

Attachment A9

Pedestrian Footpath Analysis – Mixed Use Scheme

Stockland

Stockland Piccadilly Complex

Footpath Analysis for Planning Proposal

Reference: Piccadilly Complex Footpath Analysis

03 | 05 August 2025

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1. Introduction

This Footpath Analysis report accompanies a planning proposal seeking to amend the Sydney Local Environmental Plan 2012 (the LEP) relevant to the land known as ‘Stockland Piccadilly Complex’ located at 133-145 Castlereagh Street, Sydney (the site) and legally described as Lot 10 in DP828419. The site location is shown in Figure 1.



Figure 1: 133-145 Castlereagh Street, Sydney – Stockland Piccadilly Complex

The planning proposal seeks to prescribe site specific LEP provisions, including amending the floor space ratio development standard, as well as concurrently preparing a site specific Development Control Plan (DCP) to guide the future development. The DCP will establish a building envelope for the site, as well as other key assessment criteria including the establishment of a through-site link, vehicular access and car parking provision, and sustainability criteria.

The intended outcome of the proposed amendments to the LEP and DCP is to facilitate the redevelopment of the site for a mixed-use development, which is predominately commercial office, together with basement car parking and associated facilities. The proposal will retain the structure of the majority of the existing commercial tower as well as the basement structure. The proposal facilitates additional commercial floor space capacity in Central Sydney while also delivering improved public domain outcomes. Such outcomes will include a rectified Solar Access Plane breach to Hyde Park, a northerly aligned direct through-site link between Pitt and Castlereagh Street and enhanced pedestrian amenity and activation at the ground plane.

1.1 Subject site

The site currently comprises three buildings known as the ‘Piccadilly Complex’ completed in 1991 which has been the subject of progressive improvements to upgrade selected elements within the building. The buildings currently occupying the site are detailed in Table 1.

Building	Description
Piccadilly Court	Comprises a 14-storey office building completed in 1975 and first refurbished in 1991 with frontage to Pitt Street.
Piccadilly Shopping Centre	Comprises a 2-storey retail building and the Wesley Mission facilities including the Wesley Church, Lyceum, Wesley Theatre and office space predominately located at basement level. The Wesley Centre facilities comprise the following patron capacity: • Theatre – 950 • Lyceum – 277 • Chapel – 534 A footbridge over Pitt Street connects the building to 55 Market Street to the west.
Piccadilly Tower	Comprises a 31-storey commercial building comprising office floor space and end of trip facilities and four basement levels of car parking accessed from Castlereagh Street. The building includes two lobby spaces, the main Castlereagh Street entrance and a smaller northern entrance to the through site link. A footbridge over Castlereagh Street connects the building to the Sheraton on the Park located to the east of the site.

Stockland Piccadilly Complex Footpath Analysis | 03 | 05 August 2025 | Arup Australia Pty Ltd Footpath Analysis for Planning Proposal

The Concept Reference Design includes the following elements:

- Basement car parking and building services plant;
- Retail Tenancies
- End of trip, back of house area and plant;
- A northerly aligned east-west pedestrian through-site link connecting Pitt St and Castlereagh St;
- Podium levels comprising lobby, retail, commercial and plant;
- Tower levels comprising commercial and plant;
- Residential apartments including apartments and sub-penthouses;
- Residential apartments and amenity areas;
- Penthouse apartments; and
- Plant.

1.2 Purpose of report

The purpose of this report is to document the pedestrian comfort of the footpaths adjacent to the new development at 133-145 Castlereagh Street using the NSW Walking Space Guide (WSG), a state-wide guide to be applied in the design of comfortable walking spaces. The guide was developed through a collaboration between the City of Sydney (CoS) and Transport for New South Wales (TfNSW) to understand the relationship between pedestrian volumes, density, and comfort in the NSW context, and to establish a consistent framework for assessing footpaths within the built environment. The WSG intends to set minimum footpath widths that provide the opportunity for comfortable pedestrian movement across may different footpath types and contexts such as from high-use central city footpaths.

The report builds on, and where appropriate, updates the *Footpath Analysis for Planning Proposal undertaken by Arup (dated: 10 August 2020)* document produced for the proposed development by Arup (see Appendix A). The previous work used the Pedestrian Comfort Levels (PCL) assessment method following the Transport for London (TfL) Pedestrian Comfort Guidance. The updated WSG assessment will compare the base scenario (i.e. existing conditions) and compare with the ‘with development’ impact on the footpaths adjacent to 133-145 Castlereagh Street.

2. Study Area

The study area is outlined in Figure 3. The proposed development site has dual frontages for pedestrian access at Pitt Street and Castlereagh Street. The footpaths assessed as part of this study are shown in pink, which aligns with the previous approach taken to assess the footpaths. These include the footpaths that provide direct access to the building entrances on Castlereagh and Pitt Streets as well as secondary footpaths that connect to the surrounding transport nodes.

The footpath assessment includes an additional link on Park Street between Pitt Street and Castlereagh Street. The purpose of including this link is to capture the development generated pedestrian traffic which use the newly operational Gadigal Metro Station with an access point located along the northern footpath of this street.



Figure 3: Study Area

3. Existing Conditions Assessment

This study has reviewed a number of documents that include pedestrian surveys conducted prior to the Covid-19 pandemic. These include:

- Development Application: 194 & 196-204 Pitt Street, Sydney
- Development Application: 65-77 Market Street, Sydney
- Chatswood to Sydenham Environmental Impact Statement (EIS), May 2016 (relevant for Gadigal Metro Station)
- Gadigal Station, Interchange Access Plan (IAP), January 2024 (relevant for Gadigal Metro Station)

The two neighbouring development applications did not include any indication of existing pedestrian counts in the area. However, the Chatswood to Sydenham EIS and Gadigal Station IAP has been interrogated to understand the usefulness of the information to be used in the WSG assessment.

A site visit was conducted on 24 September 2024 to get an understanding of physical characteristics of the footpath network in the study area.

3.1 Pedestrian Counts

3.1.1 Chatswood to Sydenham Environmental Impact Statement

The Chatswood to Sydenham Environmental Impact Statement (EIS) included 2015 AM Peak hourly pedestrian counts as outlined in Figure 4. The EIS shows that existing counts are only available on Park Street either side of Pitt Street and on Pitt Street north of Park Street. An overview of the 2015 AM peak hour flows is provided in Figure 4.

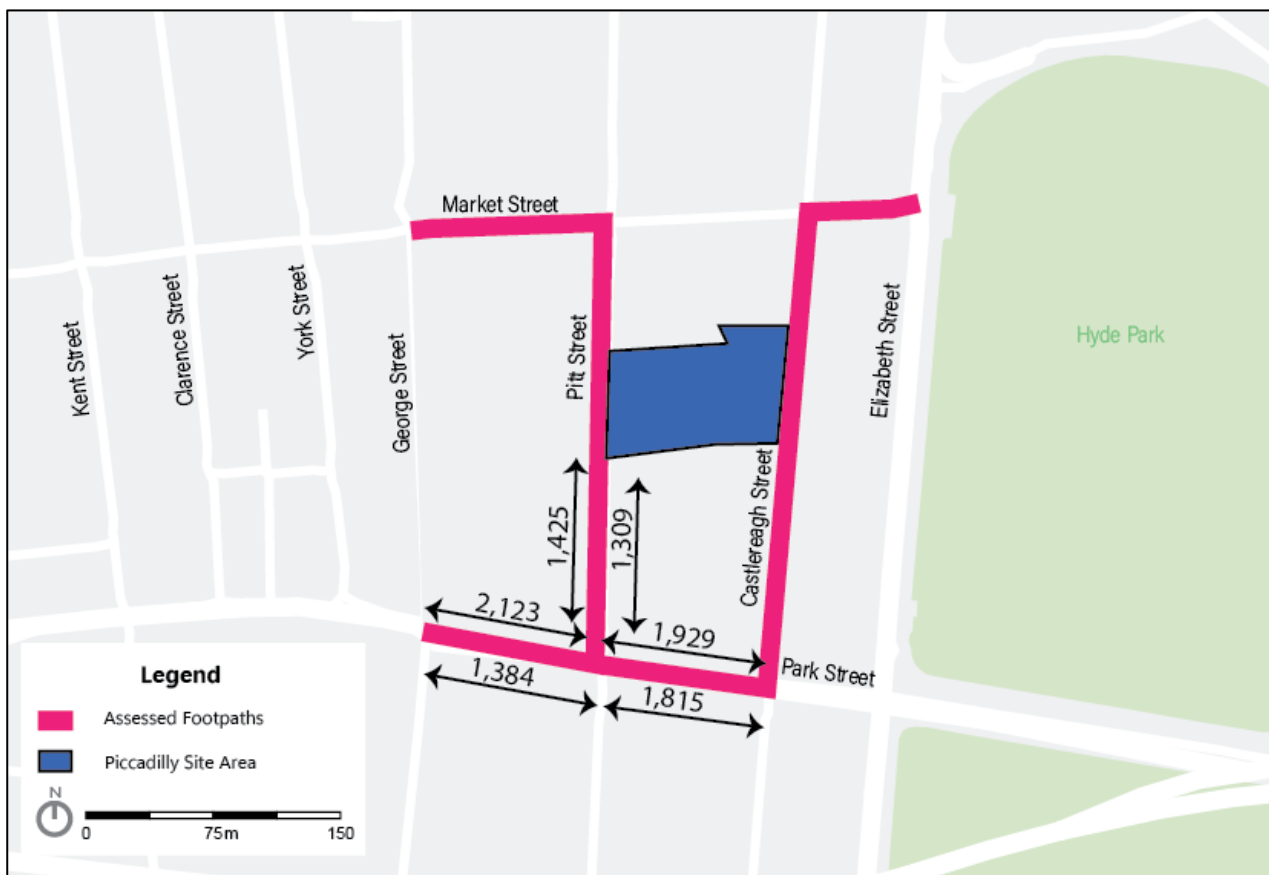


Figure 4: Pedestrian movement counts, 2015 AM Peak Hour flows (Sydney Metro 2016).

It is acknowledged that the information from the Chatswood to Sydenham EIS representing pedestrian counts in 2015, is potentially outdated and not representative of current conditions or when the future year when the proposed development opens. It has therefore been used in Section 5 as supplementary information as part of the WSG assessment.

3.1.2 Gadigal Station Interchange Access Plan

Sydney Metro's 2024 Interchange Access Plan (IAP) for Gadigal Metro station provides an overview of the 2036 AM peak period (over 3.5 hours) demand profile along with station egress and access distributions. As the information is forecast to a future year of 2036, the information is similarly useful (as that of the Chatswood to Sydenham EIS pedestrian counts) but not representative of existing conditions since the opening of the station in August 2024. The information is still considered to be of use to the WSG

assessment and has been used to supplement the assessment provided in Section 5. An overview of the 2036 AM peak period demand for the Gadigal Metro Station is provided in Figure 5.

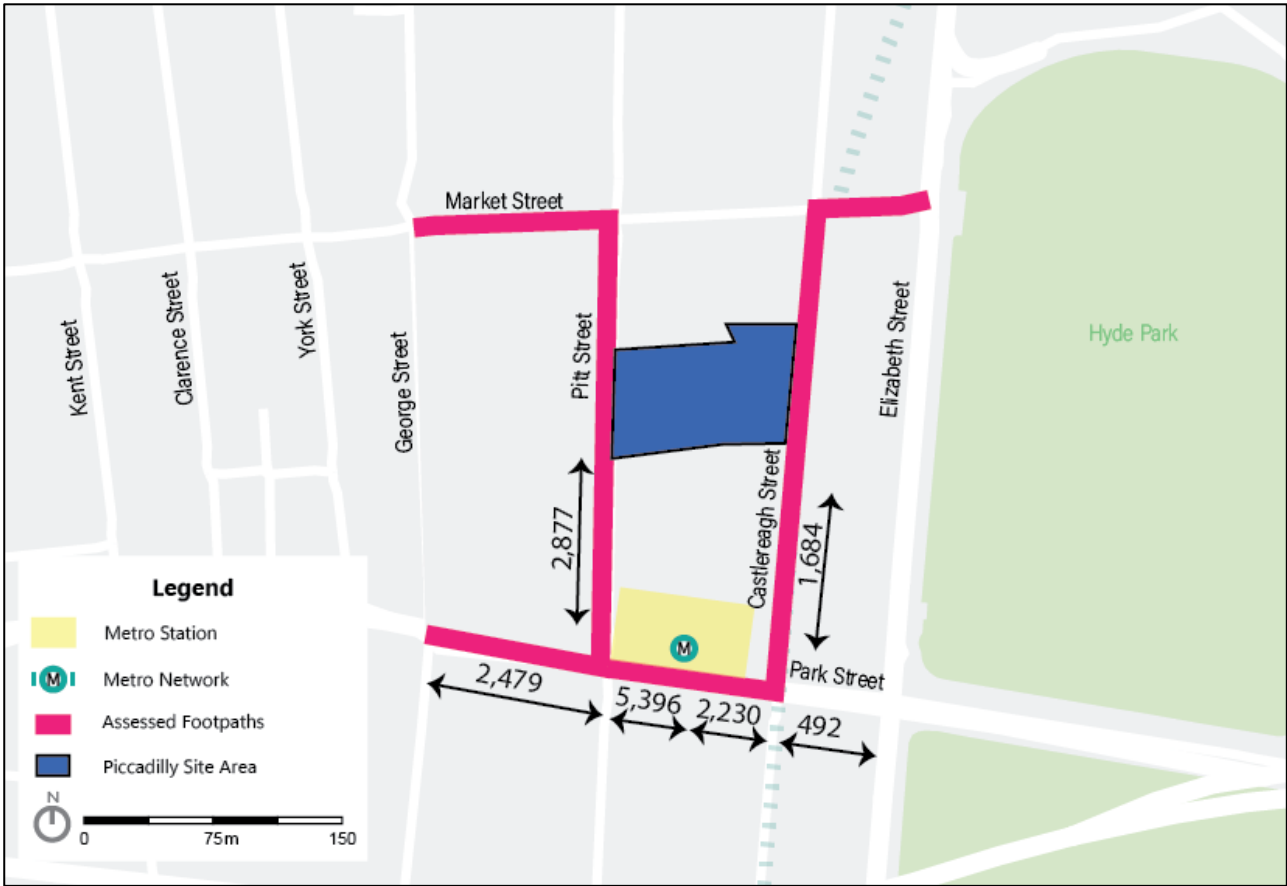


Figure 5: 2036 Gadigal Metro pedestrian movements (Sydney Metro 2024)

3.2 Site observations

A site visit of the study area was undertaken on 24 September 2024 to collect site specific measurements of the footpaths in the study area. The purpose of the visit was to measure the total footpath width to the kerb, and the effective footpath width accounting street furniture and parking bay insets. The narrowest section of each footpath is photographed, measured, and used in the footpath assessment in Section 5. The findings of the site visit are summarised in this section with a plan of assessed footpaths shown in Figure 6.

