the level provided at the street, it optimizes the interaction between the development and the street by the provision of full height glazed entry doors with the offices having full height glazing to the street. The waiting area is provided with disabled access through the provision of a disabled access ramp near the corner of Davidson Terrace and Shenton Avenue.

The development therefore complies with the entrances and access provisions of the Manual.

Levels

Due to the slope of the land and the land uses where it is necessary to ensure that the proposed building is at the same level as the existing building, it is unavoidable for portions of the ground floor of the hospital to be elevated above street level. The architect has nevertheless respected the requirements of the level provisions of the policy by lowering the tenancies facing Davidson Terrace so that the café is located at the same level as the street with the adjoining tenancies only being marginally higher than the footpath due to the fall of the land.

The development is also marginally higher than the level of Shenton Avenue, again as a result of the fall in the land to Davidson Terrace. The architect has again respected the intent of the Manual and has reduced the extent of the retaining wall by providing a raised deck and landscaped solution to the corner.

It is considered that the proposed levels can be justified based on:

- The windows and doors of the ground floor tenancies directly open onto Davidson Terrace;
- The uses to Davidson Terrace are all smaller more active tenancies and uses that will animate the street as well as providing surveillance over the public domain;
- The tenancies facing the Davidson Terrace and the north elevation to Shenton Avenue all propose full height glazing;
- The development involves a 24 hour a day use which provides passive surveillance and security over the street; and

- The tenancies facing Davidson terrace are only 800mm above the height of Davidson Terrace and satisfy the criteria of the Manual to be permitted to be 900mm above the pavement level in that the windows and doors open towards the street, the uses are all active uses and the floor of these tenancies does not exceed 1.2 metres above the pavement level.

Based on the above, the difficulty created by the fall of the land and the high level of interaction with the street proposed, it is considered that the levels of the building warrant approval.

Roofscape

The roofscape has been considered as an integral component of the building design. The dominant roof feature is the 'v' shaped roof over the north-south three storey component facing Davidson Terrace. This unique roof has an eave which increases in depth the closer it gets to Shenton Avenue to help celebrate the corner and provide a high level of interest in the roofscape. The unique roof form also helps highlight the development as an iconic building which will form a unique landmark at the northern gateway to the city centre.

The remainder of the development has been provided with a flat roof screened behind parapets. This flat roof not only reinforces the rectangular built form, but also offsets the unique 'v' shaped roof facing Davidson Terrace. No roof form casts a shadow over the public domain and all plant and equipment will be screened from view, with the bulk of the plant and equipment being in a dedicated area in the western portion of the development.

Facades

The facades of the building comply with the policies expressed by the Manual in that all glazing is set into a solid composition with the eastern elevation comprising either boxed windows with solid vertical and horizontal awnings, or full height glazing set within the face brick frame as is evident on the ground floor. The glazing on the northern and southern elevations is located within a robust white box frame, with a smaller series of window boxes located on the lower two floors of the building.

The northern façade comprises 51 % of glazing to allow the northern winter sunlight to penetrate into the development, whilst glazing on the southern side has been limited to 43% to minimise heat loss. Glazing to east façade has then been limited to a maximum of 27% with this glazing screened by awnings to minimize the penetration of the harsher summer sunlight and glazing on the west façade comprises 35%, but this will be somewhat protected by the existing building. All of these percentages are less than the maximums specified by the Manual whilst still maximizing the surveillance opportunities and providing the animation at the ground floor required by the Manual.

Pedestrian Shelter

Whilst the fall of the land virtually prohibits pedestrian shelter being provided over the public domain, the architect has nevertheless provided a covered pedestrian environment at an upper level in front of the individual tenancies facing Davidson Terrace. As discussed above, Shenton Avenue is a vehicle dominated environment and it was never anticipated for pedestrian shelter to be provided as the footpath is not located up against the property boundary. Even if a nil setback was provided to the development abutting Shenton Avenue the footpath being located away from the boundary precludes the provision of pedestrian shelter.

Whilst the pedestrian shelter to Davidson Terrace is not located over the footpath, it nevertheless entices pedestrians up to the upper level by providing active facades with full height glazing, a series of smaller tenancies and high pedestrian generating activities such as the café. This activation in conjunction with the pedestrian shelter results in a comfortable environment encouraging pedestrian activity in Davidson Terrace.

Signage

Specific signage details have yet to be determined. The developer is however aware of the requirements of the Manual and all signage will be discreet in keeping with the scale and design intent of the building.

Sightline easements

The sightline to the existing crossover is being maintained. The new crossover will be provided with the required sightline easement to the footpath as required by the Manual.

Overshadowing and Overlooking

The development causes no overshadowing or overlooking over any residential property and therefore complies with the requirements of the Manual. The development also causes minimal overshadowing over the public domain by only providing single storey development to the southern boundary adjacent to Reid Promenade, and providing permeable balustrading that allows for sun penetration and still enables surveillance of the public domain.

Public Art

Public art is to be incorporated in the building design. The two most notable forms of art will be the angled façade and glazing to the café facing Davidson Terrace. This will contrast with the remainder of the façade to provide a distinct character and identity that adds to the level of interest in the streetscape.

The second readily noticeable artwork is the series of brightly coloured vertical panels in the Shenton Avenue streetscape which increase in height and frequency the closer they get to the intersection. The brightly coloured vertical blades provide a landmark that will help orientate pedestrians and motorists and significantly add to level of enjoyment that the building offers users of the public domain. The materials used in the artworks will be durable and easy to maintain and as the art works will be within private property they will be maintained by the owner with no maintenance burden being placed on Council.

Services and Servicing

All servicing areas for the hospital have been strategically located at the western end of the building where they will be screened by the existing office building. Access to the refuse and service area will be via and extension of the new access way that will only be available for service vehicles. All loading and unloading will occur within the designated service area.

