gtk consulting
traffic management
and car parking solutions

Traffic and Car Parking Assessment

Proposed Industrial Showrooms

Cnr Castlereagh Road & Old Castlereagh Road, Penrith

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1 INTRODUCTION

gtk consulting pty ltd has been engaged by Peikos Group to prepare a traffic and car parking assessment report to accompany a development application to Penrith City Council. The proposal is to construct six (6) new industrial units, basement car parking and additions to the existing Alpha Catering building on the south-western corner of Castlereagh Road and Old Castlereagh Road, Penrith (refer **Figure 1**). All access to the proposed development will be via Camden Street which, as part of this application, is to be extended north to intersect with Old Castlereagh Road.

This application will require referral to Roads and Maritime Services (RMS) as the proposal has frontage to a classified road[1]. It should also be noted that the proposed new driveways on Camden Street do not require concurrence from RMS under the Roads Act, as this road is a non-classified local road under the care and control of Penrith City Council.

This report will:

- Describe the site and surrounding land use.
- Describe the proposed development.
- Describe the road network serving the site.
- Assess the proposed car parking.
- Assess the potential traffic implications of the development.
- Assess the adequacy of the proposed vehicle access and internal circulation arrangements.

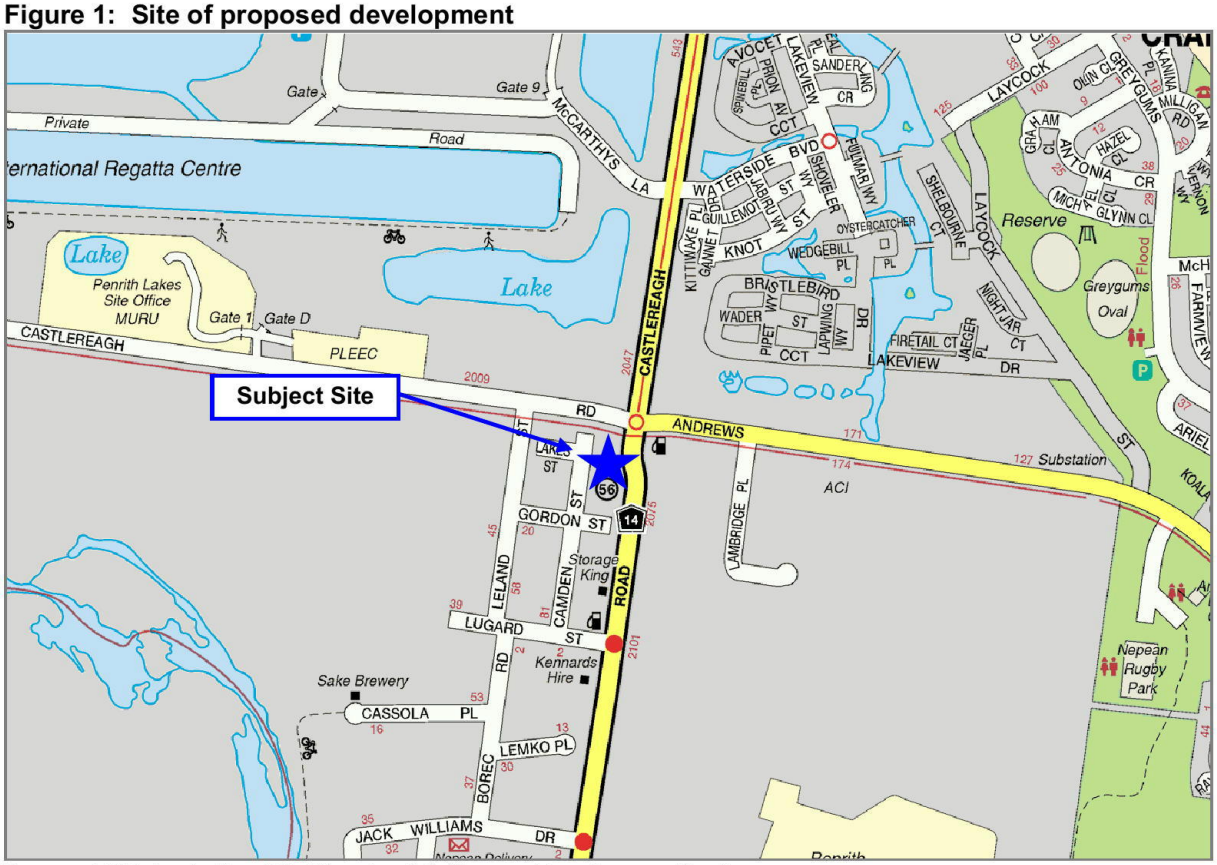
The assessment was undertaken by Garry Kennedy, Director gtk consulting pty ltd. Garry has extensive (44 years) experience in Traffic Engineering, Road Safety and Car Parking. Garry chaired a Local Traffic Committee for seventeen years at a major metropolitan Council. In 2006 Garry established gtk consulting and since that time has undertaken many traffic and car parking assessments and studies for Local and State Government Agencies and private developers.

