GTAconsultants

Central Park Proposed Mixed Use Development

State Significant Development Application for Block 4N, Traffic and Transport Report

Client // Central Park JV No. 2

Office // NSW

Reference // 12S1395000

Date // 21/10/14

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Traffic and Transport Report

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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	21/10/14	Final	Michael Lee	Michael Lee	Michael Lee	

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1. Introduction

GTA Consultants has been commissioned to prepare this traffic and transport report to accompany a State Significant Development Application for Block 4N at Central Park.

The State Significant Development Application seeks approval for the redevelopment of Block 4N as a mixed use building, with associated non-residential/retail uses located on ground floor, consistent with the Concept Plan. Specifically, the proposal includes the following uses (as shown on the Architectural Drawing):

- Residential – 3,518m^2 located on levels 11 to 16 consisting of 48 permanent residential apartments
- Retail – 236m^2 located on the ground level with frontage to Central Park Ave
- Hotel – 13,986m^2 located from ground to level 18 – approximately 283 hotel rooms
- Commercial – 6,146m^2 located on levels 5 to 10
- Childcare Centre (shell space) – 1,080m^2 located on level 3 and 4
- Existing Australia Hotel and Terraces (Heritage Pub and Terraces) – 789m^2.

The proposal has a total gross floor area of 25,755m^2 of which 22,237m^2 is to be used for non-residential purposes and 3,518m^2 is to be used for residential purposes in accordance with the Concept Plan as recently modified (MP 06_0171 MOD9).

Hotel facilities, including concierge, storage, swimming pool, spa, gym, conference facilities, will be located within the building. The hotel swimming pool, spa and gym will also be made available to permanent residents. Separate entries and lobbies are proposed to the commercial office, childcare, hotel and permanent residential.

The existing Australia Hotel and adjoining Abercrombie Street terraces will be retained, with the design creating a publicly accessible courtyard behind the terraces, accessible from Broadway and Abercrombie Street.

A combined basement below Block 1 and 4N is proposed, that will accommodate all car parking, bicycle parking, residential and commercial storage, waste handling, back of house facilities, building plant and services. The basement will have a connection into Block 4S and Central Park's Central Thermal Plant. Service vehicle loading is provided via the Abercrombie Street access ramp, and car park access for residents, hotel guests, office, retail and childcare drop off car spaces provided via Central Park Avenue. The basement will accommodate a total of 126 car parking spaces for the proposed Block 4N use.

Additional spaces are provided within the basement that will service Block 1 and the Brewery Yard building as shown on the Architectural Plans.

Figure 1.1 shows the location of the Central Park site as well as the location of Block 1.

Figure 1.1: Locality Plan

The Department of Planning and Environment has issued the Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Statement for the proposed development. The issues raised in the SEARs have been considered during the preparation of this transport assessment report. Table 1.1 summarises the relevant issues (as related to transport and traffic) together with descriptions how the issues have been addressed.

Table 1.1: Secretary's Environmental Assessment Requirements

Issues	How Addressed	Report Section
A construction traffic management plan detailing access arrangements at all stages of construction.	This is addressed in the Construction Traffic Management Plan prepared by GTA Consultants (Ref: 141021rep-12S1395000 Block 4N CTMP dated 21 October 2014).	The CTMP is provided under a separate cover (see GTA Report Ref: 141021rep-12S1395000 Block 4N CTMP dated 21 October 2014).
Demonstrate how users of the development will be able to make travel choices that support the achievement of State Plan targets.	The site is located in close proximity to high frequency, good quality public transport services. In addition, it is proposed to provide constrained parking consistent with the LEP requirements. The Concept Plan approval (Condition B7) requires commercially operated car schemes be available to residents. Some 70 car share pods would be available within the wider Central Park site. In addition, the amended Concept Plan for the overall site proposes a number of additional pedestrian and cycle facilities. A Workplace/Green Travel Plan and Travel Access Guide will be prepared for the development to assist tenants and visitors to the site with better informed transport modal choice. Section 7 provides a framework from which a travel plan and travel access guide can be prepared.	See Sections 5 and 6. See Section 2.2 See Section 7.
Detail the type of service vehicles and number of service vehicle movements.	The expected service vehicle number is a maximum of66 two-way movements per day. The types of service vehicles comprise 8.8m long medium rigid trucks and various van/ute type vehicles.	See traffic report accompany SSD 6554 (Block 1).
Provide accurate details of daily and peak vehicle movements and assess the impacts of this traffic on the local network, including intersection capacity.	The then RTA assessed the traffic effects arising from the Concept Plan, which the RTA has subsequently approved. The Concept Plan traffic assessment has an allowance of 117 vph during the peak periods for Blocks 1 and 4. This included the subject site proposed as commercial office tower. With the proposed Block 4N development, the overall development is expected to be 592 vph. Intersection capacity analysis indicates the surrounding road network would be able to accommodate the additional development traffic.	See Section 4.
Demonstrate appropriate provision of on-site car parking.	It is proposed to provide parking in accordance with the LEP and DCP requirements.	See Section 5.
Include a Workplace Travel Plan and Travel Access Guide for employees, residents, hotel users, and visitors to the site.	Section 7 of this report provides a framework on which an overall Workplace/Green Travel Plan for Central Park can be based upon.	See Section 7.

The remainder of this report is set out below:

- Chapter 2 provides an overview of the project to date
- Chapter 3 describes the development proposal
- Chapter 4 reviews the traffic implications of the proposal
- Chapter 5 assesses the off street car park provision and servicing arrangements
- Chapter 6 reviews the other transport implications arising from the proposed development
- Chapter 7 presents a preliminary Workplace/Green Travel Plan, and
- Chapter 8 presents a summary and concludes the study.

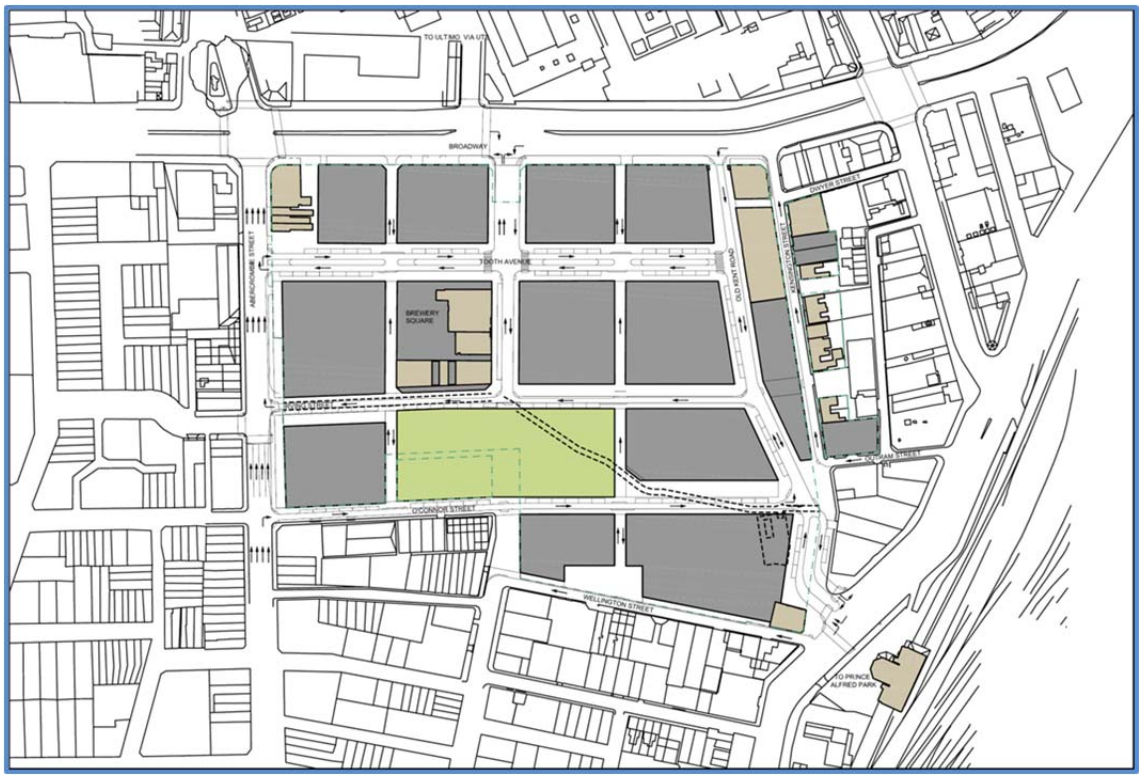
2. Project to Date

2.1 Original Concept Plan

The Carlton and United Brewery site (as it was known back then) was originally approved for redevelopment in February 2007 (MP06_0171) under the Part 3A process. The proposed redevelopment of the site includes high density residential, commercial and retail uses.

A plan showing the development as approved in February 2007 is shown in Figure 2.1.