Special consideration has been given to the emergency ambulance vehicles with a port cochere providing a covered area for the loading of patients. All piped and plumbing services will be provided to the building in an integrated manner where they will not adversely impact on the public domain.

The development therefore complies with the services section of the Manual.

Lighting of Buildings and Open Space

Whilst the actual lighting details have yet to be determined, the developer is aware of Council's requirements and will conform to the specifications of the Manual. This will include the car parking area and all stairs and pathways being well lit. It should be noted that the development is also a 24 hours a day 7 days a week operation and will therefore always require a high level of security lighting to be provided.

Public Safety and Security

As the development is a 24-hour a day, 7 day a week operation, the security of the site and the public domain is of importance. Security will be achieved through the provision of lighting and surveillance over all areas surrounding the building and generally by providing a level of activity at all times. There will be no blank walls or dead ends within the development that present as potential security risks. It is also anticipated that security guards will be present at the change of night shift to escort nursing staff to their vehicles.

Ancillary Structures

All ancillary structures such as air conditioning units and other plant will be located at the western end of the building where it will be appropriately screened from the public domain and where noise will not adversely impact on the amenity of any residential property.

Landscaping and Open Space

Whilst there is significant vegetation located on site, none of it is considered to be substantial or worthy of preservation. This vegetation will be retained for as long as possible and only cleared once development is scheduled to commence to minimise dust nuisance. All street trees will be retained and the developer will work with Council to ensure that the proposed landscaping on the site complements the landscaping in the public domain adjoining the site and compiles with the requirements of the Manual. It is anticipated that a condition will be placed on the approval to require a landscaping plan to be submitted to Council for approval prior to its implementation.

Materials

All materials used on the exterior will be robust and durable and will be generally resistant to vandalism. The materials will include glass, rendered masonry and both split face and smooth face bricks that will provide a rich tapestry of textures appropriate to the city centre. The development will also be afforded a varied colour palette that will be dominated by grays and creams to complement adjoining development, but then provided with contrasting brighter orange artworks and vertical veranda poles that will provide a striking visual appearance in the streetscape.

The proposed materials therefore comply with the requirements of the policy.

Traffic

The Shawmac report seen in Appendix 4 also identifies that traffic generated from the site can be readily accommodated on the existing road network with impacts predicted to be *"small in magnitude and manageable"* with *"adjoining intersections still operating at acceptable levels"*. Access to and from the site is considered to be safe, with low crash histories and additional traffic is not considered to increase the risk to road users by any measurable amount.

CONCLUSION

As evidenced from the above report, the proposed development complies with the requirements and intent of Council's Scheme and the Joondalup City Centre Development manual. The development has been well designed by well respected architects Silver Thomas Hanley and will make a valuable contribution to the Joondalup City Centre.

The only minor discrepancy is in relation to a small car parking shortfall that has been well and truly justified in the above report and the report prepared by Shawmac Consulting Engineers. The rate prescribed by a hospital in Council's Scheme envisages a high number of visitors to arrive at the required rate of one bay per three beds. The hospital proposed is a psychiatric hospital where patients are strongly discouraged to receive visitors as it interrupts their treatment which is largely based on removing them from their everyday environment and influences. A large number of patients will also be dropped of and picked up to avoid leaving their vehicles in the car park for extended periods.

The development directly satisfies Council's objective for the City Centre as it provides for a variety of uses on the site, which cater for the diverse needs of the community in an integrated and very attractive manner.

Based on the above, it is respectfully requested that the application be placed before the next available Council meeting with a recommendation for approval.

APPENDIX 1

CERTIFICATE OF TITLE

40652

132F

REGISTER NUMBER	
450/D75369	
DUPLICATE EDITION	DATE DUPLICATE ISSUED
2	17/10/2005

WESTERN AUSTRALIA

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

VOLUME 1840 FOLIO 613

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 450 ON DIAGRAM 75369

REGISTERED PROPRIETOR:
(FIRST SCHEDULE)

KINGSTON DEVELCO PTY LTD OF UNIT 12, 1 CORKHILL STREET, NORTH FREMANTLE
(AN J434988) REGISTERED 15 SEPTEMBER 2005

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. THE LAND THE SUBJECT OF THIS CERTIFICATE OF TITLE EXCLUDES ALL PORTIONS OF THE LOT DESCRIBED ABOVE EXCEPT THAT PORTION SHOWN IN THE SKETCH OF THE SUPERSEDED PAPER VERSION OF THIS TITLE. VOL 1840 FOL 613.
2. *G014236 CAVEAT BY PREMIER OF THE STATE OF WESTERN AUSTRALIA AS TO PORTION ONLY. LODGED 26.10.1995.
3. *G753269 CAVEAT BY PREMIER OF THE STATE OF WESTERN AUSTRALIA AS TO PORTION ONLY. LODGED 31.3.1998.
4. *H424279 CAVEAT BY MINISTER FOR WORKS AS TO PORTION ONLY. LODGED 19.4.2000.
5. *H906802 CAVEAT BY MINISTER FOR WORKS AS TO PORTION ONLY LODGED 24.10.2001.
6. *J389983 CAVEAT BY SENTIENS PTY LTD LODGED 9.8.2005.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
* Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
Lot as described in the land description may be a lot or location.

----------END OF CERTIFICATE OF TITLE----------

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 1840-613.
PREVIOUS TITLE: 1836-998.
PROPERTY STREET ADDRESS: 8 DAVIDSON TCE, JOONDALUP.
LOCAL GOVERNMENT AREA: CITY OF JOONDALUP.

ORIGINAL—NOT TO BE REMOVED FROM OFFICE C

CT 1840 0613 F

Application E122380
Volume 1836 Folio 998

WESTERN AUSTRALIA

1840 613

CERTIFICATE OF TITLE

UNDER THE "TRANSFER OF LAND ACT, 1893" AS AMENDED

I certify that the person described in the First Schedule hereto is the registered proprietor of the undermentioned estate in the undermentioned land subject to the easements and encumbrances shown in the Second Schedule hereto.