[1] Clause 101 State Environmental Planning Policy *(Infrastructure)* 2014

Garry provides expert evidence in the NSW Land and Environment Court, Local Magistrates Court and District Court. Garry's court experience covers a wide range of traffic activities, such as, the suitability of development proposals, heavy vehicle prosecutions, parking offences and many other offences under the *Local Government Act* and the *Roads Act*.

This assessment has been prepared using information provided by N F Billyard Pty Ltd and a site assessment by the author.

Figure 1: Site of proposed development



Source: UBD Australian City Streets v7.0 (licensed to gtk consulting)

2 THE SITE AND SURROUNDING LAND USE

The site (**Photo 1**) is zoned IN1 General Industrial under the *Penrith Local Environmental Plan 2010*. It is situated on the south-eastern corner of the intersection of Castlereagh Road and Old Castlereagh Road and has rear access to Camden Street (**Photo 2**). Camden Street currently terminates approximately 60 metres south of Old Castlereagh Road (**Photo 3**). The majority of the site is vacant with the existing Alpha Catering building located on the southern section of the property.

The areas immediately east, west and south of the site are industrial with some ancillary retail and office activities. Further to the east lies the residential area of Cranebrook.

Photo 1: The site looking south-east from Camden St.

Source: gtk consulting 2017

Photo 2: Camden St looking south from site.

Source: gtk consulting 2017

Photo 3: Camden St looking north towards Old Castlereagh Rd.

Source: gtk consulting 2017

3 THE EXISTING ROAD NETWORK

The road network servicing the site comprises:

- *Castlereagh Road* – a State Arterial Road (MR 155) under the care, control and responsibility of Roads and Maritime Services. It provides a significant transport corridor from areas to the north and south, e.g. Cranebrook, Richmond and Penrith CBD and M4 Motorway.
- Old Castlereagh Road – a local road under the care, control and responsibility of Penrith City Council providing access to Penrith Lakes and International Regatta Centre.
- Andrews Road – a classified regional road (RR2048) under the care, control and responsibility of Penrith City Council linking Castlereagh Road to The Northern Road.
- Lugard Street – a local road under the care, control and responsibility of Penrith City Council providing two-way access to/from Castlereagh Road and Camden Street.
- Gordon Street – a local road under the care, control and responsibility of Penrith City Council providing one-way access (westbound) from Castlereagh Road to Camden Street.
- Camden Street – a local road under the care, control and responsibility of Penrith City Council providing two-way access to/from Castlereagh Road and the subject development site.

The physical features of the streets surrounding the site are described in **Table 1**:

Table 1: Description of streets surrounding the site

Street Name	Street Configuration
Castlereagh Road	Divided 4 lane/two-way.
Old Castlereagh Road	Divided two lane/two-way in front of site. Undivided two lane/two-way west of site.
Andrews Road	Undivided two lane/two-way.
Lugard Street	Undivided two lane/two-way.
Gordon Street	Undivided two lane/two-way. Allows one lane/one-way access from Castlereagh Road.
Camden Street	Undivided two lane/two-way.

