

4-6 Bligh Street, Sydney

Sydney Metro & CBD Rail Link Assessment Summary

December 2022



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1. Executive Summary

1.1 Introduction

The report has been prepared to accompany an SSDA for the mixed-use redevelopment proposal at 4-6 Bligh Street, Sydney (SSD-48674209).

The Council of the City of Sydney, as delegate for the Minister for Planning and Public Spaces (the Minister), is the Consent Authority for the SSDA under an instrument of Delegation issued by the Minister on 3 October 2019.

The application seeks consent for the construction of a 59-storey mixed-use hotel and commercial development. The purpose of the project is to revitalise the site and deliver new commercial floorspace and public realm improvements consistent with the City's vision to strengthen the role of Central Sydney as an international tourism and commercial destination.

A separate development consent (D/2018/892) relating to early works for the proposed application was granted for the site on 31 January 2020. Consent was granted for the demolition of the existing site structures, excavation and shoring of the site for three basement levels (to a depth of RL 9.38m) to accommodate the proposed mixed-use hotel and commercial development. As such, this application does not seek consent for these components and instead seeks to rely upon and activate D/2018/892 for early works.

Specifically, development consent is sought for:

- Site establishment, including removal of three existing trees along the Bligh Street frontage and decommissioning and removal of an existing substation (s2041) on the site.
- Construction of a 59-storey hotel and commercial office tower. The tower will have a maximum building height of RL225.88 (205m) and a total gross floor area (GFA) provision of 26,796sqm, and will include the following elements:
 - Five basement levels accommodating a substation, rainwater tank, hotel back of house, plant and services. A porte cochere and four service bays will be provided on basement level 1, in addition to 112 bicycle spaces and end of trip facilities on basement level 2, and 28 car parking spaces.
 - A 12-storey podium accommodating hotel concierge and arrival at ground level, conference facilities, eight levels of commercial floor space and co-working facilities, and hotel amenities including a pool and gymnasium at level 12.
 - 42 tower levels of hotel facilities including 417 hotel keys comprising standard rooms, suites and a penthouse.
 - Two tower levels accommodating restaurant, bar, back of house and a landscaped terrace at level 57.
 - Plant, servicing and BMU at level 59 and rooftop.
- Increase to the width of the existing Bligh Street vehicular crossover to 4.25m and provision of an additional 4m vehicular crossover on Bligh Street to provide one-way access to the porte cochere and service bays on basement level 1.
- Landscaping and public domain improvements including:
 - Replacement planting of three street trees in the Bligh Street frontage,
 - Construction of a landscape pergola structure on the vertical facade of the north-eastern and south-eastern podium elevations,
 - Awning and podium planters, and
 - Provision of a feature tree at the level 57 terrace.
- Identification of two top of awning building identification signage zones with a maximum dimension of 1200mm x 300mm. Consent for detailed signage installation will form part of a separate development application.
- Utilities and service provision.
- Installation of public art on the site, indicatively located at ground level.

In addition to the Secretary's Environmental Assessment Requirements (SEARs) dated 1 October 2022, an additional infrastructure assessment is required for the project.

A Structural Report (Mott Macdonald), Geotechnical Infrastructure Impact Report (Coffey) and Acoustic Infrastructure Impact Report (Stantec) have been prepared and concluded the potential impact on the existing and future infrastructure.

1.2 Site Location and Description

The site for the purposes of this SSDA is a single allotment identified as 4-6 Bligh Street, Sydney and known as Lot 1 in Deposited Plan 1244245. The site has an area of 1,218sqm, and is identified in Figure 1.

The site is relatively flat, with a slight slope ranging from 21m AHD in the north-western corner to 19.5m AHD in the south-western corner.

The site is located within the north-eastern part of Central Sydney in a block bound by Bligh Street to the west, Hunter Street to the south, Chifley Square/Phillip Street to the east, and Bent Street to the north. The surrounding buildings are generally characterised by a mix of commercial office and hotel uses with ground level retail, restaurant and cafe uses and are of varying heights, ages and styles, including a number of State and local listed heritage buildings.

