Station Design and Precinct Plan – Artarmon Substation

City & Southwest Chatswood to Sydenham project

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Revision	Revision date	Status	Brief reason for update	Name/ position/ company	Author/ Reviewer/ Approver	Signature
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Executive summary

This Station Design and Precinct Plan has been prepared to fulfil Condition E101 of the Chatswood to Sydenham project approval SSI 15_7400 for Artarmon Substation

Condition E101 requires that:

> *Before commencement of permanent built surface works and/or landscaping, the Proponent must prepare **Station Design and Precinct Plans (SDPP)** for each station. The SDPP must be prepared by a suitably qualified and experienced person(s), in collaboration and consultation with relevant stakeholders including but not limited to relevant council(s), UrbanGrowth NSW, the Department, Chambers of Commerce and the local community. The SDPP(s) must present an integrated urban and place making outcome for each station or end state element. The SDPP(s) must be approved by the Secretary following review by the DRP and before commencement of permanent aboveground work…*
>
> *… Elements covered by the SDPP(s) must be complete no later than the commencement of operation of the Sydney Metro to paid services, unless otherwise agreed with the Secretary.*

The Condition notes that the SDPP may be submitted in stages to address the building and landscaping elements of the project. This SDPP is for the Artarmon Substation. This SDPP has been prepared by Systems Connect.

Separate SDPPs have been or are being developed for:

- Crows Nest Station
- Victoria Cross Station
- Barangaroo Station
- Martin Place Station
- Pitt Street Station
- Central Station
- Waterloo Station
- Sydenham Station
- Ancillary infrastructure, comprising the Chatswood Dive, Marrickville Dive, Sydney Metro Trains Facility South and new noise walls along the rail corridor.

This SDPP presents an integrated urban and place making outcome for Artarmon Substation. Through a three (3) stage detailed design process that culminates in the delivery of Issued for Construction documents and drawings, the project team has consulted and coordinated internally and externally with stakeholders, customers, systems and services. The project team has utilised various software tools to review and coordinate, test and assess design options, outcomes and assumptions, investigate impacts and issues and finalise the final urban design and place making outcome.

1. Introduction

1.1. Purpose of the Station Design and Precinct Plan

This report has been prepared to document the Station Design and Precinct Plan (SDPP) for the Artarmon Substation component of the Sydney Metro City & Southwest Chatswood to Sydenham project. The plan has been prepared to present an integrated urban and place making outcome to guide the design of the permanent built surface works and landscaping associated with the project.

An integrated urban and place making outcome must be achieved through the consideration of existing and planned public domain and private developments adjacent to the project and effective consultation and collaboration with relevant stakeholders. Through a three (3) stage detailed design process that culminates in the delivery of Issued for Construction documents and drawings, the project team has consulted and coordinated internally and externally with stakeholders, customers, systems and services. The project team has utilised various software tools to review and coordinate, test and assess design options, outcomes and assumptions, investigate impacts and issues and finalise the final urban design and place making outcome.

The preparation of the SDPP is a requirement of Condition E101 of the Chatswood to Sydenham project approval SSI 15_7400. Condition E101 allows the SDPP to be submitted in stages and, as identified in the Staging Report, staging of the project is represented on a precinct basis. Consistent with the requirements of Condition E101, this SDPP:

- details specific design objectives, principles and standards
- identifies design opportunities including incorporation of public art and salvaged elements
- describes the key design features
- outlines implementation of the plan, including maintenance and monitoring
- provides evidence of consultation.

As required by Condition E101, the SDPP has been prepared by suitably qualified and experienced person(s):

- Julieanne Boustead, Principal at Hassell – Qualifications: Bachelor of Planning and Design and Masters of Landscape Architecture, Registered Landscape Architect 1285 – Experience: over 30 years
- Peter Monckton, Senior Associate at Hassell – Qualifications; Bachelor of Architecture Hons 1, Registered Architect NSW – Experience: 39 years
- Andrew Ewington, Associate at Hassell – Qualifications: Bachelor of Landscape Architecture, Registered Landscape Architect 3273 – Experience: over 30 years

Appendix D contains further details on their relevant experience.

1.2. Project overview

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new metro railway stations at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central. In 2024, Sydney will have 31 metro railway stations and a 66km standalone metro railway system. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre.

Sydney Metro is made up of:

Metro North West Line (formerly the 36km North West Rail Link) Services started in May 2019 in the city's North West between Rouse Hill and Chatswood, with a metro train every four minutes in the peak. The project was delivered on time and $1 billion under budget.

Sydney Metro City & Southwest The Sydney Metro City & Southwest project includes a new 30km metro line extending metro rail from the end of the Metro North West Line at Chatswood, under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the ultimate capacity to run a metro train every two minutes each way through the centre of Sydney. Sydney Metro City & Southwest will deliver new metro stations at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street, Waterloo and new underground metro platforms at Central Station. In addition it will upgrade and convert all 11 existing stations between Sydenham and Bankstown to metro standards.

Sydney Metro West Sydney Metro West is a new underground railway connecting Greater Parramatta and the Sydney CBD. This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between these two areas, linking new communities to rail services and supporting employment growth and housing supply between the two CBDs. The locations of seven proposed metro stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock and The Bays. The NSW Government is assessing an optional station at Pyrmont and further planning is underway to determine the location of a new metro station in the Sydney CBD.

Sydney Metro Greater West Metro rail will also service Greater Western Sydney and the new Western Sydney International (Nancy Bird Walton) Airport. The new railway line will become the transport spine for the Western Parkland City's growth for generations to come, connecting communities and travellers with the rest of Sydney's public transport system with a fast, safe and easy metro service. The Australian and NSW governments are equal partners in the delivery of this new railway.

1.3. Scope of this Station Design and Precinct Plan

This SDPP presents an integrated urban and place making outcome for the following project scope elements:

- Artarmon Substation – The substation will supply traction power to the Metro trains. The site will include an above-ground building for the substation and electrical equipment, and a shaft for the cables and maintenance access to the tunnels below.

The site is located at 98-104 Reserve Road in Artarmon and is located above the Sydney Metro Tunnels. It is a rectangular site at the corner of Reserve Road and Whiting Street and therefore has two street frontages, one on Reserve Road and one on Whiting Street. Whiting Street is closed to vehicular traffic from Reserve Road. The site, although fronting a cul-de-sac, has a prominent corner condition visible from the Gore Hill Freeway fly-over. The surrounding area is predominantly light industrial.

The SDPP site boundary is the area within which works identified in this SDPP will be delivered as part of the project. The site has been highlighted in pink in Figures 1-1 and 1-2.

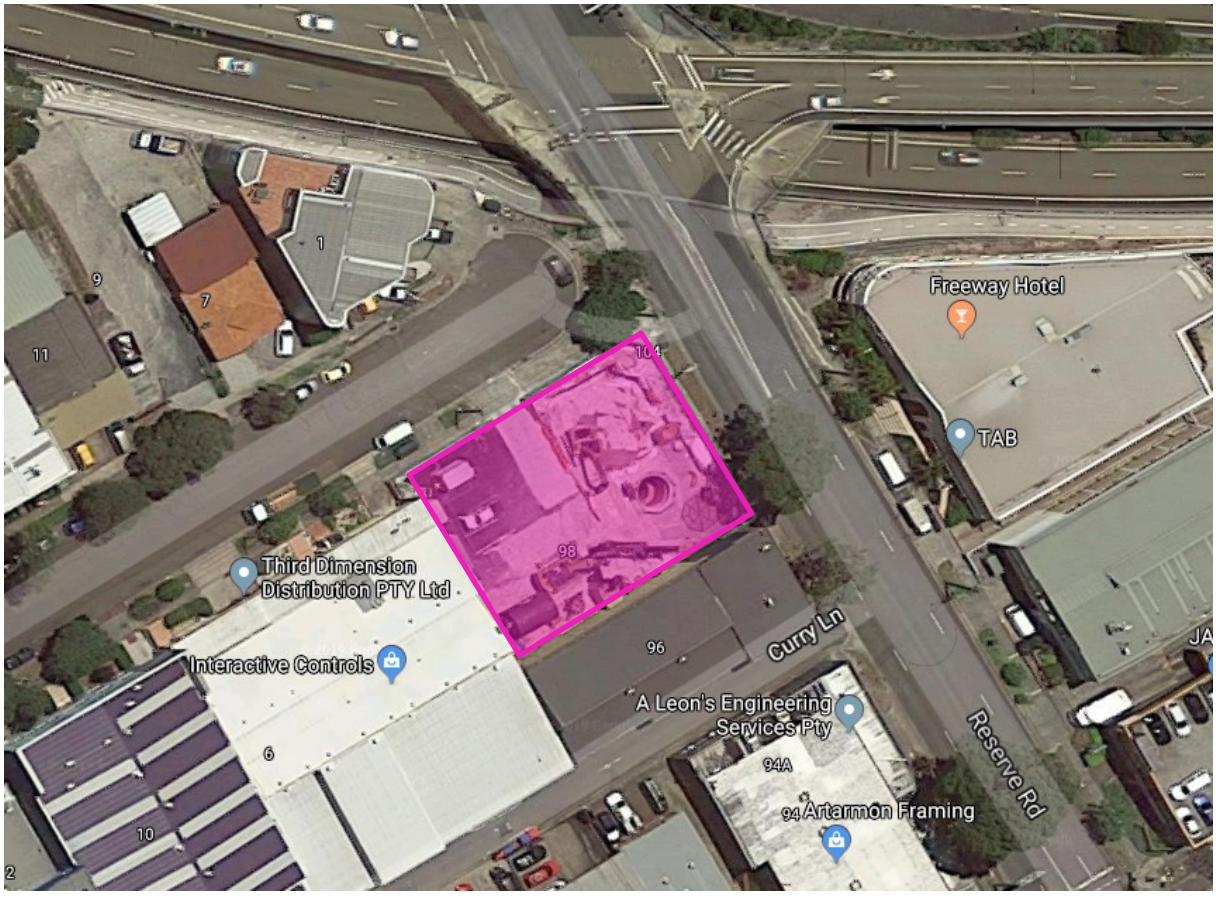


Figure 1-1 Artarmon Substation Site at 98-104 Reserve Road Artarmon Street. Site is highlighted in Pink- Aerial Photo. Extracted from Goggle Maps.

Figure 1-2 Artarmon Substation Context Aerial Photograph – Artarmon Substation Site is highlighted in Pink. Extracted from Near Map.

The study area has been identified to determine the key design drivers and influences of the broader urban context on the project. Figure 1-2 shows the site and the study area that has been considered in terms of its context on the SDPP site.

1.4. Status of this Station Design and Precinct Plan

The information contained in this report is the latest available at the time of writing. The nature of the design process on a project of this scale is one that requires continuous development and refinement until the project is constructed. Notwithstanding this, the material herein provides a clear appreciation of the scale, nature and treatment of the facilities proposed and their interactions with the environment.

Where substantial changes to the design are made following the endorsement of this SDPP, an updated SDPP would be prepared for the approval by the Secretary. This updated SDPP would be prepared at the conclusion of the Stage 3 design (refer to Section 2 for the overview of the design development process).

1.5. Structure of the Station Design and Precinct Plan

The SDPP has been structured as follows:

- Section 2: provides an overview of the design development process that has occurred for the project to date
- Section 3: outlines the consultation that has been undertaken during the preparation and review of this plan and how the feedback received has been addressed
- Section 4: identifies the design objectives, principles and standards specific to the relevant scope element of the plan
- Section 5: identifies design opportunities, including in regards to public art, heritage interpretation and use of salvaged elements
- Section 6: details the key features of the station/element design and the precinct/public realm plan
- Section 7: outlines the implementation phase including timing for delivery of access, landscaping and public realm initiatives and the monitoring and maintenance procedures for landscaping
- Section 8: provides an assessment of the visual impact for the relevant design elements and identifies if a ‘minor benefit’ rating (or at a minimum a ‘negligible’ rating) has been achieved.

1.6. Compliance with the Conditions of Approval

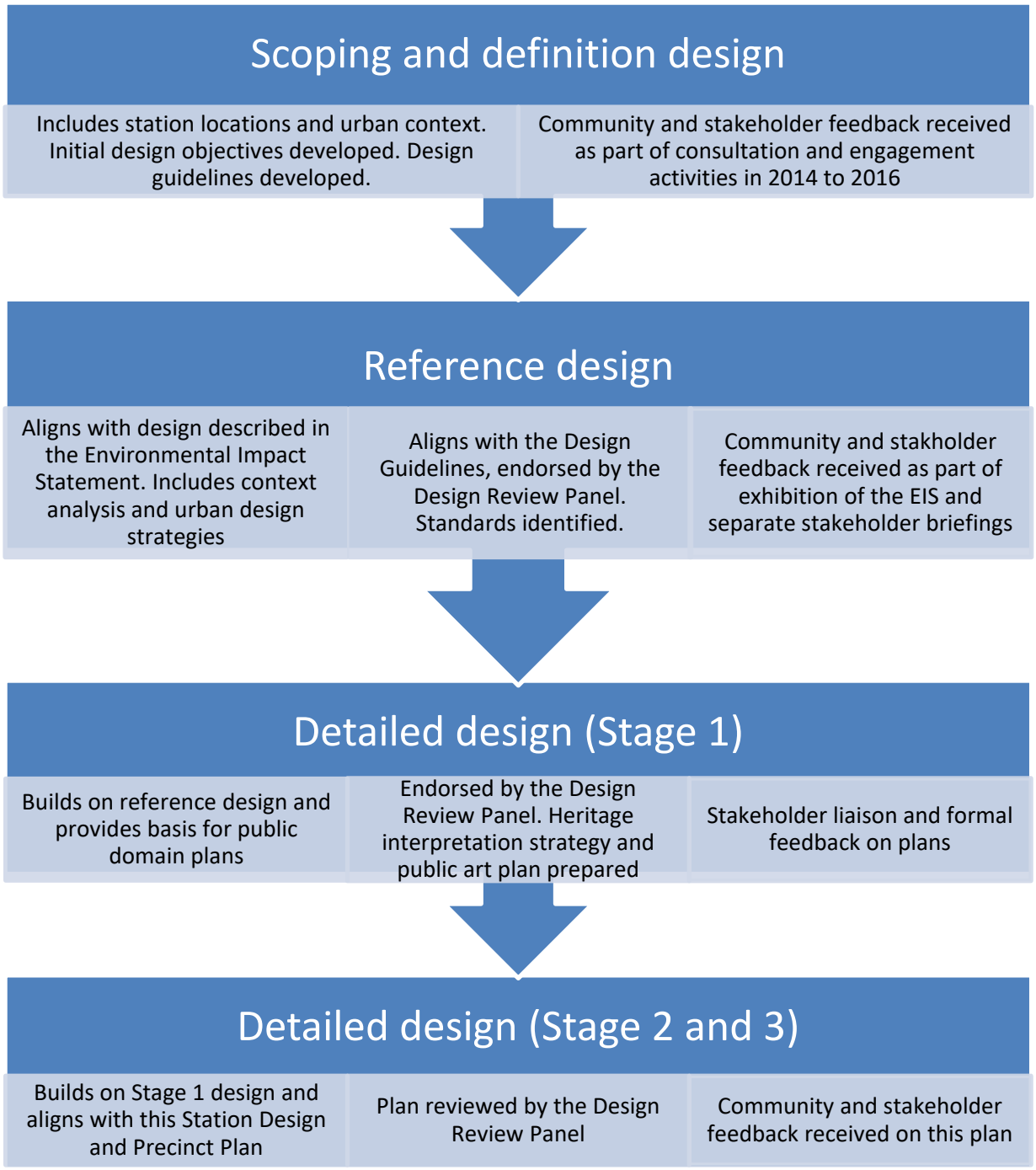
The following table identifies the requirements of the relevant conditions of approval of SSI 15_7400 and where these have been addressed in the SDPP.

