

Pruszinski Architects

79-85 Mary Street, Unley
Traffic and Parking Assessment

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1 Introduction

QED Pty Ltd has been engaged by Pruszinski Architects to undertake a traffic impact assessment for the proposed retirement village at 79-85 Mary Street, Unley.

The proposed development incorporates the following:

- **5 residential buildings with 42 2-bedroom units and 58 3-bedroom units;**
- **One hundred and thirty-six (136) car parking spaces located on the basement floors of each building; and**
- **Thirty four (34) car parking spaces located along the main circulation road.**

This assessment focuses on the traffic impacts of the proposed development, along with the level of parking provided, traffic generated and access to and from the development site.

2 Existing Conditions

2.1 Site Location

The proposed development is located at the western end of Mary Street, between Queen Street and King William Road, with a connecting roadway to Arthur Street. It is located within the Residential B300 Zone. Opposite the development site on Mary Street is a Local Industry Zone and the Residential C120-180 Zone. Near the western boundary of the site is the Mixed Use 1 Zone (based on City of Unley Development Plan).

The site is opposite an Australia Post Business Centre and Butler's Sharpening Specialists on Mary Street. Immediately to the west of the site on Mary Street is a group of 2 storey units. To the east of the site and along Arthur Street are residential properties. The existing driveway accesses on Arthur Street and Mary Street are very wide (upwards of 10 metres wide).

The site is near a number of facilities including the King William Road retail and dining precinct, a post office, a Wellness Clinic on Mary Street, an RSL Club and Unley Shopping Centre and retail precinct. There is currently a church on site.

2.2 Adjacent Road Network

Mary Street is a local street that carries approximately 1900 vehicles per day between Oak Avenue and Ramage Street. Arthur Street has a local crossing/collector function and carries 3800 vehicles per day between King William Road and Queen Street.¹

King William Road carries approximately 15,800 vehicles per day between Arthur Street and Young Street.

2.3 Public Transport

King William Road is a 15 minute Go Zone serviced by Bus Route 200 "City to Clapham" Metroticket Bus.

2.4 Crash History

Crash statistics for the local area were obtained from DTEI for a five year period from 1st January 2002 to 31st December 2006. In summary these crash statistics are as follows;

- 13 crashes at the intersection of Mary Street and King William Road, 2 resulting in injuries (6 crashes were rear end collisions, 4 were right angle collisions and 3 were side swipes).

¹ City of Unley Traffic Survey Records February 2007

- 9 crashes at the intersection of Arthur Street and King William Road, 4 resulting in injuries (3 crashes were right angle collisions, 3 were rear end collisions).
- 1 crash at the intersection of Arthur Street and Queen Street involving a collision with a fixed object and resulting in property damage only.
- 1 crash on Mary Street mid-block between King William Road and Cleland Avenue involving a rear end collision and resulting in property damage only.
- 1 crash on Arthur Street mid-block between King William Road and Queen Street involving a collision with a parked vehicle and resulting in property damage only.
- 1 mid-block crash on Queen Street involving a collision with a fixed object and resulting in property damage only.

3 Proposed Development

The development proposal for this site is a retirement village which includes the following;

- residential buildings with 42 2-bedroom units and 58 3-bedroom units;
- One hundred and thirty-six (136) car parking spaces located on the basement floors of each building; and
- Thirty four (34) car parking spaces located along the main circulation road.

For the purpose of this assessment, the plans of the development dated 26 March 2008 were referenced.

The development is proposed for retirement living by elderly people.

4 Traffic Assessment

4.1 Parking Requirements

The City of Unley Development Plan provides a car parking requirement for retirement villages under principles of development control 128.1 as follows:

- 1 space per dwelling for residents, and
- 1 space per 2 dwellings for visitors and staff.

The retirement village includes units for independent living and, as such, there will be no staff.

The “Planning Bulletin - Parking Provisions for Selected Land Uses (Suburban Metropolitan Adelaide)” (Planning SA, 2001) provides a recommendation for parking requirements for Aged Care Retirement Homes of 1 car parking space per unit.

In order to assess parking at this proposed development, both the Council and Planning SA Guidelines are discussed.

4.2 Parking Provisions

The car parking requirements outlined in the City of Unley Development Plan for a retirement village for this development are 150 car parking spaces in total with 100 spaces for residents and 50 spaces for visitors. A total of 170 spaces are proposed with 136 basement level car parks and 34 at-ground car parks within the development, which exceeds the required car parking provision.

The proposed retirement village is intended for independent living and, as such, there is no staff parking demand. Planning SA gives a specific rate for Aged Care Retirement Homes. Application of this rate gives a requirement of 100 car parking spaces. The proposed development includes a total of 170 car parks and is therefore in excess of this recommended car parking provision.

4.2.1 Parking Layout

Access to the site is proposed via a one-way circulation road allowing traffic to enter from Mary Street and exit to Arthur Street. Ninety degree parking is proposed along the circulation road. Signage and linemarking indicating the one-way orientation of the roadway will need to be carefully positioned, including visible reminders for drivers leaving the 90 degree parking bays and basement car parks.

