

To: Michelle King
From: Artemis Bacani
Date: 18 May 2020
Subject: Application No: PLN20/0006
 Description: 13 Storey Mixed-Use Building
 Site Address: 462-482 Swan Street, Richmond

I refer to the above Planning Application received on 29 April 2020 in relation to the proposed development at 462-482 Swan Street, Richmond. Council's Civil Engineering unit provides the following information:

Drawings and Documents Reviewed

	Drawing No. or Document	Revision	Dated
Impact Traffic Engineering Pty Ltd	<i>Traffic and Transport Assessment</i>	Final 03	16 April 2020
Architectus Melbourne	<i>DA1001 Basement 02</i>	C	16 April 2020
	<i>DA1002 Basement 01</i>	C	16 April 2020
	<i>DA1003 Ground Floor</i>	C	16 April 2020
	<i>DA2001 Context Elevation – North & East</i>	C	16 April 2020
	<i>DA2002 Context Elevation – South & West</i>	C	16 April 2020
	<i>DA2003 Building Elevation – North</i>	C	16 April 2020
	<i>DA2004 Building Elevation – South</i>	C	16 April 2020
	<i>DA2005 Building Elevation – East</i>	C	16 April 2020
	<i>DA2006 Building Elevation – West</i>	C	16 April 2020
	<i>DA2011 Section B-B</i>	C	16 April 2020
	<i>DA2102 Ground Elevation – North – Sheet 2</i>	B	16 April 2020
	<i>DA2103 Ground Elevation – South – Sheet 1</i>	B	16 April 2020
	<i>DA2105 Ground Elevation – West – Sheet 1</i>	B	16 April 2020
WSP	<i>Waste Management Plan</i>	D	17 April 2020

CAR PARKING PROVISION

Proposed Development

Under the provisions of Clause 52.06-5 of the Yarra Planning Scheme, the development's parking requirements are as follows:

Proposed Use	Quantity/ Size	Statutory Parking Rate*	No. of Spaces Required	No. of Spaces Allocated
Office	32,052 m ²	3.0 spaces per 100 m ² of net floor area	961	222
Retail	1,626 m ²	3.5 spaces per 100 m ² of leasable floor area	56	0
Food & Drink				
Total			1,017 Spaces	222 Spaces

* Since the site is located within the Principal Public Transport Network Area, the parking rates in Column B of Clause 52.06-5 now apply.

To reduce the number of car parking spaces required under Clause 52.06-5 (including to reduce to zero spaces), the application for the car parking reduction must be accompanied by a Car Parking Demand Assessment.

Car Parking Demand Assessment

In reducing the number of parking spaces required for the proposed development, the Car Parking Demand Assessment would assess the following:

- *Parking Demand for the Retail/Food and Drink Premises Uses.*
No on-site car parking will be provided for the retail/food and drink uses. To assess the likely parking demand for the retail/food and drink uses, a staff parking demand of 1.0 space per 100 square metres of floor area could be adopted. For this site, the retail/food and drink staff parking demand would be say, 16 spaces. Staff and customer parking would be accommodated on-street.
- *Parking Demand for Office Use.*
The proposed office would provide on-site parking at a rate of 0.69 spaces per 100 square metres of floor area. Throughout the municipality, a number of developments have been approved with reduced office rates, as shown in the following table:

Development Site	Approved Office Parking Rate
60-88 Cremorne Street, Cremorne PLN17/0626 issued 21 June 2018	0.72 spaces per 100 m ² (200 on-site spaces; 27,653 m ²)
2-16 Northumberland Street, Collingwood PLN16/0435 issued 14 June 2017	0.89 spaces per 100 m ² (135 on-site spaces; 15,300 m ²)
51 Langridge Street PLN17/0332 (Amended) issued 18 May 2018	0.54 spaces per 100 m ² (18 on-site space; 3,335 m ²)

The proposed office parking rate of 0.69 spaces per 100 square metres of floor space is considered appropriate, as the proposal seeks to minimise private car dependency and promote more sustainable form of transportation.

