

Proposed Oran Park Anglican College

**Peter Brock Drive,
Oran Park**

**TRAFFIC AND PARKING ASSESSMENT REPORT
FOR MASTERPLAN DA**

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Ref 11179

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1. INTRODUCTION

This report has been prepared to accompany an Application to Camden Council for the proposed Oran Park Anglican School which is to be located on the south-eastern corner of the Peter Brock Drive/Central Avenue intersection in Oran Park (Figures 1 and 2).

The subject site is located on part of the former Oran Park motor racing circuit, and forms part of the new Oran Park land release area, as illustrated on Figure 2.

The subject site is one of a number of sites in Oran Park which have been designated for “school” uses. Council has recently approved Building 1 of the proposed school development on the site, comprising 4 group learning areas with approximately 120 students and 9 staff.

Building 1 of the proposed school was completed earlier this year.

The proposed school will ultimately cater for a total of 986 students from *Kindergarten* to *Year 12*, with 39 staff. Carparking is provided on the site for 144 cars in two outdoor carparking areas, generally in accordance with Council’s requirements.

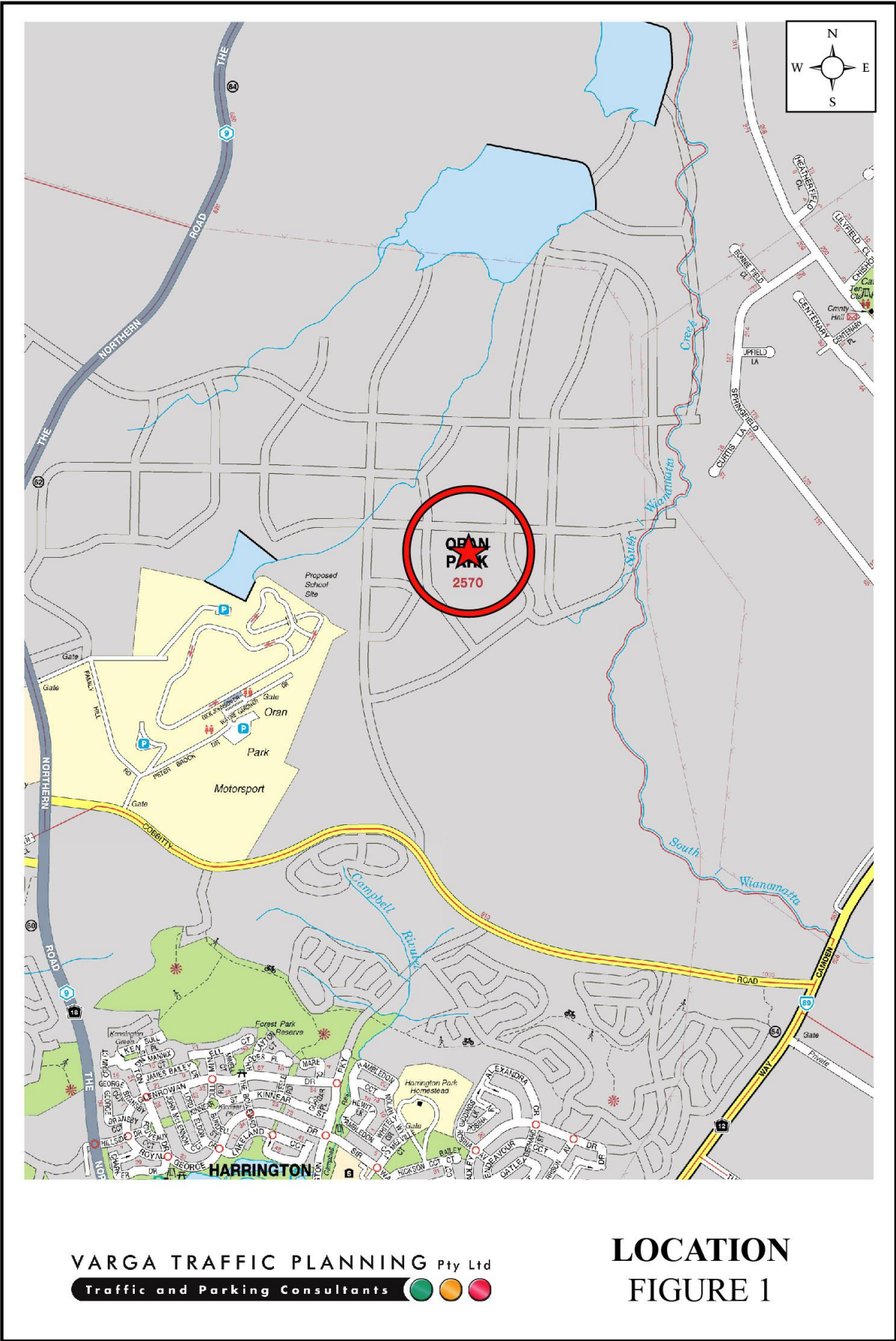
The proposed school is intended to cater primarily for students living in the local area, with at least 40% of the students expected to live within easy walking distance of the subject site.