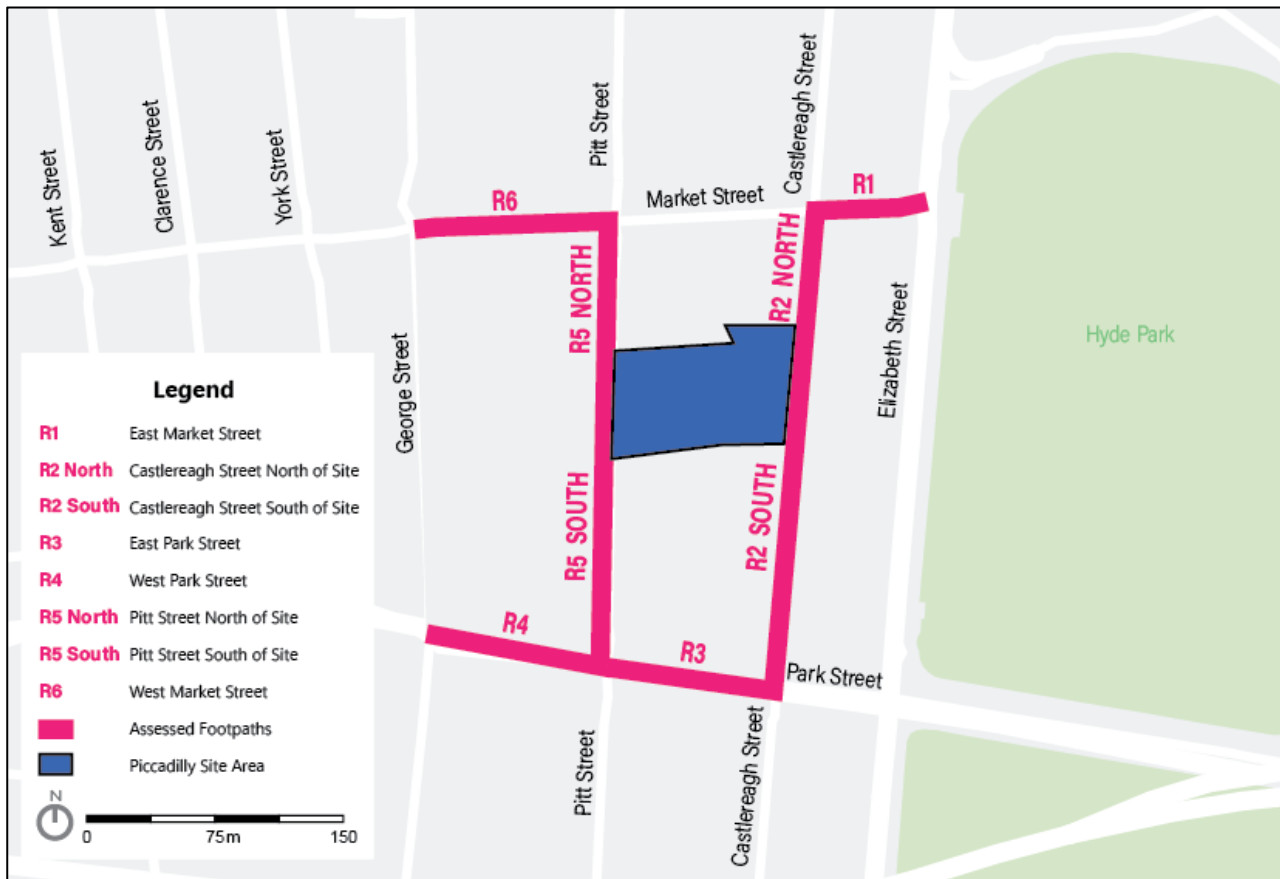


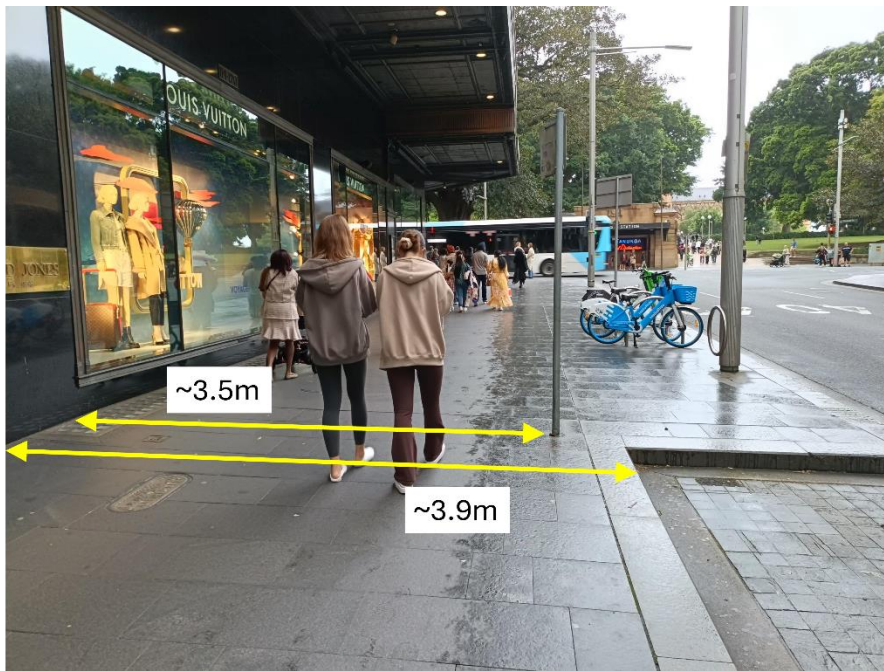
Figure 6: Assessed footpaths.

3.2.1 Market Street

Market Street is a main east-west thoroughfare. Two sections of Market Street are assessed as part of this footpath analysis.

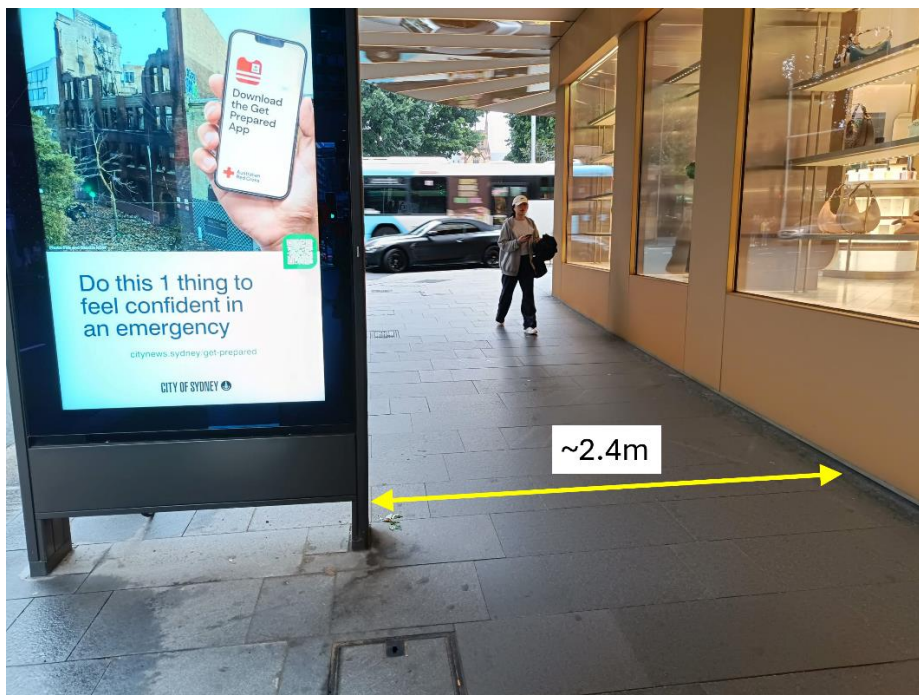
- 1) Section of Market Street located between Castlereagh Street and Elizabeth Street (R1); and
- 2) Section of Market Street located between George Street and Pitt Street (R6).

The first section provides connections to St James Station and bus stops to the north-east of the site. The northern portion of the first section is shown in Photograph 1. The narrowest section of the footpath has a width of approximately 3.5m of effective width between building property and signpost.



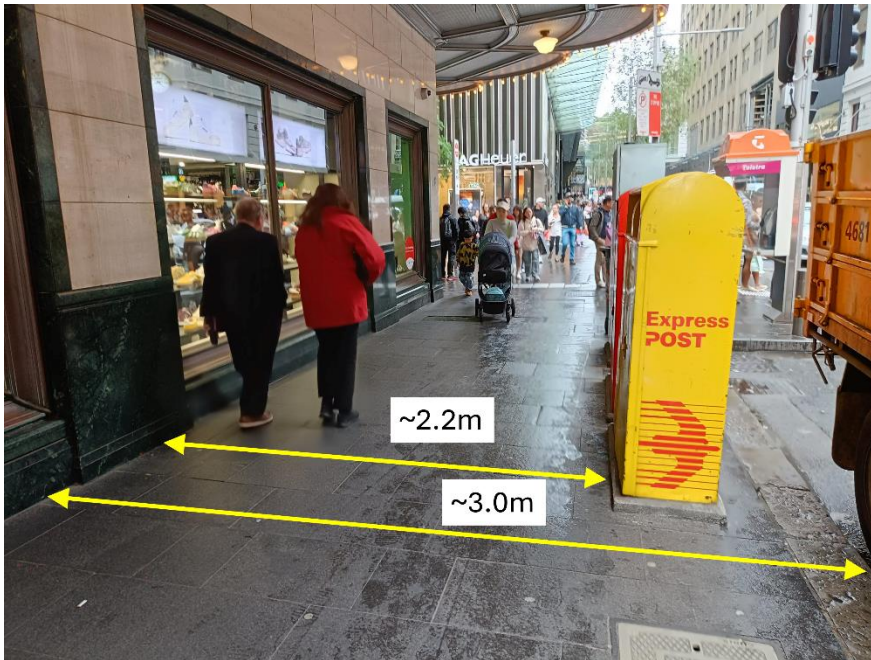
Photograph 1: Northern section of Market Street (Section 1).

The southern portion of the first section is shown in Photograph 2. The narrow section of the footpath has a width of approximately 2.4m of effective width between building property and advertisement display.



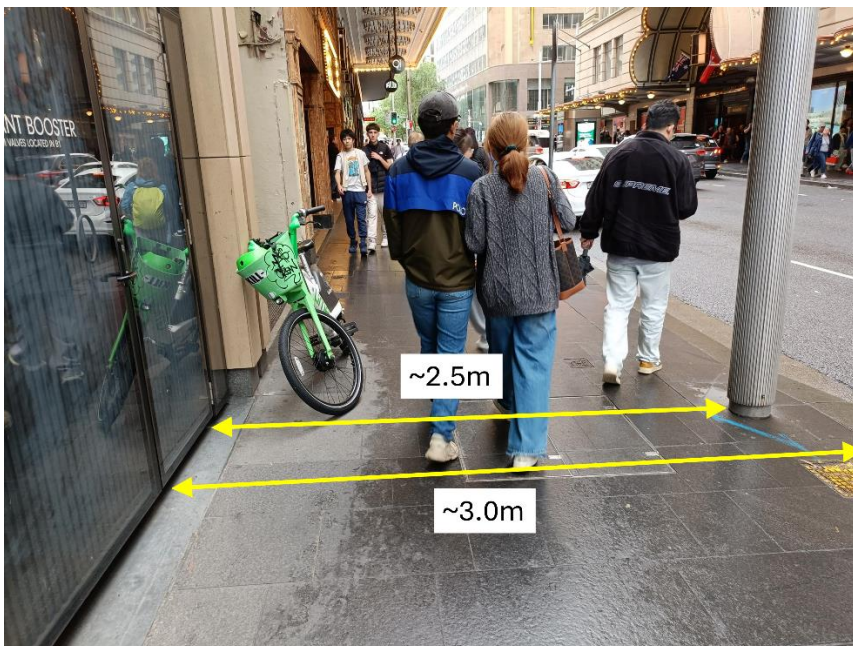
Photograph 2: Southern section of Market Street (Section 1).

The second section provides connections to bus stops and Light Rail services along George Street. The northern portion is shown in Photograph 3. The narrowest section of the footpath has a width of approximately 2.2m of effective width between building property and post-boxes.



Photograph 3: Northern section of Market Street (Section 2).

The southern portion is shown in Photograph 4. The narrowest section of this footpath has a width of approximately 2.5m of effective width between building property and lamppost.



Photograph 4: Southern section of Market Street (Section 2).

This study has not included the stretch of Market Street between Pitt Street and Castlereagh Street because temporary hoarding throughout the southern footpath has significantly reduced its effective width. Upon completion of temporary works, it is unknown where the building lines will be along the southern footpath.

3.2.2 Park Street

Park Street is a main east-west thoroughfare that provides connections to Town Hall Station, bus stops to the west and south-west and Gadigal Metro Station to the south. This report separates Park Street into two sections:

- 1) Section of Park Street located between Pitt Street and Castlereagh Street (R3); and

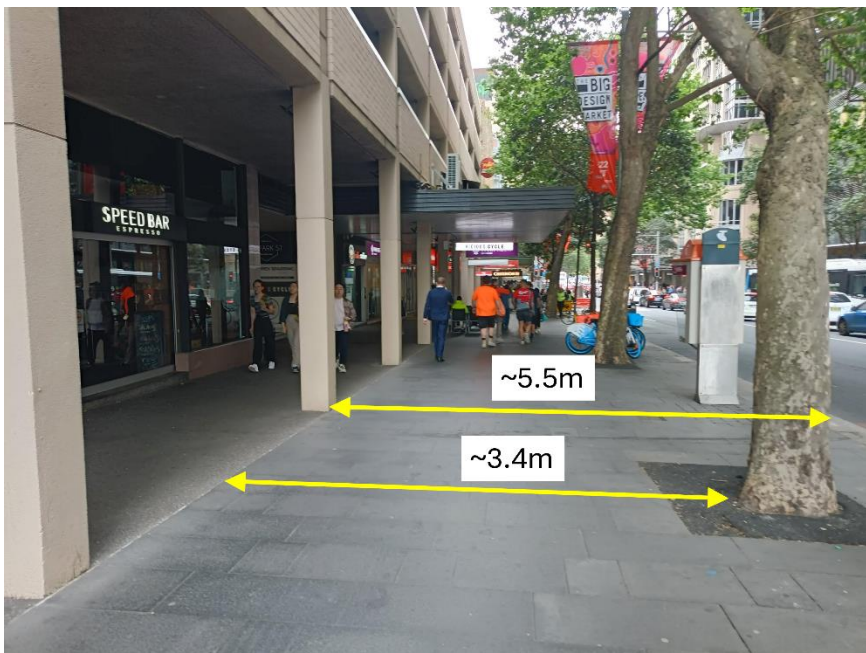
2) Section of Park Street is located between George Street and Pitt Street (R4).

The first section of Park Street is characterised generally as shown in Photograph 5. This shows an approximate total of 3.1m effective width between building property and bollards demarcating Gadigal Station's entry/exit point.