Dated 9th June, 1989

REGISTRAR OF TITLES

ESTATE AND LAND REFERRED TO

Estate in fee simple in portion of Swan Location 3324 and being part of Lot 450 on Diagram 75369, delineated on the map in the Third Schedule hereto, limited however to the natural surface and therefrom to a depth of 12.19 metres.

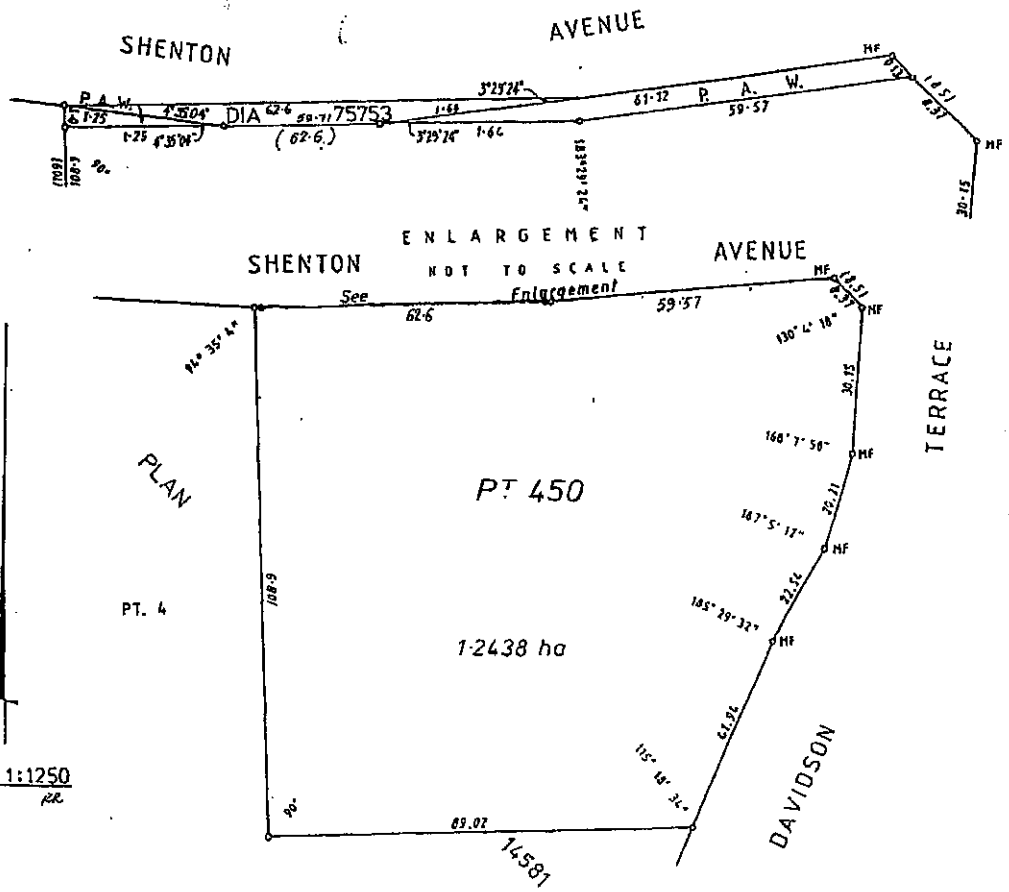
FIRST SCHEDULE (continued overleaf)

~~Joondalup Development Corporation of 1st Floor, 40 The Esplanade, Perth.~~

SECOND SCHEDULE (continued overleaf)

~~1. MORTGAGE E122382 to Australian European Finance Corporation Ltd. Registered 9.6.89 at 11.21 hrs.~~ Discharged E760624 5.12.91

THIRD SCHEDULE



NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS.

E67590/3/89-20M-L/4664

LT. 37

FIRST SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	REGISTERED	TIME	SEAL	CERT. OFFICER
Baryo Investments Pty. Ltd. of 111 Wellington Street, East Perth.	Transfer	E122381	9.6.89	11.21		

SECOND SCHEDULE (continued) NOTE: ENTRIES MAY BE AFFECTED BY SUBSEQUENT ENDORSEMENTS

INSTRUMENT NATURE	INSTRUMENT NUMBER	PARTICULARS	REGISTERED	TIME	SEAL	CERT. OFFICER	CANCELLATION	NUMBER	REGISTERED OR LODGED	SEAL	CERT. OFFICER
Mortgage	E760625	to Banque Nationale de Paris.	5.12.91	10.06							
Caveat	G14236	As to portion only: Lodged 26.10.1995 at 14.26 hrs.									
Caveat	G753269	As to portion only: Lodged 31.3.98 at 16.08 hrs.									
Transfer	G888729	of Mortgage E760625 to Westpac Banking Corporation.	28.8.98	16.12							
Mortgage	G888730	to Westpac Banking Corporation.	28.8.98	16.12							
Caveat	H424279	As to portion only: By Minister for Works. Lodged 19.4.00 at 11.25 hrs.									

CERTIFICATE OF TITLE VOL. 1840 FOL. 613

40654

APPENDIX 2

PHOTOS

Photo 1 - Subject site viewed from existing Davidson Terrace crossover

Photo 2 - Existing office building and car park

Photo 3 - Subject site from corner Shenton Avenue and Davidson Terrace
(Note: Footpath lighting on southern side of footpath in road verge.)