- *Availability of Public Transport in the Locality of the Land.*

The following public transport services can be accessed to and from the site by foot:

- Swan Street trams – 5 metre walk
- Burnley station – 100 metre walk
- Swan Street trams – 800 metre walk
- East Richmond station 840 metre walk

- *Multi-Purpose Trips within the Area.*

Visitors, clients and customers to the site might combine their visit by engaging in other activities or business whilst in the area.

- *Convenience of Pedestrian and Cyclist Access.*

The site is easily accessible by pedestrians and bicycles.

Appropriateness of Providing Fewer Spaces than the Likely Parking Demand

Clause 52.06 lists a number of considerations for deciding whether the required number of spaces should be reduced. For the subject site, the following considerations are as follows:

- *Availability of Car Parking.*

The level of on-street parking that takes place in the vicinity of the site is very high. Any areas of unrestricted parking would be normally fully occupied from early morning periods. On-street parking for employees is not a practical or viable option. Much of the on-street parking is short-stay time restricted parking, which enables turnover of parking for customers and visitors to the Swan Street activity centre.

- *The Future Growth and Development of an Activity Centre.*

Practice Note 22 – Using the Car Parking Provisions indicates that car parking should be considered on a centre-basis rather than on a site/individual basis. This is applicable to activity centres, such as the Swan Street retail precinct, where spare on-street car parking capacity would be shared amongst sites within the activity centre.

- *Other Relevant Considerations.*

The scarcity of long-stay unrestricted parking in the area would be disincentive for employees to drive to the site. Employees would be inclined to make other travel arrangements to commute to the site by taking public transport or riding a bicycle.

- *Relevant Local Policy or Incorporated Document.*

The proposed development is considered to be in line with the objectives contained in Council's *Strategic Transport Statement*. The site is ideally located with regard to sustainable transport alternatives and the reduced provision of on-site car parking would potentially discourage private motor vehicle ownership and use.

Adequacy of Car Parking

From a traffic engineering perspective, the waiver of parking associated with this development is considered appropriate in the context of the development and the surrounding area. Employees would commute to and from the site using more sustainable forms of transportation.

The Civil Engineering unit has no objection to the reduction in the car parking requirement for this site.

TRAFFIC IMPACT

Trip Generation

A review of the Impact traffic report indicates that an intersection study of Burnley Street/Swan Street and the existing site access were undertaken over a three-day period. Data was provided for Tuesday 19 November 2019 and Wednesday 20 November 2019 only, but there is no information relating to the third day of the survey. Impact is to provide further details of the third survey day.

The traffic report also suggests that Swan Street carries in the order of 1,100 vehicle movements during the AM and PM peak periods.

Section 3.5.1 of the traffic report mentions that the gap analysis studies records gap capacities for Victoria Road (West). Impact is to confirm the location of Victoria Road (West) in relation to the site.

The dates shown on Table 5 and 6 are the same. Impact is to confirm the date of survey for these tables.

Impact has adopted a rate of 0.5 trips per space in each peak hour for the traffic generated by the office component. This is consistent with previous traffic reports we have reviewed and we are satisfied with this rate.

Based on the above, the trip generation as adopted by Impact is as follows:

Proposed Use	Adopted Traffic Generation Rate	Peak Hour	
		AM	PM
Office (222 spaces)	0.5 trips per space in each peak hour	111	111

The peak hour traffic volumes generated by the site are high and accounts to approximately 10 percent of existing traffic volumes along Swan Street, as confirmed in the Impact report.

Directional Split

Impact has developed the following split model for the office use.

- 90 % inbound and 10 % outbound during the AM peak hour.
- 10 % inbound and 90 % outbound during the PM peak hour.

Directional split in each peak hour for the office traffic –

- AM Peak – 10% outbound (11 trips), 90% inbound (100 trips); and
- PM Peak – 90% outbound (100 trips), 10% inbound (11 trips).

Impact of Development Traffic

All development traffic would enter and exit the development's car park via Swan Street, an Arterial Road.

The applicant's traffic report has indicated that Swan Street currently carries in the order of 1,100 vehicle movements during the peak periods. The proposed development would generate an additional 10 percent of existing traffic.

The gap analysis performed by Impact Traffic Engineering suggests that there is sufficient capacity to comfortably accommodate the development's traffic without impacting on the traffic operation along Swan Street.

