Macquarie

Metro Martin Place

Planning Proposal – Ecologically Sustainable Design (ESD), Green Star and NABERS

MMP – Planning Proposal - ESD Report

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Arup

Arup Pty Ltd ABN 18 000 966 165

Arup

Level 10 201 Kent Street

PO Box 76 Millers Point

Sydney 2000

Australia

www.arup.com

ARUP

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Executive Summary

This report has been prepared for Macquarie Capital to outline the key Ecologically Sustainable Design (ESD) initiatives for the proposed Sydney Metro Martin Place Station Project, located in Sydney's CBD.

The project comprises of the development of a new underground station and the addition of two towers; one to the north and one to the south of 50 Martin Place.

The two towers developments are part of an over station development and will be designed as to be consistent with Sydney Metro TfNSW requirements such as;

- Easy door to door customer experience
- Consistent customer experience
- Integrated Customer Experience
- Way finding and coordination

The ESD objectives for the North and South Tower are summarised as follows:

- 5 star NABERS Energy minimum based on 2016 protocol
- 3.5 star NABERS Water Rating minimum based on 2016 protocol
- 6 Star Green Star Office Design and As-Built 2015 v1.1
- Occupant wellbeing

1 Introduction

This report supports a Planning Proposal submitted to the Department of Planning and Environment, pursuant to Section 55 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and the Department of Planning and Environment's A Guide to Preparing Planning Proposals (August 2016).

Macquarie Corporate Holdings Pty Limited (Macquarie) is seeking to create a World Class Transport and Employment Precinct at Martin Place, Sydney.

The key objective of the Planning Proposal is to facilitate the delivery of two predominantly commercial office Over Station Development (OSD) towers located above and intricately linked to the future Martin Place Metro Station (part of the NSW Government's Sydney Metro project).

Specifically, the Planning Proposal seeks to amend the Sydney Local Environment Plan 2012 (Sydney LEP) through enabling greater building height and floor space and thereby realising the Precinct's unique opportunities.

In particular this report seeks to address the environmentally sustainable development (ESD) elements of the Planning Proposal. This report details how ESD principles can be incorporated into the design, construction and ongoing operation of the project and includes a framework for how the proposed development will reflect best practice sustainable building principles to improve environmental performance, including energy and water efficient design and technology, and use of renewable energy.

2 Background

The New South Wales (NSW) Government is implementing Sydney's Rail Future (Transport for NSW, 2012), a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of customers in the future.

Sydney Metro is a new standalone rail network identified in Sydney's Rail Future. The Sydney Metro network consists of Sydney Metro Northwest (Stage 1) and Sydney Metro City & Southwest (Stage 2).

Stage 2 of the Metro entails the construction and operation of a new Metro rail line from Chatswood, under Sydney Harbour through Sydney's CBD to Sydenham and eventually on to Bankstown through the conversion of the existing line to Metro standards. The project also involves the delivery of seven (7) new Metro stations, including Martin Place.

This step-change piece of public transport infrastructure once complete will have the capacity for 30 trains an hour (one every two minutes) through the CBD in each direction catering for an extra 100,000 customers per hour across the Sydney CBD rail lines.

On 9 January 2017, the Minister for Planning approved the Stage 2 (Chatswood to Sydenham) Metro application lodged by Transport for NSW (TfNSW) as a Critical State Significant Infrastructure (CSSI) project (reference SSI 15_7400).

TfNSW is also making provision for future Over Station Development (OSD) on the land it has acquired for the Stage 2 Sydney Metro project, including land acquired for the purposes of delivering Martin Place Station. The OSD development is subject to separate applications to be lodged under the relevant provisions of the EP&A Act.

An Unsolicited Proposal submission has been lodged by Macquarie to the NSW Government for the delivery of a single fully integrated station/OSD solution for the new Sydney Metro Martin Place Station Precinct.