Access to the basement level car parks is proposed via 2-way ramps from the circulation road. Access to the building 5 car park is proposed via an underground link from the building 4 car park.

The proposed driveway location on Mary Street is along the eastern boundary of the site. The existing driveway is very wide and located along the western boundary. The

proposed driveway on Arthur Street is proposed in the same location as the existing driveway crossover.

The concept layout of the proposed basement and ground level car parks generally shows car parking spaces provided at 2.5 metres wide and 5.4 metres long, with an aisle width of 5.8m wide. These dimensions comply with Australian Standard 2890.1:2004 Parking Facilities Part 1 – Off Street Car Parking.

There are currently no turn-around spaces provided in the basement car parks. These are required due to the length of the basement car parking blind aisles under AS2890.1:2004.

The columns in the car parks for buildings 4 and 5 intrude into the car parking spaces, reducing the effective width of these spaces below minimum requirements.

Where the columns currently do not intrude directly into the car park, they should not be placed within 0.75m from the back of the parking space to allow for manoeuvring or between 1.75 – 3.65m from the back of the parking space to allow for door opening. Otherwise, 300mm clearance is required to the columns.

In building 1 there is currently insufficient clearance for pedestrians between car park 15 and the stairs/lift.

The ramped entry/exit point to the car parks is currently 5.8m wide. Where there is a high kerb/wall/retaining structure, an additional 300mm clearance is required on each applicable side in addition to a minimum width of 5.5m. So, if there is wall/retaining structure on both sides of the ramp, the ramp needs to be 6.1m wide.

The minimum aisle width with 90 degree parking with 2.5 m wide parks for residential use is 5.8m. This is generally adhered to; however, the aisle width at the back of the building 1 car park reduces to 5.75m.

Blind aisles require a 1m extension after the last park at the end of each aisle. This is not the case in the building 4 and 5 car parks.

The proposed intersection of the basement car park entries to buildings 1 and 2 and the 2-way circulating roadway forms a staggered junction. The junction between the 2-way roadway for these car parks and the main circulating roadway is also in close proximity to this intersection. The proximity and alignment of these two intersections is likely to prove confusing to drivers. Appropriate traffic control and delineation will be required, including assignment of give way priority and linemarking.

Ramp grades at the accesses to the basement car parks have not been given, these will need to comply with the maximum allowable grade of 1 in 5 under the Australian Standard. The headroom at the ramped access will also need to be checked for clearance.

4.2.2 Disabled Parking

Under the City of Unley Development Plan, if a car park has more than 25 spaces, then 1 car park for every 25 spaces should be allocated for use by disabled people. The proposed development currently indicates no parking allocation for disabled people. It is recommended that 7 car parking spaces be allocated for use by disabled people in

accordance with the City of Unley Development Plan. These car parks should be located close to building access points.

4.2.3 Bicycle Parking

There is no provision for bicycle parking stated by Planning SA for Aged Care Retirement Homes. For residential buildings, the recommended provision is 1 per 4 lodging rooms for residents and 1 per 16 lodging rooms for visitors. This rate is considered high for a retirement village. Given the size of the units, it is likely that any resident cyclists will store their bicycles within their own units. It is recommended that 3 bicycle rails be installed to cater for the 6 visitor parks required.

4.2.4 Other Parking Considerations

Consideration should also be given to the provision of taxi parks along the circulation road given the distance between the proposed residential buildings and local roads.

4.3 Traffic Generation

The 'Guide to Traffic Generating Developments' (Roads & Traffic Authority, New South Wales, 2002) provides recommendations for traffic generation for housing for aged and disabled persons. For the residential units a rate of 2 trips per dwelling per day and 0.2 trips per dwelling in the evening peak hour apply. For the proposed retirement village, the anticipated traffic generation has been calculated based on these guidelines:

Daily

- A total of 200 trips per day.
- Evening Peak Hour
- Approximately 20 trips in the afternoon peak hour (5pm-6pm).

A traffic report prepared by Phil Weaver & Associates on 13 April 2004 investigated the traffic impact of the church that currently exists on site. Unley Community Developments Pty Ltd have indicated that the church produced traffic peak periods on Sunday mornings, Wednesday evenings, Saturday mornings with slightly smaller numbers on Tuesday evenings. The report by Phil Weaver & Associates included observations of traffic generation on a Sunday, recording 85 vehicles entering the site from Arthur Street and 29 vehicles entering the site from Mary Street between 9.45am and 10.10am with a peak of 33 vehicles in a 5 minute period between 10.00 am and 10.05 am. 87 vehicles were recorded leaving the site from Arthur Street between 11.25 am and 12.15 pm with a peak of 61 cars exiting in a 20 minute period.

- The peak period volumes predicted for the proposed development are significantly less than those previously generated by the church.

4.3.1 Traffic Distribution

Given the one-way nature of the proposed circulation road, all vehicle entry to the site will occur via Mary Street and all vehicle exiting from the site will occur via Arthur Street. The impact of the traffic generated by the proposal has been assessed making the following assumptions:

- 50% of trips enter via Mary Street, including 60% from King William Road and 40% from Unley Road; and
- 20% of the trips from Unley Road are from the Unley Shopping Centre district via Arthur Street.
- 50% of trips exit via Arthur Street, including 60% to King William Road and 40% to Unley Road.

