

Proposed Mixed-Use Development

**7-13 Norfolk Street,
Liverpool**

TRAFFIC AND PARKING ASSESSMENT REPORT

9 November 2015

Ref 15474

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Document Verification

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Final	Final for Submission	By	Date	By	Date
		TY	9/11/15	CP	9/11/15

1. INTRODUCTION

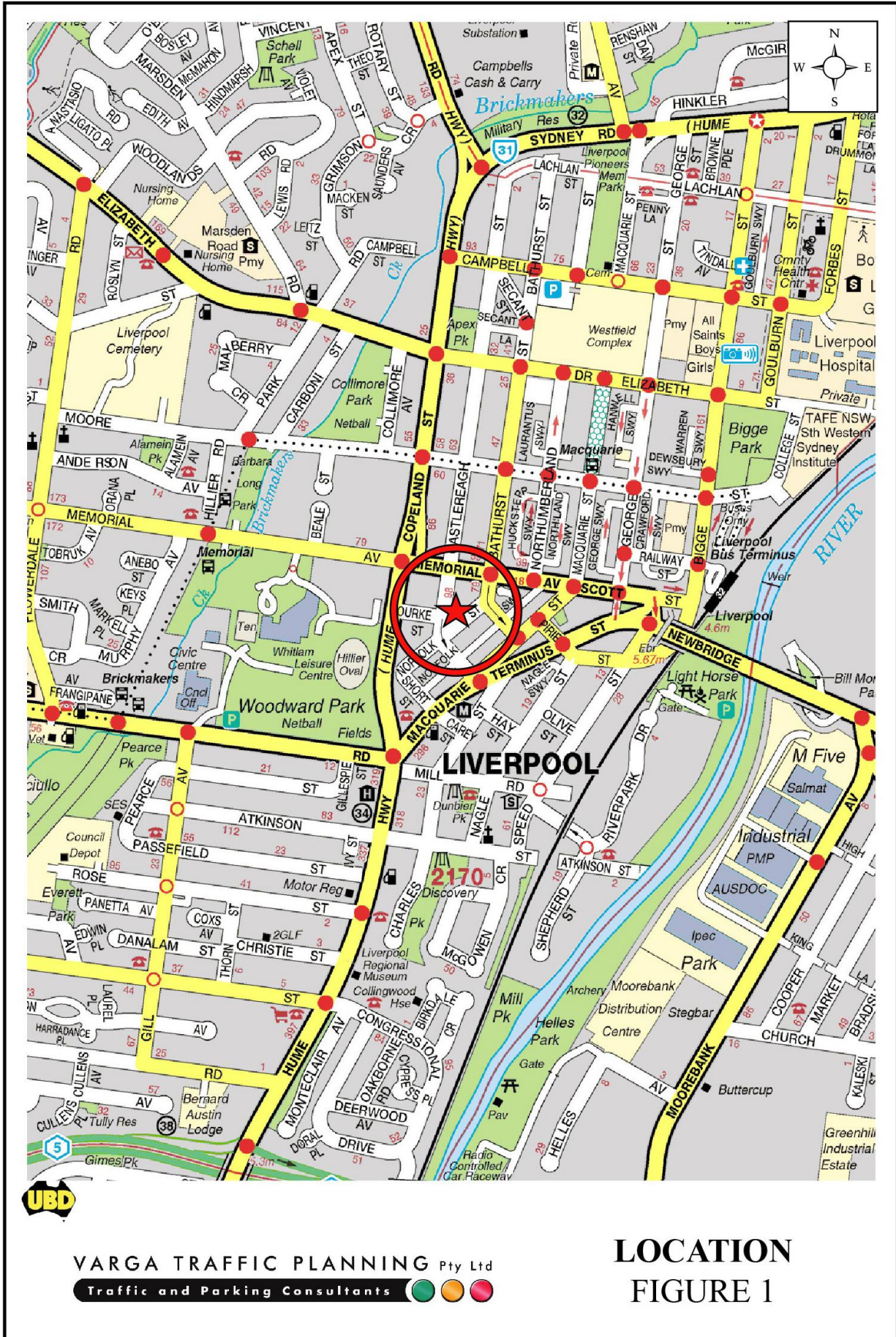
This report has been prepared to accompany a development application to Liverpool City Council for a mixed-use development proposal to be located at 7-13 Norfolk Street, Liverpool (Figures 1 and 2).