Figure 2.1: Original Approved Concept Plan



Halcrow (formerly Masson Wilson Twiney Pty Limited) prepared a traffic and transport assessment report[1] for the original concept scheme. The findings and recommendations of this report were taken into account in the concept plan approval.

Traffic implications of the original concept plan were examined in detail by the then RTA (now known as Roads and Maritime Services, RMS) using a Paramics microsimulation traffic model. The RTA found the traffic impacts of the development were within acceptable limits and granted its agreement to the concept plan transport elements including all proposed road connections to the surrounding road network.

[1] Carlton and United Brewery Site – Stage 1 Masterplan Traffic Report, Masson Wilson Twiney Pty Limited October 2006

2.2 Amended Concept Plan

The site was purchased in June 2007 by Frasers.

Following a series of stakeholder consultations, Frasers developed an amended scheme for the site. The amended Concept Plan was approved by the then Department of Planning (DoP) in July 2007 (MP 06_171 MOD 1). This was followed by a number of further modifications[2] to the original approval. The last one being MP 06_0171 MOD 8 approved in December 2013. This approval, amongst a number of other modifications granted, also allows the development of Blocks 1 and 4N to include a residential use.

It is noted there is one further proposed modification (MP 06_0171 MOD9) currently before the Department for determination in relation to the approved Concept Plan. In relation to traffic and parking, MP 06_0171 MOD 9 seeks approval to relocate the vehicular access to Blocks 1 and 4N basement car park and provision of a new vehicular access for Block 8 proposed basement car park.

The approved amended Concept Plan included the same grid like building configuration as the original concept scheme. Below is a summary of the relevant amendments to the original approval (from the six approved modifications):

- increase in site area and gross floor area with revised residential and commercial land use mix
- changes to building envelopes for the 11 development blocks
- increase in area of public open space
- reduced car parking provision (maximum of 2,000 car spaces) provided within various combined underground car parks proposed to minimise surface traffic within the site
- removal of some internal streets to create a low speed traffic environment within the precinct.

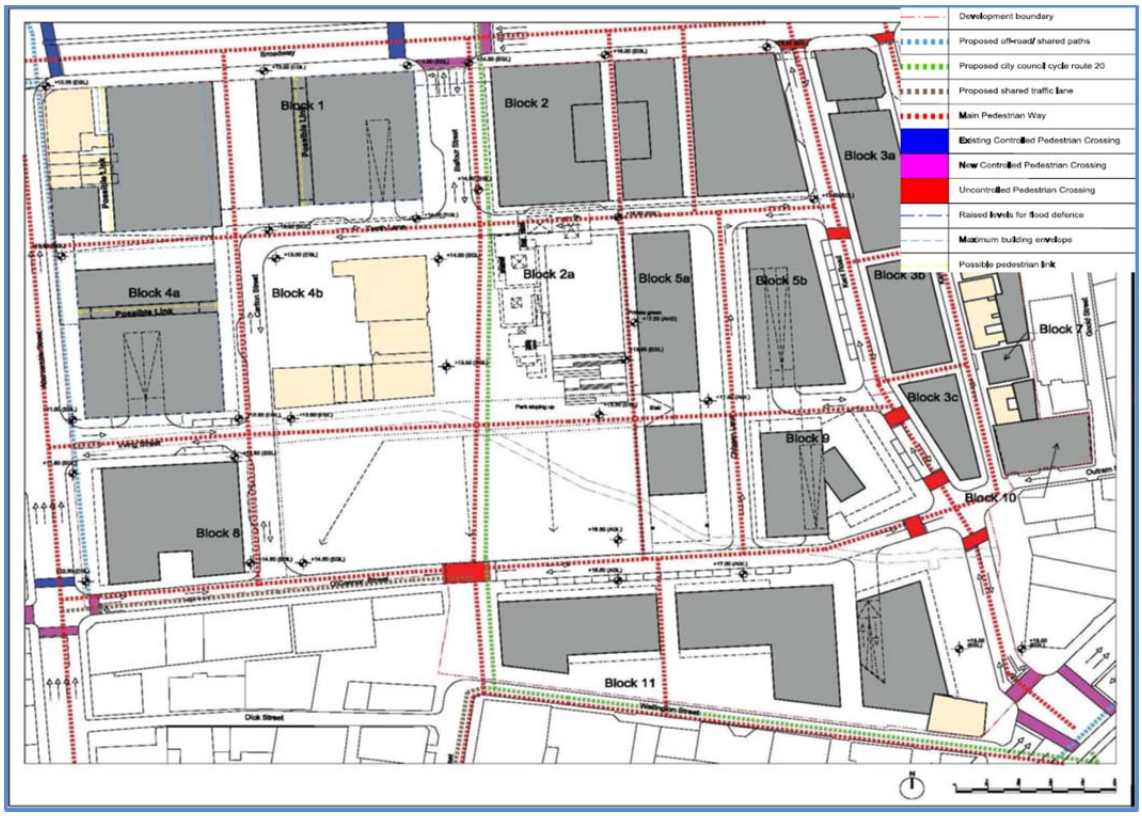
The current approved development mix is as follows:

- up to a maximum of 255,500m^2 GFA for mixed use
- a minimum of 59,515m^2 of non-residential floor space
- a maximum of 195,985m^2 of residential use.

A plan showing the approved amended Concept Plan including the internal road network and external road network connections is shown in Figure 2.2.

[2] MP 06_0171 (MOD 2) was the last significant modification relating to this approval. Subsequent approvals MP 06_0171 (MOD 3 and MOD 4) are of no significance to traffic and transport impacts. MP 06_0171 (MOD 6) allows the modification of the approved floor areas and building envelopes to Blocks 6 and 10. In addition, the Department approved an application (MP 06_0171 MOD 7) to re-allocate gross floor area within the Kensington Precinct with the total gross floor area across the site staying the same.

Figure 2.2: Amended Concept Plan



3. Project Description

3.1 Proposed Development

The SSDA seeks approval for the construction of a 20 storey building to accommodate a range of use as follow:

- residential use
  - gross floor area – 3,518m^2 with the following apartment mix:
    - 1-bedroom apartments – 36 apartments
    - 2-bedroom apartments – 12 apartments
    - total – 48 apartments
- commercial use
  - gross floor area – 6,146m^2
- hotel use
  - gross floor area – 13,986m^2 for 283 rooms
- retail use
  - gross floor area – 1,025m^2 (including the heritage pub)
- childcare centre
  - gross floor area – 1,080m^2.
- total gross floor area – 25,755m^2.

Of the 48 apartments, seven (approximately 15 per cent of total number of apartments proposed) of these would be provided as adaptable units.

The retail floor area uses would be provided as a number of small retail tenancies on the lower ground floors. The proposed childcare centre would be located on Levels 03 and 04.

The proposed total gross floor area for Block 4N development would be 25,755m^2. The proposed floor area is slightly less than the current approved maximum GFA (25,930m^2) for Block 4N. Therefore, the proposed GFA is in accordance with the current Concept Plan approval.

On-site car parking serving Block 4N is proposed to be located in the combined basement car park for Blocks 1 and 4N. The car park is located directly beneath Blocks 1 and 4N. The combined basement car park also includes a service vehicle loading area located directly beneath Block 4N.

However, this SSDA does not seek approval for the construction of the combined basement car park (including service vehicle loading area). This matter has been dealt with in the SSDA for Block 1 (SSD 6554).

In terms of proposed parking provision for Block 4N, it is proposed to be provided a total of 126 car parking spaces as follow:

- residential use – 32 car parking spaces (including accessible car spaces for adaptable units)
- commercial use – 28 car parking spaces
- hotel use – 56 car parking spaces
- retail use – five car parking spaces, and

- childcare centre – five car parking spaces.

It is noted that the proposed combined Blocks 1 and 4N basement car park would also include some 227 additional car parking spaces for a Block 1 and the proposed Brewery Yard development.

The service vehicle loading area includes a total of 11 service vehicle bays which are made up as follows:

- four truck bays with dimensions 3.5m wide by 8.8m long (accommodating service vehicles up to an Australian Standard 8.8m long vehicle)
- seven van/utility type vehicle bays with dimensions 2.6m wide by 5.4m long (accommodating an Australian Standard B99 vehicle) located in the loading area as well as the combined basement car park.

