Memorandum

ARUP

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From	George Cunha - Arup	File reference	247838-00
Subject	Metro Martin Place Stage 1 Amending DA - Over Station Development Rebuilding or Major Refurbishment Approach		

1 Introduction

1.1 Introduction

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Minister for Planning (Minister) pursuant to Part 4 of *the Environmental Planning and Assessment Act 1979* (EP&A Act) on behalf of Macquarie Corporate Holdings Pty Limited (Macquarie), who is seeking to create a world class transport and employment precinct at Martin Place, Sydney.

The SSD DA seeks approval for an amended Concept Proposal (otherwise known as a Stage 1 DA) relating to the Martin Place Metro Station Precinct ('the Precinct'). An existing development consent (SSD 17_8351) for a Concept Proposal is in place for the Precinct, which approved the concept for two Over Station Development (OSD) commercial towers above the northern (North Site) and southern (South Site) entrances of Martin Place Metro Station. The Concept Proposal approved building envelopes, land uses, Gross Floor Areas (GFA) and Design Guidelines with which the detailed design (otherwise known as a Stage 2 DA) must be consistent.

This Stage 1 Amending DA is a concept development application made under Section 4.22 of the EP&A Act. It seeks to align the approved South Site building envelope with the new planning controls established for the precinct as a result of a site specific amendment to Sydney LEP 2012. The new controls permit greater building height (over a portion of the South Site only) and additional floor space (North Site and South Site).

Whilst the approved Concept Proposal related to the entire Precinct, this Amending DA relates principally to the building envelope of the **South Site**, in terms of amending the approved height and floor space.

This application does not seek approval for elements of the Martin Place Station Precinct which relate to Stage 2 of the Sydney Metro infrastructure project, which is subject to a separate Critical State Significant Infrastructure (CSSI) approval. These include:

- Demolition of buildings on the North Site and South Site;
- Construction of rail infrastructure, including station platforms and concourses;
- Ground level public domain works; and
- Station related elements in the podium of the North Site and South Site building.

The approved Stage 1 Concept Proposal approved conceptual OSD areas in the approved Martin Place Station Structure, above and below ground level, which are classified as SSD as they relate principally to the OSD. These components are within the Metro CSSI approved station envelope that will contain some OSD elements not approved in the CSSI consent. Those elements include the end of trip facilities, office entries, office space and retail areas, along with other office/retail plant and back of house requirements that are associated with the proposed OSD and not the rail infrastructure. This Amending DA does not propose to modify this.

Accordingly, although in terms of functionality the OSD and Station components of the project can notionally be split at Ground Level (Elizabeth St) and Lower Ground (Castlereagh St) with commercial office building above and Station below, a number of the Station services continue above the Lower Ground/Ground Levels into the OSD buildings. This is necessitated primarily by the need to intake fresh air for the station and exhaust air and smoke at height above ground. There is also a requirement due to space limitations below ground on the North Tower to support some Station Plant in a number of the above-ground levels of the North Tower building.

Furthermore there is a need to classify structural elements of the project as either OSD or Station due to the differing design life requirements for the structures of these two components in terms of durability, with the OSD design life 50 years and the Station, being infrastructure, having a structural design life of 100 years.

1.2 Context

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 onto 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 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). Work is well underway under this approval, including demolition of buildings at Martin Place.

The OSD development is subject to separate applications to be lodged under the relevant provisions of the EP&A Act.

1.3 Site Description

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

- 50 Martin Place, 9 – 19 Elizabeth Street, 8 – 12 Castlereagh Street, 5 Elizabeth Street, 7 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).

This Stage 1 Amending DA relates principally to the building envelope of the South Site, being land at 39 – 49 Martin Place, Sydney (refer to **Figure 1**).

Figure 1 – Aerial Photo of the North and South Site of the Martin Place Metro Station Precinct

1.4 Background

Sydney Metro Stage 2 Approval (SSI 15_7400)

On 9 January 2017, the Minister approved Stage 2 of the Sydney Metro project, involving the construction and operation of a metro rail line between Chatswood and Sydenham, including the construction of a tunnel under Sydney Harbour, links with the existing rail network, seven metro stations (including a station at Martin Place), and associated ancillary infrastructure. The project approves the demolition of existing buildings at Martin Place, excavation and construction of the new station (above and below ground) along with construction of below and above ground structural and other components of the future OSD, although the fit-out and use of such areas are the subject of separate development approval processes.