Source: gtk consulting 2018

4 THE PROPOSAL

The proposal involves the construction of 6 new industrial units on Lots 6, 7, 8, 10 and 12 in DP 127989, Lots 6 and 7 in DP 862636 and Lot 460 DP 616419 (**Figure 2**). These lots will be consolidated as Lot 1 in DP 1230098 and addressed as 2060 Castlereagh Road, Penrith. In addition to the proposed new units, the existing Alpha Catering building will be refurbished, adding an additional warehouse space at the rear together with an additional structural second floor level over its whole footprint.

The total gross floor area (GFA) for the proposal 9,302m^2.

One hundred and forty two (142) car parking spaces are proposed with 44 spaces in front of the units and 98 spaces within the basement car parking area.

Concept plans of the proposal have been prepared by N F Billyard Pty Ltd (**Appendix 1**)

Figure 2: Aerial view of site

Source: NSW Land and Property Information 2018

5 CAR PARKING

5.1 COUNCIL'S PARKING CODE

Penrith City Council's Development Control Plan 2014 C10 Transport Access and Parking specifies a parking rate of 1 space/75m^2 gross floor area (GFA) for "Industries including ancillary office".

5.2 PARKING PROVISION

The proposed development will provide 138 on-site car parking spaces, comprising:

- 46 employee spaces.
- 96 customer spaces, including 4 spaces for persons with a disability.

Penrith City Council's Development Control Plan 2014 – Table C10.2 Car Parking Rates provides a schedule of car parking requirements for various land use activities. The car parking rates for the proposed development are set out in **Table 2** and these are used to calculate the parking requirements for the proposal.

Table 2: Car parking requirements

Land Use	DCP Car Parking Rates	GFA/Employees	Spaces Required
Industries, including ancillary office	1 space/75m^2 GFA **or** 1 space per 2 employees which is greater	9,302m^2 (92 employees)	**124 spaces** (46 spaces)
		TOTAL	**124 parking spaces**

Source: Penrith City Council DCP 2014

In addition, 18 spaces will be built over on the existing Alpha Catering carpark and need to be incorporated in the new layout. A total of **142 spaces** are therefore required which have been provided in the proposed layout. The basement car parking level provides parking for 98 vehicles including 2 spaces for persons with a disability. The area above ground in front of the buildings will accommodate 44 spaces including 2 spaces for persons with a disability. The proposed car parking provision, therefore, meets the requirements of Council's DCP.

Fourteen (14) employee parking spaces are stacked spaces. The individual stacked spaces will be allocated to employees of the same unit.

5.3 PARKING DESIGN DIMENSIONS

All parking aisles within the site are a minimum of 7.0 metres in width for two-way traffic aisles and 4.0 metres wide for one-way traffic aisles. Car parking spaces for employees are a minimum 2.4 metres wide and 5.5 metres long and spaces for customers are minimum 2.5 metres wide and 5.5 metres long. In addition, the parking spaces for persons with a disability are 2.4 metres wide and 5.5 metres long and have a shared area 2.4 metres wide and 5.5 metres long. These dimensions comply with the requirements of AS 2890.1:2004, AS 2890.6:2009 and RMS *Guide to Traffic Generating Developments*.

6 TRAFFIC GENERATION

The Roads and Maritime Services (RMS) provide average traffic generation rates for a range of different land uses in their publication *Guide to Traffic Generating Developments*. The rates are based on extensive surveys undertaken throughout the Sydney Metropolitan Area. The average peak hour vehicle trips (phvt) generated by the proposed industrial use is:

Industry (factory) = 1 (phvt) per 100m^2 GFA

Based on the RMS guidelines, the vehicle trips generated by the proposed industrial development is set out in **Table 3**:

Table 3: Peak hour trip generation for proposed industrial units

Land use	Peak hour trip generation rate	Proposed GFA	Trips generated (vtph)
Industry	1.0 phvt/100m^2 GFA	9,302m^2	**93**
		TOTAL VEHICLE TRIPS PER HOUR	**93**

Source: RMS *Guide to Traffic Generating Developments* 2002

Traffic volumes of this magnitude represent a moderate increase in existing traffic volumes and are unlikely to create any unreasonable impacts on the adjoining road network. The traffic generated by this site is in keeping with the existing road and traffic infrastructure within the industrial area.