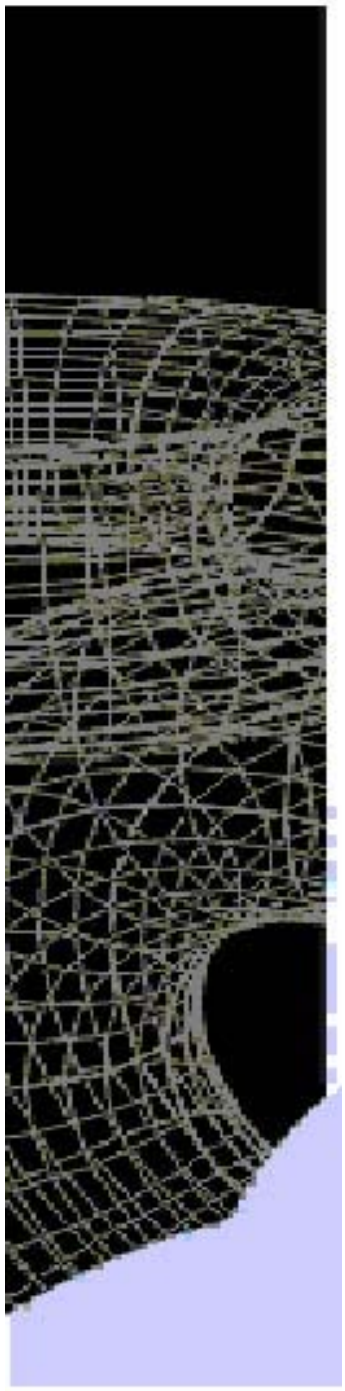
Photo 4 - Existing office building viewed from Shenton Avenue
(Note: Width of carriageways.)

APPENDIX 3

PLANS OF THE DEVELOPMENT

APPENDIX 4

TRAFFIC & PARKING REPORT



PROJECT:

Review of the traffic impacts associated with the development of Sentiens Health Joondalup Campus.

Ver. 1

Client	The Planning Group.
Author	Tony Shaw. B Sc Dip Eng Surv Grad Dip Bus MIPWEA MAITPM MQSA
Signature	
Date	December 2005.
	Version 2.

CONSULTING ENGINEERS, ENVIRONMENTAL ENGINEERS & RISK MANAGERS.

1 ST. FLOOR, 908 ALBANY HIGHWAY, EAST VICTORIA PARK WA 6101.

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EMAIL	shawmac@upnaway.com

TABLE OF CONTENTS.

1. Study and site details.

1.1. Scope.

This study has been commissioned to investigate possible traffic issues associated with the development of the Sentiens Health Campus in Davidson Road, Joondalup. The extent of the study includes a review of operational aspects of the road network adjacent to the site, parking requirements and consideration of road user safety. Methodology relied on gathering baseline data of the existing traffic environment, quantifying expected increased traffic associated with the development and assessment of the impacts associated with the revised traffic patterns.

1.2. Study site.

The study site shown on figure 1 is approximately 25 kilometres north of the Perth CBD and is located in the Joondalup Town Centre. The site is bounded by Shenton Avenue to the north, Davidson Terrace to the east and Reid Promenade to the south.

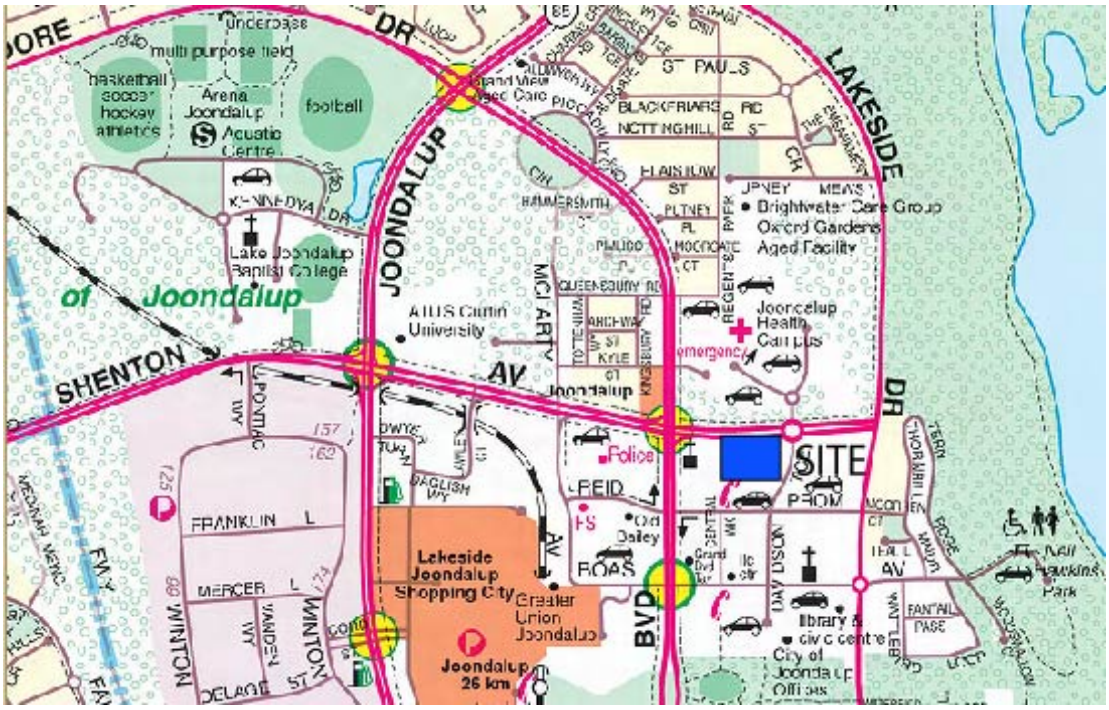

Figure 1 Study site.

The existing office development, approved in 1988, has a gross building area of 5,100 m^2 which is utilised by a number of tenants. The approved plan included 199 parking bays.

Current proposals include the development of the south east corner of the site, which when completed will provide 30 beds on each of the first and second floors (total of 60 beds) for psychiatric patients, 7 GP rooms individual consultation rooms with a possible increase by 4 rooms in the future, located on the ground floor, and separate tenancies facing Davidson Terrace which comprise a pharmacy and 3 other medical support consultancies.

