

Winten Property Group

1 Denison Street, North Sydney

MP08-0238 MOD7 Changes to
Podium and Tower - Traffic and
Parking Assessment

Issue | 11 November 2016

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 601138

Arup
Arup Pty Ltd ABN 18 000 966 165




Arup
Level 10 201 Kent Street
PO Box 76 Millers Point
Sydney 2000
Australia
www.arup.com

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1 Introduction

Arup has undertaken a traffic and parking assessment for the proposed modifications to the approved development at 1 Denison Street, North Sydney.

In February 2010, the Minister for Planning granted development consent for Major Project No. MP08-0238 for the redevelopment of the following sites in North Sydney's CBD:

- 77-81 Berry Street
- 88 Walker Street

The current approval (MP08-0238 MOD5) is dated 16 March 2015. It permits construction of a part 26/part 32 storey commercial and retail building on the southern portion of 77-81 Berry Street including 2 levels of rooftop plant together with 4 levels of basement car parking and 1 part level of basement plant with vehicular access via Little Spring Street and loading/unloading facilities including provision of 42 public car parking spaces and 27 motorcycle spaces.

The approval includes off-site works to the public domain and landscaping involving construction of a new pedestrian plaza in Denison Street and public forecourt to Spring Street; construction of a new through-site road between Denison Street and Little Spring Street; together with various public domain improvements in Denison, Spring and Little Spring Streets, including road re-alignments.

The approved Mod 5 floor area is:

Floor space	Area
Commercial	50,679 m ² GFA
Retail	2,557 m ² GFA
Total	53,236 m ² GFA

The approved Mod 5 parking allocation is:

Car parking allocation	Car spaces	Motorcycle spaces
Commercial/retail spaces	120 (including 4 accessible)	14
Public spaces	42	27
Total	162	41

2 Description of modification

This Modification 7 involves changes to the podium and tower. A floor space increase of 13,470m² GFA is proposed. The proposed floor area is:

Floor space	Area
Commercial	65,020.81 m ² GFA
Retail	1,685.70 m ² GFA
Total	66,706.51 m ² GFA

3 Parking

3.1 Summary of parking provision

The proposed car parking provision aligns with the maximum permissible by NSDCP 2013 as shown in Table 1. Loading bays are proposed at the lower ground level to suit the intended building tenant's needs. The location of all parking spaces is provided in Table 2.

Table 1: Car parking provision

Parking:	DCP Maximum	Spaces Provided	Location
Commercial	1 per 400 m ² GFA	161	LG, B1- B4
Retail	1 per 400 m ² GFA	5	LG
Car Share	N/A	10	LG
Total:		176	
Loading:		Spaces Provided	Location
Courier Spaces		8	LG
Broadcast Loading		6	LG
Garbage / Truck Loading		5	LG
Total:		19	

Table 2: Location of parking spaces

Level	Conventional Spaces	Car Share	Loading	Accessible	Total Vehicles	Motorcycle Spaces
Lower Ground	4	10	19	2	35	3
Basement 01	45			1	46	
Basement 02	47			1	48	5
Basement 03	47			1	48	5
Basement 04	18			0	18	5
Total Provided	161	10	19	5	195	18

3.2 Public parking

Condition B5 Public Car Parking requires the Proponent to allocate to Council 42 car parking spaces and 27 motorcycle spaces at Basement 1 level of the Commercial Tower as public parking.

North Sydney DCP 2013 allows for the provision of car share spaces in Clause. 10.2.2:

Car sharing schemes can be designed to enhance sustainable transport modes, such as walking, cycling and public transport by filling a “mobility gap” – that is providing access to a vehicle on an “as needs” basis, without the high cost of ownership or private parking space provision.

Objectives O1 - To minimise the impact on the safety and efficiency of existing roads.

Provisions P1 - Council may consider the provision of car share parking in residential, mixed use and commercial developments but only if:

(a) The number of car share parking spaces provided does not replace more than 25% of the total off-street parking requirement if those car share space had not been provided, excluding any residential visitor parking spaces; and

(b) Each car share space does not replace less than 3 or more than 4 residential and/or non-residential parking spaces.