Site Description

The Sydney Metro Martin Place Station Precinct (the Precinct) project relates to the following properties (refer to Figure 1):

- 50 Martin Place, 9 – 19 Elizabeth Street, 8 – 12 Castlereagh Street, 7 Elizabeth Street, 5 Elizabeth Street, and 55 Hunter Street (North Site);
- 39 – 49 Martin Place (South Site); and
- Martin Place (that part bound by Elizabeth Street and Castlereagh Street).

The Planning Proposal relates only to the North and South Site (refer to Figure 2). Each site will accommodate one OSD tower above the future Sydney Metro Martin Place Station (representing the northern and southern entries/gateways to the Sydney Metro station). The land acquired for the Sydney Metro Martin Place Station is the same as for the Macquarie proposal, except that the Macquarie proposal includes the two properties north of Martin Place owned by Macquarie, namely 50 Martin Place and 9-19 Elizabeth Street.

Both the North and South Sites are regular in shape and have area of approximately 6,022m2 and 1,897m2 respectively, totalling 7,919m2.

Located close to the centre of the Sydney CBD, the Precinct comprises of the entire City block bounded by Hunter Street, Elizabeth Street, Martin Place and Castlereagh Street; that portion of Martin Place located between Elizabeth Street and Castlereagh Street and the northern most property in the block bounded by Martin Place, Elizabeth Street, Castlereagh Street, and King Street. Together it constitutes an above ground site area of approximately 9,400 square metres, with a dimension from north to south of approximately 210 metres and from east to west of approximately 45 metres. It incorporates a significant portion of one of Sydney's most revered public spaces – Martin Place.

Martin Place is recognised as one of Central Sydney's great public, civic and commemorative spaces, as well as being a historically valued commercial and finance location of Sydney's CBD. Martin Place and a large number of buildings on, or in close proximity to, Martin Place are identified as heritage items, either as items of National, State or Local significance. Number 50 Martin Place, which forms part of the Macquarie North Site, is one of these major heritage items.

There has been a number of redevelopment and refurbishment proposals in recent years along Martin Place to improve existing assets and recapture their premium commercial status (e.g. 5 Martin Place, 50 Martin Place, 20 Martin Place, upgrades of the MLC Centre, and 60 Martin Place). The City of Sydney Council has also identified a need to reinvigorate Martin Place and upgrade the public spaces.

The surrounding locality is characterised by a variety of built forms and architectural styles, with many of the buildings, including those of relatively recent years, not complying with the current planning controls with respect to building heights, setbacks and street wall heights.

In terms of land use the area is characterised by a predominance of office uses, with some ground floor retailing, cafés, or restaurants and hotels (most notably the Westin and the Wentworth) to support its primary business centre function.