The existing office building will remain and will continue to function as at present. The proposed layout is shown on Figure 2.

Figure 2 Proposed Development.

2. Existing traffic environment.

2.1. General.

Reid Promenade and Davidson Terrace are both classed as local access roads while Shenton Avenue is classified as a District Distributor (A) road. Shenton Avenue provides access to the Joondalup Town Centre via Joondalup Drive which in turn connects to the Mitchell Freeway either by Hodges Drive or Ocean Reef Road. Shenton Avenue also provides connection to the western beach suburbs.

Shenton Avenue consists of a 4 lane dual carriageway separated by a landscaped median. Davidson Terrace and Reid Promenade are both 7.5 metres wide and are flanked with embayed on road parking bays. The intersection of Davidson Terrace and Shenton Avenue is controlled by a two lane roundabout, while the intersection of Davidson Terrace and Reid Promenade is configured as a standard 4 leg unsignalised intersection with stop signs giving priority to Davidson Terrace.

2.2. Traffic volumes.

Counts were undertaken during AM and PM peak hours at the Davidson Terrace – Shenton Avenue intersection and the Davidson Terrace – Reid Promenade intersection on the 15th November 2005. The results of those counts are summarised on Tables 1 and 2 below; turning movement numbers are identified on Figure 3.

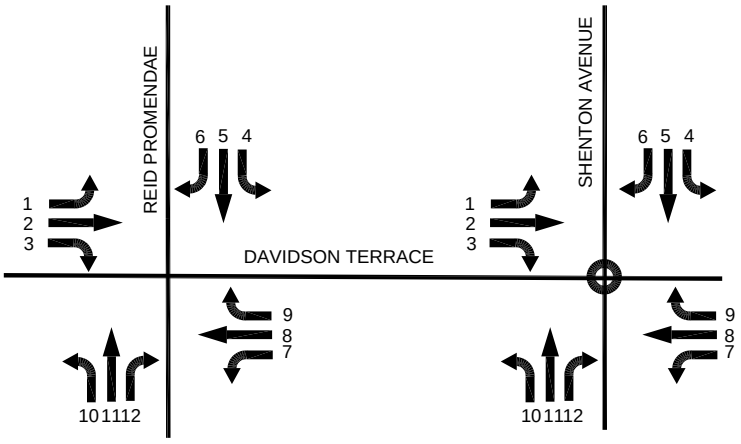

Figure 3 Turning Movement Numbers.

Intersection of Davidson and Reid.

Movement No. >	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
8:00	4	1	11	4	1	1	9	14	4	1	2	3
8:10	3	1	8	5	2	2	3	15	4	3	2	2
8:20	5	0	9	6	1	5	4	18	2	4	1	2
8:30	4	2	12	5	2	2	4	12	4	5	2	2
8:40	5	0	8	4	2	4	8	15	4	4	1	3
8:50	4	1	10	5	1	2	8	14	3	4	1	3
Total.	25	5	58	29	9	16	36	88	21	17	9	15
Movement No. >	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
4:00	7	1	16	2	2	4	3	10	4	3	2	3
4:10	2	1	17	4	3	4	3	17	1	2	4	1
4:20	4	1	17	2	4	1	3	16	4	3	0	5
4:30	5	1	15	3	4	2	4	15	3	3	5	5
4:40	4	2	15	2	3	3	2	16	4	5	4	2
4:50	2	1	18	4	3	4	2	18	4	3	2	1
Total.	24	7	98	17	19	18	17	92	20	19	17	17

Table 1 Turning Movement Volumes Davidson - Reid.

Intersection of Davidson and Shenton.

Movement No.>	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
8:00	20	0	4	31	16	16	3	9	0	3	15	13
8:10	18	3	4	28	15	16	4	8	3	5	16	8
8:20	15	1	6	33	11	19	5	10	25	4	14	8
8:30	15	3	5	35	14	18	4	10	25	4	14	11
8:40	18	3	6	30	19	19	5	8	26	5	15	10
8:50	19	3	4	24	16	19	4	9	31	3	11	13
Total	105	13	29	181	91	107	25	54	110	24	85	63
Movement No.>	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
4:00	14	1	3	25	24	9	13	6	26	8	24	4
4:10	13	5	5	11	16	10	8	9	35	11	16	9
4:20	15	1	3	10	15	19	10	15	30	13	31	4

Movement No.>	1	2	3	4	5	6	7	8	9	10	11	12
4:30	18	4	4	19	19	18	10	15	43	8	30	6
4:40	13	4	4	13	18	9	9	10	39	11	23	6
4:50	15	3	3	11	15	15	11	13	34	10	31	8
Total	88	18	22	89	107	80	61	68	207	61	155	37

Table 2 Turning Movement Volumes Davidson - Shenton.

Based on the recorded hourly peak flows, the daily traffic volumes of the surrounding streets can be estimated as:

Shenton Avenue west of Davidson Terrace: 7,100 vpd.

Davidson Terrace south of Shenton Avenue: 4,300 vpd

Davidson Terrace north of Reid Promenade: 1,800 vpd

Reid Promenade west of Davidson Terrace: 400 vpd

2.3. Parking provision.

In order to identify any parking deficiencies associated with the existing site, and to assess the integrity of predicted needs, parking utilisation of the existing parking area was surveyed over a number of separate periods midweek and on a Sunday. The off street parking for the existing site is shown on Figure 4.