The traffic volumes generated by the proposed development, therefore:

- Will have minimal impact on existing traffic flows, intersection capacities or neighbourhood amenity.
- Will be readily able to enter and leave the site without delay.
- Will not present any unsatisfactory traffic safety or capacity issues on the surrounding road network.

7 ACCESS AND INTERNAL CIRCULATION

7.1 ACCESS

Vehicular access to the proposed development is via new driveways on Camden Street. Camden Street is to be extended to the one-way slip lane from the exit of the existing roundabout at Castlereagh Road. Access to/from Camden Street will, therefore, be restricted to left in/left out.

The minimum requirement in assessing the safety of the proposed new access driveways on Camden Street is the need to provide sufficient sight distance for drivers to observe a possible conflict with other vehicles and allow for sufficient time to take evasive action should it be required.

An accepted approach to calculating the provision of safe and efficient access to and from the development is to ensure that there is sufficient sight distance to enable non-priority traffic (i.e. traffic turning into and out of the site) to carry out their turning movements without unduly interfering with mainstream traffic flow.

AS 2890.1:2004 *Parking facilities – Off-street car parking* sets out the sight distance requirements for access driveways.

The proposed new access driveways are located on a straight and level section of Camden Street providing excellent sight distance.

The speed zone is 50 km/h and sight distance from the location of the access driveway is set out in **Table 4**:

Table 4: Sight distance requirements

Source	Sight Distance Required	Sight Distance Available
AS2890.1:2004 (5 sec gap)	69 metres (north)	To intersection Old Castlereagh Rd
	69 metres (south)	>100 metres

Source: AS 2890.1: 2004 and gtk consulting 2018

The sight distance in both directions from the proposed new driveways on Camden Street meet the requirement of AS 2890.1:2004.

7.2 INTERNAL CIRCULATION

Within the development, traffic aisles have a minimum width of 6.7 metres for two-way and 4.0 metres for one-way traffic circulation. The floor to ceiling height within the basement car parking area provides:

- 2.2 metre clearance to the parking spaces for persons with a disability, as required by AS 2890.6:2009; and,
- 2.5 metre clearance above parking spaces for persons with a disability, as required by AS 2890.6:2009.

These heights include clearance to air conditioning services, plumbing, etc.

The circulation, manoeuvring and parking arrangements, therefore, comply with the requirements of AS 2890.1:2004, AS 2890.2- 2002 and the RMS *Guide to Traffic Generating Developments*.

7.3 SERVICE VEHICLES

Six (6) loading bays are provided i.e. one for each industrial unit. The bays will cater for heavy rigid vehicles which will enter the site from Camden Street into a one-way semi-circular roadway. The internal roadway is designed for turning articulated vehicles and for heavy rigid vehicles to reverse into the loading bays. Each loading bay is a minimum 3.5 metres wide and 12.5 metres long and has a vertical clearance of 4.5 metres.

8 CONCLUSION

The proposed new industrial units and additions to the existing building on the south-western corner of Old Castlereagh Road and Old Castlereagh Road, Penrith has been assessed to determine the likely traffic impacts and compliance with the relevant Australian Standards, RMS *Guide to Traffic Generating Developments* and Penrith City Council's *Development Control Plan 2014*.

Assessment of the proposal indicates that:

- The proposed on-site car parking provision complies with the number of spaces required for the proposed development in accordance with *Penrith City Council's Development Control Plan 2014*.
- The proposed internal layout meets the requirements of AS 2890.1:2004, AS 2890.2-2002, AS 2890.6:2009 and RMS *Guide to Traffic Generating Developments*.
- The traffic generated by the proposed development will not present any unsatisfactory traffic safety or capacity issues on the existing road network.
- The sight distance for vehicles entering and exiting Camden Street from the proposed new driveways meets the requirements of AS 2890.1:2004.