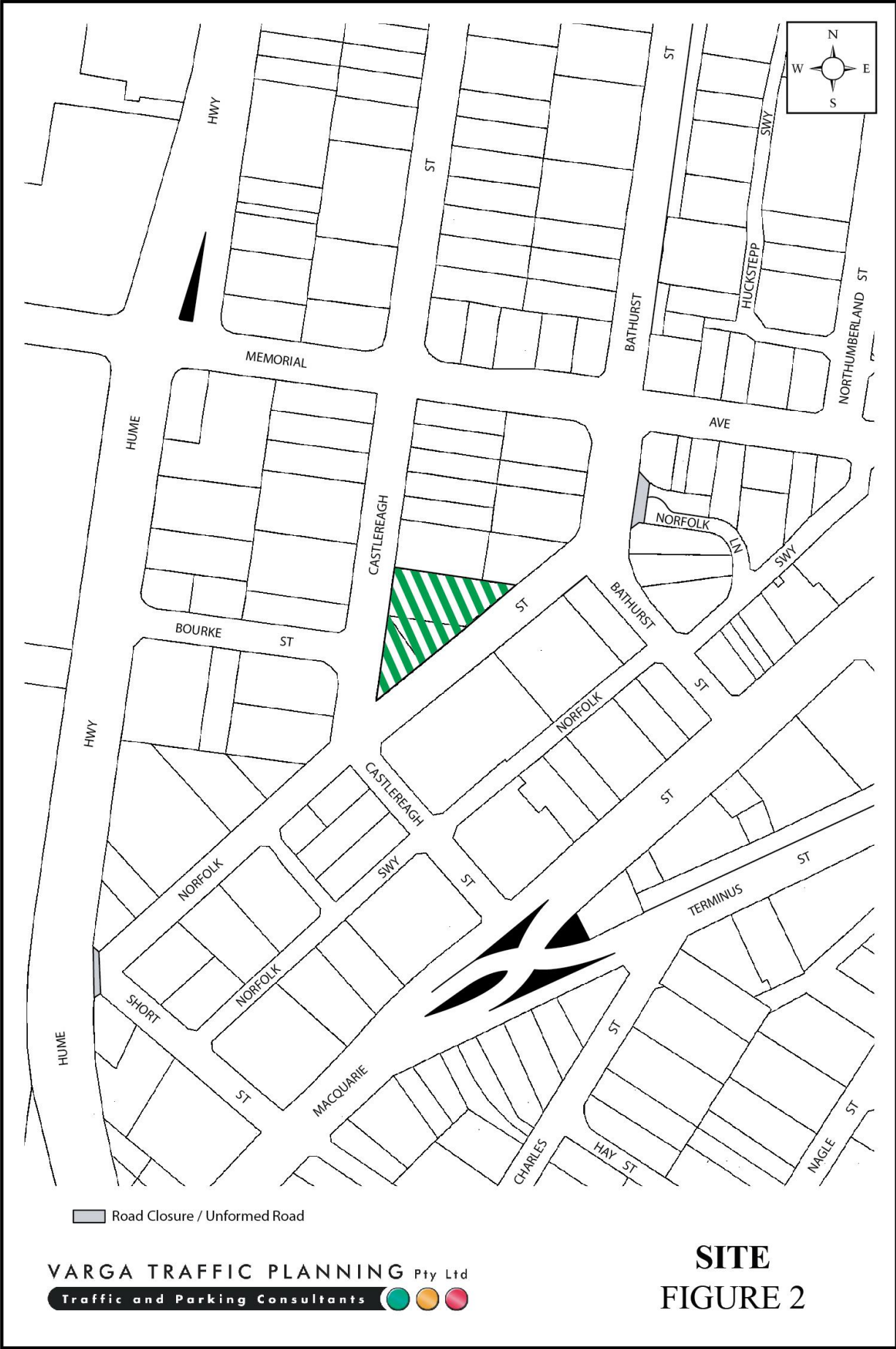
The proposed development involves the demolition of the existing church and commercial buildings on the site to facilitate the construction of a new mixed-use residential apartment building with a commercial component.

Off-street car parking is to be provided in a multi-level basement car parking area, in accordance with Council's requirements.

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
- 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 and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.





2. PROPOSED DEVELOPMENT

Site

The subject site is comprised of two allotments located at the north-eastern corner of the Castlereagh Street and Norfolk Street intersection, and lies within the Liverpool City Centre. The site is triangular shaped with a street frontage of approximately 67 metres in length to Castlereagh Street and approximately 91 metres in length to Norfolk Street. The site occupies an area of approximately 2,110m².

No. 7-9 Norfolk Street is currently occupied by a commercial building comprised of approximately 685m² of floor area. Vehicular access to the site is provided via two separate entry/exit driveways located in Castlereagh Street and Norfolk Street.