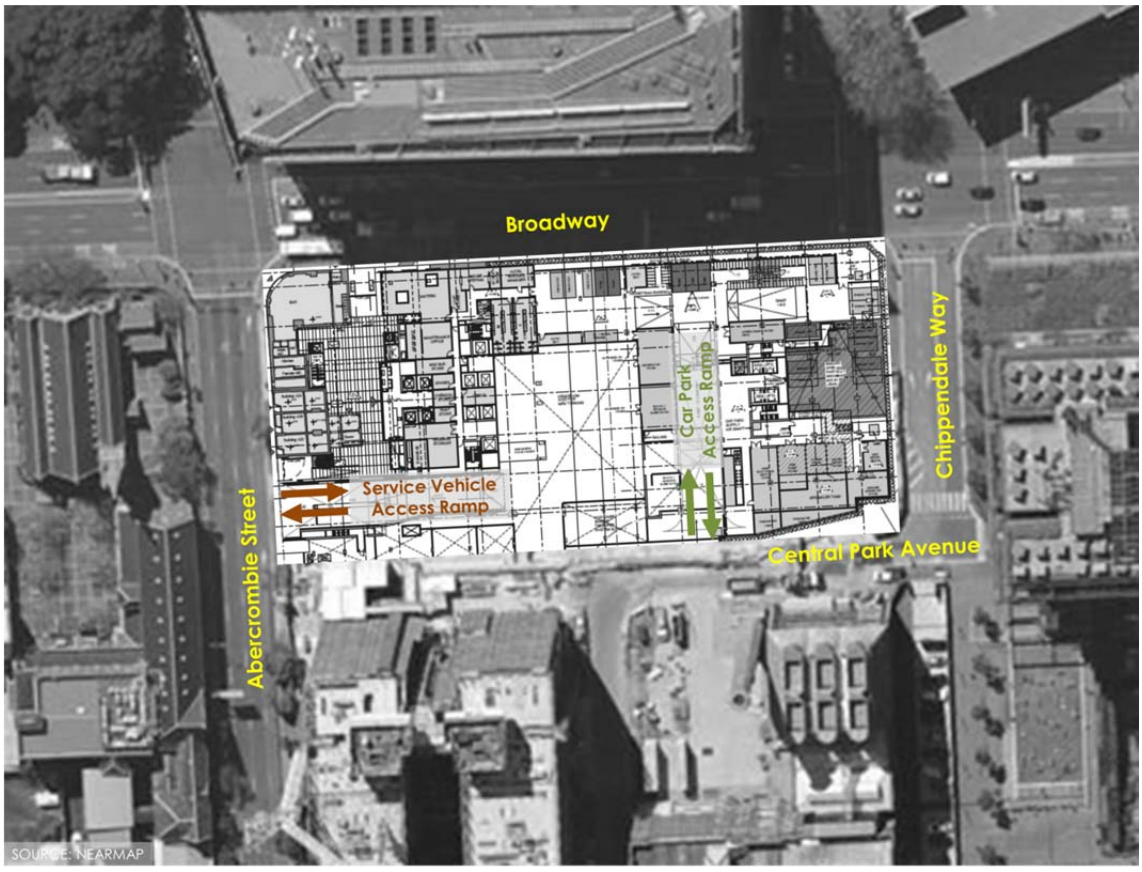
3.2 Proposed Vehicular Access

As indicated previously, this SSDA does not relate to the construction of the combined basement car parking for Blocks 1 and 4N. This has been dealt with in the SSD 6554 for Block 1.

However, it is noted that vehicular access to the combined basement would be via a driveway directly off Central Park Avenue beneath Block 1. Vehicular access to the service vehicle loading area would be via a new driveway off Abercrombie Street.

The proposed vehicular accesses are shown in Figure 3.1.

Figure 3.1: Proposed Vehicular Access



4. Traffic Assessment

4.1 Concept Plan Traffic Assessment

RMS (formerly RTA) previously examined the traffic implications on the surrounding road network due to the Central Park development as proposed under the Concept Plan including consideration of the proposed connections to the surrounding road network. RMS found that the surrounding road network would continue to operate satisfactorily.

The approved Concept Plan (and the subsequent approved modifications to the Concept Plan) estimated that the entire development would generate some 493 vehicles per hour (vph).

Subsequent modifications to the original approval for Blocks 2 and 5 resulted in the overall development traffic increasing from 493 vph to 532 vph – an increase of 39 vph.

Consultants Halcrow conducted additional intersection analysis to examine the effects of this additional traffic[3]. Table 4.1 compares the analysis results under the original approval with the additional traffic arising from the proposed changes to Blocks 2 and 5.

Table 4.1: Intersection Performance Results

	Morning Peak Hour		Evening Peak Hour	
	LoS	Ave. Delay (sec/veh)	LoS	Ave. Delay (sec/veh)
Original Approval				
- Abercrombie St Access	A	11	A	10
- Broadway Access	A	13	B	16
- Regent St Access	B	15	B	15
Amended PA				
- Abercrombie St Access	A	11	A	10
- Broadway Access	A	13	B	16
- Regent St Access	B	16	B	16

Source: Halcrow
Note: The level of service (LoS) provides an indication of the operational efficiency of a given intersection. LoS A indicates that an intersection has good operating conditions, while LoS F indicates that the intersection operates unsatisfactorily. LoS D is the long term desirable level of service.

It was found that the extra traffic would have negligible effects on the operation of the surrounding intersections. They would continue to operate at the same levels of service as those applying to the original approval i.e. level of service B or better for both peak periods.

Subsequent to the above, additional changes to the Blocks 2 and 5 unit mix resulted in an additional 3 vph increasing the overall development traffic to 535 vph. It was considered that the additional 3 vph was too small to have any traffic impact.

[3] Halcrow report *Central Park Mixed Use Development – Project Application for Block 5C Residential Building Traffic Report* (Ref: CTLRDOr05 110819 Final.doc) dated Final, 19 August 2011.

4.2 Modifications to Kensington Precinct

Kensington Precinct within Central Park comprises Blocks 3, 6, 7 and 10. These were assessed collectively in terms of traffic effects in the Concept Plan traffic assessment. The traffic assessment made an allowance of some 20 vph arising from the assumed developments within the Kensington Precinct.

Following the approval of the amended Concept Plan, a number of approvals relating to the Kensington Precinct were granted by the Department. The approved modifications are as follows:

- Blocks 3B, 3C and 10 Student Accommodation PA (MP 11_0090) – 7,294m^2 of student accommodation plus 650m^2 of retail floor space area
- Blocks 3A Boutique Hotel PA (MP 11_0089) – 3,996m^2 of boutique hotel development (60 rooms) plus 600m^2 floor area of food and drink premises, and
- Blocks 6 and 7 PA (MP 11_0091) – 2,997m^2 of commercial and retail uses.

It was estimated the cumulative traffic generation of these PAs would result in the Kensington Precinct generating about 25 vph during the peak period as follows:

- Block 3A 60-room boutique hotel @ 0.26 trips per room = 16 vph
- Blocks 3A food and drink premises (600m^2 4 car spaces @ 0.32 trips per space = 1 vph
- Blocks 3B, 3C and 10 (Student Accommodation) = 5 vph
- Block 6 & 7 (3,100m^2 max) 10 car spaces @ 0.32 trips per space = 3 vph
- Total trips (for Kensington Precinct) = 25 vph

In summary, an additional 5 vph would be generated by the Kensington Precinct above the original traffic generation allowance in the Concept Plan. This change would increase the overall site development traffic from 535 vph to 540 vph.

4.3 Block 8 Proposed Development

Separately, there is an application (SSD 6093) seeking development approval for some 178 residential apartments with ground floor retail use in Block 8. This application is currently under assessment by the Department. The accompanying traffic report[4] estimates that the current proposed development would generate some 5 vph in addition to the amended Concept Plan traffic allowance for Block 8.

4.4 Concept Plan Blocks 1 and 4 Traffic Estimates

The Concept Plan traffic assessment estimated that Blocks 1 and 4 (including the Brewery Yard) would generate about 117 vph during the peak periods[5]. The make-up of this is as follows:

- Block 1 – 23,000m^2 of commercial use
  (102 spaces @ 0.32 peak hour trips per space[6]) = 33 vph
- Block 4 – 59,000m^2 of commercial use
  (262 spaces @ 0.32 peak hour trips per space[6]) = 84 vph
- Total Blocks 1 & 4 (including Brewery Yard) = 117 vph

This traffic was included in the total site traffic generation of 493 vph discussed above.

[4] GTA report Central Park Block 8 Mixed Use Development – State Significant Development Application Traffic and Transport Report (Ref: 140122rep-12S1239502 Block 8 Issue B) dated 22 January 2014

[5] The traffic generation for the retail component has been excluded as per the original traffic assessment.

[6] Traffic generation rates for residential and commercial uses are consistent with those adopted in the original traffic assessment.

