



Sydney Metro City & Southwest: Crows Nest Over Station Development

View Impact Study – Surrounding Residential Buildings

Applicable to:	Sydney Metro City & Southwest
Author:	Virtual Ideas
Owner	Sydney Metro Authority
Status:	Final
Version:	2
Date of issue:	November 2018
© Sydney Metro 2018	

Table of Contents

1.0	Introduction	3
1.1	Purpose of this report	3
1.2	Overview of the Sydney Metro in its context	4
1.3	Planning relationship between Crows Nest Station and the OSD.....	7
1.4	The strategic planning context	9
1.5	The site.....	9
1.6	Overview of the proposed development.....	11
2.0	Scope of assessment.....	16
2.1	Background	16
2.2	Overview	16
2.3	Description of collected data	16
2.4	Methodology	18
2.5	CV of Grant Kolln, Director of Virtual Ideas	19
2.6	Key map indicating location of photography positions.....	20
3.0	Photomontages from surrounding residential buildings	21
3.1.1	Photo 01 – 420 Pacific Highway.....	21
3.1.2	Photo 03 – 420 Pacific Highway.....	24
3.1.3	Photo 05 – 420 Pacific Highway.....	27
3.1.4	Photo 06 – 400 Pacific Highway.....	30
3.1.5	Photo 07 – 400 Pacific Highway.....	33
3.1.6	Photo 08 – 545 Pacific Highway.....	36
3.1.7	Photo 09A – 26 Clarke Street	39
3.1.8	Photo 09B – 26 Clarke Street	42
3.1.9	Photo 10A – 545 Pacific Highway	45
3.1.10	Photo 10B – 545 Pacific Highway	48
4.0	Conclusion.....	51
	Appendix A - Camera Position Survey – 04-10-2018	52

1.0 Introduction

1.1 Purpose of this report

This report supports a concept State Significant Development application (concept SSD Application) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The concept SSD Application is made under Section 4.22 of the EP&A Act.

Sydney Metro is seeking to secure concept approval for a mixed use development comprising four buildings above the Crows Nest Station, otherwise known as the over station development (OSD). The concept SSD Application seeks consent for building envelopes and land uses, maximum building heights, maximum gross floor areas, pedestrian and vehicular access, circulation arrangements and associated car parking and the strategies and design parameters for the future detailed design of the development.

Sydney Metro proposes to procure the construction of the OSD as part of an Integrated Station Development package, which would result in the combined delivery of the station, OSD and public domain improvements. The station and public domain elements form part of a separate planning approval for Critical State Significant Infrastructure (CSSI) approved by DPE on 9 January 2017.

As the development is within a rail corridor, is associated with railway infrastructure and is for commercial premises and residential accommodation with a Capital Investment Value of more than \$30 million, the project is identified as State Significant Development (SSD) pursuant to Schedule 1, 19(2)(a) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The development is therefore, State significant development for the purposes of Section 4.36 of the EP&A Act.

This report has been prepared to specifically respond to the Secretary's Environmental Assessment Requirements (SEARs) issued for the concept SSD Application on 26 September 2018 which states that the Environmental Impact Statement (EIS) is to address the following requirements:

Reference	SEARs Requirement	Where Addressed in Report
Section 8: Amenity-	<ul style="list-style-type: none"> address the following in relation to the surrounding area including neighbouring properties/ buildings and the public domain. This includes neighbouring buildings within the proposal and future stages adjacent: <ul style="list-style-type: none"> views and visual impacts identify important sight lines and visual connectivity to and through the site provide a visual impact 	This report. The requirement should be read in conjunction with the Visual Impact Assessment Report submitted with the EIS.

	assessment to identify the visual changes and impacts on the site and its surrounds. This must include a view analysis to and from the site from adjoining developments, key vantage points and streetscape locations including photomontages or perspectives of the proposed development. The view locations and methodology for the analysis must be prepared in consultation with the Department and Council	
Plans and Documents	Visual and view impact analysis and photomontages.	This report. The requirement should be read in conjunction with the Visual Impact Assessment Report submitted with the EIS.

In line with the above, this report provides photomontages of the visual and view impacts of the proposal from key vantage points and streetscape locations and should be read in conjunction with the Visual Impact Assessment submitted with the EIS. These locations were selected in consultation with North Sydney Council.

1.2 Overview of the Sydney Metro in its context

Sydney Metro is Australia's biggest public transport project. A new standalone metro railway system, this 21st century network will deliver 31 metro stations and 66km of new metro rail for Australia's biggest city — revolutionising the way Sydney travels. Services start in the first half of 2019 on Australia's first fully-automated railway.

Sydney Metro was identified in *Sydney's Rail Future*, as an integral component of the *NSW Long Term Transport Master Plan*, a plan to transform and modernise Sydney's rail network so it can grow with the city's population and meet the future needs of customers. In early 2018, the *Future Transport Strategy 2056* was released as an update to the *NSW Long Term Transport Master Plan* and *Sydney's Rail Future*. Sydney Metro City & Southwest is identified as a committed initiative in the *Future Transport Strategy 2056*.

Sydney Metro is comprised of three projects, as illustrated in **Figure 1**:

- **Sydney Metro Northwest** — formerly the 36km North West Rail Link. This \$8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.
- **Sydney Metro City & Southwest** — a new 30km metro line extending the new metro network from the end of Sydney Metro Northwest at Chatswood, under Sydney Harbour, through the CBD and south west to Bankstown. It is due to open in 2024 with an

ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

- **Sydney Metro West** – a new underground railway connecting the Parramatta and Sydney central business districts. This once-in-a-century infrastructure investment will double the rail capacity of the Parramatta to Sydney CBD corridor and will establish future capacity for Sydney's fast growing west. Sydney Metro West will serve five key precincts at Westmead, Parramatta, Sydney Olympic Park, The Bays and the Sydney CBD. The project will also provide an interchange with the T1 Northern Line to allow faster connections for customers from the Central Coast and Sydney's north to Parramatta and the Sydney CBD.

Sydney's new metro, together with signalling and infrastructure upgrades across the existing Sydney suburban rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour currently to up to 200 services beyond 2024. That's an increase of up to 60 per cent capacity across the network to meet demand.

Sydney Metro City & Southwest includes the construction and operation of a new metro rail line from Chatswood, under Sydney Harbour through Sydney's CBD to Sydenham and on to Bankstown through the conversion of the existing line to metro standards.

The project also involves the delivery of six (6) new metro stations, including at Crows Nest, together with new underground platforms at Central. Once completed, Sydney Metro will have the ultimate capacity for a train every two minutes through the CBD in each direction - a level of service never seen before in Sydney.



Figure 1: Sydney Metro alignment map

On 9 January 2017, the Minister for Planning (the Minister) approved the Sydney Metro City & Southwest - Chatswood to Sydenham application lodged by TfNSW as a Critical State Significant Infrastructure project (reference SSI 15_7400), hereafter referred to as the CSSI Approval.

The CSSI Approval includes all physical work required to construct the CSSI, including the demolition of existing buildings and structures on each site. Importantly, the CSSI Approval also includes provision for the construction of below and above ground structures and other components of the future OSD (including building infrastructure and space for future lift cores, plant rooms, access, parking and building services, as relevant to each site). The rationale for this delivery approach, as identified within the CSSI application is to enable the OSD to be more efficiently built and appropriately integrated into the metro station structure.

The EIS for the Chatswood to Sydenham alignment of the City & Southwest project identified that the OSD would be subject to a separate assessment process.

Since the CSSI Approval was issued, Sydney Metro has lodged five modification applications to amend the CSSI Approval as outlined below:

- **Modification 1** - Victoria Cross and Artarmon Substation which involves the relocation of the Victoria Cross northern services building from 194-196A Miller Street to 50 McLaren

Street together with the inclusion of a new station entrance at this location referred to as Victoria Cross North. The modification also involves the relocation of the substation at Artarmon from Butchers Lane to 98 – 104 Reserve Road. This modification application was approved on 18 October 2017.

- **Modification 2** - Central Walk which involves additional works at Central Railway Station including construction of a new eastern concourse, a new eastern entry, and upgrades to suburban platforms. This modification application was approved on 21 December 2017.
- **Modification 3** - Martin Place Station which involves changes to the Sydney Metro Martin Place Station to align with the Unsolicited Proposal by Macquarie Group Limited (Macquarie) for the development of the station precinct. The proposed modification involves a larger reconfigured station layout, provision of a new unpaid concourse link and retention of the existing MLC pedestrian link and works to connect into the Sydney Metro Martin Place Station. It is noted that if the Macquarie proposal does not proceed, the original station design remains approved. This modification application was approved on 22 March 2018.
- **Modification 4** - Sydenham Station and Sydney Metro Trains Facility South which incorporated Sydenham Station and precinct works, the Sydney Metro Trains Facility South, works to Sydney Water's Sydenham Pit and Drainage Pumping Station and ancillary infrastructure and track and signalling works into the approved project. This modification application was approved on 13 December 2017.
- **Modification 5** - Blues Point acoustic shed modification which involves the installation of a temporary acoustic shed at Blues Point construction site and retrieval of all parts of the tunnel boring machines driven from the Chatswood dive site and Barangaroo through the shaft at the Blues Point temporary site. This modification application was approved on 2 November 2018.

