



Integrated Management System

Planning Approval Consistency Assessment Form

SM ES-FT-414

Sydney Metro Integrated Management System (IMS)

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The Planning Approval Consistency Assessment Form should be completed in accordance with the Sydney Metro Planning Approval Consistency Assessment Procedure (SM ES-PW-314) and Sydney Metro Environmental Planning and Approval Manual (SM ES-ST-216)

1.0 Existing Approved Project

Planning approval reference details (Application/Document No. (including modifications)):

Sydney Metro City and Southwest Chatswood to Sydenham Conditions of Approval (SSI 15_7400) as modified.

Modification 1 – Relocation of Victoria Cross northern services building. Additional station entry and relocation of Artarmon Substation (SSI Mod 1).

Modification 2 – Central Walk – Sydney Metro City and Southwest – Chatswood to Sydenham (SSI Mod 2).

Modification 3 – Martin Place Metro Station - Sydney Metro City and Southwest – Chatswood to Sydenham (SSI Mod 3).

Modification 4 – Sydenham Station and Metro Facility South – Chatswood to Sydenham (SSI Mod 4).

Date of determination:

SSI 15_7400 – 9 January 2017.

SSI Mod 1 – 18 October 2017.

SSI Mod 2 – 21 December 2017.

SSI Mod 3 – 22 March 2017.

SSI Mod 4 – 13 December 2017.

Type of planning approval:

Part 5.1 - Critical State Significant Infrastructure

Description of existing approved project you are assessing for consistency:

SSI 15_7400: The Chatswood to Sydenham component of Sydney Metro City and Southwest comprises a new metro rail line, approximately 16 kilometres long, between Chatswood and Sydenham. New metro stations would be provided at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo, as well as new underground metro platforms provided at Central Station.

Section 7.10.9 of the Environmental Impact Statement (EIS) identified and assessed the location of construction sites at Central Station and Figure 7-16 shows the indicative layout of the construction site at Sydney Yard.

SSI Mod 2: Given the modifications that have been approved, the Chatswood to Sydenham component of Sydney Metro City and Southwest SSI is now approved to operate to Sydenham Station and includes the upgrade of Sydenham Station and the delivery of Central Walk. The Central Station Main (CSM) works are a major element of the Sydney Metro City and Southwest project, which include the construction of a new metro station underneath Central Station's existing heavy-rail platforms 12, 13, 14 and 15, work to the existing Central Station and Central Walk, which includes a new eastern entrance and concourse running below the suburban rail platforms (existing platforms 16 to 23).

Section 7.2 of the SSI Mod 2 modified the Sydney Yard construction site to include a crossing of the suburban tracks to access the suburban surface platforms works (including the delivery and removal of materials). The location of this crossing is shown on Figure 7-2.

The construction of a temporary building adjacent to Platform 0, to house Sydney Trains staff relocated from Sydney Yard, was not identified or assessed in the EIS or the SSI Mod 2.

Relevant background information (including EA, REF, Submissions Report, Director General's Report, MCoA):

- The Sydney Metro City and Southwest – Development Consent – Determination, dated 9th January 2017
- The Sydney Metro City and Southwest - Environmental Impact Statement, dated 3rd May 2016
- The Sydney Metro City and Southwest Chatswood to Sydenham Submissions and Preferred Infrastructure Report dated October 2016
- Letter - Endorsement of Laing O' Rourke CEMP, Heritage Management Plan, and Traffic Management Plan for Sydney Metro City and Southwest - Sydney Yard Access Bridge by Environmental Representative – SM C&SW – SYAB and HV, dated 26 April 2017.
- Sydney Yard Access Bridge – Access and Temporary Construction Area Consistency Assessment, dated 15 September 2017.
- Condition of Approval 18 – Ancillary Facilities, dated 9 January 2017.
- Modification 2 – Central Walk – Sydney Metro City and Southwest – Chatswood to Sydenham (SSI Mod) – 21 December 2017
- Chatswood to Sydenham – Central Walk Modification – Submissions Report – 4 April 2017
- Chatswood to Sydenham – Central Walk Modification – Determination, dated 21 December 2017

All proposed works identified in this assessment would be undertaken in accordance with the mitigation measures identified in the EIS, PIR and the Infrastructure Approval, as modified.

2.0 Description of proposed development/activity/works

Describe ancillary activities, duration of work, working hours, machinery, staffing levels, impacts on utilities/authorities, wastes generated or hazardous substances/dangerous goods used

This Environmental Consistency Assessment has been prepared to address the proposed construction of a temporary office adjacent to Platform 0 at Sydney's Central Station. The temporary office is required to accommodate Sydney Trains staff who are moving out of the Rolling Stock Offices (ORS building) in Sydney Yard to make way for the CSM works compound. The permanent relocation of the ORS building will be undertaken by others.

The works would be undertaken in three stages:

- Site investigations including pot holing, non-destructive digging and survey will take place and a concrete and steel track would then be installed. The track would extend from the existing transformer/ electrical substation to the existing gantry structure, approximately 85 metres in length. This is so that the temporary office components can be lowered via a crane onto the southern end of the track and then 'wheeled' to the northern end. These works will take approximately four weeks to complete and are scheduled to occur during standard construction hours. The indicative plant and equipment will include a concrete truck, a site ute and hand tools. Approximately 15 staff will be required on site to install the track and undertake the investigations.

- The temporary office would arrive to site in several components, be craned into place and ‘wheeled’ along the purpose-built track. It would be built on above ground foundations, level with Platform 0 and the office itself would be approximately 2.4 metres high. A timber infill would be inserted between the temporary office and Platform 0 with a 20mm gap to minimise impacts to the platform. When the separate components of the building are secured together, they will be approximately six metres wide and 85 metres long. The existing fence that runs along the western edge of Platform 0 will be removed for the 85 metre length of the temporary office, prior to the buildings being installed. Temporary fencing will be used to prevent access from the platform to the site when it is not in use. The buildings would be installed on Saturday and Sunday from 8am to 6pm across approximately four weekends as works are required to be undertaken outside of standard construction hours to minimise the disruption to vehicular access at 18 Lee Street. A 100-tonne crane would be used to transfer the building components from the driveway at 18 Lee Street near the wrought iron and sandstone fence, over an existing electrical substation/transformer and onto the grassed strip between the rail corridor and the adjacent office building. Approximately 3 rigid heavy vehicles and a site ute would be required during the works with 25 staff on site.
- The fit out of the temporary office would include connections to stormwater, sewer and electricity as well as the internal fit out and take approximately six weeks, during standard working hours. 5 staff, an excavator, hand tools, site ute and approximately 2 rigid heavy vehicles would be required. Some works to connect utilities would need to occur within the Lee Street Substation construction site.

Construction access to the site would be via the driveway from 18 Lee Street, Chippendale, Sydney (refer to Appendix A for an image of the driveway, office building and transformer). Where required, traffic, pedestrians and cyclists will be held briefly to allow safe vehicle movements into and out of 18 Lee Street.

Pedestrian access for construction workers would be via purpose built scaffolding stairs over the sandstone and palisade fence on the boundary of the Lee Street driveway.

A small amount of concrete, steel, timber, packaging and plastics will be generated during construction. It would be recycled where possible and anything that cannot be recycled will be disposed of at a suitably licenced facility.

The temporary office buildings would be in place for 4.5 years and Sydney Trains staff would move into the new facilities and out of their current location in Sydney Yard once the amenities are in place. Sydney Trains staff will access the office from Platform 0 and work in shifts, 24 hours a day, 7 days a week. No parking is required for staff.

Associated activities including notifications, traffic control, environmental controls, site establishment and fencing and hoarding would be undertaken in accordance with the Revised Environmental Management Measures (REMM) in the Preferred Infrastructure Report, the Conditions of Approval (CoA) and an Environmental Control Map (ECM) that will be developed for the proposed works.

3.0 Timeframe

When will the proposed change take place? For how long?

The construction of the temporary office would take place between May and October 2018. The construction of the temporary office will be the subject of a pre-construction minor works approval.

Approved, standard working hours for the Project are as follows:

- 0700 – 1800 Monday to Friday
- 0800 – 1300 Saturdays
- No works Sundays or Public holidays

As these works are proposed to be outside of standard construction hours they will be undertaken in accordance with the REMM and the CoA for the Project and Sydney Metro out of hours works protocol.

4.0 Site description

Provide a description of the site on which the proposed works are to be carried out, including, Lot and Deposited Plan details, where available. Map to be included here or as an appendix. Detail of land owner.

The temporary office would be installed between the rear of 18 Lee Street, Sydney and the rail corridor fence on Platform 0 at Sydney Central Station (refer to Appendix B for the site location).

The site is zoned SP2 – Special Purpose (Infrastructure) and is owned by Sydney Trains. It is a grassed, flat piece of land, approximately 6 metres wide and 90 metres long. There is a gantry to the north and a caged electrical transformer to the south.

The site is located on Lot/Section/Plan no: 118//DP1078271, which is where the majority of works for the Sydney Metro - Chatswood to Sydenham - City & Southwest Project will take place.

The Sydney Railway Square Youth Hostel is approximately 30 metres north of the site.

There is a gate and stairs from Platform 0 that office workers use to access the rear of one of the buildings at 18 Lee Street. This access will not be impacted during construction or by temporary office as the access point is north of the gantry and away from the office location.

Site access to install the temporary office would be from the driveway on 18 Lee Street. This driveway leads to an underground carpark for the offices at 18 Lee Street and to the Lee Street Substation, which is currently under construction.

5.0 Site Environmental Characteristics

Describe the environment (i.e., vegetation, nearby waterways, land use, surrounding land use), identify likely presence of protected flora/fauna and sensitive area.

The ground cover at the site is long grass and weeds, interspersed with some rubbish.

The surrounding land uses are roads including Lee and Regent Streets, the rail corridor and associated infrastructure, office buildings and a hotel.

The site is located within the state heritage listed Sydney Terminal and Central Railway Stations Group (01255), on Eddy Avenue, Sydney.

There were no Aboriginal heritage items located within 100 metres of the Central Station works, with the nearest site 330 metres away (*Sydney Metro Chatswood to Sydenham Technical paper 5: Aboriginal Heritage – Archaeological Assessment, Artefact 2016*). The site appears highly disturbed, overlaid with gravel, does not show signs of any landscape features that are likely to indicate the presence of Aboriginal heritage and as such it is unlikely that Aboriginal heritage will be impacted by the proposal.

The Eastern Bentwing-bat and the Eastern Freetail-bat could inhabit buildings and bridges at Central Station (*Sydney Metro Chatswood to Sydenham Technical Paper 9: Biodiversity Assessment, Arcadis 2016*). Given that no buildings or bridges are being removed or impacted as part of the proposal then impacts to the bats is unlikely.

There are some planted trees in a landscaped garden adjacent to the driveway on Lee Street.

There are no waterways within 50 metres of the site.

6.0 Justification for the proposed works

Address the need for the proposed works, whether there are alternatives to the proposed works (and why these are not appropriate), and the consequences with not proceeding with the proposed work.

Sydney Yard was approved as the location for the construction compound for the Central Station Main (CSM) works, including site sheds. The approval includes the demolition of the Rolling Stock Offices and the Cleaner's Amenities Building in Sydney Yard to make way for the construction compound. The two buildings are currently being used by Sydney Trains staff however as these buildings are demolished, Sydney Trains staff need to be relocated elsewhere before site sheds for the CSM works can be constructed.

The construction of a temporary office adjacent to Platform 0 is required to house Sydney Trains staff relocating from Sydney Yard. This will enable CSM works construction staff to operate efficiently from the construction compound in Sydney Yard.

7.0 Environmental Benefit

Identify whether there are environmental benefits associated with the proposed works. If so, provide details:

The relocation of Sydney Trains staff out of the ORS building in Sydney Yard will enable the efficient movement of plant and equipment in and around the Sydney Yard construction site to assist in meeting project construction timeframes.

8.0 Control Measures

Will a project and site specific EMP be prepared? Are appropriate control measures already identified in an existing EMP?

A site specific ECM would be prepared incorporating control measures from this assessment, the REMM and CoA.

9.0 Climate Change Impacts

Is the site likely to be adversely affected by the impacts of climate change? If yes, what adaptation/mitigation measures will be incorporated into the design?

No. The proposed works are unlikely to be adversely affected by impacts of climate change due to the location and proposed management measures.

10.0 Impact Assessment – Construction

Attach supporting evidence in the Appendices if required. Make reference to the relevant Appendix if used.

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No flora and fauna will be impacted by the construction of the temporary office.	No additional mitigation measures are to be implemented.	Y	Y	
Water	Run off from the temporary office will be directed to the existing stormwater network and will be channelled via downpipes. The volume of water generated for the term of the temporary office is expected to be similar in volume to that identified and assessed in the EIS for the Sydney Yard site office. Potable water for the temporary office would be supplied from an existing point on Platform 0. The volume of water used for the term of the temporary office is expected to be similar to that identified and assessed in the EIS for the Sydney Yard site office.	No additional mitigation measures are to be implemented.	Y	Y	
Air quality	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Noise vibration	The noise and vibration assessment in the EIS included the impact to receivers that are located within 200 metres from the nominated construction site at Sydney Yard. The temporary office would be located approximately 120 metres from Sydney Yard	No additional mitigation measures are proposed.	Y	Y	

	<p>at its furthest point. The construction activities associated with the installation of the temporary office would take approximately 14 weeks and be less noisy than the construction site in Sydney Yard that was identified and assessed in the EIS, given the smaller amount of plant and equipment required and the small scale of works being undertaken over a short timeframe. The site would however be closer to some sensitive receivers including the Sydney Railway Square Youth Hostel. The Hostel (in particular the train carriages on Platform 0) would be approximately 130 metres away from the location of plant and equipment during the construction of the temporary office but it would be screened by the Lee Street office buildings.</p> <p>The works would take place during day time hours and therefore the impact on the hostel is expected to be negligible. Once the temporary office is in place, fit out works would be approximately 30 metres from the hostel, they would occur during daytime hours and be minor in nature with a negligible amount of noise.</p> <p>Construction traffic to the site would use major arterial roads to avoid impacts to nearby sensitive receivers on local roads. Given the small number of vehicles (approximately 12) required to complete the investigations, office installation and fit out, combined with the works being undertaken during daytime hours and in stages, the impact from construction traffic is expected to</p>				
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	<p>be minimal.</p> <p>The works involving the 100 tonne crane and trucks would take place on the weekend between 8am and 6pm to minimise disruption to the driveway access on Lee Street and noise impacts to nearby receivers. This would be subject to out of hours work approval and be temporary, taking approximately 4 weekends to complete.</p> <p>The investigations and the fit out of the building would take place during standard working hours:</p> <ul style="list-style-type: none"> • 7am to 6pm Monday – Friday • 8am to 1pm Saturday • No work on Sunday. <p>No vibration generating equipment would be used during the construction of the temporary office.</p> <p>When the office is being used by Sydney Trains staff, the noise generated will be consistent with the movement and chatter of people on Platform 0. Access to the office is required 24 hours a day, 7 days a week for the term of the office however only a small number of staff will be on site during evening shifts and no noisy activities will be undertaken. It is noted that the transport announcements that currently take place on Platform 0/1 are far louder than the noise that would be generated by office staff coming and going.</p> <p>The impacts from noise and vibration are expected to be minor and temporary and less adverse than those identified and assessed</p>				
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	in the EIS for site sheds of a similar scale and nature.				
Indigenous heritage	<p>The Central Station site is within Method Area 2 as outlined in the Aboriginal Cultural Heritage Assessment Report (CHAR) (Artefact Heritage 2016b).</p> <p>The impacts of these works would be similar to those described in the EIS.</p>	<ul style="list-style-type: none"> All excavation is to be undertaken in accordance with the Sydney Metro AMS – Central Station Metro Early Works (Artefact 2018). Aboriginal objects cannot be impacted during early works. 	Y	Y	
Non-indigenous heritage	<p>The temporary office would be located within the curtilage of the state heritage listed Sydney Terminal and Central Railway Stations Group (01255). The associated built heritage items include Platform 0 and the sandstone and wrought iron fence bordering the Lee Street driveway.</p> <p>Artefact (2018) prepared a Statement of Heritage Impact (Central Station Main Works: Early Works Statement of Heritage Impact) (Appendix D) for the temporary office adjacent to Platform 0.</p> <p>There is the potential to impact on the fabric of Platform 0 when the crane installs the temporary office however this is considered unlikely and the platform will be appropriately protected from damage.</p> <p>The existing green metal fence that runs along Platform 0 would be removed to facilitate the works. This would result in bolts being removed from the edge of Platform 0 but no other works or impacts to the platform. The fence would be reinstated once the temporary office has been removed, using the same bolts and bolt holes to minimise</p>	<ul style="list-style-type: none"> Platform 0 and the wrought iron and sandstone fence on the driveway are to be protected whilst works are taking place. The sandstone and wrought iron fence on the driveway is not to be dismantled. The connection from the temporary office to Platform 0 is to include a 20mm gap to avoid direct impacts. The timber in fill will not be directly connected to the platform. No works are to involve penetration of, drilling or fixing to Platform 0 or other nearby significant fabric, such as the rear of the Henry Deane Plaza buildings. The crane lifts must be adequately controlled to prevent any impacts to the 	Y	Y	