Requirement of the conditions of approval	Where addressed in the plan
Condition E21:	
… The Heritage Interpretation Plan must inform the Station Design and Precinct Plan referred to in Condition E101…	Opportunities identified in the Heritage Interpretation Plan considered in the SDPP have been identified in Section 5.3.
Condition E101:	
Before commencement of permanent built surface works and/or landscaping, the Proponent must prepare Station Design and Precinct Plans (SDPP) for each station.	This plan.
The SDPP must be prepared by a suitably qualified and experienced person(s), in collaboration and consultation with relevant stakeholders including but not limited to relevant council(s), UrbanGrowth NSW, the Department, Chambers of Commerce and the local community.	Section 1.1 details the qualifications and experience of the authors of the plan. This is supported by the Authors' CVs provided in Appendix D. Section 3 details the consultation that has occurred during preparation of the plan. This is supported by the consultation evidence provided in Appendix A.
The SDPP(s) must present an integrated urban and place making outcome for each station or end state element.	This plan, with a statement provided in Section 6.3.
The SDPP(s) must be approved by the Secretary following review by the Design Review Panel (DRP) and before commencement of permanent aboveground work.	The SDPP was submitted to the Secretary for approval on 15 April 2021. Section 3.2 details the reviews undertaken by the DRP. This is supported by the copy of the DRP Meeting Minutes provided in Appendix C.
Each SDPP must include, but not be limited to:	
a) identification of specific design objectives, principles and standards based on - i. the project design objectives as refined by the DRP; ii. maximising the amenity of public spaces and permeability around entrances to stations; iii. local environmental, heritage and place making values; iv. urban design context; v. sustainable design and maintenance; vi. community safety, amenity and privacy, including 'safer by design' principles where relevant; vii. relevant urban design and infrastructure standards and guidelines (including relevant council standards, policies and guidelines); viii. minimising the footprint of the project (including at operational facilities)	Section 4 identifies the Design Objectives, Principles and Standards.
b) opportunities for public art; c) landscaping and building design opportunities to mitigate the visual impacts of rail infrastructure and operational fixed facilities (including the Chatswood Dive, Marrickville Dive, Sydney Metro Trains Facility South, Artarmon Substation, station structures and services, noise walls etc.); d) the incorporation of salvaged historic and artistic elements onto the project design, including but not limited to the Tom Bass P&O fountain, the Douglas Annand glass screen (if present), the Douglas Annand wall frieze and heritage fabric from Martin Place Station, unless otherwise agreed by the Secretary;	Section 5 details the Design Opportunities

Requirement of the conditions of approval	Where addressed in the plan
e) details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species; f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI; g) the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts;	Section 6 outlines the Details of the Station Design and Precinct Plans. Section 6.1 details the key design features, including the external lighting strategy. The Precinct (Public Realm) Plan in Section 6.2 details the location of existing and proposed landscaping within the precinct/public realm plans.
h) details of where and how recommendations from the DRP have been considered in the plan;	Appendix C details the feedback from the DRP and how the recommendations have been considered.
i) the timing for implementation of access, landscaping and public realm initiatives; j) monitoring and maintenance procedures for vegetation and landscaping (including weed control), performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail; and	Section 7 outlines the implementation of the plan, including timing and monitoring and maintenance.
k) evidence of consultation with the community, local Councils and agencies in the preparation of on the SDPP(s) and how feedback has been addressed before seeking endorsement by the DRP.	Section 3 details the consultation that has occurred during preparation of the plan and how this feedback has been addressed. This is supported by the consultation evidence provided in Appendix A.
Elements covered by SDPP(s) must be complete no later than the commencement of operation of the Sydney Metro to paid services, unless otherwise agreed with the Secretary.	Refer to Section 7 which details implementation of the plan.
Note: The SDPP may be submitted in stages to address the built elements of the CSSI and landscaping aspects of the CSSI.	Refer to Section 1.3 for the scope elements considered as part of this SDPP. The SDPPs for other scope elements have been/would be considered as part of other SDPPs.
Condition 102:	
The SDPP must achieve a minimum visual impact rating of at least “Minor Benefit” as defined in the EIS, as amended by the documents listed in A1, for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP’s satisfaction, that a “Minor Benefit” is not achievable, then a “Negligible” visual impact rating must be achieved as a minimum.	Section 8 provides the visual impact assessment and identifies the ratings achieved. This assessment concludes that the SDPP achieves a minimum visual impact rating of Negligible for the Artarmon Substation from all viewpoints. Appendix C details the feedback from the DRP on the visual impact assessment ratings achieved.

2. Design development process

The design for the Sydney Metro City & Southwest Chatswood to Sydenham project has developed from an initial scoping design through to the detailed design (refer to flow chart below). At each stage a range of consultation and stakeholder engagement activities have occurred. This has also been supported by the development of design objectives, the Chatswood to Sydenham Design Guidelines and now this Station Design and Precinct Plan, all of which has been refined in consultation with the Sydney Metro Design Review Panel.



This Station Design and Precinct Plan draws upon the design work that occurred prior to obtaining planning approval (i.e. during the scoping, definition and reference design) for context, and then details the design work and associated consultation activities that have occurred since planning approval was obtained (i.e. during the detailed design stage).

It is noted that this SDPP relates to the Artarmon Substation design and surrounding precinct subject to the SSI project approval SSI 15_7400.

3. Collaboration and consultation

The stakeholder and community consultation process for Sydney Metro City & Southwest has played an integral role in informing and scoping the design of the project since 2014. The consultation and engagement activities that occurred to inform the reference design was documented in the Chatswood to Sydenham Environmental Impact Statement (EIS) and the Chatswood to Sydenham Submissions and Preferred Infrastructure Report (SPIR).

Key issues raised during consultation on the reference design, as well as more recent consultation on the Stage 1 detailed design, that relate to Artarmon Substation include:

- Feedback from community and Willoughby to relocate the Artarmon substation from the original location proposed in the reference design (Butchers Lane, north of the Gore Hill Freeway), to the new location at 98-104 Reserve Road, within the Artarmon industrial area. This relocation was agreed by Sydney Metro and was approved as a modification to the project in late 2017.

Consultation, with government agencies, councils, business groups and the community has continued throughout the development of the Stage 2 detailed design and preparation of this SDPP. The SDPP will also be reviewed by the Sydney Metro Design Review Panel.

3.1. Consultation during preparation of the Station Design and Precinct Plan

This SDPP has been prepared in collaboration and consultation with the following relevant stakeholders:

- Willoughby Council
- Department of Planning and Environment
- the local community

Collaboration and consultation activities undertaken during development of the detailed design and preparation of this SDPP include:

- Consultation on the Draft SDPP which was carried out in May 2020.
- Consultation with Willoughby Council was held on 15 May 2020. The architectural design of the substation and surrounding landscape was supported by Council.

Evidence of the above collaboration and consultation undertaken is provided in Appendix A. Appendix B identifies how the feedback received during this consultation has been addressed in the SDPP.

3.2. Review by the Design Review Panel

Sydney Metro has a Design Review Panel (DRP) that aims for design excellence across all Sydney Metro projects. The Sydney Metro DRP is chaired by the Government Architect and members include eminent architects, designers and heritage specialists. The Sydney Metro DRP has been involved in reviewing the City & Southwest Metro project since its inception.

DRP review meetings held during development of the detailed design and preparation of this SDPP were held on the following dates:

- 17 December 2019 – Review of the design
- 31 March 2020 – Final review of the design
- 28 January 2021 – Review of the Final SDPP prior to submission to DPIE

Copies of the minutes of these meetings relevant to Artarmon Substation are included in Appendix C.

4. Design objectives, principles and standards

The development of the design and SDPP has been guided by a range of design objectives, principles and standards.

The Sydney Metro City & Southwest Chatswood to Sydenham Design Guidelines (June 2017), as included in the planning approval documents for SSI 15_7400, provide guidelines for the spatial and functional design of the urban and public domain in each station precinct as well as the urban form of associated project elements.

The Design Guidelines identifies the five project design objectives to help meet the transformational vision and world class aspirations of the project. These are supported by design principles which describe the intent of the objectives for the design of the stations, station precincts and the wider metro corridor. The project design objectives and supporting principles, as reviewed and refined by the Design Review Panel, are detailed in Section 4.1.

Sections 4.2 to 4.7 details the design principles relevant to the aspects identified in Condition E101(a) and scope of this SDPP. These have been captured from the Design Guidelines, relevant design reports that support the detailed design and other standards and guidelines listed in Section 4.8.

4.1. Project design objectives

The following design objectives identified in the Sydney Metro City & Southwest Chatswood to Sydenham Design Guidelines are applicable to the design approach for Artarmon Substation.

Objective 4: Being responsive to distinct contexts and communities

Principle – Sydney Metro's identity is stronger for the unique conditions of centres and communities through which it passes. This local character is to be embraced through distinctive station architecture and public domain that is well integrated with the inherited urban fabric of existing places.

The surrounding Artarmon locale is generally a light industrial area servicing the Northern Sydney area. A predominance of motor trade service industries exist.

The adjoining buildings are one and two levels in height, masonry construction and built to the side boundary. This is evident on the southern and western boundary of the site where neighbouring walls are built to the boundary. The adjoining buildings are setback from the street alignment boundary approximately 2.5m to 3.0m. The typical condition along the street setback zone includes modest landscape planting.

It is intended that the substation responds to its immediate context in a sympathetic way. The urban/community impact to streetscape and neighbourhood is a primary consideration and on the street frontage façade /screen has been adjusted to transition and align with the adjoining property interface condition on Whiting Street and Reserve Road.

The site although fronting a cul-de-sac has a prominent corner condition visible from the Gore Hill Freeway fly-over.

Objective 5: Delivering an enduring and sustainable legacy for Sydney

Principle – Sydney Metro is a positive legacy for future generations. A high standard of design across the corridor, stations and station precincts, that sets a new benchmark, is vital to ensuring the longevity of the Metro system, its enduring contribution to civic life and an ability to adapt to a changing city over time.

New built elements are to reflect the Sydney Metro identity, being modern, sophisticated and of its place and time. Screening and planting has been included where possible to minimise visual impact.

The materials and construction used will have the necessary qualities to be serviceable, and endurable enough to meet the required “Design Life”. Care in the detailing and finishing will ensure the buildings continue to be safe, clean and present well with minimal maintenance. Service facilities by nature are required to be robust. Material choice will reflect the need to be ‘fit for purpose’. The external screening is to have a higher quality of finish/treatment to enhance the gateway/highly visible corner condition

4.2. Maximising amenity of public spaces

Design principles and guidelines were identified in the Chatswood to Sydenham Design Guidelines to ensure that the amenity of public spaces is maximised. Those relevant to the scope of this SDPP are listed below:

- Location, scale and articulation of external walls and fences are important elements of the public realm. Their design is to be an integral part of the urban design of the site to minimise excessively long unarticulated lengths, inactive, bland and unappealing frontages
- The treatment of the public spaces is to reflect local character and context, integrate with their settings and provide attractive space and streetscapes

The following site-specific design principles and guidelines have also been identified to inform the development of the detailed design for Artarmon Substation:

- Wall and fencing systems and details are to respond to their location, function and acoustic environment
- Ease of access, maintenance and replacement of walls and fencing sections is to be considered
- Robust cladding materials and finishes are to be selected in response to the local environment and conditions, and sustainability objectives including dematerialisation and embodied energy
- Plant species are to be appropriate to local conditions and relate to the character of the urban context - both current and/or planned future context.
- Proposed plants are to be low maintenance and based on minimal water requirements beyond the establishment phase.
- All planting must maintain clear setbacks and sight lines at road intersections and be offset from other transport infrastructure elements at suitable distances for the selected species.

4.3. Local environmental, heritage and place making values

The station and precinct design must be developed with reference to the local environmental, heritage and place making values of the locality.

Non-Aboriginal heritage

A historical background assessment for the lower North Shore, and land surrounding the Artarmon substation, was previously prepared as part of the assessment for the approved project. The following historical background assessment focuses on the Artarmon study area.

Phase 1: 1788 – 1869

The majority of the lower North Shore, and land surrounding the study area, is associated with large land grants given to soldiers, convicts and free settlers in the early 19th century.

Land associated with the study area at 96-98 Reserve Road and 2 Whiting Street Artarmon, was originally occupied by a 25-acre grant given to Daniel Curry in the early 1800s. These grants adjoined the larger grant of William Gore, Provost-Marshall of the Colony of NSW, to the north east, which was known as Artarmon and granted to Gore in 1810. Gore purchased additional neighbouring properties before his financial difficulties in 1818, however, it is not clear if Curry grant was one of those purchased.

There is no indication within the historic records of Daniel Curry building a residence within the study area.

Phase 2: 1869 – 1960

Residential development in Artarmon was supported by the introduction of public utilities for gas (1898), water (1888), and electricity (1914). Much of the development in the study are occurred after 1910 and into the 1920s, therefore it is unlikely occupation deposits such as rubbish dumps would be present. Wells would not have been necessary after water provision in 1888 and as the study area is located near a second order stream wells would not have been necessary in any case.

The development of brickmaking in the area, which was a major employer within Artarmon, with its close proximity to the railway, drove the redevelopment of the area into a working-class neighbourhood. Aerial images from 1943, show much of the area occupied by working class housing, including the study area, which was occupied by a large semi-detached pair of residences.

The residences identified in the 1943 aerial of the study area occupied the northern two thirds of the study area, being 98 Reserve Road and 2 Whiting Street. It is unlikely that 96 Reserve Road was built upon prior to the construction of the light industrial and commercial premises which now occupy the 96 Reserve Road.

Phase 3: 1960 – present

The three lots of the study area were later purchased and converted to light industrial/commercial allotments and the original structure demolished. The current structures date from the latter half of the twentieth century and occupy the full allotments.

There are no heritage listed items within the study area. The nearest heritage listed items are the “Industrial building (including surviving industrial elements)” listed as item I1 on the Willoughby LEP 375 metres to the south-west at 80 Reserve Road, and “Artarmon

Conservation Area", listed as item C1 on the Willoughby LEP 600 metres to the north east (Figure 4-1).

Figure 4-1 Artarmon substation – location of heritage listed items. Source: Sydney Metro Chatswood to Sydenham, Victoria Cross Station and Artarmon Substation Modification Report

Based on the initial literature review and site inspection undertaken as part of the Artarmon Substation Modification Report assessment, the following assumptions regarding archaeology of the study area were made:

- Archaeological remains associated with early agricultural land grants (Phase 1) are likely to have been impacted by two subsequent periods of development, in the early twentieth century (Phase 2) and late twentieth century (Phase 3)
- Development that took place in the 1960s and 1970s on land once occupied by early twentieth century dwellings are likely to have impacted archaeological remains of the early nineteenth century residences and associated structures
- Archaeological remains associated with Phases 1 may be present on site; however, the nature of the remains of Phase 1, being likely limited to agricultural infrastructure, such as fence lines, would be limited, unless a built structure was present on site. However, there is no clear evidence of built structures form this phase.
- Remains of Phase 2 structures may be present at deeper levels, as building footings and foundations, though archaeological materials associated with occupation from this period is likely minimal, as utility and municipal services limit the available archaeological record.

In summary, the study area has low potential to contain remains associated with Phase 1 and moderate potential for remains associated with Phase 2. The archaeological resource is unlikely to meet the local significance threshold.

Therefore, works in this location are unlikely to impact potential archaeological resources.

Aboriginal heritage

The existing Aboriginal heritage environment and potential impact was described in the assessment of the approved project. The archaeological significance of the proposed Artarmon Substation site was assessed as low due to its low archaeological potential resulting in shallow soil profiles and likely high levels of ground disturbance that would have impacted any surface or subsurface Aboriginal sites. No Aboriginal sites have been identified within the study area.

It was determined that construction of the proposed Artarmon Substation would not directly (ie damaged as a direct result of construction) or indirectly (ie damaged due to construction vibration) impact on any previously recorded Aboriginal heritage sites. The closest previously recorded Aboriginal heritage site is located about 950 metres to the south-east of the proposed modification site. Due to the largely modified nature of the proposed site and surrounding area, there are no identified areas of archaeological potential that would be impacted by the proposed works.

The Heritage Interpretation Plan (HIP), prepared by Wolf Peak, which is required to inform the SDPP under condition E21, provides more detailed information in regards to the Non-Aboriginal and Aboriginal heritage values of the area.

Design principles and guidelines were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design responds to the local environmental, heritage and place making values. Those relevant to the scope of this SDPP are listed below:

- Sydney Metro is to be fully integrated within, and sensitive to, its heritage context

4.4. Urban design context

The urban and public domain design must be developed with reference to the existing urban context and infrastructure as well as planned initiatives in the locality.

Figure 4-2 Artarmon substation – existing land use. Source: Sydney Metro Chatswood to Sydenham, Victoria Cross Station and Artarmon Substation Modification Report

The Artarmon Substation site is located in Artarmon and is in close proximity to the Lane Cove Tunnel and Gore Hill Freeway. Artarmon is a suburb on the lower North Shore of Sydney, nine kilometres north-west of the Sydney CBD, in the local government area of the City of Willoughby. Established in 1794, this mature suburban area has a mixture of residential, commercial and industrial areas. High-rise buildings are located to the west of the existing train line and low-level housing to the east.

The site of the Artarmon substation is located within the Artarmon industrial area, with surrounding development predominantly industrial in character. Opposite the site on the

eastern side of Reserve Road, is the Freeway Hotel (food, beverage and entertainment uses). The Artarmon industrial area forms part of the approximately 94 hectares of industrial zoned land in the Willoughby Local Government Area that provide a range of activities from traditional uses such as manufacturing, warehouses and concrete batching plants to high technology developments. Land use surrounding the site is shown in Figure 4-2 above.

The Willoughby Local Environmental Plan 2012 (Willoughby LEP 2012) defines the land use zoning in the area surrounding the Artarmon Substation Site as IN1 - General Industrial. Refer to Figure 4-3 below for a zoning map of the area extracted from the Willoughby LEP 2012.