The site is also located in proximity to a number of Sydney Metro City & Southwest (opening 2024) and Sydney Metro West (opening 2030) station sites.

Specifically, the site is located to the immediate east of the Sydney Metro Hunter Street station (east site), which is located on the corner of Hunter Street and Bligh Street, and approximately 350m east of the Sydney Metro Hunter Street station (west site). The Hunter Street station sites are part of the Sydney Metro West project. SEARs for the preparation of Concept SSDAs for the sites were issued in August 2022.

Approximately 150m to the south of the site is Sydney Metro Martin Place Station site, located to the south of Hunter Street between Castlereagh Street and Elizabeth Street. The Martin Place Station site is currently under construction and forms part of the Sydney Metro City & Southwest project.

The site is occupied by a vacant commercial office building with ground floor retail and basement car parking known as "Bligh House". Completed in 1964, Bligh House is a 17-storey tower inclusive of a three-storey podium with the podium levels built to the Bligh Street alignment and the tower setback from the street frontage. The building was designed by Peddle Thorp and Walker and was constructed as part of the post-World War II development boom in the Sydney CBD. The podium overhang along the footpath provides continuous pedestrian protection. Vehicle access to the site is off Bligh Street via a single 2.6m wide driveway that is restricted by a security gate under one-lane, two-way access arrangements. The driveway provides access to the basement car park, containing 21 car parking spaces.

The site contains no vegetation; however, two existing street trees are located adjacent to the site boundary on Bligh Street.

Development consent for the demolition of the existing site structures, excavation and shoring of the site for three basement levels (to a depth of RL9.38m) was granted by City of Sydney on 31 January 2022 (D/2018/892).