<p>impacts to the heritage fabric.</p> <p>The location of the temporary office has the potential to impact on the fabric of Platform 0 if it abuts the western side of the platform. This is considered unlikely as the temporary office will be free standing, has been designed with a gap between the office and the platform and will not require fastening to the platform.</p> <p>The installation of scaffolding over the sandstone and iron fence would have a temporary high visual impact to the significance of the fence but it would have a neutral permanent visual impact as it will be removed when the temporary office is in place. The scaffolding would have no direct impact to the significant fabric and therefore no impact on the significance of the Central Station.</p> <p>The change of views from the offices at 18 Lee Street across to the heritage item are expected to be minor as the office windows will be higher than the top of the temporary office and the impact is temporary. The views from the office to Platform 0 would be obscured whilst the temporary office is in place however this is a minor temporary impact.</p> <p>Given the highly disturbed nature of the proposal location and past history of disturbance, there is not expected to be impacts to archaeological deposits associated with Central Station. The study area has low to moderate potential to contain archaeological remains associated with the</p>	<p>nearby heritage items (Platform 0 and the sandstone and wrought iron fence).</p> <ul style="list-style-type: none"> • Archaeological remains cannot be impacted by early works. • All excavation is to be undertaken in accordance with the Sydney Metro AMS – Central Station Metro Early Works (Artefact 2018). • The temporary scaffolding will be light weight and free standing and will not be fixed to elements of the sandstone or iron fence. • The temporary scaffolding will be designed to be sturdy enough to withstand high point loads to prevent damage to the fence if direct force is applied. • All works are to be undertaken in accordance with the Central Station Main Works: Early Works Statement of Heritage Impact (Artefact 2018). 				
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	<p>first and second railway expansion, the third central Station expansion and the expansion of central Station, existing build heritage and sub-surface deposits relating to post-1901 station infrastructure (Sydney Metro AMS – Central Station Metro Early Works, Artefact 2018) (Appendix C).</p> <p>The temporary office would add visual clutter to Platform 0 however it would be at the southern end of the platform, away from the Grand Concourse and installed to the west, which would further obscure the views from Central Station. It would be visible to people on the regional and intercity trains, however the impact to views would be minor and temporary.</p> <p>The impacts to non-Indigenous heritage are expected to be minor and temporary and less adverse than those described in the EIS for the Sydney Central and Railway Stations Group.</p>				
Community and stakeholder	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Traffic	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Waste	Sewage waste from the temporary office would be connected to an existing outlet in close proximity to the Lee Street Substation. The temporary office adjacent to Platform 0 is an additional office to what was identified and assessed in the EIS however the volume and type of waste generated would be similar to that described in the EIS for the temporary construction site office in Sydney Yard.	No additional mitigation measures are proposed.	Y	Y	

	The electricity connection for the temporary office would be from an existing supply on the platform canopy. The amount of electricity used for the term of the temporary office would be similar to that described and assessed in the EIS for the site office in Sydney Yard.				
Social	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Economic	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Visual	There will be a temporary impact to the viewshed from the office building on Lee Street while the temporary office is craned into place. The works that require the crane will be undertaken on the weekend, when the office is expected to be empty and as such it is unlikely there will be an adverse visual impact of these works during construction. The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Urban design	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Geotechnical	No geotechnical works are proposed.	NA	Y	Y	
Land use	The impacts of these works will be similar to those described in the EIS.	No additional mitigation measures are proposed.	Y	Y	
Climate Change	There will be no climate change related impacts.	No additional mitigation measures are proposed.	Y	Y	
Risk	There are no additional risks associated with these changes.	No additional mitigation measures are proposed.	Y	Y	

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Other	NA	NA	Y	Y	
<p>Management and mitigation measures</p>	<p>Additional management and mitigation is required to protect heritage items in the vicinity of the proposed works.</p>	<ul style="list-style-type: none"> • Platform 0 and the wrought iron and sandstone fence on the driveway are to be protected whilst works are taking place. • The sandstone and wrought iron fence on the driveway is not to be dismantled. • The connection from the temporary office to Platform 0 is to include a 20mm gap to avoid direct impacts. The timber in fill will not be directly connected to the platform. • No works are to involve penetration of, drilling or fixing to Platform 0 or other nearby significant fabric, such as the rear of the Henry Deane Plaza buildings. • The crane lifts must be adequately controlled to prevent any impacts to the nearby heritage items (Platform 0 and the sandstone and wrought iron fence). • Archaeological remains cannot be impacted by early works. • All excavation is to be undertaken in accordance with the Sydney Metro AMS – 	<p>Y</p>	<p>Y</p>	



		<p>Central Station Metro Early Works (Artefact 2018).</p> <ul style="list-style-type: none">• The temporary scaffolding will be light weight and free standing and will not be fixed to elements of the sandstone or iron fence.• The temporary scaffolding will be designed to be sturdy enough to withstand high point loads to prevent damage to the fence if direct force is applied.• All works are to be undertaken in accordance with the Central Station Main Works: Early Works Statement of Heritage Impact (Artefact 2018).• Aboriginal objects cannot be impacted during early works.			
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11.0 Impact Assessment – Operation

Attach supporting evidence in the Appendix if required. Make reference to the relevant Appendix if used.

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Water	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Air quality	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Noise vibration	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Indigenous heritage	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Non-indigenous heritage	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Community and stakeholder	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Traffic	Sydney Trains office relocation is temporary	Not applicable		Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
	only. No change to the operational impacts described in the EIS.				
Waste	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Social	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Economic	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Visual	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Urban design	Sydney Trains office and workshop relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Geotechnical	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Land use	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Climate Change	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Risk	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Other	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	
Management and mitigation measures	Sydney Trains office relocation is temporary only. No change to the operational impacts described in the EIS.	Not applicable		Y	

12.0 Consistency with the Approved Project

<p>Based on a review and understanding of the existing Approved Project and the proposed modifications, is there a transformation of the Project?</p>	<p>No. The proposed works would not transform the project. The Approved Project would continue to provide a new metro line between Chatswood and Sydenham. The proposed works are within the Central Station precinct.</p>
<p>Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?</p>	<p>Yes. The proposed works would assist the Approved Project to achieve its objectives and functions. A temporary office would allow for the establishment of the construction site in Sydney Yard and enable the construction of the Central Station Main Works. This will assist the Central Station component of the Approved Project to be constructed within the required timeframes and assist in delivering the objectives to provide a reliable, quality and resilient transport offering to the customer.</p>
<p>Is the project as modified consistent with the objectives and functions of elements of the Approved Project?</p>	<p>Yes. The proposed works are consistent with the objectives and functions of the construction site in Sydney Yard. The proposed works would allow the construction site to function efficiently in accordance with the layout identified and assessed in the EIS.</p>
<p>Are there any new environmental impacts as a result of the proposed works/modifications?</p>	<p>Yes. There are new temporary impacts due to the location of the temporary site office however these are considered minor and are similar in nature to those identified and described in the EIS for the Approved Project.</p>
<p>Is the project as modified consistent with the conditions of approval?</p>	<p>Yes. The proposed works are consistent with the conditions of approval for the Approved Project and no changes are required to accommodate them.</p>
<p>Are the impacts of the proposed activity/works known and understood?</p>	<p>Yes. The impacts of the proposed works are known and understood. Detailed site plans and construction methodologies are in place to outline the proposed works and specialist reports were prepared to assess the impacts.</p>
<p>Are the impacts of the proposed activity/works able to be managed so as not to have an adverse impact?</p>	<p>Yes. The impacts would be managed to avoid adverse impacts. The relevant conditions of approval, revised environmental management measures and control measures identified in this assessment would be implemented before and during the proposed works to ensure they do not have an adverse impact on the surrounding the environment.</p>

13.0 Other Environmental Approvals

Identify all other approvals required for the project:

Pre-construction minor works approval.
Out of hours works approval.

Author certification

To be completed by person preparing checklist.

I certify that to the best of my knowledge this Consistency Checklist:

- Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the Proposed Revision; and
- Examines the consistency of the Proposed Revision with the Approved Project; is accurate in all material respects and does not omit any material information.

Name:	Leah Henderson	Signature:	
Title:	Environment Manager	Date:	26/4/2018
Company:	Laing O'Rourke		

Environmental Representative Review


(Additional step for City & Southwest projects only – if this is a CA against a Northwest Project or REF delete this table)

As an approved ER for the Sydney Metro City & Southwest project, I have reviewed the information provided in this assessment. I am satisfied that mitigation measures are adequate to minimise the impact of the proposed work.

Name:	Annabelle Tungol Reyes	Signature:	
Title:	Environmental Representative	Date:	26 April 2018

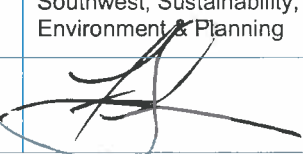
This section is for Sydney Metro only.

Application supported and submitted by

Name:	Yvette Buchli	Date:	26/4/18
Title:	Planning Manager	Comments:	/
Signature:			

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

- Yes The proposed activity/works are consistent and no further assessment is required.
- No The proposed works/activity is not consistent with the Approved Project. A modification or a new activity approval/ consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by			
Name:	FIL CERONE	Date:	30/4/18
Title:	Principal Manager Northwest City & Southwest, Sustainability, Environment & Planning	Comments:	
Signature:			

Appendix A



Photo 1: View from Platform 0 to the Lee Street driveway. Sandstone and wrought iron fence at the driveway edge.



Photo 2: View from Platform 0 to the Transformer/substation at the southern extent of the site.

Photo 3: View looking south along the proposal site.



Appendix B



Appendix C



Central Station Main Works – Early Works: Archaeological Method Statement

Project: Sydney Metro – Chatswood to Sydenham	Date: 20 April 2018
Project site: Central Station Main Works	Author: Shona Lindsay (Senior Heritage Consultant); Dr Iain Stuart (Excavation Director - Historical), Dr Sandra Wallace (Excavation Director – Aboriginal)
Contractor: Laing O’Rourke	Contact: Chris McCallum

Background

This Archaeological Method Statement (AMS) outlines the archaeological methodology to manage early works to avoid impacts to non-Aboriginal archaeological sites and relics and Aboriginal objects at the Central Station Main Works site. Heritage items, including archaeological sites, relics and Aboriginal objects, cannot be impacted prior to approval of the Construction Environmental Management Plan (CEMP) and heritage sub-plan in accordance with the Minister’s Conditions of Approval for the Sydney Metro City & Southwest - Chatswood to Sydenham project.

The methodology has been informed by, and is in accordance with, the following project assessment and management documents:

- Artefact Heritage 2016a. Sydney Metro City & Southwest - Chatswood to Sydenham Non-Aboriginal Archaeological Assessment and Research Design (AARD)
- Artefact Heritage 2016b. Sydney Metro City & Southwest - Chatswood to Sydenham Aboriginal Cultural Heritage Assessment Report (CHAR)
- Artefact Heritage 2017. Central Walk – Addendum AARD
- Transport for NSW 2017. Sydney Metro Unexpected Heritage Finds Procedure
- Transport for NSW 2018. Sydney Metro Exhumation Management Plan

Approval framework

The CEMP including the heritage sub-plan for the approved Central Station Main Works project has not yet complied with Conditions C1 to C7 of the Minister’s Conditions of Approval for the Sydney Metro City & Southwest - Chatswood to Sydenham project.¹ The Heritage Division of the NSW Office of Environment and Heritage (OEH) and the relevant local councils are required to review the CEMP heritage sub-plan prior to its publication, in accordance with Conditions C1 and C3 of the CSSI approval.

The Conditions of Approval stipulate that low impact work, such as investigative excavations, is able to be undertaken prior to the approval of the CEMP heritage sub-plan unless heritage items

¹ NSW Government Department of Planning & Environment, 2017. *Critical State Significance Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval*.

(including significant archaeological sites, relics and Aboriginal objects) are affected or potentially affected.² This AMS is required to act as a framework to facilitate the avoidance of impacts to archaeological heritage items as defined by the approval, during early works.

Condition E17 stipulates requirements for AMS documents. As this AMS relates only to early works, and does not provide for mitigation of impacts to significant archaeological remains, the Condition E17 would not be met at this stage. An additional AMS, or several work stage specific AMS documents, would be provided for construction works at a later date.

Condition E18 requires the nomination of an Excavation Director who complies with the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (July 2011). Information on the nominated Excavation Director and archaeological team have been provided for approval by the Heritage Division as a delegate of the NSW Heritage Council.

Archaeological Resources

Archaeological resources at the Central Station site are related to the former Devonshire Street cemetery, First and Second Railway Station expansion, Third Central Station, and the expansion of Central Station in the twentieth century and associated upgrades. The Devonshire Street Cemetery was the second formal burial ground established in the colony in 1820, and continued in use until the 1860s. The First Station was constructed in 1855 and the Second Station was built in 1874. The Third Central Station was constructed between 1906-1926 during large-scale expansion of Central Station.

The plan of archaeological management for the Central Station Main Works site prepared as part of the Sydney Metro City & Southwest - Chatswood to Sydenham AARD and amended in accordance with the Central Walk CSSI modification has been reproduced in Figure 1 (Artefact 2016a and 2017).

Proposed Works

The proposed early works that include excavation are:

- **Preparation of Platforms 20/21 and 22/23 for the future installation of staircases to provide temporary access to the platforms via the existing Olympic Tunnel** - The works to Platforms 20/21 and 22/23 involve the removal of an approximately 7m by 4m area to a depth of approximately 2m on each platform, located to the north of the centre of the platforms. Prior to works, temporary hoarding around the area of works and protection for the nearby canopies and posts would be installed. These works would be undertaken by first cutting and removing the tiles and concrete slab of the platforms within the 7m by 4m area, use of a low headroom drilling rig to install bored piles through the platforms around the area to excavated, and removal of the platform structure/fill in the area. Given the sequencing of construction activities for the Olympic stairs, further excavation to reach the Olympic Tunnel, the installation of stairs, and installation of balustrading is anticipated to occur post approval of the CEMP.
- **Combined services route (CSR), galvanised steel trough (GST) & under line crossing (ULX) potholing and excavation** - The works for the CSR route would include NDD to locate services, excavate fill, place conduits, then compact the area. The installation of GST would be along the side of the retaining wall south of platform 15 up to the existing buildings to be

