

Proposed Storage Facility, Lots 1059 and 1060, Precinct 3 – Caloundra South Master Plan

Traffic Report

Revision B

26 March 2019

Our Ref: 1074_TPA321

Prepared for: Town Planning Alliance

Prepared by: Richard Quinn
Director, Q Traffic
BE Civil, MIEAust, RPEQ

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Q Traffic has prepared this report solely for the benefit and use of our Client for the sole purpose of lodging a development application. This report takes into account the particular instructions and requirements of the client. In preparing this report we assume that all information and documents provided to us by the client or their consultants were complete, accurate and current. Q Traffic will not be liable for any conclusion drawn resulting from omission or lack of full disclosure by the client or their consultants.

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1.0 Introduction

Q Traffic was commissioned to undertake a Traffic Impact Assessment of a proposed storage facility to be located on Lots 1059 and 1060 of Precinct 3 within the Caloundra South Master Plan area.

The site is located in the Sunshine Coast Local Government Area within Stockland's 'Aura' master planned community, and the proposal has been assessed considering the relevant controls, including those outlined in the Caloundra South, Northern Locality - Business and Industry Area Plan of Development - Precinct 3, 4, 5 and Part 6, prepared by Urbis.

This report provides relevant background information regarding the amended proposal, and documents the results and findings of our investigations addressing the following key traffic design elements and issues:

- Vehicular access arrangements;
- On-site car parking provision;
- On-site bicycle parking provision;
- Service vehicle requirements; and
- The traffic impacts anticipated as a result of the development.

3.0 Proposal

The development application seeks approval for a storage facility (Kennards Self Storage) on the subject site. Plans of the proposal are included as **Appendix A**, and an extract from the ultimate site plan is provided as **Figure 3** below. The proposed development comprises four (4) two-storey buildings which will be delivered under two (2) stages as follows:

Stage 1

- Building 1: 3,164m²
- Building 2: 2,736m²
- **Stage Total: 5,900m²**

Stage 2

- Building 3: 3,033m²
- Building 4: 2,285m²
- **Stage Total: 5,318m²**

Stage 1 + Stage 2

- **Total: 11,218m²**

The maximum leasable area (MLA) of the facility (excluding office area, corridors, lifts, stairs, amenities etc) is estimated to be 80% of the total building area, i.e. approximately 4,700m² under Stage 1 and 9,000m² under Stage 2.

A total of 14 line-marked parking spaces are ultimately proposed to be provided (including seven (7) fronting the office and seven (7) within the aisles fronting the buildings), however the proposed circulation aisles throughout the site would allow parking directly fronting storage units on the ground level, with adequate width for vehicle circulation past these parked vehicles.

The traffic elements of the proposed development are discussed further in the following sections, considering the requirements of the Plan of Development and the design requirements stipulated in the relevant Australian Standards.



Figure 3: Proposed Site Layout (Stage 1 and Stage 2)

3.1 Operation of Facility

Given the specific nature of the use proposed, reference has been made to the *Self Storage Facility Traffic and Parking Study* undertaken by Aurecon on behalf of the Self Storage Association of Australia (dated 1 February 2012), which identifies typical vehicle parking demands and trip generation rates exhibited by Self Storage units around Australia and provides a series of parking and traffic characteristics for these facilities.

As outlined in this document, there are three (3) main types of storage facility, as described following:

- Ranch style, where vehicles can park adjacent to their storage unit. All storage units are at ground level;
- Multistorey, where storage units are located in multistorey buildings, with vehicles parking in a central car park or loading area and accessing units via stairs and lifts; and
- Mixed, which is a combination of both the ranch and multistorey layout.

The development proposed under this application is a 'mixed' facility, where vehicles can park adjacent to storage units on the ground floor, and first floor units are accessed via stairs and lifts (with vehicles parked on the ground level).

Self storage facilities are typically comprised of two separate parts:

- the office area, which is open to the public during designated business periods, and which is typically staffed by up to two employees who attend to the management of the storage facility; and
- the storage area which is generally secured by gates, and which may or may not allow 24 hours access to existing storage customers.