Modification 3 to the Sydney Metro consent, approved 22 March 2018, enabled the inclusion of Macquarie-owned land at 50 Martin Place and 9-19 Elizabeth Street within the Martin Place Station footprint, and other associated changes (including retention of existing MLC pedestrian link).

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Planning Proposal (PP_2017_SYDNE_007_00) – Amendment to Sydney LEP 2012

The Planning Proposal (PP_2017_SYDNE_007_00) sought to amend the development standards applying to the Sydney Metro Martin Place Station Precinct through the inclusion of a site-specific provision in the Sydney LEP 2012. This site-specific provision reduced the portion of the South Site that was subject to a 55 metre height limit from 25 metres from the boundary to Martin Place, to 8 metres, and applies the Hyde Park North Sun Access Plane to the remainder of the South Site, forming the height limit of the tower. It also permitted a revised FSR of 22:1 on the South Site and 18.5:1 on the North Site (resulting in a combined permissible overall GFA of 153,141m^2). These amendments were gazetted within Sydney LEP 2012 and reflect the new planning controls applying to the precinct.

Concept Proposal (SSD 17_8351)

On 22 March 2018, the Minister approved a Concept Proposal (SSD 17_8351) for the Precinct. The Concept Proposal established the planning and development framework through which to assess the detailed Stage 2 applications.

The approved Concept Proposal specifically encompassed:

- building envelopes for OSD towers on the North Site and South Site (see **Figure 3**) comprising:
    - 28+ storey building on the South Site, with a 25m setback to Martin Place above 55m in height, and a 40+ storey building on the North Site.
    - Concept approval to integrate the North Site with the existing/retained 50 Martin Place building (the former Government Savings Bank of NSW).
- predominantly commercial land uses on both sites, comprising office, business and retail premises;
- a maximum total GFA of 125,437m^2 across both sites;
- consolidated Design Guidelines to guide the built form and design of the future development.
- a framework for achieving design excellence.
- strategies for utilities and services provision, managing drainage and flooding, and achieving ecological sustainable development.
- conceptual OSD areas in the approved Martin Place Metro Station structure, above and below ground level[1].

The Concept Proposal was prepared and determined prior to the site specific Sydney LEP 2012 amendment being gazetted and was developed based on the height development standards that applied to the South Site at the time. As a result, the approved Concept Proposal allows for a tower on the South Site that is now inconsistent with the building envelope envisaged through the Sydney

[1] *Refers to those components within the Metro CSSI approved station envelope that will contain some OSD elements not approved in the CSSI consent. Those elements include the end of trip facilities, office entries, office space and retail areas, along with other office/retail plant and back of house requirements that are associated with the proposed OSD and not the rail infrastructure.*

LEP 2012.