The applicant should confirm how it was concluded that traffic exiting the development can satisfactorily enter the traffic stream of Swan Street. Impact should also clarify the figures in Tables 3 to 6 of the traffic report. How were the figures in Columns "AM Peak" and "PM Peak" derived?

There is very little detail on the impact of traffic that would be queued at the Burnley Street signalised intersection. Given the site's car park access is located approximately 100 metres from Burnley Street, any stationary traffic queues extending back from Burnley Street could block access to the site.

Impact has recommended for a "Keep Clear" road marking treatment to be installed at the development's vehicle entrance. This would prevent any stationary traffic from blocking the car park entrance at the site. This recommendation is considered reasonable.

In addition to the above, the previous proposal for 462-482 Swan Street (Planning Permit PLN15/0057; issued 31 January 2018) was approved with the provisions of traffic signals to mitigate traffic movements into and out of the site off Swan Street. The removal of on-street car parking along the frontage of the site and along the north side of Swan Street, west of Cutter Street was also approved in the permit. Has Impact considered these options to improve traffic movements into and out of the development?

Impact is to confirm if the implementation of traffic signals at the car park entrance is appropriate to reduce the traffic delays along Swan Street and possible traffic queuing within the site. If the traffic signals at the development's entrance were to be approved, the traffic signals would need to be incorporated into the signals at the Swan Street/Burnley Street intersection. If this option were to be pursued, a functional layout plan for the signals would need to be developed by the applicant in conjunction with the Department of Infrastructure. The signals and any associated infrastructure works must be funded by the applicant if the proposal is accepted/approved. Impact is to also confirm if the removal of on-street car parking along the south side and north side of Swan Street is necessary to improve traffic movements along Swan Street.

DEVELOPMENT LAYOUT DESIGN

Layout Design Assessment

Item	Assessment
Access Arrangements	
Development Entrance	The development's entrance is 6.23 metres in width to satisfy both the <i>Design standard 1 – Accessways</i> of Clause 52.06-9 and <i>AS/NZS 2890.1:2004</i> .
Visibility	Visibility sight triangles are to be superimposed and dimensioned on the drawings as required by <i>Design standard 1</i> .
Headroom Clearance – Vehicle Entrance Security Gate	Not dimensioned on the plans.
Car Parking Modules	
Regular Car Spaces	The regular car spaces measuring 2.6 metre by 5.4 metre within the basement car park levels satisfy <i>AS/NZS 2890.1:2004</i> .
Accessible Parking Space	The 2.6 metre by 5.4 metre accessible car space and adjacent shared area satisfy <i>2890.6:2009</i> .
Aisles	Aisle widths measuring 5.8 metres, 6.4 metres, 6.54 metres and 8.4 metres have been provided inside the basement car park levels to satisfy <i>AS/NZS 2890.1:2004</i> .
Floor to Ceiling Height	The floor to ceiling clearance height within the basement car park levels have not be dimensioned on the plans.
Column Depths and Setbacks	The columns are setback 130 mm, 580 mm, 590 mm, 685 mm and 690 mm from the edge of the aisle.

	The column depths are not dimensioned on the plans.
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Layout Design Assessment