The CSSI Approval as modified allows for all works to deliver Sydney Metro between Chatswood and Sydenham Stations and also includes upgrade of Sydenham Station.

The remainder of the City & Southwest alignment (Sydenham to Bankstown) proposes the conversion of the existing heavy rail line from west of Sydenham Station to Bankstown to metro standards. This part of the project, referred to as the Sydenham to Bankstown upgrade, is the subject of a separate CSSI Application (Application No. SSI 17_8256) for which an EIS was exhibited between September and November 2017, and a Submissions and Preferred Infrastructure Report was exhibited in June and July 2018. This application is currently being assessed by DPE.

1.3 Planning relationship between Crows Nest Station and the OSD

While Crows Nest Station and the OSD will form an Integrated Station Development, the planning pathways defined under the *Environmental Planning & Assessment Act 1979*

require separate approval for each component of the development. In this regard, the approved station works (CSSI Approval) are subject to the provisions of Part 5.1 of the EP&A Act (now referred to as Division 5.2) and the OSD component is subject to the provisions of Part 4 of the EP&A Act.

For clarity, the approved station works under the CSSI Approval included the construction of below and above ground structures necessary for delivering the station and also enabling construction of the integrated OSD. This includes but is not limited to:

- demolition of existing development
- excavation
- integrated station and OSD structure (including concourse and platforms)
- lobbies
- retail spaces within the station building
- public domain improvements
- pedestrian through-site link
- access arrangements including vertical transport such as escalators and lifts
- space provisioning and service elements necessary to enable the future development of the OSD, such as lift cores, plant rooms, access, parking, retail, utilities connections and building services.

The vertical extent of the approved station works above ground level is defined by the 'transfer level' level, above which would sit the OSD. This delineation is illustrated in **Figure 2**.

The CSSI Approval also establishes the general concept for the ground plane of Crows Nest Station including access strategies for commuters, pedestrians, workers, visitors and residents.

Since the issue of the CSSI Approval, Sydney Metro has undertaken sufficient design work to determine the space planning and general layout for the station and identification of those spaces within the station area that would be available for the OSD. In addition, design work has been undertaken to determine the technical requirements for the structural integration of the OSD with the station. This level of design work has informed the concept proposal for the Crows Nest OSD. It is noted that ongoing design development of the works to be delivered under the CSSI Approval would continue with a view to developing an Interchange Access Plan (IAP) and Station Design Precinct Plan (SDPP) for Crows Nest Station to satisfy Conditions E92 and E101 of the CSSI Approval.

All public domain improvement works around the site would be delivered as part of the CSSI Approval.

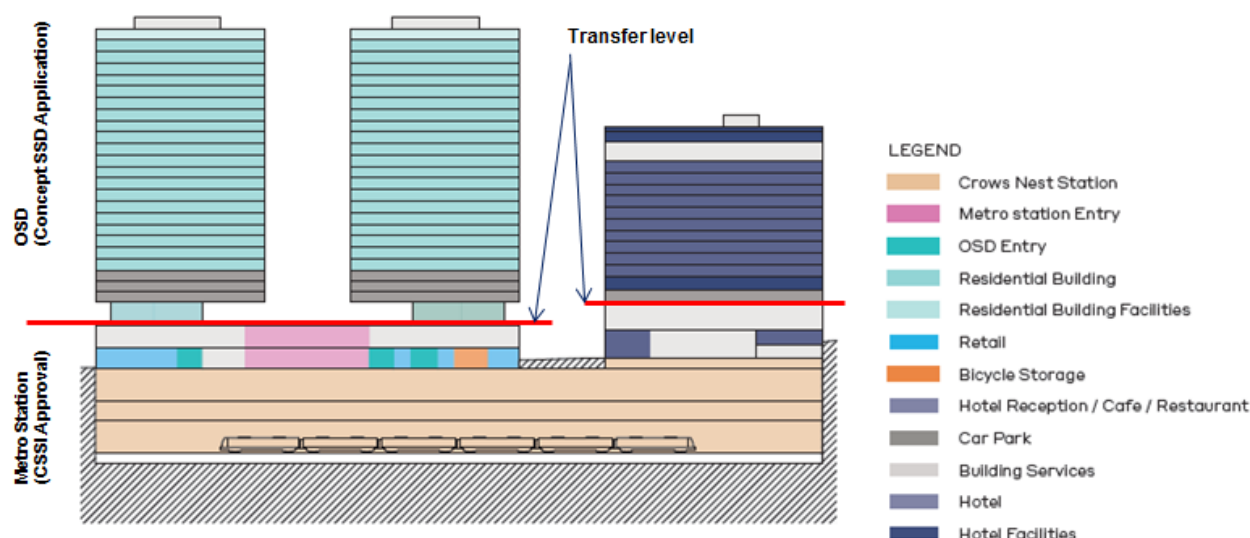


Figure 2: Delineation between the Metro station and OSD (based on indicative OSD design)

1.4 The strategic planning context

DPE is currently undertaking strategic planning investigations into revitalising the area surrounding St Leonards railway station and the metro station at Crows Nest. In August 2017, DPE released the *St Leonards and Crows Nest Station Precinct Interim Statement* and in October 2018 DPE released the *St Leonards and Crows Nest 2036 Draft Plan* (2036 Draft Plan) and supporting documents which detail recommended changes to land use controls in the precinct. These documents recommend new developments be centred around the Pacific Highway corridor and the Crows Nest Station while protecting the amenity of Willoughby Road.

In October 2018, DPE also placed on public exhibition the *Crows Nest Sydney Metro Site Rezoning Proposal* (Planning Proposal). The Planning Proposal outlines the State led rezoning of the subject site, on the basis that the current planning controls in the *North Sydney Local Environmental Plan 2013* do not reflect the opportunities for improved accessibility associated with the new metro station enabling people to live, work and spend time close to public transport. This concept SSD Application is aligned with the planning controls proposed in the Planning Proposal.

1.5 The site

Crows Nest Station precinct is located between the Pacific Highway and Clarke Street (eastern side of the Pacific Highway) and Oxley Street and south of Hume Street, Crows Nest (**Figure 3**).

The site is located within the North Sydney Local Government Area.

The Crows Nest Station precinct is divided into three separate sites as illustrated in **Figure 4** and described below:

- **Site A:** Six lots in the block bound by the Pacific Highway, Hume Street, Oxley Street and Clarke Lane (497-521 Pacific Highway, Crows Nest)
- **Site B:** Three lots on the southern corner of Hume Street and Pacific Highway (477-495 Pacific Highway, Crows Nest)
- **Site C:** One lot on the north-western corner of Hume Street and Clarke Street (14 Clarke Street, Crows Nest).

Sites A, B and C have a combined site area of 6,356 square metres.