A wide variety of people use self storage, ranging from large multi-national companies, to individuals storing personal belongings. The *Self Storage Facility Traffic and Parking Study* undertaken by Aurecon reveals that:

- Commercial customers generally account for around 25% of all self storage business, with the remaining 75% of customers being private individual customers;
- 37% of business users would access their unit once or more per week;
- 88% of private individual customers access their unit every month or less; and
- 27% of private individual customers access their unit less than three times a year.

As part of the *Self Storage Facility Traffic and Parking Study* undertaken by Aurecon, site visits were made to 14 operational facilities. Very little activity was observed at the office and in the storage area during business hours. Visits to the office generally lasted no longer than 10 minutes, and vehicle parking areas always had a large number of unoccupied spaces.

The Aurecon Report makes reference to the typical warehouse vehicle parking rates of approximately 1 space per 300m² GFA, and concludes that the application of this parking rate to self storage facilities results in an excessive number of vehicle parking spaces being provided, given the limited staffing and visitation characteristics at self storage facilities. This is discussed further in the following sections, in the context of the expected traffic and parking characteristics of the proposed development.

3.2 Vehicle Access

As shown in the plans included as **Appendix A**, vehicular access to the site is proposed via two driveways onto the proposed new road which will extend along the southern boundary of the site (Edison Crescent). Both of these driveways will be delivered under Stage 1 of the development.

The western driveway will be an entry only driveway, and the eastern driveway will be an exit only driveway. These driveways are approximately 6.0m and 6.3m wide respectively, and would be adequate to accommodate the entry and exit manoeuvres of the largest vehicles requiring access to the site i.e. a 10.24m long rear-loading refuse collection vehicle, and a 12.5m long heavy rigid vehicle, as shown in the vehicle tracking analyses included as **Appendix B**.

The position of the driveways on the outside of the bend in the frontage road will ensure that traffic approaching / departing the site will have visibility towards the driveways and/or opposing traffic travelling along the frontage road.

Overall, the site access arrangements are considered to be appropriate given the nature of the use and the proposed road environment.

3.3 Car Parking Provision

Appendix K in the Plan of Development for Caloundra South – Precincts 3 – 6 (part), prepared by Urbis (October) outlines applicable car parking rates for the precinct. Whilst parking rates for warehouse and industrial uses are provided, this document does not provide a parking rate for a use of the specific nature of that proposed i.e. a self storage facility. Accordingly, reference has been made to the *Self Storage Facility Traffic and Parking Study* undertaken by Aurecon on behalf of the Self Storage Association of Australia (dated 1 February 2012).

The surveys undertaken as part of the study undertaken by Aurecon reveal that an appropriate level of on-site car parking for self storage facilities is substantially lower than any published parking rates for warehouse / industry uses. The Aurecon report recommends the following level of parking provision for a self storage facility based upon the 95th percentile demand.

Stage 1 (MLA 3,000m² - 6,000m²)

- Staff parking: 2 spaces
- Office parking: 2 spaces
- Storage area parking: 5 spaces
- Trailer / ute parking: 1 space
- **TOTAL: 10 spaces**

Stage 2 (MLA 6,000m² - 9,500m²)

- Staff parking: 2 spaces
- Office parking: 3 spaces
- Storage area parking: 5 spaces
- Trailer / ute parking: 1 space
- **TOTAL: 11 spaces**

The Aurecon Report states however that ‘mixed’ sites may require less designated storage area parking if they have a significant number of drive up storage units in a ranch style arrangement, given that vehicles will typically park in aisles adjacent to their storage units.

As shown in the plans of the proposal which are included as **Appendix A**, the following level of on-site car parking is proposed:

- Stage 1: 12 parking spaces, including seven (7) fronting the office and five (5) within the aisles fronting the buildings; and
- Stage 2: 14 parking spaces, including seven (7) fronting the office and seven (7) within the aisles fronting the buildings

In addition, the proposed circulation aisles throughout the site would allow parking directly fronting storage units on the ground level, with adequate width for vehicle circulation past these parked vehicles.