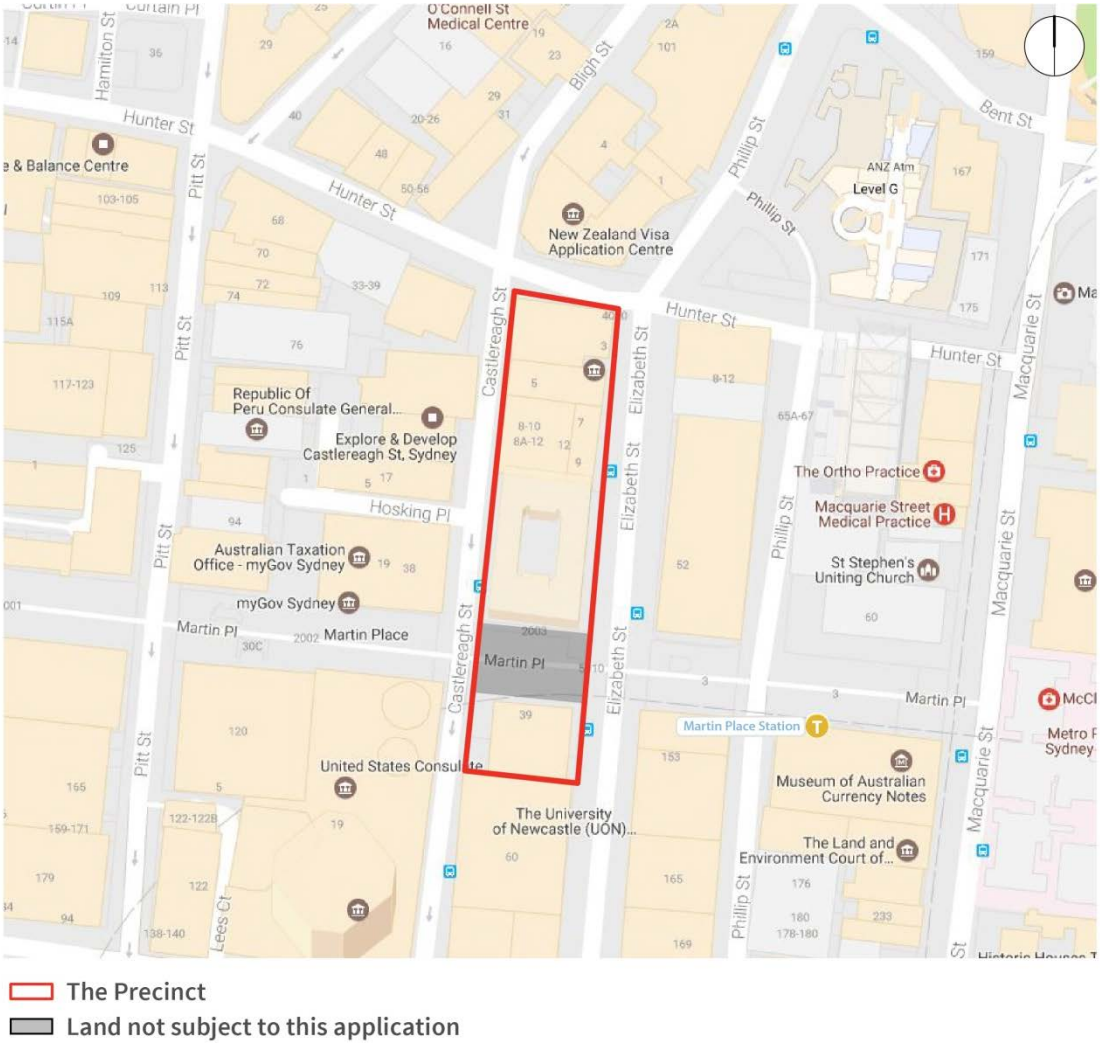

Figure 1 – Location map of the Precinct
Source: Google maps and JBA

Figure 2 – Aerial photo of the North and South Site
Source: Nearmap and JBA

3 Overview of Proposed Development

The proposal by Macquarie is unique and innovative in aligning the aspirations for public transport, civic amenity and the long-term sustainability of Sydney as a financial centre. It is achieved through a development designed to maximise the opportunities for an improved Metro Station, integrate the existing and new public transport infrastructure, coordinate this infrastructure with modern commercial office towers and world class retailing, and rejuvenate and complement some of Sydney's most revered public spaces whilst substantially improving station access and connectivity.

In order to realise this vision, the Planning Proposal seeks to amend the Sydney LEP through enabling greater building height (South Site only) and floor space (North and South Sites). In short, the existing planning controls that apply to the land are out-dated and do not align with the strategic planning framework, nor the aspirations and vision of the NSW Government, City of Sydney Council and Macquarie.

The proposed amendments will establish new maximum allowable Floor Space Ratios (FSRs) for both the North and South Sites, and which are limited generally to employment generating land uses. This increased capacity will greatly strengthen Sydney's historical financial district. The proposed height amendment to the South Site relates to increasing the maximum height of buildings for part of the site from 55m and up to the Hyde Park North Sun Access Plane.

A more detailed and comprehensive description of the proposal is contained within the Planning Proposal prepared by JBA.

4 Planning Strategy Context

The Planning Proposal forms part of a comprehensive suite of applications and processes to co-ordinate and deliver a fully integrated station/OSD solution for the new Sydney Metro Martin Place Station Precinct.