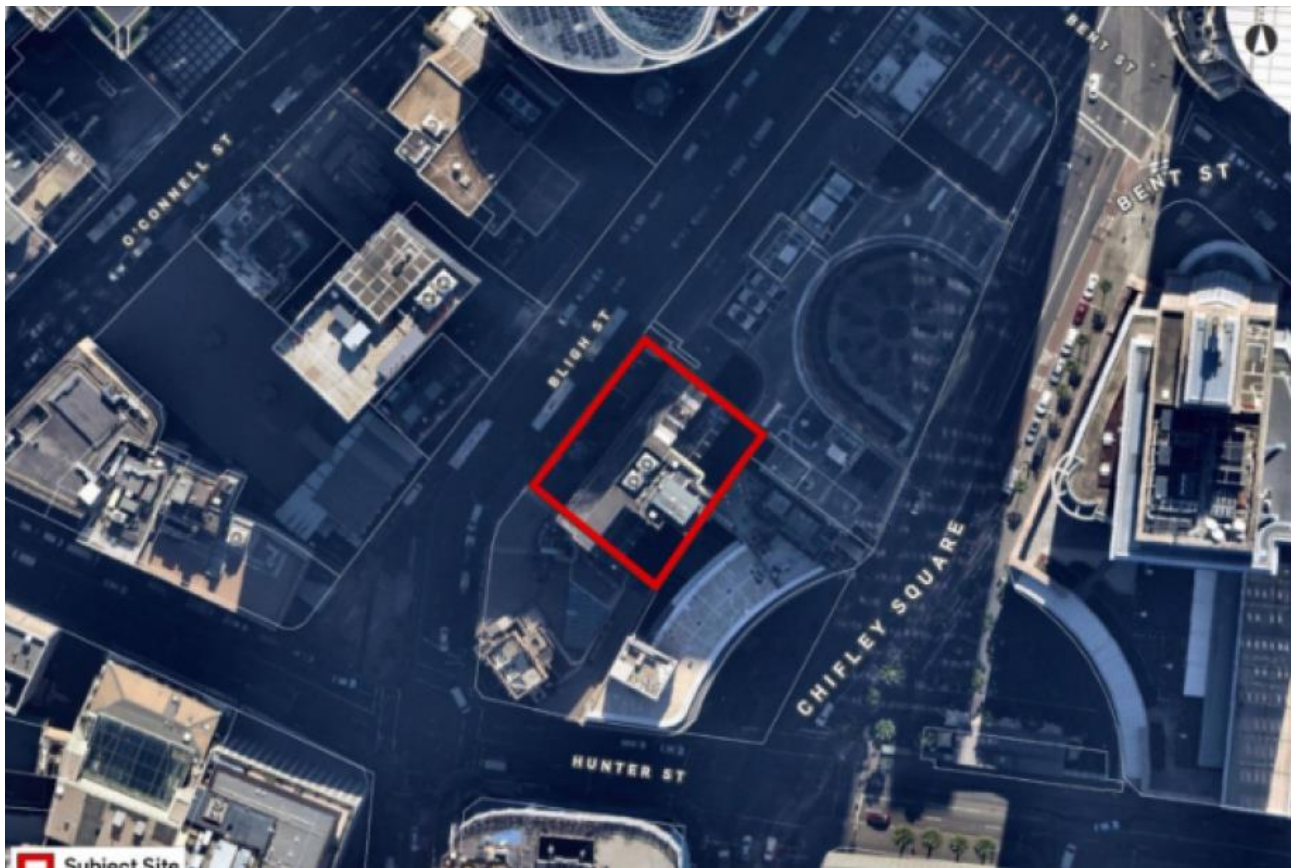


Figure 1: Site Identification Plan

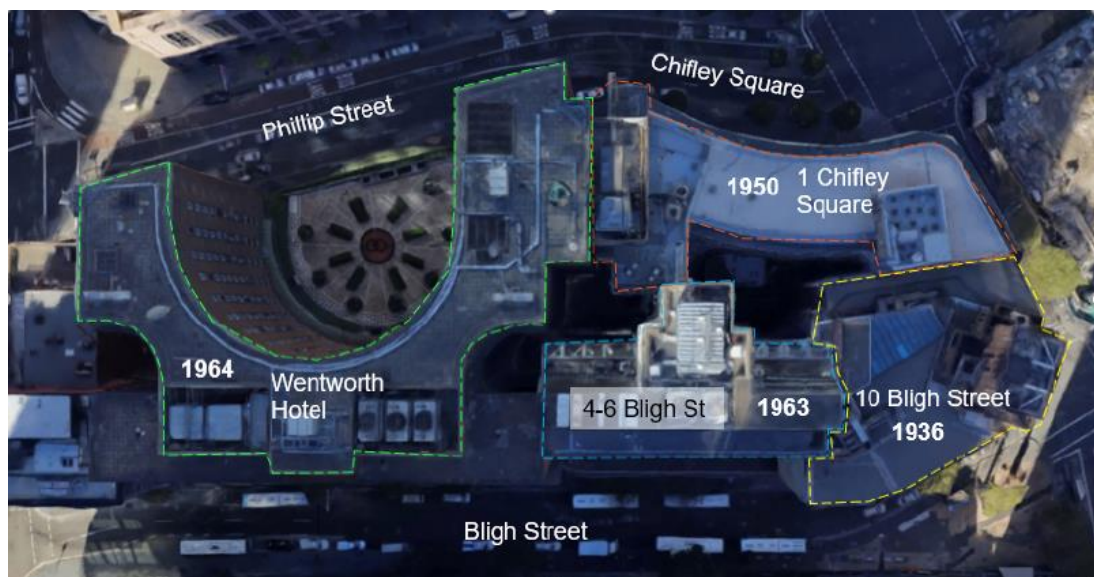


Figure 2: Site Surround Plan

1.3 Existing and Future Infrastructure

According to the available information, the location of the Sydney Metro Tunnel and CBD Rail Link Alignments are as follows and shown in Figure 3 and Figure 4.