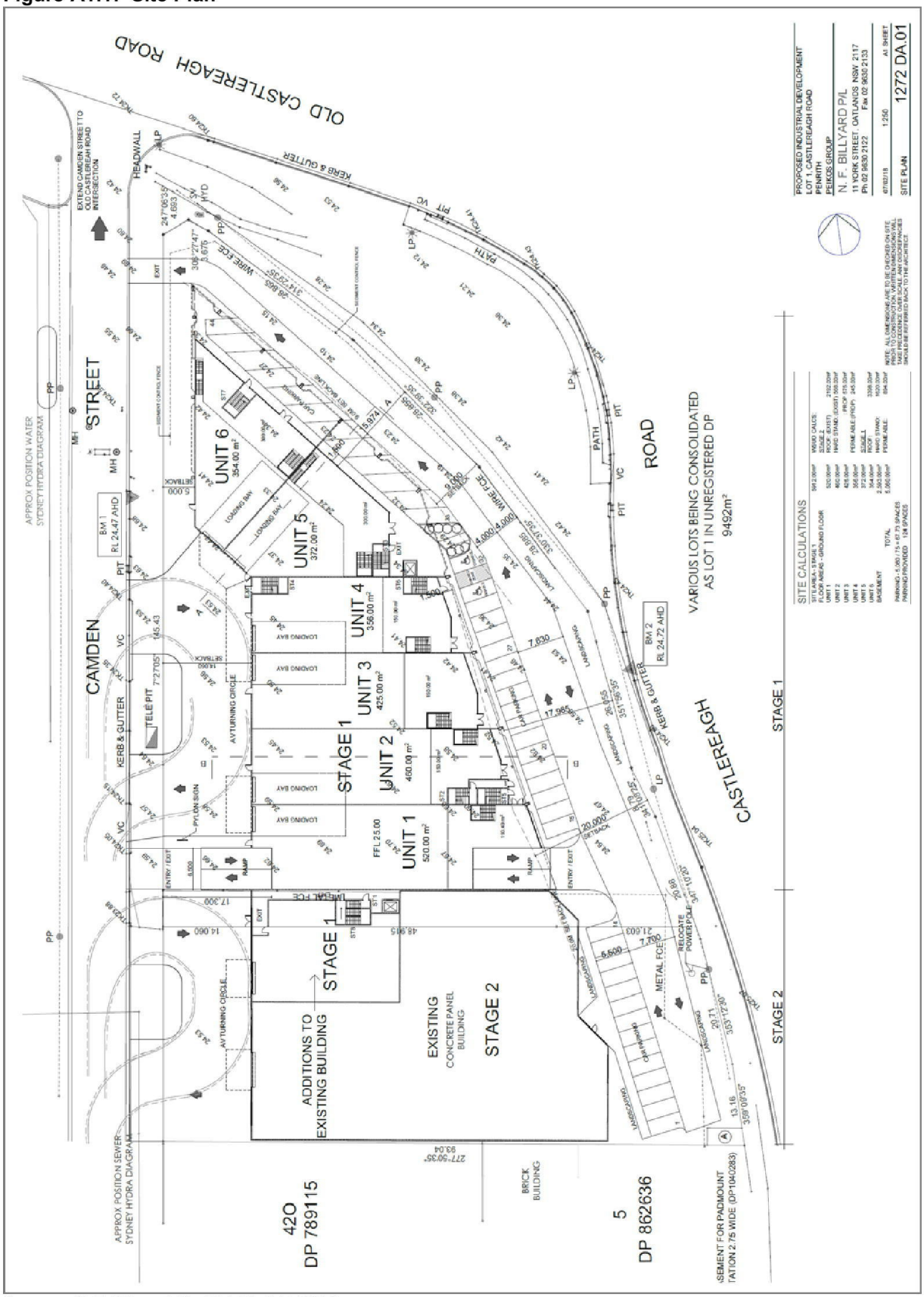
This assessment concludes that the traffic, road safety and car parking elements of the proposed industrial units are in accordance with the relevant standards and guidelines for such developments and is worthy of approval.

