

Lend Lease Pty Ltd

Rev B

Transport Management and
Accessibility Plan (TMAP)
Supplementary

Rev B | 17 January 2013

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 220316

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1 Introduction

Arup has prepared this supplementary Transport Management and Accessibility Plan (TMAP) to support an Application made pursuant to section 75W of the Environmental Planning and Assessment Act 1979 to modify Project Approval granted by the Minister for Planning in respect of MP10_0025 for the C4 commercial building within Barangaroo South.

The Commercial Building C4 Project was approved by the Minister for Planning on 3 March 2011 under Part 3A of the EP&A Act and Modified under s75W on 24 February 2012 (Mod1). The development to be carried out pursuant to the instrument of approval for the Commercial Building C4 (Mod1) Project generally comprises:

- Piling and associated earthworks and remediation;
- Construction and use of a new commercial Building C4 with a maximum 99,097m² GFA comprised of:
 - 2,338m² of retail floor space
 - 95,140m² of commercial floor space; and
 - 1,619m² office lobby.
- Allocation of 161 spaces for C4 commercial use plus 4 for retail use within the basement car park;
- Allocation of 420 bicycle spaces for C4 use (127 temporarily located in the landscaped forecourt adjacent to Hickson Road, and 293 within the basement car park);
- Pedestrian and cycle access and circulation arrangements;
- Signage zones on the building facade that will accommodate building and business identification signage;
- Temporary works and uses including:
 - creation of a temporary forecourt and landscaping along Hickson Road;
 - surfacing of the surrounding streets and laneways including Globe Street, the future City Walk, a portion of Shelley Lane and the southern laneway;
 - construction banners; and
 - hoardings
- Installation of utility services.

The proposed MOD 3 seeks to modify the following elements of the approved C4 building:

- Podium design and ground floor lobby;
- Total GFA;
- Facade details;
- Structural bracing; and
- Roof treatment.

1.1 Background

The 22 hectare Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Stage 2 and Barangaroo Stage 1 (herein after referred to as Barangaroo South).

Lend Lease was successfully appointed as the preferred proponent to develop Barangaroo Stage 1 (otherwise known as Barangaroo South) on 20 December 2009.

1.2 Site Location

Barangaroo is located on the north western edge of the Sydney Central Business District, bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point (for the northern half), The Rocks and the Sydney Harbour Bridge approach to the east; and bounded to the south by a range of new development dominated by large CBD commercial tenants.

The Barangaroo site has been divided into three distinct redevelopment areas (from north to south) – the Headland Park, Barangaroo Stage 2 and Barangaroo South.

The C4 Site extends over land generally known and identified in the approved Concept Plan as Block 2 which comprises Lot 5 in DP 876514.

2 Key Assumptions

2.1 Proposed GFA's

Current planning for Building C4 achieves the following floor space.

Total GFA –Reference **99,097m²** Gross Floor Area (GFA) comprising:

- Commercial 96,759m² GFA; and
- Retail 2,338 m² GFA

2.2 Population

The population numbers for the C4 commercial building are based on the assumption of 1 employee per 20m² GFA. This results in a combined number of 4,955 commercial and retail workers. Based on the Census 2011 data around 8.1% of workers do not attend work on a typical day which accounts for holidays, sick days, work from home, etc. which implies that there would be 4,554 workers on site on a typical day.

2.3 Parking requirements

The parking rate for commercial use is 1 space per 600m². Parking rates for other activities are as per the City of Sydney parking rates.

2.4 Mode split

The mode split target for the C4 commercial building is set out in Table 1. The 2006 and 2011 Census Data for journey to work in the Sydney Inner SLA Zone has been included for comparison purposes.

Table 1 Mode split target

Mode	2006 Census	2011 Census	C4 Mode split target
Car	18.8%	15.6%	4.0%
Bus/Light rail	22.4%	23.1%	20.0%
Train	47.6%	48.6%	63.0%
Ferry	2.7%	2.7%	1.0%
Other (pedestrian, cyclists, motorcycles, taxi)	8.5%	10.0%	12.0%
Total	100%	100%	100%

Table 2 shows detailed mode split target for the C4 commercial building.

