## **Traffix Group**

## Traffic Engineering Assessment

Proposed Section 87A Amendment 28-32 Albert Road, South Melbourne

Prepared for DCF Property Group

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### **Document Control**

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## 1. Introduction

Traffix Group has been engaged by DCF Property Group to undertake a traffic engineering assessment for a Proposed Section 87A Amendment at 28-32 Albert Road, South Melbourne.

## 2. Proposal and Background

The site has a current permit under Permit No. 1051/2017 (dated 19<sup>th</sup> February, 2019), which was issued at the directive of VCAT.

This allows for a mixed use development comprising:

- 55 dwellings including:
  - 8 x one-bedroom dwellings,
  - 8 x two-bedroom dwellings,
  - 38 x three-bedroom dwellings, and
  - 1 x four-bedroom dwelling.
- A 51m<sup>2</sup> food and drink premises,
- A 311m<sup>2</sup> wellness spa,
- 149 car spaces, 148 of which were provided within an automatic parking system, with the remaining space being an at grade DDA space,
- 32 x bicycle spaces on-site, and
- 6 bicycle spaces along the site's frontage to Albert Road.

The proposed Section 87A amendment seeks to alter the development to provide:

- 44 residential dwellings comprising:
  - 16 x one-bedroom dwellings,
  - 4 x two-bedroom dwellings,
  - 18 x three-bedroom dwellings, and
  - 6 x four-bedroom dwellings.
- 88 x residential hotel rooms,
- · A bar and restaurant that will operate as a part of the hotel,
- 69 x 'standard' car spaces over 3 basement levels, accessed via separate entry and exit car lifts, and
- 34 x bicycle spaces on-site.

The access arrangements to the site will remain unchanged, with vehicles entering via a rear Right-of-Way (ROW), and exiting via Albert Road.

A breakdown of the development summary that compares the approved and amended scheme is detailed in the table below.

#### Table 1: Comparison Development Summary

	Approved Scheme by VCAT			Pr	oposed Amendment (date		
Use	Size/No.	Min. Parking Allocation	Min. Allocation Rate	Size/No.	Parking Allocation	Min. Allocation Rate	Variation
One-bedroom apt. (1)	8	8	1 space per apt.	16	16	1 space per apt.	+8 apts., +8 spaces
Two-bedroom apt.	8	8	1 space per apt.	4	4	1 space per apt.	-4 apts., -4 spaces
Three-bedroom apt.	38	76	2 spaces per apt.	18	36	2 spaces per apt.	-20 apts., -40 spaces
Four-bedroom apt.	1	2	2 spaces per apt.	б	12	2 spaces per apt.	+5 apts., +10 spaces
Spare Resident Car Parking	-	45 spaces	-	-	1	-	-44 spaces
Apartment Sub-total	55	139 spaces (including spare)	2.53 spaces per apt.	44	69 car spaces	1.6 spaces per apt.	-11 apts., -70 spaces -0.93 car spaces / apt.
Residential Visitors	-	6 spaces	0.12 spaces per apt.	-	-	-	-6 spaces -0.12 car space / apt.
Wellness Centre	311m²	2 00000	Approx. 1 space per	-	-	-	Demoved
Food and Drink Premises	51m²	5 spaces	100m²	-	-	-	Removed
Residential Hotel (3)	-	-	-	88	-	-	+88 rooms
Total Car Parking	-	148 car spaces		-	69 car spaces		-70 car spaces

Note 1: A number of one-bedroom apartments are nominated on plans as 'one-bedroom plus study'. The studies are open and small in size (typically study nook) and accordingly, have not been assessed as separate bedrooms.

Note 2: Allocation of spare resident car parking to be determined at time of apartment sales and will allow dwellings to be provided with resident car parking above the minimum requirements.

Note 3: Includes ancillary restaurant and restaurant associated with the hotel.

## 3. Existing Conditions

#### 3.1. Subject Site

The subject site is 28-32 Albert Road, South Melbourne. The table below summarises the key characteristics of the subject site.

Table 2: Subject Site Description

Characteristic	Description
Address	28-32 Albert Road, South Melbourne
Area	1,014m <sup>2</sup>
Frontages	20.3m to Albert Road 16.4m to rear ROW
Zoning	Commercial 1 Zone (C1Z)
Activity Centre	Domain Precinct
Current use of site	Office building
Car parking and loading provision	Carpark on-site
Vehicle access	Vehicle access to Albert Road and rear ROW
On-street parking along site frontage	None

A locality plan, aerial photograph and land use zoning map is provided at Figure 1 to Figure 3.





Figure 1: Locality Plan (Source: Melway Online)





Figure 2: Aerial Photograph (Source: Nearmap)





Figure 3: Land Use Zoning Map (Source: Planning Schemes Online)



#### 3.2. Transport Network

#### 3.2.1. Road Network

**Albert Road** is generally a Department of Transport (DoT) declared Arterial Road (Transport Zone 2), extending between Canterbury Road to the south-west and St Kilda Road to the north. However, the section between Kings Way and St Kilda Road (i.e. adjacent to the subject site) is not located within a Transport Zone and is a Council managed road.

The Albert Road carriageway adjacent to the site accommodates a traffic lane and a bicycle lane in each direction. Kerbside parking (including a section of 90 degree parking south of the site) on the west side and 60 degree parking on the east side.

Parking in Albert Road, in the vicinity of the site, is generally subject to short-term, ticketed restrictions (i.e. 1P/2P Ticket 8am-6pm Monday-Friday).

On-street ticketed parking is charged at \$3.40 per hour.

Works are currently being undertaken on Albert Road as part of the ANZAC Train Station construction. This has affected the level of on-street car parking on the Albert Road median. Future access to the station is to be taken from Albert Road Reserve to the east of the site. Figure 5 illustrates the future position of ANZAC Station and pedestrian access points.

**Palmerston Crescent** is classified as a 'local road' under Port Phillip City Council's Register of Public Roads (dated 1<sup>st</sup> March, 2016) and extends in a north-south direction between Park Street in the north and Kings Way in the south. In the vicinity of the site, Palmerston Crescent has an undivided carriageway width of approximately 12.4m accommodating two-way traffic and kerbside parking.

Access to Palmerston Crescent at Park Street is left-in/left-out only.

Parking in Palmerston Crescent, in the vicinity of the site, is generally subject to short-term ticketed restrictions, '1P Ticket 8am-6pm Monday-Friday' on the west side and '2P Ticket 8am-6pm Monday-Friday' on the east side.

On-street ticketed parking is charged at \$3.70 per hour.

A posted speed limit of 40km/h applies to Palmerston Crescent.

A network of **ROWs** is located to the rear of the site. The ROWs provide access to the rear of properties that front Albert Road and Palmerston Crescent.

Two east-west ROWs south of the site are generally 3m wide between walls and each operate in a one-way arrangement, with the northern ROW facilitating westbound traffic and the southern ROW facilitating eastbound traffic.

The ROW to the rear of the site varies in width. A wide central area connecting the ROWs provides for vehicle passing.



#### **3.2.2. Car Parking Conditions**

Car parking in the vicinity of the site is highly controlled, with parking generally subject to short-term restrictions (1/4P, 1/2P, 1P and 2P), and is generally ticketed. There are also a number of 'Taxi Zone' spaces located along Albert Road.

There is no unrestricted car parking in the vicinity of the site.

There are also a number of off-street commercial car parks in the vicinity of the site, with the closes being at 13-21 Palmerston Crescent, which is located along the western side of the site. This carpark has approximately 340 car spaces.