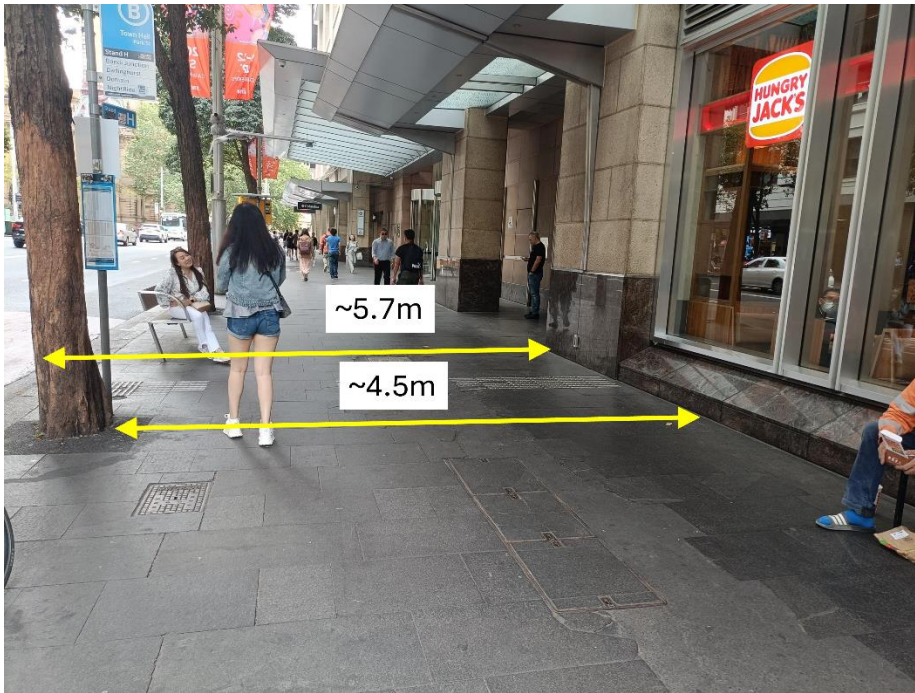
Photograph 5: Northern section of Park Street (Section 1).

The southern portion of Park Street is shown in Photograph 6. The narrowest section of this footpath has a width of approximately 3.4m of effective width between building property and tree. The tree grate is level with the footpath and provides no additional hazard. It was observed that pedestrians walk on the tree grate.



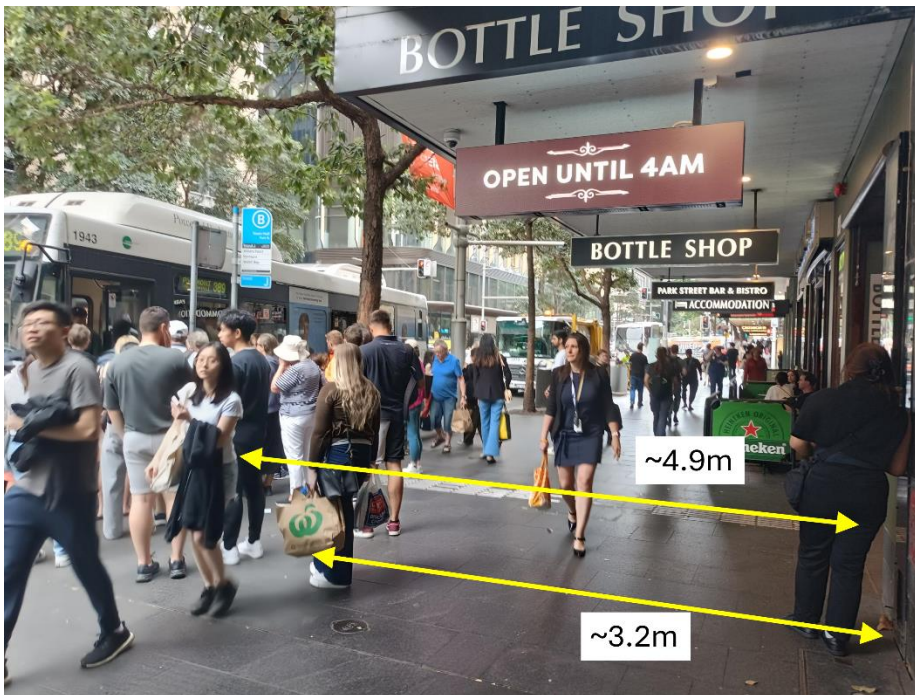
Photograph 6: Southern section of Park Street (Section 1).

The northern portion of the second section is shown in Photograph 7. The narrowest section of this footpath has a width of approximately 4.5m of effective width between building property and signposts or street furniture positioned in alignment.



Photograph 7: Northern section of Park Street (Section 2).

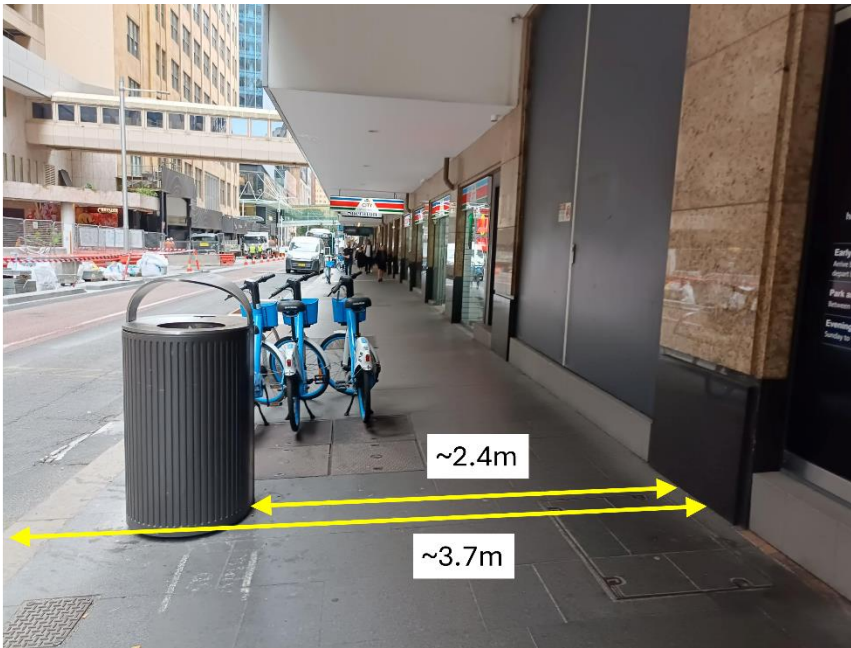
The southern portion is shown in Photograph 8. This footpath has bus stops which typically feature rows of bus patrons lining up. The footpath has a total width of 4.5m with the narrowest section of this footpath featuring a width of approximately 3.2m of effective width between building property and typical peak hour bus lines.



Photograph 8: Southern section of Park Street (Section 2).

3.2.3 Castlereagh Street

Castlereagh Street is a main north-south thoroughfare that provides direct access to the proposed development. Its eastern footpath between Market Street and Park Street is characterised generally as shown in Photograph 9. This footpath features an approximate total of 2.4m effective width at its most critical section, between building property and bin. This is located along the eastern footpath at the south of the site, within footpath R2 South.



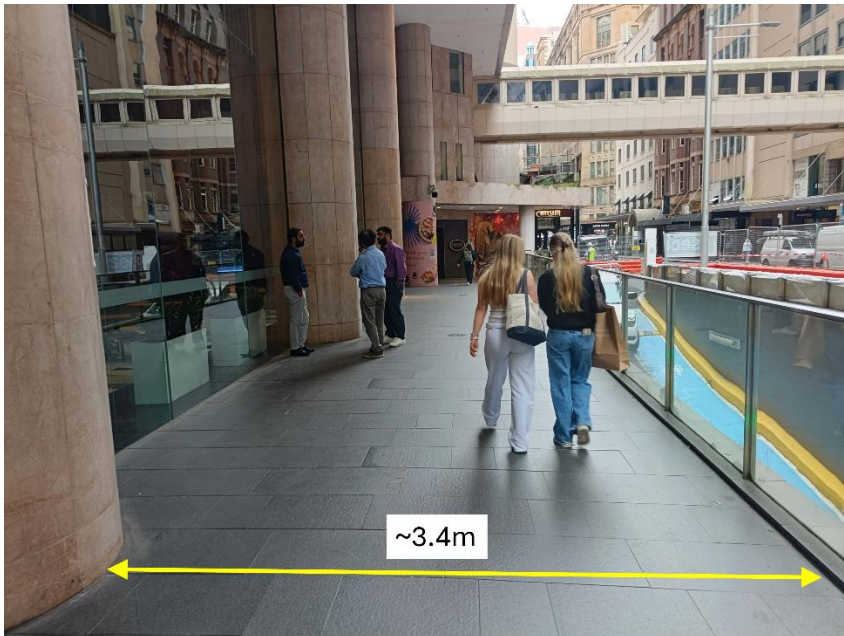
Photograph 9: Eastern section of Castlereagh Street.

Castlereagh Street western footpath is shown in Photograph 10. The footpath has an effective width of 2.9m between building property and lamppost.



Photograph 10: Eastern section of Castlereagh Street.

Adjacent to the development site there is an existing ramp down to the existing car park which diverts the footpath as shown in Photograph 12. In this instance the effective width is approximately 3.4 m. As part of the proposed development the existing car park ramp that runs parallel to the footpath will be replaced with a more standard perpendicular ramp.

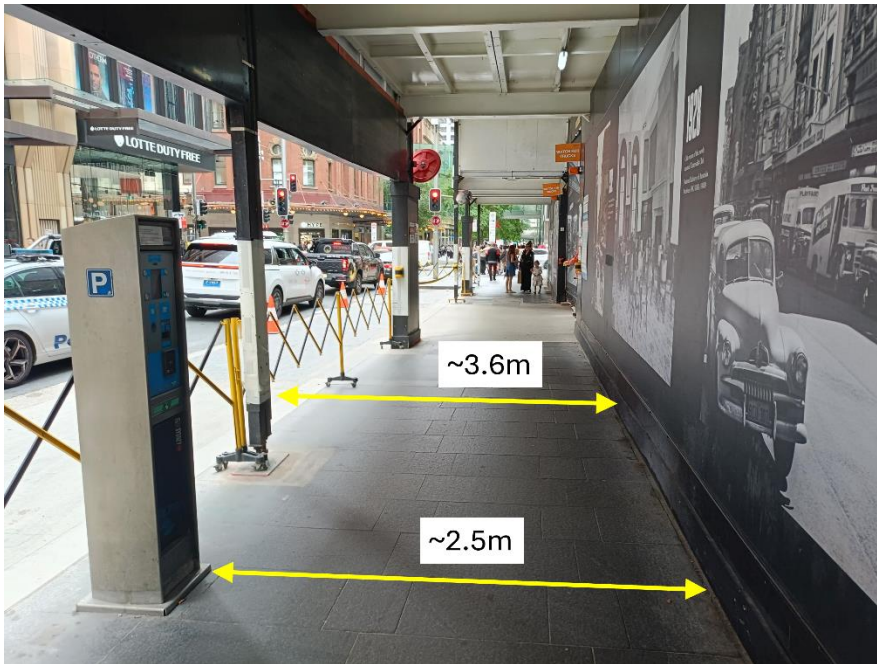


Photograph 11: Castlereagh Street looking north, adjacent to proposed development site.

The vehicle entry ramp positioned parallel to Castlereagh Street will be removed and converted into footpath area with the kerb lining up with the existing Castlereagh Street western footpath line just to the south of the site shown in Photograph 11. The total width of this footpath will increase to approximately between 6-7m, however, the effective width is dependent on the street furniture that will be implemented as part of the scheme.

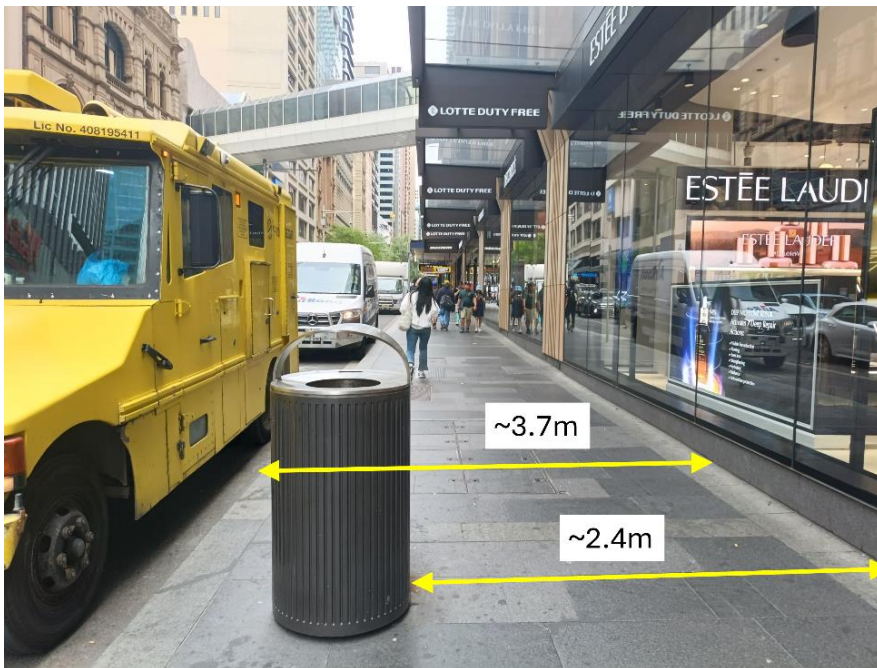
3.2.4 Pitt Street

Pitt Street is a main north-south thoroughfare that provides direct access to the proposed development. Its eastern footpath between Market Street and Park Street is characterised generally as shown in Photograph 12. This shows an approximate total effective width of 2.5m between building property and parking meter. Hoarding is located along the entire stretch of the eastern footpath which may affect the available width for pedestrians when removed. At various locations along the road there are parking bays built into the kerb and protected by bollards.



Photograph 12: Eastern section of Pitt Street.

Pitt Street western footpath is shown in Photograph 13. The footpath has an effective width of 2.4m between building property and bin. Outside of this piece of street furniture, the western footpath has consistent profile throughout. This footpath represents the most critical section of the two Pitt Street footpaths and is located along western footpath at the north of site, within footpath R5 North.



Photograph 13: Western section Pitt Street.

3.3 Existing footpath dimensions summary

Figure 7 summarises the effective footpath widths outlined in the site observation sections above.



Figure 7: Approximate effective footpath widths within study area.

4. NSW Walking Space Guide Approach

4.1 Context and Approach

The NSW WSG is a method used to assess pedestrian footpath space within the built environment, with the aim of achieving comfortable walking environments. The guide establishes a consistent framework for assessing street footpaths based on effective walking space, pedestrian volumes, and Level of Service (LoS) to evaluate pedestrian comfort levels. The WSG was developed based on research taken at midblock footpaths in primarily urban areas, so is applicable to street footpaths adjacent to proposed developments.

The WSG sets out a five-step assessment process for analysing footpaths which this report follows for the assessment.