This report provides a cumulative “Masterplan” type traffic and parking assessment of all stages of the fully developed school (ie; with 986 students).

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network

- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed car parking facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking provided on the site.



2. PROPOSED DEVELOPMENT

Site

The subject site is located on the south-eastern corner of the Peter Brock Drive/Central Avenue intersection in Oran Park.

The site has street frontages approximately 293m in length to Peter Brock Drive, 118m in length to Central Avenue and also South Circuit, 113m in length to Redman Grange and 241m in length to Shannon Way. The site occupies an area of approximately 40.5ha.

The site forms part of the Oran Park land release area, and is one of a number of sites in Oran Park which have been designated for “school” uses.

The site was included in the traffic modelling undertaken for the “*Oran Park Tranche 1 Development Application*” prepared by *AECOM Pty Ltd* dated October 2008. The modelling assumed that there would ultimately be approximately 723 students and 31 staff accommodated on the site.

The Oran Park land release also makes provision for a raised threshold crossing and *shared zone* (with a 10km/h speed limit) in Shannon Way, at the southern end of the *through-site* link.

A portion of the surrounding road network within the new land release has been completed including the roads immediately surrounding the site.

Construction of Building 1 of the proposed school has recently been completed, comprising 4 group learning areas and the 33 space carparking area (plus 8 car spaces for set-down/pick-up) on the primary school site.

Proposed Development

The proposed development will involve the staged-construction of a new K-12 educational establishment within the new Oran Park land release area. The proposed school will ultimately cater for approximately 986 local students as follows:

Junior School (Years K-6):	460 students
Senior School (Years 7-12):	526 students
TOTAL:	986 students

The junior school is to consist of two separate classrooms buildings, an outdoor playground area and an outdoor hardcourt area. The senior school is to consist of five separate specialist buildings, an outdoor playground area and an outdoor hardcourt area. The junior school and senior school are to share library facilities as well as a multi-purpose hall.

Off-street parking for the junior school is provided in a new outdoor car parking area located in the south-wester corner of the site, comprising 33 parking spaces and a drop-off area with a capacity of a further 8 cars (ie; total 41 spaces). Vehicular ingress to the car parking area is provided via a new entry-only driveway located in Central Avenue which leads through the car parking area to an exit-only driveway located in Shannon Way.

Off-street parking for the senior school is to be provided for 111 cars in a new outdoor car parking area located along the eastern property boundary. Vehicular access to the car parking area is to be provided via two new two-way driveways, one located in South Circuit and the other located in Redman Grange.