#### 3.2.3. Public Transport

The site is located within the PPTN area as shown in Figure 4 and as such has access to train and bus services within convenient walking distance of the site.

The site is located within the Domain Precinct and has excellent access to public transport services, with the future ANZAC Railway Station to be located within 100m of the site of the site (as shown in Figure 5). Eight tram services also operate along St Kilda Road, which is in close proximity to the site.

A summary of the accessible public transport services is provided in Table 3. The available public transport services within close proximity of the site are shown at Figure 6.



Figure 4: Principal Public Transport Network Map (source: planning.vic.gov.au)

#### Traffic Engineering Assessment



Figure 5: ANZAC Station location



Figure 6: Public Transport Map (source: ptv.vic.gov.au)

Service	Between	Via				
St Kilda Road – located a	St Kilda Road – located approximately 100m north-east of the site					
Tram Route 3-3a	Melbourne University & East Malvern	Caulfield North & Balaclava				
Tram Route 5	Melbourne University & Malvern	Dandenong Road				
Tram Route 6	Moreland & Glen Iris	High Street & Lygon Street				
Tram Route 16	Melbourne University & Kew	St Kilda Beach				
Tram Route 64	Melbourne University & East Brighton	Hawthorn Road				
Tram Route 67	Melbourne University & Carnegie	Glen Huntly Road				
Tram Route 72	Melbourne University & Camberwell	Commercial Road & Burke Road				
Park Street - located 15	0m north-west of the site					
Tram Route 58	West Coburg & Toorak	Toorak Road				
Park Street – located approximately 600m walking distance west of the site						
Tram Route 1	East Coburg & South Melbourne Beach	Southbank & Carlton North				
Birdwood Avenue – located approximately 600m walking distance north-east of the site						
Bus Route 605	Gardenvale & City (Queen St)	Caulfield North & Armadale				

#### Table 3: Summary of Public Transport Services



## 4. Traffic Engineering Assessment

#### 4.1. Car Parking Requirements of Planning Permit

The car parking requirements of the site are set out in Condition 19 of Permit No. 1051/2017 are:

19. Car Parking Allocation

Without the further written consent of the Responsible Authority car parking for the approved development must be allocated on any Plan of Subdivision as follows:

- A minimum of 1 car space for each one and two bedroom apartment
- A minimum of 2 car spaces for each three or four bedroom apartment
- A minimum of 6 visitor spaces
- A minimum 3 spaces for the commercial spaces for staff
- No car parking spaces are permitted to be leased to anyone not working or living on the premises.

The proposed amendment generally complies with the above with the exception of the provision for visitor car parking, while the requirements for commercial parking relate to the previously proposed wellness centre and food and drink premises (which have been removed).

#### 4.2. Statutory Car Parking Assessment

The proposed development falls under the land-use categories of 'dwelling' and 'residential hotel' under Clause 73.03 of the Planning Scheme. The Planning Scheme sets out the parking requirements for new developments under Clause 52.06. The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Given that the bar and restaurant will operate as ancillary uses to the residential hotel, it is not necessary to consider the statutory car parking rate for these uses separately.



Residential Hotel does not fall under a specific land use category in Table 1 of Clause 52.06-5, and accordingly, car parking for this use is required to the satisfaction of the Responsible Authority.

The statutory parking requirements are set out at Clause 52.06-5 of the Planning Scheme. The site is located within the Principal Public Transport Network area and accordingly the Column B parking rates apply.

The statutory car parking assessment is set out in the table below, which compares the approved car parking provision with the proposed amendment.

Use	No.	Statutory Parking Rate (Column B)	Car Parking Requirement (Note 1)	Car Parking Provision	Shortfall/ Surplus
Current Proposal – Plan	s Dated Apr	il, 2022			
Residential					
One-bedroom apt.	16		16	16	0
Two-bedroom apt.	4	r car space per dwennig	4	4	0
Three-bedroom apt.	18	2 car spaces per dwelling	36	36	0
Four-bedroom apt.	6		12	12	0
Residential Visitors	44 (apt.)	No Requirement	0	0	0
Unallocated resident car	spaces			1	N/A
Subtotal			68	69	+1
Residential Hotel					
Hotel Suites	88	To the satisfaction of the Resp	onsible Authority	0	N/A
TOTAL			68	69	N/A
Approved Scheme – Dec	cision Plans	Dated 31 <sup>st</sup> January, 2019			
Residential					
One-bedroom apt.	8	1 opt oppop por dwolling	8	8	0
Two-bedroom apt.	8	r car space per uwening	8	8	0
Three-bedroom apt.	38	2 cor choco por dwalling	76	76	0
Four-bedroom apt.	1	z cal spaces per dweining	2	2	0
Residential Visitors	55 (apt.)	No Requirement	0	6	+6
Unallocated resident car	spaces			45	N/A
Subtotal			94	145	+45

Table 4: Statutory Car Parking Assessment – Clause 52.06-5

#### Traffic Engineering Assessment

#### 28-32 Albert Road, South Melbourne

Use	No.	Statutory Parking Rate (Column B)	Car Parking Requirement (Note 1)	Car Parking Provision	Shortfall/ Surplus
Commercial					
Food and Drink Premises	51m²	3.5 spaces per 100m² LFA	1	+2 (minus any parkin	
Indoor Recreation Facility (wellness spa)	311m²	3 r To the satisfaction of the Responsible Authority		required for the wellness centre)	
TOTAL 95 148 +			+47		
Note 1: Clause 52.06-5 specifies that where a car parking calculation results in a requirement that is not a whole number, the number of spaces should be rounded down to the nearest whole number. Note 2: A total of 5 car spaces are unallocated and will be allocated to residents at the time of sale as additional car spaces.					

Based on the above, the assessed car parking requirement for the development is 68 resident spaces. Car parking for the residential hotel is to the satisfaction of the Responsible Authority.

The provision of 69 resident car spaces results in a surplus of 1 car space. There is no parking shortfall associated with the hotel if Council deems that the non-provision of car parking is sufficient for this use.

A car parking comparison for each land-use category between the amended development and approved scheme identifies:

- Residents complies with Clause 52.06 and the rates set out in Condition 19.
- Residential visitors reduction of 6 spaces (6 spaces to 0 spaces), however there is no statutory requirement for visitor parking under Clause 52.06-5.
- Commercial the uses have been removed, as have the car spaces.



#### 4.3. Reducing the Requirement for Car Parking

#### 4.3.1. Car Parking Demand Assessment

Clause 52.06-7 allows for the statutory car parking requirement to be reduced (including to zero). An application to reduce (including reduce to zero) the number of car spaces required under Clause 52.06-5 or in a schedule to the Parking Overlay must be accompanied by a Car Parking Demand Assessment.

Clause 52.06-7 sets out that a Car Parking Demand Assessment must have regard to the following key factors:

- The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.
- The variation of car parking demand likely to be generated by the proposed use over time.
- The short-stay and long-stay car parking demand likely to be generated by the proposed use.
- The availability of public transport in the locality of the land.
- The convenience of pedestrian and cyclist access to the land.
- The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.
- The anticipated car ownership rates of likely or proposed visitors to or proposed occupants (residents or employees) of the land.
- Any empirical assessment or case study.

#### **Resident Parking**

The amended development provides the statutory car parking requirement for residents on the site and is generally consistent with the approved scheme.

Accordingly, we are satisfied that the resident car parking provision is appropriate.