No. 13 Norfolk Street is currently occupied by the Liverpool Baptist Church. The existing site is not served by any off-street car parking facilities and therefore has no vehicular access driveways.

Proposed Development

The proposed development involves the demolition of the existing buildings on the site to facilitate the construction of a new mixed-use residential apartment building with a commercial component.

A total of 132 residential apartments are proposed in the new building as follows:

1 bedroom apartments:	15
2 bedroom apartments:	103
3 bedroom apartments:	14
TOTAL APARTMENTS:	132

A commercial component is also proposed on the ground and first floor level of the building, with a cumulative floor area of 1,024m².

Off-street car parking is proposed for a total of 175 cars plus 4 service/carwash bays in a multi-level basement car parking area in accordance with Council's requirements. Vehicular access to the car parking facilities is to be provided via a new entry/exit driveway located towards the northern end of the Norfolk Street site frontage.

Loading/servicing for the development is expected to be undertaken by a variety of commercial vehicles up to and including 8.8m long medium rigid vehicles (MRV). A loading dock is proposed to be located behind the building, at the north-western corner of the site. Vehicular access to the loading/service area is to be provided via a new dedicated service driveway located at the northern end of the Castlereagh Street site frontage.

Plans of the proposed development have been prepared by *Mosca Pserras Architects* and are reproduced in the following pages.



client Eagle Developments & Cardle Developments
drawing title Basements 4 & 3

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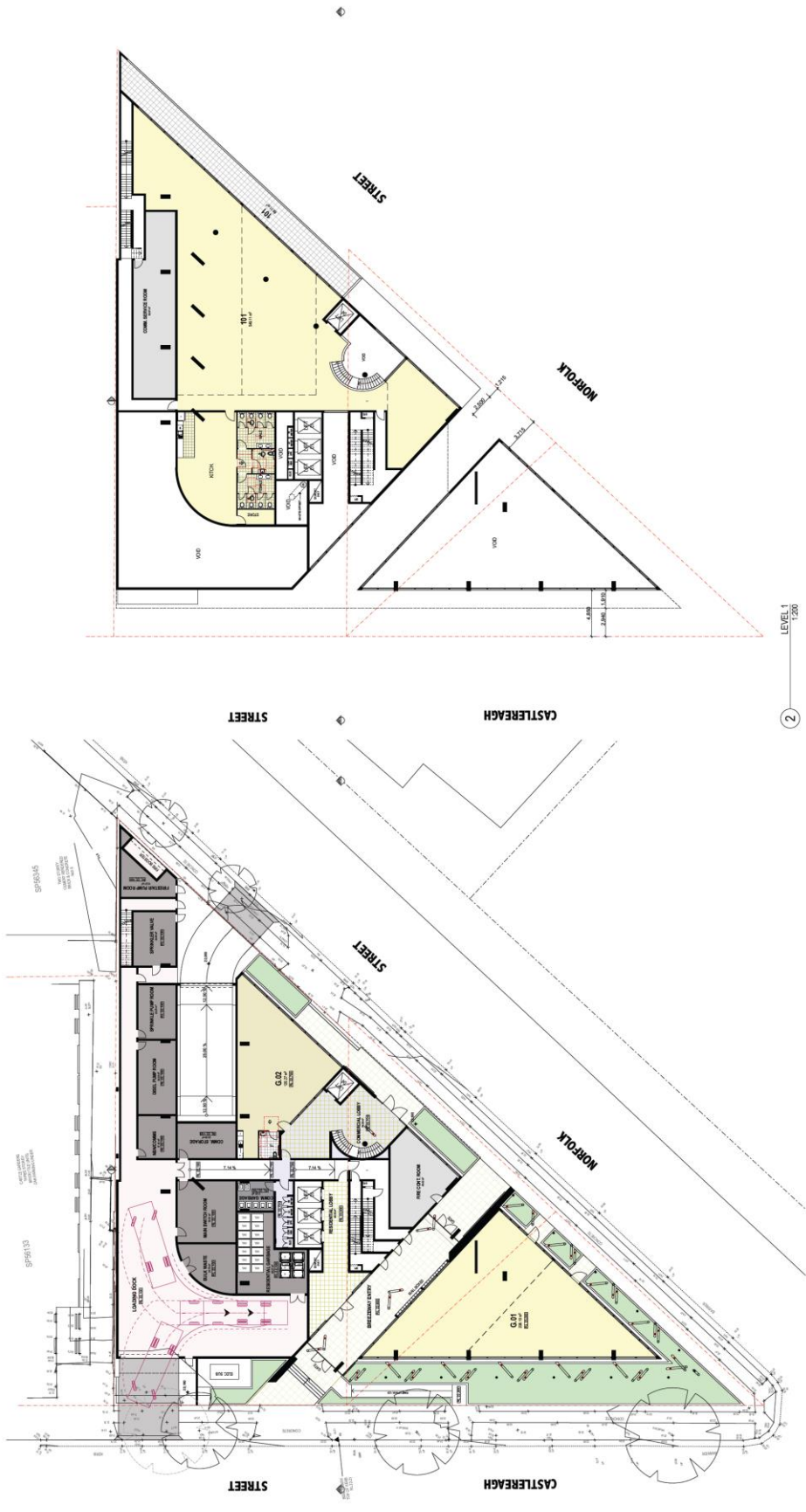
project Proposed Mixed-use Development
location 7-13 Norfolk Street
City LIVERPOOL