4.5 Blocks 1 and 4 Revised Traffic Estimates

The subject SSDA seeks approval for a mixed use development as discussed in Section 3.1 of this report. The revised traffic estimates arising from the new scheme for Block 4N is as follows:

- residential use
  36 x 1-bedroom units @ 0.20 peak hour trips per unit[6] = 7 vph
  12 x 2-bedroom units @ 0.24 peak hour trips per unit[6] = 3 vph
- commercial use (6,146m^2)
  28 spaces[7] @ 0.32 peak hour trips per car space[6] = 9 vph
- hotel use with 283 rooms @ 0.26 trips per room[8] = 74 vph
- childcare centre (based on required LEP car parking provision) = 5 vph
- Block 4N total traffic generation = 98 vph

The proposed childcare centre is not expected to generate significant volume of development traffic as it is expected to draw its businesses from childcare users living and working in the vicinity of the site. At worst, it is expected that the childcare centre would generate 5 vph during the peak periods on account of the five parking spaces required to be provided to accord with Council's parking requirement(see Section 5).

In addition, consistent with the traffic assessment conducted as part of the concept plan traffic assessment, the retail use is not expected to generate any development traffic.

From the above, the revised development for Block 4N is expected to generate some 98 vph during the peak periods.

In relation to expected development traffic for Block 1 and the Brewery Yard developments, the traffic report that accompanies the SSDA for Block 1 (SSD 6554) indicates that these two developments would each generate 60 vph and 6 vph respectively. Similarly, Block 4S development is expected to generate zero additional development traffic.

From the above, the proposed developments in Blocks 1, 4S and 4N and the Brewery Yard are expected to generate a total of some 164 vph during the busiest peak hour.

As indicated previously, the amended Concept Plan traffic allowance for Blocks 1 and 4 was some 117 vph. Therefore, the current scheme would result in an increase of some 47 vph for Blocks 1 and 4.

[7] This is based on LEP maximum parking requirement.
[8] RMS recommended traffic generation rate for luxury hotels.

4.6 Traffic Generation and its Effects Arising from this Application

Following the above discussions, the traffic changes are summarised Table 4.2.

Table 4.2: Traffic Change Summary

	Traffic Change	Overall Development Traffic
Approved Concept Plan	-	493 vph
Modifications to Blocks 2 and 5	+ 39 vph	532 vph
Additional changes to Blocks 2 and 5 unit mix	+ 3 vph	535 vph
Modifications to Kensington Precinct	+ 5 vph	540 vph
Block 8 Proposed Development	+ 5 vph	545 vph
Block 1 (Including Brewery Yard)	+ 33 vph	578 vph
Revised Block 4N Development	+ 14 vph	592 vph

From Table 4.2, it can be seen that the overall development traffic for the Central Park site would increase to 592 vph during the peak periods.

Intersection capacity analysis was conducted at the three access intersections namely at Abercrombie Street, Broadway and Regent Street. The analysis results are presented in Table 4.3.

Table 4.3: Revised Intersection Performance Results

	Morning Peak Hour		Evening Peak Hour	
	LoS	Ave. Delay (sec/veh)	LoS	Ave. Delay (sec/veh)
Original Approval				
- Abercrombie St Access	A	11	A	10
- Broadway Access	A	13	B	16
- Regent St Access	B	15	B	15
Amended PA				
- Abercrombie St Access	A	11	A	10
- Broadway Access	A	13	B	16
- Regent St Access	B	16	B	16
Revised B4N Scheme				
- Abercrombie St Access	A	12	A	10
- Broadway Access	A	13	B	16
- Regent St Access	B	16	B	16

Note: The level of service (LoS) provides an indication of the operational efficiency of a given intersection. LoS A indicates that an intersection has good operating conditions, while LoS F indicates that the intersection operates unsatisfactorily. LoS D is the long term desirable level of service.

The analysis found that the access intersections would continue to operate satisfactorily with good level of service in the future.

Therefore, it is considered that the proposed development on Block 4N with consideration to other recent changes would have negligible traffic effects. The surrounding road network would continue to operate well in the future as originally planned.

5. Parking Assessment

5.1 Parking Requirement

The City of Sydney Council's *Local Environmental Plan 2005 Chapter 2 Central Sydney* (LEP) and *Sydney Development Control Plan 2012* (DCP) requires parking for various types of development uses.

It is noted that the LEP does not require visitor parking to be provided.

5.1.1 Residential Uses

For residential uses, the LEP stipulates the following maximum parking rates:

- Studio units 0.25 spaces per unit
- 1 bedroom units 0.5 spaces per unit
- 2 bedroom units 1.2 spaces per unit, and
- 3 bedroom units 2 spaces per unit.

5.1.2 Non-Residential Uses

The LEP stipulates on-site parking for non-residential uses to be provided in accordance with the formula below:

$$Max.\,Car\ Parking = \frac{Total\ Other\ FSA}{Total\ FSA\ within\ Development} \times \frac{Site\ Area}{50}$$

The LEP also requires additional parking for the hotel use at a rate of one space per 5 bedrooms plus four spaces per 100m^2 of function room area.

The LEP requires that 1-2 per cent of the total number of commercial/retail parking spaces to be accessible for persons with mobility impairment.

5.1.3 DCP Parking Requirements

The DCP also requires parking for service vehicles as follows:

- residential – one space per first 50 apartments + 0.5 for every 50 apartments thereafter
- commercial – one space per 3,300m^2 GFA or part thereof (for the first 50,000m^2)
- hotel – one space per 50 hotel rooms or part thereof, up to 100 bedrooms then one space per 100 hotel rooms, and
- retail (shops) – one space per 350m^2 GFA (up to 2,000m^2).

The DCP also requires motorcycle parking be provided at a rate of one motorcycle parking space for every 12 car parking spaces provided.

In relation to parking for bicycles, the DCP requires one space per dwelling for residential tenants plus one space per 10 dwellings for residential visitors. For commercial use, the DCP requires bicycle parking to be provided at a rate of one space per 150m^2 GFA for staff and one space per 400m^2 GFA for visitors. For hotel use, the required bicycle parking provisions are one space per four staff and one space per 20 rooms for visitors. For retail use, one space per 250m^2 for employees is required plus an additional two spaces plus 1 space per 100m^2 over 100m^2 GFA for visitors.

5.1.4 Parking Requirement Summary

Table 5.1 presents a summary of the LEP and DCP required parking provisions for Block 4N.

Table 5.1: LEP and DCP Required Parking for Block 4N Proposed Development

Proposed Use	Car Parking	Service Bays	Motorcycle Parking†	Bicycle Parking†
Residential Use				
- Tenants	32	1	2.7	48
- Visitors	Nil		N/A	4.8
Commercial/Retail Uses				
- Tenants	33	11	2.8	41.0
- Visitors	Nil		N/A	15.4
Hotel				
- Staff (Assumed 30 Staff)	56	4	4.7	7.5
- Visitors				14.2
Childcare Centre				
- Staff	Nil	N/A	Nil	4.1
- Visitors	5		0.4	11.3
Total	126∞	15	11	See below

∞ maximum required provision
† based on LEP required car parking provision

The LEP stipulates a maximum of 126 car parking spaces to be provided.

In addition, 15 service vehicle bays are required.

It is also required to provide a total of 11 motorcycle parking spaces.

The following bicycle parking provisions are also required:

- 48 residential tenant bicycle spaces
- 53 staff bicycle parking spaces, and
- 46 visitor bicycle parking spaces.

5.2 Proposed Parking Provisions

It is proposed to provide a total of 126 car parking spaces to serve the Block 4N proposed development. This is made up as follows:

- 32 residential tenant parking spaces (including seven accessible spaces)
- 28 commercial tenant parking spaces
- five retail parking spaces
- 56 hotel parking spaces, and
- five childcare centre parking spaces.

The proposed provision of 126 car parking spaces complies with the LEP requirement parking provision. Therefore, car parking provision is satisfactory. In addition, Frasers is committed to providing the lesser of the LEP required car parking provision and 2,000 car parking spaces across the entire Central Park site.

In relation to provision for motorcycle parking (see Table 5.1), 11 motorcycle parking spaces are required to be provided. The architectural plans indicate eight motorcycle parking spaces are proposed.

It is proposed to provide bicycle parking spaces for tenants and visitors for both residential and non-residential uses in accordance with DCP requirements (see Table 5.1). Bicycle parking spaces will be provided to comply with dimensional requirements set out in AS2890.3:1993 as follows:

- residential tenants – Class 1 bicycle parking facilities i.e. individual bicycle lockers (minimum dimensions of 1840mm by 715mm) provided as part of the residential storage requirement
- non-residential tenants – Class 2 bicycle parking facilities i.e. bike racks within lockable communal area, and
- residential visitors – Class 3 bicycle parking facilities i.e. bike racks.

Finally, in relation to service vehicle bays it is proposed to provide 11 service vehicle bays to be shared between the different uses within Blocks 1 and 4N (including the Brewery Yard development). The proposed service vehicle bays are made up as follows:

- four truck loading bays (3.5m wide by 8.8m long), and
- seven van/utility type vehicle bays (2.6m wide by 5.4m long).

