

23rd March 2022  
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Dear Perry

## **Waterloo Metro Over Station Development**

### **Basement Car Park - S4.55 Modification – Traffic Statement**

ptc. have been engaged by the Waterloo Integrated Station Development team to provide a traffic statement to accompany the Section 4.55 modification for the proposed Basement Car Park as part of the Waterloo Metro Over Station Development.

The basement was originally submitted for approval under SSD 10438-Basement Car Park.

The modification will seek to amend the submitted layout to rationalise the configuration, to improve traffic flow and circulation, consolidate the residential parking onto Level P2 and adjust the end of trip facilities to be consistent with the Northern Precinct (SSD 10440) and Central Precinct (SSD 10439) State Significant Development Application requirements.

The revised basement layouts are shown in Figure 1 and Figure 2, while the modifications are outlined in Figure 5 and Figure 6.

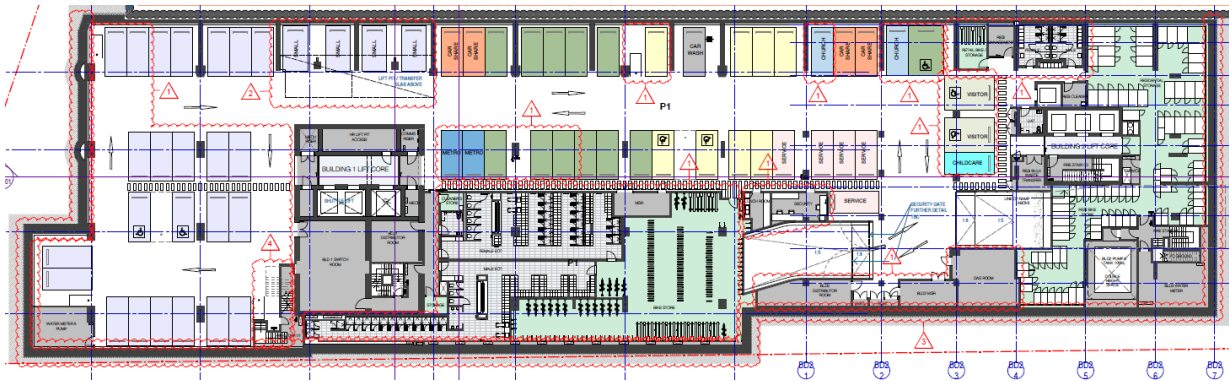


Figure 1 – Proposed Basement 1 Modification

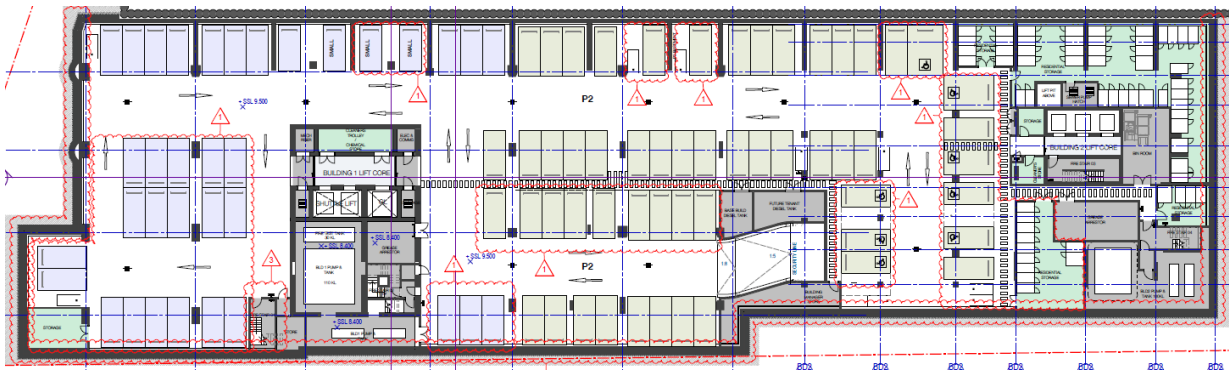


Figure 2 – Proposed Basement 2 Modification

This traffic statement outlines the proposed modifications to the basement layout and compliance of the modifications with the relevant Australian Standards.