Item	Assessment
Car Parking Modules	
Blind Aisle	Blind aisle extensions of 1.04 metres have been provided throughout the basement level car parks.
Clearances to Walls	Car spaces adjacent to walls are provided with the minimum 300 millimetres clearance to satisfy <i>AS/NZS 2890.1:2004</i> .
Gradients	
Ramp Grade for First 5.0 metres inside Property	The accessway for the first 5.0 metres inside the property is flat to satisfy <i>Design standard 3 – Gradients</i> .
Ramp grades and Changes of Grade	The ramp grades and the changes of grade for the ramped accessway and the internal ramps satisfy <i>Design standard 3</i> .
Other	
Queuing Analysis	<p>The AM peak hour would be the critical time for the operation of the security gate.</p> <p>The proposed security gate would be capable of servicing 144 vehicles per hour, based on a total service time of 25 seconds derived from our own calculation*. By conservatively assuming 109 vehicles per AM peak hour wishing to access the development, the utilisation ratio for the security gate (usage/capacity) would be 0.75 (109 vehicle trips per hour/144 vehicles per hour).</p> <p>To determine the storage queue of the security gate, guidance is sought from the Australian/New Zealand Standard <i>AS/NZS 2890.1:2004</i>. The mechanical device such as this security gate should have sufficient vehicle storage to accommodate the 98th percentile queue (the queue that will be exceeded on 2% of occasions). By knowing the utilisation ratio of the security gate (in this case, 0.75), the 98th percentile queue length can be calculated.</p> <p>Queue Length, $N = (\text{Log}_n \text{Pr}(n>N) / \text{Log}_n \rho) - 1$ $\text{Pr}(n>N) = \rho^{N+1}$ where $\rho = r / s$ (utilisation factor) $\rho = \text{average arrival rate} / \text{average service rate}$ $= 109 / 144$ $= 0.75$</p> <p>$N = (\text{Log}_n 0.02 / \text{Log}_n 0.75) - 1$ $= 12.5$ car lengths, say 12 cars</p> <p>The 98th percentile queue length for the security gate during the AM peak hour would be 12 car lengths. The applicant should consider leaving the security gate open during the AM peak period to enable vehicles to enter the site without the operation of the security gate and prevent any queuing along Swan Street.</p> <p>* Calculation of boom gate service time: - Time to activate remote control – 5 seconds - Time for security gate to open – 20 seconds</p>

	- Total time taken – 25 seconds
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Layout Design Assessment

Item	Assessment
Other	
Vehicle Turning Movements – Off Swan Street	The swept path diagrams for a B99 design vehicle entering the site and a B85 design vehicle exiting the site via Swan Street have not been provided.
Vehicle Turning Movements – Basement Levels	The vehicle turning movements within the basement car park levels are considered satisfactory.
Loading Bay	The loading bay measuring 5.68 metres by 6.5 metres is considered adequate to accommodate a 6.4 metre long small rigid vehicle.
Delivery Vehicle – Turning Movements	The swept path diagrams for a 6.4 metre long small rigid vehicle satisfactorily demonstrates entry and exit manoeuvres off Swan Street.

Design Items to be Addressed

Item	Details
Median Traffic Island	Can the median traffic island inside the vehicle accessway as shown on the <i>Ground Floor</i> plan be removed to provide a wider carriageway?
Visibility	Visibility sight triangles are to be superimposed and dimensioned on the drawings as required by <i>Design standard 1</i> .
Headroom Clearance – Vehicle Entrance Security Gate	To be dimensioned on the plans. The headroom clearance is required to determine if there is sufficient headroom height for delivery and waste collection vehicles accessing the loading bay.
Floor to Ceiling Height	The floor to ceiling height clearance within the basement car park levels are to be dimensioned on the plans.
Column Depths and Setbacks	Columns setbacks are to be designed in accordance with <i>AS/NZS 2890.1:2004</i> . If the columns cannot be relocated, can the parking spaces adjacent to columns be widened to allow car doors to be opened or could the spaces adjacent to columns be allocated for small cars? The column depths are also to be dimensioned on the plans.
Queuing Analysis	The applicant is to consider leaving the security gate open during the AM peak period to allow vehicles to enter the site without the operation of the security gate.
Vehicle Turning Movements – Off Swan Street	The swept path diagrams for a B99 design vehicle and an oncoming B85 design vehicle entering and exiting the development via Swan Street are to be provided.

Design Items to be Addressed

Item	Details
Vehicle Crossing Ground Clearance Check	<p>To assist the applicant, a Vehicle Crossing Information Sheet has been appended to this memo. The ground clearance check requires the applicant to obtain a number of spot levels which include the reduced level 2.0 metres inside the property, the property boundary level, the bottom of kerb (invert) level, the edge of the channel level and a few levels on the road pavement – in this case, for Swan Street.</p> <p>These levels are to be shown on a cross sectional drawings, with dimensions, together with the B99 design vehicle ground clearance template demonstrating access.</p> <p>Providing the ground clearance check early in the design phase can also determine whether further modification works are required, such as lowering the finished floor level inside the property or making any adjustments to Council's footpaths or road infrastructure.</p>

Bicycle Considerations	The bicycle requirements for this development are to be referred to Council's Strategic Transport unit for assessment.
Vehicle Turning Movements –	Swept path diagrams are to be provided to show a B85 design vehicle passing the B99 design vehicle at the corner of the basement car park levels.
Canopy – Swan Street and Burnley Street Frontages	The canopy along the site's Swan Street and Burnley Street road frontages must be setback 750 mm from the front of kerb to satisfy the <i>Building Regulations 2018</i> .
Waste Collection	Waste collection at the site is detailed in the Waste Collection Plan. Collection would be performed by using a private contractor using a Small Rigid Vehicle or smaller.