In light of the above and based upon the findings of the *Self Storage Facility Traffic and Parking Study* undertaken by Aurecon, the proposed level of on-site car parking under each stage of the development is expected to be more than adequate to cater for the demand generated by the facility, which will be very limited given the nature of the use proposed.

3.4 Parking Layout and Internal Configuration

The car park layout has been designed in accordance with the requirements of the relevant Australian Standards, as outlined following:

- Standard parking spaces fronting the office are 2.7m wide and 4.8m long (with provision for 600mm overhang at the end of the parking space to achieve 5.4m overall length), exceeding the requirements stipulated in Figure 2.2 of AS2890.1 for User Class 3 parking;

- The parking space for people with disabilities is located in convenient proximity to the office. This space is 2.4m wide and 5.4m long with an adjacent shared zone, meeting the dimensional requirements stipulated in AS2890.6;
- The parking aisle in the parking module fronting the office is 6.6m wide, exceeding that required for User Class 3 parking (i.e. 5.8m minimum); and
- Parallel parking spaces within the circulation aisles are 2.4m wide and 6.6m long, exceeding the minimum requirements in Figure 2.5 of AS2890.1.

In summary, the car park layout is efficient and legible, and designed in accordance with AS2890.1 and AS2890.6 requirements.

3.5 Bicycle Parking Provisions

Appendix K in the Plan of Development for Caloundra South – Precincts 3 – 6 (part), prepared by Urbis (October) outlines applicable bicycle parking rates for the precinct. Whilst parking rates for warehouse and industrial uses are provided, this document does not provide a parking rate for a use of the specific nature of that proposed i.e. a self storage facility.

The proposed development will have very limited staffing requirements, with only a maximum of 2 – 3 staff expected to be on-site at any time. Furthermore, given the nature of the facility, the proportion of visitors that will travel to the development by bicycle is extremely low.

In light of the above, it is considered that an appropriate level of on-site bicycle parking provision is five (5) spaces. This level of provision would be more than adequate to cater for the bicycle parking demand generated by only 2 – 3 staff, and a very limited number of visitors to the facility.

As shown in the plans included as **Appendix A**, an area fronting the office space at the south-western corner of Building 1 has been designated for bicycle parking. This area would be adequate to accommodate five (5) bicycle parking spaces within racks or rails, with the detail of the bicycle parking provisions to be refined at detailed design stage.

3.6 Servicing Arrangements

It is understood that the largest vehicles expected to regularly require access to and egress from the site are a 10.24m long rear-loading refuse collection vehicle, and an 8.8m long medium rigid vehicle (MRV).

Notwithstanding this, as shown in the vehicle tracking analyses included as **Appendix B** and as previously discussed, the proposed access driveways would be adequate to accommodate the entry and exit manoeuvres of up to a 12.5m heavy rigid vehicle (HRV).

In addition, the design allows for forward access and egress by a 10.24m long rear-loading refuse collection vehicle, which could collect refuse within the aisle fronting the office or alternatively, within the aisle adjacent to the bin store area at the south-western corner of Building 1.

As shown in the results of the vehicle tracking analyses included as **Appendix C**, the design allows for circulation by a 12.5m long heavy rigid vehicle throughout the development under both Stage 1 and Stage 2, for direct access to/from the ground floor units. Access to first floor units would be via goods lifts, consistent with the typical arrangements at self-storage facilities.

Overall, the servicing arrangements are considered to be appropriate given the scale and nature of the proposed development.

4.0 Traffic Impact Assessment

The *RTA Guide to Traffic Generating Developments* provides traffic generation rates for various land uses, however no rate is recommended for a use of the specific nature of that proposed. Accordingly, reference has been made to the *Self Storage Facility Traffic and Parking Study* undertaken by Aurecon on behalf of the Self Storage Association of Australia (dated 1 February 2012), which suggests that self storage facilities of between 6,000m² and 9,500m² (i.e. the ultimate development scenario) generate the following volumes of traffic during the weekday peak hours:

- AM Peak Hour: 15 – 30 vehicle trips
- PM Peak Hour: 20 – 30 vehicle trips

These levels of traffic generation are very low, equating to only one (1) vehicle trip per 2 – 4 minutes during the peak hours. Once distributed onto the surrounding road network, these additional movements would be within the range of typical fluctuations in traffic volumes, therefore insignificant from a transport planning perspective.