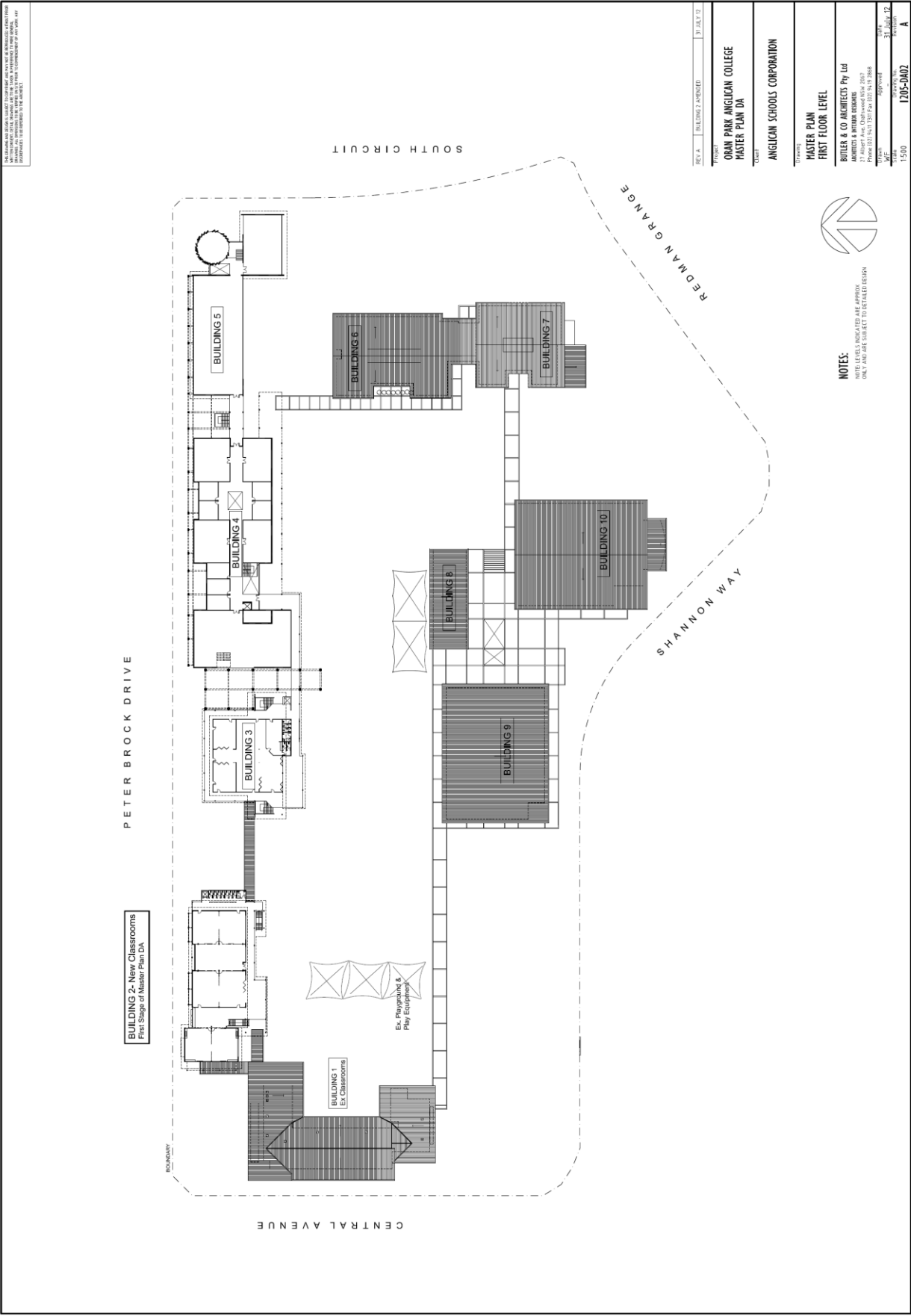
Separate indented parking bays are provided along the Shannon Way site frontage which may also be used as pick-up/drop-off area by parents. A separate indented bus bay capable of accommodating 4 to 5 buses simultaneously is to be provided in Redman Grange.

It is anticipated that the use of Shannon Way will be restricted to school-related uses only, and that the central portion of Shannon Way, will operate as a *shared zone* with a 10 km/h Speed Limit. The *shared zone* will comprise a raised platform with special paving treatment and is intended to facilitate improved pedestrian access between the school and the playing

fields located on the southern side of Shannon Way. Construction of the raised platform with special paving treatment has been completed.