Section 173 Agreement (Footpath Widening along Swan Street and Burnley Street Road Frontages)

The developer must enter into an agreement with the Responsible Authority under Section 173 of the *Planning and Environment Act 1987*, for the proposed widening of the footpath along the northern and western boundary of the site.

The widened section of the footpath is to continue under private ownership and paved in a different material to the asphalt footpath to delineate private ownership of this widened footpath.

ENGINEERING CONDITIONS

Civil Works

Upon the completion of all building works and connections for underground utility services,

- The kerb and channel along the property's Swan Street and Burnley Street (service road) road frontages must be reconstructed to Council's satisfaction and at the Permit Holder's cost.
- The footpaths along the property's Swan Street and Burnley (service road) frontages must be reconstructed to Council's satisfaction and at the Permit Holder's cost. The footpath must have a cross-fall of 1 in 40 or unless otherwise specified by Council.
- The full-width road pavement of Burnley Street service road (from west kerb to east kerb line) from the southern limit of the development to Swan Street must be profiled and re-sheeted to Council standard. Any isolated areas of road pavement failure as a consequence of construction traffic impacts must be reconstructed. The costs associated with these road works shall be borne by the developer.

- The half-width road pavement of Swan Street (from south kerb to tramway tracks) from the western limit of the development to the eastern limit of the development must be profiled and re-sheeted to Council standard. Any isolated areas of road pavement failure as a consequence of construction traffic impacts must be reconstructed. The costs associated with these road works shall be borne by the developer.
- All road markings along the property's Swan Street frontages must be reinstated to Council's satisfaction and at the Permit Holder's cost.
- All redundant vehicle crossings must be demolished and reinstated with paving, kerb and channel to Council's satisfaction and at the Permit Holder's cost.

Vehicle Crossing

Before the development commences, or by such later date as approved in writing by the Responsible Authority, the new vehicle crossing must be designed and constructed:

- In accordance with any requirements or conditions imposed by Council.
- Demonstrating satisfactory access into and out of the site with a vehicle ground clearance check using the B99 design vehicle, and be fully dimensioned with actual reduced levels (to three decimal places) as per Council's Vehicle Crossing Information Sheet;
- At the Permit Holder's cost; and
- To the satisfaction of Council.
- The edge of the vehicle crossing must comply with the minimum setback from the two electrical poles as required by the relevant power authority and Yarra Trams. If there is a requirement to relocate the poles, The Permit Holder must obtain the consent of the relevant power authority and Yarra Trams. All costs associated with the relocation will be at the Permit Holder's cost
- The vehicle crossing shall be constructed in accordance with Department of Infrastructure's and City of Yarra's requirements and specifications.

Redundant Vehicle Crossings

- All redundant vehicle crossings along the property's road frontages must be demolished and reinstated with paving, kerb and channel to Council's satisfaction and the developer's cost.

Infrastructure and Streetscape Masterplan

- The applicant must prepare and develop an infrastructure and streetscape masterplan in conjunction with Council, Department of Infrastructure, VicTrack, Public Transport Victoria and all relevant service authorities for capital improvements in the roads surrounding the development. The Plan must include, but is not limited to, the interface with the Burnley railway station, the mitigation works at the Burnley Street/Swan Street intersection, the improvement to the Burnley Street service road and the streetscape along Swan Street. The extent and scope of the works must be clearly defined before approval is granted by Council. All traffic mitigation works, road infrastructure works and streetscape works shall be funded by the applicant.

Road Asset Protection

- Any damaged roads, footpaths and other road related infrastructure adjacent to the development site as a result of the construction works, including trenching and excavation for utility service connections, must be reconstructed to Council's satisfaction and at the developer's expense.