#### **Visitor Parking**

We note that since the permit was issued for the development, Amendment VC148 has been implemented and accordingly, Column B rates now apply to the site. As a result, visitor parking is now not required for the development.

The previously provided 6 visitor spaces have been removed.

We are satisfied that the reduction/removal of visitor car parking for this development is supported on the basis of:

- The site is located within the Principle Public Transport Network (PPTN) area and as such if this was a 'new' application there would be no requirement to provide any visitor car parking.
- The site has access to a high level of public transport services suitable for visitors to access the site, including future train services (ANZAC Station) and multiple tram services, including:

- ANZAC Railway Station, which will be located at the Domain Interchange and provide a connection to the new Melbourne Metro Rail Project, and
- eight tram routes operating within the Domain Interchange located 500m from the site.
- The site has access to bicycle infrastructure with on-road bicycle lanes and provision of on-site bicycle infrastructure.
- Peak visitor demands typically occur at those times at which lower demands occur in association with commercial uses in the nearby area (weekday evening & weekends) and as a result would typically be accommodated on-street in the wider area or within suitable commercial car parking.

#### **Residential Hotel Parking**

The car parking demands generated by residential hotels can vary based on the site's location in relation to public transport access, location within urban or rural areas, and proximity to other facilities and attractions.

The non-provision of car parking for inner city hotels is common practice. Guests booking accommodation at the proposed hotel are likely to rely on other means of travel when staying at the hotel (taxi/uber, hire car/share car, public transport, etc.).

In this case, the proposed residential hotel will largely provide accommodation for guests visiting family, friends, doctors/hospital or for business purposes and accordingly, is unlikely to generate a significant parking demand.

ANZAC Station is located approximately 100m from the site, and will open in 2025. This station will also connect to Melbourne Airport when the Melbourne Airport Rail Link opens in 2029, which will effectively provide a direct connection for hotel guests visiting from overseas/interstate.

It must be recognised that hotel guests factor into their stay whether or not the hotel provides car parking and whether they require it. Prospective customers that cannot obtain on-site car parking (and require it) will likely book a different hotel.

It is noted that on-street car parking in the nearby area is not suitable for long-term guest or staff car parking and as such on-street car parking would typically not be possible (i.e. on-street demands cannot reasonably occur). In the event that any guests or staff drive to the site and require long-term car parking, they would be instructed to utilise off-street commercial car spaces in the nearby area.

#### **Residential Hotel Drop Off and Pick Up**

Guests arriving/departing the site via Taxi/rideshare would do so using on-street parking.

Historically, the supply of on-street parking in the nearby area has been high due to wide road reserves and vehicle carriageways. The construction of ANZAC station, Melbourne Metro and development in the area is serving as a catalyst for change as to how the streets within the Domain Precinct are used and configured.



The Domain Precinct Parking Study (20<sup>th</sup> May, 2019) summarises the changes to car parking supply as a result of ANZAC station:

With development comes change and for the Domain Precinct this includes the loss of approximately 200 on-street parking spaces. Of these 200 spaces, some 80 spaces have already been removed due to construction works. A further 120 spaces (approx.) will be removed to expand the Albert Park Road Reserve.

The decision to greatly expand the Albert Park Road Reserve is greatly contributing to the loss of on-street parking in the area.

These changes are not confined to the immediate vicinity of ANZAC station. The Port Phillip Domain Precinct Public Realm Masterplan (adopted the 18<sup>th</sup> September, 2019) sets out a series of complementary streetscape improvements in and around ANZAC Station and throughout the Domain Precinct. Improvements include upgraded tram stops, new bicycle lane connections, better footpaths and landscaping improvements. The space for most of these improvements largely comes from a relocation of road space away from vehicle carriageways and on-street parking.

In our view, strategic decisions have already been made in regard to the supply of on-street car parking in the nearby area - it is of a lower priority than improving sustainable transport options (trams, walking and cycling) and providing improved streetscapes, including the significantly larger Albert Road reserve. The future of transport in the Domain Precinct for all residents, workers and visitors is via sustainable transport modes, rather than a continued high reliance on private vehicles and on-street parking.

To address the loss of car parking in the area, Council has identified that better management of existing resources is required. This is discussed in the Domain Precinct Parking Study and the Port Phillip Domain Precinct Public Realm Masterplan. The Masterplan states that:

Council is proposing to review all on-street car parking spaces in the precinct to optimise parking efficiency in the Domain Precinct and in proximity to Anzac Station.

Priority will be given to disabled, loading, drop-off / pick-up and other special use spaces to support people and business functions that often do not have alternative transport options.

The prioritisation of disabled, loading, drop-off / pick-up and other special use zones is entirely consistent with the management of on-street parking resources within large Activity Centres, the Melbourne CBD and nearby inner areas of Melbourne with high-density land use. Allowing on-street parking to be used for drop-off/pick-up activities in the nearby area, including the hotel, is acceptable in this context.

These on-street parking facilities are of benefit to both the proposed hotel and residents/workers of the nearby area. The rise of rideshare services and home delivery (online shopping, food, etc.) mean that very short-term and Loading Zone parking areas are becoming increasingly important.

Council has provided the following plans for the configuration of Albert Road and surrounds after completion of ANZAC station.



Figure 7: Concept Plan of Albert Road - post completion of ANZAC station (Source: Appendix D - Domain Precinct Public Realm Plans – Cross Yarra Partnership)

We understand that this plan is generally accurate, however the pedestrian crossing of Albert Road will move to a position north of the subject site.

Of importance to note is that the site is surrounded by on-street Loading Zones on the northwest side of the street (where the subject site is located) and a Kiss n Ride and Taxi Rank on the south-east side of Albert Road (opposite the site). Loading Zones are usable by taxis for the purposes of dropping-off/picking-up passengers (as per Road Rule 179(f)).

The Taxi Rank on the south-east side of Albert Road adjacent to the station provides a location for taxis to easily pick up hotel guests. The Taxi Rank can also be used for guest drop off.

A proportion of guests will also arrive from Kings Way and will likely be dropped on the northwest side of Albert Road. Kings Way generally provides more connectivity to the wider road network than St Kilda Road (Albert Road will be limited to left-in/left-out).

Taxis arriving from Kings Way can drop off guests at any short-term parking spaces on the north-west side of Albert Road. This includes the on-street Loading Zones immediately abutting the site and the 7 x Taxi Zone spaces immediately south of the site (6pm-6am).

The removal of the approximately 9m wide crossover to the subject site, to be replaced by a 3m crossover, should allow one on-street car space to be reinstated. In our view, this new space should be restricted to short-term (No Parking or P5min or similar) or Loading Zone parking.

Based on the above, we are satisfied that there are ample opportunities for hotel guest dropoff/pick-up in close proximity to the site.

It is not realistically possible to predict the demand for on-street parking in the immediate area in 2025, nor the demand for hotel drop-off/pick-up services. It is possible that in the longer term, the airport rail link may reduce the demand for taxis accessing this hotel (see figure below for the current two routes proposed for the airport rail link).

The reduced on-street parking may be counterbalanced by a range of factors including an uptake in sustainable transport modes. There might be commercial incentive for privately run, paid public carpark. Council may need to review restrictions in the future to see if more very-short term parking restrictions should be introduced – which would cater for the increasing demand associated with short-term parking by taxis/rideshare services, home deliveries of parcels/food/etc by all residents and businesses in the area.