Figure 2 – North Site and South Site Approved OSD Building Envelopes

1.5 Overview of the Proposed Development

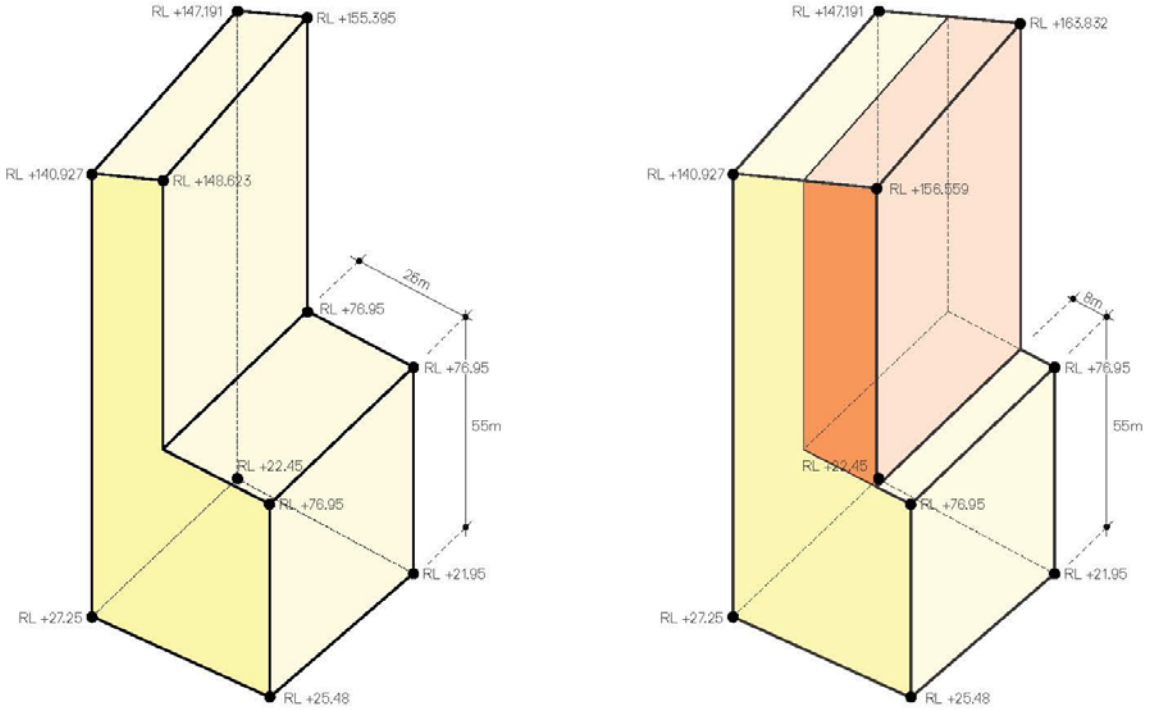
The Stage 1 Amending DA seeks approval for an amended Concept Proposal for the Martin Place Metro Station Precinct, specifically a larger building envelope for the South Site compared to the building envelope approved by the Minister through SSD 17_8351. The amended South Tower envelope will reflect a building envelope that aligns with the new controls applying to the precinct under Sydney LEP 2012, including increased height and FSR limits. It is proposed to amend the South Tower building envelope, through:

- a tower setback to Martin Place of 8 metres above the 55m podium height (reduced from 25 metres as approved within the Concept Proposal);
- a tower height that is consistent with the Hyde Park North Sun Access Plane beyond the 8m setback to Martin Place (constituting a generally taller tower than approved within Concept Proposal); and
- an increase in GFA/FSR for the South Site from approximately 23,700m^2 (12.5:1) up to approximately 41,700m^2 (22:1) - inclusive of all CSSI Station components.

Figure 3 below illustrates these proposed amendments to the South Site building envelope.

It is proposed that a condition be imposed on the Stage 1 Amending DA development consent pursuant to Section 4.17(1)(b) of the EP&A Act, requiring the modification of the original consent

(SSD 17_8351) upon the commencement of the Stage 1 Amending DA Consent, in accordance with the procedures under Clause 97 of the *Environment Planning and Assessment Regulation 2000* (EP&A Regulation). This condition would address any inconsistency between the approved Concept Proposal and the Stage 1 Amending DA (and any subsequent detailed consents, i.e. the Stage 2 South Site DA).



Approved South Site Building Envelope *Proposed Amended South Site OSD Envelope (aligning with site specific amendment to Sydney LEP 2012)*

Figure 3 – Relationship between the approved and proposed amended South Site building envelope

1.6 Planning Approvals Strategy

State Environmental Planning Policy (State and Regional Development) 2011 (SEPP SRD) identifies development which is declared to be State Significant. Under Schedule 1 and Clause 19(2) of SEPP SRD, development within a railway corridor or associated with railway infrastructure that has a capital investment value of more than $30 million and involves commercial premises is declared to be State Significant Development (SSD) for the purposes of the EP&A Act.

The proposed amendment (involving commercial development that is both located within a rail corridor and associated with rail infrastructure) is therefore SSD.