Construction Management Plan

- A Construction Management Plan must be prepared and submitted to Council. The Plan must be approved by Council prior to the commencement of works. A detailed dilapidation report should detail and document the existing and post construction conditions of surrounding road infrastructure and adjoining private properties.

Impact of Assets on Proposed Development

- Any services poles, structures or pits that interfere with the proposal must be adjusted, removed or relocated at the owner's expense after seeking approval from the relevant authority.
- Areas must be provided inside the property line and adjacent to the footpath to accommodate pits and meters. No private pits, boundary traps, valves or meters on Council property will be accepted.

Discharge of Water from Development

- Only roof runoff, surface water and clean groundwater seepage from above the water table can be discharged into Council drains.
- Council will not permit clean groundwater from below the groundwater table to be discharged into Council's drainage system. Basements that extend into the groundwater table must be waterproofed/tanked.

Removal, Adjustment, Changing or Relocation of Parking Restriction Signs

- No parking restriction signs or line-marked on-street parking bays are to be removed, adjusted, changed or relocated without approval or authorisation from Council's Parking Management unit and Construction Management branch.
- Any on-street parking reinstated as a result of development works must be approved by Council's Parking Management unit.
- The removal of any kerbside parking sensors and any reinstatement of parking sensors will require the Permit Holder to pay Council the cost of each parking sensor taken out from the kerb/footpath/roadway. Any costs associated with the reinstatement of road infrastructure due to the removal of the parking sensors must also be borne by the Permit Holder.

ADDITIONAL ENGINEERING ADVICE FOR THE APPLICANT

Item	Details
Legal Point of Discharge	The applicant must apply for a Legal Point of Discharge under Regulation 133 – Stormwater Drainage of the <i>Building Regulations</i> 2018 from Yarra Building Services unit. Any storm water drainage within the property must be provided and be connected to the nearest Council pit of adequate depth and capacity (legal point of discharge), or to Council's satisfaction under Section 200 of the <i>Local Government Act</i> 1989 and Regulation 133.

Clearances to Electrical Assets	<p>Overhead power lines run along the south side of Swan Street, close to the property boundary.</p> <p>The developer needs to ensure that the building has adequate clearances from overhead power cables, transformers, substations or any other electrical assets where applicable. Energy Safe Victoria has published an information brochure, <i>Building design near powerlines</i>, which can be obtained from their website:</p> <p>http://www.esv.vic.gov.au/About-ESV/Reports-and-publications/Brochures-stickers-and-DVDs</p>
Burnley Railway Station	<p>VicTrack's draft Yarra Site Development Frameworks (June 2015), identified potential issues for pedestrians accessing the Burnley Station, particularly along the east side of the Burnley Street service road.</p> <p>The applicant must consult and liaise with VicTrack and Public Transport Victoria in relation to future redevelopment of the Burnley railway station and address any issues in relation to pedestrian movement and safety between Swan Street and the station.</p>
Tree Protection	<p>The applicant is to liaise with Council's Open Space unit regarding the protection of the street trees along the property's Swan Street frontage.</p>

Vehicle Crossing – Cross Section

The designer is to submit a 1:20 scale cross section for each proposed vehicle crossing showing the following items:

- | | |
|--|--|
| A. Finished floor level 2.0 metres inside property | E. Surface level at the bottom of the kerb |
| B. Property line surface level | F. Surface level at the edge of channel |
| C. Surface level at change in grade (if applicable) | G. Road level 1.0 meter from the edge of channel |
| D. Bullnose (max height 60mm) – must be clearly labelled | H., I. Road levels |
- Please note the cross section must be fully dimensioned. As shown in the sketch below.
 - Please show both the existing and proposed surface.
 - The maximum allowable cross-fall between points B and C is 1:40 (2.5%).
 - A bullnose (max 60mm) is permitted at point D, however not compulsory.
 - The levels shown must be exact reduced levels, to three decimal points. Interpolation of levels is not acceptable.
 - The designer must demonstrate that an 85th or 99th percentile vehicle profile can traverse the design cross section as per the Australian/New Zealand Standard ground clearance template (AS/NZS 2890.1:2004).
 - Significant level changes to the existing footpath level B to C will require additional level design either side of the proposed crossing.
 - Please include any additional levels or changes in grade that are not shown in the diagram.