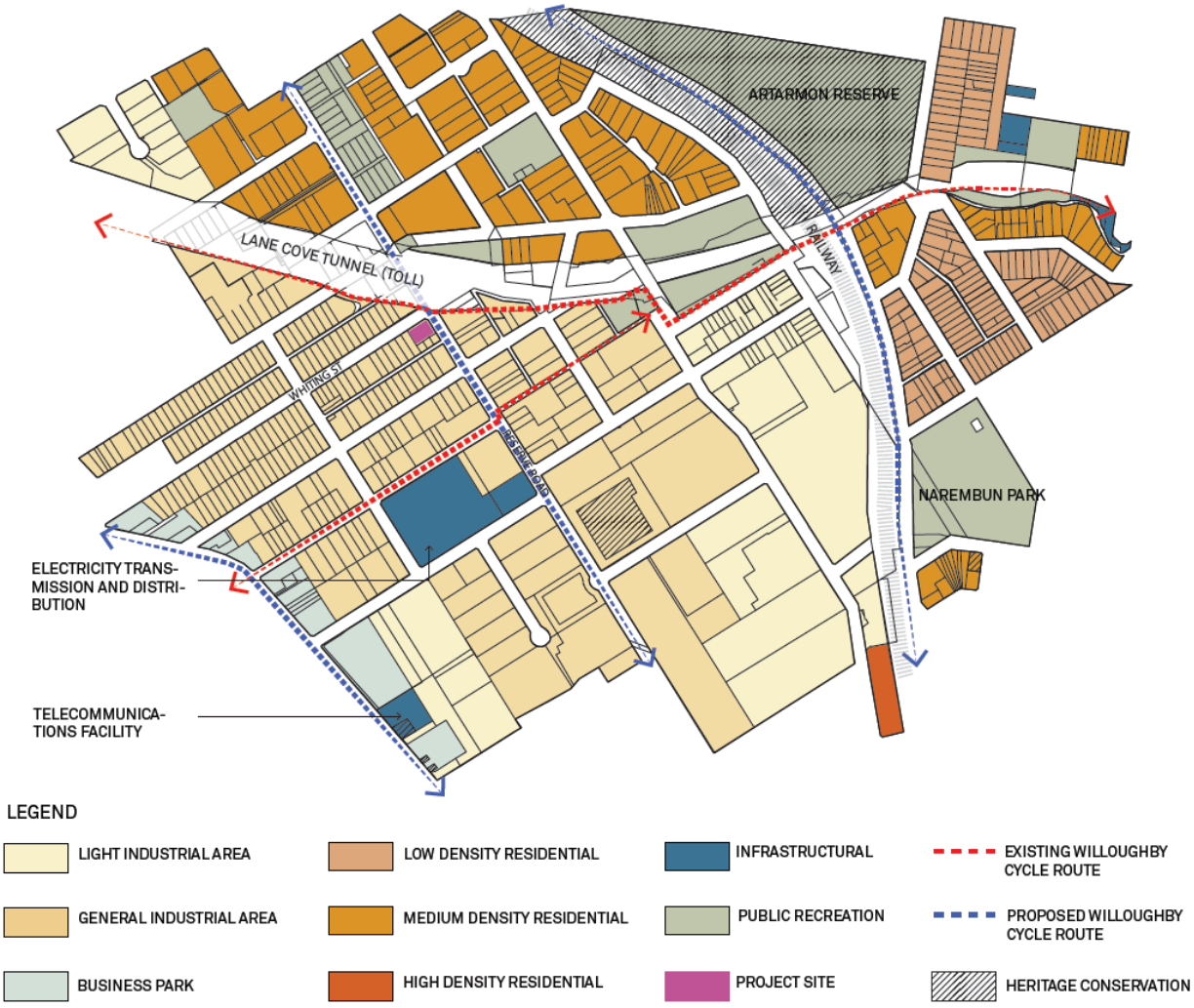


Figure 4-3 Willoughby Local Environmental Plan 2012

The site itself is located at the corner of Whiting Street cul-de-sac and Reserve Road junction leading onto the Gore Hill Freeway entry point. Reserve Road is a busy local carriageway providing connection to the Gore Hill Expressway/Lane Cove Tunnel, St Leonards Station, Royal North Shore Hospital and Sydney CBD.

Figure 4-4 Reserve Road – Current View

In contrast, Whiting Street is a cul-de-sac closed street with a planted barrier to the street end.

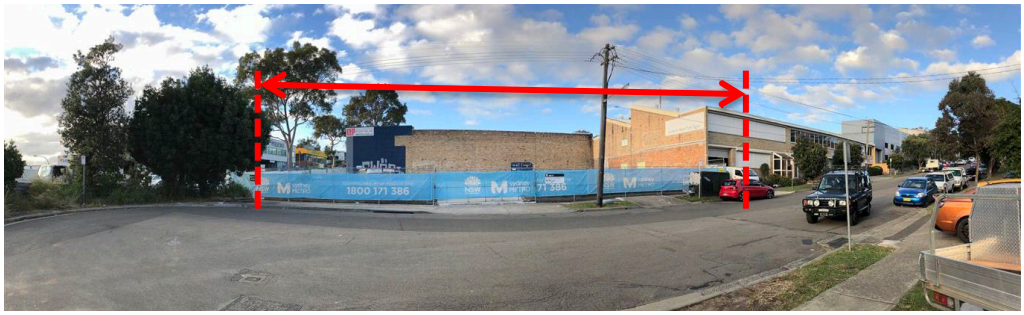


Figure 4-5 Whiting Street View

It is an approximately a 13 minute walk to Artarmon Station and approximately a 9 min walk to the main local retail strip, Herbert Street. The local Gore Hill Freeway shared path/cycle path network runs near the site on the northern corner. Refer Figures 4-6 and 4-7 below.

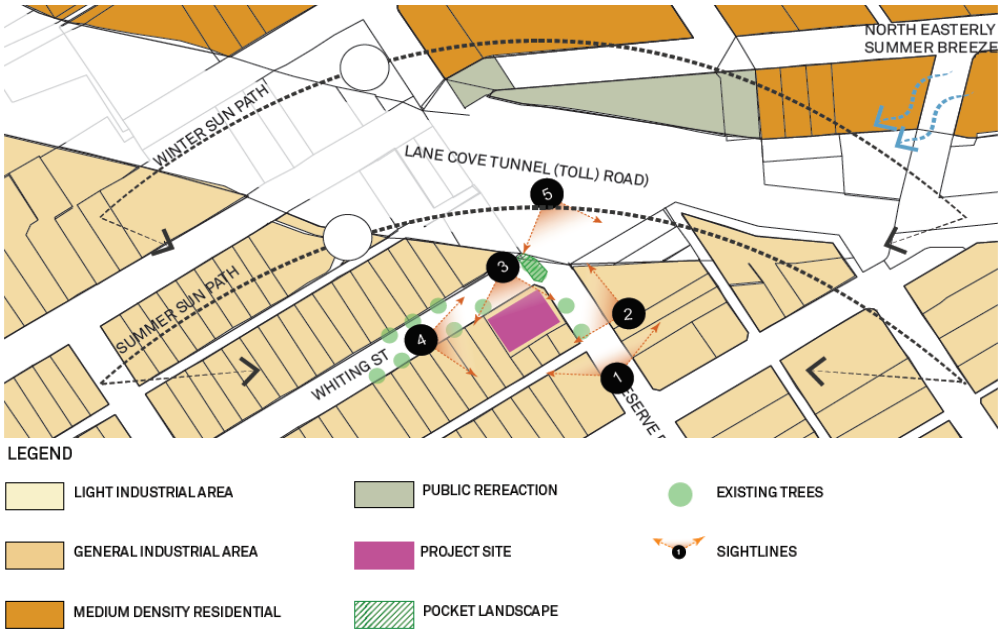


Figure 4-6 Site Contextual Diagram

Figure 4-7 Site Contextual Photos – Current View

As shown in the site contextual photos in Figure 4-7, the existing building on the site had already been demolished at the time of the preparation of this SDPP. Refer to Figures 4-8 and 4-9 for a Google Maps view of the building that was on the site prior to its demolition.

Figure 4-8 Site Contextual Photo from Reserve Road – Google Maps view from November 2009 (prior to demolition of existing building on the site)

Figure 4-9 Site Contextual Photo from Whiting Street – Google Maps view from November 2009 (prior to demolition of existing building on the site)

All surrounding developments are at a higher relative level than the site. The site sits in a slight depression with a cross-fall of approximately 1.5 metres southwest to northeast. The previous building on the site has been demolished. Generally, the built context is one and two storey industrial use buildings of masonry construction with the exception of the hotel/restaurant, Freeway Hotel, directly opposite the site on Reserve Road.

Design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design responds to the urban design context. Those relevant to the scope of this SDPP are listed below:

- A positive precinct image is to be developed around the particular heritage values or a place or by the quality of the existing urban context
- The design of station buildings, service facilities and public domain elements must respond to be the local context and environment

The following site-specific design principles and guidelines have also been identified to inform the development of the detailed design for Artarmon Substation:

- The landscape design is an important component of a positive, high quality and appealing urban realm identity for Metro stations and structures
- Hard and soft landscaping design, species selection and material palettes are to relate and reflect the existing urban fabric of the city

4.5. Community safety, amenity and privacy

Safety has been and will continue to be considered at all stages of design of the project, with the commitment to safety outlined in Section 1.6 of the Chatswood to Sydenham Design Guidelines.

Design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design provides community safety, amenity and privacy. Those relevant to the scope of this SDPP are listed below:

- The design must ensure the precinct provides a safe and secure environment and contributes to the overall public safety of urban places throughout the day and night
- Safety issues are to be embedded in the design development process and optimised through the application of relevant Crime Prevention through Environmental Design (CPTED) principles and guidelines

The following site-specific design principles and guidelines have also been identified to inform the development of the detailed design for Artarmon Substation:

- Substation and precinct design will identify and reflect current architectural and engineering best practice with respect to safety
- The safe movement of staff and contractors into and out of the substation needs to be facilitated through many aspects of physical design, including the provision of adequate circulation space, clear routes, adequate lighting and minimising obstructions
- All planting must maintain clear setbacks and sight lines at road intersections and be offset from other transport infrastructure elements at suitable distances for the selected species

4.6. Sustainable design and maintenance

Section 1.7 of the Chatswood to Sydenham Design Guidelines outlines the commitment to sustainability and acknowledges that Sydney Metro would achieve new benchmarks in sustainability infrastructure delivery. The design must ensure best practice sustainable design solutions are adopted for the public domain, stations and buildings to minimise environmental impacts and benefit customers and local communities.

All design elements have been designed to achieve either:

- an ‘excellent’ rating using the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) rating tool, or
- a 5-star rating using the Green Building Council of Australia (GBCA) Green Star Sydney Metro rating tool.

In addition the Sydney Metro City & Southwest Sustainability Strategy 2017-2024 identifies examples of sustainable design initiatives being considered for the project.

Sustainability initiatives to be considered in the design and for maintenance include:

- Develop a low maintenance design

4.7. Minimising the project footprint

Design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design minimises the project footprint. Those relevant to the scope of this SDPP are listed below:

- The design must ensure that earthworks and engineered structures such as noise walls, retaining walls and portals are visually integrated into their urban or landscape setting as much as possible, keeping engineered structures to a minimum
- Provide integrated public art, lighting, signage and heritage interpretation to minimise the footprint.

4.8. Relevant standards and guidelines

The following urban design and infrastructure standards and guidelines have been considered in developing the above design principles and the SDPP:

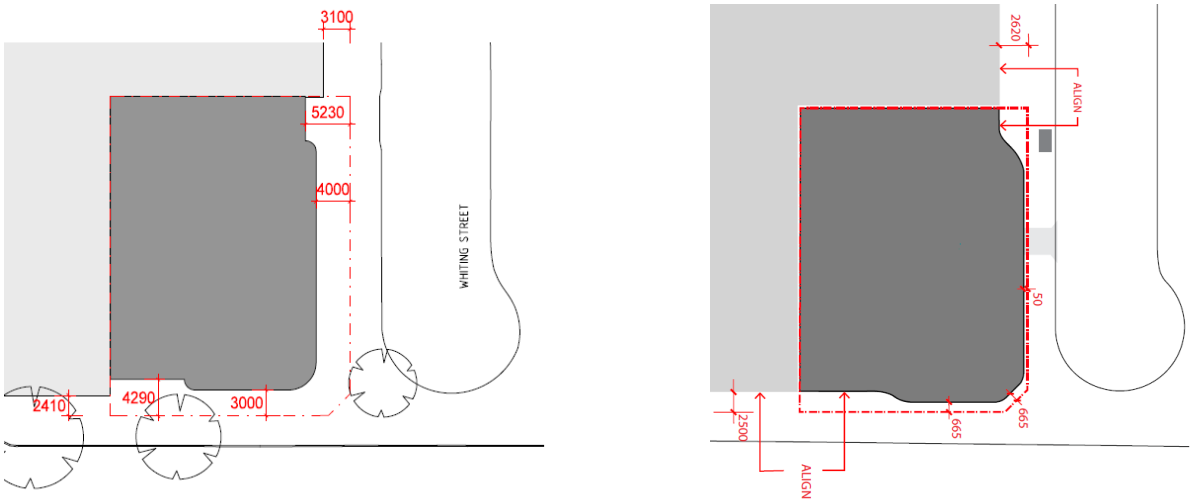
- Sydney Metro Chatswood to Sydenham Design guidelines
- Sydney Metro City & Southwest Sustainability Strategy
- Crime Prevention through Environmental Design
- Building Code Australia (BCA)
- Australian Standards
- Willoughby Local Environment Plan (LEP) 2012

5. Design opportunities

5.1. Opportunities for landscaping and building design to mitigate visual impacts

The visual impact of the project has been mitigated by implementing the following building design and landscape initiatives:

- Building setback and frontage alignment has taken into consideration alignment with adjoining buildings. The building is entirely screened by a screen constructed of vertical battens/blades including gates. Refer Figures 5-1 to 5-4. Section 6.1 provides further detail on the proposed building façade/screen design.



EIS Design Setbacks

Current Design Setbacks

Figure 5-1 Artarmon Substation Building Setback and Frontage Alignment – Proposed vs DCP & EIS Compliant

Figure 5-2 Artarmon Substation Building Setback and Frontage Alignment 3D View

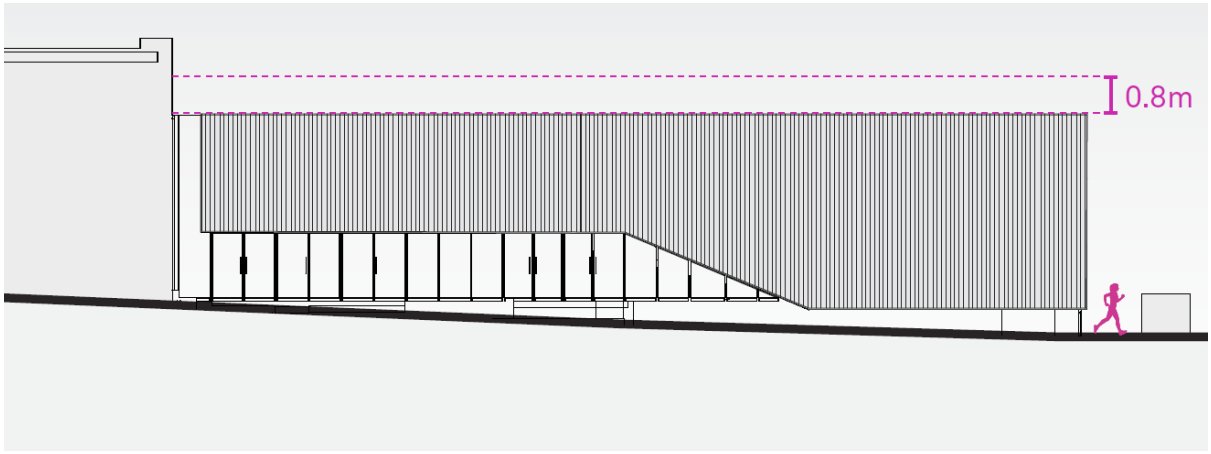


Figure 5-3 Artarmon Substation Building Elevation from Reserve Road

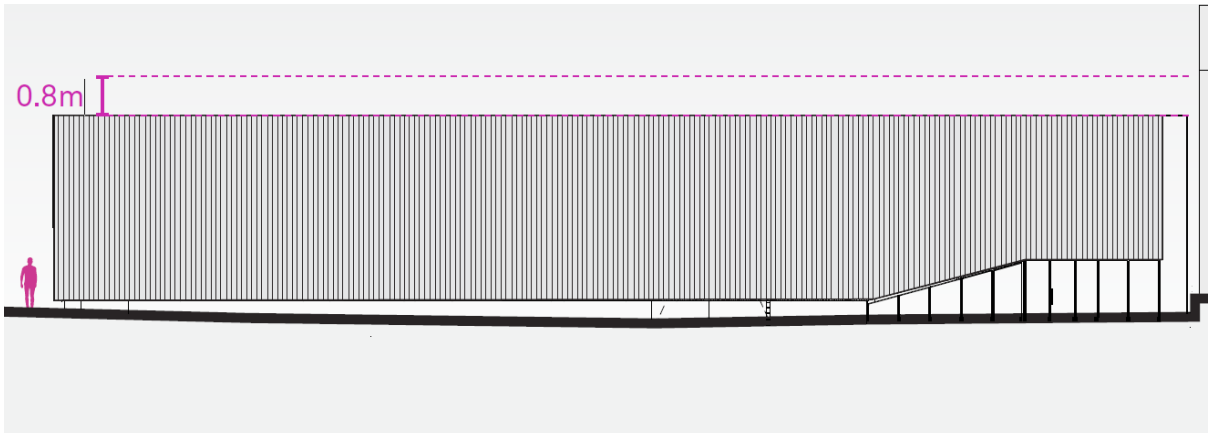


Figure 5-4 Artarmon Substation Building Elevation from Whiting Street

- Existing street trees and plantings are retained where possible to reduce impact of the proposed development. New street plantings along Whiting Street and new grass/shrub plantings in the area between the building façade and public footpath along Reserve Road further reduce visual impact of the development from the street. Refer Figure 5-5 below. Section 6.2 provides further detail on the proposed landscape treatment.