An analysis of the distribution of traffic has been undertaken with regard to the traffic generation and distribution anticipated to and from the proposed development. The impact on daily traffic volumes is shown in Table 1.

Table 1 Comparison of Existing and Anticipated Daily Traffic Volumes

Street	Existing Traffic Volume	Anticipated Traffic Volume
Mary Street (between King William Road and site entrance)	1900	1960
Mary Street (between site entrance and Queen Street)	1900	1940
Mary Street (east of Queen Street)	1900	1932
Arthur Street (between King William Road and site exit)	3800	3860
Arthur Street (between site exit and Queen Street)	3800	3840
Arthur Street (east of Queen Street)	3800	3848
Queen Street	333	341

Analysis indicates only a minor increase in traffic volumes within the existing capacity of these streets.

4.4 Access

4.4.1 Vehicles

Vehicular access to the site is proposed via a one-way circulation road allowing traffic to enter from Mary Street and exit to Arthur Street. The distribution of traffic, discussed

earlier, assumes most residents and visitors will access the site from King William Road.

It is not clear from the plans how weekly refuse pick-up is intended, but this will need to occur on a weekly basis. AutoTURN tests have shown that a standard refuse collection truck cannot negotiate the circulation roadway.

Roadways will need to be designed for large service vehicles to enable deliveries to be made to the site. AutoTURN tests have shown that an 8.8m long service vehicle cannot negotiate the circulation roadway.

4.4.2 Pedestrians

Access from Mary Street is along the western side of the access road. There appears to be no separated pedestrian access to Arthur Street. Given the importance of Arthur Street as a pedestrian route and considering the need to minimise walking distances to local facilities, a separate pedestrian footpath access to Arthur Street should be included.

The proposed walkway from Mary Street does not line up with the opposite path where it intersects the circulating roadway. The footpath along the eastern edge of building 4 appears to disappear at the north-east corner of the building. Footpaths should be made continuous.

Where possible, footpaths should be designed at 1.8 metres wide to allow room for 2 wheelchairs to pass. It is expected that gopher-users will also use the internal road network; signage indicating the one way nature of this road will need to be clear to all users and carefully placed. Where ramps are required, tactile indicators and handrails should be used.

On the landscape plan, walkways appear to cross the accesses to the basement car parks along the building line. The grades and slopes are not given at these locations; however, care will need to be taken during development of the final design to ensure crossfall is kept to a minimum. Where the walkways have grades steeper than 1:20, landings every 10 metres should be provided in accordance with Australian Standard - Design for Access and Mobility AS1428.1:2001, with hand rails for the length of any sloped walkways and tactile indicators on the landings. Tactile indicators should also be placed at the tops and bottoms of the stairs.

5 Conclusions

The traffic assessment of the proposed mixed use development has found:

- The proposed retirement village includes 5 residential buildings with 42 2-bedroom units and 58 3-bedroom units; one hundred and thirty-six (136) car parking spaces located on the basement floors of each building; and thirty four (34) car parking spaces located along the main circulation road.
- The provision of parking exceeds the requirements of the City of Unley Development Plan for retirement villages, as well as the recommended Planning SA car parking provision for Aged Care Retirement Homes.
- Vehicular access to the site is proposed via a one-way circulation road allowing traffic to enter from Mary Street and exit to Arthur Street.
- The proposed development is estimated to generate a total of 200 vehicle trips per day, with approximately 20 trips in the afternoon peak hour (5pm-6pm).
- Analysis indicates only a minor increase in traffic volumes within the existing capacity of surrounding streets.
- The car parking layout generally complies with Standards although some modifications are required (refer below).
- Appropriate traffic control and delineation is required at the intersection between the car park accesses to buildings 1 and 2.
- car parking spaces need to be allocated for use by disabled people.
- 3 bicycle rails should be installed to cater for the 6 visitor parks required.
- Consideration should be given to the provision of taxi parks along the circulation road given the distance between the proposed residential buildings and local roads.
- A separate pedestrian footpath access to Arthur Street should be included.
- Footpaths within the development should be made continuous with ramps aligned at intersections.
- Where possible, footpaths should be designed at 1.8 metres wide to allow room for 2 wheelchairs to pass.
- It is expected that gopher-users will also use the internal road network; signage indicating the one way nature of this road will need to be clear to all users and carefully placed.
- **Where ramps are required on walkways, tactile indicators and handrails should be used.**
- Cross-fall on walkways should be kept to a minimum, and longitudinal slopes should be made gentler than 1:20.
- **AutoTURN tests have shown that standard refuse collection trucks and large service vehicles cannot negotiate the circulation roadway. Roadways need to be designed for access by large service vehicles.**

Based on the assessment of parking and traffic generation of the proposed development and its associated impacts on the adjacent street network, and subject to minor modifications recommended in this report, it is considered that this proposal satisfies the relevant guidelines and standards for traffic and parking operation.