In accordance with this clause, we are proposing 10 car share spaces on lower ground level in lieu of the 42 council parking spaces required by the approved scheme. The car share spaces provided in a single pod in an off-street location will be of great benefit to the precinct.

3.3 Bicycle Parking

The North Sydney Council Development Control Plan (NSCDCP), 2002, outlined the bicycle parking requirements for the North Sydney area at the time of the development approval. DCP 2002 has since been superseded by DCP 2013. It is noted that with regard to requirements for bicycle parking, the rates have been increased significantly as shown in Table 3.

Table 3: Bicycle Parking

Type		NSDCP 2002		NSDCP 2013	
		Occupants	Visitors/customers	Occupants	Visitors/customers
Commercial	Rate	1 space/600m ²	1 space/2,500m ²	1 space/150m ²	1 space/400m ²
	Spaces	106	26	426	160
Retail	Rate	1 space/600m ²	1 space/2,500m ²	1 space/25m ²	2+ 1 space/100m ² (over 100m ²)
	Spaces	5	1	98	26
Sub-Total		111	27	524	186
Total		138		710	

The new DCP represents a 5 fold increase in bicycle parking requirement. We have considered the likely utilisation of bicycle parking based on the expected building occupancy and visitor activity.

The likely building occupancy can be calculated at a rate of 1 person per 15m², which results in 4,250 people for the commercial floor space. At the NSDCP 2013 rate, 426 bicycle space represents a bicycle mode of 10%. The current bicycle mode for journey to work in the North Sydney CBD from the 2011 Census data is less than 2%. We consider application of a 5% target bicycle mode to be appropriate which requires approximately 200 bicycle parking spaces for commercial tenants.

There are 9 retail shops proposed in the design. It is expected that there could be up to 60 staff across all of the retail. At a rate of 5% bicycle mode the parking requirement is 3 bicycle parking spaces.

Visitor bicycle parking will be provided in the public domain. 12 u-rails are recommended providing parking for 24 bicycles. A further 17 secure bicycle parking spaces are proposed for visitors to the commercial.

The proposed total bicycle parking provision is:

- 220 bicycle parking spaces in a secure room at lower ground level
- 12 bicycle parking u-rails (24 spaces) in the public domain

3.4 Motorcycle parking

The NSDCP 2013 requires a minimum of 1 motorcycle park per 10 car spaces. The provision of 18 motorbike spaces is consistent with this.

3.5 Loading Dock

The approved development provided 5 truck loading docks and a series of courier spaces. The Mod 7 scheme maintains the number of truck docks and adds a specific tenant with media production and broadcasting functions requirement for 6 broadcast vans.

The lower ground floor provides a total of 19 loading spaces, consisting of:

- 6 broadcast loading spaces
- 8 courier spaces
- 2 x MRV's
- 3 x SRV's

This mix and provision of loading spaces will provide a good level of service and ensure all loading can occur within the site. The lower ground level is accessed directly from Little Spring Street at the same level providing easy access for trucks. A large turning area is provided so that all vehicles will enter and exit the site in a forward direction.

4 Traffic generation

4.1 Existing traffic generation

The original approval for the development on the site was supported by a Traffic and Parking Report prepared by Halcrow MWT in May 2009. At that time, the adjacent site at 88 Walker Street was included and the development included both commercial and hotel components with supporting retail.

The existing Berry Square car park was surveyed and found to generate:

- AM Peak hour: 35 two-way movements for 117 spaces = 0.3 two-way movements per space
- PM Peak hour: 29 two-way movements for 117 spaces = 0.25 two-way movements per space

4.2 Proposed traffic generation

The approved commercial component of the development was assessed using a rate of 0.4 trips per space for commercial tenant parking. Based on the proposed 152 commercial car spaces at that time, 61 two-way vehicle movements were predicted for the AM and PM peak hours.

The Mod 7 commercial car parking provision of 161 spaces could be anticipated to generate 64 two-way vehicle movements, an increase of only 3 vehicle movements. On this basis, the Mod 7 proposal is considered to have no additional impact on the wider access road network.