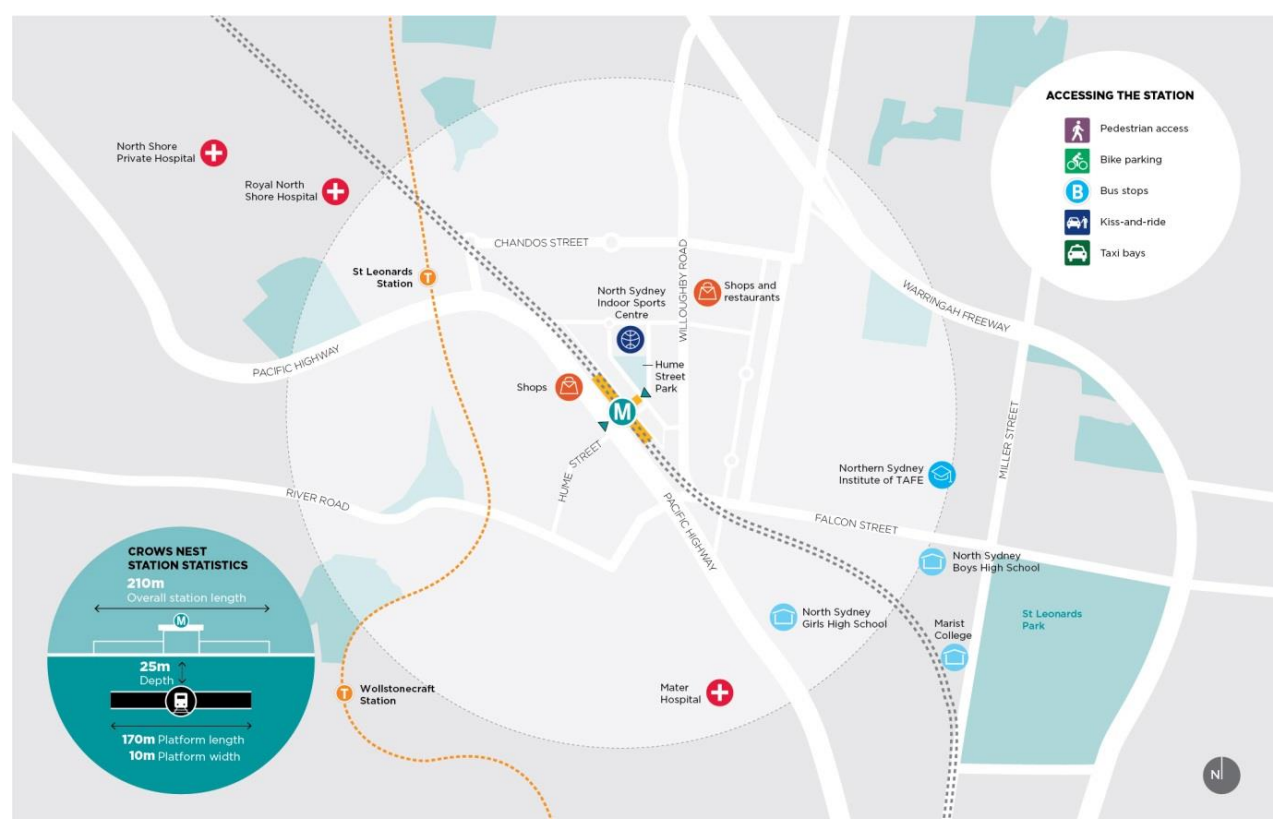


Figure 3: Crows Nest Station location plan



Figure 4: The subject site

The site comprises the following properties:

- **Site A:**
 - 497 Pacific Highway (Lot 2 in DP 575046)
 - 501 Pacific Highway (Lot 1 in DP 575046)
 - 503-505 Pacific Highway (Lot 3 in DP 655677)
 - 507-509 Pacific Highway (Lot 4 in DP 1096359)
 - 511-519 Pacific Highway (SP 71539)
 - 521-543 Pacific Highway (Lot A and Lot B in DP 374468)
- **Site B:**
 - 477 Pacific Highway (Lot 100 in DP 747672)
 - 479 Pacific Highway (Lot 101 in DP 747672)
 - 491-495 Pacific Highway (Lot 100 in DP 442804)
- **Site C:**
 - 14 Clarke Street (Lot 1 in SP 52547)

1.6 Overview of the proposed development

This concept SSD Application comprises the first stage in the Crows Nest OSD project. It will be followed by a detailed SSD Application for the design and construction of the OSD to be lodged by the successful contractor who is awarded the contract to deliver the Integrated Station Development.

This concept SSD Application seeks approval for the planning and development framework and strategies to inform the future detailed design of the Crows Nest OSD.

The concept SSD Application specifically seeks approval for the following:

- maximum building envelopes for Sites A, B and C, including street wall heights and setbacks as illustrated in the plans prepared by Foster + Partners for Sydney Metro
- maximum building heights:
 - **Site A:** RL 183 metres or equivalent of 27 storeys (includes two station levels and conceptual OSD space in the podium approved under the CSSI Approval)
 - **Site B:** RL 155 metres or equivalent of 17 storeys (includes two station levels and conceptual OSD space approved under the CSSI Approval)
 - **Site C:** RL 127 metres or 8 storeys (includes two station levels and conceptual OSD space approved under the CSSI Approval)

Note 1: the maximum building heights defined above are measured to the top of the roof slab and exclude building parapets which will be resolved as part of future detailed SSD Application(s)

 - maximum height for a building services zone on top of each building to accommodate lift overruns, rooftop plant and services:
 - **Site A:** RL 188 or 5 metres
 - **Site B:** RL 158 or 3 metres
 - **Site C:** RL 132 or 5 metres

Note 1: the use of the space within the building services zone is restricted to non-habitable floor space.

Note 2: for the purposes of the concept SSD Application, the maximum height of the building envelope does not make provision for the following items, which will be resolved as part of the future detailed SSD Application(s):

 - communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like, which are excluded from the calculation of building height pursuant to the standard definition in NSLEP 2013
 - architectural roof features, which are subject to compliance with the provisions in Clause 5.6 of NSLEP 2013, and may exceed the maximum building height, subject to development consent.
- maximum gross floor area (GFA) of 55,400sqm for the OSD comprising the following based on the proposed land uses:
 - **Site A:** Residential accommodation - maximum 37,500 square metres (approximately 350 apartments)
 - **Site B:** Hotel / tourist accommodation and associated conference facilities or commercial office premises GFA - maximum of 15,200 square metres (approximately 250 hotel rooms)
 - **Site C:** Commercial office premises GFA - maximum of 2,700 square metres
 - **Site A or C:** social infrastructure GFA inclusive of the GFA figures nominated above for each site, with provision optional as follows:
 - Site A: podium rooftop (approximately 2,700 square metres)

- Site C: three floors and rooftop (approximately 1,400 square metres)

Note 1: GFA figures exclude GFA attributed to the station and station retail space approved under the CSSI Approval

- a minimum non-residential floor space ratio (FSR) for the OSD across combined Sites A, B and C of 2.81:1 or the equivalent of 17,900 square metres
- the use of approximate conceptual areas associated with the OSD which have been provisioned for in the Crows Nest station box (CSSI Approval) including areas above ground level (i.e. OSD lobbies and associated spaces)
- a maximum of 150 car parking spaces on Sites A and B associated with the proposed commercial, hotel and residential uses
- loading, vehicular and pedestrian access arrangements
- strategies for utilities and services provision
- strategies for managing stormwater and drainage
- a strategy for the achievement of ecological sustainable development
- a public art strategy
- indicative signage zones
- a design excellence framework
- the future subdivision of parts of the OSD footprint, if required.

As this is a staged development pursuant to section 4.22 of the EP&A Act, future approval would be sought for the detailed design and construction of the OSD.

The proposed location of the buildings on the site is illustrated in the location plan provided at **Figure 5**.

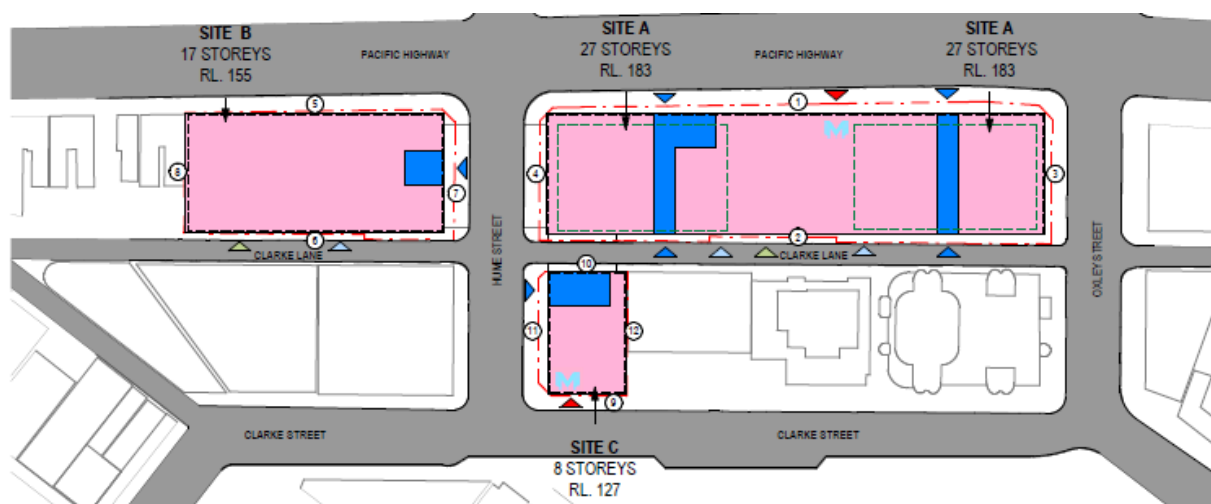


Figure 5 – Proposed location of buildings on the

The total GFA for the integrated station development, including the station GFA (i.e. retail, station circulation and associated facilities) and the OSD GFA is 60,400 square metres, equivalent to a floor space ratio (FSR) of 9.5:1.

The concept proposal includes opportunities for community uses in the development on either Site A or Site C. This space has the potential to be used for a range of uses including community facilities, child care centre, recreational area/s, library, co-working space, which can take advantage of the sites accessibility above the metro station.