1. **Select and assess the site** by collating information regarding to land use and surrounding transport networks for existing or future scenarios.
2. **Classify footpath types** using foot path typologies defined within the walking space guide. There are two methods of analysis to determine footpath type dependant on the availability of data. Street footpath classifications is conducted based on existing and future indicative pedestrian demand.
3. **Determine Walking Space** by measuring footpaths taking into account of kerbside traffic buffers, obstructions or static activity.
4. **Assess the Walking Space Level of Service (LoS)** based on the peak hour flow rate and minimum walking space width in metres.
5. **Understand the LoS Rating, Targets and Mitigation Measures** based on comfort levels; LoS C is considered the minimum target level.

4.2 Assumptions

To determine the pedestrian volumes generated by the development, the following assumptions have been adopted:

- The commercial development has an average population density of 1 person for every 8m² of NLA.
- 1-bedroom apartments house an average of 2 working persons over the age of 15,
2-bedroom apartments house an average of 3 working persons over the age of 15,
3-bedroom apartments house an average of 4 working persons over the age of 15,
Sub-penthouse apartments house an average of 4 working persons over the age of 15, and
Penthouse apartments house an average of 5 working persons over the age of 15.
- A growth rate of 1.21% per annum has been assumed to estimate flows on the footpaths in 2030 which reflects planned opening year. The 1.21% per annum growth rate has been estimated based on projected employment figures from Transport for NSW's Travel Zone Projection 2022 for the travel zone within which the site is located.

4.3 Pedestrian Volumes

4.3.1 Development Pedestrian Volumes

A summary of the Concept Reference Design that informs this planning proposal is outlined in Section 1.1. The assessment is based on the net increase in commercial population between the existing floor area and that of the proposed development. A net increase of approximately 4,000 people across the commercial and residential uses has been estimated based on the increase in commercial floor area, and residential dwellings.

The development demand has both commercial and residential pedestrian volumes allocated to the footpath network based on the following approach:

- Transport mode share for Journey to Work is estimated based on 2016 Census data for the Destination Zone (DZN) 113371093 that includes the site. 2016 Census data has been used instead of 2021 Census data due to Covid-19 effects on the accuracy of 2021 Journey to Work data.
- Building users (i.e. commercial and residential) are allocated to each mode as per the mode share data. Car mode share is split into onsite parking based on the available car parking spaces and offsite parking for overflow. 110 car spaces are provided for the site's commercial development and 75 spaces for the residential development. Bicycle mode share is assumed to be all accommodated in the proposed end of trip facilities.
- For each mode, trips are split to various stations, stops, and car parks based on their distribution surrounding the proposed site.
- Pedestrians are allocated to footpaths from each transport node to the closest building entry from the transport node. The route choice is generally assumed to be the shortest distance, however where the city grid provides multiple equivalent alternatives, the assignment is distributed to the various routes.
- AM peak hour data is used to consider the greater number of workers visiting the site during the morning peak. The commercial development at site is estimated to have a conservatively estimated population of 3,200 people with a conservatively assumed 80% of total commercial population traveling to site and 80% of residential population leaving site during the morning peak, taking the worst-case scenario to evaluate the development's total pedestrian traffic generation and impact on assessed footpaths.
- Based on Opal travel data, Sydney Gadigal Metro Station operations have diverted 12% of Town Hall Station users towards engaging with Gadigal Metro Station instead. Due to 2016 census data not accounting for Metro use, Gadigal Metro Station mode share is calculated based on Town Hall Station mode share totals. This resulted in a 5.8% Metro mode share for the commercial development of workers arriving to the site and a 2.6% mode share for residents leaving the site during the AM Peak Hour.

Transport mode share for the site's commercial development was calculated based on analysis of Census Journey to Work 2016 dataset for destination zones (DZN) 113371093. Incoming work trips to these zones were analysed and the resulting mode share is presented in Table 2.

Table 2: 2016 Journey to Work mode share for commercial development.

Mode	Percent of work trips made to site
Train	49.3%
Bus	23.4%
Ferry	1.4%
Light rail	0.3%
Metro	5.8%
Car and taxi	12.6%
Cycle	1.0%
Walked only	6.1%

Transport mode share for the site's residential development was calculated based on the 2016 Census counting Method of Travel to Work by Survey Area 4 (SA4) Places of Work and SA2 level Usual Residence. The resulting mode share is presented in Table 3.

Table 3: 2016 Journey to Work mode share for residential development.

Mode	Percent of work trips made to site
Train	22.4%
Bus	12.7%
Ferry	0.1%
Light rail	0.9%
Metro	2.6%
Car and taxi	12.4%
Cycle	0.8%
Walked only	48.0%

Figure 8 presents the total number of additional pedestrian traffic generated by the site's commercial and residential developments. These calculations are based on mode share, Net Lettable Area (NLA) of the commercial development, and the apartment numbers based on bedroom totals and Gross Floor Area (GFA) of the residential development.



Figure 8: Total development generated AM Peak Hour pedestrian volumes.

5. NSW Walking Space Guide Assessment

5.1 Select and Assess the site

The WSG assessment considers the study area and the collection of site-specific measurements of footpaths to understand the total and effective widths to be used to determine the available walking space. Figure 3 and Figure 6 provide overviews of the study area and Section 3 provides a summary of the dimensions to be used in the assessment.

5.2 Footpath Classification

The WSG details two options to determine the intensity of use and hence footpath type:

- 1) Pedestrian Peak Hour walking counts extrapolated for the life of the infrastructure (Table 2A Column A); or
- 2) Desktop analysis (Table 2A Column B-D and Table 2B).

Table 2A and Table 2B of the WSG is used to classify footpath types, an excerpt of each table is provided below in Figure 9 and Figure 10 respectively.

Footpath Type	Column A Peak Hour number of people on the footpath (People Per Hour – PPHr)	Column B Land use characterisation	Column C Proximity to public transport	Column D Proximity to places of interest (where a block is measured to a major pedestrian dispersal point like a street intersection)
Type 1	Less than 7 PPHr	Residential areas with detached housing, or low intensity employment areas (eg industrial land), isolated 3 storey flat building	-	-
Type 2	7-69 PPHr	Residential areas that include row or town houses or up to 3 storey residential flat buildings/mixed use residential buildings or medium intensity employment areas (up to 3 storey campus model business parks), hotel/motel, one or two shops	Adjacent to regional cycle lane 0-200m from a bus stop (excluding stops with less than 10 services per day) 0-600m from a LR/Bus Rapid Transit (BRT) stop 400-800m from a train/metro station	Within two blocks of a local place of interest (Table 2B List 1)
Type 3	70-399 PPHr	Streets with shops, food and drink premises, entertainment uses or services, residential areas that include residential flat buildings/mixed use residential buildings greater than 3 storeys or medium employment industrial areas	0-400m from a train/metro station <i>Footpath adjacent to retail – 0-200m from a bus stop 0-300m from a LR/BRT stop</i>	Within one block of a local place of interest (Table 2B List 1) or Within two blocks of a regional place of interest (Table 2B List 2)
Type 4	400-2000 PPHr	Streets with more than 200m of shops, food and drink premises, entertainment uses or services, Late night trading/management areas, Mixed use or employment areas	<i>Footpath adjacent to retail – 0-100m from a train/metro station</i>	Within one block of a regional place of interest Table 2B List 2 or Within two blocks of a metropolitan place of interest (Table 2B List 3)
Type 5	Greater than 2000 PPHr	Very high intensity mixed use, employment, retail, transport or entertainment areas, significant public places or buildings with very large numbers of people, transport interchanges and associated waiting areas, entries and overflow areas	0-50m from a transport interchange including at least 2 modes	Within one block of a metropolitan place of interest (Table 2B List 3)

Figure 9: WSG Footpath Types.

Table 2B – Places of interest

List Number	Places of interest types
List 1 Local places of interest	bakery, childcare, church or place of public worship, community centre, entertainment facility (local), general practitioner, grocer, leisure centre (local), library, medical centre (local), park (local), places that support temporary creative activity in the public domain all year round (eg stalls, art, music), police station, public eating and drinking areas, public facility (local), recreation facility (local), regional cycle route, school (<200 students), shopping centre (<1000sqm), sports field (local), supermarket (<1000sqm), swimming pool, town hall, walking route (major local)
List 2 Regional places of interest	cinema, convenience store (regional importance e.g. serving a town), entertainment facility (regional), gallery, hospital, information or visitor centre, leisure centre (regional), markets, medical centre (regional), music hall or performance space, park (regional), public facility (regional), recreation facility (regional), school (>200 students), shopping centre (>1000sqm), sports field (regional), tertiary education, theatres, university, walking route (regional)
List 3 Metropolitan places of interest	metropolitan or international place of interest, e.g. state art gallery/museum, sports stadium, metropolitan park, large shopping centre

Figure 10: WSG Places of interest.

As detailed in Section 3.1, the pedestrian volume information that could be used has its limitations for direct application in this WSG assessment. The classification is therefore based on the desktop analysis method. A summary of each area within the study area is provided in Table 4 below to provide commentary on the rationale for choosing the classification for the existing footpath network. Due to the location of the site as a busy part of the CBD, and excellent access to high-quality, busy transport nodes, the existing footpaths have been classified as type 5 has been identified for all parts of the study area.

Table 4: Footpath WSG type classification.

Footpath route	Footpath type	WSG type classification
R1	Type 5	Very high intensity mixed use street within 50m of St James transport interchange of at least 2 modes.
R2 North	Type 5	Very high intensity mixed use street within 50m of St James transport interchange of at least 2 modes and within one block of a metropolitan park.
R2 South	Type 5	Very high intensity mixed use street within one block of a metropolitan park.
R3	Type 5	Very high intensity mixed use street within 50m of Gadigal Metro station of at least 2 modes.
R4	Type 5	Very high intensity mixed use street within 50m of Town Hall station of at least 2 modes.
R5 North	Type 5	Very high intensity mixed use street within one block of a Pitt Street Mall shopping centre.
R5 South	Type 5	Very high intensity mixed use street within one block of a Pitt Street Mall shopping centre.
R6	Type 5	Very high intensity mixed use street within one block of a Pitt Street Mall shopping centre.

5.3 Assess the Walking Space LoS

Table 4A of the WSG is used to determine the walking space LoS and provides an indication of the minimum target space that should be provided for the footpaths. An excerpt of the table is provided below in Figure 11. The WSG specifies a minimum target criterion of LoS C in which 50% of people would expect to be comfortable. On that basis, the LoS C target has been used to assess each route against and to assess the walking space LoS.

Table 4A – Walking Space Level of Service							
Footpath Type	Adjacent to Active Edge	Walking Space and LOS					
		Types 1-4 Minimum Walking Space in metres (m)			Type 5 Minimum Walking Space in metres (m) and Maximum Peak Hour flow rate in PPMM		
		LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
Type 1	-	2.7	2.3	2.0	1.6*	1.3*	Less than 1.3*
Type 2	-	3.0 + 0.6 Passing Zone	2.7 + 0.6 Passing Zone	2.3 + 0.6 Passing Zone	1.9 + 0.6 Passing Zone	1.6 + 0.6 Passing Zone	Less than 1.6 + 0.6 Passing Zone
Type 3	Not Adjacent	3.9	3.5	3.0	2.6	2.2	Less than 2.2
	Adjacent	4.3	3.8	3.2	2.8	2.3	Less than 2.3
Type 4	Not Adjacent	4.8	4.3	3.7	3.2	2.7	Less than 2.7
	Adjacent	5.2	4.6	3.9	3.4	2.9	Less than 2.9
Type 5	Min. width (m)	5.2	4.6	3.9	3.4	2.9	Less than 2.9
	Max. PPMM	4.0	6.0	9.5	13.5	18.0	Greater than 18.0

Figure 11: WSG Walking Space Level of Service.

5.3.1 Without Development

Table 5 presents the results of the WSG assessment without the development to provide an understanding of the existing conditions.

It is noted that the footpath selected for each street is predicated on the effective width, and not the total width. Furthermore, the narrowest point along each link has been chosen as the minimum width. While this is the evaluation method required by the WSG, it does not necessarily reflect accurately on the condition of the entire stretch of footpaths, which typically has greater widths for large section of the chosen links included in the assessment. The effective width of R6 where the critical footpath is on the southern side has been reduced to 1.8m due to 40km/hour vehicle speeds immediately adjacent to this footpath. The WSG kerbside traffic buffer applies a 1.2m buffer zone to the 3.0m total width of this footpath.

Table 5: Existing footpath WSG assessment without development.

Footpath	Footpath classification	Existing effective width (m)	LoS	Minimum width required for LoS C
R1	Type 5	2.4m	F	3.9m
R2 North	Type 5	2.4m	F	3.9m
R2 South	Type 5	2.4m	F	3.9m
R3	Type 5	3.1m	E	3.9m
R4	Type 5	3.2m	E	3.9m
R5 North	Type 5	2.4m	F	3.9m
R5 South	Type 5	2.4m	F	3.9m
R6	Type 5	1.8m	F	3.9m

It's clear that all the footpaths within the study area already have effective widths less than the required widths and all assessed footpaths evaluated on existing conditions, without the development, fail to meet a WSG LoS of C. Assessing overall footpath widths against WSG criteria is restricted by effective widths which are often isolated pinch points on stretches of footpaths exceeding 100m in length. These footpaths often feature total widths that provide LoS approaching or meeting WSG LoS C.

5.3.2 With Development

The assessment considers the estimated development demand allocated to each link within the study area and compares it against the current provision. It considers the peak minute flow (PPMM) calculated using the pedestrian volumes generated by the net uplift in development and the existing footpath widths. The assessment also considers the potential widening through rationalisation of measures that could be implemented to increase the effective footpath widths. Table 6 summarises this assessment.

Table 6: Footpath WSG assessment with development impacts.

Footpath	Peak minute flow (PPMM)	Minimum width required for LoS C	Existing effective Width (m)	Existing total width (m)	Comment
R1	0.9	3.9m	2.4	4.5	Extremely small development impact. Total width exceeds width required for WSG LoS C. Street ad display creates a pinch point which reduces the effective width in one location. Can consider the removal of ad display to increase effective width.
R2 North	1.7	3.9m	2.4	3.7	Extremely small development impact. Isolated street furniture restricts effective width but presents limited overall impact on footpath. The removal of the ramped car park access provides opportunities to widen the footpath.
R2 South	2.0	3.9m	2.4	3.7	Extremely small development impact. Pinch point created by placement of bins and signposts. Otherwise, minimal street furniture along this footpath.
R3	0.5	3.9m	3.1	3.1	Extremely small development impact. Effective and total widths restricted by Gadigal Metro station bollards and building line. No widening opportunities.
R4	4.0	3.9m	3.2	4.9	Some development impact, but generally consider to be negligible. Effective width restricted by lines for bus stop. Dependent on bus scheduling. Opportunity to

Footpath	Peak minute flow (PPMM)	Minimum width required for LoS C	Existing effective Width (m)	Existing total width (m)	Comment
					increase effective width to approach total width with clear demarcation bus waiting area.
R5 North*	1.4	3.9m	2.4	3.7	Extremely small development impact. Isolated street furniture restricts effective width but presents limited overall impact on footpath.
R5 South	5.7	3.9m	2.4	3.7	Some development impact, but generally consider to be negligible. Isolated street furniture restricts effective width but presents limited overall impact on footpath.
R6	1.8	3.9m	1.8	3.0	Extremely small development impact. Kerbside traffic buffer zone of 1.2m restricts effective width. Opportunity to create kerbside parking or bicycle lane to increase effective width.