5 Road network alterations

5.1 Approved road network alterations

The approved road network changes surrounding the site are shown in Figure 1. They include:

- Closure of Denison Street between Spring Street and MLC driveways
- East-West link road
- Little Spring Street converted to two-way traffic between Spring Street and East-West link road

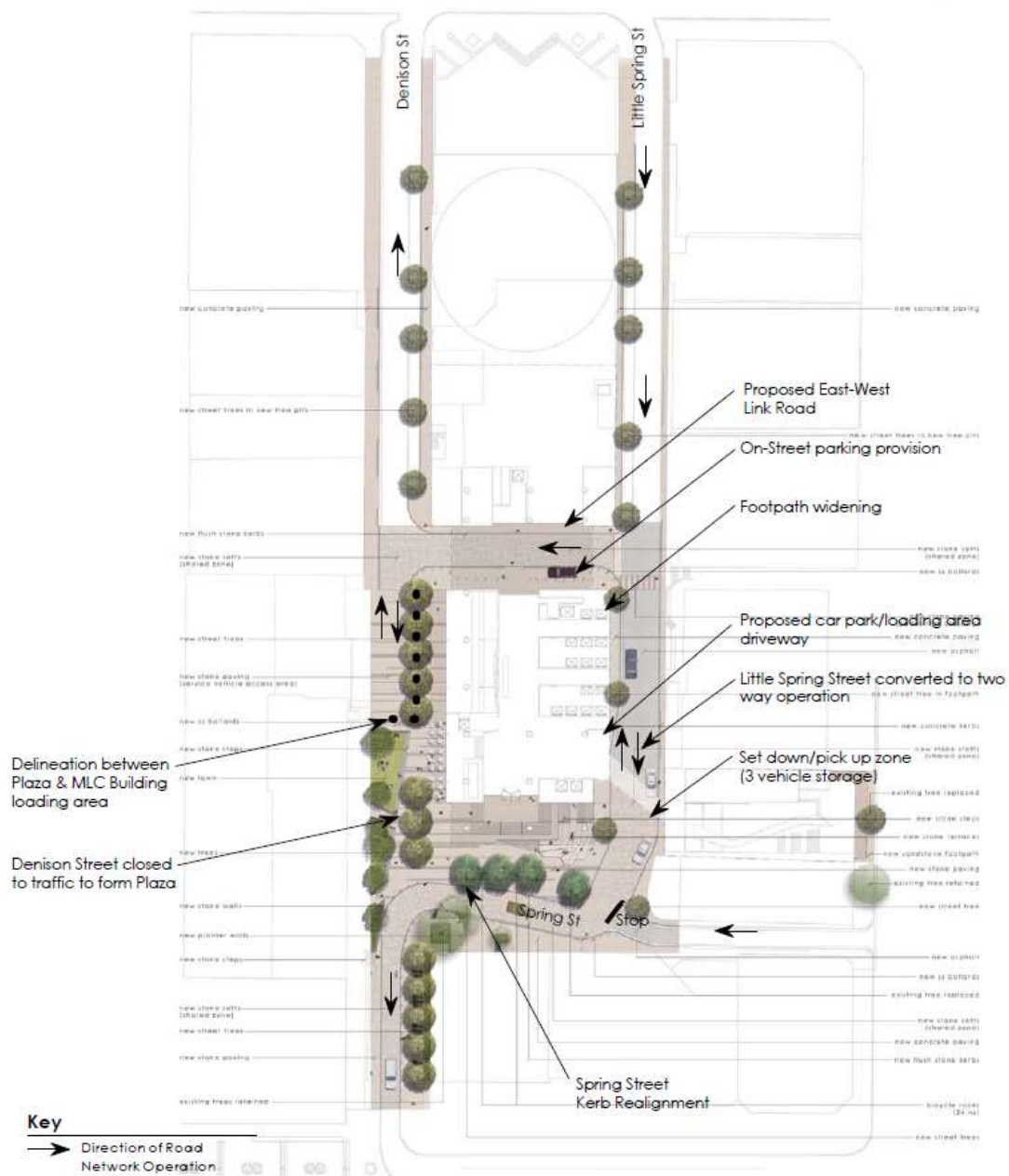


Figure 1: Approved road network changes (Source: Halcrow MWT 2009)

5.2 Proposed road network alterations by Mod 7

Since the approved scheme and subsequent modifications, the Sydney Metro City and Southwest project has been announced which proposes a new metro railway station within North Sydney with access portals in Miller Street and Denison Street. In recognition of this significant change in pedestrian activity, North Sydney Council prepared the Central Laneways Masterplan in July 2016. An excerpt from this document describes the need for careful consideration on the road network.