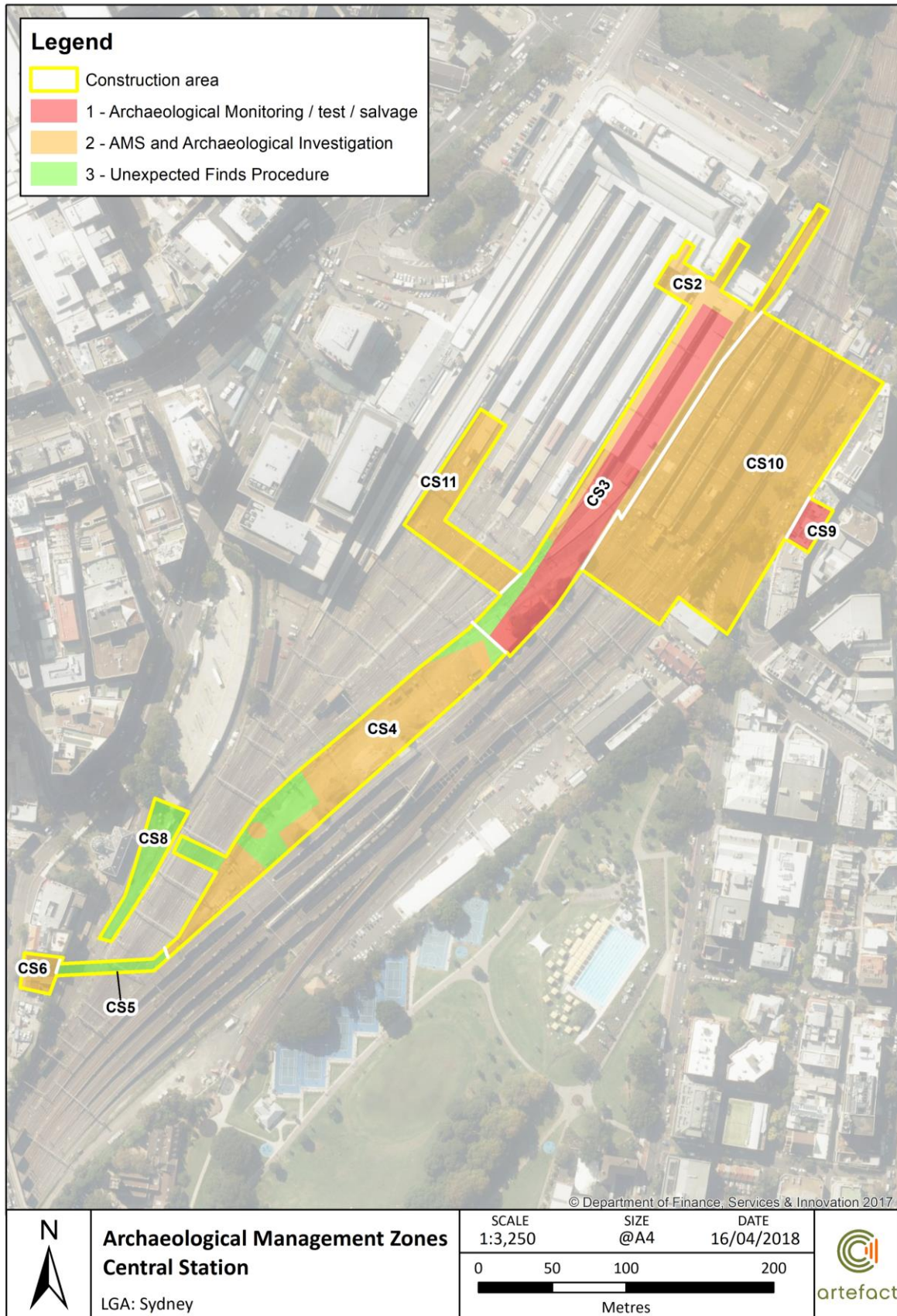
² NSW Government Department of Planning & Environment, 2017. *Critical State Significance Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval*, p. 6.

demolished. This would be located in the same location as existing GST. The installation of ULV and comms routes would utilise existing network

- **Gas works investigation** - The construction methodology for potholing (NDD) would be to pressure hose sediment to loosen material. Maximum 2000psi so as to not damage services and vacuum up loose fines.
- **Overhead wire (OHS) footing potholing and excavation on Platform 10/11** - The works to prepare Platform 10/11 for the future installation of overhead wire structure involve saw cutting and removal of sections of the tiles and concrete slab and potholing and NDD to identify existing services. A 6 tonne excavator would remove the fill The area would measure 1750 mm to 1200 mm by up to 4m in depth. Note that the proposed early works do not include the installation of overhead wire structures.
- **Track infrastructure foundations potholing and excavation** – NDD methodology as above.
- **Platform zero potholing for new location of temporary office amenities** – NDD methodology as above.
- **SYAB padmount potholing & excavation as part of Central Station Main Works.** - The padmount potholing and excavation would involve NDD within a 4m x 3m footprint, then a 6 tonne excavator would be used to excavate to a depth of 1.5 m. A dumpy would be used to remove and place fill then a compactor would level the area. A form reo would pour a concrete slab and a hiab truck would be used. The area would then be drilled for an electrical conductor down to a depth of 4m.

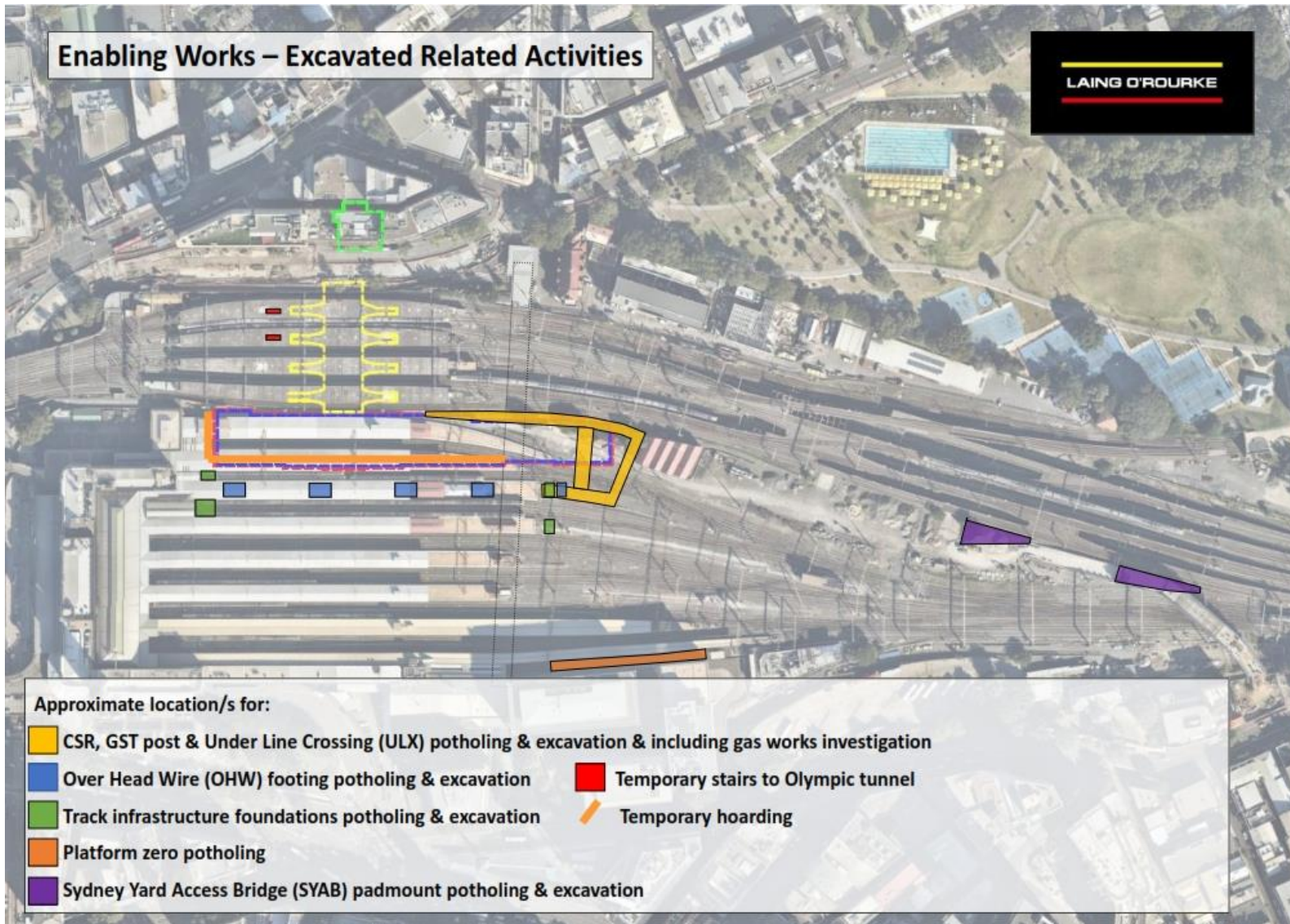
The location of the proposed early works is presented in Figure 2.

Figure 1: Archaeological management plan for Central Railway Station including Central Walk (Source: Artefact 2016: 333 modified for Central Walk)



Document Path: C:\Users\GIS\Desktop\GIS\GIS_Mapping\160155_Sydney_Metro_Chatswood_to_Sydenham\MXD\Central_and_Central_Walk_mgmt_1

Figure 2: Plan of proposed excavation works (Source: Laing O’Rourke)



Land Use Summary

A detailed historical context is included in the AARD (Artefact 2016a) and is not reproduced here. In the AARD, European occupation of the Central Station study area has been divided into four distinct phases of historical activity, which are:

- Phase 1 (1788 – 1855) early European settlement and the Devonshire Street Cemetery. Early land use associated with the construction of early brick and sandstone buildings, road building, wall construction, pasturage and the development of the Devonshire Street cemetery.
- Phase 2 (1855 – 1900) first and second railway stations. Land use predominantly associated with the development of Sydney's first railway station and the expansion of the railway station. Earthworks and industrial rail infrastructure developed on the site at this time. Road building and grading in the area as nearby subdivisions are laid out and built on. Construction of early water and sewerage infrastructure.
- Phase 3 (1900 – 1930) twentieth century land resumptions and station expansion. Land use predominantly associated with the enlargement of Central station north of Devonshire Street and the large-scale earthworks required for this expansion. Exhumation of burials. Excavation of large areas of tunnels, basements and below station services. Renovation of existing station sidings and facilities in southern part of the station.
- Phase 4 (1930 – present) mid- to late-twentieth century station modifications. Further excavation of below-ground service tunnels and new underground platforms. Redevelopment of carriage sheds and rail sidings areas.

Recent archaeological investigations

Sydney Yard Access Bridge (SYAB)

Artefact Heritage were engaged by Laing O'Rourke to archaeologically manage construction activities for the SYAB, which is part of the Sydney Metro City & Southwest – Chatswood to Sydenham project. The construction of SYAB involved excavations within Sydney Yards in CS 4. Monitoring works in November 2017 uncovered brick remains of a former structure, likely associated with the 'Railway Shop' which was part of the 'second station' development phase of Central Railway Station. The remains were assessed as being of local significance.³

CBD and South East Light Rail (CSELR)

Artefact Heritage were engaged by Acciona to archaeologically manage investigation and construction activities for the CBD and South East Light Rail (CSELR) project. The utility and civil works involved excavations within the Former Radio Workshop of Central Station, and within the road corridors of the surrounding streets.

Archaeological test excavations at the intersection of Eddy Avenue and Pitt Street undertaken by Artefact Heritage in May 2017 encountered the remains of a brick barrel drain. The feature was interpreted as being the remains of a brick drain depicted in Map 36 of the 1865 Trigonometrical Survey of the City of Sydney. Metal tracks and timber sleepers associated with the former tramways

³ Artefact Heritage December 2017. *Memo – Archaeological monitoring summary report.*

were also exposed within the intersection. The remains of the drain and the tramway were assessed as being of local significance.

Preliminary investigative works monitored by GML in February 2014 identified a possible bottle dump and sandstone block at the corner of Chalmers Street and Eddy Avenue. In July 2017 the bottle dump was encountered during NDD works monitored by Artefact Heritage. The area was shown to be heavily disturbed by existing services and the bottle dump had likely been previously excavated and then redeposited. No evidence of the sandstone block identified by GML was uncovered.

NDD works within the Former Radio Workshop in Central Station undertaken in September and October 2017 uncovered the remains of former brick and trachyte block floor surfaces beneath the modern floor of the structure. The remains were assessed as being of local significance.

In March 2018 a brick and concrete structure was identified during NDD investigative works within Prince Alfred Park. The structure was identified as likely being associated with 20th century utilities. The remains were assessed as unlikely to reach the threshold of local significance.

In March 2018 a substantial sandstone structure was identified on the west side of Elizabeth Street during trenching for the installation of a conduit alignment. The feature was identified as likely representing the remains of the boundary wall of the former Devonshire Street Cemetery. The remains were assessed as potentially being State significant.

Additional archaeological test excavations and monitoring undertaken by Artefact Heritage between 2016 and 2018 also encountered numerous services along Eddy Avenue, Elizabeth Street, and Chalmers Street. These included terracotta and metal pipes, and brick service pits. These were assessed as unlikely to reach the threshold of local significance. No evidence of human burials or remains were identified within the former boundaries of the Devonshire Street Cemetery. No evidence associated with Carter's Barracks or the Benevolent Asylum have been identified along Eddy Avenue or Pitt Street.

It is noted that the excavation works and analysis of the remains for this project are still underway.

Non-Aboriginal Archaeological Resources

The following section outlines the potential archaeological remains for each site code within the study area and archaeological significance and has been divided by phase. It has been adapted from the AARD (Artefact 2016a).

Table 1: Summary of potential archaeological remains at the Central Station site

Site Code	Phase	Likely archaeological remains	Potential Significance	
CS 2	1 (1788 – 1855)	Devonshire Street Cemetery located in this area. No documented structures located within this area. Area contained graves, tombstones and grave cuts. The area was located in the Church of England, Presbyterian, Wesleyan and Roman Catholic burial grounds. Potential archaeological remains such as skeletal material, coffin furniture, personal items such as jewellery and clothing, coffin timber, disarticulated human skeletal material and artefacts. The outer perimeter of the cemetery had a 4-foot 6-inch brick outer fence in the southern part of this area.	Low	State

Site Code	Phase	Likely archaeological remains	Potential	Significance
	2 (1855 – 1900)	Devonshire Street Cemetery located in this area, no burials continued after the 1860s. Isolated artefacts from deposited nineteenth century rubbish.	Low	State
	3 (1900 – 1930)	Third Central Station original railway platforms located in this area. Potential archaeological remains would include brick former platform surfaces and retaining walls, and former footings for original canopy supports.	Low	Local
	4 (1930 – Present)	Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.	Nil	N/A
CS 3	1 (1788 – 1855)	Devonshire Street Cemetery located in this area. No documented structures located within this area. Area contained graves, tombstones and grave cuts. The area was located in the Church of England, Presbyterian, Wesleyan and Roman Catholic burial grounds. Potential archaeological remains such as skeletal remains, coffin furniture, personal items such as jewellery and clothing, coffin timber, ghosts, disarticulated human skeletal material and artefacts. The outer perimeter of the cemetery had a 4-foot 6-inch brick outer fence in the southern part of this area.	Low	State
	2 (1855 – 1900)	Devonshire Street Cemetery located in this area, no burials continued after the 1860s. Isolated artefacts from deposited nineteenth century rubbish.	Low	State
	3 (1900 – 1930)	Third Central Station original railway platforms located in this area. Potential archaeological remains would include brick former platform surfaces and retaining walls, and former footings for original canopy supports.	Low	Local
	4 (1930 – Present)	Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.	Nil	N/A
CS 4	1 (1788 – 1855)	Area located within Government Paddocks, no evidence of built structures in this area. Potential for evidence of former wooden boundary fences, postholes, field drains, isolated artefact scatters.	Nil - Low	N/A

Site Code	Phase	Likely archaeological remains	Potential	Significance
	2 (1855 – 1900)	<p>First and second railway station expansion (1855 and 1874) located in this area. This area was predominantly the location of the main rail sidings and train storage areas. Buildings consisted of stone, wood and brick train sheds and workshops, of which former footings and discarded industrial objects are likely to be present. Rail siding lines also present, likely partially remaining below modern ground surface. Rail infrastructure from this period could include former signalling equipment and rail points as well as rail beams, sleepers and ballast.</p> <p>A train turntable was located in this area from 1855 until 1895. The turntable was likely infilled during the third phase of Central Station's expansion in 1901. Remains associated with the turntable would include the outer brick-lining of the turntable; a metal circular rail around the lower base of the turntable supported by wooden sleepers and footings; the possible remains of a steel rail bridge used to support the locomotives; and mechanical remains of the central pivot to the rail bridge.</p> <p>Remnants of the original fabric of the Prince Alfred Sewer may be located in this area. Remains associated with the sewer could include sandstone culverts, sandstock brick barrel drains and isolated artefact deposits.</p>	Moderate - High	Local – State
	3 (1900 – 1930)	East carriage shed was constructed during this period, demolished in 1987. Potential remains include postholes, footings, surfaces and artefacts.	Moderate - High	N/A
	4 (1930 – Present)	Area is predominately open ground with sealed road and side yards, with three existing structures on the site (two sheds, one brick building).	Nil	N/A

Archaeological potential

Archaeological remains associated with the following phases may be present in the proposed Central Station Main Works early works areas:

Preparation of Platforms 20/21 and 22/23 for the future installation of staircases to provide temporary access to the platforms via the existing Olympic Tunnel

- Devonshire Street Cemetery
- Third Central Station expansion
- Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.

Combined services route (CSR), galvanised steel trough (GST) & under line crossing (ULX) potholing and excavation. Gas works investigation

- Devonshire Street Cemetery
- First and second railway expansion
- Third Central Station expansion
- Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.