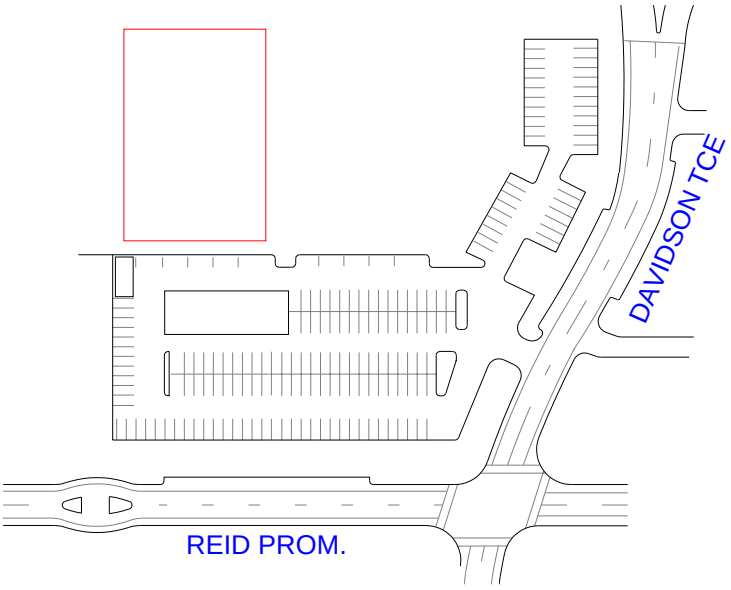

Figure 4 Existing onsite parking.

Recorded utilisation of the available parking, together with an estimated utilisation rate for the parking area in the Joondalup Medical Campus on the north side of Shenton Avenue is shown on Table 3 below.

Period	Existing site parking area. Bays occupied. (% counted)	Medical Campus parking. Bays occupied. (% Estimated)	On road parking bays. Bays occupied. (% Estimated)
Tues 08:00	85%	60%	75%
Tues 09:00	95%	80%	100%
Tues 15:00	100%	80%	95%
Tues 17:00	70%	80%	80%
Sun 11:00	25%	45%	0%
Sun 14:00	30%	50%	0%

Table 3 Parking Utilisation Existing Site.

The parking survey generally indicated that onsite bays were heavily utilised on weekdays with approximately 33% of available bays utilised on a Sunday. During weekdays it was noted that a number of bays were occupied by pool vehicles associated with the Disability Services Commission who are tenants in the existing office building. As these pool vehicles are not used

for commuting use, the demand for bays would be expected to increase in response to the need to cater for typical office personnel and visitor parking numbers plus parking requirements for pool vehicles. This situation is atypical and not normally associated with office buildings and leads to an unrealistic parking demand. It is expected that upon redevelopment and relocation of the Disability Services Commission, utilisation will drop to more typical patterns as bay demand decreases.

2.4. Crash history.

A review of the MRWA intersection crash rankings on their website indicates the following crash history for the intersections adjacent to the site.

Shenton – Davidson.

Crash Details										
Rear End	**Side Swipe**	**Right Angle**	**Right Thru**	**Wet**	**Night**	**Ped**	**Cycle**	**Truck**	**Motorcycle**	**Casualty**
2	0	0	0	0	0	0	0	0	0	0

Davidson – Reid.

Crash Details										
Rear End	**Side Swipe**	**Right Angle**	**Right Thru**	**Wet**	**Night**	**Ped**	**Cycle**	**Truck**	**Motorcycle**	**Casualty**
0	2	6	0	1	3	0	0	0	1	2

No atypical patterns are evident.

3. Future traffic generation and impacts.

3.1. Traffic generation.

Generation from the existing and proposed development is based on the RTA[1] Guide to Traffic Generating Developments or where generation rates are not shown in the RTA publication, the ITE[2] Generation rates. These give the following:

Office space	- Daily Vehicle Trips	10 per 100 m^2 GFA;
	- Evening Peak Hour Vehicle Trips	1.0 per 100 m^2 GFA.
Private Hospital [3]	- Peak Vehicle Trips	-22.07+1.04B;
	- Morning Vehicle Trips	-12.41+0.57B;
	- Evening Vehicle Trips	-11.96+0.69B;
Consulting Rooms	- Daily Vehicle Trips	36 per 90 m^2 GFA;
	- Peak hour trips	2.48 per 90 m^2 GFA;
Café	- Daily Vehicle Trips	60 per 100 m^2 GFA;
	- Peak hour trips	5 per 100 m^2 GFA
Pharmacy[4]	- Daily Vehicle Trips	97 per 90 m^2 GFA
	- Peak hour trips	3.20 per 90 m^2 GFA
Medical consultancies[5].	- Daily Vehicle Trips	36 per 90 m^2 GFA;
	- Peak hour trips	2.48 per 90 m^2 GFA;

[1] Road Traffic Authority of New South Wales.

[2] Institute of Transport Engineers, USA.

[3] ITE Rates state 3 trips per bed, 1,75 trips per 90 m^2 Sunday peak.

[4] ITE Rates

[5] Type of tenancy is pharmacy and medical support such as radiographer, physiotherapist etc.

Predicted generation from the proposed facility are shown on Table 4 below.

Landuse.	**Generation rate.**	**Quantity.**	**Predicted daily trips.**	**Predicted hourly peak trips.**
Existing office space	Daily -10 trips per 100 m^2 Peak - -10 trips per 100 m^2	5,100 m^2	510	51
Proposed hospital	-22.07+1.04B – Peak hour	60 beds	180[6]	40
Consulting Rooms	Daily - 36 per 90 m^2 Peak hour - 2.48 per 90 m^2	255 m^2	102	7
Café	Daily - 60 per 100 m^2 Peak hour - 5 per 100 m^2	88 m^2	53	4
Pharmacy	Daily - 97 per 90 m2 Peak hour - 3.20 per 90 m2	112 m^2	120	4
Medical consultancies.	Daily - 36 per 90 m^2 - Daily Peak Hour - 2.48 per 90 m^2	228 m^2	92	6
Total			1057	112

Table 4 Predicted Traffic Generation from Existing Site.

As the existing office is to remain operational, the predicted trips will be in addition to the flows from the existing site. On that basis the total traffic load predicted is as shown on Table 5 below.