Submitted separately to this SSD DA are detailed proposals for the South Site (Stage 2 South Site DA) and North Site (Stage 2 North Site DA), which follow the approval of the Concept Proposal for the Precinct under Section 4.22 of the EP&A Act (formerly Section 83B). The Stage 2 detailed DA for the South Tower includes a design which is consistent with the envelope envisaged with this

subject Stage 1 Amending DA and where it must only be determined following approval of the subject Stage 1 Amending DA.

Figure 4 below is a diagrammatic representation of the suite of key planning applications undertaken or proposed by Macquarie and their relationship to the subject application (the subject of this report).

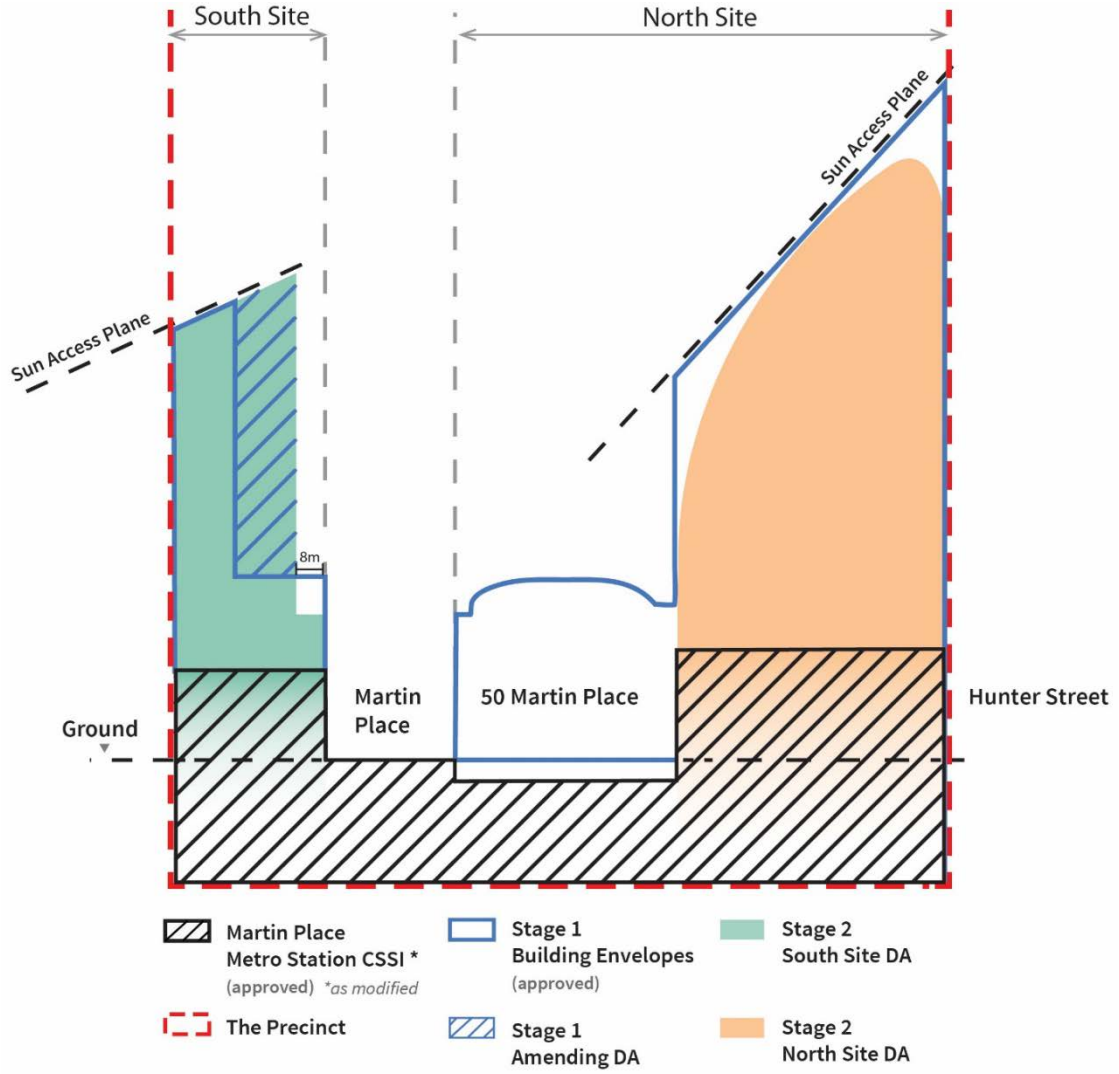


Figure 4 – Relationship of key planning applications to the **Stage 1 Amending DA** (this application)

The Department of Planning and Environment have provided Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the preparation of an Environmental Impact Statement for the proposed development. This report has been prepared having regard to the SEARs as relevant.