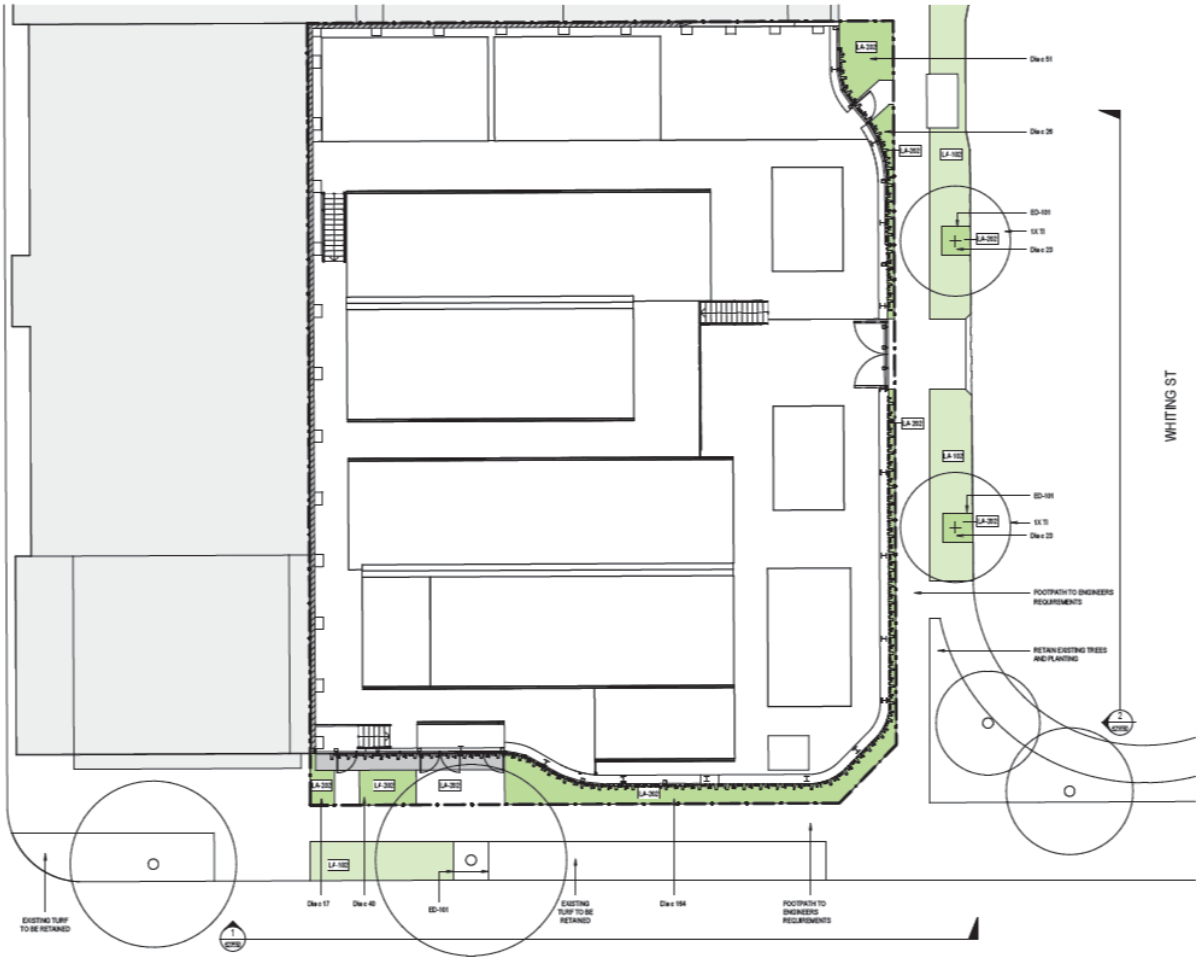


Figure 5-5 Artarmon Substation Landscape Plan

- The lighting has been designed to minimise light spill into neighbouring communities.

5.2. Opportunities for public art

Sydney Metro's Art program is guided by the CSW Metro Public Art Masterplan. The document identifies stations and station plazas as artwork sites because they are located in areas of high footfall, are the most publically accessible and visible, and are most easily monitored and maintained.

As such, Artarmon substation has not been identified for Public Art under the Sydney Metro Art Program as it is located in a light industrial area surrounded by major roads, has low footfall, low access around the site, and would not be experienced by many people.

5.3. Opportunities identified in the Heritage Interpretation Plan

A Heritage Interpretation Plan has been prepared for Artarmon Substation by Wolf Peak. This Plan concluded that heritage interpretation at the site is not appropriate and is not recommended. The Artarmon Substation has been designed for its purpose, as a utility

building. The considered design has respected its purpose, placement, and its surrounds, however, it is not designed to attract public attention or visitors.

Therefore the recommendation of the HIP is not to undertake any heritage interpretation at the Artarmon Substation site.

5.4. Opportunities for incorporating salvaged historic and artistic elements

There are no salvaged historic or artist elements at Artarmon Substation.

6. Details of the Station Design and Precinct Plan

6.1. Artarmon substation design features

6.1.1. Design for Modular Assembly (DIMA): A Creative Approach

The Design for Modular Assembly (DIMA) principles of producing a standardised 'kit of parts' to deliver a consistently high quality series of elements for simple and cost effective construction has been used.

The DIMA philosophy will inform each element to enable it to be built smarter, faster, modular, and more materially efficient. Off-site construction could allow for a higher quality finish.

Design principles include:

- Ensuring maximum possible repetition using standard elements and details
- Designing elements to be as large as possible to minimise the number of crane lifts and therefore reduce construction time
- Each modular element transported simply and erected quickly, which means less disruption to adjacent communities
- Simple modules with positively located/minimal secure fixings allowing for a faster construction sequence
- Modular and multi-functional elements designed to minimise waste in manufacture
- A consistent suite of repeated details

6.1.2. Building arrangement

Construction of the Artarmon substation will involve (Refer Figure 6-1):

- Excavation of a vertical shaft to the tunnels below (works completed)
- Lining and reinforcing the shaft (works completed)
- Building above-ground components
- Installing electrical equipment

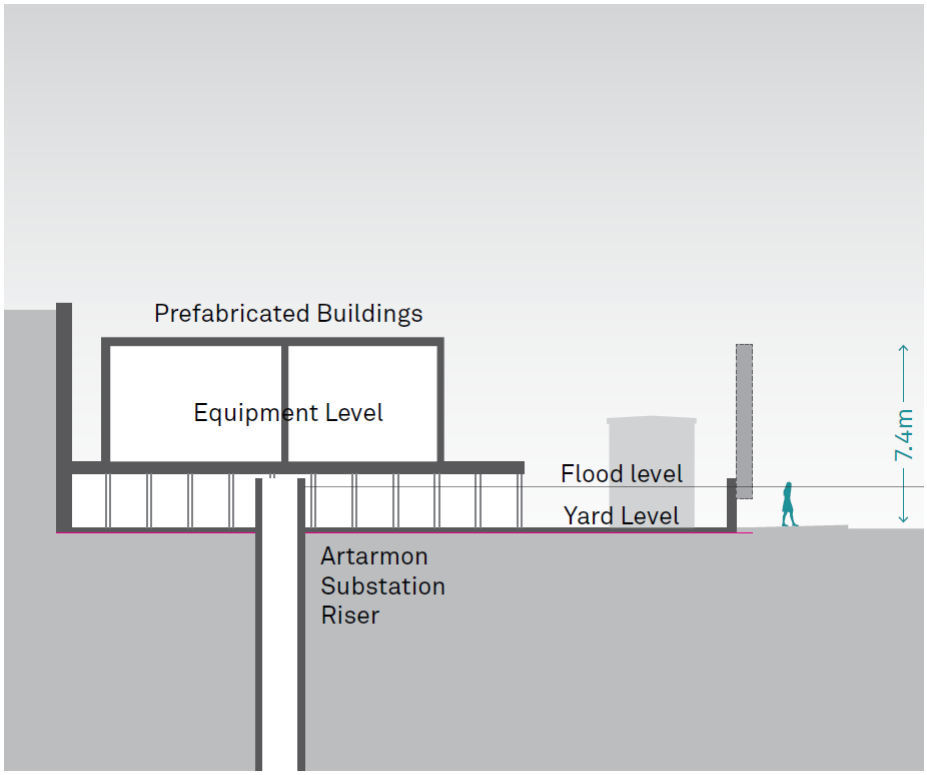


Figure 6-1 Artarmon Substation – Section showing building components arrangement

The building is arranged into the following principle components:

- Multiple transportable switch rooms and service buildings are elevated above steel framed supporting/cable access platform.
- Harmonic filter to the west
- Rectifier transformers to the north
- Loading bay on the north

6.1.3. Façade types

The façade is composed of the following typologies:

- Type 1 – Screening element (a composition of folded profiled powder coated sheet aluminium) with painted structural steel support
- Type 2 – Screening element (flat 3mm aluminium panels for service cupboards and personnel access)
- Type 3 – Non visible, cladding to transportables - metal Colorbond profiles material
- Type 4 – Precast concrete boundary fencing

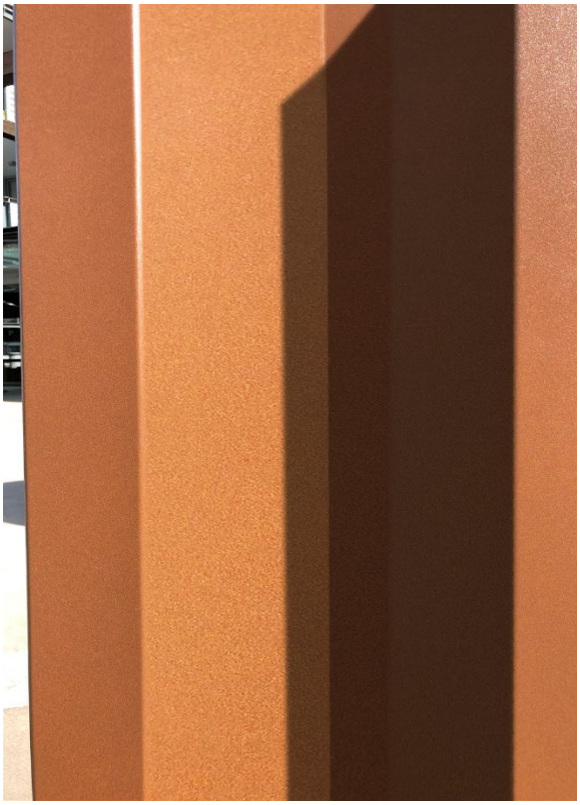
6.1.4. Materials and Finishes

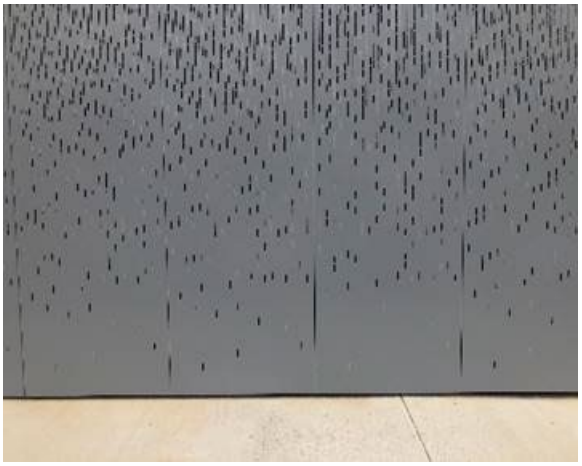
The materials and finishes selected were chosen to meet line wide objectives for:

- Sustainable design
- Certainty of delivery
- Response to user needs
- Durability
- Longevity
- Value for money
- Safety and security, Ease of cleaning, maintenance and replacement
- Low Maintenance
- Anti Graffiti

The enclosure is designed as sinuous and organic. Simple, discrete and robust cladding materials are proposed, appropriate to the building function and maintenance requirements.

The palette of materials is indicated in the imagery incorporated on the following pages of this section. Acoustic and equipment sizing are yet to be advised. A range of possible alternatives are also being evaluated. All metal components are to be treated/coated with durable finishes powder coated aluminium with anti-graffiti coating. Concrete and masonry elements are to be finished in anti-graffiti sealer. Current key external materials and finishes options are included in the table on the following page.

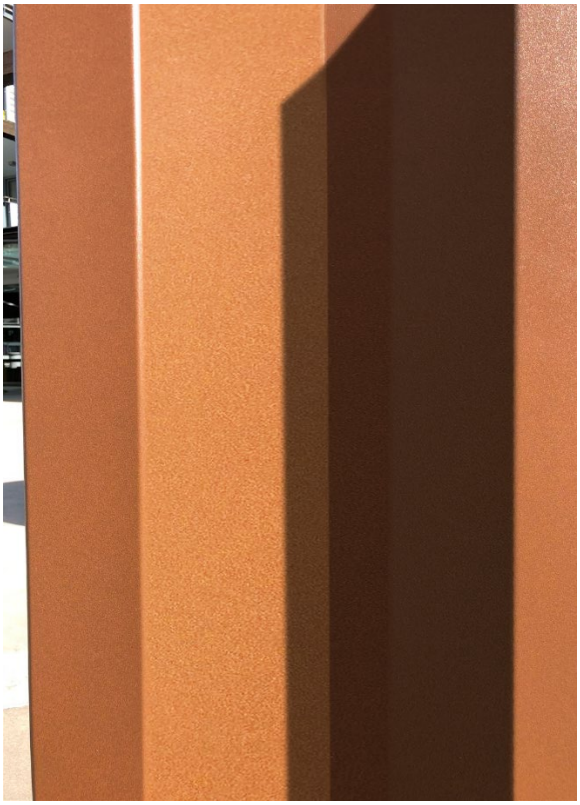
Type	Finish	Example
1	Folded profiled powder coated sheet aluminium (without perforations)	
2	Dark grey to externally visible structural steel and galvanised to structural steel that is not visible from outside the site.	

3	3mm flat powder coated sheet aluminium (without perforations)	

Type	Finish	Example
4	Sealed concrete finish – Mid grey	

6.1.5. Fencing and Screening

The building is entirely screened by folded profiled powder coated sheet aluminium including gates. The close spacing of the vertical battens prohibits climbing. The powder coated finish with anti-graffiti coating allows for easy cleaning and discourages graffiti.

Type	Finish	Example
1	Folded profiled powder coated sheet aluminium (without perforations)	
2	Painted dark grey to externally visible structural steel and galvanised to structural steel that is not visible from outside site.	

Type	Finish	Example
3	3mm flat powder coated sheet aluminium (without perforations)	

6.1.6. Cladding

The main switchroom building will be clad with insulated Colorbond panels.

6.1.7. Walling

Blockwork walls will be built along the perimeter/adjoining boundary lines, acting as fire walls. They are proposed to be stacked blockwork with integrated blockwork piers.

6.1.8. External Lighting Strategy

The external lighting strategy for the substation building is outline below:

- Lighting will be functional, low maintenance, low energy/security style lighting sufficient to illuminate the yard and external working areas
- The lighting will be subtle and provide minimum light spill or nuisance to adjoining development
- All lighting to be housed in weatherproof enclosures, mounted to the structure and switchroom
- Lighting could be motion sensor activated
- No ‘external’ or outside the enclosure lighting is proposed. The only exception is if CPTED requires a particular area to be illuminated

6.1.9. Acoustic Strategy

The acoustic strategy for the substation is as follows:

- Minimal acoustic treatment to the internal equipment will be required

- Acoustic treatment of the facilities will be provided in accordance with industry standards and to meet brief specified criteria
- The design intent is to ensure neighbouring residences/property are adequately screened against equipment noise
- Any required screening is to occur within the equipment enclosure/s or an adjacent screen fencing

6.1.10. Signage Strategy

Artarmon traction substation signage and wayfinding strategy has been derived from the requirements established for the Sydney Metro North West substations. The suite of sign types includes:

- Identification door signage
- Statutory signage
- Building identification signage
- Internal and enclosed external directional signage

Any atypical interfaces with the external facade, landscaping or boundary fencing will be assessed and detailed once the signage strategy has been applied.

6.2. Precinct (public realm) plan

6.2.1. Pedestrian and Vehicular Movement Strategies

Pedestrian movement adjacent to the site is along the adjoining street frontage foopaths along Reserve Road and Whiting Street. The footpaths provide connections to and from the Artarmon/St Leonards shops and Artarmon Train Station via Reserve Road. A designated cycle path crosses Reserve Road at the corner of Whiting Street. Refer Figure 6-2 below.

Vehicular access to the Artarmon Substation will be provided from Whiting Street. Reserve Road is an arterial road and is less suitable as an access point to the site due to the high traffic volumes. Whiting Street has low traffic volumes because the street connection to Reserve Road has been closed off to vehicles, creating a cul de sac at Reserve Road. Refer Figure 6-3 below.