## 1. Revised Basement Layout Assessment

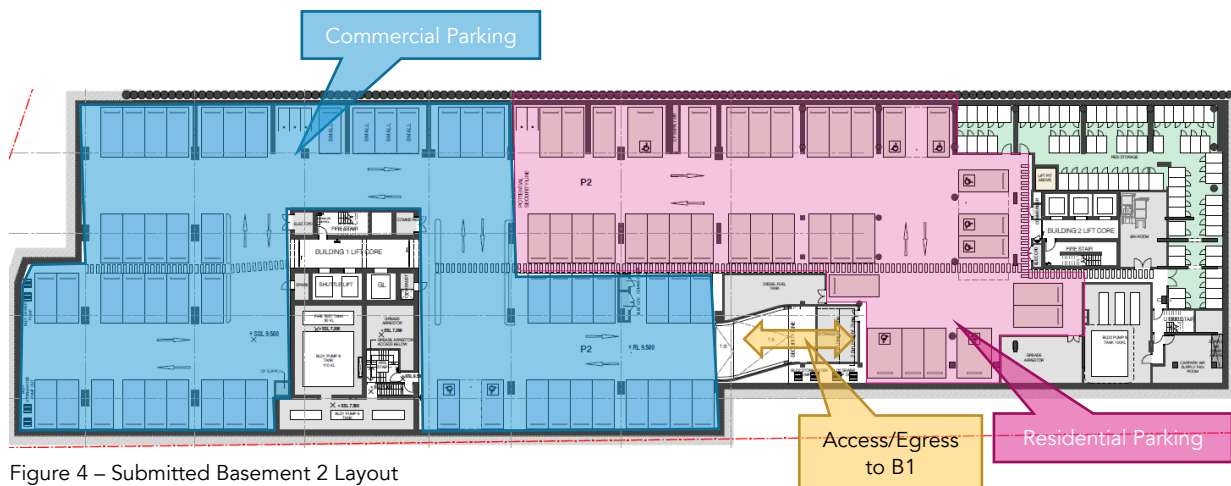
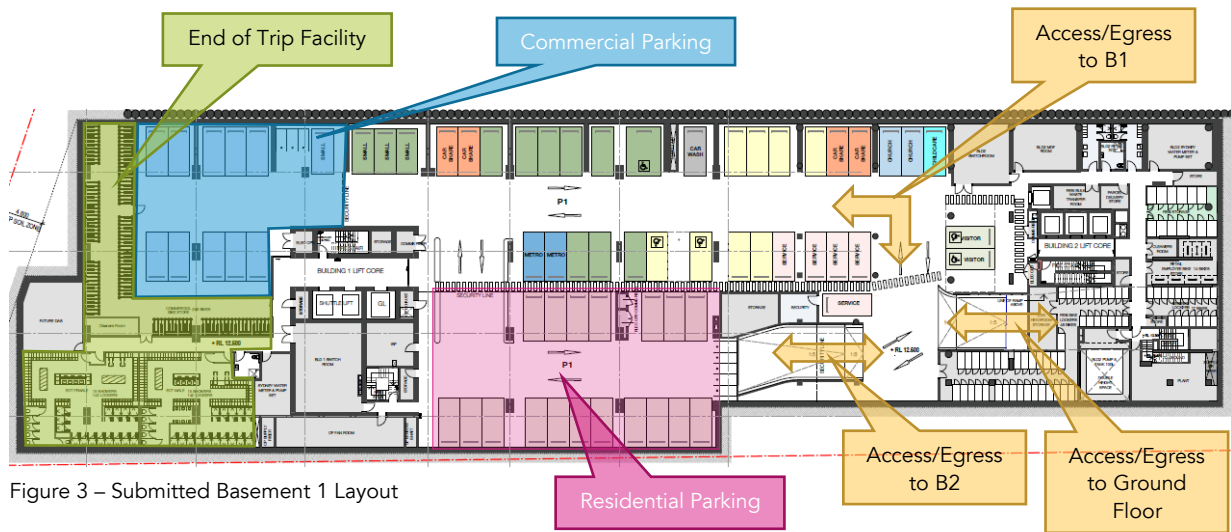
### 1.1. Submitted Basement Layout