Figure 8: Airport Rail Route (Source: Victoria's Big Build)

#### 4.3.2. Appropriateness of Providing Fewer Car Spaces than the Demand Assessment

If the number of car spaces is not met on-site under the Car Parking Demand Assessment, the second step is to consider whether it is appropriate to allow fewer spaces to be provided than the number likely to be generated by the site as assessed by the Car Parking Demand Assessment.

Clause 52.06-7 sets out a series of car parking provision factors that should be considered when assessing the appropriateness of providing fewer car spaces on the site than are likely

to be generated by the use. Although it is anticipated that the car parking demand will be met on-site, we have still considered the relevant decision factors that also support the level of car parking proposed under the amended scheme.

The table below reviews the proposed car parking reduction against the decision factors of Clause 52.06-7.

De	cision factor of Clause 52.06-7	Response
·	The Car Parking Demand Assessment.	The car parking demand assessment indicates that resident parking will be met on-site and that the provision is generally consistent with what is endorsed. Additionally, visitor car parking can be accommodated in the nearby area, and that this is appropriate.
		The hotel is not expected to generate the demand for any on-street car parking given the location of the site in relation to its proximity to the CBD and ANZAC Station, and the highly constrained car parking conditions in the area. Accordingly, we consider that the non-provision of car parking for the residential hotel is appropriate.
•	Any relevant local planning policy or incorporated plan.	We are satisfied that the level of car parking proposed encourages sustainable modes of transport in line with local policies and state government directives.
•	<ul> <li>The availability of alternative car parking in the locality of the land, including:</li> <li>Efficiencies gained from the consolidation of shared car parking spaces.</li> <li>Public car parks intended to serve the land.</li> <li>On street parking in non residential zones.</li> <li>Streets in residential zones specifically managed for non-residential parking.</li> </ul>	On-street car parking surrounding the site is highly constrained, and is mostly short-term in nature (i.e. 2P or less). Accordingly, residents, staff of the hotel and hotel patrons will not be able to park on-street in the nearby area. Accordingly, we are satisfied that the impacts of the proposed amendment to on-street car parking will be minimal.
•	On street parking in residential zones in the locality of the land that is intended to be for residential use.	

#### Traffic Engineering Assessment

#### 28-32 Albert Road, South Melbourne

De	cision factor of Clause 52.06-7	Response
•	Local traffic management in the locality of the land.	The lower provision of car parking assists in reducing the traffic impacts of the development on the local and broader road network and encourages sustainable transport choices.
•	Access to or provision of alternative transport modes to and from the land.	The site is located within the Domain Precinct, is situated within the PPTN and has excellent access to public transport services, with the future ANZAC Railway Station to be located within 100m of the site. The site also has access to a large number of tram services that operate along St Kilda Road. Additionally, given the use proposed on-site (residential hotel), we expect that a large portion of trips to/from the site will be via taxis and other ride share vehicles rather than via their own private vehicle.
•	Any other relevant consideration.	The site is located within the Category 1 levy area of the 'Congestion Levy', which is applied by the State Revenue Office of Victoria.
		This levy applies to private and public commercial car spaces that are used for staff parking purposes within the inner Melbourne area.
		The Congestion Levy applies to long stay car spaces only and for the purposes of this levy, all private car parks (not open to the general public) are considered to contain only long stay car spaces. Car parking allocated for resident car parking is excluded.
		The Congestion Levy is an annual charge calculated per car space, although exemptions can be sought for certain car spaces (e.g. DDA compliant car spaces used by a disabled person, fleet vehicles that are stored overnight). The congestion levy is \$1,480 for 2021 for the Category 1 area (red area, including the subject site) and \$1,050 for the Category 2 area (blue area). This levy is designed to discourage both the provision and use of on-site parking for employee parking, by increasing the cost of long- term parking on an on-going basis. It is designed to encourage the use of alternative transport

Decision factor of Clause 52.06-7	Response
	modes by employees, by increasing car parking costs. Accordingly, irrespective of the current Planning Scheme requirement for this site under Clause 52.06-5, it needs to be recognised that this tax is designed to limit the provision and use of car parking by staff in these areas at a state government level.

Overall, we are satisfied that the level of car parking proposed under the amendment is acceptable and supported under the relevant decision guidelines of Clause 52.06 of the Planning Scheme.



#### 4.4. Bicycle Parking Provision

Clause 52.34 of the Planning Scheme specifies bicycle parking requirements for new developments. The purpose of Clause 52.34 is to:

- To encourage cycling as a mode of transport.
- To provide secure, accessible and convenient bicycle parking spaces and associated shower and change facilities.

The development provides 34 x bicycle parking spaces as follows:

- 28 secure bicycle spaces within the basement for residents, provided via 'Ned Kelly' bicycle racks.
- 6 open bicycle rails at ground level within the Albert Road verge.

The statutory bicycle parking requirement of the development under Clause 52.34 is set out in the table below.

Use	se Size/No. Statutory Bicycle Parking Requirement		No. Bicycle		
		Residents or Employees	Visitors or Customers	required	
Dwelling	45	1 space to each 5 dwellings	1 space to each 10 dwellings	9 resident 5 visitor	
Residential Hotel <sup>(1)</sup>	88	1 space to each 10 dwellings	1 space to each 10 dwellings	9 employee 9 customer	
TOTAL				32 spaces	

Table 6: Statutory Bicycle Parking Assessment - Clause 52.34

Note 1: As there is no rate for a residential hotel under Clause 52.34 of the Planning Scheme, the rate for' residential building other than specified in this table' as been adopted.

Based on the above, satisfies the bicycle parking provision requirements of Clause 52.34.



The table below reviews the design of the bicycle parking provided.

Table 7: Design of Bicycle Parking

Requirement	Assessment	Design Response				
End of Trip Facilities - Table 2 & 3 of Clause 52.34-5						
If 5 or more employee bicycle spaces are required, 1 one shower for the first 5 employee bicycle spaces, plus 1 to each 10 employee bicycle spaces thereafter.	✓	One shower is required for 9 employee bicycle spaces and one is provided.				
1 change room or direct access to a communal change room to each shower. The change room may be a combined shower and change room.	~	The changeroom is combined with the shower.				
Design of Bicycle Parking						
Does the design comply with the design requirements of Clause 52.34-6?	$\checkmark$	All bicycle spaces are designed in accordance with the bicycle parking specifications contained at				
Does the design comply with the requirements of AS2890.3-2015?	✓	Appendix D.				

Based on the above, we are satisfied that the provision of bicycle parking accords with the requirements of Clause 52.34.

#### 4.5. Review of Carpark Layout and Vehicle Access Arrangements

Traffix Group has provided design advice to the project architect to achieve a satisfactory carpark layout. The proposed parking layout has been assessed under the following guidelines:

- · Clause 52.06-9 of the Planning Scheme (Design Standards for car parking),
- · Clause 55.03-9 (Access Objective) and Clause 55.03-10 (Parking Location Objective),
- AS2890.1-2004 Part 1: Off-Street Car Parking, where relevant, and
- AS2890.6-2009 Part 6: Off-Street Car Parking for People with Disabilities.

A detailed assessment of the carpark layout and vehicle access arrangements against the relevant design standards of the Planning Scheme and Australian Standards is provided at Appendix B.