It is noted that the DCP requires 15 service vehicle bays for Block 4N. The proposed provision would be less the DCP requirement. However, the loading dock will be managed by an appointed dock manager and a plan of management would be implemented to ensure the loading dock operate as efficient as possible. Therefore, it is considered that the proposed number of service vehicle bays is satisfactory.

5.3 Internal Parking Layout

As indicated previously, a combined basement car park for Blocks 1 and 4N is proposed beneath Blocks 1 and 4N buildings.

The proposed Blocks 1 and 4N basement car park is proposed to be accessed from Central Park Avenue. A straight ramp with a maximum gradient of 1:5 (with appropriate transitions) is proposed to provide access into the basement levels.

From the ground level, the straight ramp from Central Park Avenue would be located to the western side of Block 1 core. It continues down into the site towards Broadway and wraps around Block 1 core in a clockwise direction from Level B0 to Level B4 with a gentle slope of 1:20. Block 1 parking spaces would be provided along this gentle ramp. The car spaces would generally be configured as 90 degree spaces off the ramp.

From Level B2 onwards, cross aisles would be provided off the western side of the ramp to provide access to parking spaces beneath Block 4N. Parking spaces beneath Block 4N are proposed to be configured as 90 degree parking spaces. The parking aisles would be arranged in an east-west direction.

It is proposed that the car park and associated elements such as space dimensions, circulation aisles, ramp be designed in accordance with the relevant Australian Standard for car parking facilities, namely AS2890.1: 2004 and AS2890.6:2009.

General car parking spaces for residential tenants and visitors and employees parking are proposed to be designed as a Class 1A car park facility as specified in the Australian Standard. That is, general car parking spaces would have dimensions 2.4m wide by 5.4m long with an aisle width of 5.8m. Accessible car spaces would also have dimensions of 2.4m wide by 5.4m long. An additional shared area for accessible spaces with the same dimensions would also be provided.

Parking spaces for hotel guests would need to be designed as a Class 2 car parking facility. Class 2 car parking spaces are required to have dimensions 2.5m wide by 5.4m long.

Design of the car park has only been taken to a level to demonstrate that the proposed car park could be designed to comply with the relevant Australian Standard, while providing sufficient parking spaces to comply with requirements stipulated in the LEP.

The shared loading dock (between Blocks 1 and 4N as well as the Brewery Yard development) would be located beneath Block 4N on Level B0. The loading dock is proposed to be accessed from Abercrombie Street. The loading dock and associated elements are proposed to be designed in accordance with AS2890.2:2002.

The proposed car park and loading dock layout plans are contained in Appendix A.

5.4 Childcare Centre Proposed Parking Provision

Block 4N proposed development includes a proposed childcare centre. The proposed childcare centre would be located on Levels 03 and 04. Pedestrian access for the proposed childcare centre would be via lifts located at the western core within Block 4N. The western core also provides access to basement car parking levels (B00 to B03).

As discussed in Section 5.1, the LEP requires five car parking spaces to be provided for the proposed childcare centre. The proposed parking provision of 126 car parking spaces for Block 4N development includes five parking spaces allocated to the proposed childcare centre.

The proposed childcare centre parking spaces are located on Basement Level 02 in the south eastern corner of Block 4N basement. These spaces would be accessed via pedestrian lifts to and from the proposed childcare centre on Levels 03 and 04.

Vehicular access to the proposed childcare centre parking spaces would be via the driveway off Central Park Avenue providing access to all car parking spaces located within the combined Blocks 1 and 4N basement car park.

5.5 Retail Tenant Proposed Parking Provision

As discussed in Section 5.1, the LEP requires five car parking spaces to be provided for Block 4N retail use. As such, five car parking spaces are proposed to be allocated to retail tenants in Block 4N. These parking spaces are located on Basement Level 00 which would be accessed via Block 4N eastern core.

It is noted that as with other completed developments within Central Park car parking spaces are not proposed for retail customers.

6. Other Transport Implications

6.1 Existing Public Transport

The site, being within the Sydney City Centre, is well served by regular bus services along Parramatta Road/Broadway as well as Harris Street with direct services into the CBD and surrounding destinations such as Glebe, Newtown, Abbotsford, Kogarah etc. The nearest bus stop is on Broadway.

In addition, the site is located approximately within 550m walking distance to Central Railway Station. Central Railway Station services all train lines within the CityRail network, and is a major terminus for suburban as well as interstate rail services. As such, all CityRail railway stations could be accessed from Central.

The site is also located within walking distance of a light rail stop at Central Railway Station. Running from Central Railway Station, the light railway network connects Lilyfield to the inner city areas such as Darling Harbour and Ultimo. It has a peak period frequency of 10 minutes.

The Travel Access Guide prepared for the site (see Appendix B) provides details on the available bus and train services near the site. The Travel Access Guide indicates that the area is very well served by public transport.

6.2 Existing Walking & Cycling Facilities

The site is also very well situated in terms of provision for walking and cycling. There are a number of strategic and local cycling routes and links in the vicinity of the site.

Public footpaths are currently provided along the majority of roads in the local network. Fully constructed footpaths are available on both sides of Broadway in the vicinity of the site with generous width. Similarly, along Harris Street, Regent Street, and Abercrombie Street fully constructed pedestrian footpaths are also available on both sides of the streets. The pedestrian network continues into the residential streets to the south and west of the site as well as across Broadway into the area to the north of the site.

There is an existing on-road cycle path that runs along Wilson Street near Newtown that joins on to Shepherd Street to continue along Broadway near Mountain Street before heading north along Jones Street towards Pyrmont Bay. The section along Broadway is provided as off-road shared pedestrian/cycle path.

A combination of other on-road and off-road cycle links provide access to the surrounding suburbs.

In addition, on-road cycling is also permissible on the local road network where traffic volumes are generally considered to be moderate.

6.3 Existing Bicycle Parking Provision

City of Sydney Council provides free bicycle parking spaces on most streets within its local government area. They are provided either as bicycle parking rings or U-rail parking. There are a number of bicycle parking rings located on Broadway within the immediate vicinity of the site.

6.4 Proposed Cycling and Walking Arrangements

It is anticipated that the development would attract some additional walking and cycling trips. However, it is considered that the development would have minimal impact on existing walking and cycling facilities on the surrounding road network.

The following enhancements to pedestrian and cycle networks are proposed as part of the amended Concept Plan for the overall Central Park development site.

Pedestrian crossing facilities will be provided across the main roads surrounding the site, namely Broadway, Abercrombie Street and Regent Street. Pedestrian pathways will be provided on both sides of all internal streets within the site. A shared pedestrian/cycleway link to Wellington Street would be provided through the proposed park. This shared pathway would continue through the park to connect to Chippendale Way. A raised pedestrian threshold is also proposed across O'Connor Street adjacent to the main park at the centre of the overall site.

The provision of bicycle facilities through the site has accounted for external linkages to existing and proposed bicycle routes as part of the City of Sydney Council's Bicycle Plan.

A shared pedestrian/cycleway will be provided through the park from Wellington Street to Chippendale Way. Recreational cyclists will utilise the shared laneways to access Central Park Avenue before making their way to Broadway. Non-recreational cyclists will utilise the sign posted cycle route through the site along Chippendale Way.

This will create a permeable pedestrian/cycle network through the Central Park site which will be fully accessible by local people and people traversing the site. This accessibility will thus enhance existing pedestrian/cycle accessibility between Chippendale and the node of public transport represented by Railway Square/Central Station.

In addition, Councils has plans for an off road shared pedestrian/cycle pathway along the eastern side of Abercrombie Street.

Figure 2.1 also shows the above amended Concept Plan proposed additional pedestrian and cycle facilities.

In addition, the proposed overall Central Park development proposes to provide bicycle parking spaces in accordance with the requirements set out in Council's LEP and DCP.

6.5 Future Public Transport Patronage

It is expected that employees working and residents living on the site would make use of the existing available public transport services. However, as the site is well serviced by both bus and heavy rail services, it is not expected that it would require further augmentation to enhance existing public transport services in the area.

Further, any improvement to public transport services would be a matter for the consideration of Transport for NSW as part of its long term strategic planning and implementation of public transport services.

7. Workplace/Green Travel Plan

A Workplace/Green Travel Plan applicable to both residential tenants living and employees working on the site would be prepared to promote sustainable travel. The section below provides a framework for the implementation of such a travel plan.

7.1 Introduction

Transport is a necessary part of life, but it has economic, public health and environmental consequences. The transport sector is one of the fastest growing emissions sectors in Australia, and therefore is one of the key opportunities for reducing greenhouse gases. As well as delivering better environmental outcomes, providing a range of travel choices with a focus on walking, cycling and public transport will have major public health benefits and will ensure a strong and prosperous community.

The physical infrastructure being provided as part of the development is only part of the solution. A Workplace/Green Travel Plan will ensure that the transport infrastructure, services and policies both within and external to the site are tailored to the users and co-ordinated to achieve the most sustainable outcome possible.