Garry Kennedy

Director

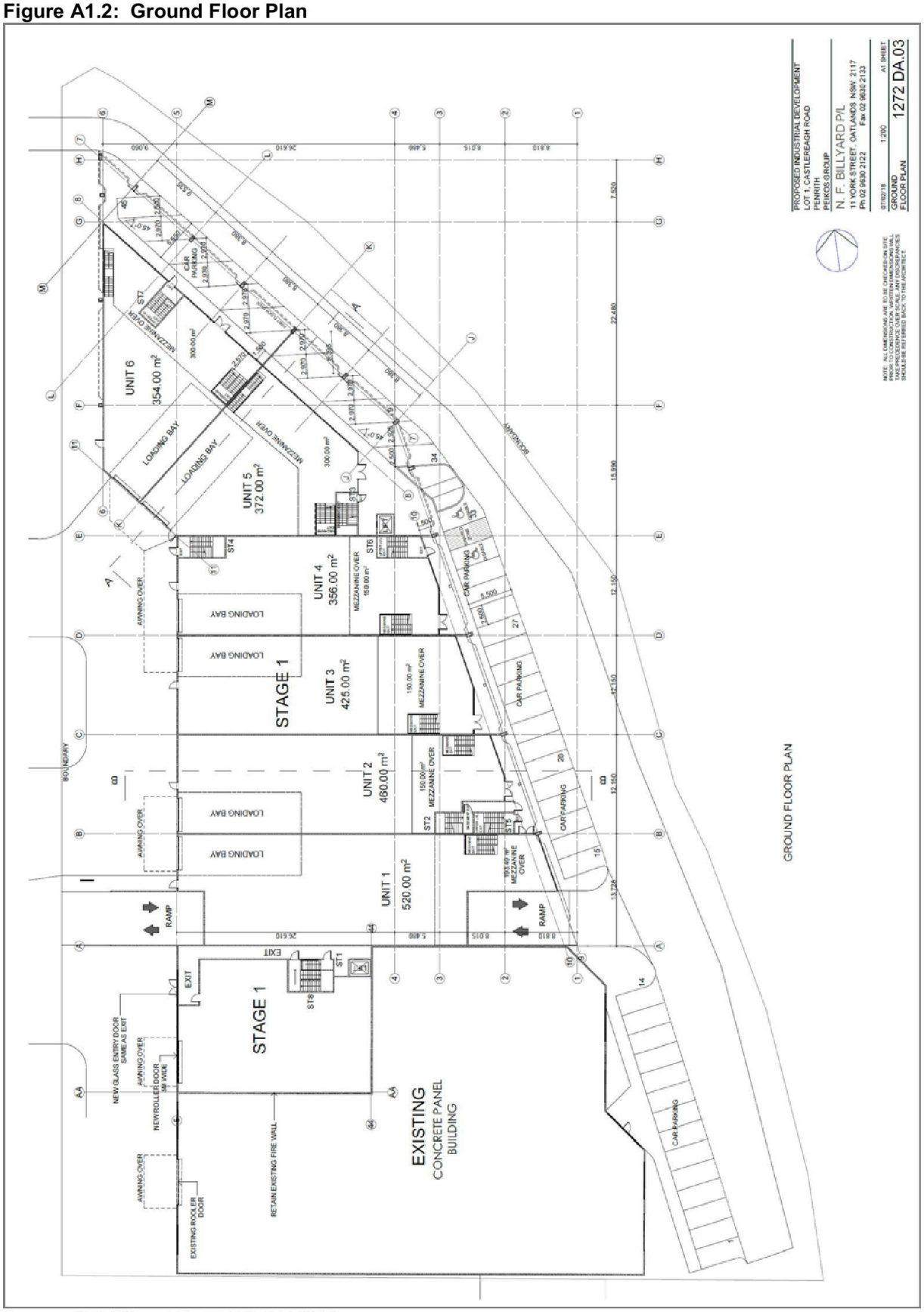
APPENDIX 1 ARCHITECTURAL PLANS

Figure A1.1: Site Plan



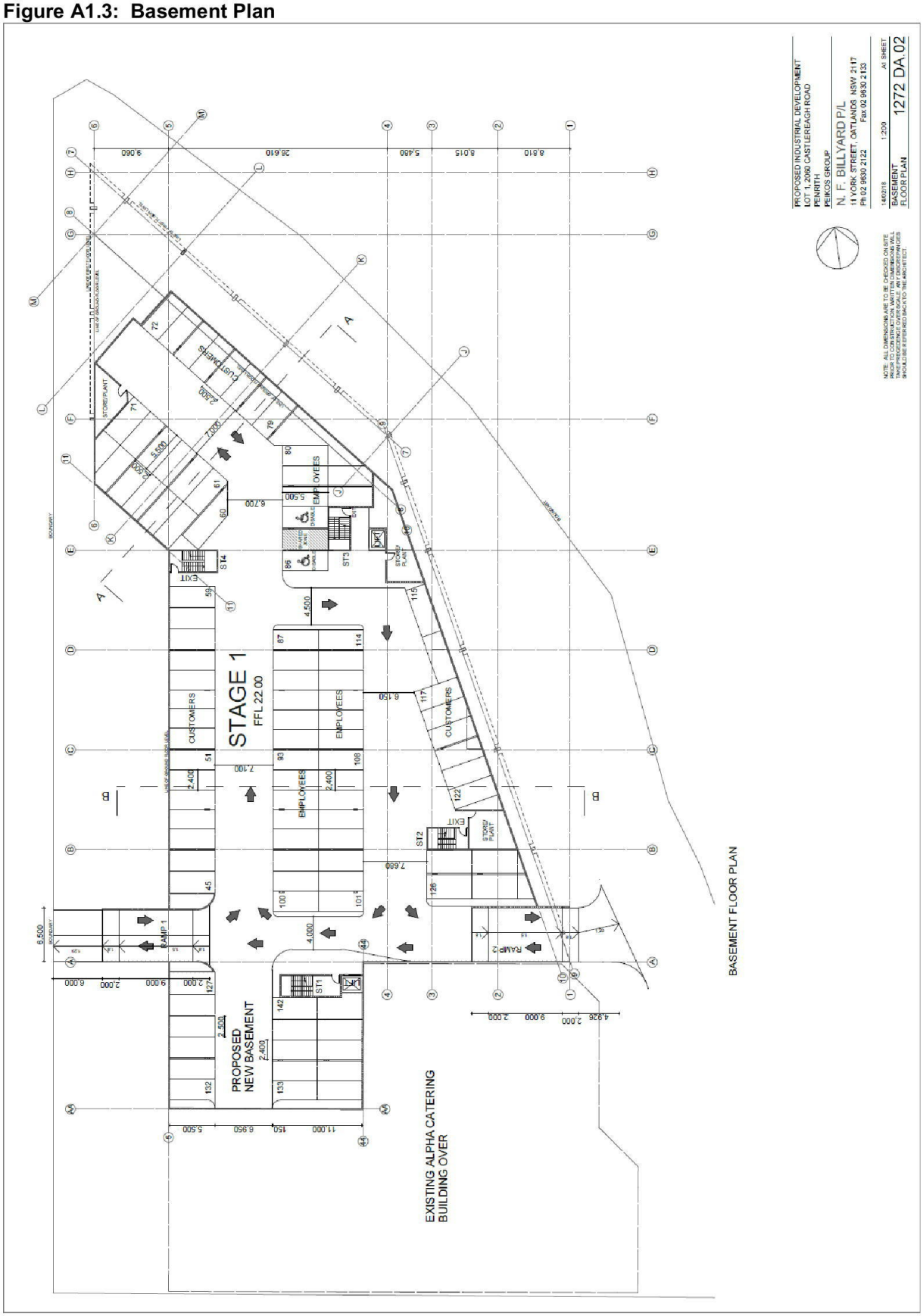
Source: N F Billyard Pty Ltd Pty Ltd 2018

Figure A1.2: Ground Floor Plan



Source: N F Billyard Pty Ltd Pty Ltd 2018

Figure A1.3: Basement Plan



Source: N F Billyard Pty Ltd Pty Ltd 2018