2 Future OSD Replacement/Major Refurbishment Strategy

The nature of building and station designs is such that building services are integrated with the structure and the overall building form to maximise the utility and function of the buildings. In the development of the design of the Metro Martin Place (MMP) project a further consideration has been the future-proofing for demolition and rebuilding or major refurbishment of the OSD buildings whist maintaining the operation of the Martin Place Sydney Metro Station. Due to the constrained nature of the site this means that the position and functionality of the Building Services components of the Station above Ground and incorporated in the OSD buildings must be maintained in-situ and in operation during and such demolition, rebuild or refurbishment of the buildings over. This is primarily because there is no feasible opportunity to divert Station Building services below ground or relocate Station building services above ground as there is no surplus space above ground in which to do so.

Overall views of the largely complete 3D computer Revit model showing combined structures and OSD + Station building services are described in Figure 6 below.

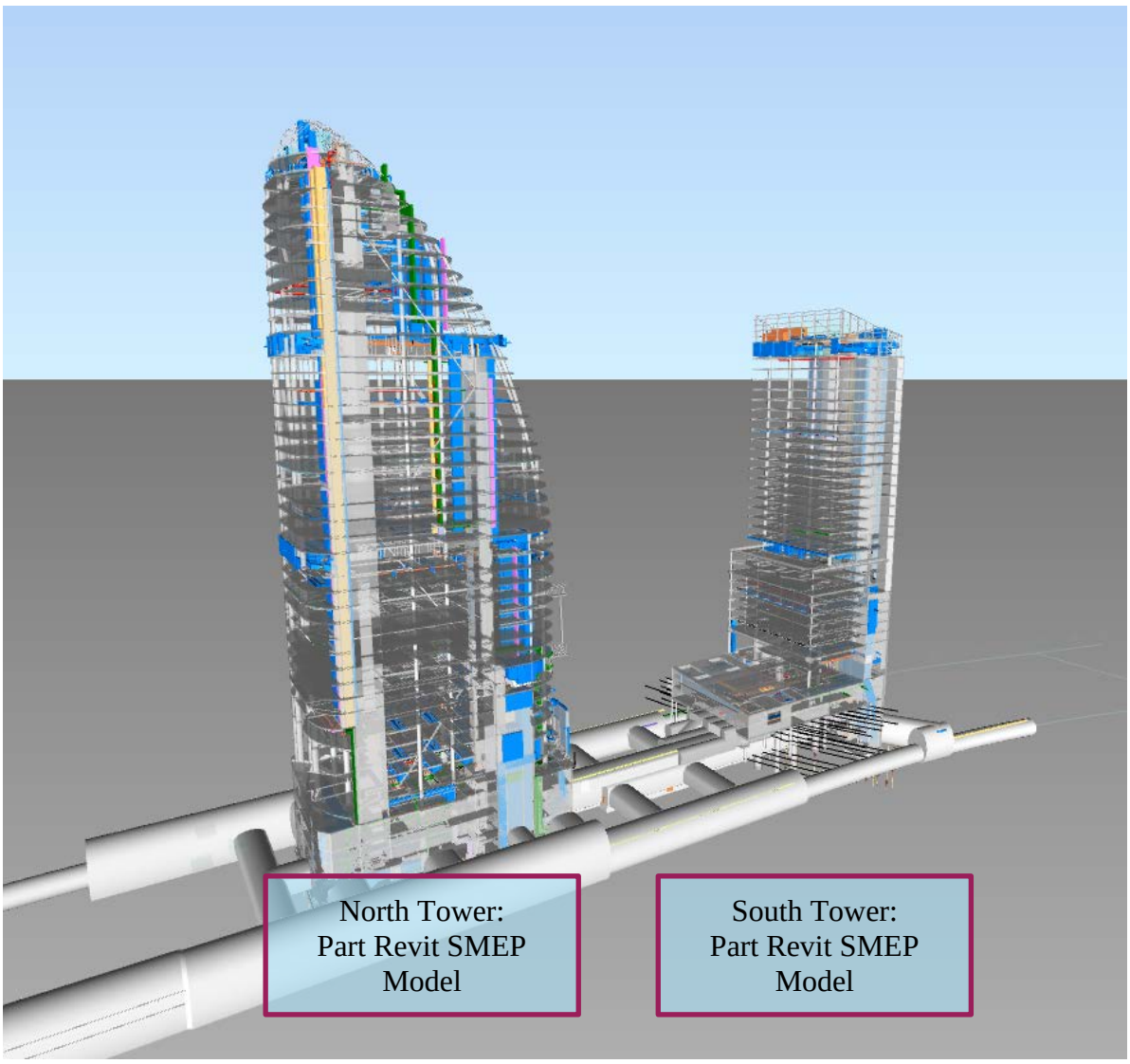


Figure 6 - Combined OSD + Station 3D Structural and Building Services Model

The strategy for ensuring the Station building services remain supported and operational during OSD demolition/reconstruction and/or refurbishment falls into two main actions:-

1. Self-supporting vertical riser shafts in both North and South Towers; &
2. Temporary support of localised floor structures not demolished supporting Station plant in the North Tower.