Over head wire (OHS) footing potholing and excavation on Platform 10/11

- Devonshire Street Cemetery
- First and second railway expansion
- Third Central Station expansion
- Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.

Track infrastructure foundations potholing and excavation

- Devonshire Street Cemetery
- First and second railway expansion
- Third Central Station expansion
- Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.

Platform zero potholing for new location of temporary office amenities

- First and second railway expansion
- Third Central Station expansion
- Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure.

Sydney Yard Access Bridge (SYAB) padmount potholing & excavation

- First and second railway expansion
- East carriage shed

Work Stage Specific Archaeological Methodology

The AMS archaeological methodology would in general meet the requirements of Chapter 12 of the project ARD which discusses details of archaeological methodologies. These requirements are not reproduced in detail, but where relevant are discussed below.

The Archaeological Method section of the AARD in relation to Central Station notes that ground disturbance and excavation works would be required.

Excavation work within the former Devonshire Cemetery site (Sites CS 2 and CS 3) would require archaeological management. As potential for human skeletal and burial-related remains cannot be ruled out entirely at this stage, archaeological monitoring and testing should be undertaken.

Ground disturbance and excavation work in Sites CS 4 with potential to impact significant archaeological remains (rail-related 1850s-1900s) would require archaeological mitigation. This would be monitoring or test/salvage depending on extent of work and level of potential impact, for example, archaeological

test/salvage in the northern part of Site CS 4 subject to bulk excavation for the station utilities structure.

In summary, the archaeological mitigation for CS 2, CS 3, and CS 4 would include preparation of an AMS (this document), and archaeological monitoring during early works due to the low potential for impacts. If significant archaeological remains, Aboriginal objects, or skeletal material are identified works must cease as impacts are not approved under early works.

It is recommended that archaeological monitoring is undertaken for all early works to manage the risk of impacting significant archaeological remains. Works may proceed under on call provisions if approved to do so by the Excavation Director. Works would cease if archaeology may be affected or impacted.

Contractor

The contractor would set up site and then operate under the direction of the archaeologists during archaeological monitoring of the early works, as appropriate. This would involve:

- Set out and secure the work area for the construction and archaeological team
- Provide a site induction to contractors in consultation with the Excavation Director.

Historical archaeological monitoring of early works

Due to the potential for archaeological resources to be located within the study area, early works involving excavation would be archaeologically monitored. **It should be noted that significant archaeological remains cannot be impacted under early works.**

Archaeological monitoring is where an archaeologist is in attendance and supervising construction excavation work with potential to expose or impact archaeological remains. Monitoring is generally undertaken where there is lower potential for significant archaeological remains and/or where minor excavation work is in an area of archaeological sensitivity.

If archaeological remains are identified during archaeological monitoring, they would be recorded, protected, and assessed to determine their heritage significance and if further investigation is required at a later date under the CMEP/CHMP and AMS. Localised stoppages in the construction work would be required to facilitate this process. Works would not recommence until the monitoring archaeologist has completed the recording and is satisfied that further investigation is not required. If needed, potholing would be relocated around any archaeological remains, as appropriate for the design bearing in mind that it is a requirement that impacts to any archaeological remains would not occur during the early works program.

A record of archaeological monitoring would be made in accordance with the methodology outlined in the AARD. This would include digital photography, in RAW format, using photographic scales and photo boards where appropriate. A photographic record of all phases of the work on site would be undertaken. Archaeological recording including the locations, dimensions and characteristics of all archaeological features and deposits will be recorded on a sequentially numbered context register.

Should hazardous materials or contaminants be identified during archaeological monitoring, ground excavation would cease until appropriate controls or remediation is conducted by Laing O'Rourke.

Human Remains

Discovery of suspected human remains would be managed under the project Unexpected Finds Policy and the Exhumation Policy (Transport for NSW 2016b; Transport for NSW 2016c). All suspected bone must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated. **Human remains cannot be impacted during early works.**

Aboriginal archaeological heritage strategy

The Central Station Main Works site is within Method Area 2 as outlined in the Aboriginal Cultural Heritage Assessment Report (CHAR) (Artefact Heritage 2016b). In accordance with the provisions for MA2 Aboriginal archaeological test/salvage excavation would be undertaken where intact natural soil profiles with the potential to contain significant deposits, or Aboriginal objects, are located during historical archaeological excavations.

If intact natural soil profiles or suspected Aboriginal objects were identified during early works the Aboriginal archaeological team would be notified by the Excavation Director and a qualified archaeologist experienced in Aboriginal archaeology would assess the find. **Aboriginal objects can not be impacted during early works**, therefore archaeological management of any identified intact soil profiles would be undertaken during the construction phase and could not be further impacted during early works.

Reporting

A preliminary findings report would be prepared following completion of the works outlined in this AMS in accordance with the ARD (Artefact 2016a:314). This report would outline the main results and identify if further archaeological work would be required.

Team and timing

Archaeological team

The archaeological team would comprise:

- Primary Excavation Director – Dr Iain Stuart (JCIS Consultants/ Artefact Heritage)
- Secondary Excavation Director – Jenny Winnett (Senior Heritage Consultant, Artefact Heritage)
- Site Director – Shona Lindsay (Senior Heritage Consultant, Artefact Heritage)
- Excavation Director (Aboriginal) – Dr Sandra Wallace (Principal, Artefact Heritage)
- Forensic Anthropologist – Dr Denise Donlan (Senior Lecturer in Anatomy and Curator, Shellshear Museum, University of Sydney)
- Archaeologists – Adele Zubrzycka (Senior Heritage Consultant, Artefact Heritage), HollyMae Steane Price (Heritage Consultant, Artefact Heritage), Jessica Horton (Graduate Heritage Consultant, Artefact Heritage) and other subconsultants as needed.
- Archaeological Surveyor - Guy Hazell and Gala Hazell (ArcSurv)

The Excavation Directors meet the requirements of the AARD, CHAR and Condition E18.

Excavation timing

The excavation works would be monitored by an archaeologist as required under the direction of the Excavation Director.

The Excavation Director would be on call during the excavation works to oversee responses to unexpected finds as required.

Appendix D



Central Station Main Works: Early Works Statement of Heritage Impact

Project: Central Station Main Works	Date: 18 April 2018
Project site: Central Station	Author: Elanor Pitt (Heritage Consultant), Shona Lindsay (Senior Heritage Consultant), Dr Sandra Wallace (Managing Director)
Contractor: Laing O'Rourke	Contact: Chris McCallum

Introduction

The purpose of this Statement of Heritage Impact (SoHI) is to provide an impact assessment for the early works required to facilitate construction of the Central Station Main Works, approved under the Sydney Metro City & Southwest Chatswood to Sydenham project. This SoHI provides a brief background for the project, outlines the proposed works, summarises the heritage listings and significance of Central Railway Station Group and elements, assesses the potential heritage impact to Central Railway Station Group as a result of the early works and provides mitigation measures to minimise potential impact.

Background

The Sydney Metro City & Southwest Chatswood to Sydenham project involves the construction of a new metro rail line between Chatswood and Sydenham. New metro stations will be provided along the line. As part of the project, new underground platforms will be constructed at Central Station along with other modifications to upgrade sections of the station to metro standard. This part of the project is known as Central Station Main Works.

As part of the Sydney Metro City & Southwest Chatswood to Sydenham project, the Central Station Main Works project has Critical State Significant Infrastructure (CSSI) approval (SSI15_7400). The Environmental Impact Statement (EIS, May 2016) for the project included a Non-Aboriginal Heritage Impact Assessment (HIA) prepared by Artefact Heritage in April 2016.¹ The HIA identified the heritage and archaeological impact of the proposed corridor and associated works, including proposed works at Central Station.

Early Works

The aim of this SoHI is to assess the proposed impacts of the early (enabling) works for the Central Station Main Works project.

¹ Artefact Heritage Services, 2016. *Sydney Metro City & Southwest – Chatswood to Sydenham Technical Paper 4 – Non-Aboriginal Heritage Impact Assessment*. Report to Jacobs / Arcadis / RPS. Version dated 12 April 2016.

The CEMP including the heritage sub-plan for the Central Station Main Works project is currently being developed in accordance with Conditions C1 to C7 of the Minister's Conditions of Approval for the Sydney Metro City & Southwest - Chatswood to Sydenham project.² The Heritage Division of the NSW Office of Environment and Heritage (OEH) and the relevant local councils are required to review the CEMP heritage sub-plan prior to its publication, in accordance with Conditions C1 and C3 of the CSSI approval.

The Conditions of Approval stipulate that low impact work is able to be undertaken prior to the approval of the CEMP heritage sub-plan unless heritage items are affected or potentially affected.³ This SoHI is required to act as a framework to facilitate the avoidance of impacts to archaeological heritage items as defined by the approval, during early works.

The early works for Central Station stipulated in the Sydney Metro City & Southwest - Chatswood to Sydenham Staging Report (v3.1, February 2018), prepared to meet Conditions A12 to A15 of the CSSI approval, include works to Platforms 12 to 15 as well as customer continuity works to reduce construction impacts and to ensure the effective operation of Central Station, a new eastern concourse to connect future metro platforms to a new Chalmers Street entry and connections to the existing aboveground suburban platforms (and associated platform works).⁴

Proposed Works

The works proposed to be included as part of the early works at Central Station involve preparation of Platforms 20/21 and 22/23 for the future installation of staircases to provide temporary access to the platforms via the existing Olympic Tunnel and preparation of Platform 10/11 for the future installation of overhead wire structures. Note that the proposed early works to the Olympic Stairs do not include further excavation to reach the Olympic Tunnel, the installation of stairs, balustrading or overhead wire structures as the timing of works will be in the Construction phase after CEMP approval.

Temporary hoarding will be installed around the area of works on Platforms 20/21 and 22/23, around the northern and western boundaries of the area of works to Platforms 12/13 and 14/15 and temporary scaffolding for access will be installed over the sandstone and iron fence during the installation phase only of the temporary buildings adjacent to Platform 0.

Early works also include the construction of temporary offices on Platform 0 and hazmat material testing in the Rolling Stock Officers Building and Cleaners Amenity Block in the Sydney Yards.

Heritage Listings

A search of all relevant registers was undertaken on 4 April 2018. The results are displayed below in Table 1 and Figure 1.

The Heritage Item

The study area, Platforms 10/11, 20/21 and 22/23 of Central Station, are located within the Sydney Terminal and Central Electric Precincts of the State significant heritage item, Sydney Terminal and

² NSW Government Department of Planning & Environment, 2017. *Critical State Significance Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval*.

³ NSW Government Department of Planning & Environment, 2017. *Critical State Significance Infrastructure Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval*, p. 6.

⁴ Sydney Metro Delivery Office, 2018. *City & Southwest Chatswood to Sydenham Staging Report*. Revision v3.1, dated 15 February 2018. Prepared for TfNSW. Section 3.2.3.

Central Railway Stations Group (Central Station) (SHR Item No. 01255).⁵ Central Station is listed on the NSW State Heritage Register (SHR), the Sydney Local Environmental Plan (SLEP) 2012 and the RailCorp Section (S.) 170 Heritage and Conservation Register (RailCorp S.170), as shown in Table 1 and Figure 1 below. The study area is also part of an item listed on the non-statutory Register of the National Estate (RNE).⁶ The study area is not listed or in the vicinity of any items on the Commonwealth Heritage List or the National Heritage List.

Mortuary Station is located on Regent Street to the southwest of the Central Station SHR curtilage. It is at a distance from the works assessed in this SoHI so it is not included in the detailed impact assessments below.

Table 1: Heritage registers search results.

Item	Significance	Listing
Sydney Terminal and Central Railway Stations Group	State	SHR (Item No. 01255)
Central Railway Station group including buildings, station yard, viaducts and building interiors	State	SLEP 2012 (Item No. I824)
Central Railway Station and Sydney Terminal Group	State	RailCorp S.170 (SHI No. 4801296)
Mortuary Station	State	State Heritage Register 00157 Included in the 'Sydney Terminal and Central Railway Station Group' SHR item no. 01255 Sydney Trains S170 Sydney LEP 2012 I194

Statement of Significance for the Heritage Items

The Statements of Significance for Central Station (Sydney Terminal and Central Railway Stations Group), Sydney Terminal Precinct, Country and Interstate Platforms (Platforms 1-15), Central Electric Precinct and the Above Ground Platforms (Platforms 16-23), as well as the pertinent areas of the Western Yard and Sydney Yards, have been extracted in full from the *Central Station Conservation Management Plan 2013 (CMP)*, prepared for NSW Transport RailCorp by the NSW Government Architect's Office and Rappoport Pty Ltd. These Statements of Significance are provided in the Appendix of this report.

⁵ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013. Central Station Conservation Management Plan, NSW Transport RailCorp, Section 5.0 Central Electric, p. 1.

⁶ The Register of the National Estate is no longer recognised as a statutory heritage list, though it is still used as an inventory of Australian heritage places registered between 1976 and 2007.

Figure 1: Listed curtilage for Central Station



Grading of Elements

Sydney Terminal Country and Interstate Platforms (Platforms 1-15)

The Country and Interstate Platforms (Platforms 1-15) to the south of the Main Concourse, of which Platform 10/11 is a part, were originally built in 1906 as part of the third Central Station Terminus. The platforms were originally built with brick walls beneath the level of the platform and with timber-framed platform awnings, clad with corrugated iron (Figure 2). The original platform and awning on Platform 10/11 are still extant.⁷

In 1913, a room for cleaning water bottles and glasses was built at the south end of Platform 10/11. The brick store on Platform 10/11 was constructed in the mid to late 20th century and was refurbished in the early 2000s. The platforms were extended with concrete walls in the late 1990s prior to the 2000 Sydney Olympics, as part of the 1998 Olympic Enhancement Project. The existing brick paving was constructed on top of the previous surface of the platforms as part of the late 1990s works to raise the level of the platforms. As part of the Olympic Enhancement Projects, the awnings of Platform 10/11 were extended to the south and the platform was truncated at the northern end to allow for the extension of the concourse at the northern end of Platforms 11-14 (Figure 3).⁸

The significance of the relevant individual elements within the Country and Interstate Platforms (Platforms 1-15) area of the Sydney Terminal Precinct are provided in Table 2 below, extracted from the 2013 CMP. Note that Platform 0 is included in this assessment.

Table 2: Gradings of Significance and Condition for the Sydney Terminal Precinct at Central Station.⁹

Element	Date	Significance	Condition
Country and Interstate Platforms Overall	1906-Contemporary	Moderate	Good
Platforms (original 1906 brick supporting walls and c.1990s concrete extension)	1906	Moderate	Good
Brick paving (all platforms, including original sections and extensions)	c.1998	Moderate	Good
Platforms 1-3 Awnings and Columns(includes Platform 0)	1990s	Little	Good
Platforms 8-15 Awnings, Skylights. Columns and Trusswork	1906 (timber)/20 th century (steel)	Moderate	Fair/Good
Platform Goods Lifts	c.1906	Moderate	Fair
Original Platform Lift Mechanism	1906	High	Good

⁷ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 3.0 Sydney Terminal Precinct, 3.12 Country and Interstate Platforms, pp. 1-9.

⁸ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 3.0 Sydney Terminal Precinct, 3.12 Country and Interstate Platforms, pp. 1-9.

⁹ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 3.0 Sydney Terminal Precinct, 3.12 Country and Interstate Platforms, pp. 1-9.

Element	Date	Significance	Condition
Brick Stores (Platforms 8-11)	Mid-late 20 th century (on Platform 10/11), altered early 2000s	Moderate	Fair
Information Boards, Vending Machines, Signage & Wayfinding	Contemporary	Little	Good
Platform Furniture	Contemporary	Little	Good
Introduced Services; Mechanical, Electrical, Lighting & Data	Contemporary	Intrusive	Good
Platform 10/11 Clock	c.1906	Moderate	Fair

Figure 2: Typical original awnings on the Sydney Terminal platforms and the c.1998 brick paving tiles (Source: Rappoport, 2013).



Figure 3: Typical awning extension on the Sydney Terminal platforms and extant balustrading (Source: Rappoport, 2013).



Central Electric Above Ground Platforms (Platforms 16-23)

The four island platforms of the Central Electric Station, known as the Above Ground Platforms (Platforms 16-23), were built between 1922 and c.1926 as part of the electrification of Central Station. The platforms were originally accessed by the Northern Concourse below the track level, with a staircase connecting it to the Main Concourse. The platforms were built with corbelled brick supporting walls with a rendered brick top course, which are still extant (Figure 4). The still extant original awnings were built from reinforced concrete slabs supported by steel columns and trusses (Figure 5). The original asphalt surface of the platforms has been covered by the c.1998 brick tiles used to raise the level of the platforms. In c.2000, goods and passenger lifts were constructed at the northern end of the platforms to access the Northern Concourse.¹⁰

The significance of the relevant individual elements within the Above Ground Platforms (Platforms 16-23) area of the Central Electric Precinct are provided in Table 3 below, extracted from the 2013 CMP.