In the interest of improving pedestrian safety for school students, the Oran Park Anglican College proposes that the section of Shannon Way which is located *to the east* of the raised threshold crossing be made ONE-WAY *eastbound* between the raised threshold crossing and Redman Range. The ONE-WAY section of Shannon Way is proposed to be used as a drop-off/pick-up area. The proposed ONE-WAY restriction will reduce vehicular/pedestrian conflicts in this area by simplifying the traffic arrangements and by reducing the volume of traffic using the eastern section of Shannon Way.

Plans of the proposed development have been prepared by *Butler & Co Architects Pty Ltd* and are reproduced in the following pages.



3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Traffic Authority is illustrated on Figure 3.

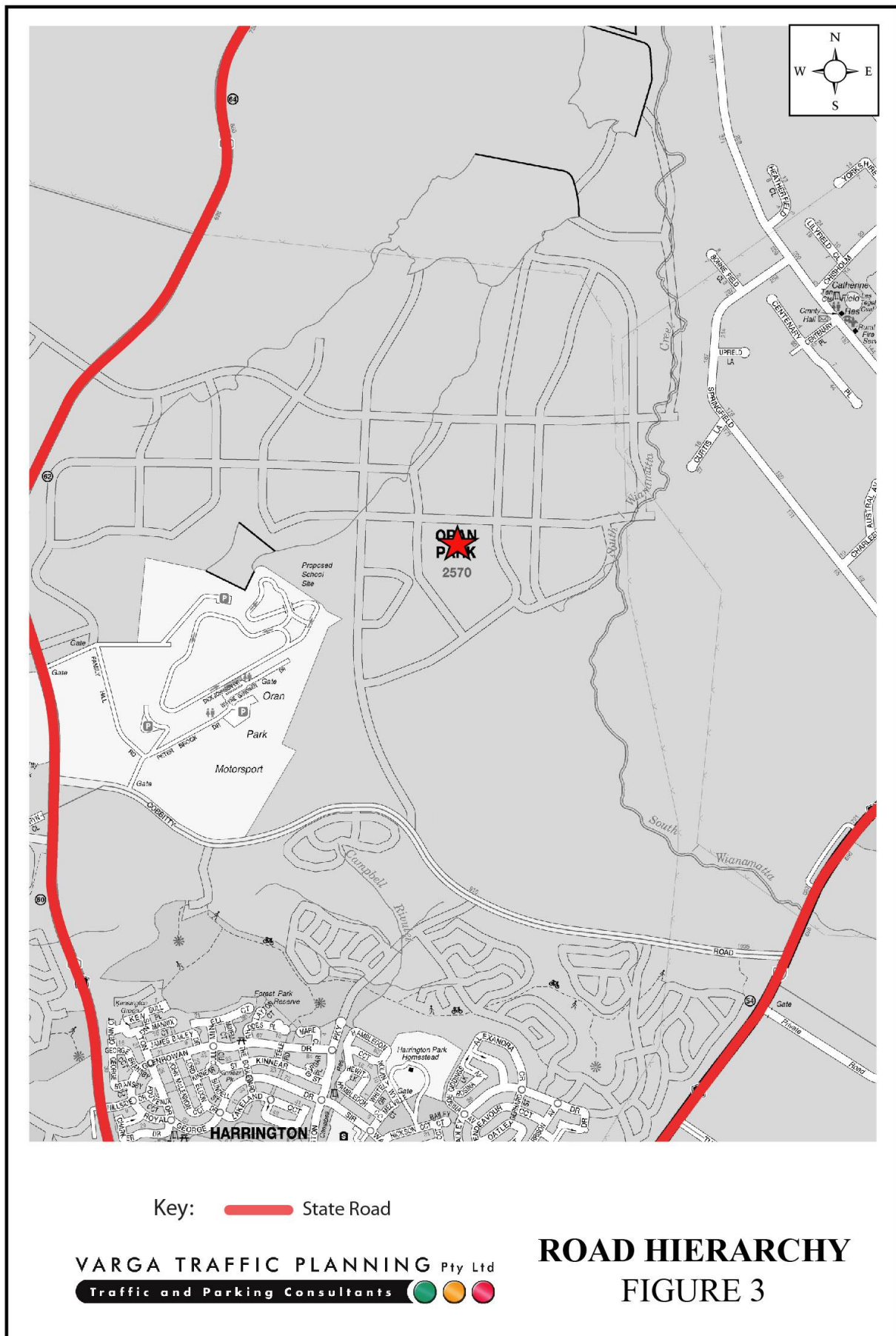
The Northern Road is classified by the RTA as a *State Road* and provides a north-south road link to the west of Oran Park, linking Bligh Park to Narellan. It typically carries one traffic lane in each direction in the vicinity of the site, with additional lanes provided at key locations including the Cobbitty Road intersection.