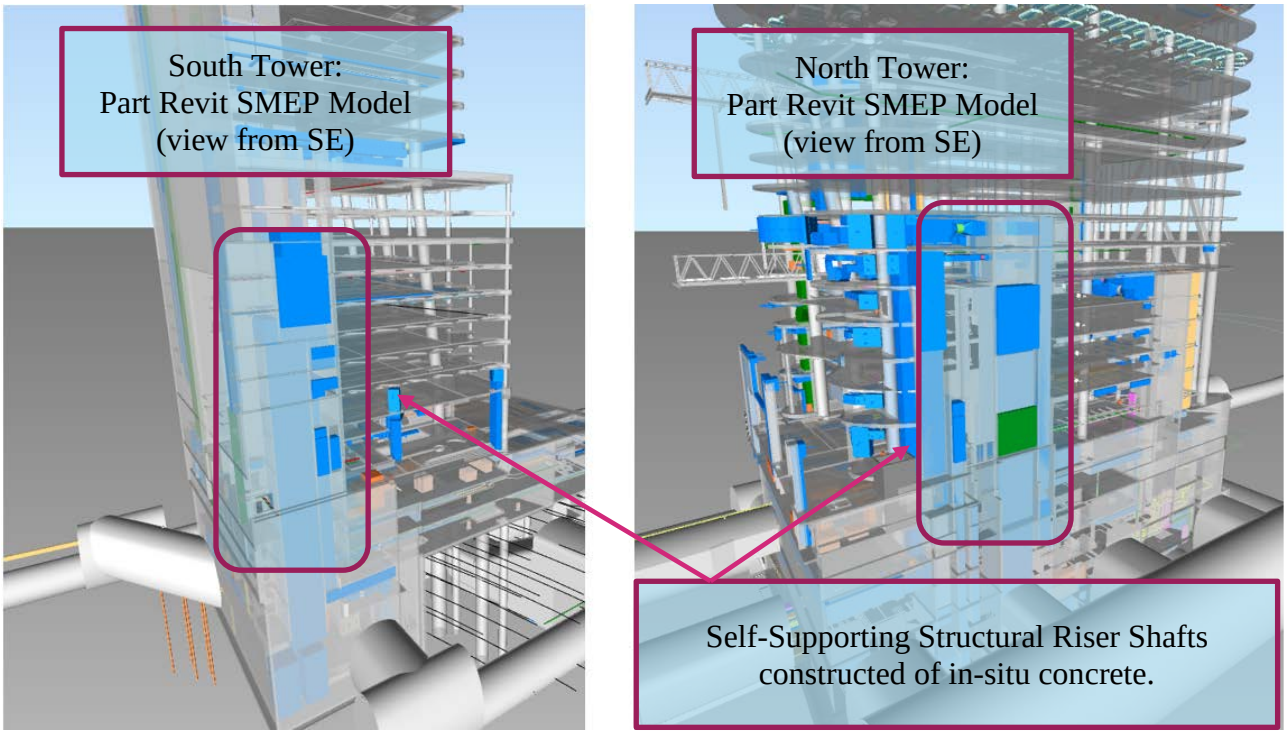


Figure 7 - Self-supporting concrete riser shafts

2.1 Self-Supporting Concrete Riser Shafts

The tunnel and station ventilation and exhaust ducts as well as vertical distribution of station building services that extend up through the lower levels of the towers are typically contained within in-situ reinforced concrete riser shafts. These riser shafts are self-supporting and do not rely on the adjacent tower structure for support. These concrete core elements could therefore remain to enclose and support the vertical shafts and station services vertical distribution whilst the adjacent tower structure is demolished or modified.

2.2 Temporary Floor Support Structures

Where Tower floors support Station building services the strategy for future demolition or refurbishment of the OSD would potentially involve puncturing through the tower floors locally to insert temporary steel columns and bracing down onto retained existing or existing structure/support. These steel columns would support temporary steel beams positioned beneath areas of slab that directly support Station building services elements. The existing slab structure

retained, and/or potentially the steel beams, would be integrated into the new or revised OSD building structure reinstating permanent vertical and lateral support.