¹⁰ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 5.0 Central Electric Precinct, 5.4 Above Ground Platforms, pp. 1-5.

Table 3: Gradings of Significance and Condition for the Central Electric Precinct at Central Station.¹¹

Element	Date	Significance	Condition
Above Ground Platforms Overall	1922-c.1926	Moderate	Good
Platforms and Original Asphalt Platform Surface	1922-c.1926	Moderate	Fair
Brick Paving	c.1998	Moderate	Fair
Corbelled Platform Walls	1922-c.1926	Moderate	Good
Iron Balustrades and Sign Brackets	1922-c.1926	Moderate	Good
Concrete Platform Roofs, Columns and Trusswork	1922-c.1926	High	Good
Stairs to Subway Tunnels and Northern Concourse	1922-Mid 20 th Century	Moderate	Good
Central Signs/Signage and Wayfinding	Mid-20 th century/ contemporary	High/Little	Good
Mid to Late 20 th Century Platform Sheds	Mid to Late 20 th Century	Little	Good
c.2000 Metal Clad Platform Sheds	c.2000	Little	Very Good
Lifts (northern platform ends)	c.2000	Little	Very Good
Introduced Services; Mechanical, Electrical, Lighting & Data	Late 20 th century/ contemporary	Intrusive	Good
Furniture	Contemporary	Little	Good

¹¹ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 5.0 Central Electric Precinct, 5.4 Above Ground Platforms, pp. 1-5.

Figure 4: Original corbelled brickwork of the platform supporting wall, trusswork and columns of the awnings and original iron balustrading (Source: Rappoport, 2013).



Figure 5: The steel trusses and reinforced concrete awning along the platforms (Source: Rappoport, 2013).



Figure 6: Typical guard room/information shed located centrally on all platforms (Source: Rappoport, 2013).



Western Yard

The Western Yard of Central Station was used for servicing the railway from 1855, comprising the Inwards Parcels Dock, the Western Carriage Shed, support offices, demountable workshops and stores. These buildings were demolished preceding the construction of the Henry Deane Plaza in c.1998-2000.¹² An iron palisade fence with a dwarf sandstone base was built in c.1906 in conjunction with the extant third Sydney Terminus, to delineate the Western Yard area. This fence is located to the south of the Henry Deane Plaza and to the west of the southern end of Platform 0/1.¹³

The Henry Deane Plaza is located between Platform 0/1 to the east and Railway Square to the west, with a small strip of undeveloped land between Platform 0 and the Henry Deane Plaza. The Henry Deane Plaza comprises the western access to the Devonshire Street Tunnel, as well as three mid-rise commercial buildings group around a large public space. The fenestration and cladding was designed to respond to the adjacent brick heritage buildings of the station.¹⁴ A narrow grassed strip

¹² NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 1.0 Western Yards, 1.7 Henry Deane Plaza, pp. 1-3.

¹³ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 1.0 Western Yards, 1.6 Remnant Boundary Fence, pp. 1-2.

¹⁴ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 1.0 Western Yards, 1.7 Henry Deane Plaza, pp. 1-3.

lies between the Henry Deane Plaza and Platform 0/1 (Figure 7 and Figure 8), with some rail infrastructure within the area.

The significance of the relevant individual elements within the Henry Deane Plaza to the west of the Central Electric Precinct are provided in Table 4 below, extracted from the 2013 CMP.

Table 4: Gradings of Significance and Condition for the Henry Deane Plaza at Central Station.¹⁵

Element	Date	Significance	Condition
Henry Deane Plaza Overall	c.1998-2000	Moderate	Good
Views and Vistas	N/A	Moderate	N/A
Walls, Roofs and Building Form (Henry Deane Building, 18 Lee Street and Gateway Building)	c.1998-2000	Moderate	Good
Context and Setting	N/A	Moderate	N/A
Plaza and link to Devonshire St. Tunnel	c.1998-2000	Moderate	Good
Remnant Boundary Fence Wall and Iron Palisade	c.1906	Moderate	Fair

Figure 7: The sandstone and iron fence from Platform 0/1 (Source: Sydney Metro, 2018).



Figure 8: The grassed area between the Henry Deane Plaza and Platform 0/1 (Source: Sydney Metro, 2018).



¹⁵ NSW Government Architect’s Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 1.0 Western Yards, 1.7 Henry Deane Plaza, pp. 1-3.

Sydney Yards

The Sydney Yards comprise the central portion of Central Station, located to the south of the Sydney Terminal Platforms. The Sydney Yards date back to c.1855 as part of the yards of the first and second Sydney Termini, which contained a number of workshops, railway tracks and vacant land. The Rolling Stock Officers Building, built between 1929 and 1949, is situated at the northern end of the Sydney Yards. The building is a two-storey face-brick Inter-War structure, but has undergone some internal alterations for an office fit-out and a ground level substation.¹⁶ The Cleaners Amenities building is located immediately south of the Rolling Stock Officers Building. The structure is an Inter-War two-storey brick building divided into four gabled bays, which was built by c.1929.¹⁷

The significance of the relevant individual elements within the Sydney Yards to the south of the Central Electric Precinct are provided in Table 5 below, extracted from the 2013 CMP.

Table 5: Gradings of Significance and Condition for the Sydney Yards at Central Station.¹⁸

Element	Date	Significance	Condition
Rolling Stock Officers Building Overall	c.1929-1949	Moderate	Good
Brick Façades of Rolling Stock Officers Building	c.1929-1949	Moderate	Good
Roof of Rolling Stock Officers Building	c.1929-1949	Moderate	Good
Substation of Rolling Stock Officers Building	Late 20 th Century	Little	Good
Doors, Windows and Hardware of Rolling Stock Officers Building	c.1929-1949	High	Good
Floors and Paving of Rolling Stock Officers Building	Late 20 th Century	Little	Fair
Skirting, Architraves and Linings of Rolling Stock Officers Building	c.1929-1949	High	Good
Applied Finishes of Rolling Stock Officers Building	Late 20 th Century	Little	Good
Fitout of Rolling Stock Officers Building	Late 20 th Century	Little	Fair
Introduced Services: Mechanical, Electrical, lighting and data of Rolling Stock Officers Building	Late 20 th Century	Little	Poor
Cleaners Amenities East Deck Overall	c.1929	Moderate	Poor

¹⁶ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 4.0 Sydney Yards, 4.2 Rolling Stock Officers Building, pp. 1-3.

¹⁷ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 4.0 Sydney Yards, 4.3 Cleaners Amenities, pp. 1-3.

¹⁸ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 4.0 Sydney Yards.

Element	Date	Significance	Condition
Cleaners Amenities Brick Façades	c.1929	Moderate	Poor
Cleaners Amenities Roof	c.1929-Late 20 th Century	Moderate	Good
Cleaners Amenities Doors, Windows and Hardware	c.1929-Late 20 th Century	Little/Moderate	Poor
Cleaners Amenities Floors and Paving	Late 20 th Century	Little	Fair
Cleaners Amenities Skirting, Architraves and Linings	Late 20 th Century	Little	Fair
Cleaners Amenities Applied Finishes	Late 20 th Century	Little	Fair
Cleaners Amenities Fitout	Late 20 th Century	Little	Fair
Cleaners Amenities Introduced Services: Mechanical, Electrical, lighting and data	Late 20 th Century	Intrusive	Poor
Cleaners Amenities No 1 Air Vacuum	c.1927	High	Poor
Cleaners Amenities No 2 Air Vacuum	c.1927	High	Poor
Cleaners Amenities Carpet Runner Cleaner	c.1927	High	Poor
Cleaners Amenities Remnant Cleaning Equipment Parts	c.1927	High	Poor

Figure 9: The Rolling Stock Officers Building (Source: Rappoport, 2013).



Figure 10: The Cleaners Amenities building (Source: Rappoport, 2013).



Heritage Impact

The following section provides a description of the proposed works, an assessment of the heritage impact, a brief justification for the works and recommendations for management and mitigation for

each class of proposed work in accordance with the CSSI Conditions of Approval and supporting documents.

Temporary Hoarding and Scaffolding

Description of impacts

Temporary hoarding and/or scaffolding is to be installed in the following as part of the approved early works to Central Station:

- Temporary hoarding around the area of works on Platforms 20/21 and 22/23 (located to the north of the centre of the platform), as shown in Figure 11 to Figure 13;
- Temporary hoarding around the northern and western boundaries of the area of works to Platforms 12/13 and 14/15 (Figure 14);
- Temporary scaffolding over the sandstone and iron fence (Figure 7) for access during the installation phase only of temporary buildings adjacent to Platform 0 (Figure 14).

Impact assessment

The installation of temporary hoarding on Platforms 20/21, 22/23, 12/13 and 14/15, depending on the design and exact location, has potential to result in a localised minor direct impact to nearby significant fabric, such as damage to brick paving tiles (moderate significance) or columns and trusses of the awnings (high significance). Note that although tiles are assessed as having moderate significance in the CMP, they are modern additions installed in 1998. The overall direct impact to Central Station is likely to be negligible. It is noted that the tiles to these platforms will be replaced as part of the Project works.

The installation of hoarding would have a localised minor to moderate visual impact to views to and from Platforms 12/13, 14/15, 20/21 and 22/23 and the adjacent platforms. The overall visual impact to Central Station is likely to be negligible.

The installation of hoarding is unlikely to result in an indirect impact to Platforms 12/13, 14/15, 20/21 and 22/23 and the adjacent platforms, as the installation would not result in vibration. The overall indirect impact to Central Station is likely to be neutral.

The installation of scaffolding over the sandstone and iron fence (Figure 7) for access during the installation phase of temporary buildings at Platform 0, depending on the design and exact location, would aid in minimising potential inadvertent direct or indirect damage to this element of moderate significance. The scaffolding, would not be fixed directly to the fence, would have a neutral direct impact to the significant fabric of the fence. The overall direct impact to Central Station is likely to be neutral.

The installation of scaffolding would have a temporary high visual impact to the significant fence, but would have a neutral permanent visual impact due to its removal on completion of the installation phase of the temporary buildings at Platform 0. The overall temporary visual impact to Central Station would be negligible and the overall permanent visual impact would be neutral.

The installation of scaffolding over the sandstone and iron fence would have no indirect impact to significant fabric and therefore would have no impact on the significance of Central Station.

Justification

Temporary hoarding is required to be constructed around the proposed area of works in order to restrict access to the work site and ensure the safety of users and staff of Central Station. The temporary scaffolding around the sandstone and iron fence is required for access during installation of the temporary buildings at Platform 0.

Management and mitigation

The following management and mitigation methods should be followed prior to the installation of temporary hoarding on Platforms 12/13, 14/15, 20/21 and 22/23 and scaffolding on Platform 0:

- A photographic archival recording must be undertaken of the relevant areas and views of the platforms and sandstone and iron fence prior to any works, including the installation of temporary hoarding, in accordance with the requirements of Condition E13 of the CSSI approval;
- Temporary hoarding should be interpretative, in accordance with Condition E21 of the CSSI approval. This could include historic photographs of the Above Ground Platforms at Central Station during the 1922-c.1926 construction works or following completion, or more general historic photographs of Central Station. Those on the sandstone and iron fence could consist of historic photographs of the First or Second Sydney Termini yards or station;
- The temporary hoarding and scaffolding should be light-weight and free-standing and should not be fixed to significant elements of the platforms or sandstone and iron fence, such as the brick paving tiles, base, balustrades or structural trusses, columns or beams of the awning;
- The temporary hoarding should be designed so that is easily constructible on site, to minimise potential damage to fabric of Central Station during movement of components;
- The temporary scaffolding should be designed to be sturdy enough to withstand high point loads so that it does not fall over and damage the sandstone and iron fence if direct force is applied to the scaffolding;
- The temporary hoarding and scaffolding should be designed so that the opening of the hoarding does not scrape or otherwise cause damage to significant elements of the platform or other surfaces; and
- The temporary hoarding and scaffolding should utilise footings that will not damage the brick paving tiles or other significant surfaces. Consider installation of an adequate protective barrier under the footings to ensure any movement of the footings does not damage the tiles.

Piles and Initial Excavation on Platforms 20/21 and 22/22

Description of impacts

The following works to Platforms 20/21 and 22/23 are proposed as part of the approved early works to Central Station:

- Protection of the nearby canopies and posts by wrapping with an appropriate protective cover and installing boards held together by straps;

- Cutting and removal of the tiles and concrete slab within a 7m by 4m area on Platforms 20/21 and 22/23 (located to the north of the centre of the platform), as shown in Figure 11 to Figure 13 to allow for piling works to commence;
- Delivery of a low headroom drilling rig by train and ramp for it to be manoeuvred onto the platform under the existing canopies;
- Installation of bored piles using the low headroom drilling rig, to a depth of 2m, retaining the casings in situ for extra reinforcement and to contain the spread of the grout;
- Removal of the remaining platform structure/fill within the area (7m by 4m) bounded by the piles and excavation will be conducted to a depth of approximately 2m, with the spoil removed by a bulker bag on the train. The timing of further excavation is anticipated to occur after CEMP approval;
- Vibration monitoring will be conducted during works in accordance with the CSSI approval; and
- The works would be monitored by an archaeologist as required as discussed in the Archaeological Method Statement (AMS) (Artefact April 2018).

Impact assessment

The proposed installation of piles and initial approximately 2m deep excavation on Platforms 20/21 and 22/23, to prepare the site for future installation of a temporary staircase, would result in a non-reversible localised direct impact to fabric of moderate significance, that being the c.1998 brick paving tiles (which is unlikely to be of significance), the original (1922-c.1926) flooring surface/concrete slab of the platforms and the internal structure of the platforms (1922-c.1926). As a 7m by 4m section of tiling and original platform surface/concrete slab would require cutting and removal, this would result in a minor direct impact to section of fabric of moderate significance, noting the 1988 tiles are not of moderate significance. The installation of the bored piles and excavation of the remaining platform structure/fill would involve the removal of fabric of moderate significance.

A number of mitigation methods are proposed to minimise direct impact to surrounding significant fabric. The retention of the casings to contain the spread of the grout would aid in minimising impact to surrounding significant fabric. The delivery of a low headroom rig by train and ramp would minimise inadvertent direct impact to surrounding fabric, including the reinforced concrete roof, steel trusswork and columns of the platform awnings of high significance to the heritage item. Additionally, the protection of the nearby canopies and posts by wrapping them with a appropriate protective material and installing boards held together by straps would also aid in the minimisation of inadvertent impact to surrounding fabric. These mitigation methods would aid in preventing direct impact to surrounding fabric, resulting in negligible impacts to nearby fabric, but would not mitigate impacts to the fabric to be removed. See the recommendations in the management and mitigation section below.

Overall, due to the proposed removal of sections of fabric of moderate significance, the overall direct impact to each platform would be minor. The overall impact to the significance of Central Station would be negligible.

The proposed installation of piles and initial 2m deep excavation on Platforms 20/21 and 22/23 would result in a temporary moderate visual impact due to the removal of 7m by 4m areas of the c.1998 brick paving tiles, original platform surface and internal platform structure, leaving a large gap in the platform. The overall visual impact to the platforms is likely to be moderate, with an overall negligible to minor visual impact to Central Station.

The works required to cut and remove the c.1998 brick paving tiles and concrete platform surface and, install bored piles and excavate the platform structure has the potential to result in moderate indirect impact to surrounding heritage fabric due to the vibration caused by such works. The works are likely to result in minor indirect impacts to Platforms 20/21 and 22/23 and negligible to minor indirect impacts to the overall heritage item of Central Station.

Justification

The installation of piles and initial excavation to the north of the centre of Platforms 20/21 and 22/23 is required to prepare the site for the future works of providing temporary access to the Olympic Tunnel in order to maintain pedestrian access to the platform during the main construction works at Central Station as part of the CSSI Central Station Metro project. The timing of further excavation is anticipated to occur in the Construction phase after CEMP approval. All works for the Olympic Stairs are required to be completed by early December 2018 to ensure the safe and effective operation of Central Station in the busy holiday period.