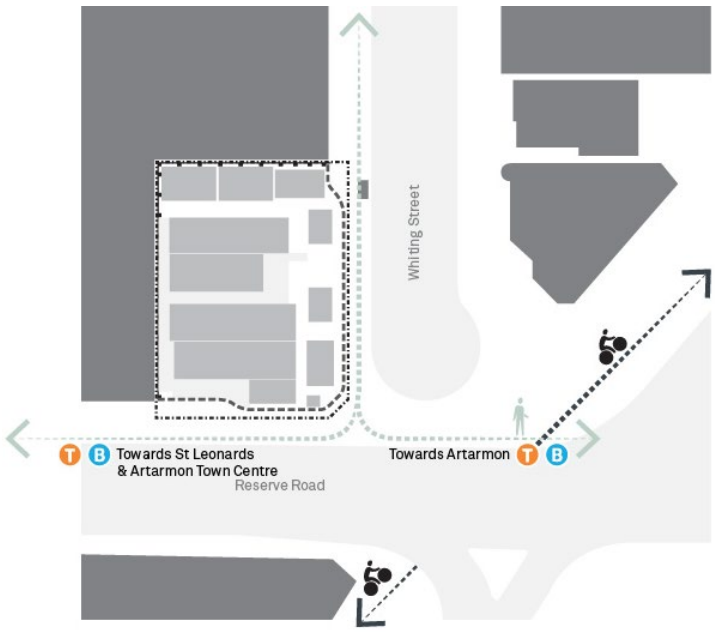


Figure 6-2 Artarmon Substation – Existing Pedestrian and Cycle Routes Plan

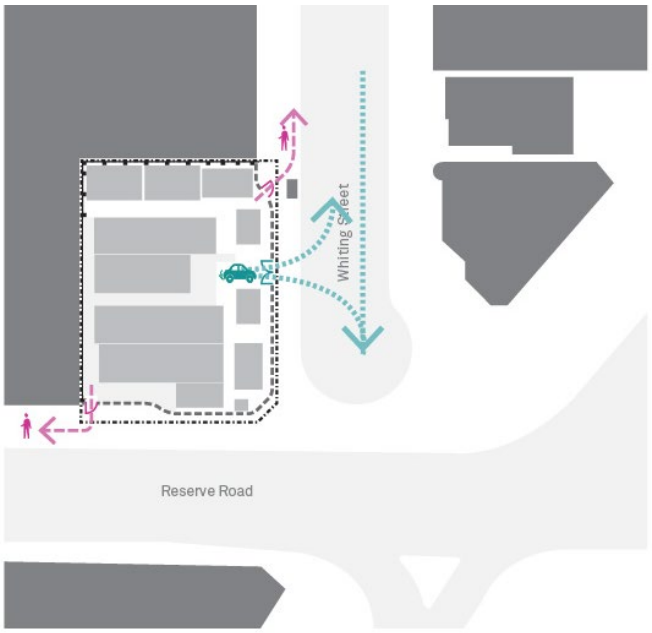


Figure 6-3 Artarmon Substation – Proposed Substation Pedestrian and Vehicular Access Plan

A single small utility vehicle (reverse parking) is provided for in the Loading Bay. An elevated loading dock (Refer Figure 6-4) provides efficient delivery of equipment and maintenance. Components are in an elevated position above the concrete yard slab.

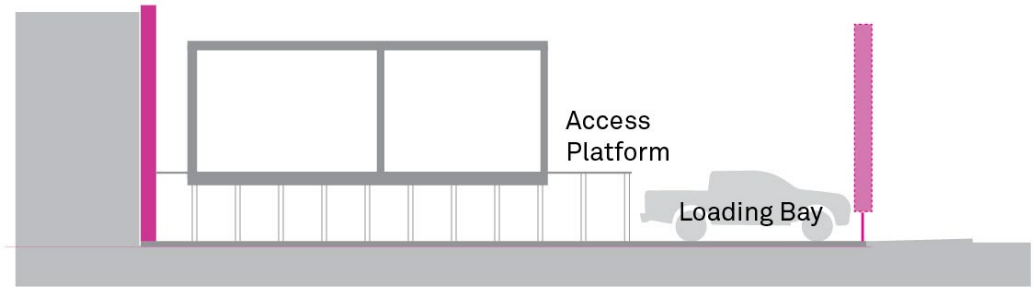


Figure 6-4 Artarmon Substation – Loading Bay Paving Strategy

6.2.2. Pavement Strategy

New footpath paving, vehicular driveway and paths to substation doors from footpaths will be insitu concrete finish to match the adjacent existing footpaths along Whiting Street and Reserve Road. Paving will achieve required slip resistance and colour contrast required by the relevant standards.

6.2.3. Planting Strategies

The landscape design maximises the retention of the existing trees within the streetscape and enhances this with additional street tree plantings along Whiting Street and continues the lawn nature strips along both Reserve Road and Whiting Street. Refer Figures 6-5 and 6-6.

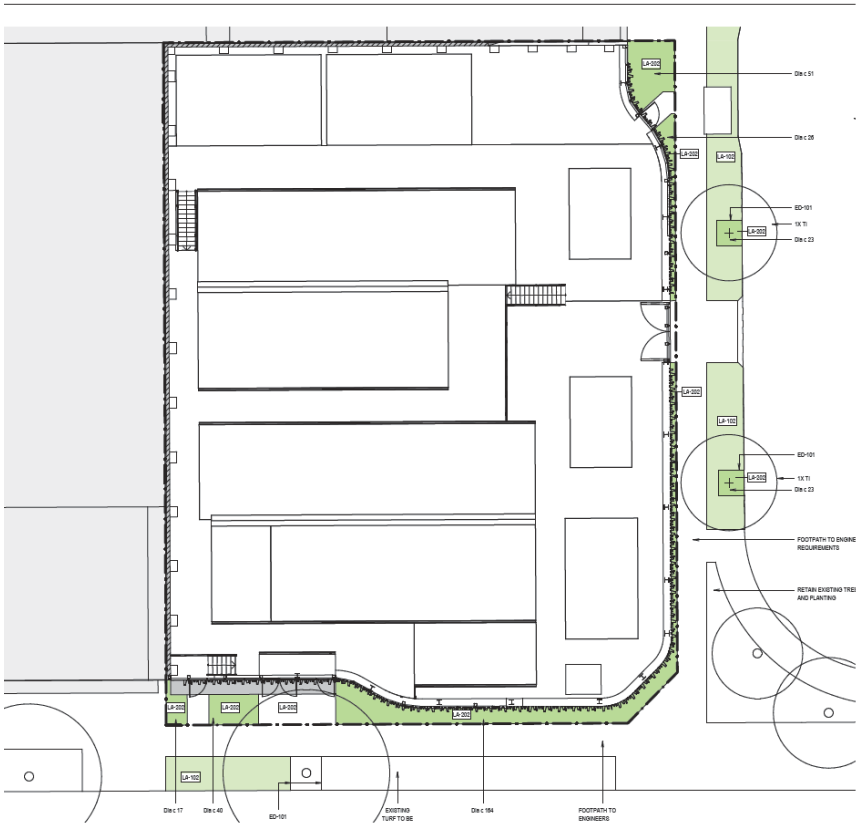
Along the Reserve Road frontage, the existing large Eucalyptus sp. street tree is to be retained along with the existing turf nature strip, which has also been extended further south to extend over the old footpath crossing.

Along the Whiting Street frontage, the provision of new street tree plantings and a turf nature strip will be coordinated with Willoughby Council and their street tree masterplan requirements. This will continue the rhythm of the existing *Tristaniopsis laurina* plantings already planted down the southern side of Whiting Street.

Street tree plantings will be located to ensure that sight lines of pedestrians and cyclists in the streets are maintained and signage is not obstructed by planting, in accordance with CPTED requirements.

Along the property boundary, low native grass plantings of *Dianella caerullea* have been provided between the building façade and the public footpath.

Figure 6-5 Artarmon Substation - Street Tree Planting Strategy



Tl
Tristaniopsis Laurina
Water Gum

LA-202
Dianella caerulea
Flax lily

Figure 6-6 Artarmon Substation- Indicative Planting Plan

Table 6-1 Artarmon Substation – Indicative Planting Schedule

Landscape Type	Species	Common Name
Street Trees	Tristaniopsis laurina	Water Gum
Native Grass Plantings	Dianella caerulea	Flax Lily
Turf	Stenotaphrum secundatum	Sir Walter Buffalo

6.2.4. External Lighting Strategy

The external lighting within the substation site will be functional, low maintenance, low energy lighting sufficient to illuminate the yard and external working areas. The lighting will provide minimum light spill to adjoining developments. All lighting will be house in weatherproof enclosures mounted to the structure and switch room.

No lighting is proposed on the Reserve Road or Whiting Street sides of the substation façade, unless required to meet external security CCTV cameras.

6.3. Statement of integrated urban design and place making outcome

The design of the Artarmon Substation responds to its immediate context in a sympathetic way. The urban/community impact to streetscape and neighbourhood has been a primary consideration in the design of the materiality, height and setbacks of the façade which have been adjusted during design development to transition and align with the adjoining property interface condition on Whiting Street and Reserve Road. The site, although fronting a cul-de-sac, has a prominent corner condition visible from the Gore Hill Freeway fly-over. The substation design reflects the Sydney Metro identity, being modern, sophisticated and of its place and time. Screening and planting work together to minimise the visual impact of the substation workings.

The following design principles have guided the project design in order to create an integrated urban design and place making outcome:

- All services concealed from direct view
- Consistent palette of materials and details to all buildings
- Consideration of microclimate in detailing.
- Detailing to reduce vandalism
- Consideration of context for building form and alignment.

7. Implementation

7.1. Timing

Condition E101 states that the:

> …Elements covered by the SDPP(s) must be complete no later than the commencement of operation of the Sydney Metro to paid services, unless otherwise agreed with the Secretary.

The timing of the implementation of access, landscaping and public realm initiatives is planned for completion in July 2021.

7.2. Monitoring and maintenance of landscaping

The landscaping has been designed to optimise long-term maintenance.

The following horticultural practices shall be carried out to ensure plants are maintained in a vigorous condition.

- Watering: generally ensure that all planting is receiving sufficient water to ensure vigorous growth and maintained in a healthy condition
- Weed and pest control: eradicate all grass, weeds and pests from within planted area manually or with approved weedicides and insecticides and remove from site and use measures to prevent reinfestation
- Monitoring all plants and trees for pest and disease on a monthly basis
- Fertilising as appropriate to the species
- Replacement of plants: treat or replace damaged plants and replace unhealthy or stolen plants to ensure minimum planting densities maintained
- Re-mulch as necessary to maintain mulched areas to the specified depths
- Litter and debris: ensure that the site is kept clean, free of litter, and general debris at all times
- Pruning of vegetation for safety with regards to operations of rail line, safety of public domain and CPTED surveillance

8. Visual impact assessment

A visual impact assessment was undertaken for the Chatswood to Sydenham project as part of the Environmental Impact Statement (EIS) and associated modification reports. This assessment was based on the concept design for the project.

Condition E102 requires the SDPP to achieve a minimum visual impact rating of at least 'minor beneficial, as defined in the EIS, for all design elements of the project where feasible and reasonable. Where it can be demonstrated, to the DRP's satisfaction, that a 'minor beneficial' rating is not achievable, then a 'negligible' visual impact rating must be achieved as a minimum.

The EIS MOD 1 - Victoria Cross Station and Artarmon Substation Modification Report identified a minimum visual impact rating of Negligible from all viewpoints for the scope elements of the design considered in this SDPP.

Using the methodology for visual impact assessment used for the EIS, refer Figure 8-1 below, the visual impact assessment has been updated considering the visual sensitivity and visual modifications from all viewpoints identified in the EIS/Modification Report. Note that the visual sensitivity is consistent with the EIS/modification report unless substantial change to this sensitivity has occurred since the EIS. All viewpoints identified in the EIS/modification report have been assessed.

Visual change	Daytime visual sensitivity				
	National	State	Regional	Local	Neighbourhood
Considerable reduction	Very high adverse	Very high adverse	High adverse	Moderate adverse	Minor adverse
Noticeable reduction	Very high adverse	High adverse	Moderate adverse	Minor adverse	Negligible
No perceived change	Negligible	Negligible	Negligible	Negligible	Negligible
Noticeable improvement	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial	Negligible
Considerable improvement	Very high beneficial	Very high beneficial	High beneficial	Moderate beneficial	Minor beneficial

Figure 8-1 Daytime Visual Impacts. Source: Table 16-2 Sydney Metro Chatswood to Sydenham from the EIS Modification Report

A further visual impact assessment of the design provided in this SDPP has been undertaken in accordance with the methodology identified in the EIS. This assessment concludes that the SDPP achieves a minimum visual impact rating of Negligible for the Artarmon Substation from all viewpoints.

8.1. Updated visual impact assessment

The visual assessment in the EIS modification report identified that the daytime visual impacts for Artarmon Substation would result in Negligible visual impacts on the three viewpoints assessed. Refer Figure 8-2 for a summary of the daytime visual impact assessments that were determined in the EIS modification report from each of the viewpoints identified in Figure 8-3.

Location	Sensitivity rating	Construction impact		Operation impact	
		Change rating	Impact rating	Change rating	Impact rating
Viewpoint 1: View southeast from Reserve Road bridge	Local	Noticeable reduction	Minor adverse	No perceived change	Negligible
Viewpoint 2: View northwest from Reserve Road	Local	Noticeable reduction	Minor adverse	No perceived change	Negligible
Viewpoint 3: View northeast along Whiting Street	Neighbourhood	Noticeable reduction	Negligible	No perceived change	Negligible

Figure 8-2 Extract from 'Daytime Visual Impacts. Source: Figure 14-12 from the EIS MOD 1 Victoria Cross Station and Artarmon Substation Modification Report

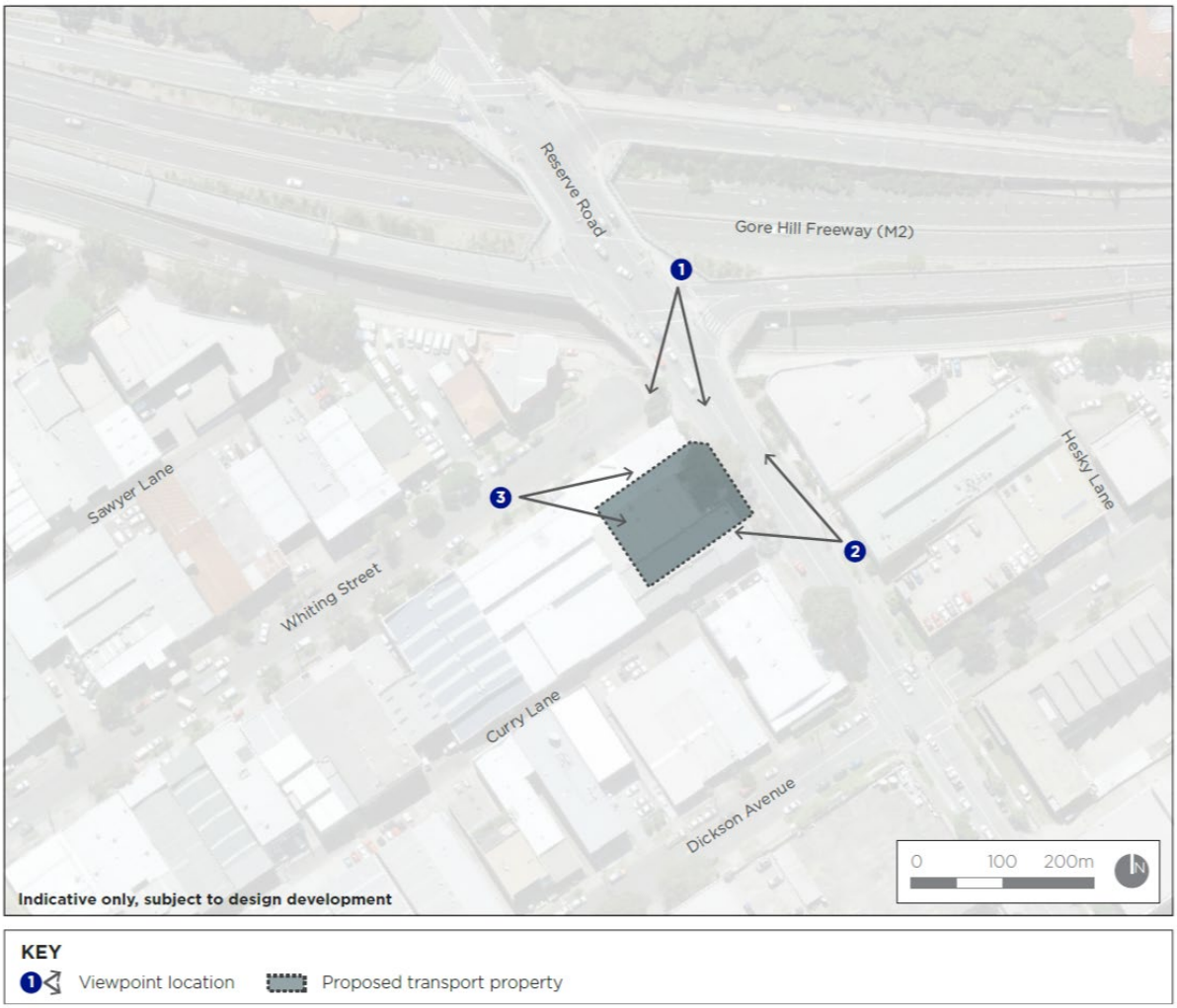


Figure 8-3 Representative viewpoints for Artarmon Substation. Source: Figure 14-2 from the EIS MOD 1 Victoria Cross Station and Artarmon Substation Modification Report

Viewpoint 1

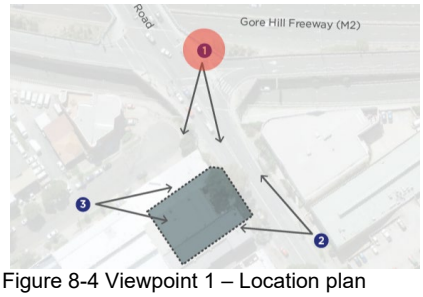


Figure 8-4 Viewpoint 1 – Location plan

Figure 8-5 Viewpoint 1 – Current view (Note: The existing building on the site had already been demolished at the time of the preparation of this SDPP)

Figure 8-6 Viewpoint 1 - SDPP design

In the EIS Modification Report, Viewpoint 1 was assessed as **'Local'** in terms of visual sensitivity.