As part of this co-ordinated approach, a Stage 1 State Significant Development (SSD) Development Application (DA) is being made pursuant to Section 83B of the EP&A Act. This Stage 1 SSD DA establishes the vision and planning and development framework for the precinct, and forms the basis for the consent authority to assess future detailed development applications (Stage 2 DAs). The concept proposal for the South Site under this DA includes a tower envelope that complies with the building height and FSR controls under Sydney LEP (with this Planning Proposal facilitating an alternative and larger tower). Also submitted separately to this SSD DA is an application to modify the CSSI approval (in order to align with the Macquarie proposal).

For clarity, Figure 3 below is a diagrammatic representation of the suite of applications proposed by Macquarie, to show the relationship of the Planning Proposal (the subject of this report) to OSD Stage 1 SSD DA and the Martin Place Metro CSSI.

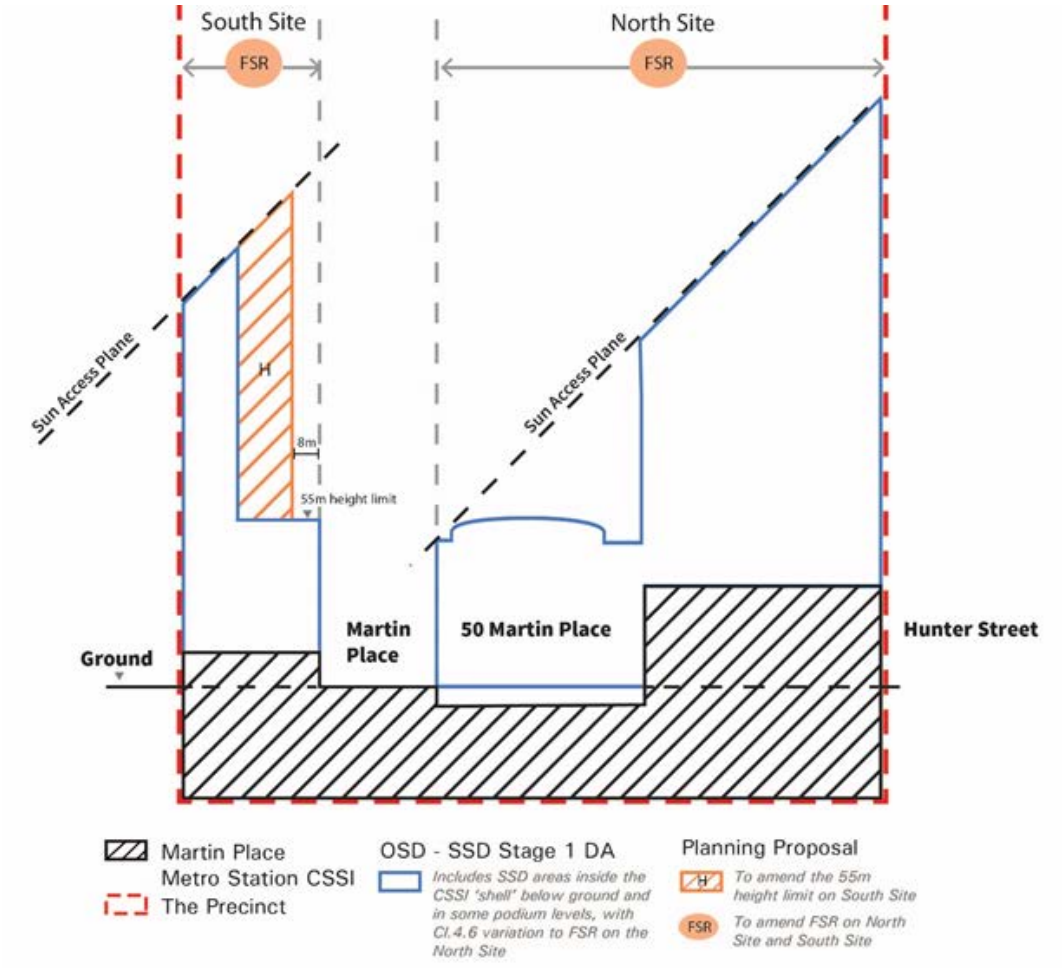

Figure 3 – Relationship of planning applications
Source: JBA

5 Design Features

The proposed project comprises of the station, two mixed use towers, and the surrounding precinct. Being surrounded by the pedestrianized Martin Place offers a unique opportunity to consider the redevelopments holistically and at a precinct level, with sustainability as a key driver for the development of the design. Precinct and station based initiatives are considered in a separate statement.