Through design development post the CSSI Approval, pedestrian access to the metro station is proposed from the Pacific Highway and from Clarke Street, opposite the Hume Street Park. Vehicular access to the site including separate access to the loading docks and parking is proposed from Clarke Lane.

Public domain works around the site would be delivered as part of the CSSI Approval. Notwithstanding, the OSD will be appropriately designed to complement the station and activate the public domain. Provision for retail tenancies to activate the public domain are included in the ground floor of Sites A, B and C, as part of the CSSI Approval. Future detailed development applications will seek approval for the fitout and specific use of this retail space.

Drawings illustrating the proposed building envelopes are provided in Figures 6A and 6B. The concept SSD Application includes an indicative design for the OSD to demonstrate one potential design solution within the proposed building envelope (refer to Figure 7).

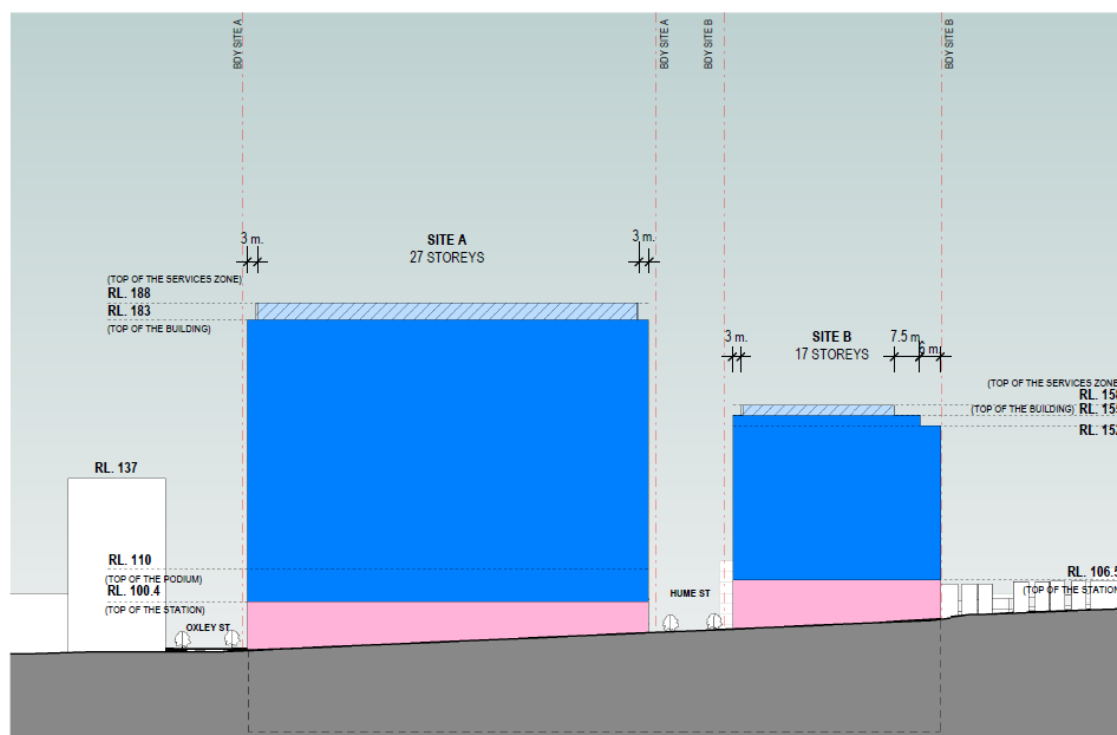


Figure 6A: Proposed Crows Nest OSD building envelopes – west elevation (Pacific Highway)

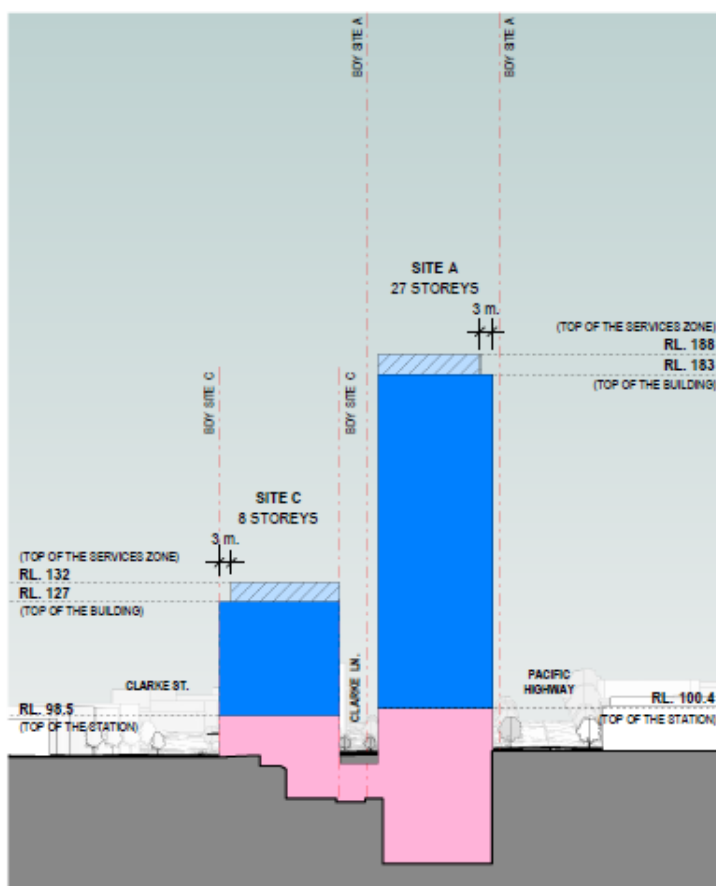


Figure 6B: Proposed Crows Nest OSD building envelopes – cross section through the site (east-west)



Figure 7: Crows Nest OSD indicative design

2.0 Scope of assessment

2.1 Background

This document was prepared by Virtual Ideas and includes a description of the processes used to create the visual impact photomontages and illustrate the accuracy of the results.

Virtual Ideas is an architectural visualisation company that is highly experienced at preparing visual impact assessment media to a level of expertise that is suitable for both council submission and use in court.

Virtual Ideas is familiar with the court requirements to provide 3D visualisation media that will accurately communicate a proposed developments' design and visual impact.

These methodologies and results have been inspected by various court appointed experts in a variety of cases and have always been found to be accurate and acceptable.

This report should be read in conjunction with the Visual Impact Assessment Report submitted with the EIS.

2.2 Overview

The process of creating accurate photomontage renderings involves the creation of an accurate, real-world scale digital 3D model.

Photographs are taken on location, with each camera positions subsequently surveyed to identify the Map Grid of Australia (MGA) coordinates at each position.

3D cameras are then set-up in the 3D model to match these same real-world camera positions.

By matching the real-world camera lens properties to the camera properties in our software and rotating the camera so that surveyed points in 3D space align with the corresponding points in the photograph, we can create a rendering that is correct in terms of position, scale, rotation, and perspective.

The rendering can then be superimposed into the real photo to generate an image that represents accurate form and visual impact.

2.3 Description of collected data

To create the 3D model and establish accurate reference points for alignment to the photography, a variety of information was collected.

This includes the following:

3D model of proposed Crows Nest OSD Concept SSDA Envelope

- Supplied by: Sydney Metro

- Format: DWG file

Surveyed data

- Supplied by: CMS Surveyors
- Format: DWG file

Site photography

- Created by: Virtual Ideas
- Format: JPEG file

Surveyed 3D city model

- Created by: AAM
- Format: 3DS Max

Approved DA building envelopes

- Supplied by: Group GSA
- Format: Sketchup model

Notes on images:

The photomontages showing the proposed building envelope were taken from the following surrounding residential buildings:

- 400 Pacific Highway
- 420 Pacific Highway
- 545 Pacific Highway
- 26 Clarke Street

2.4 Methodology

Site Photography

Site photography was taken from positions within surrounding residential buildings from which Sydney Metro was given access for the purposes of conducting the view impact study.

These photos were taken on two separate cameras:

- Canon EOS 5DS R with a camera lens EF16-35mm f/4L IS USM
- NIKON D800 with a camera lens 14.0-24.0 mm f/2.8

3D Model

Using the imported surveyed data into our 3D software (3DS Max), we then imported the supplied 3D model of the proposed Crows Nest OSD Concept SSDA Envelope and relevant DA approved building massing.

Alignment

The positions of the real-world photography were located in the 3D scene. Cameras were then created in the 3D model to match the locations and height of the position from which the photographs were taken. These were then aligned in rotation so that the points of the 3D model aligned with the corresponding objects that are visible in the photograph.

Renderings of the building envelope massing were then created from the aligned 3D cameras and montaged into the existing photography at the same location. This produced an accurate representation of the scale and position of the proposed concept envelope with respect to the existing surroundings.

A surveyed context 3d model was also licensed for use in this project and referenced with regards to aligning each camera position.