Camden Valley Way is also classified by the RTA as a *State Road* and provides the key north-south road link in the area, linking Liverpool to Camden. It also typically carries one traffic lane in each direction in the vicinity of the site with additional lanes provided at key locations including the Oran Park Drive intersection.

It is anticipated that Oran Park Drive will be classified by the RTA as a *Regional Road* which will provide a north-south *collector route* through the Oran Park area. It will typically carry two traffic lanes in each direction which will be separated by a landscaped central median island. Turning bays are to be provided at key locations including Central Avenue and South Circuit.

It is anticipated that Peter Brock Drive will also be classified by the RTA as a *Regional Road* and will provide the key east-west *collector route* through the Oran Park area. It will typically carry 2 traffic lanes in each direction, separated by a landscaped central median island.

Central Avenue, Shannon Way, Redman Grange and South Circuit are local, unclassified roads which are primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on each of those roads, within indented parking bays.



Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

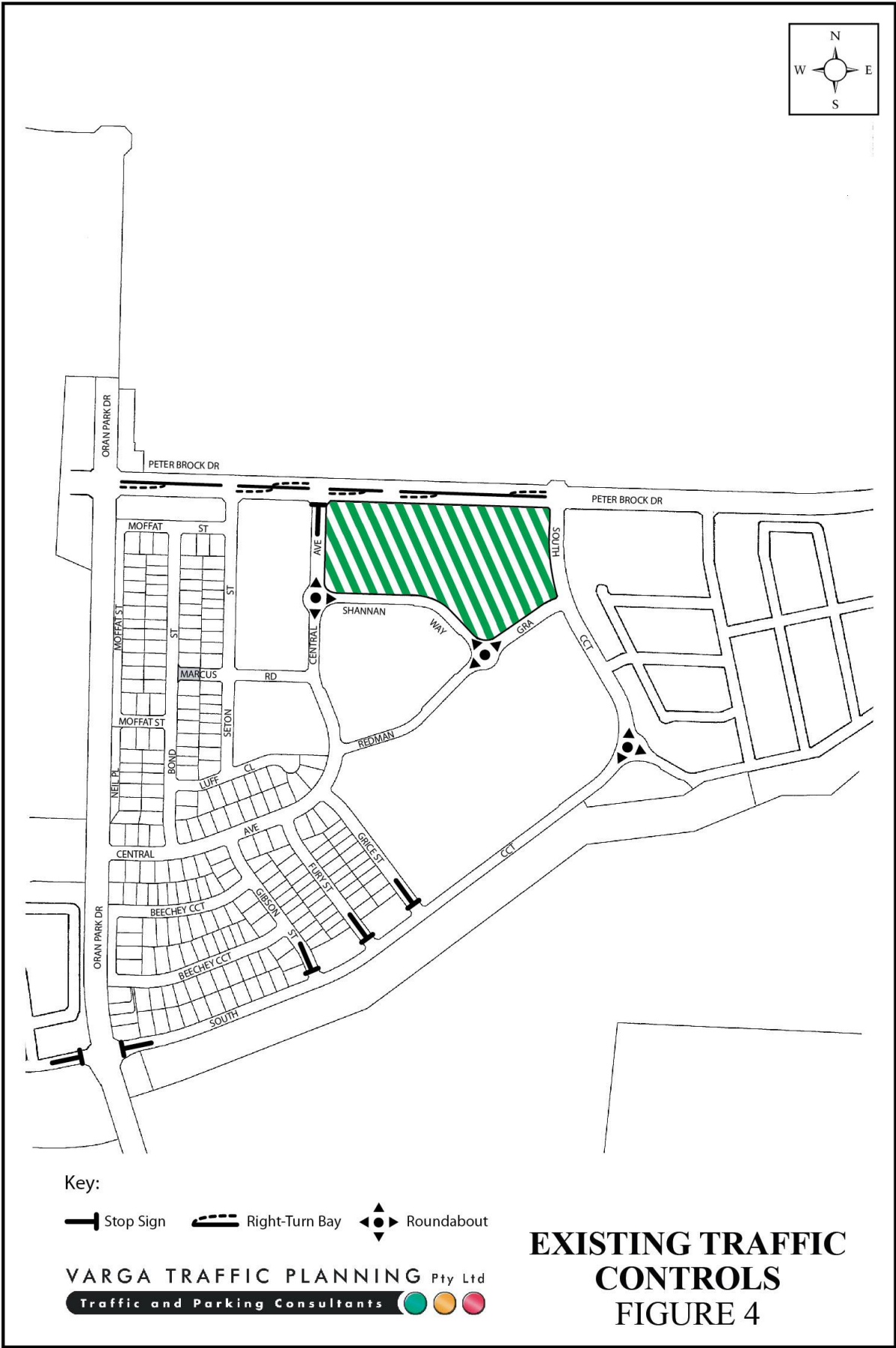
- a 50 km/h SPEED LIMIT which applies to Oran Park Drive and all other local roads in the area including Central Avenue, Shannon Way, Redman Grange and South Circuit
- a 40 km/h SCHOOL ZONE along the Central Avenue frontage of the school
- ROUNDABOUTS in Shannon Way at its intersection Central Avenue and also Redman Grange
- STOP SIGNS in Central Avenue and also South Circuit at their intersection with Peter Brock Drive
- RIGHT-TURN HOLDING BAYS provided in Peter Brock Drive at its intersection with Central Avenue and also South Circuit.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by reference to the RTA's *Annual Average Daily Traffic* data. The relevant count stations nearest to the subject site are summarised below:

Station No.	Location	1996	1999	2002	2005
85010	Camden Valley Way (south of Cobbitty Road)	15,223	18,859	20,296	21,280
85021	The Northern Road (west of Camden Valley Way)	9,758	11,857	15,308	16,369
85026	The Northern Road (south of Lowes Creek)	9,775	12,067	13,212	14,284

A more detailed indication of the existing traffic conditions on the road network in the vicinity of the site is provided by reference to the *Maunsell/AECOM* 2008 report. Peak period traffic surveys were undertaken at three key nearby intersections in 2008 by *Maunsell/AECOM* which revealed that:



- in 2008, the Northern Road & Cobbitty Road East intersection had a Degree of Saturation (DS) of 0.37 during the AM peak period and 0.30 during the PM peak period. The Average Vehicle Delay (AVD) was 4.0 seconds per vehicle during the AM peak period and 3.0 seconds per vehicle during the PM peak period
- in 2008, the Northern Road & Cobbitty Road West intersection had a DS of 0.83 during the AM peak period and 0.65 during the PM peak period. The AVD was 11.7 seconds per vehicle during the AM peak period and 7.4 seconds per vehicle during the PM peak period
- in 2008, the Camden Valley Road & Cobbitty Road intersection had a DS of >1.20 during the AM peak period and 1.00 during the PM peak period. The AVD was 70.9 seconds per vehicle during the AM peak period and 11.2 seconds per vehicle during the PM peak period.

Since the surveys and intersection modelling was undertaken, the Camden Valley Way and Cobbitty Road intersection has undergone a major upgrade comprising new traffic signals, major road widening and the provision of four two-lane right-turn holding bays.