The proposed carpark layout is fully compliant with these standards, with the following exceptions:

- Column locations within the basement carpark are slightly non-compliant, due to the structural constraints of the development. There are 4 car spaces per level that are adjacent to columns that slightly encroach into the 'Clearance Required' area specified in Diagrams 1 of Clause 52.06-9. This encroachment is as a result of columns extending 1.55m into car spaces, rather than only 1.25m (i.e. extends 300mm further into car spaces), as required by the Planning Scheme. This level of encroachment is relatively minor and does not impact vehicle access to the spaces. These spaces will all be allocated to residents who will become familiar with these arrangements, and we consider this acceptable.
- Car spaces 4, 20 and 21 are located adjacent to walls, which are only offset 100mm-200mm, rather than the required 300mm under Diagram 1. All of these car spaces provide at least 2.7m clear width, which is required for vehicle door opening under AS2890.1-2004, and accordingly, we are satisfied that this objective is achieved. All of these spaces will be allocated to residents who will become familiar with these arrangements, and we consider this acceptable.

Swept path diagrams demonstrating accessing to all critical car spaces and vehicle circulation movements are provided Appendix C.

Based on the above, we are satisfied that the design and layout of the carpark and vehicle accessways complies with the objectives of Clause 52.06 and the Australian Standards, where relevant.

#### 4.5.1. Car Lift System

It is proposed to access the site via two separate mechanical car lifts. Drivers will enter via the ROW along the western side of the site, and enter the western car lift. On exit, drivers will then proceed to the eastern car lift, and exit the site onto Albert Road.

We have been in discussion with the car lift supplier and have specified that the system will have the characteristics outlined in Table 8. We recommend that these minimum specifications be included as a condition of any permit issued.



Table 8: Assessment of Car Lift Design	Table 8:	Assessment	of Car	Lift	Design
--	----------	------------	--------	------	--------

System Characteristic	Specifications	Response
Lift System	2 x Liftronic Hydraulic Lift	Specification Sheet attached at Appendix D.
Type of systemHydraulic lift that stops at 4 levels		
Usable Platform Dimensions	Min. 3.0m wide x 5.85m platform	Satisfies requirements of Clause 52.06-9. Accommodates the 5.2m long B99 design vehicle with 300mm clearance at each end.
Internal Headroom Clearance	2.2m	Satisfied minimum headroom requirements of Clause 52.06-9 and AS2890.1-2004.
Minimum Lift Speed	0.5 m/s	
Additional Notes	Activated by remote	

We recommend that these lift specifications be included as a condition of any permit issued.

Swept path diagrams demonstrating access in and out of both car lifts via the B99 design vehicle specified in Appendix B of AS2890.1-2004 are attached at Appendix C to this report.

#### 4.6. Loading and Waste Collection Arrangements

Clause 65.01 of the Planning Scheme states that the Responsible Authority must consider a number of matters as appropriate including:

• The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

A loading bay is provided on-site at lower ground level, which will be accessed via the rear ROW.

We understand from the client that the loading will generally be undertaken via smaller trucks and vans, and that the largest anticipated vehicle on-site will be the 6.4m mini waste truck.

Loading and waste collection vehicles will enter the site via the ROW, and will manoeuvre onto a rotating turntable platform within the loading area. This platform will turn vehicles to enable them to exit via the ROW in a forward direction.

The manufacturers specification sheet for this turntable system is attached at Appendix E.

Swept path diagrams demonstrating this manoeuvre are attached at Appendix C.

Overall, we are satisfied that the proposed loading and waste collection arrangements are acceptable.



#### 4.7. Traffic Impact Assessment

Given the inner city location of the subject site, it is anticipated that traffic generation rates will be generally lower than standard residential dwellings.

Traffix Group has reviewed traffic generation data from other residential developments in inner city locations, and found that a rate of 0.2 vehicle trips per car space is appropriate for peak hour periods.

For the proposed 69 car spaces, this results in a traffic generation of 14 vehicle trips per peak hour period.

During the AM peak hour, traffic will be split 20%/80% between in and out movements, while during the PM peak hour, traffic will be split 60%/40% between in and out.

The table below summarises the traffic generation of the proposal.

 Table 9: Expected Traffic Distribution

Period	Entry	Exit
AM Peak	3	11
PM Peak	10	4

All traffic will enter the site via the ROW along the western boundary of the site, and exit onto Albert Road, on the eastern boundary of the site.

Separate car lifts are provided at both the entry and exit.

Overall the proposed level of traffic is low, and represents 1 vehicle trip every 4-5 minutes in the peak hour period.

This level of traffic is substantially lower than what is endorsed, where a total of 149 car spaces are provided via the same access arrangements (ROW entry and Albert Road exit).

#### 4.7.1. Car Lift Capacity

A queuing analysis has been undertaken to determine the expected queues of vehicles waiting to access the basement and determine the impact on the rear ROW.

A queuing model has been developed to assess the lift capacity based on the above predicted traffic volumes using standard queuing theory as recommended by AS2890.1-2004.

Given that two lifts are provided, only the entry lift has been considered for the vehicle queuing, which will accommodate up to 10 vehicles (in the PM peak hour). For exiting vehicles, queuing will occur within the basement carpark, and would have no external impacts.

Table 10 summarises the key operating statistics of the proposed car lift (entry system), adopting the traffic generation estimates. These values were calculated using standard queuing theory, adopting an average service time of 75 seconds.

The 'service time' is essentially defined as the time taken for an entry or exit movement to be completed and for the car lift to return to its starting position (whether it be ground or a parking level). It is calculated based on the speed of the lift and making allowances for vehicles to enter and exit the system.

Table 10: Predicted Queuing Characteristics of Car Lift (Entry Lift)

Statistic	Value
System Capacity	48 vehicles per hour
Approach Volume	10
Number of People Accessing the System at Any One Time	
System being empty (i.e. no one using the system)	79.2%
System in use by one user	16.5%
System in use by one user and a queue of one user	3.4%
System in use by one user and a queue of two users	0.7%
External 98 <sup>th</sup> Percentile queue	1 veh
External 95 <sup>th</sup> Percentile queue	0 veh
Mean Number of Vehicles (including the vehicle being moved within the system)	0.26 veh
Time Delays	
Mean Delay – all vehicles	19.74 secs

#### **Review of Queues**

A critical aspect of the design of car lifts is providing adequate space for vehicle queuing.

Clause 3.5 of AS2890.1-2004 provides the following guidance in relation to access to mechanical parking installations:

Access to mechanical parking installations such as car stackers, shall be by means of access driveways and circulation roadways designed in accordance with this Standard, and providing sufficient vehicle storage to ensure that queues of vehicles awaiting service by the installation do not extend beyond the property boundary of the parking facility under normally foreseeable conditions.

When determining the amount of vehicle storage required, queue lengths shall be calculated by applying conventional queuing theory to estimated mean arrival rates during normal peak periods, and mean service rates under continuous demand, determined as closely as possible from observing the operation of similar facilities. The storage area shall be designed to accommodate the 98th percentile queue under such conditions.

In this case, the 98<sup>th</sup> percentile queue is 2 users. This comprises 1 car being moved within the lift and 1 user waiting outside the system. This external user would be someone on a car parking level, waiting to exit the building or a user waiting in the waiting bay provided to enter the carpark.

The entry car lift is offset 5.4m from the property boundary, meaning that one vehicle can prop on-site while waiting for the lift to be vacant. Accordingly, the 98<sup>th</sup> percentile queue can be accommodated on the site and we are satisfied that the car lift will operate satisfactorily, provide a high level of service to users and offer highly functional car parking arrangement.