The Sydney Metro City and Southwest project proposes a new metro railway station within North Sydney. The Victoria Cross station, as it will be known, will be located at the north western edge of the subject precinct. Access portals will be located both on Miller and Denison Streets, as shown in Figure 7.



The new station is expected to cater for around 14,000 passenger movements in the morning peak alone. Transport for NSW estimates that more than half of all movements in and out of the Victoria Cross station will occur at Denison Street. Preliminary pedestrian modelling suggests that Denison Street in its current form will not adequately cater for the increase in pedestrian traffic in that street.

The arrival of significant transport infrastructure amplifies the need and opportunity for Denison Street and the laneways precinct to be re-engineered to cater for this expected influx of people. The opportunity to create something special in this precinct is further highlighted by the impending Metro development.

The Central Laneways Masterplan recommends a number of Key Moves:

1. Revisit 1 Denison Street Development Approval
2. Create a Pedestrian Priority Precinct
3. Implement Brett Whiteley Place Concept plan
4. Facilitate New Spaces and Activities.

Mod 7 has therefore addressed the first two of the key moves through considering the road network operations and aiming to further improve the pedestrian environment through reducing vehicle circulation.

The proposed road network changes surrounding the site are shown in Figure 2. They include:

- Closure of Denison Street between Spring Street and 181 Miller Street driveways
- Two-way traffic in Denison Street between 181 Miller Street and Berry Street
- A shared zone in Denison Street for access to the MLC driveway
- East-West link is open only to pedestrians
- Little Spring Street, Spring Street, Denison Street between Spring Street and Mount and Mount Street all remain with their current traffic flow direction.