Projected Traffic Generation

As noted in the foregoing, traffic modelling undertaken on behalf of *Landcom* by *AECOM Pty Ltd* has assumed that the site will be used for “school” uses. The traffic modelling undertaken by *AECOM Pty Ltd* was based on 723 students with 31 staff. That traffic modelling yielded the following trip generation characteristics for the proposed school, as set out in the table below:

Projected Trip Generation Characteristics with 723 Students and 31 Staff

		AM Total Trips	PM Total Trips
Junior School Students:	348 students & 15 staff -	224 vph	149 vph
Senior School Students:	375 students & 16 staff -	228 vph	156 vph
TOTAL:		452 vph	305 vph

Source: Maunsell, October 2008

Application of the above traffic generation characteristics to the proposed school which is the subject of this Application with 986 students and 39 staff yields the following trip generation characteristics:

Projected School Traffic Generation Characteristics with 986 Students and 39 Staff			
		AM Total Trips	PM Total Trips
Junior School Students:	460 students & 16 staff -	295 vph	196 vph
Senior School Students:	526 students & 23 staff -	319 vph	219 vph
TOTAL:		614 vph	415 vph

Accordingly, it is likely that the proposed development will result in an *increase* in the traffic generation potential the site in the range 110 to 160 vph (two-way) when compared with modelling previously undertaken for the Oran Park land release area, as set out below:

Projected Nett Increase in Peak Hour Traffic Generation Potential Of the School Site as a Consequence of the Development Proposal		
	AM	PM
Proposed School Traffic Generation Potential (986 Students & 39 Staff):	614 vph	415 vph
Oran Park School Masterplan (723 Students & 31 Staff):	452 vph	305 vph
NETT INCREASE IN TRAFFIC GENERATION POTENTIAL:	+162 vph	+110 vph

That projected increase in traffic activity as a consequence of the development proposal is minimal and will clearly not have any unacceptable traffic implications in terms of road network capacity.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

Unrestricted kerbside parking restrictions apply to the indented bays surrounding the subject site. Kerbside parking is not permitted outside of these indented bays.

Off-Street Parking Provisions

The off-street parking requirements applicable to the development proposal are specified in Council's *Development Control Plan 2011, Section B5.1 – Car Parking Rates / Requirements* document in the following terms:

Educational Establishments

- 1 space per 2 full-time staff member, *plus*
- 1 space per 10 x Year 11/12 students, *pus*
- Bicycle storage, *plus*
- Pick-up & set-down area, *plus*
- 1 space per 100 students enrolled for visitor parking

Application of the above parking requirements to the various components of the development proposal yields an off-street parking requirement of 47 parking spaces (plus bicycle parking and a set-down/pick-up area for parents) as set out below:

Staff (16+23 staff):	19.5 spaces
Year 11/12 students (180 students):	18.0 spaces
Visitors (986 students):	9.9 spaces
TOTAL:	47.4 spaces

The proposed development makes provision for a total of 144 off-street parking spaces, comprising 33 junior school spaces (plus a further 8 spaces in the set-down/pick-up area), and 111 senior school spaces, therefore satisfying Council's Parking Code requirements.

By way of comparison, surveys undertaken at similar Anglican schools have identified a peak parking demand rate of 1 space per 4 students (ie; including staff, visitor etc. parking needs), although it is noted that *all of those surveys* were undertaken at schools where walking to

school was *NOT* an option. In this instance however, it *will* be possible for at least 40% of students to *walk* to school, thereby reducing the overall parking demand rate. Based on those survey results, and taking into account the proportion of students that are likely to walk to school, the peak parking demand rate expected to be generated by the proposed school is expected to be in the order of 138 parking spaces.

That projected peak parking requirement will be satisfied by the proposed provision of 144 carparking spaces on the school site.

In addition, a number of indented parking bays are proposed in Shannon Way, adjacent to the school, which will have the capacity to accommodate an additional 18 on-street parking spaces which may be used for dropping-off and picking-up students during school peak periods. An indented bus bay is also proposed in Redman Grange capable of accommodating 4 to 5 cars simultaneously.

The geometric design layout of the proposed carparking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* in respect of parking bay dimensions and aisle widths.

In summary, the proposed parking facilities satisfy the relevant requirements specified in both Council's Parking Code as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking implications.