As part of the SSD-10438 Basement Car Park submission, Woods Bagot prepared the basement car park plans listed below:

WMQ-BMNT-WBG-AR-DRG-DA0091 (B) – Basement Floor Plan Level P1

WMQ-BMNT-WBG-AR-DRG-DA0092 (B) – Basement Floor Plan Level P2

These plans are shown in Figure 3 and Figure 4 and Attachment 1



Highlighted on Figure 3 and Figure 4 are the allocation of the parking areas, the access and egress points and the End of Trip Facilities.

## 1.2. Submitted Basement Parking Provision

### 1.2.1. Car Parking

The submitted parking provision, as part of the SSD-10438 Basement Car Park submission, was as shown in Table 1:

Table 1 - Submitted Basement Parking Provision

Use Type	Units/ GFA/Spaces	Parking Rate	Maximum Permissible/ Required Parking Provision	Proposed Parking Provision
Commercial	33,843m <sup>2</sup>	1 Space per 435m <sup>2</sup> GFA	78	63
Retail (combined)	2,785m <sup>2</sup>	1 Space per 435m <sup>2</sup> GFA	6	0
Market Residential & Affordable Housing	150 units	0.3 spaces per 1 bed unit 0.7 spaces per 2 bed unit 1.0 space per 3 bed unit	80	67
Residential - Social Housing	70 units	0.1 spaces per studio 0.3 spaces pe 1 bed unit 0.7 spaces per 2 bed unit 1.0 space per 3 bed unit	36	8
Market Residential Visitor	-	-	-	2
Residential - Student Accommodation	435 rooms (474 beds)	0.1 spaces per unit	44	0
Car Share - Commercial	63 spaces	1 per 30 spaces	2	4
Car Share - Residential (Combined)	77 spaces	1 per 50 spaces	2	
Child Care	146 children	1 space per 8 children (min) 1 long term visitor car	20 (min)	1 - long term visitor space
Metro			2	2
Church			2	2
Car Wash Bay				1
<b>Total Car Space Provision</b>			<b>272</b>	<b>150</b>
Service Bays - Commercial Market Residential, Affordable & Social Housing	33,843m <sup>2</sup> 220 units	1 space per 3,300m <sup>2</sup> 1 space for 1st 50 units & 0.5 spaces per 50 units + (min)	10 (min) 3 (min)	<b>Shared amongst all Uses:</b>  <b>Basement</b> 5 car/ute/small van  <b>Loading Dock Northern</b> 2 SRV and 2 MRV**

				Loading dock Southern 1 MRV**
Total Service Bay Provision			13 (min)	10

**\*\*MRV spaces are sized to accommodate City of Sydney 9.25m waste collection vehicle**

### 1.2.2. Motorbike Parking

The submitted motorbike parking provision, as part of the SSD-10438 Basement Car Park submission was 13 spaces, which equates to 1 motorbike space per 12 parking spaces, with the basement car park accommodating 155 car spaces.