7.2 What is a Workplace/Green Travel Plan

A Workplace/Green Travel Plan is a package of measures aimed at promoting sustainable travel and reducing reliance on the private car. It is not designed to be 'anti-car', but will encourage and support people's aspirations for carrying out their daily business in a more sustainable way. Travel Plans can provide both:

- measures which restrict car use (disincentives or 'sticks')
- measures which encourage or support sustainable travel, reduce the need to travel or make travelling more efficient (incentives or 'carrots').

The Travel Plan would promote the use of transport, other than the private car, provide choice for travel to and from the site (for both residential tenants and employees living and working on the site), which is more sustainable and environmentally friendly.

Indeed, there are a range of "non-car" transport options that are available at the site which have been described in this report.

7.3 Key Objectives

The aim of the Workplace/Green Travel Plan is to bring about better transport arrangements for residents living on the site. The key objectives of the Travel Plan are:

- to encourage walking
- to encourage cycling
- to encourage the use of public transport
- to reduce the use of the car, in particular single car occupancy
- where it is necessary to use the car, encourage more efficient use.

It is the intention therefore that the Travel Plan will deliver the following benefits:

- enable higher mode share targets to be achieved

- contribute to greenhouse gas emission reductions and carbon footprint minimisation
- contribute to healthy living for all
- contribute to social equity and reduction in social exclusion
- improve knowledge and contribute to learning.

Green travel plans are historically the most common type of travel plan in the UK and the USA as regular journeys such as the daily commute to work tend to be the easiest to influence.

It is difficult at this stage without knowing the type and location of the occupants to prepare a detailed Workplace/Green Travel Plan. It would be reasonable for a condition to be imposed on a development consent which would ask the developer to design and implement a plan prior to occupation of the site and Frasers (and any future owners of the buildings) will commit to providing such a Travel Plan.

7.4 Site Specific Measures

As stated earlier, it is difficult to be specific about the measures that might be introduced until the demographics of the occupants are fully understood.

However, it is likely that the Travel Plan at this site could include the following measures:

- compliance with the stringent parking controls applicable to the site
- creation of street networks and associated cycle ways, footpaths and links to encourage cycling and walking
- provision of a TAG (the proposed guide is contained in Appendix B) which would be given to every new occupant of the dwellings and employees (this information will need to be updated prior to occupation to ensure that the most up to date information is available to new residents/staff)
- public transport information boards to make residents/staff and visitors more aware of the alternative transport options available (the format of such information boards would be based upon the travel access guide)
- in accordance with NBN requirements, all properties will be provided with high quality telecommunication points which will provide residents with the opportunity to work from home thus reducing the need to travel
- provision of bicycle parking spaces both for residents/staff and for visitors to the site
- a half yearly newsletter to be provided to every household for up to two years after occupation bringing the latest news on sustainable travel initiatives in the area, and
- car share operators making available marketing materials for car share scheme during the occupancy of building.

All of these measures would need to be in place from 'Day One' as people will establish habits of a lifetime from day one.

Frasers has therefore put together the framework of a Travel Plan which would form the basis of the formal document. Future building owners will also make a commitment in how the plan will be practically managed.

7.5 Travel Access Guide

A Travel Access Guide (TAG) provides information to residents/staff and visitors on how to travel to the site using sustainable transport modes such as walking and public transport. The information is presented visually in the format of a map showing the site location and nearby transport nodes highlighting available pedestrian and cycle routes. The information is usually

presented as a brochure to be included in a welcome pack or on the back of company stationery and business cards.

A preliminary TAG has been specifically prepared for the subject proposed development. This is contained in Appendix B.

7.6 Summary

Future building owners/managers should be required to develop and utilise a Travel Plan to improve the use of sustainable transport by the tenants living and employees working in the building. Although it is difficult to predict what measures might be achievable until the building is occupied, the above measures provide a framework for the development and implementation of a future Travel Plan for the site.

It is considered that it is appropriate that any development consent is conditioned to ensure that a Travel Plan is implemented prior to occupation of the development.

8. Summary and Conclusion

This report examines the traffic and transport implications of a proposed development on Block 4N within the Central Park development site in Chippendale. This report accompanies a State Significant Development application to the Department of Planning seeking development approval for a 20 storey building to accommodate the following uses:

- 48 residential apartments
- 6,146m^2 of commercial floor space area
- hotel with 283 rooms
- 1,025m^2 of retail floor space area, and
- a childcare centre.

The total proposed gross floor area is 25,755m^2 which is slightly less than the current approved maximum GFA for Block 4N.

The Central Park development was granted Concept Plan approval in February 2007. Subsequent to this, an amended Concept Plan was approved in July 2007. This was followed by a number of further modifications to the Concept Plan. The last approved modifications allow Block 1 to be developed as a residential use.

Under the amended Concept Plan, the entire Central Park development was estimated to generate some 493 vph. Of the estimated 493 vph, Blocks 1 and 4 were estimated to generate some 117 vph.

A number of modifications (as discussed in the preceding sections of this report) to the proposed Central Park development resulted in the overall development traffic increasing from 493 vph to 545 vph.

The subject development in Block 4N and the proposed changes in Block 1together would result in the overall Central Park development traffic increasing from 545 vph to 592 vph.

Intersection capacity analysis was conducted at the three access intersections to assess the traffic effects of the additional development traffic arising from Block 4N. The analysis results indicate that the access intersection would continue to operate with good level of service. Therefore, in the future the surrounding intersections are expected to continue to operate satisfactorily.

City of Sydney Council's LEP stipulates a maximum permissible parking provision of 126 car parking spaces for Block 4N proposed development. It is proposed to provide parking to comply with the LEP maximum permissible parking.

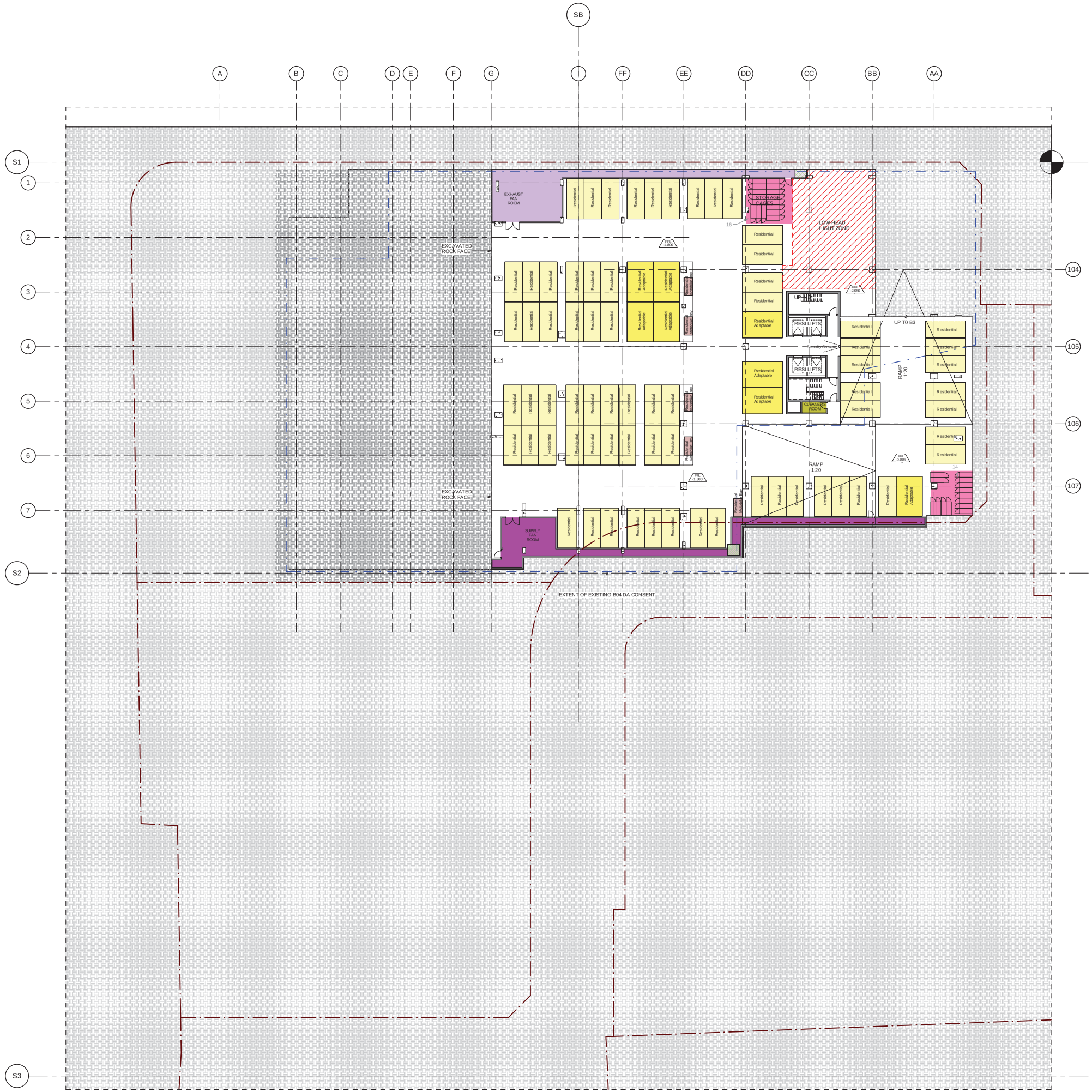
Similarly, the DCP requires 15 service vehicle bays to be provided for Block 4N. It is proposed to provide a total 11 service vehicle bays to be shared between Blocks 1 and 4N development. This is considered to be acceptable as a loading dock management plan will be prepared to ensure the efficient operation of the dock.