Management and mitigation

- A photographic archival recording must be undertaken of the relevant areas and views of the platforms prior to any works, including the installation of protective wrappings, in accordance with the requirements of Condition E13 of the CSSI approval;
- Significant fabric, including the canopies and posts, should be protected by wrapping them with an appropriate protective material and installing boards held together by straps. No fixing method is to involve penetration of significant fabric;
- The temporary ramp to manoeuvre the rig should not be fixed to the brick paving tiles, but should be free-standing;
- The brick paving tiles should be protected with an appropriate protective material during manoeuvring of the rig into position, as well as for movement of any other required machinery for cutting and excavation works;
- All brick paving tiles and concrete within the footprint of the excavation should be removed carefully prior to piling and excavation so as not to damage them or the surrounding fabric, in accordance with Condition E15.
- Vibration monitoring should be conducted in accordance with approval Conditions E28 to E31 during works to ensure limits are not exceeded. The following recommendations should be followed to minimise impact of vibration monitoring equipment:
 - Vibration monitoring equipment should not be directly fixed to fabric of moderate, high or exceptional heritage significance. Where possible, fix to fabric of little or intrusive significance;
 - If vibration monitoring must be fixed to fabric of moderate, high or exceptional heritage significance, the method of attaching the equipment must be reversible; and
 - If the vibration caused by the works exceeds the accepted level of vibration for heritage items, works should cease and alternative methods of work considered in consultation with an experience heritage engineer.
- The piling and excavation works should be monitored by a suitably qualified archaeologist as outlined in the AMS for these works (Artefact April 2018); and

- The Sydney Metro Unexpected Finds Procedure would be followed in the event of identification of potential archaeological remains or Aboriginal objects.

Non-Destructive Digging on Platform 10/11

Description of impacts

The following works are required to prepare Platform 10/11 for the future installation of overhead wire structures:

- Saw cutting and removal of the tiles and concrete slabs approximately 1m x 1m on Platform 10/11 in the areas shown in Figure 14; and
- Potholing and non-destructive digging (NDD) on Platform 10/11 to confirm location of the existing services within the platform.
- Excavation of footings

Note that the proposed early works do not include the installation of the overhead wire structures.

Impact assessment

Saw cutting, removal of the paving tiles and concrete slabs on Platform 10/11 and excavation would result in a moderate direct impact to fabric of moderate significance. The works would also result in a moderate direct impact to the original 1906 platform surface, determined to be of moderate significance. Potholing and non-destructive digging (NDD) on Platform 10/11 would also result in a moderate direct impact to fabric of moderate significance (the platform structure). The overall direct impact to the platform is likely to be moderate and the overall impact to Central Station is likely to be minor.

The works would have a localised temporary minor visual impact to views to and from the platform and the adjacent platforms. The overall visual impact to Central Station is likely to be negligible.

The works required to cut and remove the paving tiles and concrete platform surface, undertake potholing and NDD to the platform structure and excavate footings have the potential to result in minor indirect impact to surrounding heritage fabric due to the vibration caused by such works. The works are likely to result in minor indirect impacts to Platform 10/11 and negligible indirect impacts to the overall heritage item of Central Station.

Justification

Potholing and NDD and footing excavation is required along Platform 10/11 in order to prepare the site for the future works of providing overhead wiring to maintain connection to services on the platform during the main construction works at Central Station as part of the CSSI Sydney Central Station Metro project.

Management and mitigation

- A photographic archival recording must be undertaken of the relevant areas and views of the platforms prior to any works including the installation of any hoarding or protective wrappings, in accordance with the requirements of Condition E13 of the CSSI approval;
- Any hoarding required should be designed to follow the recommendations provided for *Temporary Hoarding* above;

- The potholing and excavation works should be monitored by a suitably qualified archaeologist in accordance with the AMS (Artefact April 2018);
- The brick paving tiles should be protected with an appropriate protective material during manoeuvring of any equipment or machines for excavation;
- The brick paving tiles and concrete should be removed carefully so as not to damage them or the surrounding fabric.
- The brick paving (and concrete, if possible) should be retained onsite, stored carefully and labelled for future reinstatement after the construction of the overhead wiring footings. Any remaining tiles should be retained for any future repairs to the flooring, in accordance with Condition E15;
- The Sydney Metro Unexpected Finds Procedure would be followed in the event of identification of potential archaeological remains or Aboriginal objects.

Installation of Temporary Offices Adjacent to Platform 0

Description of impacts

The following works are required to be undertaken to install temporary offices in the narrow grassed strip between Platform 0/1 and the Henry Deane Plaza, as part of the approved early works to Central Station:

- Site investigations including potholing, non-destructive digging and survey;
- Installations of an 85 m long concrete and steel track from the existing substation to the existing gantry structure, using a concrete truck, site ute and hand tools;
- Installation of the temporary office built on aboveground foundations, delivered in parts, craned into place and pushed along the concrete and steel track. The office would measure 2.4 m tall, 6 m wide and 85 m long;
- Timber infill would be inserted between the temporary office and Platform 0 with a 20mm gap to minimise impacts to the platform;
- Temporary removal of green steel fence along the western side of Platform 0/1 reinstatement following completion of the works (Figure 7 and Figure 8). The fence would be removed through dismantling the existing bolts and reinstated utilising the same bolts and bolt holes;
- Installation of temporary fencing to prevent access from the platform to the site when not in use; and
- Fitout of the temporary office, including connections to stormwater, sewer and electricity, utilising an excavator, hand tools, site ute and two rigid heavy vehicles.

Impact assessment

The proposed works for the installation of the temporary office buildings, undertaken in accordance with the mitigation methods provided below and in the *Planning Approval Consistency Form SM ES-FT-414*, has potential to result in localised negligible direct impacts to nearby significant fabric, such as Platform 0/1 and the Henry Deane Plaza. The temporary removal of the fence along the western side of Platform 0/1 would have a localised negligible impact due to the fence being of little

significance. As it would be replaced using the existing bolts and holes, there would be no loss of fabric and no impact to significant fabric. The use of gaps between the new offices and Platform 0/1 and timber infill that is not directly connected to the platforms would ensure the minimisation of potential impact to significant fabric. The overall direct impact to Central Station is likely to be neutral.

The works would have a temporary localised minor visual impact to views to and from Platforms 0/1 and the adjacent platforms, as well as from the rear of the Henry Deane Plaza. The overall visual impact to Central Station is likely to be negligible.

The works are unlikely to result in an indirect impact to nearby significant fabric, as the installation would not result in vibration. The overall indirect impact to Central Station is likely to be neutral.

Justification

The construction of a temporary office between Platform 0/1 and the Henry Deane Plaza is required for the Sydney Trains staff in order to relocate staff prior to demolition of the Rolling Stock Officers Building and the Cleaners Amenities, in order to enable construction staff to operate efficiently out of the Sydney Yard construction site at Central Station.

Management and mitigation

- A photographic archival recording must be undertaken of the relevant areas and views from Platform 0/1, the rear of the Henry Deane Plaza area and along the narrow strip of grass between the two areas prior to any works, in accordance with the requirements of Condition E13 of the CSSI approval;
- In order to avoid direct impacts to significant fabric of Platform 0 and the Henry Deane Plaza, there must be a sufficient gap between the temporary office and Platform 0, as well as between the temporary office and the Henry Deane Plaza buildings;
- Install timber infill between the temporary office and Platform 0 with a 20mm gap in order to minimise impacts to the platform. Ensure this timber infill is not directly connected to the platform;
- No works are to involve penetration of, drilling or fixing to Platform 0 or other nearby significant fabric, such as the rear of the Henry Deane Plaza buildings;
- The crane lifts should be controlled sufficiently to prevent inadvertent direct or indirect impacts to the nearby significant fabric, including Platform 0, the Henry Deane Plaza and the sandstone and iron fence;
- The potholing and excavation works should be monitored by a suitably qualified archaeologist in accordance with the AMS (Artefact, April 2018); and
- The Sydney Metro Unexpected Finds Procedure would be followed in the event of identification of potential archaeological remains or Aboriginal objects

Hazmat Testing of the Rolling Stock Officers Building and Cleaners Amenities

Description of impacts

Hazardous materials testing is required to be undertaken to the Rolling Stock Officers Building and the Cleaners Amenities as part of the approved early works to Central Station. This will include:

- One sample from each surface/fabric type within the buildings, which will usually comprise 50mm diameter cores, but may also comprise smaller samples such as paint scrapings.

Impact assessment

The removal of 50mm diameter cores from each surface/fabric type within the Rolling Stock Officers Building and the Cleaners Amenities would result in localised minor direct impacts to fabric of high through to little significance. Fabric that would be affected would be existing paint finishes, floors, existing doors, windows, timber framing and skirting, brickwork and roofing. Though the impact to the overall individual elements would be negligible, the cumulative direct impact to the buildings would be minor. As both buildings are assessed as having moderate significance to Central Station in the CMP, the works would result in an overall negligible direct impact to the significance of Central Station. It should be noted that the CSSI approved the removal of both these structures during construction.

The removal of 50mm diameter cores and samples would have a localised minor visual impact to views to and from the Rolling Stock Officers Building and the Cleaners Amenities, as well as views within the buildings. The cumulative visual impact to the buildings would be negligible. The overall visual impact to Central Station is likely to be negligible.

The removal of 50mm diameter cores and samples is likely to result in a localised minor indirect impact to fabric of the Rolling Stock Officers Building and the Cleaners Amenities, due to the works resulting in low vibration levels. The overall indirect impact to Central Station is likely to be negligible.

Justification

Hazardous materials testing is required to be undertaken to the Rolling Stock Officers Building and the Cleaners Amenities in order to ensure the correct methods of demolition are carried out to minimise potential health and safety issues to workers and users of the train station.

Management and mitigation

- A photographic archival recording must be undertaken of the relevant areas and views of the Rolling Stock Officers Building and the Cleaners Amenities prior to any hazardous materials testing, in accordance with the requirements of Condition E13 of the CSSI approval unless a recording has been done for the structures in their entirety.

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Figure 12: Proposed hoarding and initial 2m deep excavation for the future temporary staircase on Platform 22/23 (Source: Laing O'Rourke, 2018).

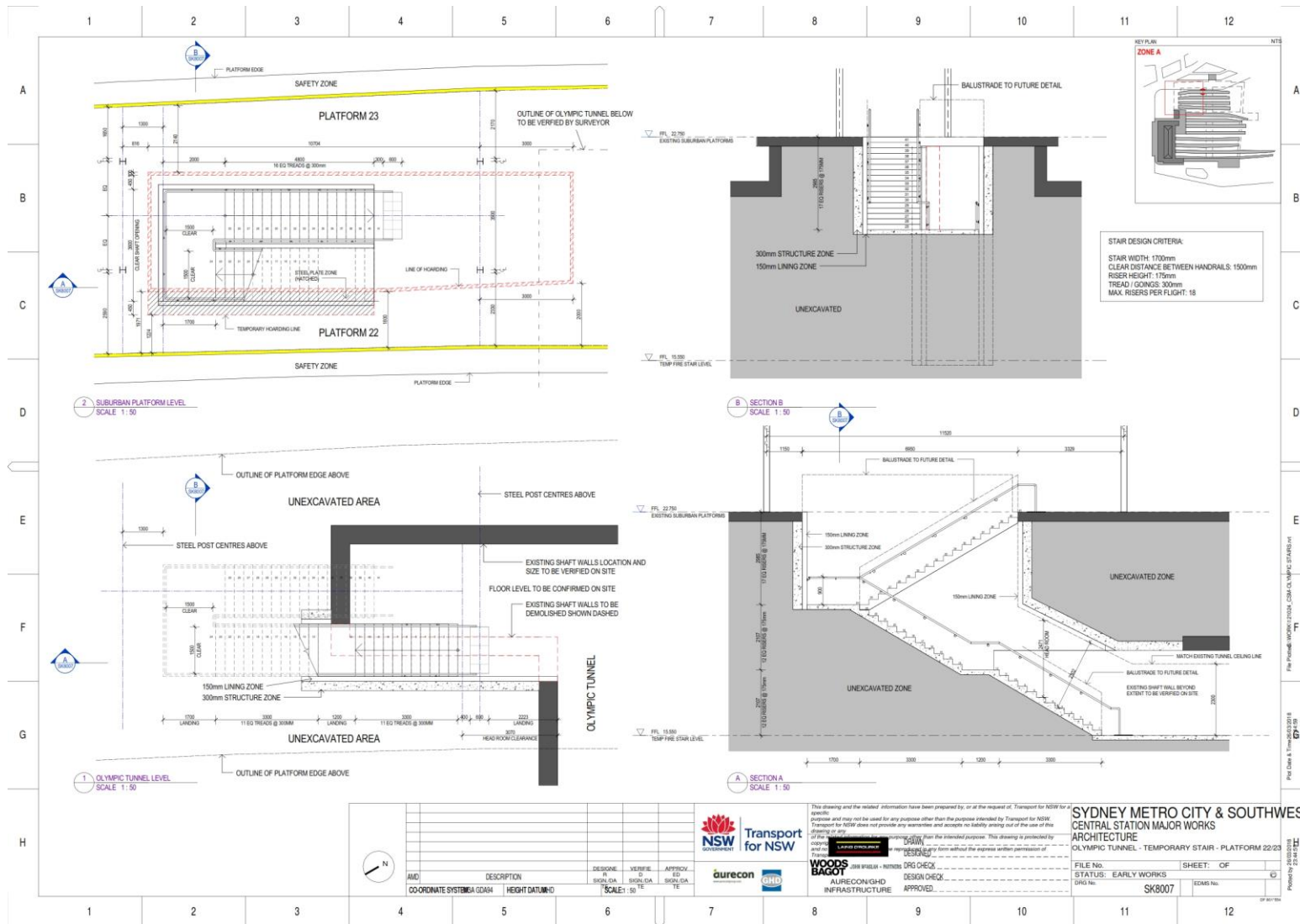


Figure 13: Proposed location of the excavation for the future temporary staircases on Platforms 20/21 and 22/23 (Source: Laing O’Rourke, 2018).