### 1.2.3. Bicycle Parking

The submitted parking provision, as part of the SSD-10438 Basement Car Park submission, was as shown in Table 2

Table 2 - Submitted Bicycle Parking Provision

Location	Provided Spaces
Commercial End of Trip Facility	243
Residential - Lockers	60
Retail and Childcare Spaces	14
<b>TOTAL</b>	<b>317</b>

### 1.3. Modified Basement Layout

The modification seeks to reconfigure the basement layout, with the significant alterations being:

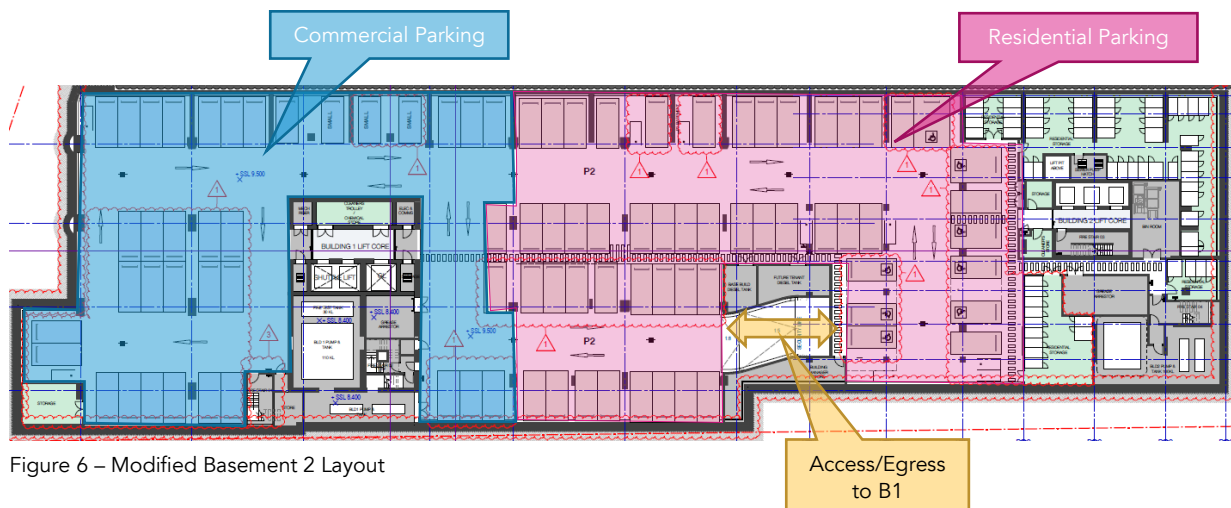
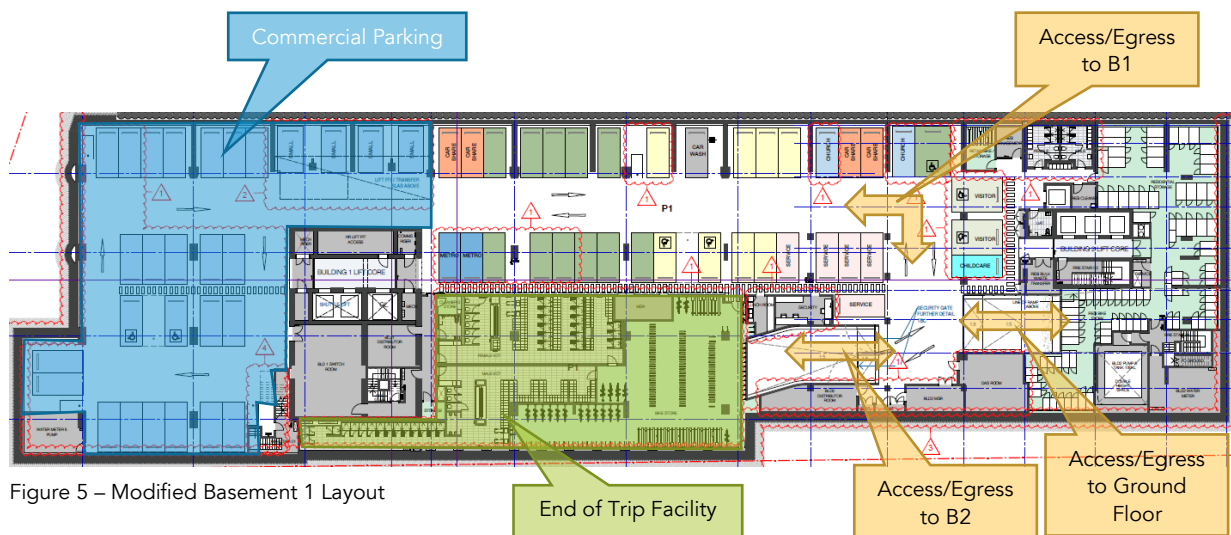
- Relocation of the End of Trip Facilities to align with the Northern and Central Precinct requirements,
- The removal of the dead end aisles in the northern sections of both levels of car park,
- The introduction of one way circulation aisles in the northern section of the car park on both levels, and
- The consolidation of the residential parking onto B1.