DATE	DESCRIPTION	BY	CHKD BY

Notes

- The drawing is to be used for the design of the structure and shall be subject to the approval of the relevant authorities.
- Dimensions are given in millimetres unless otherwise stated.
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mosca psercas architects

client: **Eagle Developments & Cardale Developments**
drawing title: **Ground Floor & Level 1**

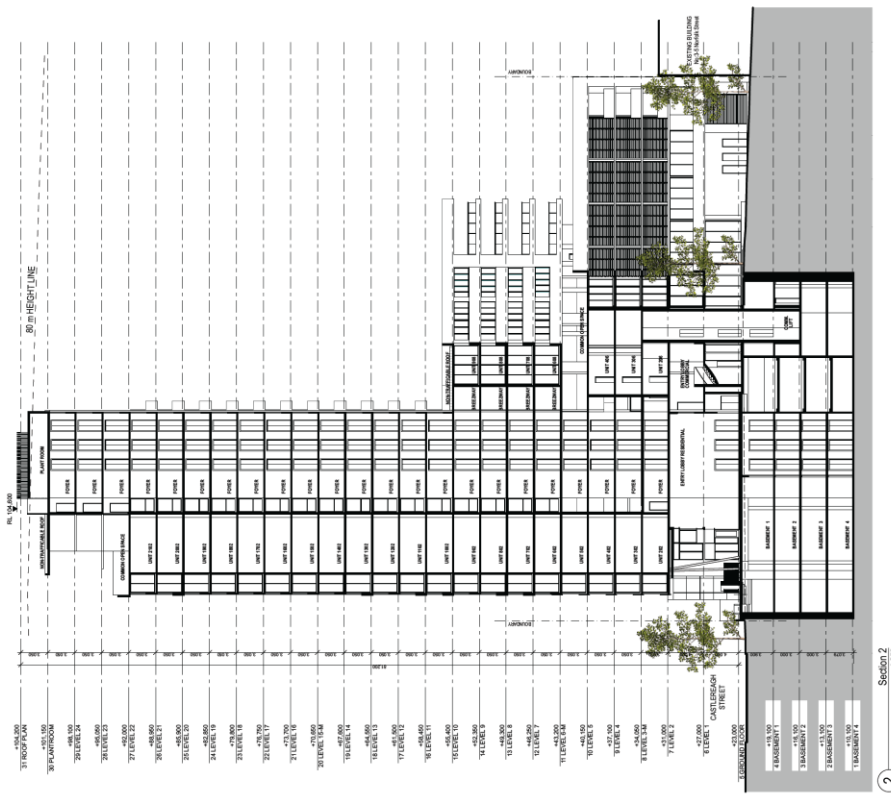
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Proposed Mixed-Use Development
Location: **7-13 Norfolk Street**
City: **LIVERPOOL**

No.	Date	Revisions

- Notes**
- The drawings copyright and the property of the author and are not to be used without the authority of the author.
 - Major notes change are author's discretion. See preference.
 - Do not scale from drawing.
 - All dimensions to be checked on site before commencing work.
 - All discrepancies to be brought to the attention of the author.



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client: **Eagle Developments & Cardale Developments**
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PROJECT: **Proposed Mixed-Use Development**
 location: **7-13 Norfolk Street**
 City: **LIVERPOOL**

No.	Description	Date	Revised
1	Issued for tender		
2	Issued for construction		

- Notes**
- the drawings copyright and the property of the author and are not to be reproduced or used without the author's prior written consent.
 - larger scale drawings and sections are available upon request.
 - do not scale from drawings.
 - all work is to be checked on site before commencement of work.
 - all discrepancies to be brought to the attention of the author.