## 5. Conclusions

Having undertaken a detailed traffic engineering assessment of the Proposed Section 87A Amendment at 28-32 Albert Road, South Melbourne, we are of the opinion that:

- a) the proposed development has a statutory car parking requirement of 68 resident car spaces under Clause 52.06-5, plus any additional car parking required by the Responsible Authority for the residential hotel,
- b) the provision of 69 resident car spaces satisfies the car parking requirement for the residential component, while car parking for the residential hotel component is required to the satisfaction of the Responsible Authority,
- c) the Car Parking Demand assessment indicates that car parking for both the dwellings and the residential hotel component is expected to be met on-site, as hotel patrons and staff and not able to reasonably maintain an on-street car space in the vicinity of the site, and will be expected to seek alternative modes of transport,
- d) the level of car parking proposed by the development is also supported by the following relevant decision factors under Clause 52.06-7:
  - i) the proposed rate of car parking supports the objectives of Council's local transport policies,
  - ii) the site is highly accessible via numerous forms of alternative transport, including the future ANZAC station, which is directly opposite the site,
  - iii) on-street car parking in the vicinity of the site is highly constrained, and residents/staff/hotel patrons will not practically be able to maintain a car park on-street in the nearby area,
  - iv) the proposed development proposed car parking via a car lift system, which limits the type of users who can utilise the system (i.e. only long-term users such as residents),and
  - v) the provision of car parking is consistent with the objectives of the Congestion Levy implemented by the State Government in the locale of the site.
- e) the car parking provision for residents is consistent with the current planning permit conditions,
- the proposed parking layout and vehicle access arrangements generally accord with the requirements of the Planning Scheme, Australian Standards (where relevant) and current practice,
- g) the proposed car lift arrangement is appropriate, and will not result in queuing extending beyond the site boundary,
- h) we recommend that a condition of any permit issued include the requirement for the car lifts to have the following specifications:
  - i) Car lift internal platform to have a clear width of 3.0m wide x 5.85m long

- ii) Minimum headroom within system to be at least 2.2m
- iii) Car lift speed to be at least 0.5 m/s
- iv) Car lift system to be activated by remote
- i) bicycle parking is provided in accordance with the Clause 52.34 of the Planning Scheme and accords with the design requirements of AS2890.3-2015,
- j) the level of traffic generated by the proposal can be accommodated without any adverse impacts to the operation of the local road network,
- k) loading and waste collection arrangements will be undertaken from within the dedicated loading bay proposed on-site and are appropriate, and
- there are no traffic engineering reasons why a planning permit for the proposed section 87a amendment at 28-32 Albert Road, South Melbourne should be refused, subject to appropriate conditions.





# Appendix A

**Development Plans** 

**Traffix Group** 

G26080R-01C







C A952



![](_page_40_Picture_0.jpeg)

# **Appendix B**

**Carpark Layout Review** 

**Traffix Group** 

G26080R-01C

Requirement	Assessment	Design Response
Clause 52.06-9 Design Standard 1 – Accessways		
Must be at least 3m wide	~	Accessways and car lifts are greater than 3m in width.
Have an internal radius of at least 4m at changes of direction or intersection or be at least 4.2m wide.	✓	No bends in accessway.
Allow vehicles parked in the last space of a dead-end accessway in public car parks to exit in a forwards direction with one manoeuvre.	N/A	Not a public carpark.
Provide at least 2.1m headroom beneath overhead obstructions, calculated for a vehicle with a wheel base of 2.8m.	~	Complies, minimum headroom of 2.2m provided.
If the accessway serves four or more car spaces or connects to a road in a Transport Zone 2 or Transport Zone 3, the accessway must be designed so that cars can exit the site in a forward direction.	✓	Complies, all vehicles can exit the site in a forward direction.
Provide a passing area at the entrance at least 6.1m wide and 7m long if the accessway serves ten or more car parking spaces and is either more than 50m long or connects to a road in a Transport Zone 2 or Transport Zone 3.	N/A	Accessway is less than 50m long. In any event, separate entry and exit crossovers are provided, meaning that a passing area is not necessary.
Have a corner splay or area at least 50% clear of visual obstructions extending at least 2m along the frontage road from the edge of an exit lane and 2.5m along the exit lane from the frontage, to provide a clear view of pedestrians on the footpath of the frontage road. The area clear of visual obstructions may include an adjacent entry or exit lane where more than one lane is provided, or adjacent landscaped areas, provided the landscaping in those areas is less than 900mm in height.	~	Splays provided on both sides of the exit accessway at the site boundary.
If an accessway to four or more car parking spaces is from land in a Transport Zone 2 or Transport Zone 3, the access to the car spaces must be at least 6m from the road carriageway.	N/A	Access is not to a Transport Zone.
If entry to the car space is from a road, the width of the accessway may include the road.	N/A	Not applicable

Table 11: Carpark Layout and Access Assessment

#### Traffic Engineering Assessment

#### 28-32 Albert Road, South Melbourne

	L				Assessment	Design Response
lause 52.00	5-9 Design S	Standard 2 – Car	Parking Spa	ices		
car parking s ninimum dii 2.06-9. Ingle of car space accessway	spaces and mensions as es to Accessway	accessways mu s outlined in Tab width Car park width	st have the le 2 under Cl Car park leng	lause <sub>9th</sub>	~	All car spaces are 2.6m wide x 4.9m with a 6.4n wide access aisle, or 2.8m wide from a 5.8m
Parallel	3.6 m	2.3 m	6.7 m			wide aisle.
45°	3.5 m	2.6 m	4.9 m			Access to and from the
60°	4.9 m	2.6 m	4.9 m			critical car spaces with
90°	6.4 m	2.6 m	4.9 m			the basement carpark
	5.8 m	2.8 m	4.9 m			have been checked for
	5.2 m	3.0 m	4.9 m			access by the B85
	4.8 m	3.2 m	4.9 m			design car (specified a
ote to Table 2: Som 52890.1-2004 (off od less to marked s e to be used in pre- sabled spaces which	ne dimensions in Tab street). The dimensio paces to provide imp ference to the Austra ch must achieve Aus	ble 2 vary from those shown ons shown in Table 2 alloca proved operation and acces alian Standard AS2890.1-20 tralian Standard AS2890.6-	in the Australian Sta te more space to aisl s. The dimensions in 004 (off street) except -2009 (disabled).	andard le widths Table 2 nt for		2004).
han: A column, tree or tree guard, which may project into a space if it is within the area marked 'tree or column permitted' on Diagram 1. A structure, which may project into the space if it is at least 2.1 metres above the space.				compliant, due to the structural constraints of the development. There are 4 car spaces per level that are adjacent to columns that slightly		
A structu least 2.1	d´on Diagra ure, which m metres abo	im 1. hay project into t ove the space.	he space if it	mn t is at		the development. Then are 4 car spaces per level that are adjacent to columns that slightly
A structu least 2.1 Diagram 1 Cl	ed' on Diagra ure, which m metres abo earance to ca	Im 1. hay project into the space. Ar parking spaces Dimensions in milling Clearance re	netres	mn t is at		the development. Ther are 4 car spaces per level that are adjacent to columns that slightly encroach into the 'Clearance Required' area specified in Diagrams 1 of Clause 52.06-9. This encroachment is as a result of columns extending 1.55m into ca spaces, rather than onl 1.25m (i.e. extends 300mm further into ca spaces), as required by the Planning Scheme. This level of encroachment is

#### 28-32 Albert Road, South Melbourne

Requirement	Assessment	Design Response
		arrangements, and we consider this acceptable. Car spaces 4, 20 and 21 are located adjacent to walls, which are only offset 100mm-200mm, rather than the required 300mm under Diagram 1. All of these car spaces provide at least 2.7m clear width, which is required for vehicle door opening under AS2890.1-2004, and accordingly, we are satisfied that this objective is achieved. All of these spaces will be allocated to residents who will become familiar with these arrangements, and we consider this acceptable.
Car spaces in garages/carports must be at least 6m long and 3.5m wide for a single space and 5.5m wide for a double space measured inside the garage/carport.	N/A	No garages proposed.
Where parking spaces are provided in tandem, an additional 0.5m in length must be provided between each space.	✓	Tandem spaces are provided with an additional 500mm in length.
Where two or more car parking spaces are provided for a dwelling, at least one space must be under cover.	✓	All spaces are under cover.
Disabled car parking spaces must be designed in accordance with AS2890.6-2009 and the Building Code of Australia. Disabled car parking spaces may encroach into an accessway width specified in Table 2 by 0.5m. A minimum headroom of 2.5m is to be provided above the disabled car space in accordance with AS2890.6- 2009.	N/A	No disabled spaces.