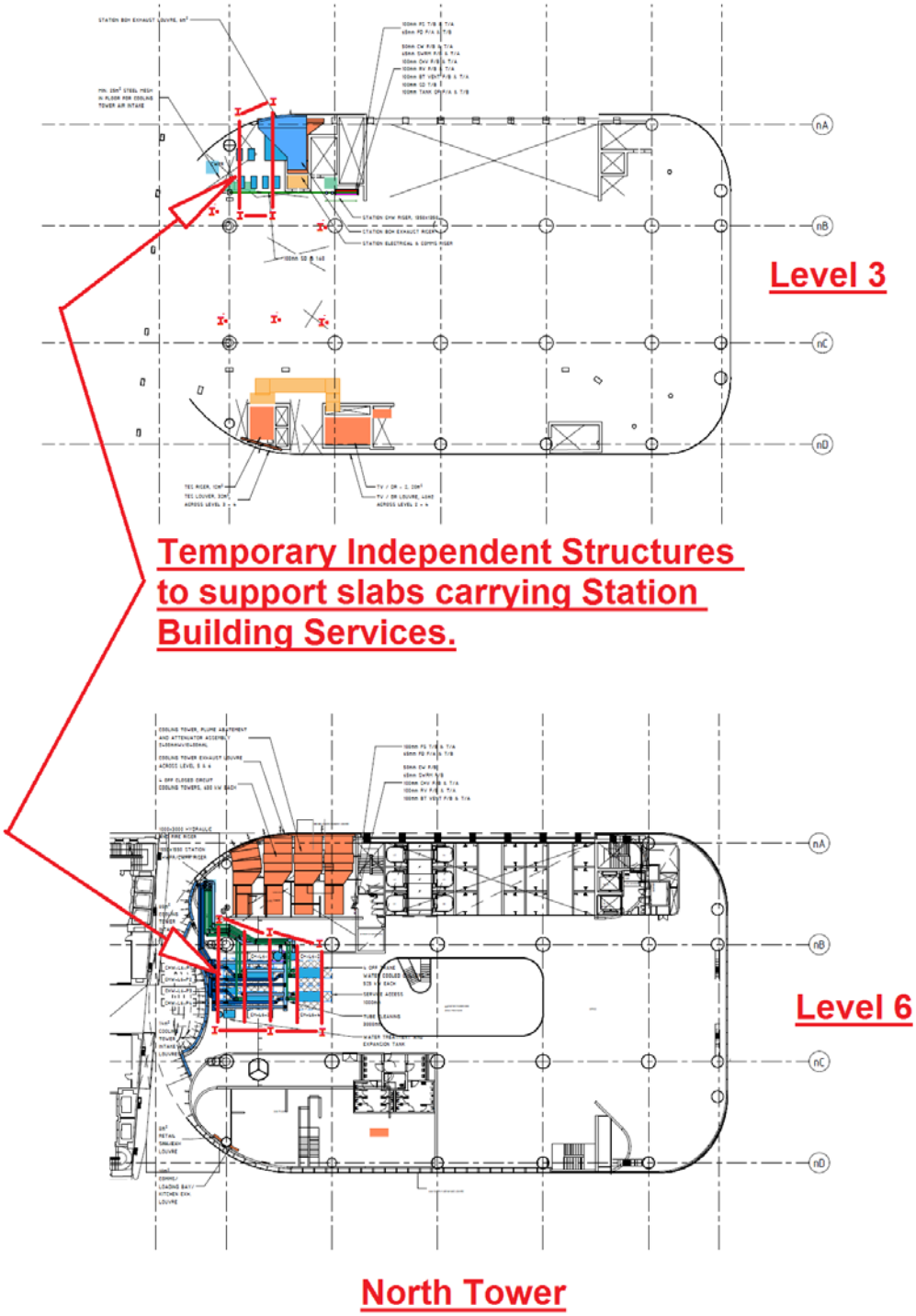


Figure 8 - Temporary Support of Tower slabs supporting Station Building Services

2.3 Advice from Lendlease Building with respect to Methodology for Demolition of OSD

The future demolition of the OSD buildings will be undertaken in a number of stages and in a manner not dissimilar to the current demolition of Wynyard Place, Sydney. Further the Metro Martin Place station having 2 main above ground entry points (one at Hunter St – North Tower and the other at Martin Place – South Tower) allows greater flexibility with the staging of the demolition of the respective buildings.

Planning activities specific to the demolition of one of these OSD buildings would include:-

- The undertaking of extensive pedestrian studies and the development of a detailed pedestrian management plan which would focus on maximising pedestrian flows through the underground links and to the ground plane accesses of the building that is not being demolished;
- Extensive services investigations & planning would be required to:-
    - Identify Station services , plant & equipment;
    - Prepare a detailed strategy for maintaining and protecting Station services; &
    - A strategy for the provision of alternative temporary services where the permanent services cannot be maintained.
- Structural engineering of the structure being demolished as detailed in ARUP's report
- Structural engineering of the temporary works necessary to maintain plant & equipment servicing the Metro as informed by the services strategy; &
- Structural engineering of temporary works such as overhead catch decks, temporary supports etc.