Generator	**PM Peak**	**Daily Traffic**
Existing site.	51	510
Proposed site.	61	547
Total	112	1057

Table 5 Predicted Traffic Generation.

As the PM peak movements are highest these are adopted for assessment. Existing PM peak flows through the intersections are shown on Figure 5 below.

[6] ITE estimate.

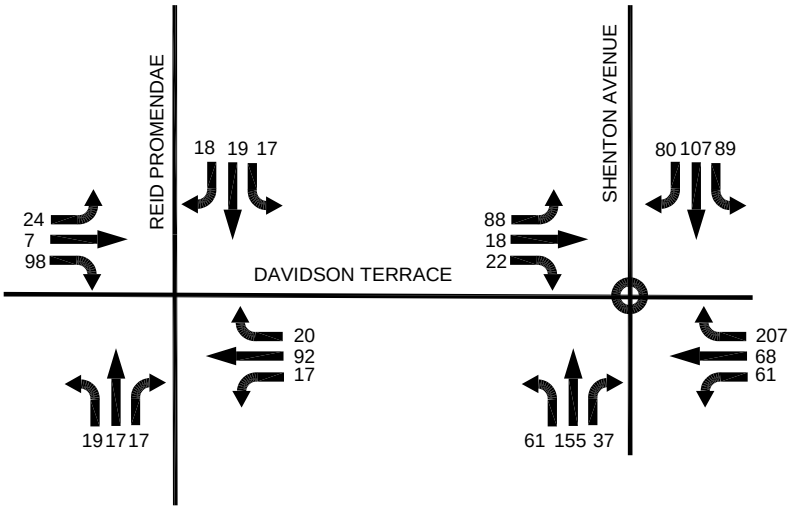

Figure 5 Existing PM peak Intersection Turning Movements.

Traffic assignment assumes that of the additional peak hour trips, about 67% will move to and from Shenton Avenue and 34% to and from Reid Promenade with the majority of trips being exit trips from the site. On that basis the following traffic assignment can be predicted.

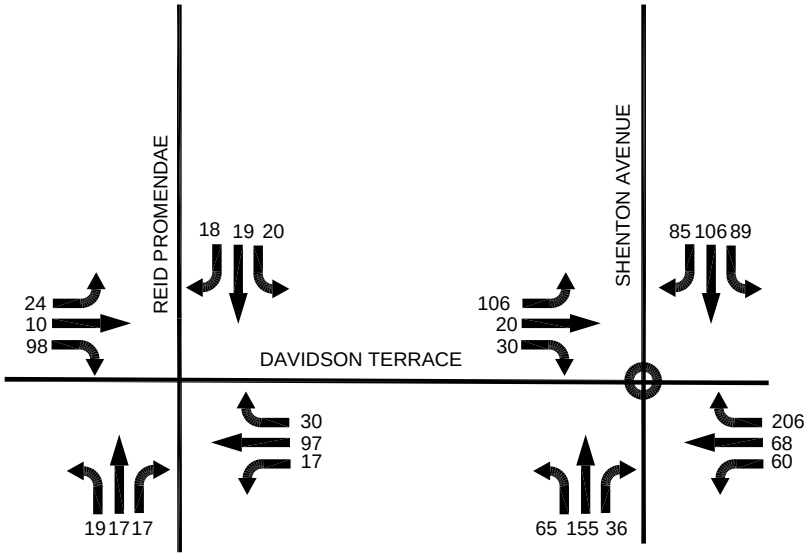

Figure 6 Predicted PM peak Intersection Turning Movements.

Assessment of the intersections were undertaken using the SIDRA software and the results of that analysis are shown on Table 6 and 7.

Mov No	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Davidson Terrace south										
1	L	25	4.0	0.100	8.9	LOS A	4	0.26	0.50	47.8
2	T	11	5.3	0.100	8.3	LOS A	4	0.26	0.59	48.3
2	R	103	5.3	0.100	8.3	LOS A	4	0.26	0.59	48.3
Approach		**139**	**5.0**	**0.100**	**8.4**	**LOS A**	**4**	**0.26**	**0.57**	**48.2**
Reid Promenade east										
4	L	20	5.0	0.077	10.5	LOS B	3	0.34	0.61	46.8
5	T	18	5.6	0.077	10.0	LOS A	3	0.34	0.69	47.2
5	R	18	5.6	0.077	10.0	LOS A	3	0.34	0.69	47.2
Approach		**56**	**5.4**	**0.077**	**10.1**	**LOS B**	**3**	**0.34**	**0.66**	**47.0**
Davidson Terrace north										
7	L	18	5.6	0.087	8.5	LOS A	4	0.13	0.58	48.4
8	T	102	5.2	0.087	2.2	LOS A	4	0.13	0.15	55.5
8	R	32	5.2	0.087	2.2	LOS A	4	0.13	0.15	55.5
Approach		**152**	**5.3**	**0.087**	**2.9**	**LOS A**	**4**	**0.13**	**0.20**	**54.5**
Reid Promenade west.										
10	L	21	4.8	0.080	10.3	LOS B	3	0.14	0.61	46.9
11	T	20	5.1	0.080	9.8	LOS A	3	0.14	0.66	47.4
11	R	19	5.1	0.080	9.8	LOS A	3	0.14	0.66	47.4
Approach		**60**	**5.0**	**0.080**	**10.0**	**LOS A**	**3**	**0.14**	**0.64**	**47.2**

Table 6 SIDRA results Davidson – Reid.

Analysis indicates a Level of Service (LOS) for the intersection of "A" with the lowest LOS for any leg of "B". This indicates that the intersection will operate satisfactorily under peak flows. Average Delay for the intersection is predicted to be 6.8 seconds with the longest delay predicted to be 10.3 seconds on the Reid Promenade (west) left turn.