#### Traffic Engineering Assessment

#### 28-32 Albert Road, South Melbourne

Requirement		Assessment	Design Response	
	Clause 52.06-	d 3 - Gradients		
Accessway grades must not be steeper than 1:10 (10 per cent) within 5 metres of the frontage to ensure safety for pedestrians and vehicles. The design must have regard to the wheelbase of the vehicle being designed for; pedestrian and vehicular traffic volumes; the nature of the car park; and the slope and configuration of the vehicle crossover at the site frontage. This does not apply to accessways serving three dwellings or less.			✓	Complies, accessway does not exceed 1:10 for the first 5m into the site.
Ramps (except within 5 metres of the frontage) must have the maximum grades as outlined in Table 3 and be designed for vehicles travelling in a forward direction.Type of car parkLength of rampMaximum gradePublic car parks20 metres or less1:5 (20%)longer than 20 metres1:6 (16.7%)Private or residential car parks20 metres or less1:4 (25%)longer than 20 metres1:5 (20%)		✓	Complies, carpark is generally flat.	
Where the difference in grade between two sections of ramp or floor is greater that 1:8 (12.5 per cent) for a summit grade change, or greater than 1:6.7 (15 per cent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.			✓	Complies, carpark is generally flat.
Plans must include an greater than 1:5.6 (18 apart for clearances, to responsible authority	assessment of gra per cent) or less that the satisfaction o	ide changes of an 3 metres f the	~	Complies, carpark is generally flat.

![](_page_45_Picture_0.jpeg)

# Appendix C

**Swept Path Diagrams** 

![](_page_45_Picture_3.jpeg)

G26080R-01C

## ENTRY CAR LIFT - INGRESS EIXT CAR LIFT - EGRESS CONCIERGE RAMP 1:16 EXISTING ELM TREE To be replaced THE BOLND BOOSTER

#### CIRCULATION BETWEEN BASEMENT CAR LIFTS

![](_page_46_Figure_2.jpeg)

CHECKED BY L. FURNESS REV DATE NOTES DESIGNED BY 87A AMENDMENT A 26/05/22 J. YOUNG

28-32 ALBERT ROAD, SOUTH MELBOURNE MIXED USE DEVELOPMENT

GENERAL NOTES: BASE INFORMATION FROM: 17016\_a0099.dwg, 17016\_a0100.dwg & 17016\_a0100LG.dwg PREPARED BY Elenberg Fraser FILE NAME: G28080-02 sheet no.: 01

![](_page_46_Picture_7.jpeg)

![](_page_46_Figure_8.jpeg)

TING PIT EMOVED

 $\bigcirc$ 

-WSITOR BIKE RACKS (6)

EXISTING BIKE RACKS

#### VEHICLE PROFILE

![](_page_46_Figure_10.jpeg)

SCALE: 0 1:200 (A3) SCALE:

![](_page_46_Picture_12.jpeg)

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![](_page_46_Picture_14.jpeg)

#### LOADING BAY AREA - INGRESS

![](_page_47_Picture_1.jpeg)

#### LOADING BAY AREA - EGRESS

![](_page_47_Figure_3.jpeg)

 REV
 DATE
 NOTES
 DESIGNED BY
 CHECKED BY

 A
 26/05/22
 87A AMENDMENT
 J. YOUNG
 L. FURNESS

**28-32 ALBERT ROAD, SOUTH MELBOURNE** MIXED USE DEVELOPMENT GENERAL NOTES: BASE INFORMATION FROM: 17016\_a0099.dwg, 17016\_a0100.dwg & 17016\_a0100LG.dwg PREPARED BY Elenberg Fraser FILE NAME: G28080-02 SHEET NO.: 02

![](_page_47_Picture_8.jpeg)

#### VEHICLE PROFILE

![](_page_47_Figure_10.jpeg)

SCALE: 0\_\_\_\_\_ 1:200 (A3)

![](_page_47_Picture_12.jpeg)

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![](_page_47_Picture_14.jpeg)

CAR SPACE 1 - INGRESS

![](_page_48_Figure_1.jpeg)

CAR SPACE 1 - EGRESS

![](_page_48_Picture_3.jpeg)

CAR SPACE 4 - INGRESS

![](_page_48_Figure_5.jpeg)

CAR SPACE 4 - EGRESS

![](_page_48_Figure_7.jpeg)

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28-32 ALBERT ROAD, SOUTH MELBOURNE MIXED USE DEVELOPMENT

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SHEET NO.: 03

![](_page_48_Picture_12.jpeg)

#### VEHICLE PROFILE

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![](_page_48_Figure_15.jpeg)

![](_page_48_Picture_16.jpeg)

#### CAR SPACE 5 - INGRESS

![](_page_49_Figure_1.jpeg)

CAR SPACE 5 - EGRESS

![](_page_49_Figure_3.jpeg)

![](_page_49_Figure_4.jpeg)

![](_page_49_Figure_5.jpeg)

CAR SPACE 11 - EGRESS

![](_page_49_Picture_7.jpeg)

CHECKED BY L. FURNESS REV DATE NOTES DESIGNED BY 87A AMENDMENT A 26/05/22 J. YOUNG

28-32 ALBERT ROAD, SOUTH MELBOURNE MIXED USE DEVELOPMENT

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![](_page_49_Picture_12.jpeg)

#### **VEHICLE PROFILE**

![](_page_49_Figure_14.jpeg)

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![](_page_49_Picture_16.jpeg)

#### CAR SPACE 13 - INGRESS

![](_page_50_Figure_1.jpeg)

#### CAR SPACE 13 - EGRESS

![](_page_50_Figure_3.jpeg)

#### **CAR SPACE 18 - INGRESS**

![](_page_50_Figure_5.jpeg)

#### CAR SPACE 18 - EGRESS

![](_page_50_Picture_7.jpeg)

REV DATE NOTES DESIGNED BY CHECKED BY 87A AMENDMENT L. FURNESS A 26/05/22 J. YOUNG

28-32 ALBERT ROAD, SOUTH MELBOURNE MIXED USE DEVELOPMENT

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![](_page_50_Picture_12.jpeg)

#### **VEHICLE PROFILE**

![](_page_50_Figure_14.jpeg)

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![](_page_50_Picture_16.jpeg)

CAR SPACE 19 - INGRESS

![](_page_51_Figure_1.jpeg)

![](_page_51_Figure_3.jpeg)

#### **CAR SPACE 20 - INGRESS**

![](_page_51_Figure_5.jpeg)