The first demolition activities would be the erection of class B hoardings of the perimeter of the building and then scaffold encapsulation of the façade of the building to be demolished. The scaffold would be clad with chain wire and shade cloth to contain debris and dust. Much of the building could be demolished prior to any impact on station services or impact to station accesses. Normal demolition techniques would be utilised as are currently being employed during the demolition of Wynyard Place, namely the progressive demolition floor by floor using small to medium size excavators.

The key environmental factors to manage are considered to be:-

- Noise & Vibration – through the selection of appropriate plant and the implementation of respite periods; &
- Dust Suppression – through the use of water misting fans, excavators fitted with water sprayers and attendant labour with hoses.

The debris from each floor would be pushed into the concrete lift shafts and these lift shafts would act as rubbish chutes to transport the debris to the ground floor (South Tower) or B1 basement level (North Tower).

Once the demolition of the buildings is within two floors of station plant or within three floors of publicly accessible areas, the temporary works programme (structure and services) would be implemented.

After the erection of way-finding signage, individual ground plane accesses could be closed off on a progressive basis and internal overhead 10kPa protection structures constructed to facilitate the demolition of the lower floors of the buildings. At this stage the demolition is undertaken part-floor by part-floor in conjunction with the staging of station access to and from the ground plane.

Conclusion

In conclusion, the design of the MMP project has considered a broad strategy for future demolition and rebuilding or significant refurbishment of the OSD building components that would allow the continued operation of the Martin Place Metro Station. The strategy outlined above will be developed further in subsequent phases of the project.