*Driveway access to be removed as part of the proposed development

The assessment shows:

- All footpaths have small increases in demand (i.e. in PPMM) that are considered to be negligible.
- The pedestrian volumes generated by the development examined in isolation will have negligible additional effective walking space width demands compared to total available widths of the more critical footpaths assessed. For R4 and R5 South, corresponding respectively to Pitt Street (south of the site) and the stretch of Park Street between George Street and Pitt Street, these two footpaths connect the site with the Town Hall and a higher proportion of pedestrian volumes will travel through them during the AM peak hour. Opportunities exist to widen the effective widths to total widths less kerbside traffic buffer zones of 1.2m.

In addition to the qualitative assessment of the footpaths in the study area above, the below comments are made with regards to the proposed design and its impact on pedestrian flows:

- The existing driveway on Castlereagh Street that provides access to the basement car park currently has a major impact on the quality of the pedestrian experience along the footpath. In the current state, pedestrians are forced to divert around the driveway, creating challenges for all users but especially people with visual impairments. The proposed design removes the parallel driveway and replaces it with a traditional perpendicular driveway which allows the reinstatement a straight and linear footpath which is consistent for the full length of Castlereagh Street. It is therefore a substantial improvement in terms of pedestrian experience and continuity of shoreline for people with disabilities.
- The existing through site link includes horizontal shifts as well as level changes and is not an attractive or intuitive option for thoroughfare movements. The proposed development includes a substantially improved through-site link which is wider, straight and has gentle ramps connecting Pitt Street and Castlereagh Street. It will provide a legitimate link for pedestrians who want to travel east west. It has the potential to take pedestrian traffic off the surrounding footpath network. The proposed design allows for the through-site link has an unencumbered width of at least 6m.

6. Conclusion

Stockland propose to develop a new commercial and residential tower in the Sydney CBD. Whilst there is open-source pedestrian volume information, there is limitations in its use in the WSG assessment. The assessment has focussed on the existing footpath network without the development, and the impact of the development from a qualitative perspective.

Key findings from the assessment include:

- A total of six footpaths have been assessed based on the WSG assessment. Each of the existing footpaths fails to meet the LoS C criteria meaning that an intervention would be needed to be provided to increase the footpath widths (i.e. without the development).
- When assessing the additional pedestrian volumes associated with development, the increase of between 0.5 PPMM to 5.7 PPMM are estimated. These increases are considered to be negligible in terms of their impact on the existing footpaths included within the study area.
- The proposed design removes the parallel driveway on Castlereagh Street and replaces vehicle entry and exit with a signalised perpendicular driveway with a waiting bay. It is a substantial improvement in terms of pedestrian experience and continuity of shoreline for people with disabilities.
- The proposed development includes a substantially improved through site link that is wider and has gentle ramps connecting Pitt Street and Castlereagh Street. It has the potential to take pedestrian traffic off busy Market Street, especially those coming from St James Station and heading south-west.

Appendix A

Footpath Analysis for Planning Proposal undertaken by Arup (dated: 10 August 2020)

Attachment A13

**Pedestrian Footpath Analysis - 133-145
Castlereagh Street, Sydney**

Stockland

Stockland Piccadilly Complex

Footpath Analysis for Planning Proposal

249470-59_ Piccadilly Complex Footpath Analysis

V3 | 10 August 2020

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 249470-59

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Document verification

ARUP

Job title		Stockland Piccadilly Complex		Job number		249470-59	
Document title		Footpath Analysis for Planning Proposal		File reference			
Document ref		249470-59_ Piccadilly Complex Footpath Analysis					
Revision	Date	Filename	133 Castlereagh Street Footpath Analysis_Draft.docx				
Draft 1	3 Jul 2020	Description	First draft				
			Prepared by	Checked by	Approved by		
		Name	Michael Rumbold	Fiona Grant	Glenn Wheatley		
		Signature					
V2	25 Jul 2020	Filename	249470-59_Piccadilly Complex Footpath Analysis_V2 (200725)				
		Description					
			Prepared by	Checked by	Approved by		
		Name	Michael Rumbold	Eric Rivers	Glenn Wheatley		
		Signature					
V3	10 Aug 2020	Filename	249470-59_Piccadilly Complex Footpath Analysis_V3 (200810)				
		Description					
			Prepared by	Checked by	Approved by		
		Name	Michael Rumbold	Eric Rivers	Glenn Wheatley		
		Signature					
		Filename					
		Description					
			Prepared by	Checked by	Approved by		
		Name					
		Signature					
Issue Document verification with document ☒							

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1 Introduction

This Footpath Analysis has been prepared by Arup on behalf of Stockland. It accompanies a planning proposal seeking to initiate the preparation of a Local Environmental Plan amendment for the land known as ‘Stockland Piccadilly Complex’ located at 133-145 Castlereagh Street, Sydney (the site) legally described as Lot 10 in DP828419, and shown in Figure 1.

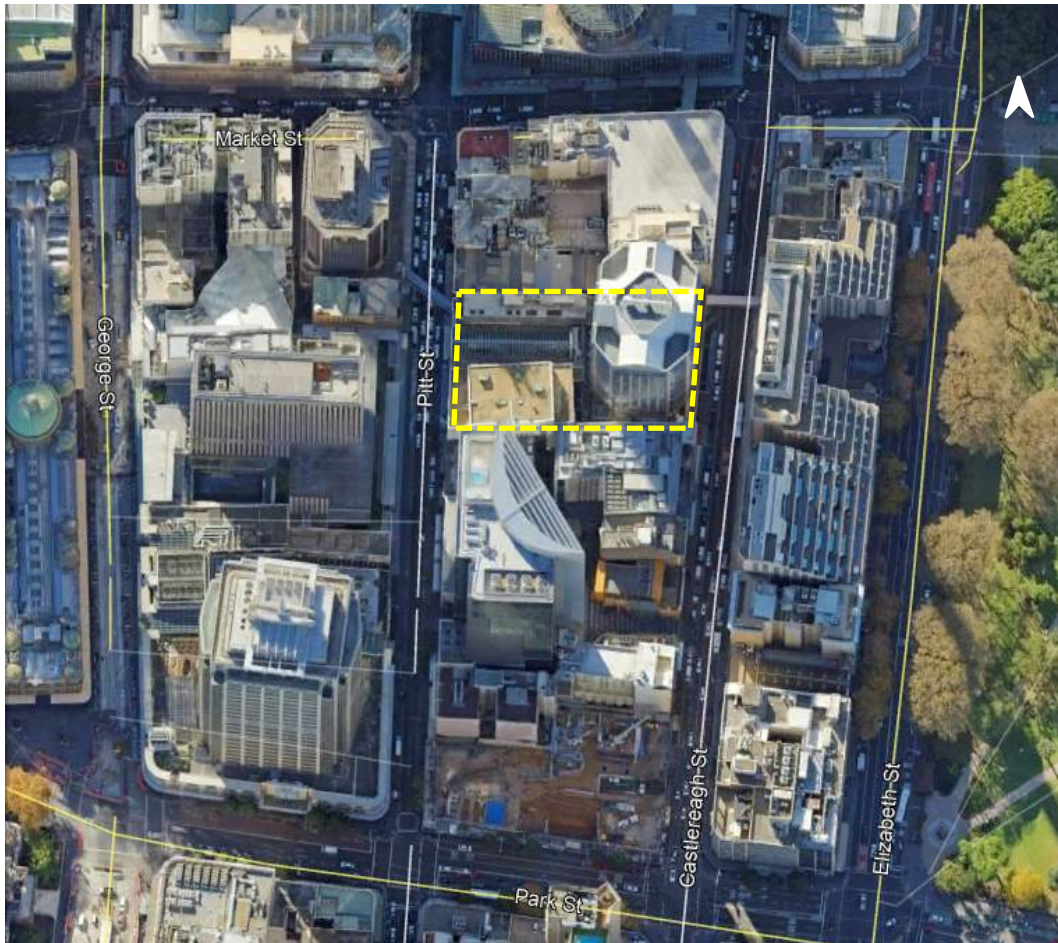


Figure 1: 133-145 Castlereagh Street, Sydney – Stockland Piccadilly Complex

The planning proposal seeks to amend the floor space ratio development standard applicable to the site, under the *Sydney Local Environmental Plan 2012* (the LEP), in accordance with Section 3.33 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In accordance with Clause 7.20 of the LEP, this planning proposal also seeks amendments to the *Sydney Development Control Plan 2012* (the DCP) to establish site specific provisions to guide the future development, including establishing a building envelope for the site as well as other key assessment criteria.

The intended outcome of the proposed amendments to the LEP and DCP is to facilitate the redevelopment of the site for a mixed-use commercial development together with basement car parking and associated facilities. Such a proposal

aligns with the draft Central Sydney Planning Strategy to facilitate additional commercial floor space capacity in Central Sydney while also delivering improved public domain outcomes. Such outcomes will include a northerly aligned direct through-site link between Pitt and Castlereagh Street and enhanced pedestrian amenity and activation at the ground plane.

1.1 Subject site

The site currently comprises three buildings known as the ‘Piccadilly Complex’ completed in 1991 which has been the subject of progressive improvements to upgrade selected elements within the building. The buildings currently occupying the site are detailed in Table 1.

Table 1: Description of existing buildings and improvements

Building	Description
Piccadilly Court	Comprises a 14-storey office building completed in 1975 and first refurbished in 1991 with frontage to Pitt Street.
Piccadilly Shopping Centre	Comprises a 2-storey retail building and the Wesley Mission facilities including the Wesley Church, Lyceum, Wesley Theatre and office space predominately located at basement level. The Wesley Centre facilities comprise the following patron capacity: • Theatre – 950 • Lyceum – 277 • Chapel – 534 A footbridge over Pitt Street connects the building to 55 Market Street to the west.
Piccadilly Tower	Comprises a 31-storey commercial building comprising office floor space and end of trip facilities and four basement levels of car parking accessed from Castlereagh Street. The building includes two lobby spaces, the main Castlereagh Street entrance and a smaller northern entrance to the through site link. A footbridge over Castlereagh Street connects the building to the Sheraton On the Park located to the east of the site.

1.2 Concept Reference Design

To demonstrate that the proposed building envelope is capable of accommodating a viable scheme, a Concept Reference Design accompanies the planning proposal within the Urban Design Study. The Concept Reference Design is indicative only and the final detailed design will be the subject of a competitive design process and detailed development application (DA) which will ultimately result in further refinement. The ground floor plan is shown in Figure 2.

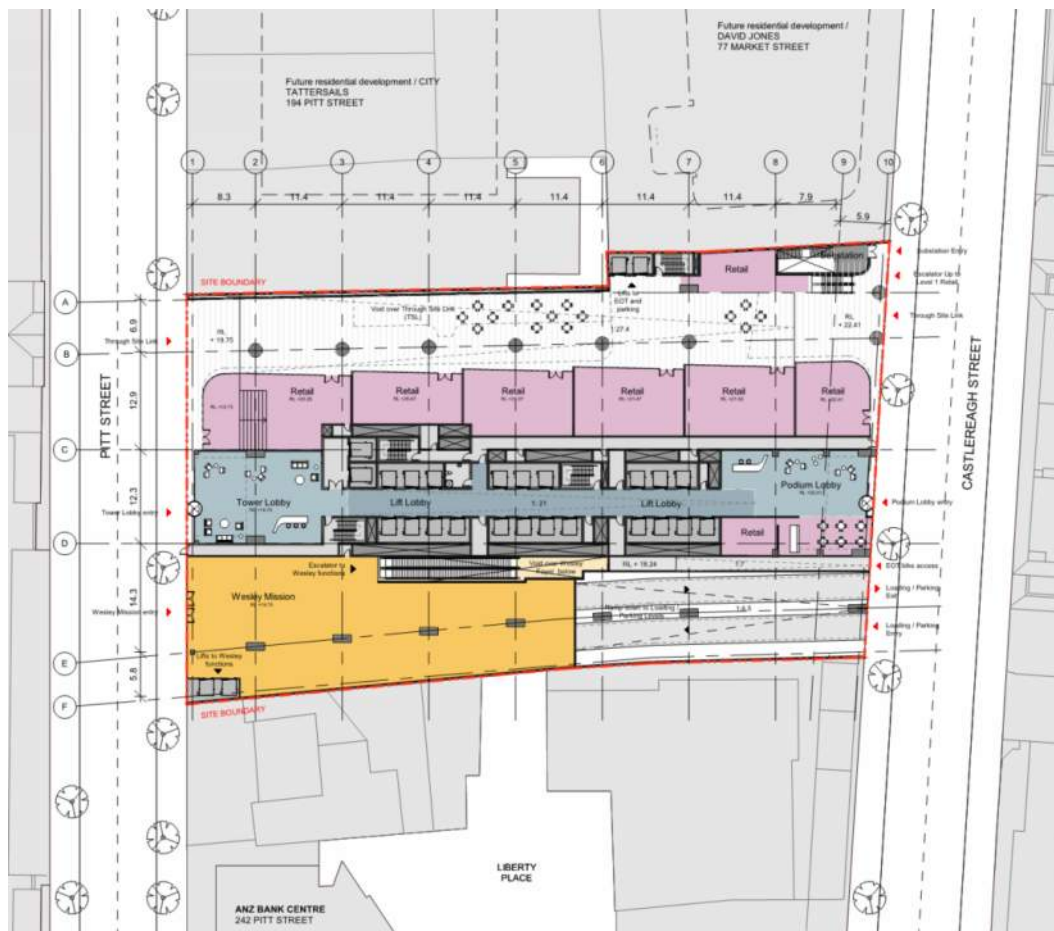


Figure 2: Stockland Piccadilly Complex – Concept Reference Design - Ground plan (3XN, 55001_200805)

The Concept Reference Design includes the following elements:

- Basement car parking and mechanical plant (B05-B03);
- Wesley Mission facilities including the Church, Theatre and Lyceum, and supporting offices (B2-B1);
- End of trip, back of house area and plant (B1);
- A northerly aligned east-west pedestrian through-site link connecting Pitt St and Castlereagh St (L00);
- Podium levels (L00-L09) comprising lobby (L00), retail (L00-L01), commercial (L02-L09) and plant (L09); and

Tower levels (L10-L34) comprising commercial and plant (L19, L35-L36).

1.3 Purpose of report

The City of Sydney (CoS) Draft Guidelines for Site Specific Planning Proposals in Central Sydney require that a Pedestrian Comfort Levels (PCL) assessment following the Transport for London (TfL) Pedestrian Comfort Guidance document be undertaken for new developments in the Sydney CBD.