Furthermore, it is noted that the subject site is zoned 'Industrial' under the Plan of Development for the precinct, and it is therefore assumed that the traffic impact of a development of the nature of that proposed has been considered as part of the road network planning for the area, and the previous approvals for the overall master plan area.

In summary, no material impact upon the performance of the surrounding road network is anticipated as a result of the development. As a consequence, no external roadworks are required to support the development from a capacity perspective.

5.0 Recommendation

In light of the information contained within this report, we consider that the proposal is satisfactory from a traffic operations perspective and recommend that the development application be approved.

5.1 Qualifications

This report has been approved by Richard Quinn | Director | RPEQ 08565

APPENDIX A

Proposed Development Plans



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ORIGINAL SHEET SIZE: A1

NO	DATE	DESCRIPTION
A	08-02-19	CLIENT ISSUE
B	21-02-19	GENERAL REVISION
C	19-03-19	GENERAL REVISION

REFER CIVIL WORKS DOCS FOR LEVELS

CLIENT ISSUE

RP Description
Lot 1059 & 1060 on RP?????
Parish of ????
County of ????
Total Site Area: 1.075ha

project: PROPOSED STORAGE FACILITY

location: AURA BUSINESS PARK, QUEENSLAND

client: KENNARDS SELF STORAGE

sheet title: SITE PLAN - STAGE 1

1 SITE PLAN - STAGE 1
1 : 250

DATE: 19-03-19	SCALE: AS SHOWN
DRAWN: Author	PLOTTED:
JOB No: 3714	DRAWING No: DA-0002
	AMEND: C



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• REFER CIVIL WORKS DOCS FOR LEVELS

CLIENT ISSUE

RP Description
Lot 1059 & 1060 on RP?????
Parish of ????
County of ????
Total Site Area: 1.075ha

neale windress and associates pty.ltd. architects

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project: PROPOSED STORAGE FACILITY

location: AURA BUSINESS PARK, QUEENSLAND

client: KENNARDS SELF STORAGE

sheet title: SITE PLAN - STAGE 1 AND 2

LANDSCAPE REQUIRED= 10750x10%= 1075 sq.m
LANDSCAPE PROVIDE= 1127 sq.m (10.5%)

1 SITE PLAN - STAGE 1 AND 2
1 : 250

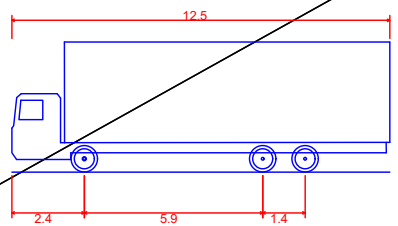
DATE: 19-03-19 SCALE: AS SHOWN

DRAWN: CAS PLOTTED:

JOB No: 3714 DRAWING No: DA-0003 AMEND: D

APPENDIX B

Vehicle Tracking Analyses – Access Driveways



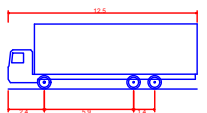
HRV - Heavy Rigid Vehicle
Overall Length 12.500m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.417m
Track Width 2.500m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 12.500m

APPENDIX C

Vehicle Tracking Analyses – Circulation



RP Description
Lot 1059 & 1060 on RP?????
Parish of ????
County of ????
Total Site Area: 1.075ha



HRV - Heavy Rigid Vehicle
Overall Length 12.500m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.417m
Track Width 2.500m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 12.500m

drawing title			
Lots 1059 and 1060, Precinct 3, Caloundra South Master Plan - Vehicle Tracking Analyses			
drawn: RQ	Scale: 1:500 @ A3	date: 26/03/19	
The base drawing is provided to Q Traffic by others. This drawing is draft for discussion purposes only			
1074_TPA321	SK.03	B	
project no.	drawing no.	rev	