The following drivers form part of sustainability philosophy and aspirations for The Sydney Metro Martin Place Station Project:

- World's Best Practice Benchmark
- Environmental Impact – a design capable of reducing carbon emissions, promoting energy efficiency and reducing resource consumption
- Sustainable definition – a design capable of achieving recognised high performance with efficient use of resources
- Integration of the station with the surrounding precinct
- Implementation of highly efficient systems - The use of energy efficient HVAC and lighting systems combined with the passive strategies in the building will further contribute to energy, water and carbon reduction.

The ESD principles will be incorporated into the design as follows, with further detail on these strategies provided in the following sections.

1. **The Precautionary Principle**
   Careful evaluation to avoid damage to the environment will be mitigated via strategies such as use of responsibly sourced materials. Such requirements will be achieved via a 6 star Green Star rating.

2. **Intergenerational Equity**
   This principle will be demonstrated via:
   - Promotion of community integration with the precinct such as a centralised waste management strategy, best practice station comfort for optimised passenger experience and improved CBD public amenity via provision for arts/culture displays.
   - Reduced carbon emissions:
     - recycled materials
     - optimised precinct energy usage through high performance façades and efficient mechanical systems
     - inclusion of renewable energy technologies where appropriate
   - Reduced waste to landfill (via a centralised waste strategy)
   - Reduced potable water usage
   - Enhanced commissioning practices to minimise operational energy.

3. **Conservation of Biological Diversity and Ecological Integrity**

The project will be on an existing site which has minimal biological and ecological value. Any identified biological or ecological value will be maintained equal to, or greater than the current level.

4. **Improved Valuation, Pricing and Incentive Mechanisms**

   The project aims to achieve a 6 Star Green Star rating in the most cost effective way via a life cycle cost approach that provides best return on investment.

5.1 World's Best Practice

A review of best practice for transport oriented developments (TODs), precincts and commercial buildings was performed to establish a relevant design strategy. The following 5 key headings were determined through this benchmarking study and precincts, as well as consideration of the Sydney Metro Project initiatives proposed by the Government of New South Wales:

International Trends/Core Principles

- Energy
- Water
- Waste & Materials
- User Comfort
- Community

The two tower developments are part of an over station development and will be designed as to be consistent with Sydney Metro TfNSW requirements such as;

- Easy door to door customer experience
- Consistent customer experience
- Integrated Customer Experience
- Wayfinding and coordination
- Best practice adaptive comfort
- Initiatives to integrate with the surrounding precinct and community

Climate Change Resilience Plan

A climate change resilience plan will be developed in accordance with the following:

- The requirements of Green Star Design & As-built tool
- The recommendations of AS5334 Climate change adaptation for settlements and infrastructure—A risk based approach.
- Arup's experience with best practice approaches to risk, resilience, and climate change vulnerability adaptation.

It will address potential climate impacts with risk assessments, and adaptation options with evaluations for the project.

5.2 Ratings

5.2.1 Building Code of Australia – Section J

For the underground station and two towers, compliance with Section J Parts 1, 2, and 3 will be achieved through the JV3 Alternative Compliance path .

The JV3 methodology involves the comparison of the predicted energy consumption of a reference building model that is developed using the deemed to satisfy requirements of the NCC, with the proposed building model. If the predicted energy consumption of the proposed building model is no more than the reference model then a complying alternative solution to the NCC Section J is achieved.

All other services will exceed the DTS requirements and minimum energy performance requirements (MEPs).

5.2.2 Green Star and NABERS

The strategies to achieve world's best practice will be addressed under rating schemes such as Green Star and NABERS. The Green Building Council of Australia (GBCA) released a new Green Star Design & as Built v1 rating tool in 2014. This tool together with NABERS are the primary benchmarks used for commercial buildings.