The new OSD building envelope is shown in 'blue' in the following photomontages, with the indicative OSD building form shown by a 'broken white line/outline' within the extent of the new building envelope. The extent of the CSSI Approval (station box) is shown in 'pink'. Other approved DA envelopes which are not within the site or the subject of this SSD Application are shown as 'ghosted yellow'.

Conclusion

In conclusion, it is my opinion as an experienced, professional 3D architectural and landscape renderer that the images provided accurately portray the level of visibility and impact of the built form.

Yours sincerely,

Grant Kolln



2.5 CV of Grant Kolln, Director of Virtual Ideas

Personal Details

Name: Grant Kolln
DOB: 07/09/1974
Company Address: Suite 71, 61 Marlborough St, Surry Hills, NSW, 2010
Phone Number: 02 8399 0222

Relevant Experience

2003 - Present Director of 3D visualisation studio Virtual Ideas. During this time, Grant has worked on many visual impact studies for planning submission across various different industries including architectural, industrial, mining, landscaping, and several large public works projects. Through this experience, Grant has developed a highly accurate methodology for the creation of visual impact media and report creation.

1999 – 2001 Project Manager for global SAP infrastructure implementation - Ericsson, Sweden 1999 - 1999 IT Consultant - Sci-Fi Channel, London

1994 – 1999 Architectural Technician, Thomson Adsett Architect, Brisbane QLD.

Relevant Education / Qualifications

1997 Advanced Diploma in Architectural Technology, Southbank TAFE, Brisbane, QLD

2.6 Key map indicating location of photography positions



3.0 Photomontages from surrounding residential buildings

3.1.1 Photo 01 – 420 Pacific Highway

Original photograph



Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 01 – 420 Pacific Highway

Original photograph with surveyed alignment points



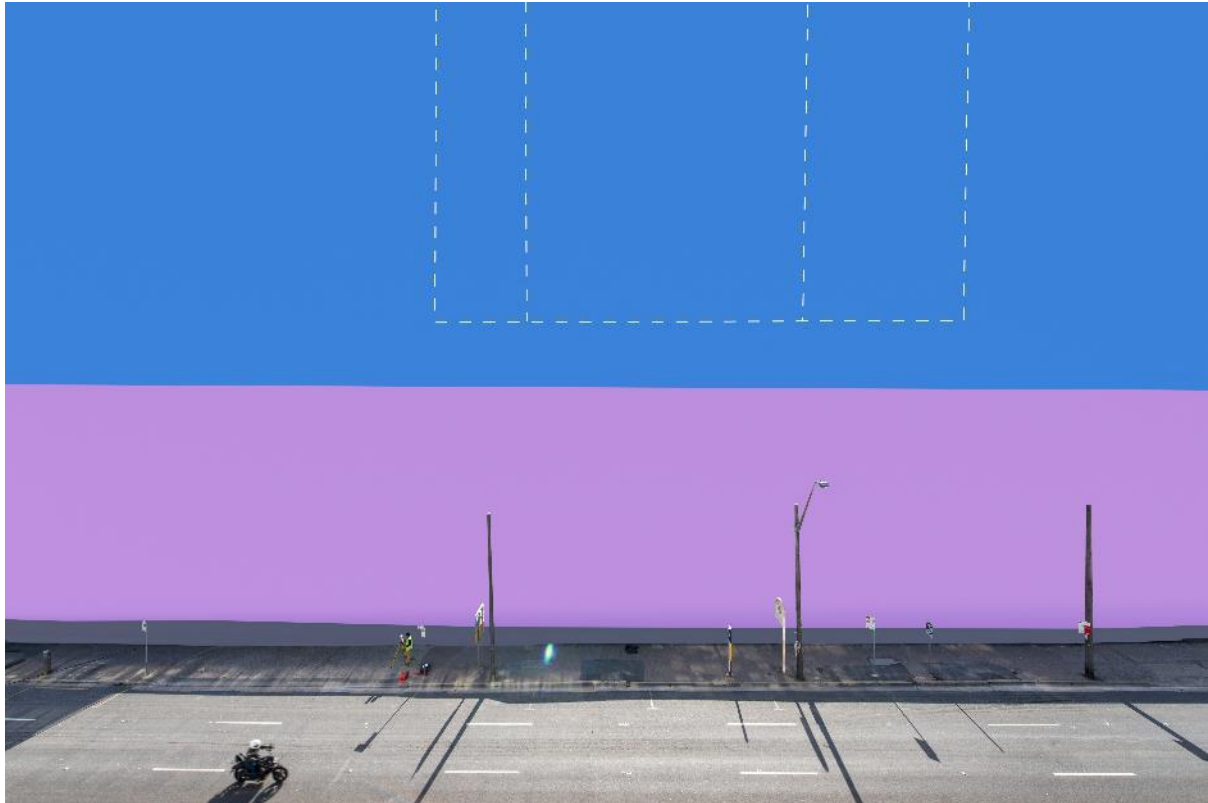
■ Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 01 – 420 Pacific Highway

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 14mm

3.1.2 Photo 03 – 420 Pacific Highway

Original photograph



Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 03 – 420 Pacific Highway

Original photograph with surveyed alignment points



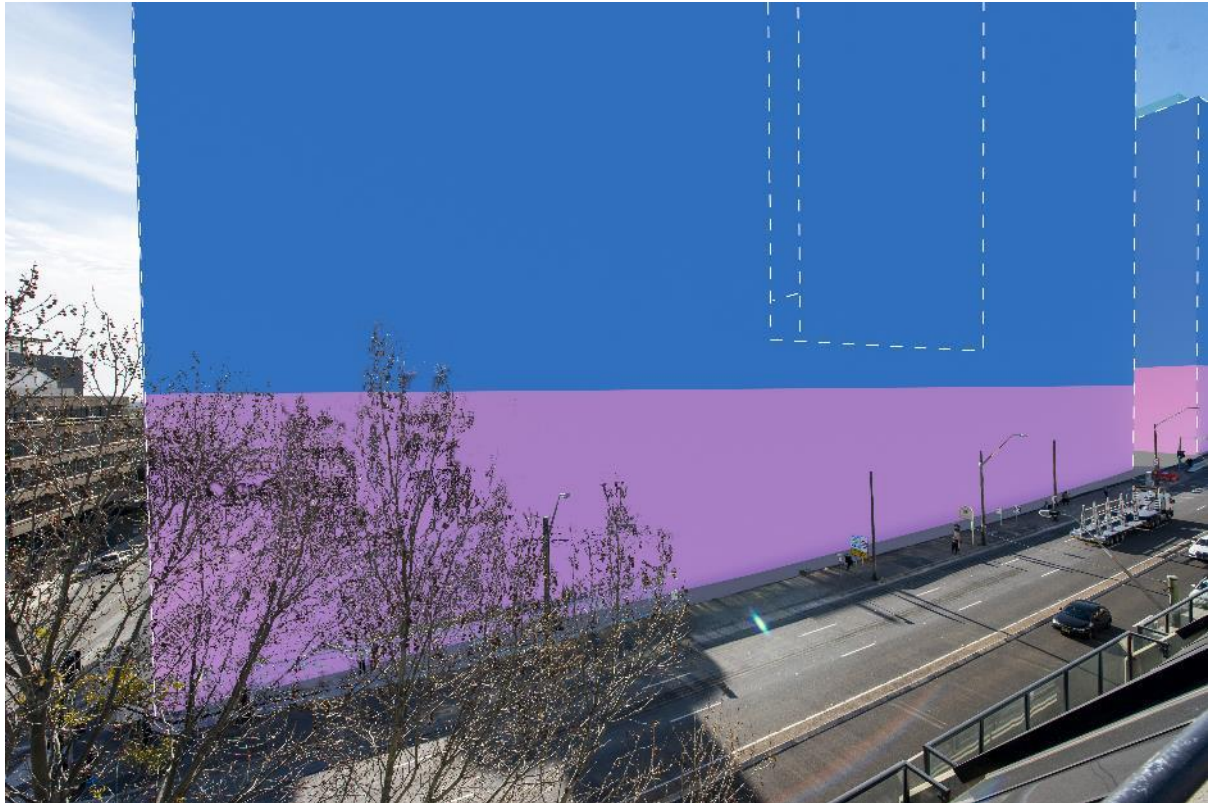
 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 03 – 420 Pacific Highway