The purpose of this report is to document the pedestrian activity and comfort assessment of the footpaths adjacent to the new development at 133-145 Castlereagh Street, as outlined in Transport for London's PCL assessment tool. The objective of the assessment is to understand existing and future pedestrian flows and behaviour on the footpaths adjacent to the proposed development. TfL's PCL tool requires that pedestrian activity and movement on footpaths and formal crossings be assessed under existing conditions. No mention is made of assessment of future year scenarios. Given that the aim of the assessment is to understand the impact of the development on the footpaths, the performance of the footpaths has been evaluated for the future year of 2026, the target year of opening of the tower.

A typical PCL assessment would include an assessment of the future do nothing conditions (base case) to compare against the 'with development' case. Given that this assessment is being carried out during the COVID-19 pandemic, when the majority of CBD workers are working from home, there has not been an opportunity to collect reasonable existing conditions pedestrian flow data as part of this project. Understanding this, and through agreement with CoS, the approach taken in this assessment considers the uplift demand generated by the building and qualitatively compares it to the available and potential footpath widths.

2 Study area

The study area is outlined in Figure 3. The proposed development site has dual frontages to Pitt Street and Castlereagh Street, and is highlighted in blue. The footpaths assessed as part of this study are shown in pink. These include the footpaths that provide direct access to the building entrances on Castlereagh and Pitt Streets as well as secondary footpaths that connect to the surrounding transport nodes. Given that the surrounding land use in the area is primarily commercial, the site has been classified as ‘Office and Retail’ under the PCL area categories.

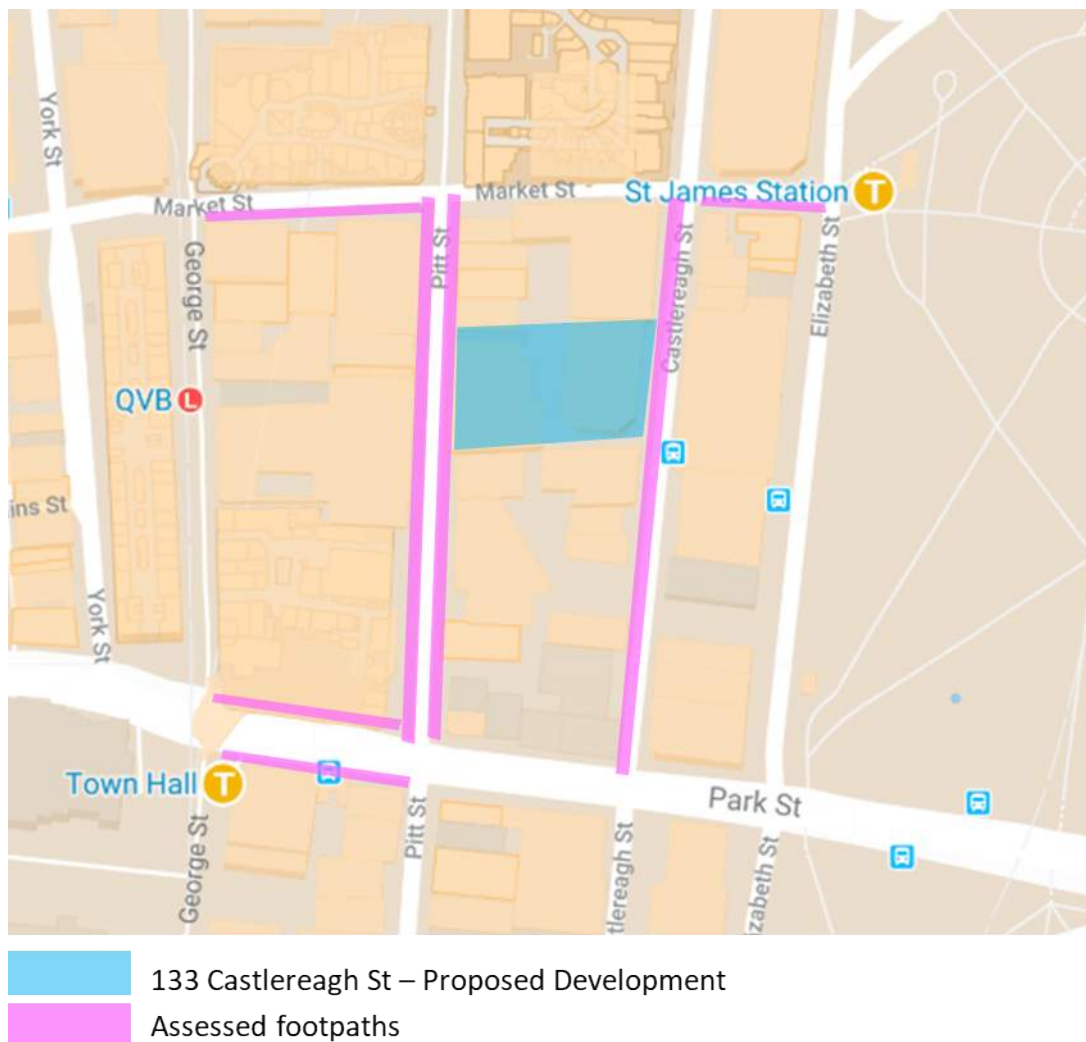


Figure 3: Study Area

2.1 Proposed development

A summary of the Concept Reference Design that informs this planning proposal is outlined in Section 1.2. For the purpose of this assessment the net increase in commercial population between the existing condition and the proposed development has been adopted. It is assumed that the net increase in commercial population is 4,500 staff.

3 Existing conditions assessment

As discussed above, this study is being undertaken in the midst of the COVID-19 pandemic. During this period, attendance at workplaces has dramatically reduced as most people are working from home, particularly office workers. Therefore, any surveys of pedestrian demand carried out at this time would not represent a realistic baseline demand.

In lieu of being able to conduct specific pedestrian surveys, we have reviewed a number of other documents that could potentially include recent pedestrian surveys prior the COVID-19 pandemic, including:

- Development Application: 194 & 196-204 Pitt Street, Sydney
- Development Application: 65-77 Market Street, Sydney
- Chatswood to Sydenham, EIS, May 2016 (relevant for Pitt St Station)

The two neighbouring development applications did not include any indication of existing pedestrian counts in the area. However, the Chatswood to Sydenham EIS included pedestrian counts in the Pitt Street and Park Street area, undertaken in 2015 in support of the Station development.

A site visit was conducted to get an understanding of physical characteristics of the footpath network in the study area.

3.1 Existing pedestrian counts

The Chatswood to Sydenham EIS included 2015 AM Peak hourly pedestrian counts as outlined in Figure 4. The EIS shows that existing counts are only available on Park Street either side of Pitt Street and on Pitt Street north of Park Street. There is no existing pedestrian count data available for any other footpath within the study area.

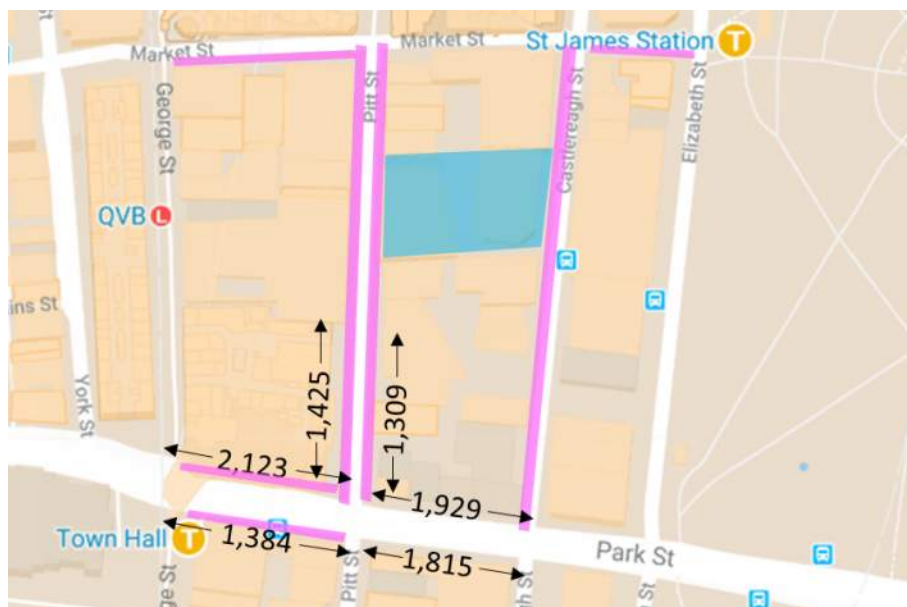


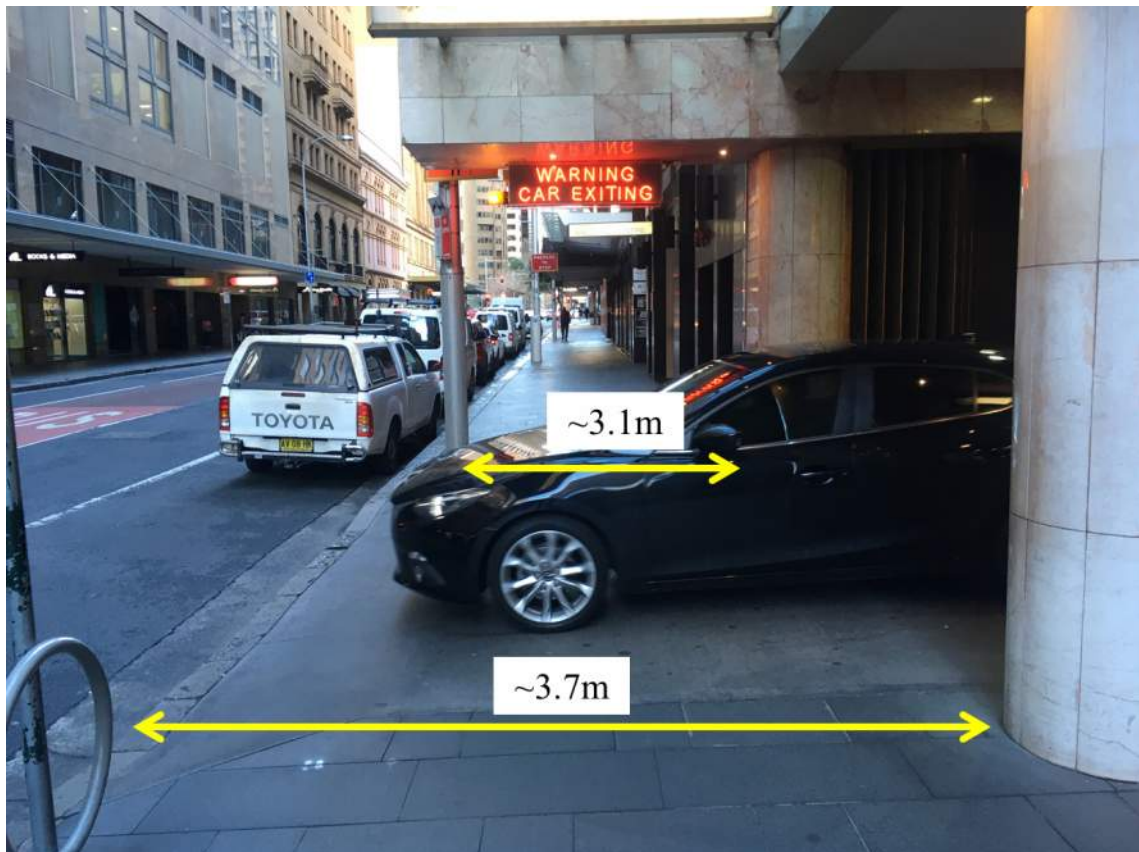
Figure 4: Existing pedestrian movement counts, 2015 Peak Hourly flows

3.2 Site observations

Observations of footpath infrastructure in the study area were taken on 29 June 2020 and included a review of the estimated total footpath width to the kerb as well as the effective footpath width including losses due to roadside furniture and parking bay insets. The findings of the observations are summarised in this section.

3.2.1 Castlereagh Street

Castlereagh Street is a main north-south thoroughfare that provides direct access to the proposed development. Its western footpath between Market Street and Park Street is characterised generally as shown in Photograph 1 and Photograph 2. This shows an approximate total of 3.7 m between building property and the kerb, and between 2.8 m and 3.1 m of effective width depending on the location.

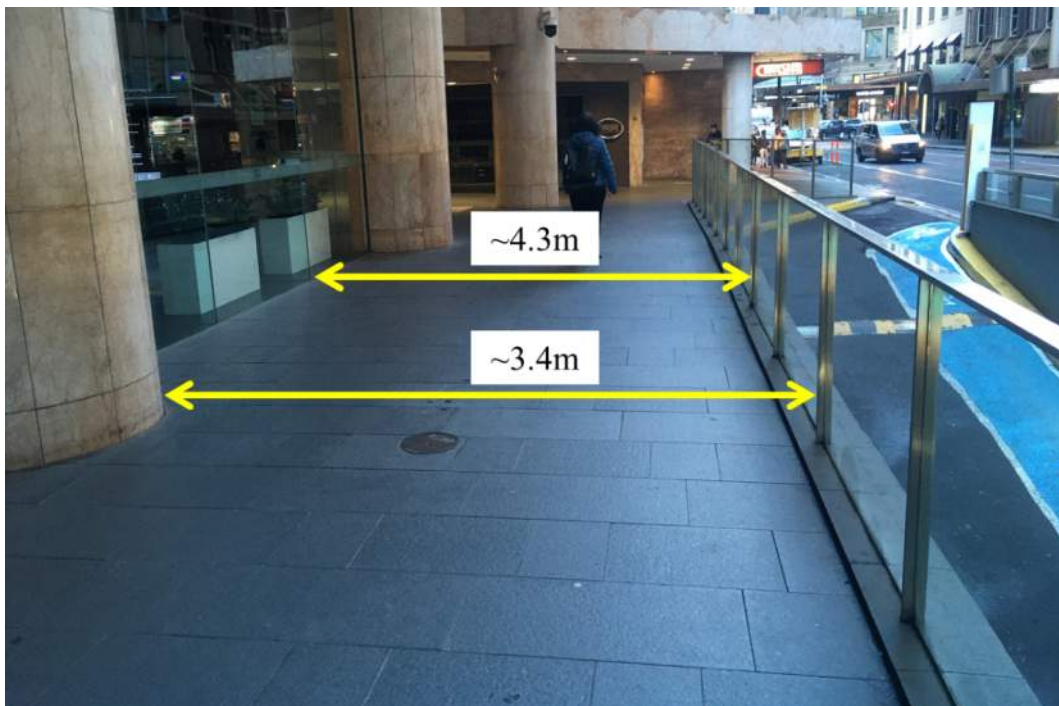


Photograph 1: Castlereagh Street west, looking south, just south of the proposed development



Photograph 2: Castlereagh Street west, looking south, midblock

Adjacent to the development site there is an existing ramp down to the existing car park which diverts the footpath as shown in Photograph 3. In this instance the effective width is approximately 3.4 m. As part of the proposed development the existing car park ramp that runs parallel to the footpath will be replaced with a more standard perpendicular ramp. The footpath in this area will be reinstated to match the existing footpath either side of the site (as shown in Photograph 1).