Green Star—Design & as Built v1

Green Star – Design & as Built v1 assesses the sustainability outcomes from the design and construction of new buildings or fit outs, across nine impact categories:

- Management
- Indoor Environment Quality
- Energy
- Transport
- Water
- Materials
- Land Use & Ecology
- Emissions
- Innovation

The current version of the rating tool to be used on this project is: Green Star – Design & as Built v1.1. This was released on 01/07/2015.

NABERS Energy and Water

NABERS is a national rating system that measures the environmental performance of Australian buildings, tenancies and homes. This is measured in terms of the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment.

This is undertaken with measured and verified performance information, such as utility bills, and converting them into an easy to understand star rating scale from one to six stars. For example, a 6 star rating demonstrates market-leading performance, while a 1 star rating means the building or tenancy has considerable scope for improvement.

5.3 Strategies: Precinct and Station Development

For information, the ESD objectives for the Station Box and Precinct are summarised as follows:

- Green Star Office Design and As-Built equivalence
- Daylight for way finding
- Best practice adaptive comfort
- Initiatives to integrate with the surrounding precinct and community

Precinct and Station Development

As part of the Green star and NABERS strategy the following initiatives are being developed.

Best Practice Station Comfort

- Provide adaptive comfort temperate in station concourse and platforms
- Utilising natural ventilation where possible along with localised cooling

Design for active transport

The following strategies are included to encourage zero emissions transportation options both to and from work, as well as within the working day. The proximity of the two towers to the Martin Place train station will encourage the building occupants to travel via public transportation.

The below strategies are proposed to encourage both building occupants and the general public to travel by carbon neutral modes:

- Provide world class end of trip facilities to occupants
- Provide convenient pedestrian routes with interesting night scapes and secure routes

Water

- Bio retention to tree pits.
- Storm water management (refer to Hydraulic strategy)

Innovation

- Development of best practice indoor environments
- Soft landings to minimise operational energy
- Potential to purchase of Green Power to offset carbon emissions and improve performance in Energy credits

- Stakeholder participation: View of building works and smart hoarding

Materials

- Materials strategies are applied uniformly across the site. Refer to the towers section for details

5.4 Strategies: North and South Tower

The ESD objectives for the North and South Tower are summarised as follows:

- 5 star NABERS Energy minimum based on 2016 protocol
- 3.5 star NABERS Water Rating minimum based on 2016 protocol
- 6 Star Green Star Office Design and As-Built v1.1
- Occupant wellbeing

The specific ESD strategy to achieve the objectives noted above is summarised below:

North and South Tower

As part of the Green star and NABERS strategy the following initiatives are being developed.

Facade

- Exceed BCA compliance by a combination of internal and external shading with high performance glazing
- Reflectivity of the façade will be designed to comply with City of Sydney minimum performance guidelines

Mechanical / BMS

- High end mechanical systems to optimise indoor environmental quality, environmental and energy performance. Systems being considered are VAV, chilled beams, under floor chilled ceilings and underfloor or overhead air distribution
- Reduced demand on the electrical grid through systems such as cogeneration plants

Electrical/Hydraulic

- WELS rated fixtures, rain-water harvesting and recycling where possible
- Water quality testing

Carbon Shift

- Renewable energy options and efficient tenant systems

Architectural

- Area considerations for recycled waste and garbage rooms and effective waste management to optimise land fill diversion
- End of trip facilities – refer to “design for active transport” section above

Materials

- Recycled demolition and construction waste
- Provision for responsibly sourced construction materials
- Minimised inclusions of PVC
- Material Transparency

Indoor Environmental Quality (IEQ)

- Optimizations that address air filtration, natural and artificial lighting control
- Space provision for carbon filtration to AHU

Innovation

- Development of best practice indoor environments
- Soft landings to minimise operational energy
- Potential to purchase of Green Power to offset carbon emissions and improve performance in Energy credits
- Tenancy fit out systems review