Table 2 Detailed mode split target breakdown

Mode Detailed	Mode split target			Mode General	%	number
	%	Number				
car driver parking onsite*	2.8%	128	183	Car	4%	183
car driver parking offsite	0.3%	14				
car passenger of car parked on site	0.6%	27				
car passenger of car parked off site	0.3%	14				
bus	20.0%	911		Bus	20%	911
light rail	0.0%	-				
train	63.0%	2,869		Train	63%	2,869
ferry	1.0%	46		Ferry	1%	46
truck	0.0%	-	547	Other	12%	547
taxi	1.0%	46				
walk	6.0%	273				
bicycle	4.0%	182				
motorcycle on site	1.0%	46				
motorcycle off site	0.0%	-				
Total**	100.0%	4,554			100%	4,554

* For traffic analysis purposes 161 spaces are assumed to generate traffic movements (based on number of car parking bays allocated for C4 use).

** Totals may not add due to rounding errors

3 Existing Conditions

3.1 Road Network

Hickson Road runs along the eastern boundary of the site. It is a wide two lane, two way road that forms a northern extension of Sussex Street to the north of Napoleon Street. Sussex Street runs along the western side of Sydney CBD between Napoleon to the north and Hay Street to the south. It is two way north of King Street and one way southbound south of King Street.

Other local roads adjacent to the site are Napoleon Street and Shelley Street. Napoleon Street provides connection between Kent Street and Hickson Road. It is a relatively wide road and has moderate downward slope from Kent Street to Hickson Road. Shelley Street provides a connection between Hickson Road (to the north) and Erskine Street (to the south).

Key local intersections surrounding the site have been modelled as a component of previous studies, and were found as having reasonable levels of operation. Queuing back from the Harbour Bridge approach however does constrain traffic operations in the vicinity of the site in both commuter peaks. Southbound flow on Sussex Street is also constrained in the PM peak due to the operation of intersections at King Street and Market Street.

Local road access to the Barangaroo site area is provided as follows:

- From the CBD via Napoleon Street;
- From Millers Point via Dalgety Road;
- Via George Street from the north east;
- Via Sussex Street/Kent Street/Napoleon Street from the southern CBD;
- Via Harbour Street, Wheat Road (through King Street Wharf) to Shelley Street from the south; and
- Via the east-west alignment of Napoleon Street and Margaret Street.

3.2 Main Road Intersections

Most existing road intersections to the south of Barangaroo, along Sussex Street and within the Sydney CBD generally are controlled by traffic signals. The intersections along Sussex Street, i.e. at Erskine Street, King Street and Market Street are controlled by traffic signals.

More recently traffic signals have been installed at Shelley Street on Hickson Road. However to the north of Shelley Street, there are no further intersections controlled by traffic signals.

Intersection surveys were conducted by AECOM on Tuesday 8th November 2011 (a typical weekday outside of school holiday periods). The existing morning and afternoon peak hour intersection traffic volumes at these intersections are illustrated in Figure 1 and Figure 2.



3.3 Public Transport

The site is well served by a number of public transport modes, which are detailed in the sections below:

3.3.1 Rail

The following railway stations in the northern part of the Sydney CBD are within viable walking distance of the site:

- Wynyard;
- Martin Place;
- Town Hall; and
- Circular Quay.

Services run frequently throughout the day, and are forecast to provide access for the majority of visitors to Barangaroo on a daily basis.

3.3.2 Bus

There is a major bus interchange located at Wynyard Station for buses servicing the Hills District, Northern Beaches and the North Shore areas. These services all utilise the bus lane on the Harbour Bridge to access Wynyard.

Terminating in the vicinity of the Barangaroo site, both King Street Wharf and Circular Quay also currently service a number of bus routes.

3.3.3 Ferry

Commuter ferry services arrive and depart from both King Street Wharf (number 3) and Circular Quay.

3.4 Pedestrians and Cyclists

There is currently public pedestrian access along the waterfront adjacent to the Barangaroo worksite. The nearby Sussex Street / Shelley Street intersection is controlled by traffic signals and pedestrian crossing facilities are provided on all three approaches. On a cruise ship day, pedestrian volumes on Hickson Road are significant. Many cruise ship passengers walking via Napoleon Street also currently cross Hickson Road near Napoleon Street where a pedestrian refuge was installed in March 2012 to provide a dedicated two-staged crossing. A zebra crossing facility is provided on Hickson Road north of Napoleon Street.

A bicycle lane exists along Hickson Road between Circular Quay and Napoleon Street which is utilised by both commuter and recreational cyclists. Cycling connections to the site are being improved through the construction of separated cycleways along King Street (completed May 2009) and Kent Street (completed December 2010).

Internally, the site is relatively flat which will encourage pedestrian and cycle movement. The site is constrained however in that there is a considerable grade differential to other parts of the CBD and to Wynyard.