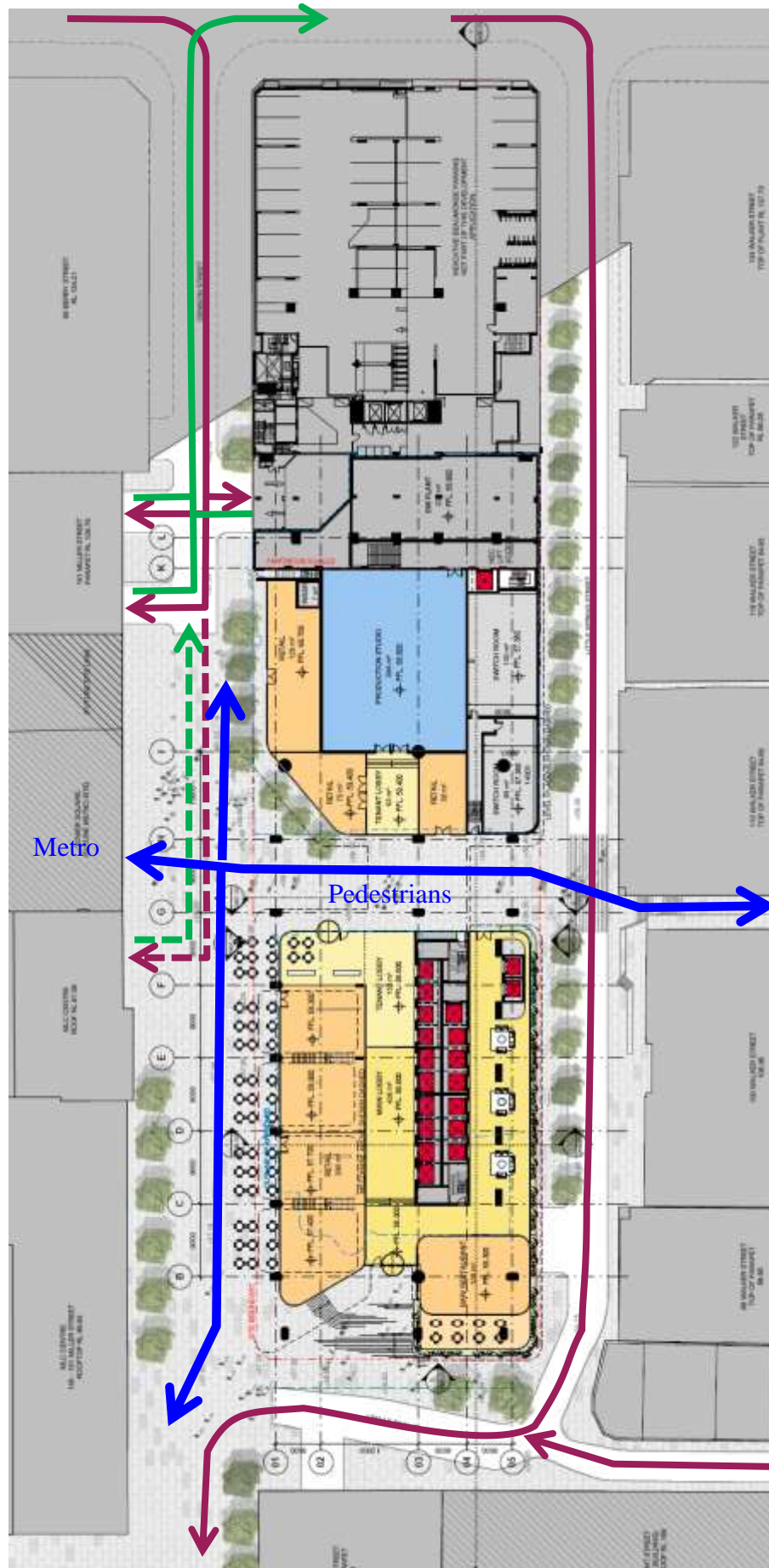


Figure 2: Proposed Laneway Strategy

The laneway system provides access to a number of car parking facilities as shown in Figure 3. The approximate number of spaces access from each section of roadway is shown in Figure 3. (Note that a number of car parks have been estimated)

Table 4: Car parking access locations

Access Road	Spaces
Little Spring Street	391
Spring Street	42
Denison Street	723
Mount Street	100
Total	1,256