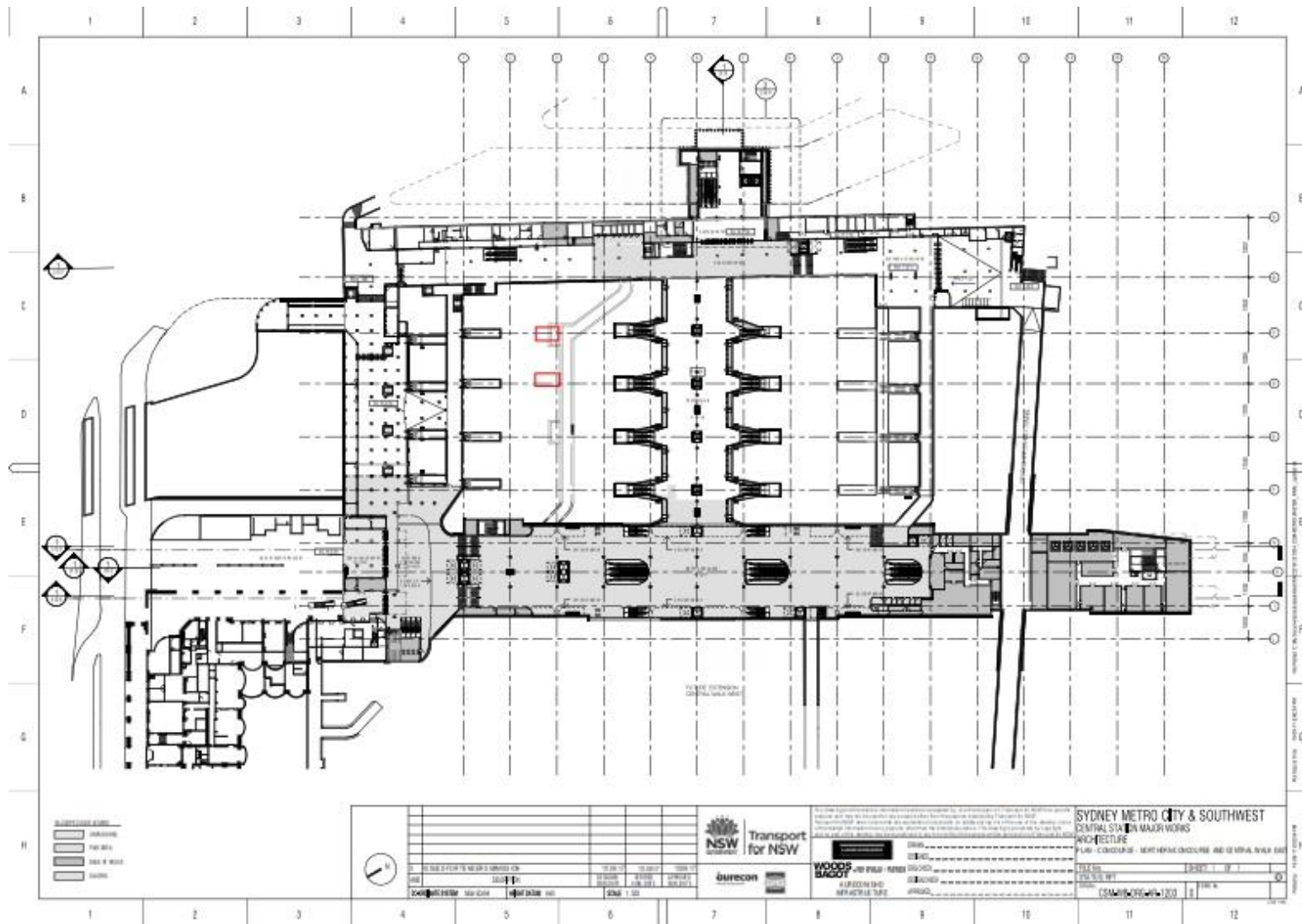
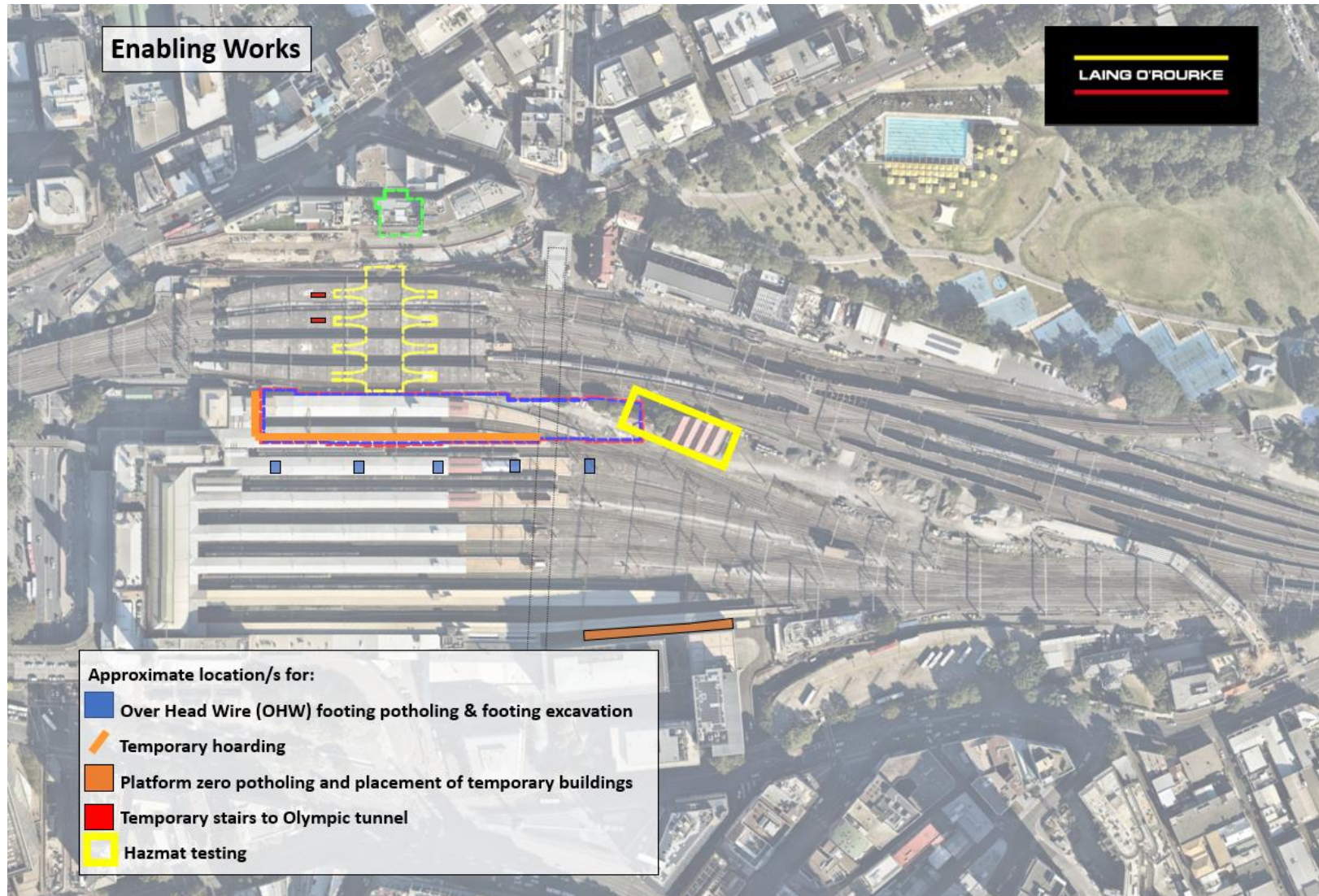


Figure 14: Proposed location of works (Source: Laing O'Rourke).



Summary of impacts and mitigation measures

Table 6: Summary of impacts and mitigation measures.

Item of Work	Direct Impact (fabric)		Visual Impact (views)		Indirect (vibration)		Mitigation (Approval Condition, if relevant)
	Localised	Overall to Central Station	Localised	Overall to Central Station	Localised	Overall to Central Station	
Temporary Hoarding and scaffolding	Minor	Negligible	Minor	Negligible	Neutral	Neutral	<ul style="list-style-type: none"> Archival Recording (E13); Interpretative hoarding (E21); and Design free-standing lightweight hoarding to minimise impact.
Piles and Initial Excavation on Platforms 20/21 and 22/22	Minor	Negligible	Minor	Negligible to Minor	Minor	Negligible to Minor	<ul style="list-style-type: none"> Archival Recording (E13); Vibration monitoring (E28 to E31); Unexpected Finds Procedure (E19 and E20); Monitoring by a suitably qualified archaeologist; and Protection of significant fabric with free-standing ramp, adequate protective material and boards.
Non-Destructive Digging on Platform 10/11	Minor	Minor	Minor	Negligible	Minor	Negligible	<ul style="list-style-type: none"> Archival Recording (E13); Vibration monitoring (E28 to E31); Unexpected Finds Procedure (E19 and E20); Monitoring by a suitably qualified archaeologist; Protection of significant fabric with free-standing ramp, adequate protective material and boards; Interpretative free-standing lightweight hoarding (E21).

Item of Work	Direct Impact (fabric)		Visual Impact (views)		Indirect (vibration)		Mitigation (Approval Condition, if relevant)
	Localised	Overall to Central Station	Localised	Overall to Central Station	Localised	Overall to Central Station	
Installation of temporary office on Platform 0	Negligible	Negligible	Negligible	Neutral	Neutral	Neutral	<ul style="list-style-type: none"> • Archival Recording (E13); • Unexpected Finds Procedure (E19 and E20); • Monitoring by a suitably qualified archaeologist; • Protection of significant fabric with sufficient gaps, adequate protective material and boards; • Interpretative free-standing lightweight hoarding (E21).
Hazmat testing	Minor	Negligible	Minor	Negligible	Minor	Negligible	<ul style="list-style-type: none"> • Archival Recording (E13);

References

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Appendix

The following Statements of Significance for Central Station (Sydney Terminal and Central Railway Stations Group), Central Electric Precinct, the Above Ground Platforms and the Henry Deane Plaza, in which the study area is located, have been extracted, in full, from the *Central Station Conservation Management Plan 2013 (CMP)*, prepared for NSW Transport RailCorp by the NSW Government Architect's Office and Rappoport Pty Ltd.

Table 7: Statement of Significance for the Central Railway Station and Sydney Terminal Group.

Central Railway Station and Sydney Terminal Group	
Listings	SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<p><i>Central Station is the largest railway station and transport interchange in NSW and is of State significance for its historical, aesthetic, technical values and for its research potential. With its grand sandstone edifices and approaches it is a well-known landmark in Sydney.</i></p> <p><i>The site contains the original Sydney Railway Company grant on which the first Sydney Station and yards were opened, in 1855, and so represents over 150 years of railway operations in the same place, making it the oldest and the longest continuously operated yard in Australia.</i></p> <p><i>The Sydney Terminal precinct has a high level of historic significance associated with its early government and institutional uses, as well as being the site of Sydney's second major burial ground, the Devonshire Street cemetery. Archaeological evidence of the government and institutional uses is rare and has high research potential.</i></p> <p><i>Central Station site contains evidence of the first phase of railway construction in NSW and has been the major hub of rail transportation in NSW since the mid-19th century and has the ability to demonstrate the evolution of changes in the NSW railways and in railway technology over the past 150 years, from steam to electric, reflected in the changes in yard layout and in signalling [sic] work practices. The Darling Harbour branch line and associated sandstone Ultimo Railway Overbridge is the only remaining example of railway infrastructure built for the Sydney Railway Company and is the oldest piece of railway infrastructure in NSW. The Prince Alfred Sidings contains some of the oldest remaining workshops in the NSW railway system. The Prince Alfred Substation is part of the Bradfield 1926 electrification works and was designed by Bradfield himself. The site has technical heritage value in such elements as: The Darling Harbour Dive; Central Electrics flyovers; the elliptical arch construction of the Elizabeth Street Viaduct; the western approach ramp underbridge the three-pin truss roof of the porte-cochère; the Devonshire Street subway (probably the first of its type in Australia); the underground men's toilets; and the early mail, parcels and luggage subway system.</i></p> <p><i>The main terminus building, accentuated by its clock tower and approach ramps, exemplifies the predominant use of sandstone at the site and it has been sited to dominate its surroundings and to mark the importance of the railway to both the city and the State. The construction of the Sydney Terminus was the largest planned intervention into the urban fabric of Sydney at the time and it was the only major complex of the period where the urban setting was consciously designed to enhance and provide views to and from the main structure. With its multi layered access modes and above ground level platforms not only was the development extraordinarily innovative but also the largest incursion into the southern part of Sydney prior to World War I.</i></p> <p><i>Some of Sydney's most notable 19th and 20th century architects and engineers have worked on the Central Station site, including: James Wallace and William Randle who</i></p>

Central Railway Station and Sydney Terminal Group

together designed and built the first railway from Sydney to Parramatta and the associated Darling Harbour Branch Line; the last serving Colonial Architect, James Barnet (Mortuary Station); the first NSW Government Architect, Walter Liberty Vernon (the main Terminus building and the Parcels Post Office); and the Chief Engineer for the City Underground and Sydney Harbour Bridge, Dr John Jacob Crew Bradfield (Central Electric). Mortuary Station, the main terminus building, and the Parcels Post Office were the only designs undertaken for the NSW Railways by the Colonial Architect and the Government Architect within the Department of Public Works.

The main terminus building is enhanced by its Neo-classical architectural features together with the high-quality workmanship and materials it contains, from carved sandstone, marble and terrazzo to cedar joinery, acid etched glazing and metalwork balustrades.

The same fine quality in design, materials and workmanship is seen in Mortuary Station, the Railway Institute and also in the Neo-classical Chalmers Street Entrance, the Central Electric Station main façade and the Parcels Post Office, all of which tends to unify these buildings with the main terminus.

The Mortuary Station is a fine and rare example by James Barnet of the Gothic Revival architectural style and is the only remaining example of a mortuary station in NSW. The exemplary Federation Anglo-Dutch architectural style of the Railway Institute is significant, and it was as the first institute of its type in Australia, demonstrating 19th century initiatives in railway workers educational and recreational facilities. The Parcels Post Office contains fine brickwork and sandstone detailed facades and documents the association of the site with railway postal services.

The significance of Central Station is widely appreciated by the broad community for its sense of place and theatre; as an extraordinary place of work for employees past and present and their families; and by many specialist transport and heritage community groups.¹⁹

¹⁹ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, p. 27.

Table 8: Statement of Significance for the Sydney Terminal Precinct within the Central Railway Station and Sydney Terminal Group.

Sydney Terminal Precinct	
Listings	SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<p><i>Central Station, constructed to serve the expanding population of Sydney, was the first major metropolitan rail terminal to be constructed in Australia and is the main NSW terminus. There have been three successive passenger termini on this site, each successive station designed to provide a much greater level of passenger accommodation than the former. The debate concerning the location of the main terminal for Sydney occurred on and off during the last two decades of the nineteenth Century. The technical difficulties associated with extending the line further north and the associated cost as well as changing governments resulted in the creation and abandonment of numerous station designs and almost as many locations. The Sydney Terminal precinct has a high level of historic significance associated with its early government and institutional uses, as well as being the site of Sydney's second major burial ground, the Devonshire Street cemetery. The development of the Benevolent Asylum and Carters barracks are associated with Governor Macquarie and were part of his overall plan for Sydney. The Carters Barracks site had the first treadmill in use in Australia. The archaeological remains would be rare and important survivors from this early Colonial period. The striking form, character and materials of the Sydney Terminus contribute to the high degree of aesthetic significance of this precinct, and ensure that it remains an iconic landmark.</i></p> <p><i>Archaeological evidence of the charitable institutions on the site can contribute to a range of important research questions relating to:</i></p> <ul style="list-style-type: none"> <i>- the nature of charitable institutions during the convict period and after;</i> <i>- the way the residents and staff lived and worked;</i> <i>- the way the archaeological evidence contributes to a range of views on the nature of charitable institutions in NSW, Australia and the United Kingdom.²⁰</i>

Table 9: Statement of Significance for the Country and Interstate Platforms (Platforms 1-15) within the Sydney Terminal Precinct of the Central Railway Station and Sydney Terminal Group.

Country and Interstate Platforms	
Listings	SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<p><i>Notwithstanding the various extensions and truncations of the Country and Interstate Platforms over the course of a Century, the overall layout of these platforms conforms to their c 1906 design. Some of the original fabric of these platforms remains in situ and the platforms document the evolution of the railways since the establishment of the c 1906 third Sydney Station.²¹</i></p>

²⁰ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 3.0 Sydney Terminal, pp. 7-8.

²¹ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 3.12 Country and Interstate Platforms (Platforms 1-15), p. 7.

Table 10: Statement of Significance for the Central Electric Precinct within the Central Railway Station and Sydney Terminal Group.

Central Electric Precinct	
Listings	A part of the SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<i>The Central Electric Precinct documents the first phase of the suburban electrification of the NSW Railway in 1926. It is associated with Dr John Job Crew Bradfield. The aesthetic presentation is Neoclassical. The Precinct has the grandest of entrances on the City Circle Line using sandstone detailing. The monumental sandstone walling of the Elizabeth Street Viaduct and the tram ramps is a well known and iconic landmark in Sydney. The precinct has high technical value in the design of the viaducts, underbridges and overbridges. Central Electric was the only station on the new electric system to use reinforced concrete slabs for the platform canopy roofs.²²</i>

Table 11: Statement of Significance for the Above Ground Platforms (Platforms 16 to 23) within the Central Electric Precinct of the Central Railway Station and Sydney Terminal Group.

Above Ground Platforms	
Listings	A part of the SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<i>The platforms are significant as evidence of the transition in the 1920s from the traditional use of bricks or stone to concrete; and also for the innovative use of reinforced concrete in the platform awnings. Central Electric was the only station on the new electric system to use reinforced concrete slabs for the platform canopy roofs.²³</i>

Table 12: Statement of Significance for the Henry Deane Plaza within the Western Yards of the Central Railway Station and Sydney Terminal Group.

Henry Deane Plaza	
Listings	A part of the SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<i>The significance of the Henry Deane Plaza lies mainly in the setting that it provides for the former Parcels Post Office (Inventory Sheet 3.19) and to a lesser extent for the access and setting it provides to the YHA Railway Square (Inventory Sheet 3.18). Although the Plaza is excluded from the Railway Square/Central Station Special Character Area under the Sydney DCP 2012, it contributes to the network of active public open space that connects the surrounding heritage places. The Plaza has social significance as a public space for Sydney-siders and for its commemoration of Henry Deane – a prominent engineer for the NSW railways and Engineer in Chief from 1891 - 1906.²⁴</i>

²² NSW Government Architect’s Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 5.0 Central Electric, pp. 4-5.

²³ NSW Government Architect’s Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 5.4 Above Ground Platforms, p. 5.

²⁴ NSW Government Architect’s Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 1.7 Henry Deane Plaza, p. 2.

Table 13: Statement of Significance for the Remnant Boundary Fence within the Western Yards of the Central Railway Station and Sydney Terminal Group.