3. TRAFFIC ASSESSMENT

Road Hierarchy

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

Copeland Street is classified by the RMS as a *State Road* and forms part of the Hume Highway which is one of Australia's major inter-city highways, running between Sydney and Melbourne. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island. Clearway restrictions apply along both sides of the road during commuter peak periods.

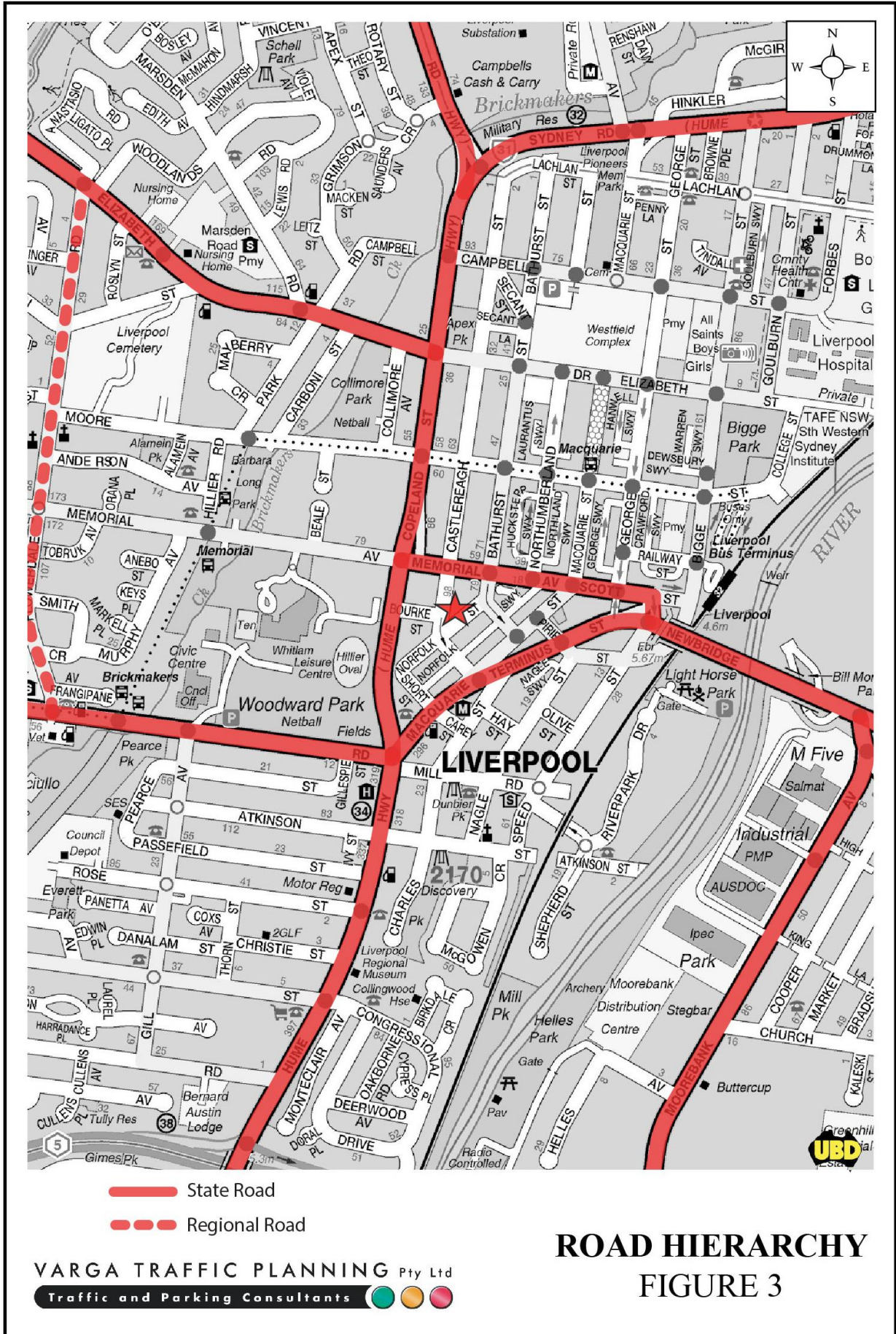
Hoxton Park Road, Macquarie Street, Terminus Street and Newbridge Road are classified by the RMS as *State Roads* which provide the key east-west road link in the area, linking Chipping Norton and Hoxton Park. The route typically carries two traffic lanes in each direction in the vicinity of the site and widens to three traffic lanes in each direction along Macquarie Street. Clearway restrictions apply along both sides of the road during commuter peak periods.