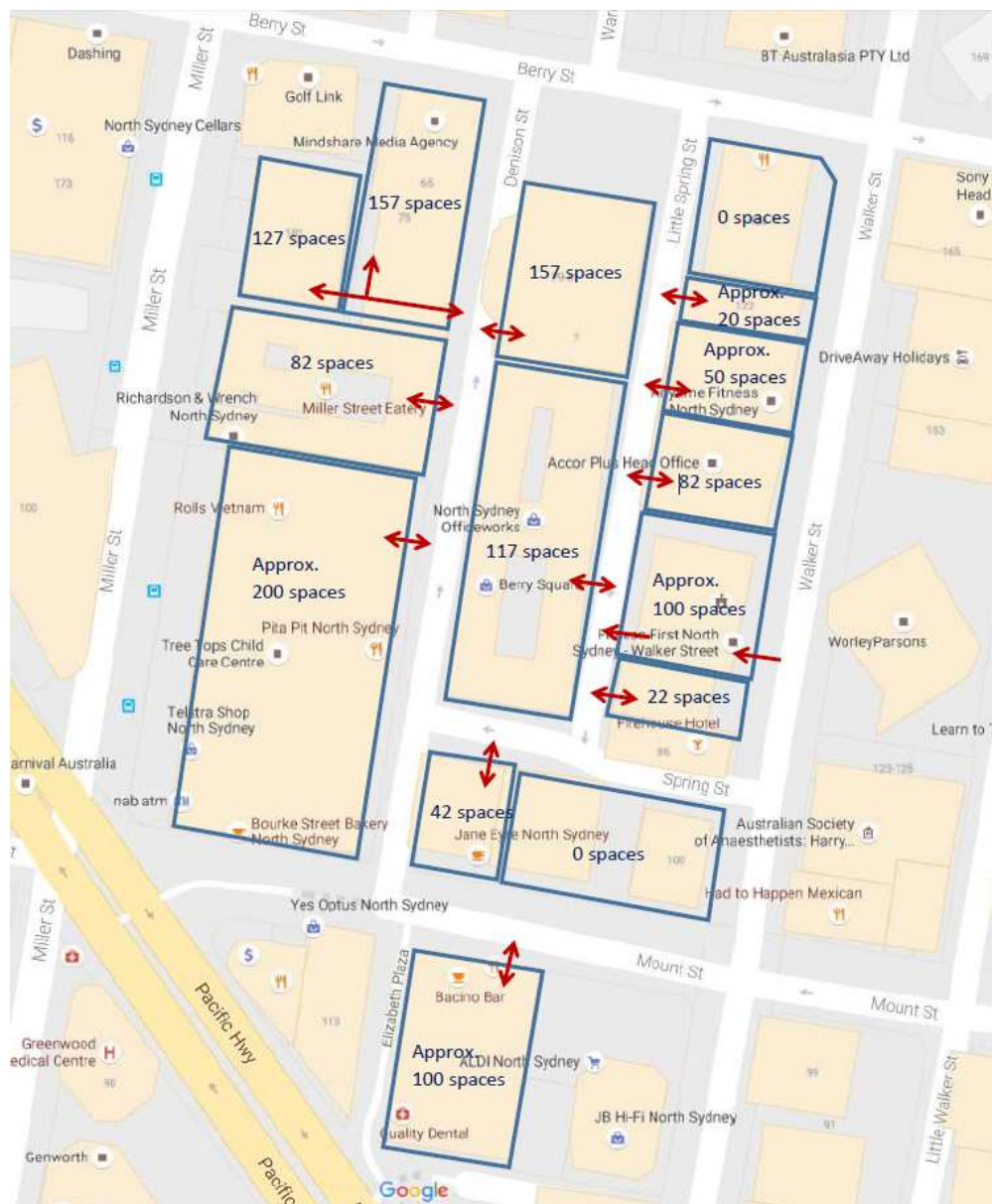


Figure 3: Car parking in precinct

(Note that a number of car parks have been estimated)

Arup has reviewed the current traffic patterns for the AM Peak to determine the routes being taken to access the various car parks. The observed patterns are shown in Figure 4. There are a large number of vehicles circulating around the one-way system to avoid the main roads. These vehicles can be removed from the laneway system by the proposed closures. The potential AM Peak traffic flows are shown in Figure 5.