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 14mm

3.1.3 Photo 05 – 420 Pacific Highway

Original photograph



Photo Date - 31st August 2018

Photo Lens - 24mm

Photo 05 – 420 Pacific Highway

Original photograph with surveyed alignment points



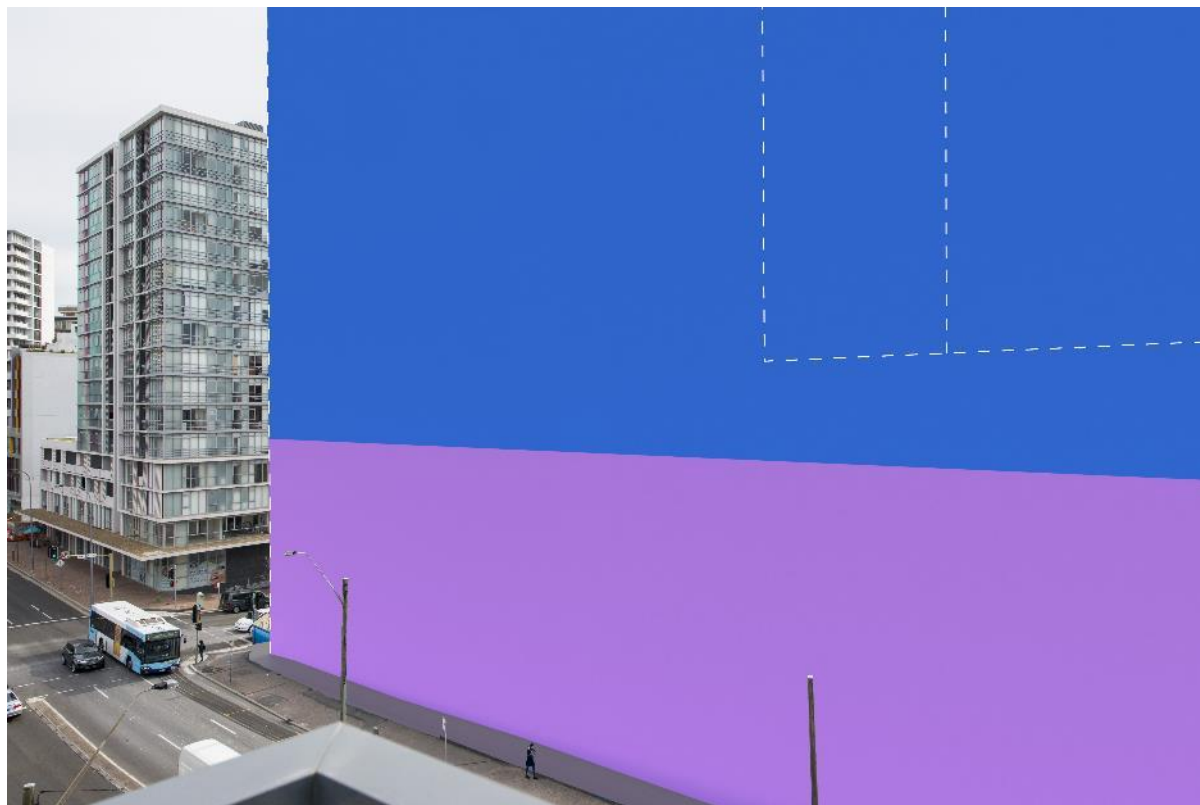
 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 24mm

Photo 05 – 420 Pacific Highway

Photomontage of proposed envelope



- Crows Nest OSD building envelope
- Indicative OSD design
- Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 24mm

3.1.4 Photo 06 – 400 Pacific Highway

Original photograph



Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 06 – 400 Pacific Highway

Original photograph with surveyed alignment points



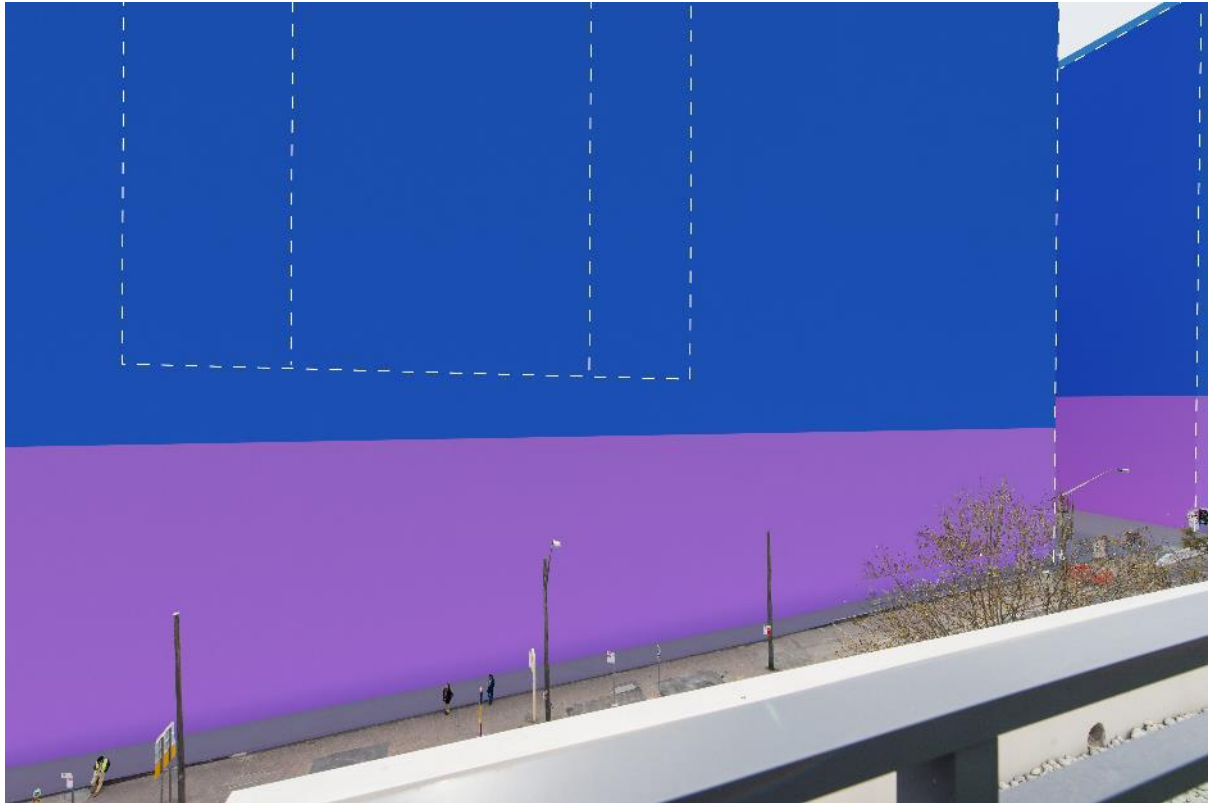
 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 06 – 400 Pacific Highway

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 14mm

3.1.5 Photo 07 – 400 Pacific Highway

Original photograph



Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 07 – 400 Pacific Highway

Original photograph with surveyed alignment points



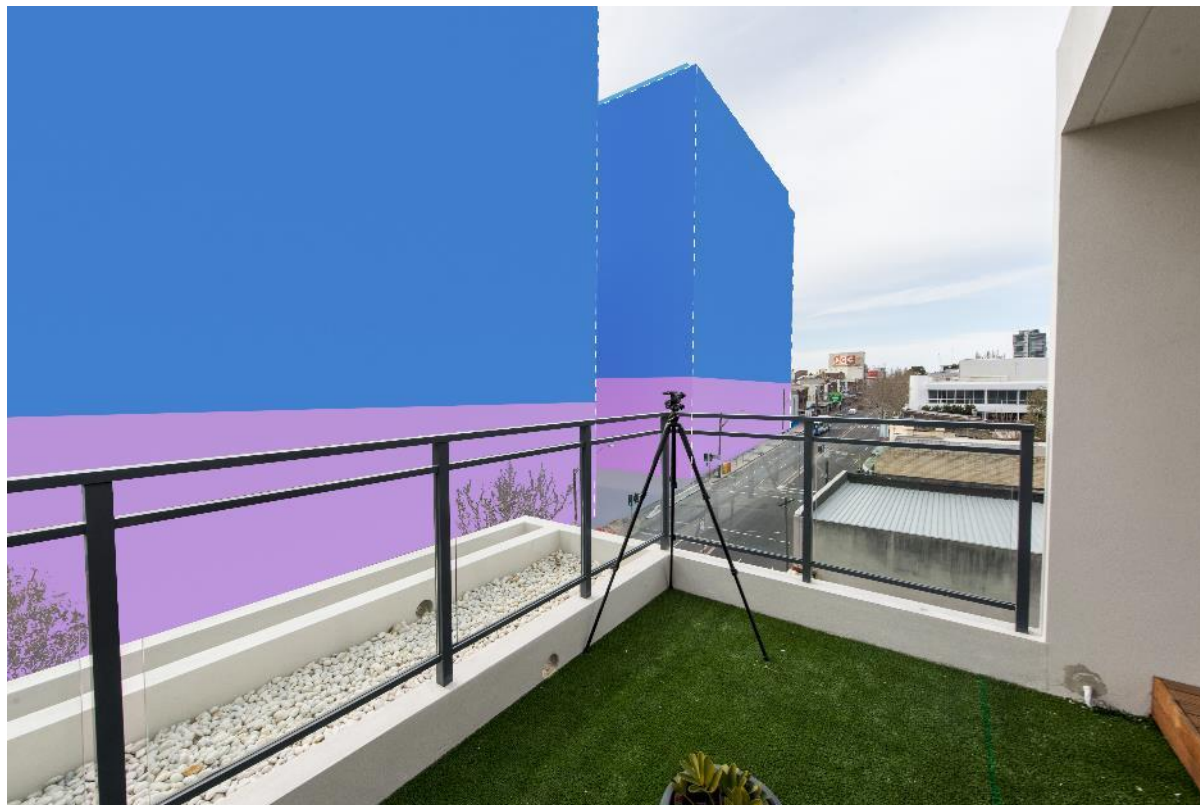
 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 07 – 400 Pacific Highway