Remnant Boundary Fence	
Listings	A part of the SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<i>The wall is historically and aesthetically significant as remnant c. 1906 fabric from the first phase of construction of the third Sydney Station. The sandstone dwarf wall is significant as it documents the wide use of rusticated Pyrmont sandstone in the first phase of construction of the c. 1906 station and is evidence of the use of sandstone at this time for important public sites. The pales are also indicators of the c. 1906 site. The lost context of this fence diminishes its heritage significance.²⁵</i>

Table 14: Statement of Significance for the Rolling Stock Officers Building within the Sydney Yards of the Central Railway Station and Sydney Terminal Group.

Rolling Stock Officers Building	
Listings	A part of the SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<i>The Former Rolling Stock Officers Building is representative of a group of buildings which have been used in conjunction with administration of Central Station and, as such, is an integral part of the cultural landscape of the Sydney Yards.²⁶</i>

Table 15: Statement of Significance for the Cleaners Amenities within the Sydney Yards of the Central Railway Station and Sydney Terminal Group.

Rolling Stock Officers Building	
Listings	A part of the SLEP 2012 (Item No. I824) and SHR (Item No. 01255)
Significance	State
Statement of Significance	<i>The Cleaners Amenities is representative of a building of the Inter War period which has been continuously used in conjunction with the administration of the Central Station site. The building documents the evolution of the Sydney Yards as its original use as a base for cleaning related purposes associated with the East Carriage Shed has changed to that of general administration. The building continues to house significant carpet cleaning equipment which was used in conjunction with the East Carriage Shed. It is an integral part of the Sydney Yard.²⁷</i>

²⁵ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 1.6 Remnant Boundary Fence, p. 2.

²⁶ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 4.2 Rolling Stock Officers Building, p. 3.

²⁷ NSW Government Architect's Office, and Rappoport Pty Ltd, 2013, *Central Station Conservation Management Plan*, NSW Transport RailCorp, Section 4.3 Cleaners Amenities, p. 4.

Addendum 1 – Temporary office at Platform Zero - CSM - 02 Consistency Assessment

This Addendum has been prepared to assess the potential impact of incorporating a site generator and fuel cell to the temporary office set up, adjacent to Platform Zero. The generator is required to power the site until mains power is made available in late 2018.

The potential impact is consistent with that which was assessed as part of Consistency Assessment 02 for Platform Zero as well as the approved project.

The following information includes the identification of any impacts during construction and operation and confirms that no changes are required to the originally approved consistency assessment.

Existing Approved Project

Planning approval reference details (Application/Document No. (including modifications)):

No changes to that outlined in Section 1.0

Date of determination:

No changes to that outlined in Section 1.0

Type of planning approval:

No changes to that outlined in Section 1.0

Description of existing approved project you are assessing for consistency:

No changes to that outlined in Section 1.0

Relevant background information (including EA, REF, Submissions Report, Director General’s Report, MCoA):

The Platform Zero Consistency Assessment was approved by Sydney Metro on 26 April 2018.

2.0 Description of proposed development/activity/works

Describe ancillary activities, duration of work, working hours, machinery, staffing levels, impacts on utilities/authorities, wastes generated or hazardous substances/dangerous goods used.

This addendum has been prepared to address:

The use of a site generator and fuel cell to power the temporary office adjacent to Platform Zero until a connection to mains power can be made.

3.0 Timeframe

When will the proposed change take place? For how long?

The proposed use of the generator would be between mid October 2018 until and the end of December 2018, with a contingency until March 2019.

4.0 Site description

The temporary office would be installed between the rear of 18 Lee Street, Sydney and the rail corridor fence on Platform 0 at Sydney Central Station (refer to Appendix B of CA 02 for the site location).

The site is zoned SP2 – Special Purpose (Infrastructure) and is owned by Sydney Trains. It is a grassed, flat piece of land, approximately 6 metres wide and 90 metres long. There is a gantry to the north and a caged back up diesel generator owned by Sydney Trains to the south.

The site is located on Lot/Section/Plan no: 118//DP1078271, which is where the majority of works for the Sydney Metro - Chatswood to Sydenham – City & Southwest Project will take place.

The Sydney Railway Square Youth Hostel (YHA) is approximately 30 metres north of the site. The generator and fuel cell is to be located south of the caged electrical transformer, which is approximately 130m from the YHA. Comparing the CNVIS estimated RBL's for the closest sensitive receiver being YHA (R17) (D 54/ E 52/ N 49) against the Noise Aspects for Predicted Noise Levels, the impact has been assessed as negligible.

Refer to Appendix A of this Addendum for the proposed location of the Generator and Fuel cell.

Cable will be installed using cable ties to secure conduit below existing cable duct along platform wall and fence. The conduit will then be secured to the underside of the temporary building skids all the way back to main switchboard. No heritage fabric will be damaged in this process.

Site access to install the temporary generator and fuel cell would be from the driveway on 18 Lee Street. This driveway leads to an underground carpark for the offices at 18 Lee Street and to the Lee Street Substation.

5.0 Site Environmental Characteristics

Describe the environment (i.e., vegetation, nearby waterways, land use, surrounding land use), identify likely presence of protected flora/fauna and sensitive area.

Refer to Section 5.0 of CA 02.

6.0 Justification for the proposed works

Address the need for the proposed works, whether there are alternatives to the proposed works (and why these are not appropriate), and the consequences with not proceeding with the proposed work.

The construction of a temporary office adjacent to Platform 0 is required to house Sydney Trains staff relocating from Sydney Yard. This will enable CSM works construction staff to operate efficiently from the construction compound in Sydney Yard. This was approved under CA 02. Temporary ancillary power is required until a mains connection is made available late 2018.

7.0 Environmental Benefit

Identify whether there are environmental benefits associated with the proposed works. If so, provide details:

The relocation of Sydney Trains staff out of the ORS building in Sydney Yard will enable the efficient movement of plant and equipment in and around the Sydney Yard construction site to assist in meeting project construction timeframes. The generator and fuel cell is required to facilitate this.

8.0 Control Measures

Will a project and site specific EMP be prepared? Are appropriate control measures already identified in an existing EMP?

The project ECM would be amended to incorporate the use of the generator, and will include designated refuelling area, refuelling bunds and spill kit locations. Noise blankets would be added to the ECM if monitoring results trigger the requirement to do so.

9.0 Climate Change Impacts

Is the site likely to be adversely affected by the impacts of climate change? If yes, what adaptation/mitigation measures will be incorporated into the design?

No. The proposed works are unlikely to be adversely affected by the impacts of climate change due to the extent of works, location and proposed management measures.

10.0 Impact Assessment – Construction

There are no changes to the construction impacts described in the Approved Project (see Section 10) and this addendum is considered consistent with the approved project.

The requirement to use noise blankets would be assessed based on the results of monitoring. The predictions have not warranted the need. Refer to Appendix B. The generator will be continuously operating for three months (with an additional three month contingency) 24/7. Table 3: Predicted Noise Levels and Exceedances of RBLs (dBA) demonstrates that the additional impact would be negligible. As per Table 2, a distance attenuation penalty of -5dBA has been used for a 130m distance offset and a -10dBA penalty for existing screening (by a building) between site and receiver.

In accordance with the CSM Project CEMP and sub plans, refuelling will occur in designated re-fuelling areas located at a minimum distance of 50 metres from drainage lines or waterways, where possible. All spills or leakages will be immediately contained and absorbed. The generator will be properly maintained to minimise the risk of fuel/oil leaks.

No additional heritage impacts are anticipated during the operation of the Platform Zero office facility and generator. The site is zoned SP2 infrastructure, as such would not have an additional visual impact. Cables would be cable tied. No drilling or fixing to heritage items is required or permitted. The location of the generator and fuel cell was selected based on operational specifications of the items. It is unlikely the 11kVA backup generator would be impacted by the selected positioning of the temporary generator.

11.0 Impact Assessment - Operation

There are no operational impacts as described in the Approved Project (see Section 11). This addendum is considered consistent with the approved project.

12.0 Consistency with the Approved Project

The proposed activities to be undertaken as part of this Addendum are consistent with the activities associated with those approved as part of the other generator use (see Section 12).

13.0 Other Environmental Approvals

No additional environmental approvals are required for the proposed Addendum activities.

Author certification

To be completed by person preparing checklist.



(Uncontrolled when printed)

I certify that to the best of my knowledge this Consistency Checklist:

- Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the Proposed Revision; and
- Examines the consistency of the Proposed Revision with the Approved Project; is accurate in all material respects and does not omit any material information.

Name:	Chris McCallum	Signature:	
Title:	Environment Manager		
Company:	Laing O'Rourke	Date:	16 October 2018

Environmental Representative Review

(Additional step for City & Southwest projects only – if this is a CA against a Northwest Project or REF delete this table)

As an approved ER for the Sydney Metro City & Southwest project, I have reviewed the information provided in this assessment. I am satisfied that mitigation measures are adequate to minimise the impact of the proposed work.

Name:	Annabelle Tungol Reyes	Signature:	
Title:	Environmental Representative	Date:	29/10/2018

This section is for Sydney Metro only.

Application supported and submitted by

Name:	Xette Buchli	Date:	29/10/2018
Title:	Planning Approvals Manager	Comments:	-
Signature:			

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

- Yes The proposed activity/works are consistent and no further assessment is required.
- No The proposed works/activity is not consistent with the Approved Project. A modification or a new activity approval/ consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by

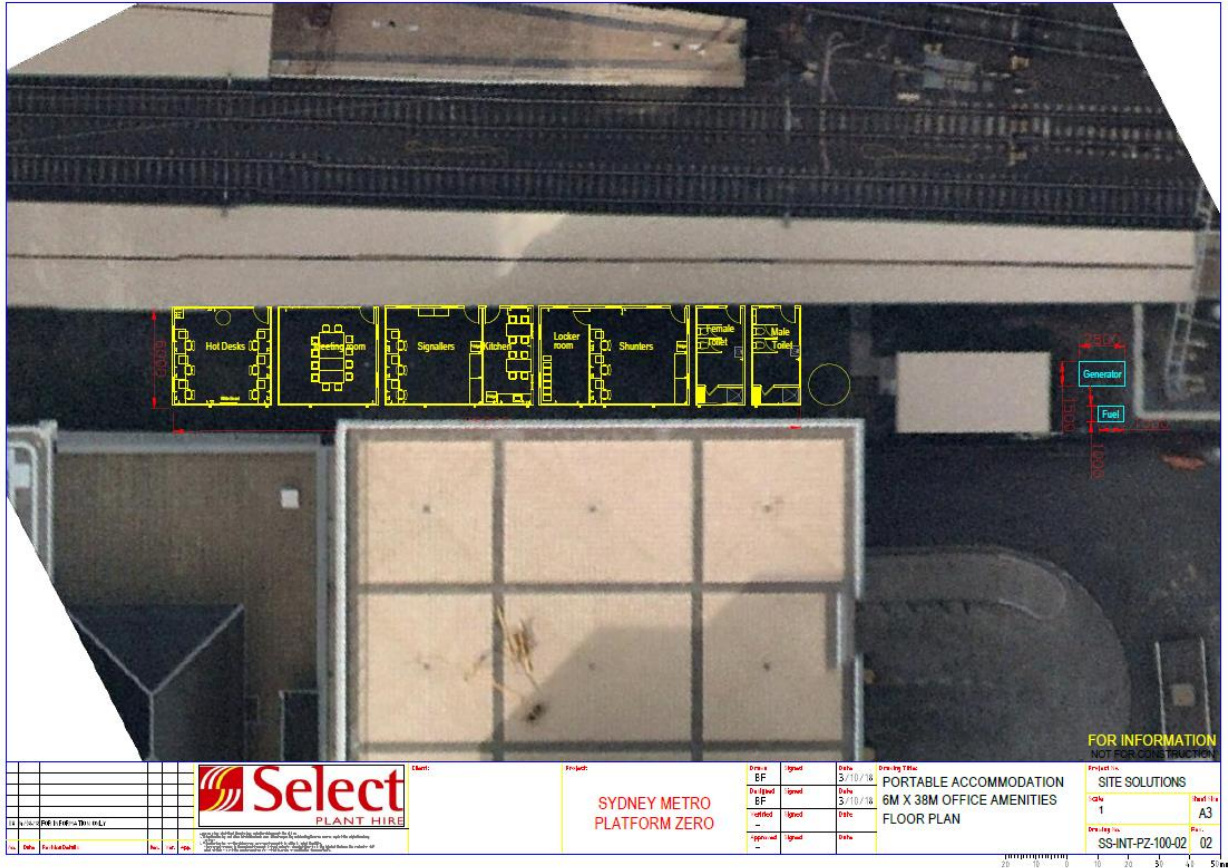
Name:	FIL CERONE	Date:	2/11/18
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(Uncontrolled when printed)

Title:	Director City & Southwest, Sustainability, Environment & Planning	Comments:	
Signature:			

Appendix A – Location of Generator and Fuel Cell



Appendix B: CNVIS Supporting Evidence

Table 1: Estimated RBLs for Residential Receivers and NMLs for Non-Residential Receivers

Sensitive Receiver Category	Estimated RBLs (dBA)		
	Daytime OOH	Evening OOH	Night Time OOH
Residential			
Urban (e.g. city hubs, near busy roads, near industrial activity)	55	50	45
Suburban	45	40	35
Quiet, rural or isolated	40	35	30
Non-Residential	ICNG NMLs (dBA)		
Industrial facilities	75 (only applicable when in use)		
Offices or retail	70 (only applicable when in use)		
Health and educational facilities	55 (only applicable when in use)		

Sensitive Receiver Category	Estimated RBLs (dBA)		
	Daytime OOH	Evening OOH	Night Time OOH
Residential			
YHA (R17)	54	52	49

Table 2: Noise Aspects for Predicted Noise Levels

Noise Aspect	If anticipated predicted noise levels have not already been established, select the most applicable value for each noise aspect below and enter these values into Table .	dBA Value
1. Estimated predicted plant /equipment noise level at 10 metres Including +5 dBA penalty for annoying activities as per ICNG (refer to Appendix B for other predicted noise level data)	Hand-held tamper, impact sheet piling rig	105
	Rail grinder, ballast regulator, concrete/rock saw, excavator hammer, jackhammer, rock-breaker	95
	Mainline tamping machine, pin puller, dynamic track stabiliser, large bulldozer, chainsaw, large excavator, pour fill/ballast, water cart, super-sucker, front-end loader, vibratory or bored piling	85
	Asphalt paver, backhoe, small bulldozer, mulcher, concrete pump/mixer/agitator, tower/mobile crane, small excavator, grader, forklift, welder, wheeled-loader, Standard Penetration Testing	80
	Truck, spreader, whacker packer, cherry-picker, fence post driver, electric drill, drill rig	75
	Lighting tower, small generator	70
	Light vehicle, hand-tools (no impact), small cement mixer	65
2. Noise source character	Non-continuous use (plant/equipment to operate for less than half the time)	- 5
3. Local screening	Existing screening between site and receiver (buildings, cuttings, canopies, etc.)	- 5
	Temporary screening to be implemented near work site	- 10
	Acoustic shed or enclosure	- 25
4. Distance attenuation	< 10 metres	0
	10 to 20 metres	- 5
	20 to 35 metres	- 10
	35 to 60 metres	- 15
	60 to 100 metres	- 20
	100 to 180 metres	- 25
	180 to 350 metres	- 30
350 to 1,000 metres	- 40	

Table 3: Predicted Noise Levels and Exceedances of RBLs or NMLs (dBA)

Platform Zero, generator operation 24/7, for three months, 130m from sensitive receiver YHA

Period (only complete as applicable for each period)	Noisiest Plant /Equipment (state the noisiest plant/equipment to be used during each applicable OOH period)	Receiver Type (state 'Res' or 'Non-Res' as applicable for closest receiver to noisiest plant/equipment)	Enter the most applicable values from Table , then add to determine the Predicted Noise Level				Predicted Noise Level (1 + 2 + 3 + 4)	RBL (for Res)	NML (for Non-Res)	Exceedance (Predicted Noise Level minus RBL for Res or NML for Non-Res)
			1. Plant/ Equipment Noise Level	2. Noise Source Character	3. Local Screening	4. Distance Attenuation				
Daytime OOH	vibratory or bored piling	Res	70	0	-10	-25	40	54	0	



(Uncontrolled when printed)

Evening OOH	vibratory or bored piling	Res	70	0	-5	-25	40	52		0
Night Time OOH	vibratory or bored piling	Res	70	0	-5	-25	40	49		0