The modified layouts are shown on the Woods Bagot plans listed below:

WMQ-BMNT-WBG-AR-DRG-DA0091 (F) – Basement Floor Plan Level P1

WMQ-BMNT-WBG-AR-DRG-DA0092 (F) – Basement Floor Plan Level P2

These plans are shown in Figure 5 and Figure 6 and Attachment 2.



This modification should provide a safer arrangement for all users by,

- Reducing conflict points,
- Removing dead end aisles and therefore removing the potential 3 point turns and reversing movements,
- Improving access and egress to the End of Trip Facilities, and
- Providing a more segregated layout, improving wayfinding and user experience.

## **1.4. Modified Basement Parking Provision**

### **1.4.1. Car Parking**

The modified basement car park proposes the same car parking provision as the submitted basement car park and therefore does not seek any modification to the car parking numbers.

### **1.4.2. Motorbike Parking**

The modified basement car park proposes the same motorbike parking provision as the submitted basement car park and therefore does not seek any modification to the motorbike parking numbers.

### **1.4.3. Bicycle Parking**

The modified basement car park proposes the same bicycle parking provision as the submitted basement car park and therefore does not seek any modification to the bicycle parking numbers.



## 2. Access and Car Park Assessment

The following section details an assessment of the modified development with reference to the requirements of AS2890.1:2004 (Off-street car parking), AS2890.3:2015 (Bicycle Parking) and AS2890.6:2009 (Off-street parking for people with disabilities).

This section is to be read in conjunction with the Architectural Plans in Attachment 2 and the Car Park and Access Assessment Plans in Attachment 3.

### 2.1. Vehicle Access and Circulation

Access to the car parking is via the proposed 6.3m wide driveway off Church Square (shared zone). With regard to the driveway width, reference is made to Table 3.1 and Table 3.2 of AS2890.1. According to Table 3.1, the driveway will be classified as a Category 2 as the total car parking provision is between 101 and 300 spaces, with the driveway located on a local road. According to Table 3.2, the width of a Category 2 driveway should be within the range of 6.0m to 9.0m for combined driveways. The proposed driveway width of 6.3m therefore complies with AS2890.1 for driveway vehicular access.

### 2.2. Internal Circulation

The ramps between the parking levels are proposed to be combined two-way ramps with a width of 6.0 metres. Throughout the car park, access aisles have been provided at a minimum of 5.8 metres, in accordance with the requirements of AS2890.1. Convex mirrors have been provided to aid traffic circulation, in locations where two way movements are not achievable with the minimum 5.8 metre aisle width. In this regard, the proposed ramp, roadway and aisle widths have been assessed and meet the requirements of AS2890.1.

### 2.3. Sight Distance

The sight distance requirements are described in Section 3.2 of AS2890.1 and are prescribed on the basis of the sign posted speed limit or 85th percentile vehicle speeds along the frontage road. Church Square shared zone, will have a posted speed limit of 20kph, which requires a desirable visibility distance of 55 metres and a minimum distance of 35 metres (based on the minimum requirement of 40kph within the standard). The proposed driveway access is located on a straight section of the road alignment, at the end of a cul-de-sac, with no permanent obstructions to affect the visibility from the driver when exiting the site.