The SDPP Artarmon Substation design from this viewpoint contributes positively to the existing streetscape.

This results is a **'No Perceived Change'** compared to the existing condition due to:

- the containment of works within the project site
- consistent built form scale and character to the surrounding light industrial built form
- retention of the existing street tree on Whiting Street
- streetscape reinforced with new street trees on Whiting Street and ground cover planting within the project site

Visual Impact Assessment (VIA) achieved - **'Negligible'** rating. This is consistent with the Victoria Cross Station and Artarmon Substation Modification Report VIA rating.

Viewpoint 2

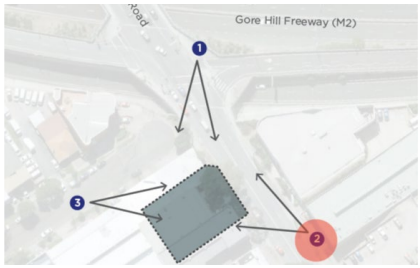


Figure 8-7 Viewpoint 2 – Location plan

Figure 8-8 Viewpoint 2 – Current view (Note: The existing building on the site had already been demolished at the time of the preparation of this SDPP)

Figure 8-9 Viewpoint 2 - SDPP design

In the EIS Modification Report, Viewpoint 2 was assessed as **'Neighbourhood'** in terms of visual sensitivity.

This results is a **'No Perceived Change'** compared to the existing condition due to:

- the containment of works within the project site
- consistent built form scale and character to the surrounding light industrial built form
- retention of the existing street tree on Reserve Road
- streetscape reinforced with new ground cover planting within the project site

Visual Impact Assessment (VIA) achieved - **'Negligible'** rating. This is consistent with the Victoria Cross Station and Artarmon Substation Modification Report VIA rating.

Viewpoint 3

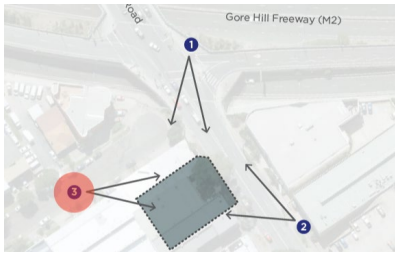


Figure 8-10 Viewpoint 3 – Location plan

Figure 8-11 Viewpoint 3 – Current view (Note: The existing building on the site had already been demolished at the time of the preparation of this SDPP)

Figure 8-12 Viewpoint 3 - SDPP design

In the EIS Modification Report, Viewpoint 3 was assessed as **'Local'** in terms of visual sensitivity.

The SDPP Artarmon Substation design from this viewpoint contributes positively to the existing streetscape.

This results is a **'No Perceived Change'** compared to the existing condition due to:

- the containment of works within the project site
- consistent built form scale and character to the surrounding light industrial built form
- retention of the existing street tree on Whiting Street
- streetscape reinforced with new street trees on Whiting Street and ground cover planting within the project site

Visual Impact Assessment (VIA) achieved - **'Negligible'** rating. This is consistent with the Victoria Cross Station and Artarmon Substation Modification Report VIA rating.

Appendix A Evidence of collaboration and consultation

The following pages contain the consultation meeting minutes, letters and email correspondences provided by the community and stakeholders on the Draft SDPP, along with the project update from Sydney Metro for December 2020.

City & Southwest

Project update – Artarmon substation

December 2020

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new metro railway stations at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central Station.

In 2024, Sydney will have 31 metro railway stations and a 66km standalone metro railway system. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre.

Systems Connect (an unincorporated joint venture between CPB Contractors and UGL Limited) is delivering Line-wide work, which includes installing metro rail track, power systems, communications, signalling systems and infrastructure to turn the excavated tunnels into a working railway between Chatswood and Sydenham.

New substation in Artarmon

As part of the Sydney Metro City & Southwest, a new traction power system is required, including substations and power supply cables. Traction power is an electricity network designed to supply train networks. The Sydney Metro network traction power system will be separated and operate independently from the Sydney Trains network.

The new Artarmon substation will be located on the corner of Reserve Road and Whiting Street. The substation is is planned to be 38 metres long, 28 metres wide and eight metres long. Construction of the substation began in October this year.

Station Design and Precinct Plan (SDPP)

A draft Station Design and Precinct Plan (SDPP) has been prepared for the Artarmon substation showing how the design for the facility was developed. Consultation on the SDPP was carried out in May 2020. Two submissions were received for the SDPP regarding the design of the substation and consideration of other major Sydney infrastructure projects.

The substation has been designed to blend in with the local environment and the design of the substation wil remain. There has been a minor variation in the type of materials used for the façade. These changed and the final SDPP is available here www.sclww.com.au/documents.

Keeping you informed

We have written to the community members who sent in submissions and addressed their concerns individually.

To keep up to date with what is happening in the Artarmon area, please register for email updates, which provide the latest information about our work, including out of hours activities. You can register for updates by sending your details to linewidemetro@transport.nsw.gov.au, or call us on **1800 171 386** and ask for **Tahneal.**

1800 171 386 Community information line open 24 hours

linewidemetro@transport.nsw.gov.au

Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240

If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

sydneymetro.info

Meeting Minutes

Date:	15/05/2020
Time:	11:00
Venue:	Microsoft Teams
Chair:	Tahneal Tantos
Attendees:	Willoughby Council – Norma Shankie-Williams Sydney Metro – Jose Argueta Dominguez, Busara Pruttivarasin, James Porter Systems Connect - Tahneal Tantos, Tim Xiros, Taylor Tsieng, Kia Arbabi, Daniel Boorman, Andrew Ewington, Chris Carr, Kutay Ozay, Julieanne Boustead
Apologies	Systems Connect – Anita Govender
Doc Ref:	20200515_Artarmon Substation_Willoughby Council Meeting
Do you want minutes added to Consultation Manager Y/N? **If no, simple summary for Consultation Manager**	Yes

Item	Note/ Action	Due Date
1. Previous Minutes		
• Nil	-	-
2. Architectural and Landscaping Stage 3 Design (Attachment 1)		
• KO presented the Architectural Stage 3 Design to Willoughby Council. Key topics included: ➢ Overview – Program, Package Scope, Status, Previous Planning Pathways, Location + Context, Design Changes from Metron Stage 1 and Contextual EIS Views ➢ Architecture – Plans, Sections, Screen Detail and Materials (Site Wide, Perforations, Transportable)	Note	-
• AE presented the Landscaping Stage 3 Design to Willoughby Council. Key topics included: ➢ Landscaping plan along Reserve Road and Whiting St frontages of the site	Note	-
• WC supported landscaping plan with footpath trees and low-level planting along boundary.	Note	-
• SC advised that parking for one-(1) x truck size vehicle provided on site. This on-site parking space should satisfy the parking needs for the operation of the substation.	Note	-
• WC requested changes to proposed colour palette. SC to review request.	SC	29/05/2020
• Copies of Noise and Vibration Report requested by WC for information (Attachment 2).	SC	29/05/2020

Meeting Minutes

Item	Note/ Action	Due Date
• Copies of Contamination Studies requested by WC for information. SC to forward when completed.	SC	29/05/2020
3. Station Design and Precinct Plan (SDPP)		
• JB presented the SDPP to Willoughby Council. Key topics included: ➢ Introduction – Purpose of SDPP, project overview, scope, status, structure and compliance ➢ Design development process ➢ Collaboration and consultation ➢ Design objectives, principles and standards ➢ Design opportunities ➢ Details of the SDPP – Design features, precinct (public realm) plan, integrated urban design and place making ➢ Visual impact assessment	Note	-
• SC advised that Draft SDPP will be published on 17/05/2020 for commencement of consultation process. Stakeholders to provide feedback on Draft SDPP within 2 weeks.	Note	-
4. Bulk Power Supply (BPS) Route		
• KO presented the Bulk Power Supply to Willoughby Council. Key topics included: ➢ Plan of underground cable route from Ausgrid Willoughby STS to Artarmon Substation along Carlotta St and Reserve Road ➢ Typical sections and clash detection with existing authority utilities	Note	-
• SC advised that investigation works, and potholing are in progress and meetings are currently being held between the SC construction team and WC traffic manager – Gordon Farrelly.	Note	-
• Copy of BPS plan and section drawings package requested by WC for information (Attachment 3).	SC	29/05/2020
5. Other business		
• SC contact person for WC is Tahneal Tantos – Stakeholder Engagement Manager.	Note	-
6. Next meeting		
To be confirmed by Willoughby Council and Systems Connect.	-	-

Objection to Station Design and Precinct Plan (SDPP) – Artarmon Substation

Peter Egan, 14/26 Hampden Rd, Artarmon 2064,
04 1450 9700, peteregan2001@gmail.com

Sydney Metro City & Southwest,
PO Box K659, Haymarket, NSW 1240
engagement@sclww.com.au

I welcome the opportunity to comment on this plan as detailed in Appendix 2.

I objects to the Artarmon Substation Design and Precinct Plan on the following grounds:

1. The building form is out of character with the neighbourhood.

The prefabricated buildings, essentially construction buildings, surrounded by a corten (rust finished surface) fence, are out of character with the neighbourhood (Figures 1 to 3 below).

It is also out of character with the images of the Substation as depicted in the Chatswood to Sydenham May-June 2016 EIS Summary (Figures 4 and 5). These figures show a well-designed single building with a sparse fence that cannot used as a graffiti billboard.

The neighbourhood is single large buildings of two, or more, stories setback from the street, generally of brick, or cement rendered brick and paint.

The setbacks of neighbouring buildings are:
--- Reserve Road setback is 2.44 m (8 feet)
--- Whiting St setback is 2.64 m (8 ft 8 inches).

The exterior rust-coated 'corten' steel fence of the proposed design will become the local graffiti billboard, thus, it does not meet social objectives.

The buildings and fence, if built, should comply with these setbacks, and have the form of a large single building without fences.

If a fence is used, it should be black with sparse railings on which it is difficult to display an image as per the 2016 EIS Summary (Figure 5). Such fences are used for many TfNSW projects.

2. Conflict with the Beaches Link plan for Reserve Rd

The SDPP was completed 30 April 2017, three years before the "Western Harbour Tunnel and Warringah Freeway Upgrade March 2020" illustration (Figure 6) was released by TfNSW.

The SDPP was also completed three years before the Western Harbour Tunnel EIS was released with plan information for Reserve Rd Artarmon. Extracts are provided in Appendix 1.

The substation plan has not been updated to eliminate the conflict which otherwise reduces the Reserve Rd footpath width from 3.66 metres to 1.86 metres.

The conflict arises from:

--- The Western Harbour Tunnel EIS Appendix F Technical working paper: Traffic and transport (see extracts in Appendix 1) says the Reserve Rd motorway overpass will be widened to 6 lanes using the bridge footpaths (each 1.8 m wide). The overpass will need widening on its eastern side for an extra road lane and pedestrian-cycle path.

The westward shift of the roadway by 1.8 m needs to apply between Barton Rd and Dickson Ave due motorway ramp layout, Reserve Rd congestion, and the current poor Level of Service rating of 'F' for the Barton Rd and Dickson Ave intersections. Figure 7 provides an illustration of the likely layout of reserve Rd between Dickson Ave and Barton Rd.

As the substation will be there for at least a century, provision needs to be made for the road widening whether it proceeds with the Beaches Link project, or not, due to the current congestion of Reserve Rd.

A setback of 2.44 metres becomes a setback of just 0.64 metres from the footpath with the road widening.

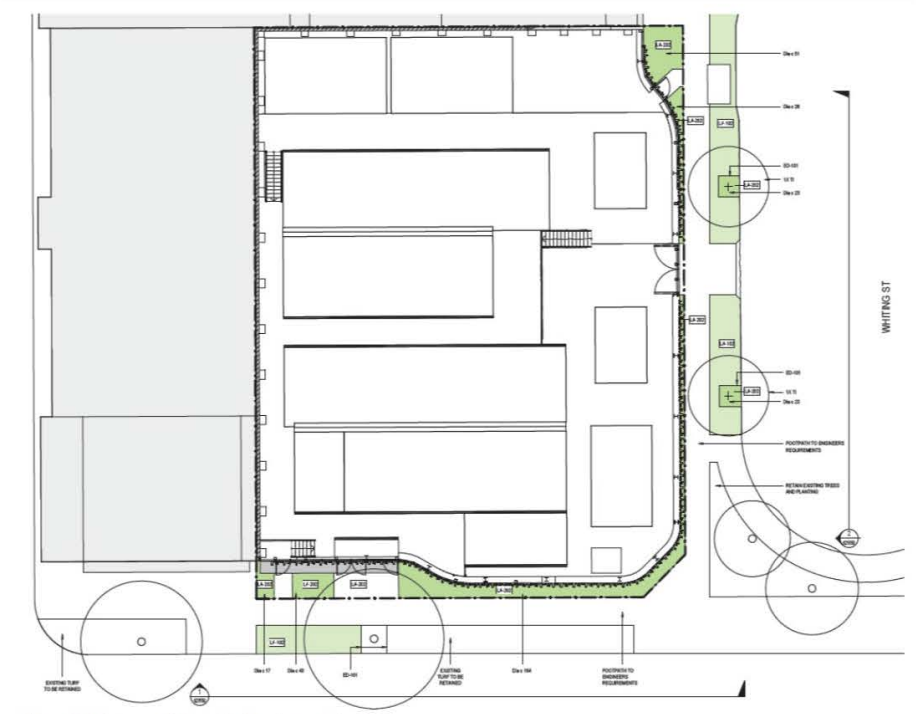


Figure 5-5 Artarmon Substation Landscape Plan

Figure 1 – Station Design Figure 5.5 Artarmon Substation Landscape Plan

Figure 2 – Station Design Figure 5.2 Artarmon Substation Building Setback

(From Section 6.1.4. Materials and Finishes)

Figure 3 – Finish Type 1 - Folded and perforated pre weathered -Weathering Steel (Corten)

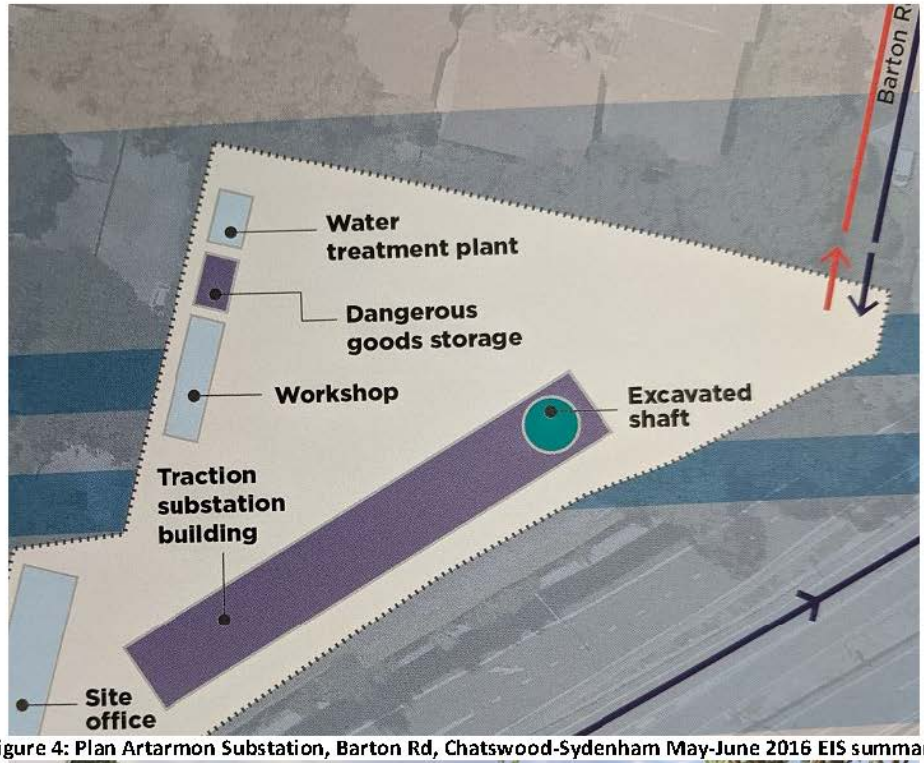


Figure 4: Plan Artarmon Substation, Barton Rd, Chatswood-Sydenham May-June 2016 EIS summary