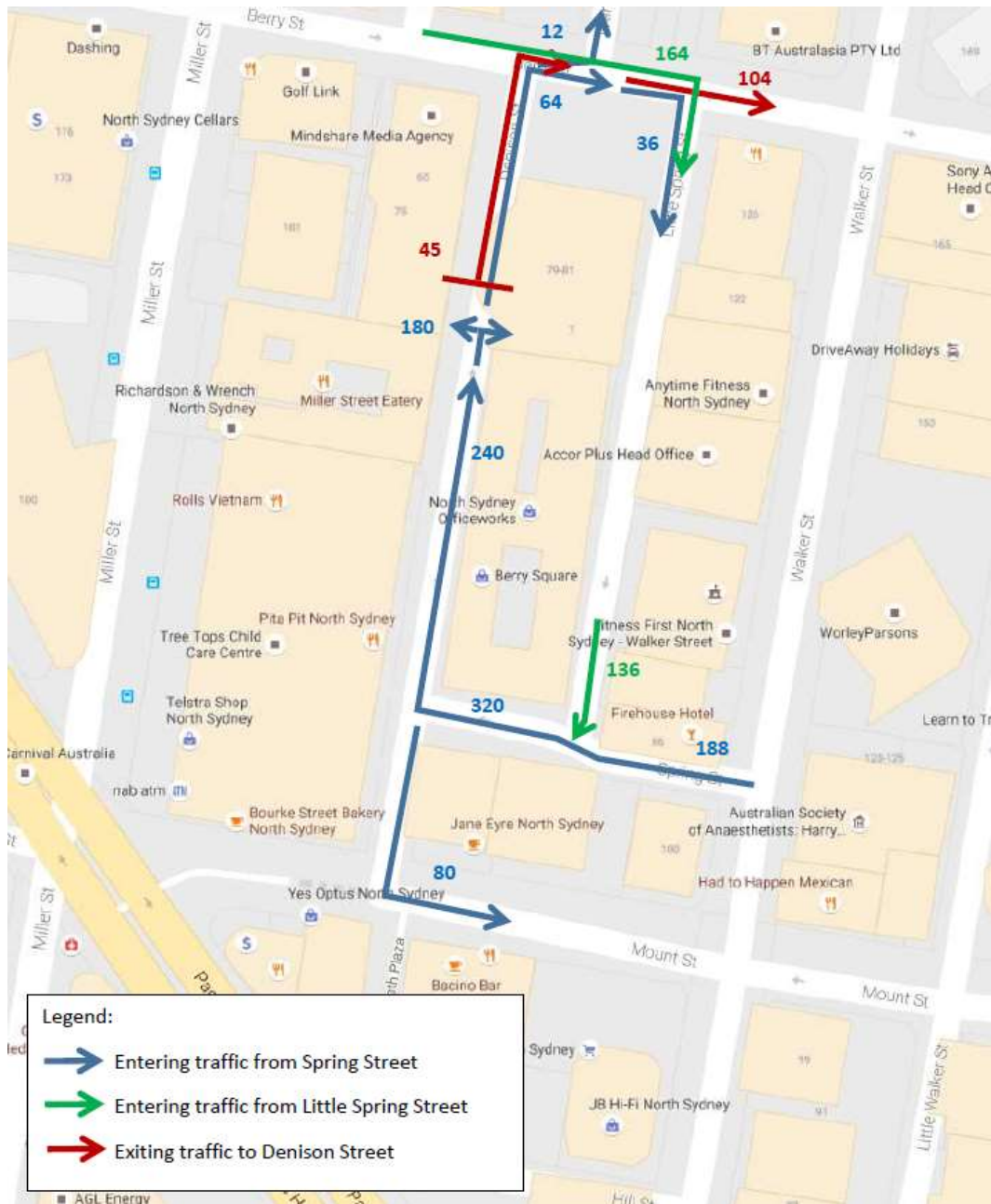


Figure 4: Existing AM Peak Hour traffic flows in the laneways

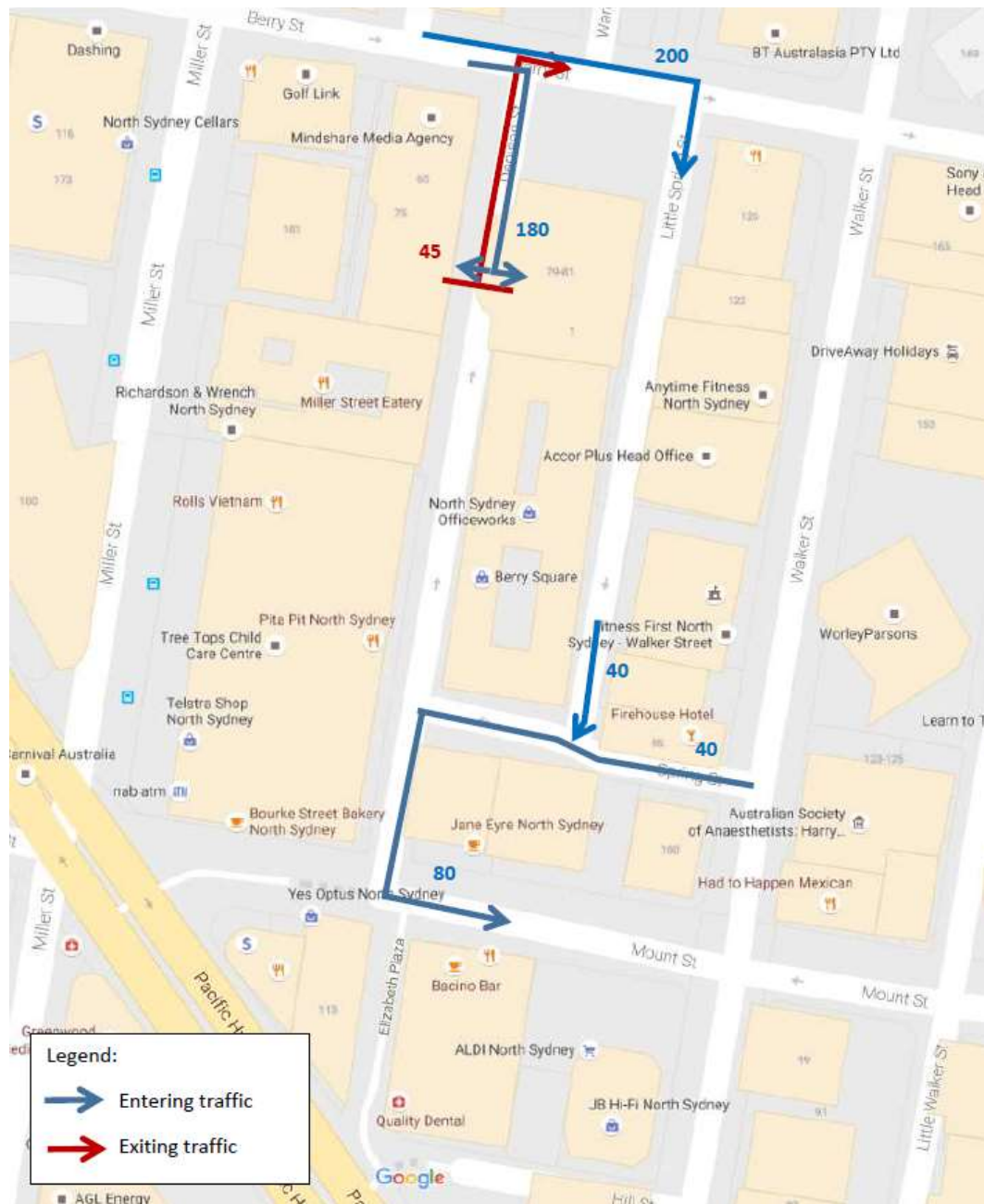


Figure 5: Potential AM Peak Hour traffic flows in the laneways

With two-way traffic in the northern section of Denison Street, approximately 180 vehicles will enter from Berry Street. There will be no change in traffic entering little Spring Street but a significant reduction in traffic entering Spring Street from Walker Street.

Adjustments to the kerb alignment at the entry to Denison Street from Berry Street will allow a relatively easy right turn in from the kerbside lane with giving way to pedestrians being the only limiter. This is similar to the existing right turn into little Spring Street.

We have not considered the PM peak at this stage. The minor change will be additional traffic potentially exiting via Mount Street from the Little Spring Street car parks. There will be a decrease in traffic exiting from Denison Street into Berry Street.

5.3 Future refinement of the laneway strategy

The Central Laneways Masterplan prepared by North Sydney Council indicates the potential for Elizabeth Plaza to be extended along Denison Street through to the Metro station. If this was pursued, the direction of travel in Spring Street or Little Spring Street would need to be reversed to create a one-way link between Walker Street and Berry Street. Mount Street would also need to become two-way with a turning head.

5.4 Further network traffic assessment

It is recommended that further network traffic assessment be undertaken with information considered about the Sydney Metro station arrangements and Council's proposed Central Laneways Masterplan.

6 Conclusions

Arup has undertaken a traffic and parking assessment for the proposed modifications to the approved development at 1 Denison Street, North Sydney. This Modification 7 involves changes to the podium and tower. A floor space increase of 13,470m² GFA is proposed with a small increase in car parking from 162 to 176 spaces. The proposed car parking provision aligns with the maximum permissible by NSDCP 2013.

In accordance with this clause, we are proposing 10 car share spaces on lower ground level in lieu of the 42 council parking spaces required by the approved scheme. The car share spaces provided in a single pod in an off-street location will be of great benefit to the precinct.

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It is recommended that further network traffic assessment be undertaken with information considered about the Sydney Metro station arrangements and Council's proposed Central Laneways Masterplan.