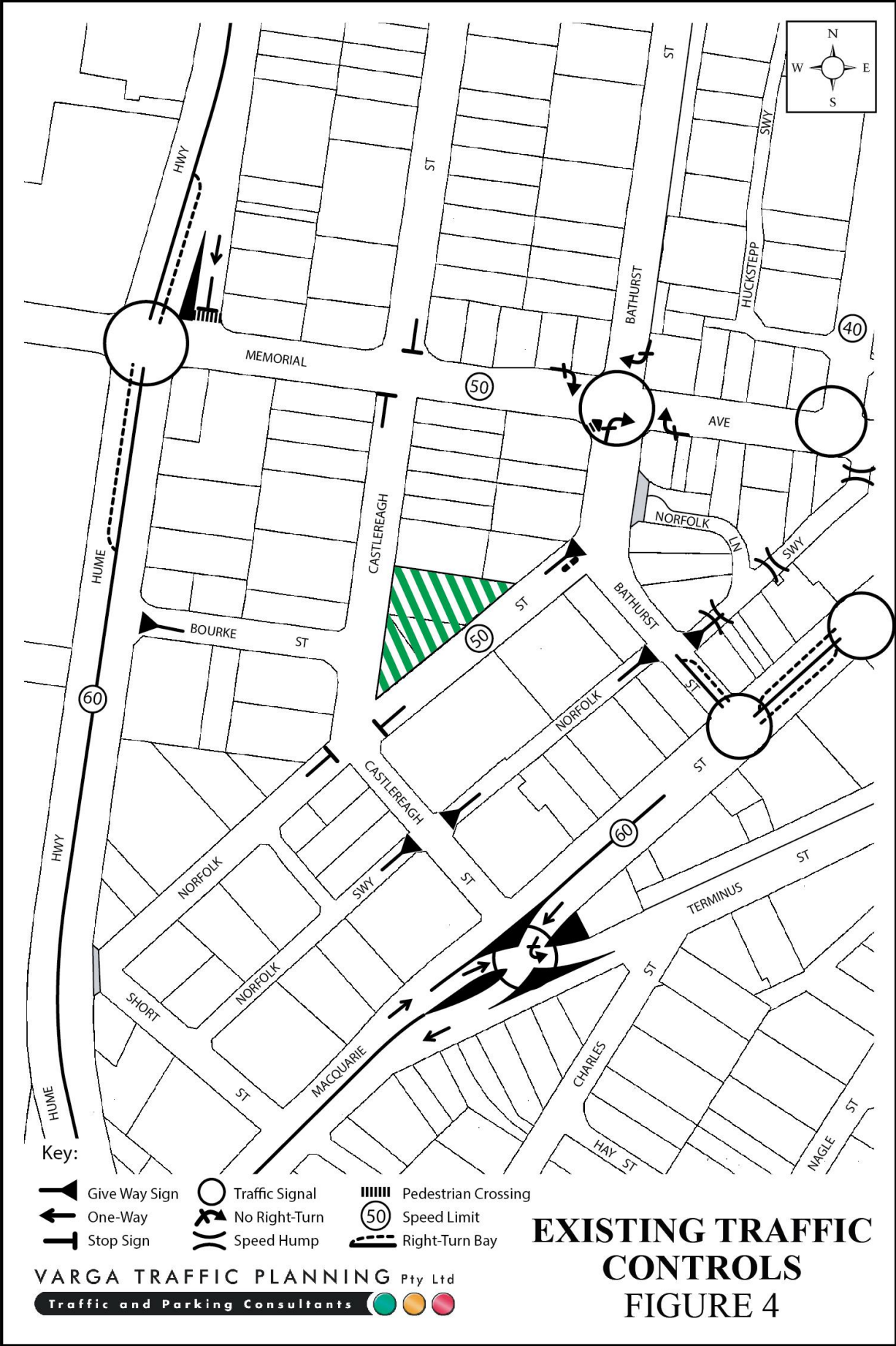
The section of Memorial Avenue and Scott Street linking between Hume Highway and Bridge Street is classified by the RMS as a *State Road*. The route typically carries two traffic lanes in each direction in the vicinity of the site and kerbside parking is generally permitted along one side of the road.

Norfolk Street and Castlereagh Street are local, unclassified roads which are primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted along both sides of both roads, including along both site frontages.

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 60 km/h SPEED LIMIT which applies to Hume Highway and also Macquarie Street
- a 50 km/h SPEED LIMIT which applies to Norfolk Street, Castlereagh Street and all other local roads in the area
- TRAFFIC SIGNALS in Memorial Avenue where it intersects with Hume Highway, Bathurst Street and also Northumberland Street
- TRAFFIC SIGNALS in Macquarie Street where it intersects with Terminus Street, Bathurst Street and also Memorial Avenue
- NO-RIGHT restrictions on all approaches at the Memorial Avenue and Bathurst Street intersection
- LEFT TURN ONLY restrictions in Castlereagh Street turning onto Norfolk Street.