Motorcycle and bicycle parking provisions are also proposed to comply with Council's requirements as stipulated in the DCP.

Overall, it is concluded that the traffic and parking aspects of the proposed development would be satisfactory.

Appendix A

Car Park Architectural Layouts



1 BASEMENT B4 PLAN
1 : 200

General Notes

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2. All dimensions are in millimetres unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work.
4. Foster + Partners shall be notified in writing of any discrepancies.
5. Any areas indicated on this sheet are approximate and indicative only.

Key

	Concept Plan development boundary
	PA Boundary

Rev.	Date:	Reason For Issue:	Chk
A	16/10/14	ISSUED FOR CO-ORDINATION	
B	16/10/14	ISSUED FOR SSDA	

For Information

Key Plan:

FRASERS PROPERTY

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Title

BLOCK 1 + 4N

BASEMENT 04

Project No.	Scale @ A0	Date:	Drawn By:
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Number PA-A4-1755

Revision: 0

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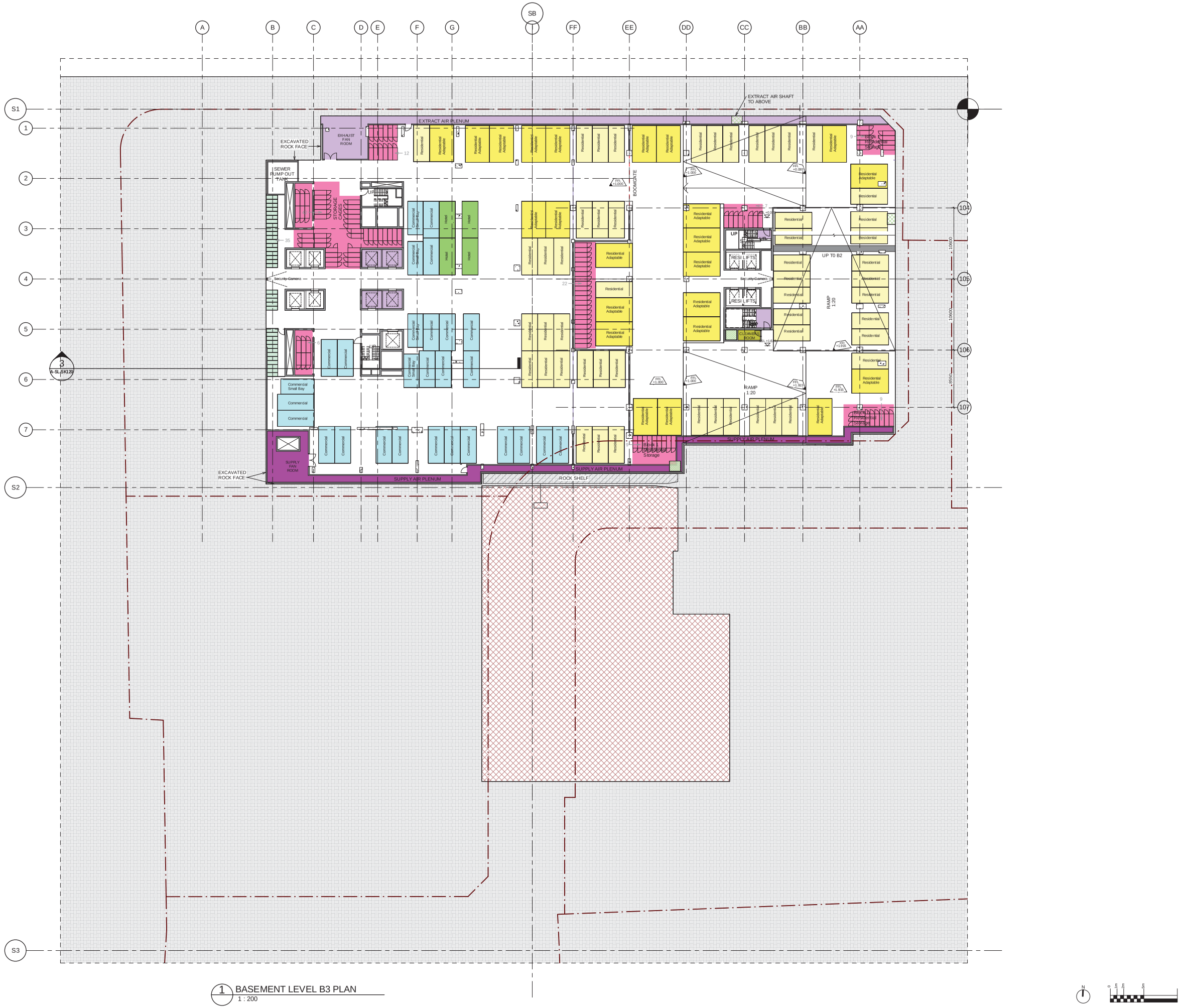

1 BASEMENT LEVEL B3 PLAN
1 : 200

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BLOCK 1+4N
BASEMENT 03

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Revision: 0

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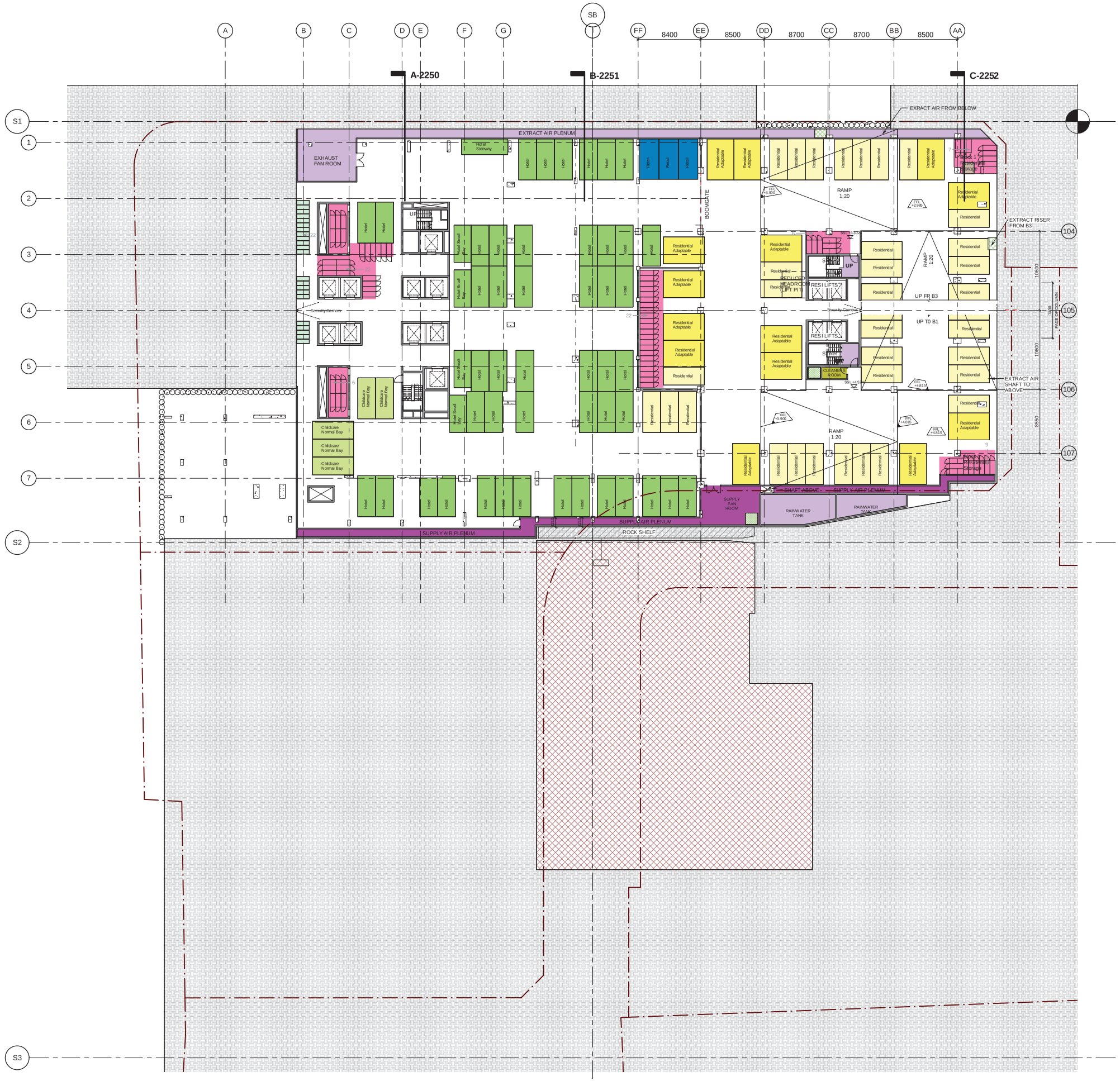