### 2.4. Typical Parking Requirements

The car park access and parking arrangements have been designed in accordance with the requirements of Section 2 of AS2890.1. Table 1.1 of AS2890.1 presents a number of classifications applicable to different land-uses. According to the Table, the most appropriate car park classification applicable to the subject car park will be a Class 1A facility, which is suitable for "Residential, domestic and employee parking".

The parking space dimensions and associated aisle widths for each classification are presented in Table 2.2, and accordingly, a Class 1A facility requires parking space dimensions of 2.4 x 5.4 metres with an access aisle width of 5.8 metres. The proposed car park has been designed to provide compliant parking space widths of 2.4 metres, length of 5.4 metres and aisle widths of 5.8m, which meet the minimum requirement.

The car park also includes the provision of four 'car share' spaces and these have been assessed as Class 2 spaces (medium term parking) in accordance with AS2890.1. Class 2 spaces require a parking space dimension of 2.5x 5.4 metres with an access aisle width of 5.8 metres. These spaces have been designed to provide compliant space widths of 2.5 metres, length of 5.8 metres and aisle widths of 5.8m, which meet the minimum requirement.



An assessment of all elements of the car park has been undertaken including column locations, aisle extensions, and headroom and ramp grades and in this regard, the car park design complies with the requirements of AS2890.1.

**2.5. Accessible Parking Requirements**

The car park includes the provision of 15 accessible/adaptable car spaces (13 residential and 2 commercial). The accessible spaces have been assessed against the requirements within AS2890.6:2009, which requires an accessible space dimension of 2.4 x 5.4 metres with a shared space of 2.4 metres width adjacent to any space. An assessment of these spaces has been undertaken and, in this regard, the accessible spaces comply with AS2890.6:2009.

The adaptable spaces have been assessed against the requirements with AS4299:1995 which requires an adaptable space dimension of 3.8 x 5.4 metres. An assessment of these spaces has been undertaken and, in this regard, the adaptable spaces comply with AS4299:1995.

**2.6. Bicycle Parking**

The bicycle parking arrangements have been designed in accordance with the requirements of AS2890.3. The bicycle parking has been provided as a combination of horizontal spaces, vertical spaces and provisions within storage cages and the space requirements for each are listed below;

- Horizontal spaces                      1.8m length, 0.5m width, 1.5m wide access aisle
- Vertical spaces                         1.2m length, 0.5m width, 1.5m wide access aisle
- Within storage cages                 1.8m length, 0.5m width, 2.0m wide access aisle

An assessment of the bicycle spaces, including aisle widths and access has been undertaken and in this regard the bicycle parking provisions generally complies with the requirements of AS2890.3.

**2.7. Motorcycle Parking**

Section 2.4.7 of AS2890.1 requires motorcycle parking spaces with dimensions of 1.2 metres x 2.5 metres and the car park has been designed to provide spaces compliant with this minimum standard.

### 3. Conclusion

In conclusion, based on the above discussion, it is considered that the proposed modification to the basement configurations should provide a safer arrangement for all users by,

- Reducing conflict points,
- Removing dead end aisles and therefore removing the potential 3 point turns and reversing movements,
- Improving access and egress to the End of Trip Facilities, and
- Providing a more segregated layout and improving wayfinding for users.

The revised basement layout does not propose any changes to the submitted car, motorbike or bicycle parking provisions.

The revised parking layout meet the requirements of AS2890.1, AS2890.2, AS2890.3 and AS2890.6 or have been assessed on a performance basis and have been deemed fit for purpose.

Therefore, from a parking and traffic perspective, **ptc.** endorse the proposed change to the basement configuration.

Yours faithfully



**Steve Wellman**

**Project Director**

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Document Control: Prepared by SW on 23/03/2022. Reviewed by AM on 23/03/2022

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## **Attachment 1 – Submitted Architectural Layouts**

## **Attachment 2 – Modified Architectural Layouts**

## **Attachment 3 – Car Park and Access Assessment Plans**