Projected Traffic Generation

The traffic implications of the development proposal primarily concern the effects of the *additional* traffic flows generated as a result of the development and its impact on the operational performance of the adjacent road network.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)*.

The RMS *Guidelines* are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

Commercial Premises

2.0 peak hour vehicle trips per 100m² GFA

High Density Residential Flat Buildings in Metropolitan (CBD) Centres

0.24 peak hour vehicle trips per dwelling

The RMS *Guidelines* also make the following observation in respect of high density residential flat buildings:

Definition

A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.

Factors

The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

Application of the above traffic generation rates to the commercial and residential components of the development proposal yields a traffic generation potential of approximately 52 vehicle trips per hour during commuter peak periods as set out below:

Projected Future Traffic Generation

Residential Apartments (132 apartments):	31.7 peak hour vehicle trips
Commercial Tenancies (1,024m ²):	20.5 peak hour vehicle trips
TOTAL TRAFFIC GENERATION POTENTIAL:	52.2 peak hour vehicle trips

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase (or decrease)* in traffic generation potential of the site.

Application of the above *commercial premises* traffic generation rate nominated in the RMS *Guidelines* to the existing commercial building on the site (~685m²) of floor area on the site yields a traffic generation potential of approximately 14 peak hour vehicle trips.

The RMS *Guidelines* however do not provide a traffic generation rate for places of worship. Notwithstanding, Baptist Church congregations primarily occur on Sundays and generally have a nominal traffic generation potential during weekday commuter peak periods and therefore has not been *discounted*.

Accordingly, it is likely that the proposed development will result in a *nett increase* in the traffic generation potential of the site of approximately 39 vph as set out below:

**Projected Nett Increase in Peak Hour Traffic Generation Potential
of the site as a consequence of the development proposal**

Projected Future Traffic Generation Potential:	52.2 vehicle trips
Less Existing Traffic Generation Potential:	-13.7 vehicle trips
NETT INCREASE IN TRAFFIC GENERATION POTENTIAL:	38.5 vehicle trips

That projected increase in the traffic generation potential of the site as a consequence of the development proposal is minimal, consistent with the zoning objectives of the site and will clearly not have any unacceptable traffic implications in terms of road network capacity.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 5. Key features of those parking restrictions are:

- 2 HOUR PARKING along a northern section of Norfolk Street
- generally UNRESTRICTED kerbside parking elsewhere throughout the local area, including along both side frontages.

Off-Street Parking Provisions

The off-street parking requirements applicable to the development proposal are specified in *Liverpool Development Control Plan 2008 Part 4, Section 4. Traffic and Access* document in the following terms:

Car Parking for Residential Developments (in the City Centre)

- 1 space per two studio apartments
- 1 space per one bedroom or two bedroom apartments
- 1.5 spaces per three or more bedroom units
- 1 space per 10 units or part thereof, for visitors
- 1 space per 40 units for service vehicle including removalist vans and car washing bays, up to a maximum of 4 spaces per building.