Figure 5 – Illustration of Artarmon Substation at Barton Rd site – Chatswood to Sydenham May-June 2016 EIS summary

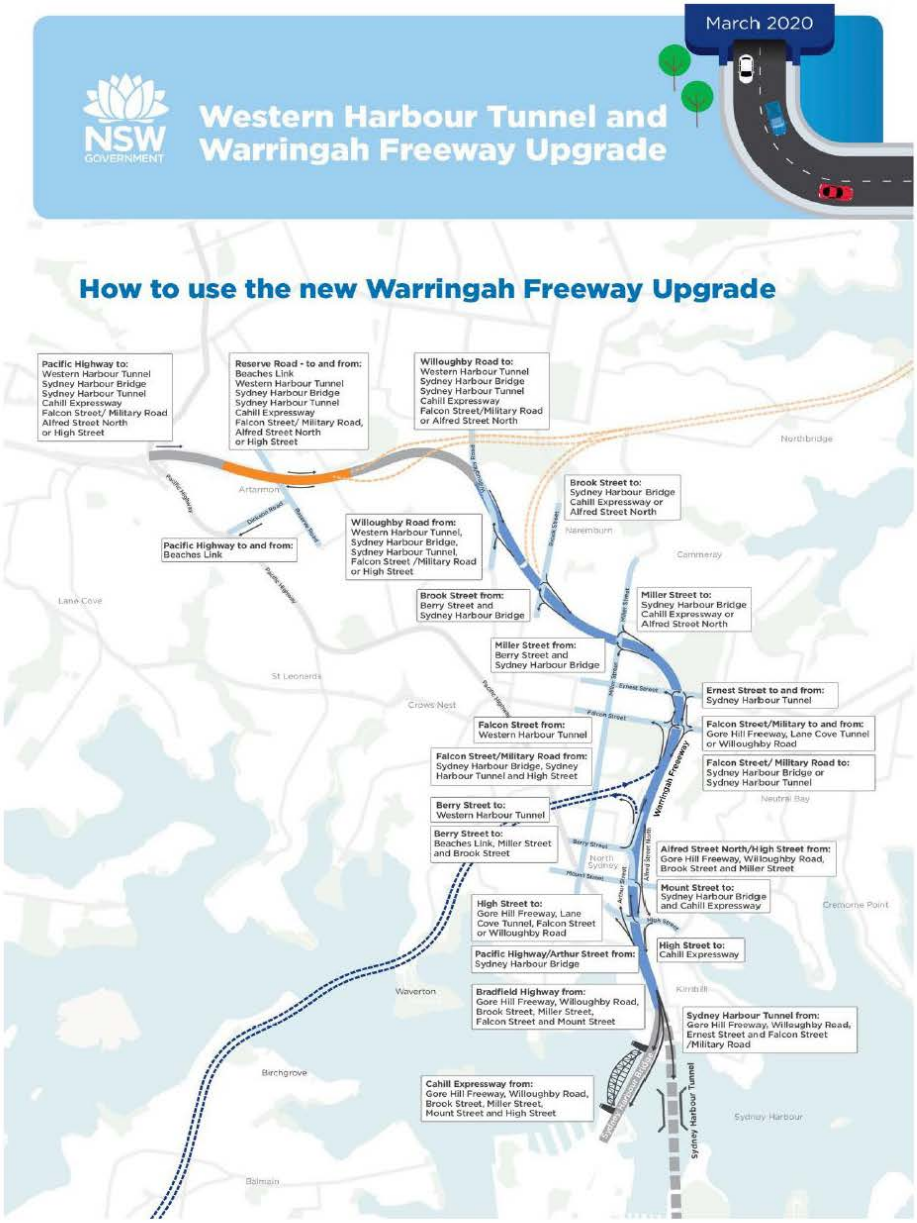


Figure 6 – Western Harbour Tunnel and Warringah Freeway Upgrade March 2020

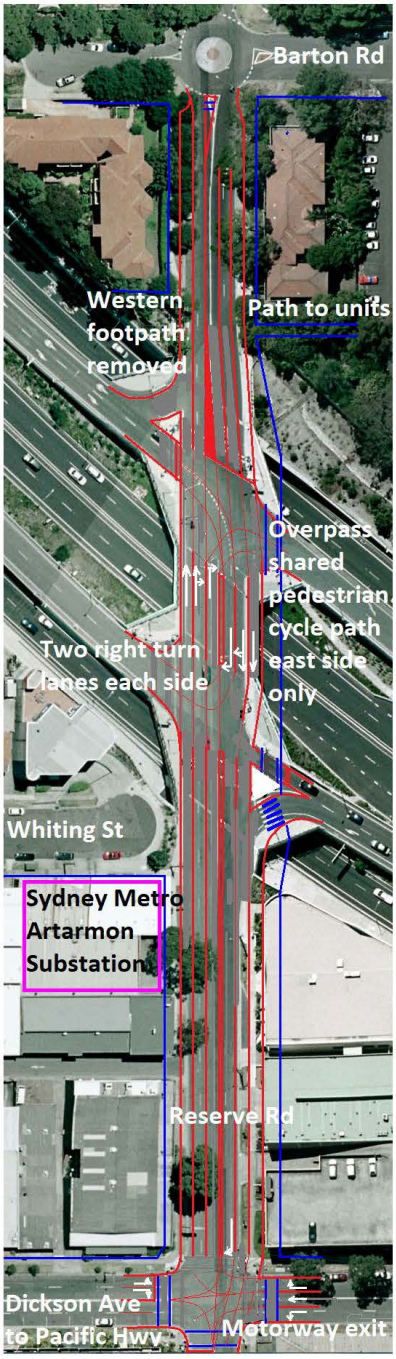


Figure 7 – Reserve Road widening for Beaches Link project

Appendix 1 - EXTRACT - WHT EIS Appendix F Technical working paper: Traffic and transport

8. Cumulative operational impact assessment

8.6 Gore Hill Freeway and Artarmon

8.6.3 Intersection performance

Analysis of intersection performance under the 'Do something cumulative' scenario indicates:

- The Reserve Road interchange would operate with comparable delays to the 'Do something' scenario, with delays on off ramps managed during peak periods to ensure the efficient operation of Gore Hill Freeway under the increased traffic demands of the 'Do something cumulative' scenario. This would increase localised delays at adjacent intersections along Reserve Road, with Dickson Road and Barton Road continuing to operate at a relatively poor LoS F.

APA note: 'Cumulative' means both the Western Harbour Tunnel and Beaches Link are built.

8.6.4 Road network changes and access arrangements

Local road changes as part of the Gore Hill Freeway Connection are required to integrate the Beaches Link Tunnel with the existing road network. This would involve:

- ... Dickson Avenue east of Reserve Road would be converted to a cul-de-sac. ... Access to Dickson Avenue west of Reserve Road would be maintained.
- Modifying the Reserve Road/Dickson Avenue intersection to accommodate the Beaches Link westbound off ramp.
- Installing traffic signals at the Pacific Highway/Dickson Avenue intersection to increase safety and connectivity.

Additional capacity would be provided at the Reserve Road bridge, with the existing footpaths converted to traffic lanes and a new footpath constructed on the eastern side of the bridge. The T2 transit lanes on the Gore Hill Freeway in both directions would be removed and converted to general traffic lanes to improve lane utilisation.

Appendix 2 - Station Design and Precinct Plan - Artarmon Substation

From: Sydney Metro - Systems Connect [mailto:engagement@sclww.com.au]
Sent: Friday, 15 May 2020 4:56 PM
To: sec@artarmonprogress.org.au
Subject: Station Design and Precinct Plan - Artarmon Substation

Good afternoon,

As part of the Sydney Metro City & Southwest, a new traction power system is required, including substations and power supply cables.

A draft Station Design and Precinct Plan (SDPP) has been prepared for the new substation in Artarmon that shows how the design has developed and how it will integrate with the surrounding area.

Further information can be found in the attached notification and you're invited to provide feedback on the draft Artarmon substation SDPP, available at www.sclww.com.au/documents

Please provide your feedback via reply e-mail, by calling 1800 171 386 or writing to Sydney Metro City & Southwest, PO Box K659, Haymarket, NSW 1240 by 5pm Friday 29 May 2020.

For more information about the Artarmon substation SDPP or Sydney Metro City & Southwest, please call 1800 171 386 (24-hour community information line) or email SydneyMetro@transport.nsw.gov.au

Kind regards,

The project team

Artarmon
PROGRESS ASSOCIATION

26 May 2020

Sydney Metro City & Southwest,
PO Box K659
Haymarket NSW 1240

STATION DESIGN AND PRECINCT PLAN – ARTARMON SUBSTATION

The Artarmon Progress Association (APA) welcomes the opportunity to provide comments on the Artarmon Substation Design and Precinct Plan.

The APA has identified two key concerns.

1. The building form is out of character with the neighbourhood

The prefabricated buildings, essentially construction buildings, surrounded by a corten (rust finished surface) fence, are out of character with the neighbourhood (Figures 1 to 3).

It is also out of character with the images of the substation as depicted in the Chatswood to Sydenham May-June 2016 Environmental Impact Statement Summary (EIS) (Figures 4 and 5). These figures show a well-designed single building with a sparse fence that cannot be used as a graffiti billboard.

The neighbourhood is characterised by large buildings of two or more storeys setback from the street and generally of brick, or cement rendered brick and paint.

The setbacks of neighbouring buildings are:

- Reserve Road setback is 2.44 m (8 feet)
- Whiting Street setback is 2.64 m (8 feet 8 inches).

The proposed Artarmon substation is not setback from the boundary.

The exterior rust-coated 'corten' steel fence of the proposed design will likely become the local graffiti billboard causing adverse social issues for the community.

The buildings and any fences should comply with setbacks to neighbouring buildings.

The building should have the form of a single building.

If a fence is required it should be black with sparse railings, similar to the one included in the 2016 EIS Summary (Figure 5). Such fences are difficult to imprint an image or tag and are used for many TfNSW projects.

Artarmon Progress Association Inc • www.artarmonprogress.org.au
PO Box 540, Artarmon NSW 1570 • ABN 77 319 108 019

2. Conflict with the Beaches Link plan for Reserve Rd

The Station Design and Precinct Plan (SDPP) was completed on 30 April 2017, three years before the "Western Harbour Tunnel and Warringah Freeway Upgrade March 2020" illustration (Figure 6) was released by TfNSW.

The SDPP was also completed three years before the Western Harbour Tunnel EIS was released with plan information for Reserve Road Artarmon. Extracts are provided in Appendix 1.

The substation plan has not been updated to eliminate the conflict which otherwise reduces the Reserve Road footpath width from 3.66 metres to 1.86 metres.

The conflict arises from:

- The Western Harbour Tunnel EIS Appendix F Technical working paper: Traffic and transport (see extracts in Appendix 1) says the Reserve Road motorway overpass will be widened to 6 lanes using the bridge footpaths (each 1.8 m wide). The overpass will need widening on its eastern side for an extra road lane and pedestrian-cycle path.

The westward shift of the Reserve Rd roadway by 1.8 m needs to apply between Barton Rd and Dickson Ave due to the motorway ramp layout, Reserve Rd congestion, and the current poor Level of Service rating of 'F' for the Barton Rd and Dickson Ave intersections. Figure 7 provides an illustration of the likely layout of Reserve Rd between Dickson Ave and Barton Rd.

As the substation will be there for at least a century, provision needs to be made for the road widening whether it proceeds with the Beaches Link project, or not, due to the current congestion of Reserve Rd.

A setback of 2.44 metres becomes a setback of just 0.64 metres from the footpath with the road widening.

The APA would be happy to discuss the concerns raised in this submission.

Yours faithfully,

Georgina Roussac
President
Artarmon Progress Association

Who we are

The Artarmon Progress Association, Inc. (APA) was founded in 1906 as a not-for-profit group and our objectives are to promote the welfare, physical and intellectual advancement of the suburb of Artarmon and the City of Willoughby, to protect the interests of the residents, and to encourage a keener spirit of citizenship and mutual help amongst residents.

Our newsletter, the Artarmon Gazette, is distributed quarterly to over 5,000 homes and businesses in Artarmon. We regularly communicate with residents and act as a conduit between local residents and elected representatives on matters concerning our local community.

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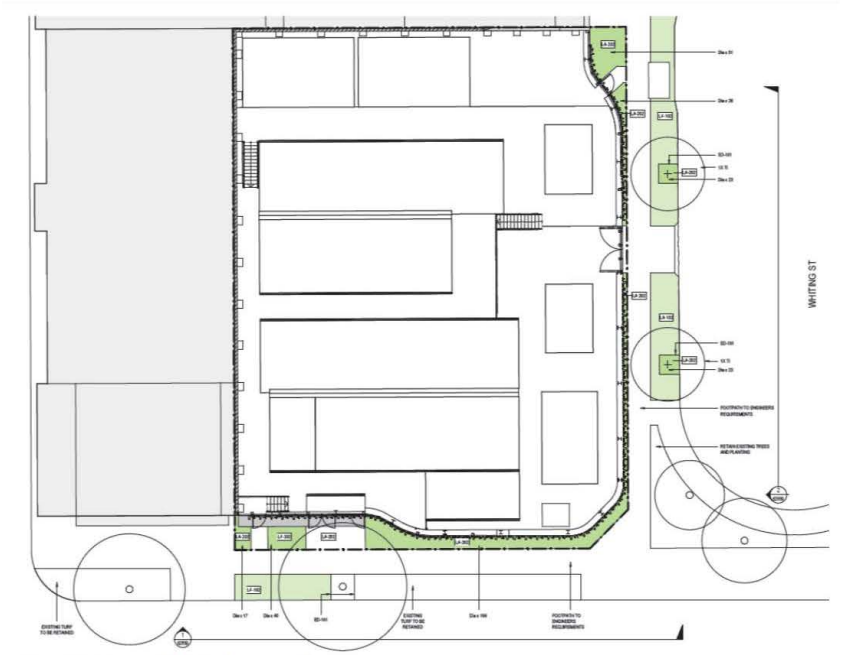
PO Box 540, Artarmon NSW 1570 • ABN 77 319 108 019



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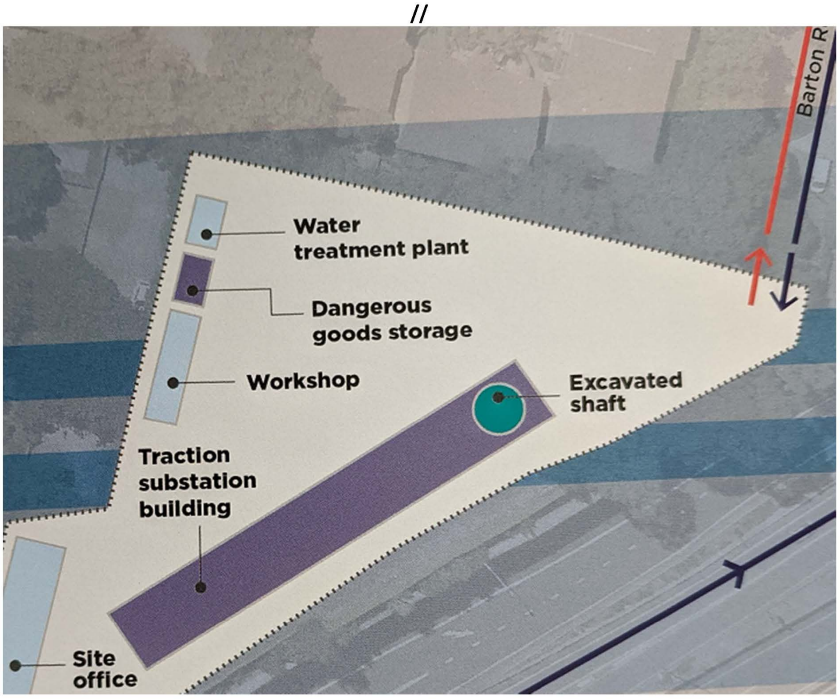