Photomontage of proposed envelope



- Crows Nest OSD building envelope
- Indicative OSD design
- Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 14mm

3.1.6 Photo 08 – 545 Pacific Highway

Original photograph



Photo Date - 31st August 2018

Photo Lens - 24mm

Photo 08 – 545 Pacific Highway

Original photograph with surveyed alignment points




 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 24mm

Photo 08 – 545 Pacific Highway

Photomontage of proposed envelope



- Crows Nest OSD building envelope
- Indicative OSD design
- Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 24mm

3.1.7 Photo 09A – 26 Clarke Street

Original photograph



Photo Date - 31st August 2018

Photo Lens - 24mm

Photo 09A – 26 Clarke Street

Original photograph with surveyed alignment points




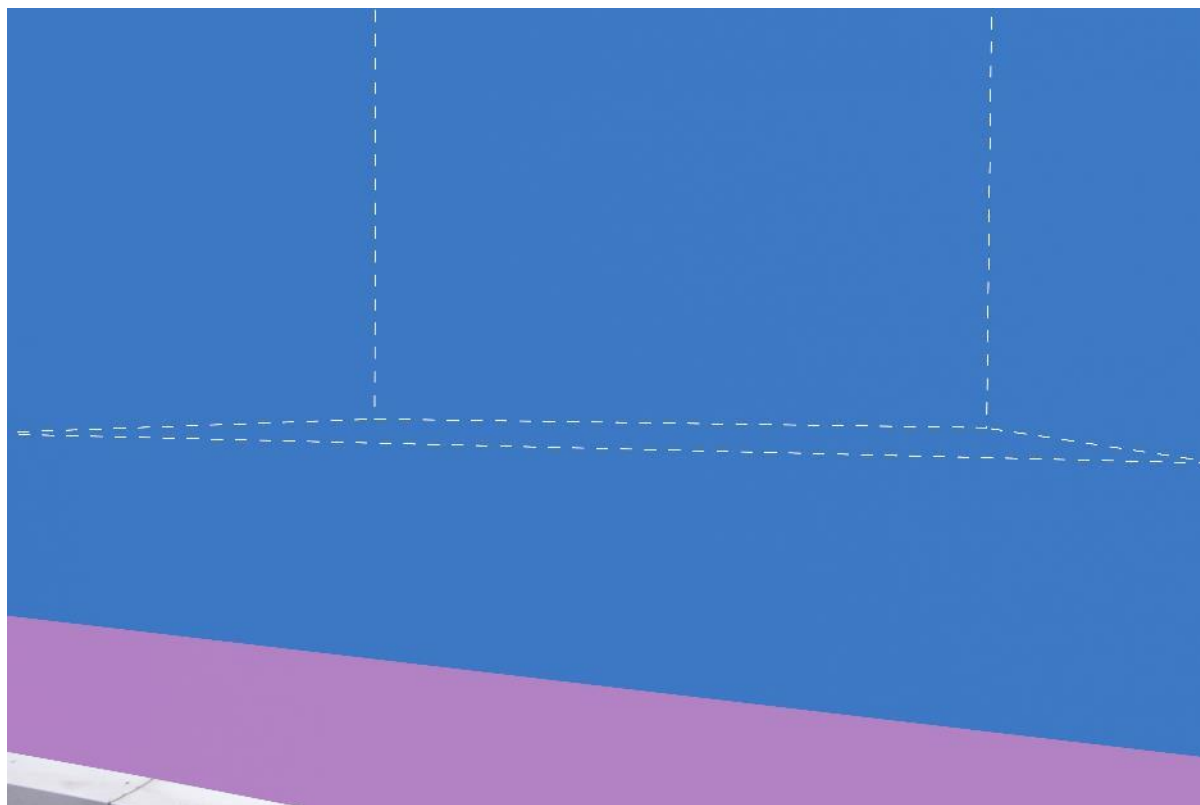
 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 24mm

Photo 09A – 26 Clarke Street

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 24mm

3.1.8 Photo 09B – 26 Clarke Street

Original photograph



Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 09B – 26 Clarke Street

Original photograph with surveyed alignment points



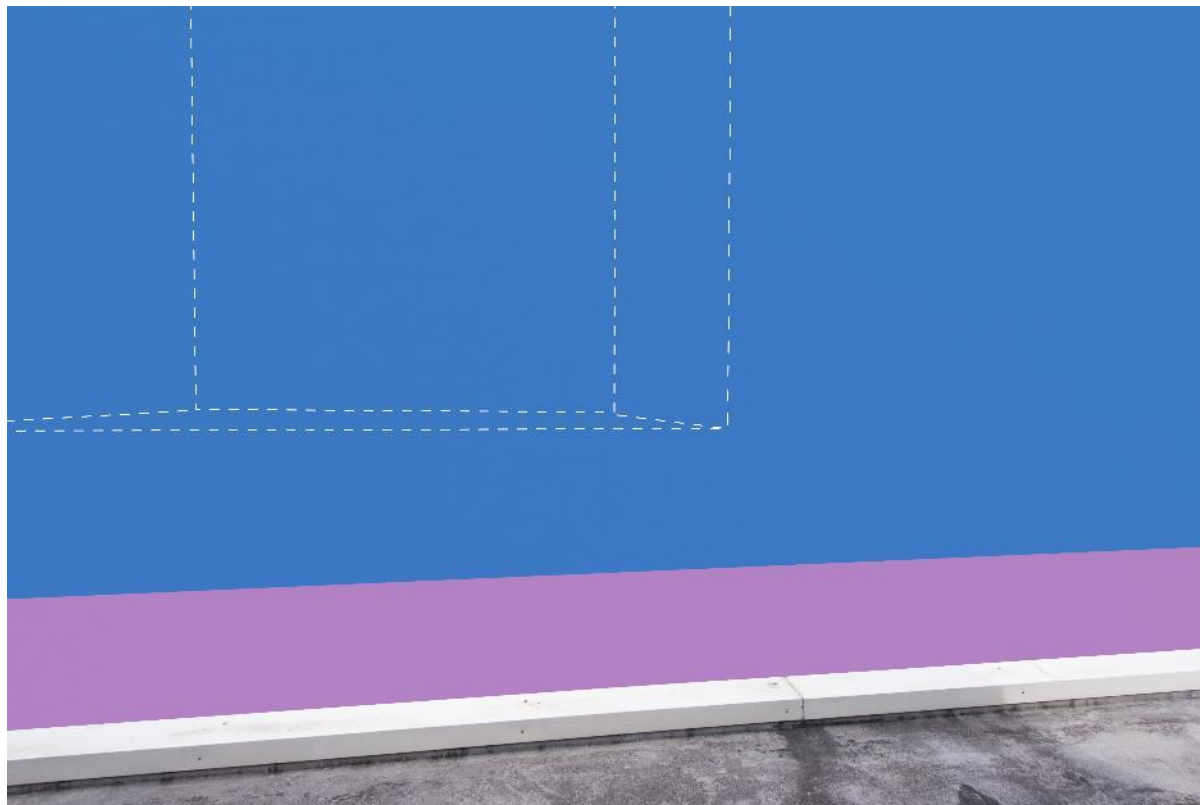
 Alignment points derived from CMS camera location survey