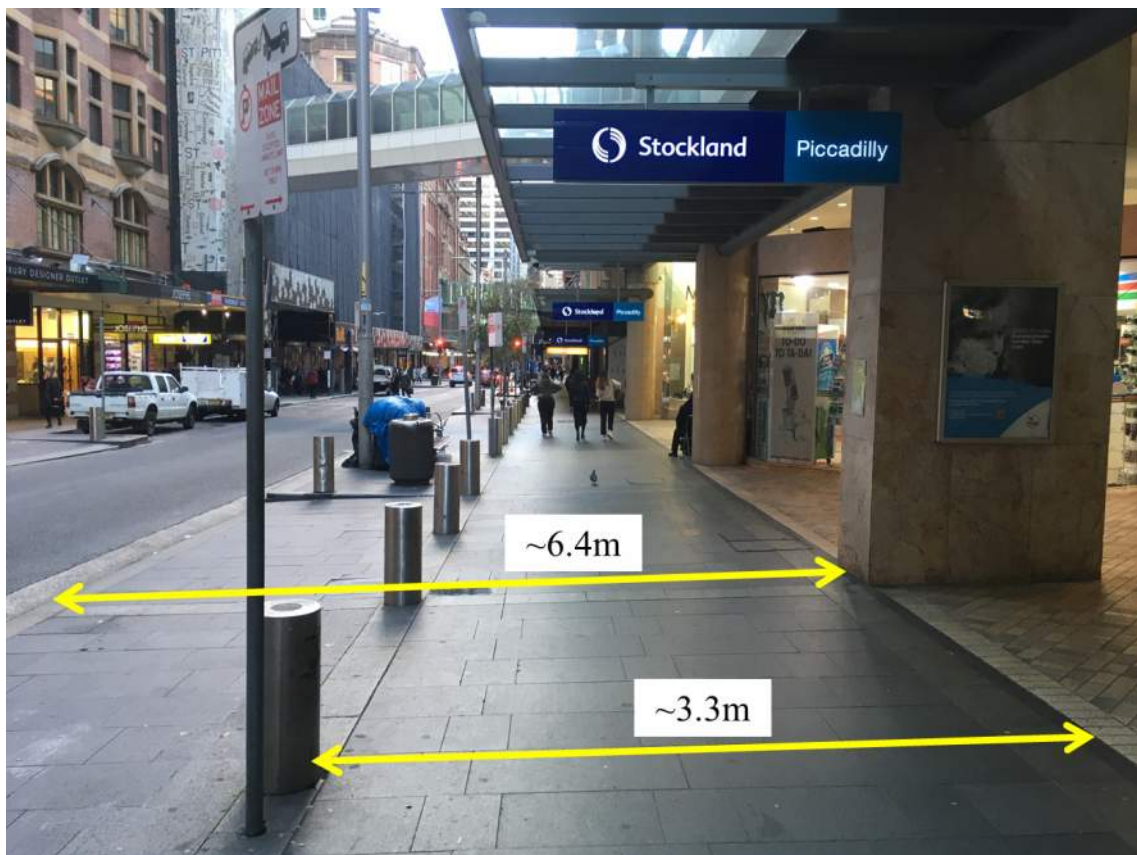


Photograph 3: Castlereagh Street, looking north, adjacent to proposed development site

3.2.2 Pitt Street

Pitt Street is a main north-south thoroughfare that provides direct access to the proposed development. Its eastern footpath between Market Street and Park Street is characterised generally as shown in Photograph 4. This shows an approximate total of 6.4 m between building property and the kerb. At various locations along the road there are parking bays built into the kerb and protected by bollards. The effective width is generally in the order of 3.3 m for the entire length of this road section. At locations where there aren't car parks there is other furniture along a similar line that maintains a consistent effective width.

The western footpath is very similar to the eastern footpath shown in Photograph 4.



Photograph 4: Pitt Street, looking north, adjacent to proposed development site

3.2.3 Market Street

Market Street is a main east-west thoroughfare that provides connections to St James Station and the bus stops and Ferry to the west and north west. Its southern footpath between Elizabeth Street and George Street is characterised generally as shown in Photograph 5. This shows an approximate total of 3.7 m between building property and the kerb, and 3.1 m of effective width. This profile is reasonably consistent for the entire length of footpath with minimal obstructions that reduce the effective width further than shown.

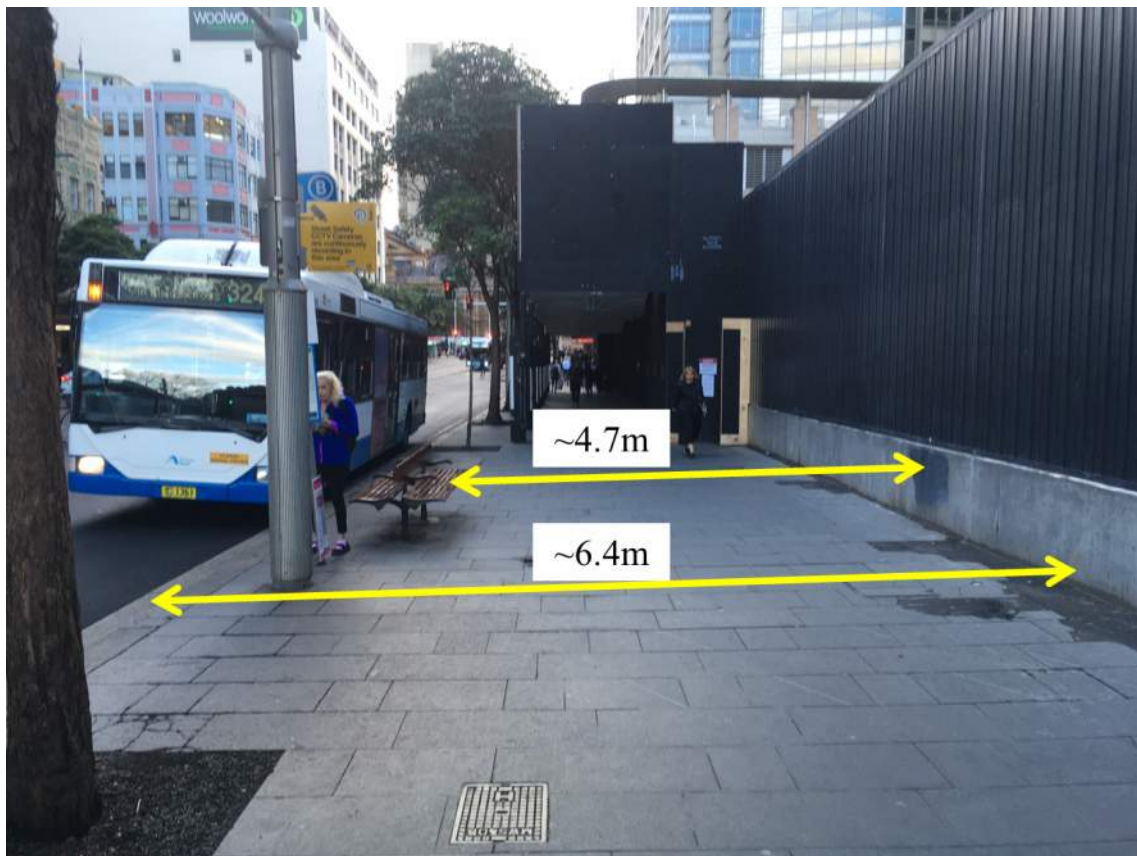


Photograph 5: Market Street, looking west, west of Castlereagh Street

3.2.4 Park Street

Park Street is a main east-west thoroughfare that provides connections to Town Hall Station and is the site of the future Pitt Street Metro station. Its northern footpath between Elizabeth Street and George Street is characterised generally as shown in Photograph 6. This shows an approximate total of 6.4 m between building property and the kerb, and 4.7 m of effective width. This profile is reasonably consistent for the entire length of footpath. This footpath includes wider furniture obstruction than the other streets, including trees and benches.

The southern footpath is very similar to the northern footpath shown in Photograph 6.



Photograph 6: Park Street, looking west, west of Castlereagh Street

3.3 Existing footpath dimensions summary

Figure 5 summarises the effective footpath widths outlined in the Site Observation sections above.

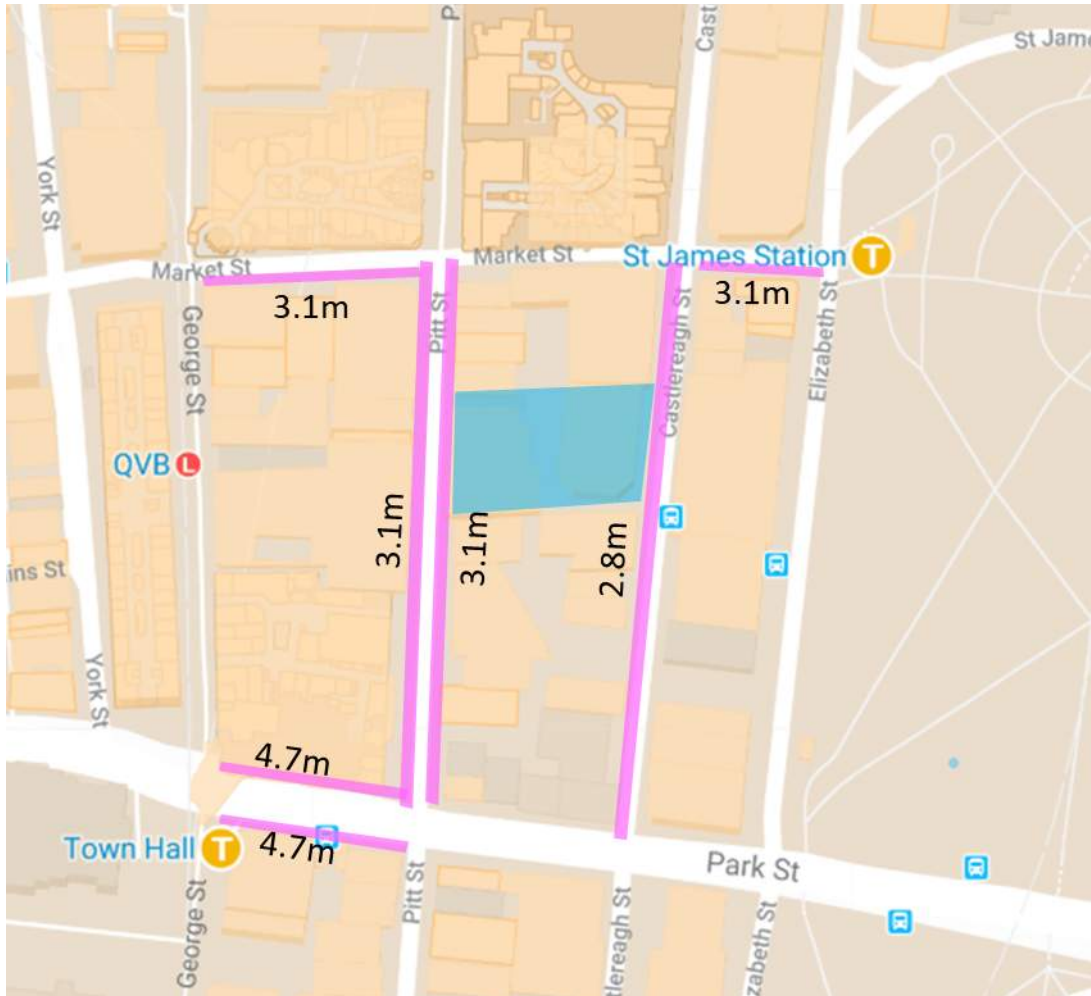


Figure 5: Approximate effective footpath widths within study area

4 Assessment approach, assumptions and methodology

A spreadsheet-based assessment has been undertaken to evaluate the performance of the footpaths based on a combination of the existing flows and estimated building demand flows.

For locations where existing pedestrian counts have been sourced, two scenarios have been assessed:

1. **2026 AM Peak Base Case:** Future 2026 performance including background growth due to employment, with no development at the site.
2. **2026 AM Peak With Development:** Future 2026 performance including background growth due to employment and the net impact of the development at the site.

For locations with no existing pedestrian counts available the following is assessed:

1. **AM Peak Development only:** PCL footpath width assessment to support the increased demand associated with the proposed development
2. **Qualitative assessment** of the existing footpath and its ability to support a future increase in demand, based on the current allocation to roadside furniture.

4.1 Approach: Passenger Comfort Level (Transport for London)

The ‘*Pedestrian Comfort Guidance for London*’ has been developed by Transport for London (TfL) to assist those planning London’s streets in helping to provide an attractive and comfortable experience for pedestrians on footpaths. This guidance has been adopted by the City of Sydney for assessment of footpaths as a temporary framework until an official guide can be agreed between CoS and TfNSW. We understand CoS and TfNSW are currently discussing a localised version of the PCL that may be adopted and introduced in the near future.

The PCL guide identifies five different types of street categories: High Street, Office and Retail, Residential, Tourist Attraction and Transport Interchange. The footpaths analysed as part of this work has been categorised as Office and Retail given the area is dominated by commercial office buildings.

Figure 6 and Figure 7 show the different Passenger Comfort Levels (PCLs) identified in the guidance document. The guidance states that PCL C+ is the maximum flow that would be categorised as ‘acceptable’ for footpaths in an Office and Retail area, with PCL C– being categorised as ‘at risk’. PCL C+ is equivalent to a maximum flow rate of 20 people/minute/metre (see Figure 6). The guidance is silent on the categorisation of the PCL C rating, which is equivalent to a maximum flow rate of 23 people/minute/metre. A PCL C rating could therefore be deemed to be ‘borderline acceptable’.



Figure 6: Pedestrian Comfort Levels on Footways (Transport for London)

	HIGH STREET		OFFICE AND RETAIL		RESIDENTIAL		TOURIST ATTRACTION		TRANSPORT INTERCHANGE	
	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max	Peak	Ave of Max
A	COMFORTABLE		COMFORTABLE		COMFORTABLE		COMFORTABLE		COMFORTABLE	
B+	ACCEPTABLE		COMFORTABLE		ACCEPTABLE		ACCEPTABLE		COMFORTABLE	
B										
B-	AT RISK		ACCEPTABLE		ACCEPTABLE		AT RISK		ACCEPTABLE	
C+	UNACCEPTABLE/ UNCOMFORTABLE		ACCEPTABLE				UNACCEPTABLE/ UNCOMFORTABLE		ACCEPTABLE	
C-	UNACCEPTABLE/ UNCOMFORTABLE				AT RISK		AT RISK		UNACCEPTABLE/ UNCOMFORTABLE	
D			AT RISK		UNACCEPTABLE/ UNCOMFORTABLE		UNACCEPTABLE/ UNCOMFORTABLE		UNACCEPTABLE/ UNCOMFORTABLE	
E	UNACCEPTABLE/ UNCOMFORTABLE		UNACCEPTABLE/ UNCOMFORTABLE		UNACCEPTABLE/ UNCOMFORTABLE		UNACCEPTABLE/ UNCOMFORTABLE		UNACCEPTABLE/ UNCOMFORTABLE	
	Peak and Average of Maximum Activity levels have similar guidance as people visiting retail areas stated they were particularly sensitive to crowding.		The “at risk” level is set at a lower PCL during the Average of Maximum Activity than peak flows. This is because of the greater number of single travellers and the short duration of maximum activity.		The “at risk” level is set at a lower PCL than peak flows in Residential Areas to reflect the short time this is likely to occur. A site visit to Residential sites is particularly important to check if there is school activity or a bus stand in the area.		Peak and Average of Maximum Activity levels have similar guidance as people visiting tourist areas are likely to be particularly sensitive to crowding		The “at risk” level is set at a lower PCL during the Average of Maximum Activity than peak flows. This is because of the greater number of single travellers and the short duration of maximum activity.	