Mov No	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Davidson Terrace										
1	L	112	5.4	0.137	9.1	LOS A	4	0.43	0.68	47.6
2	T	21	4.8	0.064	8.3	LOS A	2	0.45	0.63	48.5
3	R	32	6.2	0.064	13.0	LOS B	2	0.45	0.74	44.7
Approach		**165**	**5.5**	**0.137**	**9.7**	**LOS A**	**4**	**0.44**	**0.68**	**47.1**
Shenton Avenue east										
4	L	68	4.4	0.129	9.1	LOS A	6	0.45	0.67	47.6
5	T	163	4.9	0.129	7.9	LOS A	6	0.46	0.62	48.4
6	R	38	5.3	0.129	12.7	LOS B	6	0.46	0.73	44.8
Approach		**269**	**4.8**	**0.129**	**8.9**	**LOS A**	**6**	**0.46**	**0.65**	**47.6**
Hospital access										
7	L	63	5.1	0.341	10.7	LOS B	16	0.41	0.69	46.1
7	T	72	5.1	0.341	10.7	LOS B	16	0.41	0.69	46.1
7	R	217	5.1	0.341	10.7	LOS B	16	0.41	0.69	46.1
Approach		**352**	**5.1**	**0.341**	**10.7**	**LOS B**	**16**	**0.41**	**0.69**	**46.1**
Shenton Avenue west										
10	L	94	5.3	0.113	8.0	LOS A	5	0.20	0.60	48.7
11	T	112	5.4	0.113	6.7	LOS A	5	0.21	0.52	49.9
12	R	89	4.5	0.113	11.5	LOS B	5	0.21	0.67	45.7
Approach		**295**	**5.1**	**0.113**	**8.6**	**LOS A**	**5**	**0.21**	**0.59**	**48.2**
All Vehicles		**1081**	**5.1**	**0.341**	**9.5**	**LOS A**	**16**	**0.37**	**0.65**	**47.2**

Table 7 SIDRA results Davidson – Shenton.

Analysis indicates a Level of Service (LOS) for the intersection of "A" with the lowest LOS for any leg of "B". This indicates that the intersection will operate satisfactorily under peak flows. Average Delay for the intersection is predicted to be 9.5 seconds with the longest delay predicted

to be 13.0 seconds on the Davidson Terrace right turn.

Results compare favourably with Main Roads WA criteria, which require intersections to operate at a minimum LOS of C with no leg of the intersection having a LOS less the D.

3.2. Parking requirements.

Based on the RTA Guide to Traffic Generating Developments, and the ITE Generation guide, the parking needs of the site following redevelopment have been determined using the following rates:

Office space	1 per 40 m^2 GFA.
Private Hospital	-26.52 + 1.18 B.
Consulting Rooms	3 per surgery[7].
Café	15 per 100 m^2 GFA.
Pharmacy.	97 per 90 m^2 GFA.
Medical Consultancies.	3 per surgery.

Based on these requirements the parking needs are assessed as shown on Table 8

[7] RTA rate for professional consulting rooms. ITE rate - 1 per doctor + 2 per room

Occupancy	Rate	Quantity	Requirement
Office space	1 per 40 m^2 GFA.	5,100 m^2	128
Private Hospital	-26.52 + 1.18 B.	60 beds.	45
Consulting Rooms	3 per surgery.	11[8] rooms	33
Café[9]	15 per 100 m^2 GFA.	178 m^2	27
Pharmacy	1 per 35 m^2 GFA.	112 m^2	3
Medical consultancies	3 per consultancy.	228 m^2	9
Total required			245

Table 8 Parking requirements.

Advice from the City of Joondalup indicates the following:

For the proposed hospital, the parking requirement under DPS2 is 1 bay per 3 patients accommodated plus 1 space for each staff member on duty.

Parking for the existing office development based on the planning approval granted in 1988, did not specifically identify the required number of parking bays, however, documentation submitted by the applicant suggested that for the existing building the then parking requirement was 1 bay per 30 m^2 gross building area, which equated to 170 parking bays. The approved plan dated 13/4/1988 included 199 parking bays.

Construction of the proposed hospital would result in the deletion of a number of existing bays and the addition of new bays; however this results in an overall increase in available bays giving a total of 250 bays on site (deck – 105, ground – 129, at entry – 16). As such the parking provision is in excess of the calculated demand need. It is also noted that the current carpark often has spare capacity suggesting that the provision of car park bays exceeds demand. With the proposed new land use there will also be a number of dual purpose trips, for example those visiting the consulting rooms may also visit the pharmacy and the café in the same trip. As the parking demand is based on single purpose trips to each separate land use, it is likely that the aggregated

[8] Provision for proposed 7 GP rooms plus possible future 4 GP rooms.

[9] Includes provision for al fresco dining area.

parking demand overstates the total demand as it does not allow for dual purpose trips.

4. Summary.

4.1. Traffic impacts.

Assessment of the proposal indicates that impacts associated with the redevelopment are predicted to be small in magnitude and manageable, and that the performance of the road network will not be compromised.

Traffic generation from the redeveloped site is predicted to result in only minor additional loads on the intersections of Davidson Terrace and Reid Promenade and on Davidson Terrace and Shenton Avenue, and modelling of these intersections indicates that they will operate at acceptable levels of service following re-development of the site.

4.2. Parking.

Assessment of the likely demand for parking indicates a need for approximately 245 bays. As the proposed development plans to provide a total of 250 bays, parking demand is satisfied. Additionally it is considered that given the likelihood of dual purpose trips to a number of different land uses in the centre, and the removal of pool vehicle parking associated with the current office tenant, parking demand as assessed will overstate the actual required demand further increasing the availability of parking at the redeveloped site.

4.3. Safety.

Access to and from the site and movements within the site are considered to be safe. Intersections adjacent to the site record low crash histories and additional traffic is not considered to increase the potential risk to road users buy any measurable amount.

Internal parking areas and access roads are designed to appropriate standards and no issues with regard to use of these facilities are identified.