Photo Date - 31st August 2018

Photo Lens - 14mm

Photo 09B – 26 Clarke Street

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 31st August 2018

Photo Lens - 14mm

3.1.9 Photo 10A – 545 Pacific Highway

Original photograph

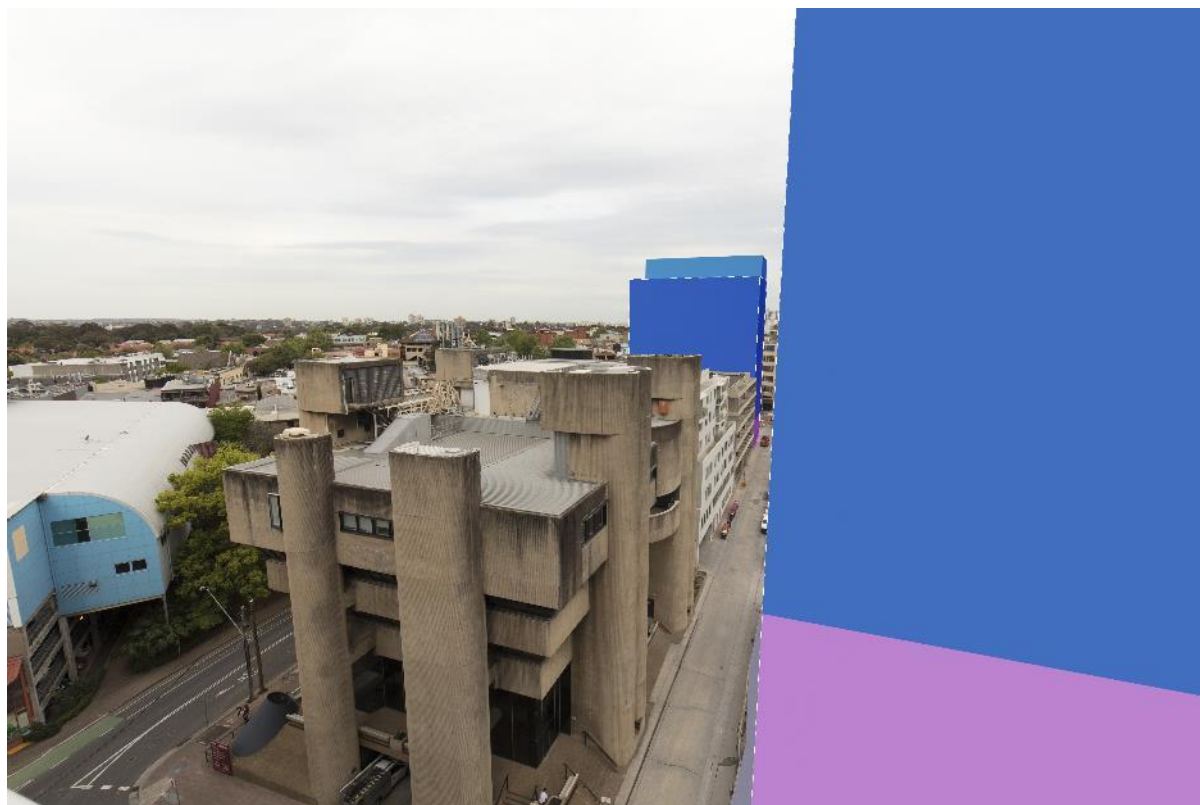


Photo Date - 3rd October 2018

Photo Lens - 16mm

Photo 10A – 545 Pacific Highway

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 3rd October 2018

Photo Lens - 16mm

3.1.10 Photo 10B – 545 Pacific Highway

Original photograph



Photo Date - 3rd October 2018

Photo Lens - 16mm

Photo 10B – 545 Pacific Highway

Original photograph with surveyed alignment points



 Alignment points derived from CMS camera location survey

Photo Date - 3rd October 2018

Photo Lens - 16mm

Photo 10B – 545 Pacific Highway

Photomontage of proposed envelope






-  Crows Nest OSD building envelope
-  Indicative OSD design
-  Crows Nest Metro Station CCSI

Photo Date - 3rd October 2018

Photo Lens - 16mm

4.0 Conclusion

This report presents the results of a visual impact assessment of the OSD above Crows Nest Station.

This report has been prepared to outline the visual impacts of the OSD and to specifically respond to the SEARs issued for the concept SSD Application.

This report should be read in conjunction with the Visual Impact Assessment Report submitted with the EIS.

Appendix A - Camera Position Survey – 04-10-2018

CMS Surveyors Pty Limited
A.B.N. 79 096 240 201
LAND SURVEYING, PLANNING & DEVELOPMENT CONSULTANTS



Date: 04-10- 2018
Our Ref: 18028 Photo Locations

Studio 71/161 Marlborough Street
Surry Hills
NSW 2010

Dear Mr Rick Mansfield.

As requested we have attended site and measured the Co-ordinates and Elevation of the photo locations for 420, 400 & 545 Pacific Highway and 22-26 Clarke Street, Crows Nest.

Co-ordinate's are MGA 56 and elevation to Australian Height datum (AHD).

Measurements were taken by GNSS observations SmartNet.

DWG of locations has also been supplied.

Point Number	Easting	Northing	Reduced Level (RL)	Photo Point
110	333291.778	6255716.265	102.067	PHOTO 1
111	333279.388	6255731.388	101.980	PHOTO 2
112	333263.699	6255750.455	102.014	PHOTO 3
113	333279.095	6255723.693	103.835	PHOTO 4
114	333293.733	6255712.752	104.830	PHOTO 5
115	333299.952	6255705.194	104.840	PHOTO 6
116	333305.938	6255697.633	104.836	PHOTO 7
117	333272.901	6255803.366	92.307	PHOTO 8
118	333344.347	6255767.245	107.672	PHOTO 9
100	333288.046	6255813.513	115.571	PHOTO 10
200	333304.896	6255696.098	108.074	TOP BUILDING
201	333299.109	6255703.452	108.046	TOP BUILDING
202	333304.758	6255704.842	103.901	TOP OF WALL
203	333294.999	6255714.316	105.092	TOP BUILDING
204	333307.876	6255698.522	105.089	TOP BUILDING
205	333294.236	6255714.024	102.830	TOP BUILDING
206	333263.649	6255751.581	102.818	TOP BUILDING
207	333279.526	6255723.740	106.025	TOP OF GUTTER
208	333276.032	6255728.054	106.042	TOP OF GUTTER
209	333296.127	6255715.643	99.056	BALCONY
210	333269.228	6255748.665	99.051	BALCONY
211	333268.709	6255798.998	136.336	TOP BUILDING



HEAD OFFICE
2/99A South Creek Rd, DEE WHY NSW 2099
PO Box 463, DEE WHY NSW 2099
Ph: 02 9971 4802 Fax: 02 9971 4822
Email: info@cmssurveyors.com.au
Web: www.cmssurveyors.com.au

INCORPORATING
A.C.GILBERT & Co.
(Roseville)
MBS GREEN & ASSOCIATES
(Mona Vale)

COOTAMUNDRA
Incorporating PENGELLY & GRAY
90 Wallendoon St., COOTAMUNDRA NSW 2590
Ph: 02 6942 3395 Fax: 02 6942 4046
Email: coota@cmssurveyors.com.au



212	333288.868	6255814.626	134.016	TOP BUILDING
213	333312.378	6255801.761	106.795	TOP BUILDING
214	333324.137	6255786.760	106.796	TOP BUILDING
215	333337.506	6255778.167	112.373	TOP BUILDING
216	333338.084	6255770.040	107.688	TOP BUILDING
217	333355.893	6255748.430	107.891	TOP BUILDING
219	333355.677	6255748.172	105.886	TOP BUILDING
220	333354.501	6255747.249	104.883	TOP BUILDING
222	333372.468	6255724.225	104.887	TOP BUILDING
223	333353.788	6255689.958	105.575	TOP BUILDING
224	333374.562	6255706.440	105.499	TOP BUILDING

The height of camera is 1.6m.

Note: This should be added to the supplied RL of each corresponding location.



HEAD OFFICE
 2/99A South Creek Rd, DEE WHY NSW 2099
 PO Box 463, DEE WHY NSW 2099
 Ph: 02 9971 4802 Fax: 02 9971 4822
 Email: info@cmssurveyors.com.au
 Web: www.cmssurveyors.com.au

INCORPORATING
 A. C. GILBERT & Co.
 (Roseville)
 MBS GREEN & ASSOCIATES
 (Mona Vale)

COOTAMUNDRA
 Incorporating PENGELLY & GRAY
 90 Wallendoon St., COOTAMUNDRA NSW 2590
 Ph: 02 6942 3395 Fax: 02 6942 4046
 Email: coota@cmssurveyors.com.au





Yours faithfully,
CMS Surveyors Pty Limited

Damon Roach



HEAD OFFICE
2/99A South Creek Rd, DEE WHY NSW 2099
PO Box 463, DEE WHY NSW 2099
Ph: 02 9971 4802 Fax: 02 9971 4822
Email: info@cmssurveyors.com.au
Web: www.cmssurveyors.com.au

INCORPORATING
A. C. GILBERT & Co.
(Roseville)
MBS GREEN & ASSOCIATES
(Mona Vale)

COOTAMUNDRA
Incorporating PENGELLY & GRAY
90 Wallendoon St, COOTAMUNDRA NSW 2590
Ph: 02 6942 3395 Fax: 02 6942 4046
Email: coota@cmssurveyors.com.au