- Sydney Metro West tunnels are running from west to east underneath the proposed development. The Eastbound tunnel is located underneath the central core of the development and the Westbound tunnel is located underneath the southern corner of the development as shown in Figure 3. Indicative cross section for tunnel sections are shown in Figure 4. The crown and centre of both tunnels are located at approximately RL -13.1 m AHD and RL -17.1 m AHD, respectively.
- CBD Rail Link (City & Southwest tunnels) are running from north to south. The eastern tunnel is located adjacent to the eastern corner and the western tunnel is located at approximately 14 m from the western corner of the development as shown in Figure 3. The eastern tunnel is circular in cross section with a diameter of 6 m. The crown and centre of the tunnel is located at approximately RL -1.1 m AHD and RL -4.1 m AHD, respectively.

Based on the Sydney Metro Underground Corridor Protection Technical Guidelines, the proposed development site is located within the 2nd Protective Reserve zone of the Sydney rail corridor and the basement excavation and footing will be intruded into the 2nd reserve zone.



Figure 3: Location of CBD Rail Link Tunnels



Figure 4: Location of Sydney Metro West Tunnels – Eastbound and Westbound Tunnels

1.4 Assessment Summary

In addition to the industry-specific SEARs, the Department has identified additional assessment requirements, which includes:

- Identify the existing and future infrastructure (CBD Rail Link and Sydney Metro – City and Southwest and Sydney Metro – West) on-site and any possible impacts of the construction and operation of the proposal on this infrastructure and associated mitigation measures.
- Include a report demonstrating compliance with the Sydney Metro Underground Corridor Protection Guidelines.

1.4.1 Structural Analysis

Mott Macdonald has prepared a Structural Schematic Report and concludes that the proposed mixed-use hotel and commercial development is suitable and warrants approval subject to the implementation of the following mitigation measures:

- Compliance with Sydney Metro corridor protection guidelines.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.

At the completion of Schematic Design, the following items have been addressed in terms of coordination between structure, architecture, and other design disciplines:

- Foundation systems have been reviewed and impacts to the CBD Rail Link and Sydney Metro tunnels have been assessed by the project team.
- The structural aspects of the development do not have structural impacts on the Martin Place Station.

1.4.2 Geotechnical Analysis

Based on the detailed assessment, the analyses show that for the proposed development with 5 basement levels in which the footings are anticipated to be founded in Class II or better Sandstone, from geotechnical point of view, the assessment results satisfied the allowable limits of displacement and ultimate structural actions are within the tunnel liner capacity. Also, because of the distance between the proposed development and existing infrastructure facility, the existing station is irrelevant to the current analysis.

2D analysis was completed for both Sydney Metro and CBD Rail Link based on the tunnel assumption. The current 2D analysis results indicate that the proposed development does not significantly impact on the Tunnel and existing infrastructure. A detailed 3D analysis will be prepared in the next stage once the final design is confirmed with Sydney Metro.

1.4.3 Noise and Vibration Analysis

An Infrastructure Impact Assessment has been prepared to provide evidence to the NSW Transport authorities regarding the potential acoustic impacts of the demolition, excavation and construction works and building operation on the nearby existing underground rail infrastructure.

The operation of the proposed development will not include any vibration intensive activities or plant. Any vibrating plant will be isolated from the building structures to provide amenity within the development itself, resulting in negligible impact on any existing underground infrastructure, including any underground rail tunnels.

The details of the noise and vibration assessments undertaken to predict the impacts of demolition, excavation, and construction activities on the closest underground rail tunnel have been presented in the report. The structural damage and Sydney Metro protection guideline limits for vibration are not expected to be exceeded at the tunnel section closest to the proposed excavation works. The generated ground-borne noise within the tunnel is also likely to comply with the set criterion.

2. Structural Assessment

Refer to the SSDA Schematic Design Report (Structures) dated 16 December 2022 from Mott Macdonald.

3. Geotechnical Assessment

Refer to the Potential Impacts of Proposed Development on Sydney Metro and CBD Rail Link Assets dated 5 December 2022 from Coffey.

4. Noise and Vibration Assessment

Refer to the Infrastructure Impact Assessment on Sydney Metro & CBD Rail Link dated 19 December 2022 from Stantec.