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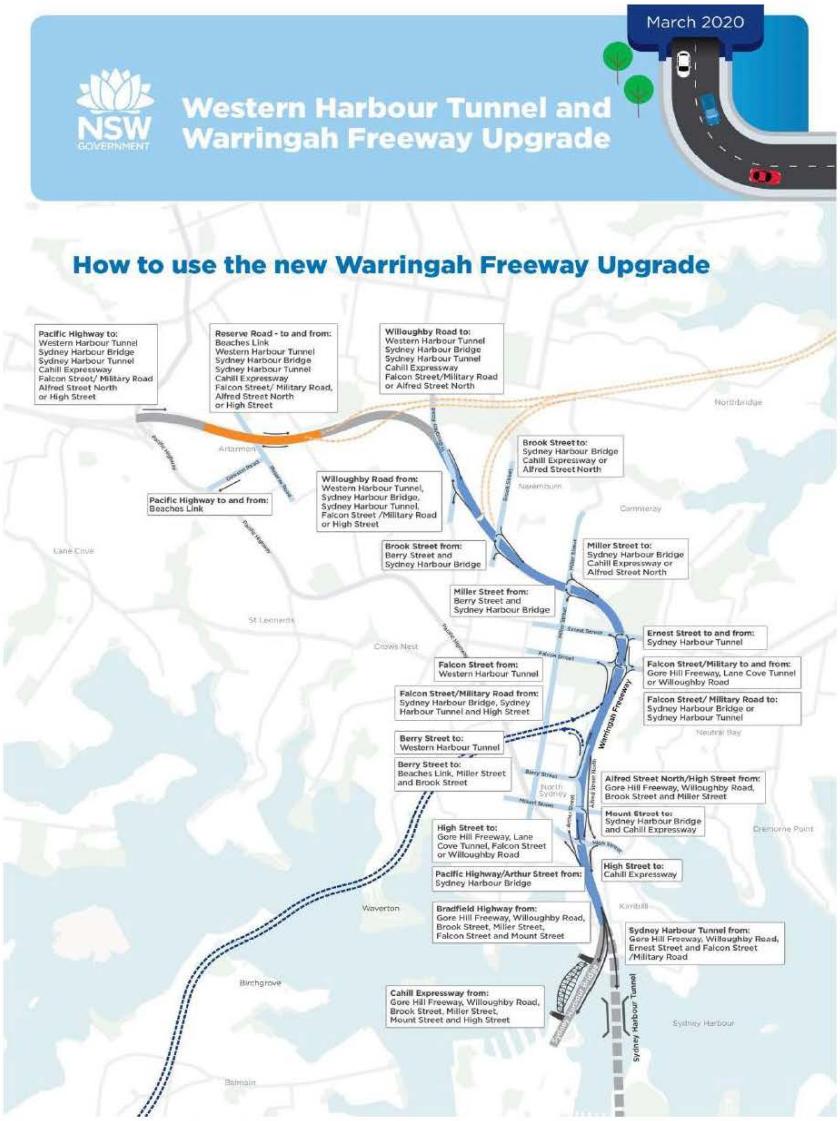

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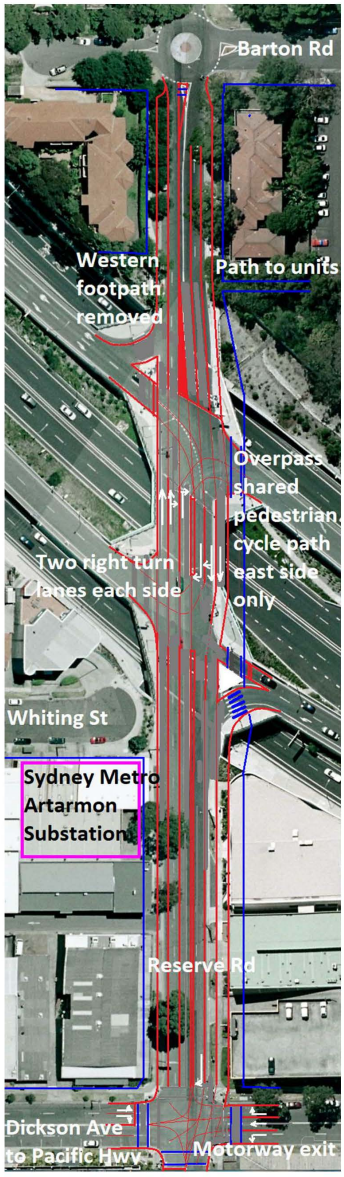

Figure 7 – Reserve Rd widening for Beaches Link project

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APA note: 'Cumulative' means both the Western Harbour Tunnel and Beaches Link are built.

8.6.4 Road network changes and access arrangements

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• Installing traffic signals at the Pacific Highway/Dickson Avenue intersection to increase safety and connectivity.

Additional capacity would be provided at the Reserve Road bridge, with the existing footpaths converted to traffic lanes and a new footpath constructed on the eastern side of the bridge. The T2 transit lanes on the Gore Hill Freeway in both directions would be removed and converted to general traffic lanes to improve lane utilisation.

Appendix B How feedback from consultation has been addressed

Consultation on the SDPP was carried out in May 2020, via letterbox drop, stakeholder email, resident and business phone calls and a briefing for Willoughby Council. Doorknocking properties was not possible due to COVID-19 restrictions in place during the consultation period.

Following the consultation process, two submissions were received for the SDPP. Key issues raised were the design of the substation and consideration of other major Sydney infrastructure projects.

The issues raised were considered by the project team and the concerns around the design have been noted. However as outlined in the SDPP, the substation has been designed to blend in with the local environment and so there are no major changes proposed to the design.

In regards to potential conflict with other major Sydney Infrastructure projects, the design is not planned to interfere with any other major infrastructure works. Specifically the Beaches Link work should not interfere with any work for the substation at this stage, collaboration with other major infrastructure projects will occur if required.

There has been a minor variation in the type of materials used for the façade due to availability of materials and acoustic requirements, it will look very similar to the original design. These changes have been incorporated into the design of the substation included in this final SDPP.

Appendix C Evidence of review by the Design Review Panel

Design Review Panel 17 December 2019	Action
Minutes and Actions	
Package 4010 Artarmon Substation Shaft and Precinct is currently at Stage 1.	Note
The Panel supports the general direction of the revised design for Artarmon Package 4010 as presented.	Note
The Panel supports the proposed materiality of weathering steel (Corten) and agrees with the project team that the wall panel perforation size and/or quantity requires review. The Panel suggests that the Corten steel be pre-weathered.	Perforation size and percentage were investigated further and due to subsequent acoustic requirements the design was amended to exclude any perforations. Material finish was changed from Corten to a folded profiled powder coated sheet aluminium due to graffiti damage concerns as illustrated in Section 6.1.4 Materials and Finishes.
Design Review Panel 31 March 2020	**Action**
Minutes and Actions	
The project team presented Package 4010 with the aim that this would be the last review by the DRP.	Note
The Panel commended the design and agree further review is not required.	Note
Design Review Panel 28 January 2021	**Action**
Minutes and Actions	
The Panel endorses Yvonne von Hartel AM to review the Artarmon SDPP on its behalf. The Panel look forward to the SDPP submission with the below amendments made: _Photos added of existing views to the viewpoint analysis. The Panel understands that these photos were taken after the demolition of the existing building had taken place and recommends the reasons for this are clearly outlined in the report; _Trees added to Viewpoint 3 visualisation as proposed in the landscape plans; _Update image of profiled aluminium to remove perforations as currently proposed; _Ensure the document attached relevant appendix to support statements made in the report.	Updated SDPP submitted for Panel review with requested amendments implemented and comment closed 02/02/2021.
Design Review Panel 24 March 2021	**Action**
Minutes and Actions	
The Panel endorses the Station Design and Precinct Plan for Artarmon Substation, in accordance with Condition of Approval E101(k) of Planning Approval SSI 7400.	Note

Design Review Panel Artarmon SDPP Requirements Review – 19 March 2021

Condition	DRP Comment
General	
The SDPP must be prepared by a suitably qualified and experienced person(s), in collaboration and consultation with relevant stakeholders including but not limited to relevant council(s), the Department, and the local community.	The SDPP has been prepared by Julieanne Boustead of Systems Connect, an experienced Planner. The SDPP gives evidence of her qualifications and the support team at **Appendix A** Consultation with relevant stakeholders is documented **at Appendix D**
The SDPP(s) must present an integrated urban and place making outcome for each station or end state element	This SDPP
Design Elements	
Each SDPP must include, but not be limited to: (a) identification of specific design objectives, principles and standards based on –	Project Design Objectives are stated **Section 4.1** Relevant Standards and Guidelines are listed at **Section 4.8**
(i) the project design objectives as refined by the DRP;	Project Design Objectives are stated **Section 4.1**
(ii) maximising the amenity of public spaces and permeability around entrances to stations	**Section 4.2** discusses maximising the amenity of public spaces
(iii) local environmental, heritage and place making values;	**Section 4.3** identifies the local environmental, heritage and place making values;
(iv) urban design context;	**Section 4.4** identifies the Urban Design Context
(v) sustainable design and maintenance;	**Section 4.6** identifies sustainable design and maintenance
(vi) community safety, amenity and privacy, including 'safer by design' principles where relevant;	**Section 4.5** identifies community safety, amenity and privacy, including 'safer by design' principles where relevant;
(vii) relevant urban design and infrastructure standards and guidelines (including relevant council standards, policies and guidelines);	**Section 4.8** identifies relevant urban design and infrastructure standards and guidelines (including relevant council standards, policies and guidelines);
(viii) minimising the footprint of the project (including at operational facilities);	**Section 4.7** identifies minimising the footprint of the project (including at operational facilities);
(b) opportunities for public art;	Opportunities for Public art are detailed in **Section 5.2**
(c) landscaping and building design opportunities to mitigate the visual impacts of rail infrastructure and operational fixed facilities (including the Chatswood Dive, Marrickville Dive, Sydney Metro Trains Facility South, Artarmon Substation, station structures and services, noise walls etc.);	Opportunities for landscaping and Building design for the Artarmon substation are detailed in **Section 5.1**

(d) the incorporation of salvaged historic and artistic elements onto the project design, including but not limited to the Tom Bass P&O fountain, the Douglas Annand glass screen (if present), the Douglas Annand wall frieze and heritage fabric from Martin Place Station, unless otherwise agreed by the Secretary;	These elements are included in the Martin Place North SDPP and do not form part of this SDPP
(e) details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species;	**Section 6** outlines the Details of the Station Design and Precinct Plans. The Precinct (Public Realm) Plan in **Section 6.2** details the location of existing and proposed landscaping within the precinct/public realm plans.
(f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI;	**Section 6** outlines the Details of the Station Design and Precinct Plans.
(g) the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts;	**Section 6.1** details the key design features, including the external lighting strategy.
(h) details of where and how recommendations from the DRP have been considered in the plan	**Appendix C** details the feedback from the DRP and how the recommendations have been considered in the plan
(i) the timing for implementation of access, landscaping and public realm initiatives;	**Section 7** outlines the implementation of the plan, including timing and monitoring and maintenance.
(j) monitoring and maintenance procedures for vegetation and landscaping (including weed control), performance indicators, responsibilities, timing and duration and contingencies where rehabilitation of vegetation and landscaping measures fail;	**Section 7** outlines the implementation of the plan, **Section 7.2** describes monitoring and maintenance of landscaping
Consultation	
(k) evidence of consultation with the community, local Councils and agencies in the preparation of on the SDPP(s) and how feedback has been addressed before seeking endorsement by the DRP	**Section 3** details the consultation that has occurred during preparation of the plan and how this feedback has been addressed. This is supported by the consultation evidence provided in **Appendix A.**
Visual Impact Assessment	
The SDPP must achieve a minimum visual impact rating of at least “Minor Benefit” as defined in the EIS, as amended by the documents listed in A1, for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP’s satisfaction, that a “Minor Benefit” is not achievable, then a “Negligible” visual impact rating must be achieved as a minimum	**Section 8** provides the visual impact assessment. This assessment concludes that the SDPP achieves a minimum visual impact rating of Negligible for the Artarmon Substation from all viewpoints. **Appendix C** details the feedback from the DRP on the visual impact assessment ratings achieved

Appendix D Qualifications and Experience of the author(s) who prepared this plan

Authors CVs

Curricula Vitae

JULIEANNE BOUSTEAD

Principal

Julieanne has 30 years of experience working in landscape in Sydney, Melbourne and London, where she's successfully managed multi-disciplinary teams on complex urban projects across sectors as diverse as transport, culture and education.

Having joined Hassell in 1994, she's firmly established herself within the roots of the practice – offering guidance and mentoring graduate designers coming up through the practice.

Julieanne's projects include the city-changing Sydney Metro Northwest as well as the transformation of Darwin's waterfront precinct earlier in her career.

She is highly valued for her calm, focused approach and her commitment to consultation with clients and teams through every stage of a project. She wants to ensure she and her team have time to explore a vision and develop a clear concept that can carry a project from concept to execution.

"Great design starts with identifying where we'll get the most value – and then making that the foundation of our work."

Qualifications

- B. Planning & Design, Melbourne University
- MLA, Melbourne University

Professional Affiliations

- Registered Landscape Architect, Australian Institute of Landscape Architects, #1285

Key Projects

- Sydney Metro North West, Sydney, Australia
- Darwin City Waterfront Public Domain, Northern Territory, Australia
- Macquarie University Central Courtyard, Sydney, Australia
- Wentworth Common Regional Playground, Sydney, Australia
- Coal Loader, Sydney, Australia
- Sydney Olympic Parklands, Sydney, Australia
- Cross River Rail Woolloongabba, Boggo Road and Dutton Stations Urban Design and Landscape Architecture, Brisbane, Australia
- Sydenham Station and Junction Metro Upgrade Plazas, Sydney, Australia

Curricula Vitae

ANDREW EWINGTON

Associate, Landscape Architecture

Andrew has over 25 years experience in designed and constructed landscapes in Australia, Fiji, Dubai and Oman.

With qualifications in both landscape architecture and project management, Andrew has always enjoyed playing an ongoing role in the design and construction of a project and seeing works through to completion.

As a landscape architect, Andrew has provided design development, technical direction, documentation coordination, contract administration, quality control and project management on a broad range of projects, including large scale integrated urban design projects and many varied educational, institutional and residential projects.

As a project manager, Andrew has managed teams, subcontractors, suppliers, programmes and cost management whilst also ensuring the original design and overall quality is achieved and maintained throughout the entire project, including public domain, open space, recreational and subdivision works.

Qualifications

- BLA, University of New South Wales
- DipProjMgt, MBH Training
- Registered Landscape Architect, Australian Institute of Landscape Architects, #3273

Experience

- Associate, Hassell, Sydney
- Senior Landscape Architect, Hassell, Sydney
- Project Manager, Design Landscapes, Sydney
- Partner, Site Image Landscape Architects, Sydney
- Senior Landscape Architect, DEM Group, Sydney
- Principal, Babylon Landscapes, Sydney
- Construction Manager, Marsupial Landscapes, Sydney
- Landscape Architect, Landscan, Sydney
- Landscape Architect, Marrickville Council, Sydney
- Landscape Architect, Tropman & Tropman Architects, Sydney

Key Projects

- Darling Harbour Live, Sydney, Australia
- Sydney Metro Northwest, Australia
- Summer Hill Flour Mill, Sydney, Australia
- The Ponds Central and Northern Parklands, Sydney, Australia*
- Bathers Way, Dixon Park, Merewether, Newcastle, Australia*
- Edmondson Park Stage 1, Edmondson Park, Sydney, Australia*
- Coachman's Park, St Marys, Sydney, Australia*
- Stonecutters Ridge, Colebee, Sydney, Australia*
- Jamison Park, South Penrith, Australia*
- Bamal Way Through Link, Coulson St, Erskineville, Australia*
- Pop-Up Park, IUCN World Parks Congress 2014, Homebush, Australia*
- Archikidz Playground, Vivid 2015, Hyde Park Barracks, Sydney, Australia*
- iC Central, Wollongong Innovation Campus, Australia*
- New Leaf, Bonnyrigg, Sydney, Australia*
- Rhodes 1A, 1B, 2A and 2B, Australia*
- Sandgate Road, Shortland, Newcastle, Australia*
- CTCP, Wollongong Innovation Campus, Australia*
- Bernie Banton Centre, Concord Repatriation Hospital, Sydney, Australia*
- Sonaisali Island Resort, Fiji*
- Barka Resort, Oman*
- City Quarter, Camperdown, Australia*

* Prior to working at HASSELL

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Curricula vitae

PETER MONCKTON

Senior Associate

Peter joined HASSELL in 2008 to lead high profile health and other projects.

Prior to joining HASSELL, Peter's apprenticeship began as an undergraduate with Lester Firth Associates in Canberra and upon graduation from Sydney University as an architect with Allen Jack and Cottier P/L. There he remained for many years gaining experience 'across the board', and finally in 1996-99 as the resident Director of AJC – Asia Pacific, in Indonesia and Malaysia.

Peter returned to Sydney and formed the practice of Monckton Fyfe P/L 1999-2006. Early in 2006 Peter joined the Cox Group with the purpose of working on large key overseas projects.

The most acclaimed of his built work as design/project architect are the State Library NSW Mitchell Libarary Galleries, Shoalhaven Cancer Care Centre, Exhibition Building, Darling Harbour Live and The Penfolds Magill Estate winery in Adelaide.

Other large built projects include, the twin 45 storey Luxury Condominium Residential Towers "the Binjai", in KLCC Kuala Lumpur; the Hudson in Alexandria, Sydney; "Coast" 98 low rise beachfront apartments; 26 storey office building in Kuala Lumpur.

Qualifications

- BArch (Hons1), University of Sydney
- BSci (EnvDes), University of Canberra

Experience

- Senior Associate, Hassell
- Senior Associate, Cox Group
- Director, Monckton Fyfe
- Director Asia Pacific, Allen, Jack & Cottier

Key Projects

- State Library of NSW Mitchell Building Galleries and Refurbishment, Sydney, Australia
- Capital Metro, Stages 1 & 2, Reference Design, Canberra, Australia
- Sydney Metro City and Southwest, Southwest Stations and Corridor, Bid Phase, Sydney, Australia
- North West Rail Link (Sydney Metro), Sydney, Australia
- Darling Harbour Live, Sydney, Australia
- Shoalhaven Cancer Care Centre, Australia
- Nepean Hospital, Penrith Health Campus Redevelopment Stage 3, East Block and Dental Clinic, Australia
- Grafton Hospital, Surgical Services and Emergency Department, Australia
- Heidelberg Repatriation Hospital, 122 Bed Secure Extended Care Unit, Melbourne, Australia

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