1 BASEMENT LEVEL B2 PLAN
1 : 200

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Key Plan:

FRASERS PROPERTY

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BLOCK 1+4N

BASEMENT 02

Project No.	Scale @ A0	Date:	Drawn By:
212028	As indicated	06/13/14	PTW

Number	Revision:
PA-A4-1757	0

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1 BASEMENT LEVEL B1 PLAN
1 : 200

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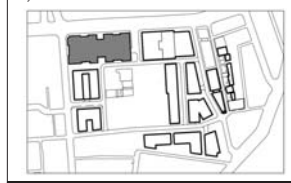

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BASEMENT 01

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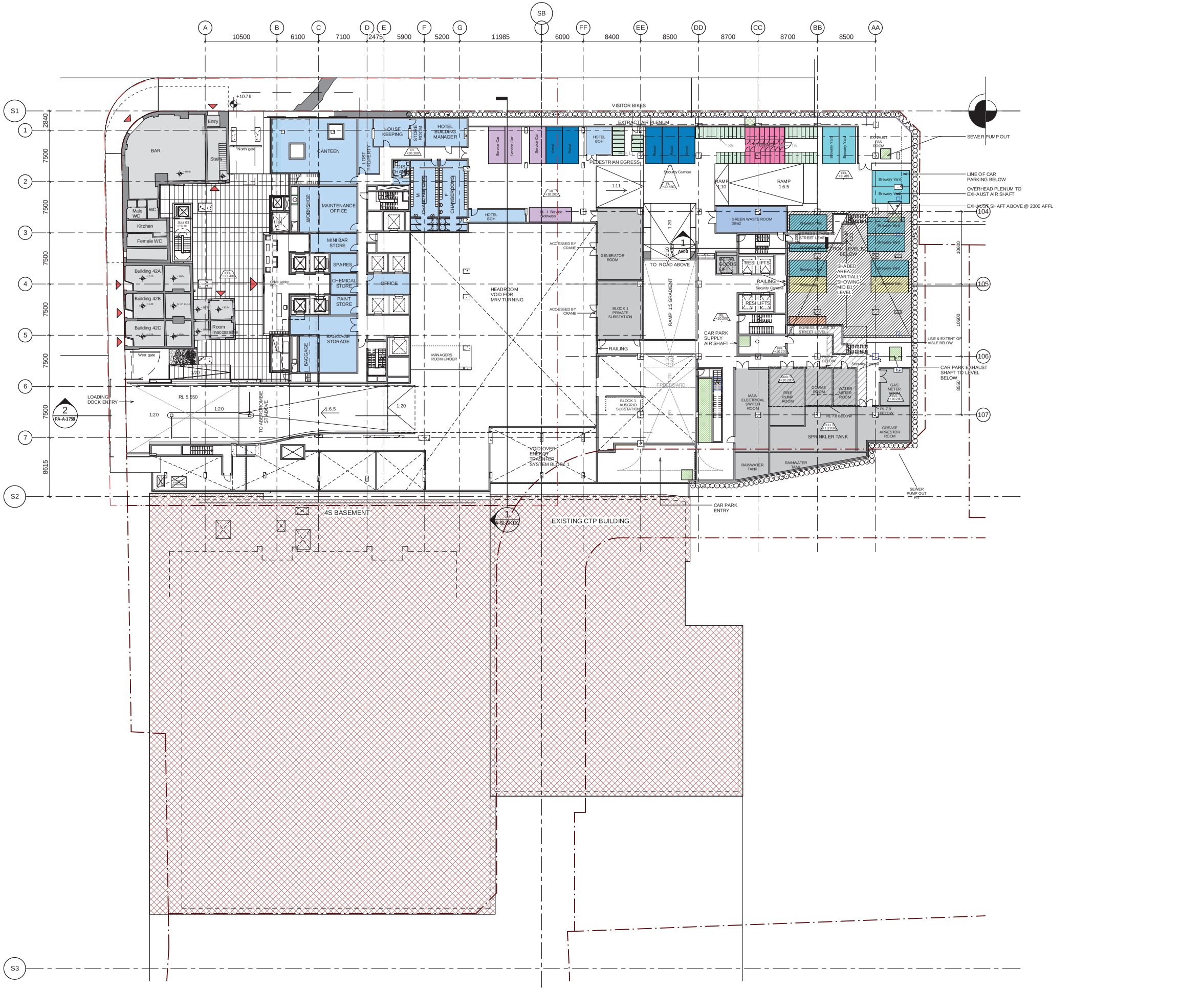

BASEMENT LEVEL B0
PLAN

General Notes

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BLOCK 1 + 4N

BASEMENT 00

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212028	As indicated	13/06/14	PTW

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Revision: 0

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Appendix B

Travel Access Guide

Central Park Block 4N SSDA – Travel Access Guide

Transport Services and Facilities

Train

Central Railway Station, located 700 metres away from the site, is one of the largest railway station and transport interchange in Australia. It serves all Sydney suburban, intercity, country and interstate trains except for the Cumberland Line and the regional Hunter Line.

	Frequency – AM Peak		Frequency – PM Peak	
	To city	*From City*	*To city*	*From City*
Suburban Line				
Eastern Suburbs & Illawarra Line	4 min	4 min	4 min	4 min
Bankstown Line	5 - 10 min	10 - 15 min	5 - 15 min	5 - 10 min
Airport Line	3 - 6 min	6 - 9 min	6 - 10 min	3 - 6 min
Inner West & South Line	3 - 10 min	3 - 10 min	6 - 9 min	3 - 10 min
Western Line	3 - 6 min	3 - 10 min	3 - 10 min	3 - 6 min
Carlingford Line	30 - 45 min	45 - 60 min	30 - 45 min	45 min
North Shore/ Northern Line	3 - 6 min	3 - 6 min	3 - 6 min	3 - 6 min
Intercity Line				
South Coast	20 min	50 min	30 min	20 min
Southern Highlands	10 - 20 min	60 min	60 min	10 - 35 min
Blue Mountains	15 min	30 min	30 min	15 min
Central Coast & Newcastle	6 - 10 min	30 min	30 min	15 min

Bus

Route No.	Service Route	Frequency – AM Peak	Frequency – PM Peak
M10	Leichhardt to Maroubra Jn	10 min	10 min
M30	Mosman to Sydenham	10 - 15 min	10 min
352	Marrickville to Bondi	20 - 25 min	20 min
412	City to Campsie Station	15 - 20 min	15 min
413	City to Campsie Station	30 min	15 min
422	City to Kogarah	10 - 20 min	15 min
423/ L23	City to Kingsgrove	10 - 20 min	5 - 15 min
426	City to Dulwich Hill	20 min	5 - 15 min
428/ L28	City to Canterbury	20 min	7 - 10 min
431	Glebe Point to Millers Point	3 - 5 min	15 - 20 min
433	Balmain to Millers Point	12 min	15 min
436	City to Chiswick	20 min	15 - 20 min
438/ L38	City to Abbotsford	15 - 20 min	5 - 10 min
439/ L39	City to Mortlake	40 min	15 - 25 min
440	City to Rozelle	5 - 10 min	5 - 10 min
461	City to Burwood	10 - 20 min	10 min
470	City to Lilyfield	15 min	5 - 10 min
480/ 483	City to Strathfield Station	30 min	15 - 20 min

Light Rail

Light Rail operates every 10-15 minutes on day time from Central Station to Dulwich Hill and Central Station to The Star. Services to Dulwich Hill finish at 11pm and overnight service is available from Central Station to The Star for every 30 minutes

Wheelchair accessible buses operate on some routes. Contact Sydney Buses or the Transport Infoline for details.

The closet cycle routes run along Jones Street, Shepherd Street and Meagher Street. The cycle routes are connected to Sydney CBD, inner west and eastern suburbs.

Note: See attached maps of ***Existing Public Transport Nodes***, ***Existing Bus Routes*** and ***Existing Cycle Network***.