Figure 7: Guidance for different area types (Transport for London)

4.2 Approach: Allocation of development demand

The development demand has been allocated to the footpath network based on the following approach:

- Transport mode share is estimated based on 2016 Census data for the Destination Zone (DZN) that includes the site.
- Office workers are allocated to each mode as per the mode share data. Car mode share is split into onsite parking based on the available car parking spaces. Bicycle mode share is assumed to be all accommodated in the proposed end of trip facilities.
- For each mode, trips are split to various stations, stops and car parks based on their distribution surrounding the proposed site. The distribution is assumed to be pro rata to the number of lines/routes/car parks that each location serves.
- Pedestrians are allocated to footpaths from each transport node to the closest building entry. The route choice is generally assumed to be the shortest distance, however where the city grid provides multiple equivalent alternatives, the assignment is distributed to the various routes.

- Consideration has been given to two transport network configuration states:
 - Existing configuration
 - Future configuration that includes the Sydney Metro Pitt St Station

The analysis considered the highest demand between these two states for each link separately.

Transport mode share for the site was calculated based on analysis of Census Journey to Work 2016 dataset for destination zones (DZN) 113371093

Incoming work trips to these zones were analysed and the resulting mode share is summarised in Table 2. It is evident that public transport accounts for most trips made to the study area.

Table 2: Journey to Work mode share for study area

Mode	Percent of work trips made to study area
Train	54.7%
Bus	23.2%
Private Car and taxi	13.4%
Walked only	6.0%
Ferry	1.4%
Bicycle	1.0%
Tram	0.3%

Figure 8 shows the allocation of transport nodes that provide access to the development site. It is assumed that 50% of passengers using Town Hall Station will use the underground and in building links through the Galleries Victoria Site.

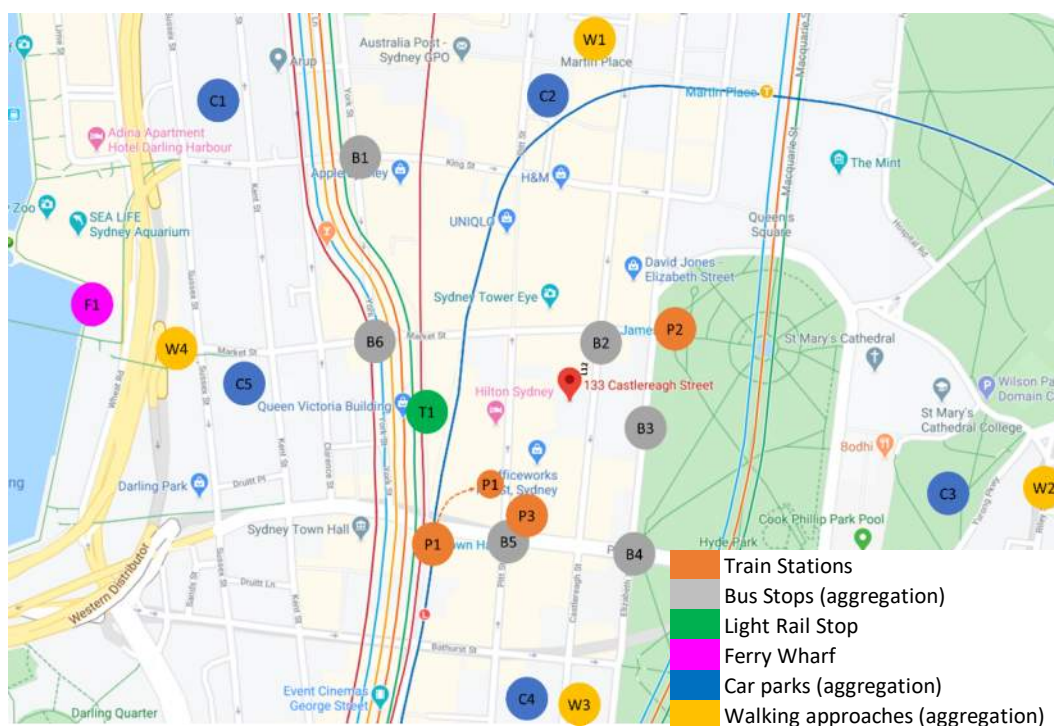


Figure 8: Transport Node allocation

Figure 9 provides a summary of the estimated approach directions based on this analysis. This shows that the dominant approach is the south-west which is driven by Town Hall and Pitt Street Stations. The north east and north west approaches are estimated to be similar in size, while the south east is a very minor approach direction.

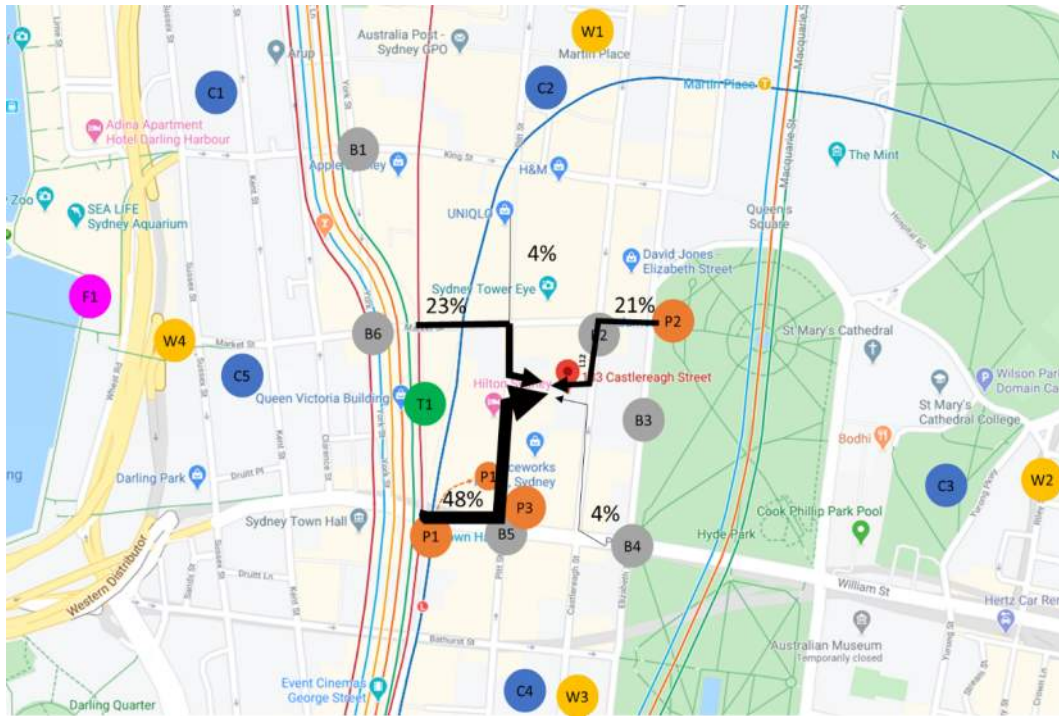


Figure 9: Estimated Approach directions

4.3 Analysis assumptions

The following assumptions have been adopted:

- Peak 1-minute flows have been used in the assessment.
 - For development demand, the peak 1-minute demand is assumed to be equivalent to 1.14% of the building population. This is based on studies of commercial buildings in the Sydney CBD. This includes consideration of staff attendance rates.
 - For background demand it is assumed that the peak 1 minute represents 2% of the peak hour demand, based on the peak 15 minutes being 30% of the peak hour and a flat profile within the peak 15 minutes.
- A growth rate of 1.4% per annum has been assumed to estimate flows on the footpaths in 2026. The 1.4% per annum growth rate has been estimated based on projected employment figures from Transport for NSW's Travel Zone Projection 2016, version 1.51 for the travel zone within which the site is located.
- Edge effects of 200 mm are applied to the kerb, building edges and furniture edges as per the guidance in the TfL Pedestrian Comfort Guidance for London document.

5 Analysis and results

5.1 PCL assessment

Table 3 presents the results of the PCL assessment. Where there is existing pedestrian count data this includes a comparison of the future base case with the future with development scenarios. Where existing pedestrian counts are not available, an assessment of the required width to support the uplift generated by the development has been provided.

Table 3: PCL Assessment Results

Location	Existing Effective Width (m)	2026 Base Case		2026 With development		
		Peak minute flow (ppl/m/min)	PCL	Peak minute flow (ppl/m/min)	PCL	width req ^d for PCL C (m)
Market St south, btw George and Pitt	2.7	*	*	3.6	N/A	0.4
Market St south, btw Castlereagh and Elizabeth	2.7	*	*	5.3	N/A	0.6
Pitt St west, between Market and project site	2.9	*	*	0	N/A	0.0
Pitt St east, between Market and project site	2.9	*	*	5	N/A	0.6
Castlereagh St west, between Market and project site	2.7	*	*	5.7	N/A	0.7
Pitt St west, between project site and Park	2.9	11.3	B	14.6	B-	N/A
Pitt St east, between project site and Park	2.9	10.4	B+	17.7	C+	N/A
Castlereagh St west, between project site and Park	2.4	*	*	0.8	N/A	0.1
Park St north, btw George and Pitt	4.3	11.4	B	12.5	B	N/A
Park St south, btw George and Pitt	4.3	7.2	A-	8.4	B+	N/A

*No existing pedestrian count data available

The results show:

- All four of the locations with existing counts are showing an estimated PCL C or better in line with the criteria.

- The estimated flow rates on the footpaths where there are no existing counts range from 0.1 ppl/m/min to 5.7 ppl/m/min. These flows would utilise up to 0.7 m of effective footpath width whilst operating at PCL C and is therefore considered acceptable.

5.2 Qualitative assessment

For each of the locations where there are no existing pedestrian counts, a qualitative assessment has been undertaken. This assessment considers the estimated development demand allocated to the link and compares it against the current provision. Additionally, there is consideration of potential widening through rationalisation of street furniture or car parking. Table 4 summarises this assessment.

Table 4: Qualitative Assessment

Location	Width required for PCL C (m)	Existing effective width (m)	Existing total width (m)	Comment
Market St south, btw George and Pitt	0.4	2.7	3.7	Small width required. Minimal street furniture currently with little scope to rationalise. Minimal overall impact.
Market St south, btw Castlereagh and Elizabeth	0.6	2.7	3.7	Small width required. Minimal street furniture currently with little scope to rationalise. Minimal overall impact.
Pitt St west, between Market and project site	0.0	2.9	6.4	No estimated development demand. No impact.
Pitt St east, between Market and project site	0.6	2.9	6.4	Small width required. Opportunity to increase effective width through conversion of indented parking bays into footpath and reconfiguration of street furniture if required, but not expected at this stage.
Castlereagh St west, between Market and project site	0.7	2.7	3.7	Small width required. Opportunity to increase effective width through conversion of indented parking bays into footpath and reconfiguration of street furniture if required, but not expected at this stage.
Castlereagh St west, between project site and Park	0.1	2.4	0.0	Negligible estimated development demand. Negligible impact.

The assessment shows:

- All footpaths have small increases in demand that require widths less than 1m.
- The footpaths on Market Street have minimal opportunities to increase effective footpath width and may experience performance worse than PCL C depending on the level of existing pedestrian demand.
- The footpaths on Pitt Street have the potential to increase the effective width through conversion of the indented parking bays into footpath if it is required based on the level of the existing demand.

In addition to the qualitative assessment of the footpaths in the study area above, the below comments are made with regards to the proposed design and its impact on pedestrian flows:

- The existing driveway on Castlereagh Street that provides access to the basement car park currently has a major impact on the quality of the pedestrian experience along the footpath. In the current state, pedestrians are forced to divert around the driveway, creating challenges for all users but especially people with visual impairments. The proposed design removes the parallel driveway and replaces it with a traditional perpendicular driveway which allows the reinstatement a straight and linear footpath which is consistent for the full length of Castlereagh Street. It is therefore a substantial improvement in terms of pedestrian experience and continuity of shoreline for people with disabilities.
- The existing through site link includes horizontal shifts as well as level changes and is not an attractive or intuitive option for thoroughfare movements. The proposed development includes a substantially improved through-site link which is wider, straight and has gentle ramps connecting Pitt Street and Castlereagh Street. It will provide a legitimate link for pedestrians who want to travel east west. It has the potential to take pedestrian traffic off busy Market Street, especially those moving between St James Station and points south-west of the Piccadilly Complex.

6 Conclusion

Stockland propose to develop a new commercial tower in the Sydney CBD. The assessment of any potential impact of the proposed development has been atypical due to the current COVID-19 pandemic, which has ruled out the possibility of conducting existing pedestrian counts. Fortunately, a small set of existing counts have been sourced from the Chatswood to Sydenham EIS.

For locations where existing pedestrian counts have been sourced, two scenarios have been assessed:

3. **2026 AM Peak Base Case:** Future 2026 performance including background growth due to employment, with no development at the site.
4. **2026 AM Peak With Development:** Future 2026 performance including background growth due to employment and the net impact of the development at the site.

For locations with no existing pedestrian counts available the following is assessed:

1. **AM Peak Development Only:** PCL footpath width assessment to support the increased demand associated with the proposed development
2. **Qualitative Assessment** of the existing footpath and its ability to support a future increase in demand, based on the current allocation of roadside furniture.

Key findings from the assessment include:

- There are four footpaths that have been assessed that have existing count data. At each of these the estimated PCL is C or better.
- On the footpaths where there are no existing counts, the additional demand associated with development at the site is estimated to increase flow rates by between 0.8 ppl/m/min to 5.7 ppl/m/min. These flows would require up to 0.7 m of effective footpath width to perform at PCL C.
- The footpaths on Market Street have minimal opportunities to increase effective footpath width and may experience performance worse than PCL C depending on the level of existing pedestrian demand.
- The footpaths on Pitt Street are estimated to experience a moderate uplift in demand but have the potential to increase the effective width through conversion of parking bays to footpath width. Whether widening is needed will depend on the level of existing demand (which is not currently known), the increase of foot traffic due to the Pitt Street Metro Station and potential increase due to other developments in the nearby precinct.
- The proposed design removes the parallel driveway on Castlereagh Street and replaces it with a traditional perpendicular driveway. It is a substantial improvement in terms of pedestrian experience and continuity of shoreline for people with disabilities.

- The proposed development includes a substantially improved through site link that link is wider, straight and has gentle ramps connecting Pitt Street and Castlereagh Street. It has the potential to take pedestrian traffic off busy Market Street, especially those coming from St James Station and heading south-west.