Car parking for all other developments

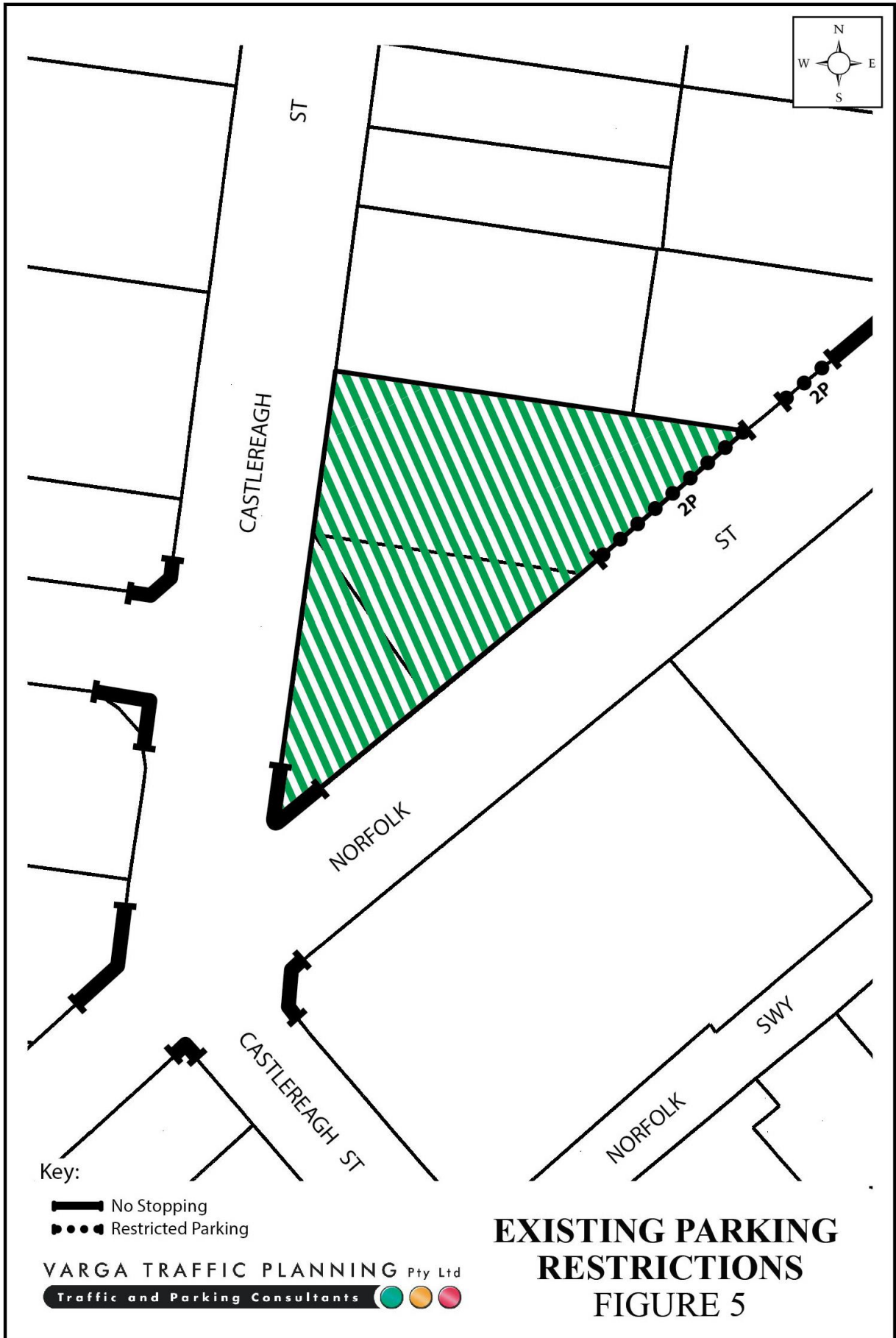
- 1 space per 100m² of floor area
- Sufficient service and delivery vehicle parking adequate to provide for the needs of the development.

Motorcycle parking for all other developments

- Provision is to be made for motorcycle parking at the rate of 1 motorcycle space per 20 car spaces

Minimum Car parking requirements for people with disabilities

- Provide 2% of the total demand generated by a development, for parking spaces accessible, designed and appropriately signposted for use by persons with disabilities.



Bicycle parking for all development

- 1 bicycle space per 200m² of gross floor area. 15% of this requirement is to be accessible to visitors.

Application of the above parking requirements to the residential and commercial components of the development proposal yields an off-street parking requirement of 167 car spaces (including a minimum provision of 3 disabled spaces), 9 motorcycle spaces and 59 bicycle spaces as set out below:

Car Parking Requirement:

Residents (132 Apartments):	139.0 spaces
Visitors:	14.0 spaces
Service Vehicle/Car Wash Bay:	3.4 spaces
Commercial (1,024m ²):	10.2 spaces
TOTAL:	166.6 spaces

Motorcycle Parking Requirement:

8.8 spaces

Bicycle Parking Requirement:

58.5 spaces (8.8 spaces for visitors)

The proposed development makes provision for a total of 175 off-street car parking spaces (including 15 disabled spaces), 4 service/carwash bays, 59 bicycle spaces and 16 motorcycle spaces, thereby satisfying all aspects of Council's off-street parking requirements

The geometric design layout of the proposed car parking 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* and *Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6* in respect of parking bay dimensions, ramp gradients and aisle widths.

Loading/Service Provisions

Loading/servicing for the proposed development is expected to be serviced by a variety of commercial vehicles up to and including 8.8m long MRV trucks. A loading dock is proposed to be located behind the building, at the north-western corner of the site. The manoeuvring

area has been designed to accommodate the swept turning path requirements of these MRV trucks, allowing them to enter and exit the site whilst travelling in a forward direction at all times.

The geometric design layout of the proposed loading facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2* in respect of loading dock dimensions and service area requirements for MRV trucks.

In summary, the proposed parking and loading 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 or loading implications.