CAR SPACE 20 - EGRESS

![](_page_51_Picture_7.jpeg)

REV DATE NOTES DESIGNED BY CHECKED BY 87A AMENDMENT A 26/05/22 J. YOUNG L. FURNESS 28-32 ALBERT ROAD, SOUTH MELBOURNE MIXED USE DEVELOPMENT

GENERAL NOTES: BASE INFORMATION FROM: 17016\_a0099.dwg, 17016\_a0100.dwg & 17016\_a0100LG.dwg PREPARED BY Elenberg Fraser FILE NAME: G28080-02 SHEET NO.: 05

![](_page_51_Picture_12.jpeg)

#### VEHICLE PROFILE

![](_page_51_Figure_14.jpeg)

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![](_page_51_Picture_16.jpeg)

CAR SPACE 21 - INGRESS

![](_page_52_Figure_1.jpeg)

CAR SPACE 21 - EGRESS

![](_page_52_Figure_3.jpeg)

 REV
 DATE
 NOTES
 DESIGNED BY
 CHECKED BY

 A
 04/05/2022
 87A AMENDMENT
 J. YOUNG
 L. FURNESS

**28-32 ALBERT ROAD, SOUTH MELBOURNE** MIXED USE DEVELOPMENT GENERAL NOTES: BASE INFORMATION FROM: 17016\_a0099.dwg, 17016\_a0100.dwg & 17016\_a0100LG.dwg PREPARED BY Elenberg Fraser FILE NAME: G28080-02 SHEET NO.: 07

![](_page_52_Picture_8.jpeg)

#### VEHICLE PROFILE

![](_page_52_Figure_10.jpeg)

SCALE: 0 1:200 (A3)

![](_page_52_Picture_12.jpeg)

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![](_page_52_Picture_14.jpeg)

![](_page_53_Picture_0.jpeg)

# **Appendix D**

## **Car Lift Specification Sheet**

**Traffix Group** 

G26080R-01C

	NORDIC ELEVATORS PTY LTD HYDRAULIC CAR LIFTS - Dimension Sheet											
LIFT CAR INTERNAL WIDTH	2500mm		2600mm		2700mm		2800mm		2900mm		3000mm	
DOOR TYPE	4PCO	6PCO	4PCO	6PCO	4PCO	6PCO	4PCO	6PCO	4PCO	6PCO	4PCO	6PCO
MINIMUM SHAFT WIDTH	3950	3525	4100	3660	4250	3790	4400	3925	4550	4060	4700	4195
												1
LIFT CAR INTERNAL DEPTH	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200	5200
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	5580	5670	5580	5670	5580	5670	5580	5670	5580	5670	5580	5670
MINIMUM SHAFT DEPTH THROUGH CAR	5760	5940	5760	5940	5760	5940	5760	5940	5760	5940	5760	5940
LIFT CAR INTERNAL DEPTH	5300	5300	5300	5300	5300	5300	5300	5300	5300	5300	5300	5300
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	5680	5770	5680	5770	5680	5770	5680	5770	5680	5770	5680	5770
MINIMUM SHAFT DEPTH THROUGH CAR	5860	6040	5860	6040	5860	6040	5860	6040	5860	6040	5860	6040
LIFT CAR INTERNAL DEPTH	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400	5400
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	5780	5870	5780	5870	5780	5870	5780	5870	5780	5870	5780	5870
MINIMUM SHAFT DEPTH THROUGH CAR	5960	6140	5960	6140	5960	6140	5960	6140	5960	6140	5960	6140
LIFT CAR INTERNAL DEPTH	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500	5500
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	5880	5970	5880	5970	5880	5970	5880	5970	5880	5970	5880	5970
MINIMUM SHAFT DEPTH THROUGH CAR	6060	6240	6060	6240	6060	6240	6060	6240	6060	6240	6060	6240
LIFT CAR INTERNAL DEPTH	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600	5600
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	5980	6070	5980	6070	5980	6070	5980	6070	5980	6070	5980	6070
MINIMUM SHAFT DEPTH THROUGH CAR	6160	6340	6160	6340	6160	6340	6160	6340	6160	6340	6160	6340
LIFT CAR INTERNAL DEPTH	5700	5700	5700	5700	5700	5700	5700	5700	5700	5700	5700	5700
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	6080	6170	6080	6170	6080	6170	6080	6170	6080	6170	6080	6170
MINIMUM SHAFT DEPTH THROUGH CAR	6260	6440	6260	6440	6260	6440	6260	6440	6260	6440	6260	6440
LIFT CAR INTERNAL DEPTH	5800	5800	5800	5800	5800	5800	5800	5800	5800	5800	5800	5800
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	6180	6270	6180	6270	6180	6270	6180	6270	6180	6270	6180	6270
MINIMUM SHAFT DEPTH THROUGH CAR	6360	6540	6360	6540	6360	6540	6360	6540	6360	6540	6360	6540
LIFT CAR INTERNAL DEPTH	5900	5900	5900	5900	5900	5900	5900	5900	5900	5900	5900	5900
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	6280	6370	6280	6370	6280	6370	6280	6370	6280	6370	6280	6370
MINIMUM SHAFT DEPTH THROUGH CAR	6460	6640	6460	6640	6460	6640	6460	6640	6460	6640	6460	6640
LIFT CAR INTERNAL DEPTH	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
MINIMUM SHAFT DEPTH SINGLE ENTRANCE	6380	6470	6380	6470	6380	6470	6380	6470	6380	6470	6380	6470
MINIMUM SHAFT DEPTH THROUGH CAR	6560	6740	6560	6740	6560	6740	6560	6740	6560	6740	6560	6740
MINIMUM PIT DEPTH	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
MINIMUM HEADROOM * (please refer to												
notes)	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400
Notes	Dimensions	as shown are r	ninimum dim	ensions								
	Minimum Pit	t Depth and He	eadroom is de	pendent on tr	avel and type	of piston (hy	draulic ram st	ages) Please d	confirm these	dimensions wi	ith Nordic Elev	ators prior
	to final desig	ŋn										
	Minimum Headroom dimensions are based on car beight at 2200mm Headroom can be reduced for a custom solution, however extra safety devices are required											
	to meet the	requirements	as per code. P	lease confirm	these dimens	ions with Nor	dic Elevators	prior to final d	lesian		, , , , , , , , , , , , , , , , , , , ,	
	Generally speed can range from 0.20m/s to 0.60m/s. However Note - Power requirements do increase with areater speed											

Machine room dimensions to be confirmed for each project to suit minimum size as required. Machine room location can be next to lift shaft at any level served

![](_page_55_Picture_0.jpeg)

# **Appendix E**

**Truck Turntable Specification Sheet** 

**Traffix Group** 

G26080R-01C

## **Product Summary**

## **VT-56**

Turntable Diameter: 6.0m

Turntable Capacity: 5.0 ton

Frame Finish: Hot dipped galvanised

**Deck Finish:** Galvanised chequerplate

**Turntable Controls:** Motorised as standard, forward/reverse with manual push button and remote control.

**Brief Description**: This rotating turntable is the perfect parking solution for smaller sized trucks. In fact, difficult parking in limited spaces is now as easy as the press of a button. This motorised turntable will quietly rotate your truck up to 360° and remote controls are available for all models. Your parking problems will be solved and a galvanised finish gives you a hardwearing framework that will stay rust-free

![](_page_56_Figure_8.jpeg)

![](_page_56_Picture_9.jpeg)

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![](_page_56_Picture_11.jpeg)

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