

SITE ENVIRONMENTAL MANAGEMENT PLAN (SEMP)

Sydney Trains is the proponent and determining authority for this activity. This environmental impact assessment is being completed in accordance with Division 5.1 of the EP&A Act 1979 and Part 8 of the EP&A Reg 2021. This SEMP forms the assessment when paired with the associated Environmental Work Method Statements.

The activity covered by this SEMP is routine maintenance or ancillary works associated with the ongoing safe operation and management of the Sydney Trains rail network in accordance with NSW and Federal statutory objectives. As such, and in respect to this assessment, the cumulative impacts of the routine maintenance and ancillary works are negligible and alternatives to undertaking the works have not been assessed.

1) Project or Program Details

Project/Program Name	Liverpool Station Platform 1 Building – Re-Roof and Repair Works / Major Periodic Maintenance – Opportunity Works 22/23
Project/Program No	P.0045552
Scope of Works	<p>Liverpool station was opened on 26 September 1856 as the temporary terminus for the Great Southern railway.</p> <p>Platform 1 Building While Liverpool Railway Station opened in 1856 as the terminus of the great southern line, construction of a new station was commenced in 1879 to replace the original structures, and the Platform 1 Building dates to this period (completed c.1880). The station building’s east facade was where one would board and/or alight the train from platform 1 at Liverpool Station. The Platform 1 Building is a standard Type 4 design of the Whitton era. Known as ‘Third Class Station Buildings’ or ‘Standard Roadside Station Buildings’, Type 4 Buildings were constructed between 1857 and 1894, mostly at smaller metropolitan or regional locations in the 1880s. Metropolitan types (including Liverpool) were constructed mostly of brick, while regional types were more commonly of timber. Common features of Type 4 included:</p> <ul style="list-style-type: none"> • Roof – Gable, sometimes with centre transverse gable; • Floor Plan – Central building with symmetrical layout and wings at one or both ends; • Awning Support – timber or metal posts. <p>The scope of works is for external conservation works only.</p> <p>The proposed scope of works:</p> <p>Generally</p> <ul style="list-style-type: none"> • Hazmat Samples and Hazardous Dust Removal • Insulate Roof Space

	<ul style="list-style-type: none"> • Provide zinc sacrificial flashing to all downpipe discharging from slate roofs onto • galvanised steel roofs. • Paint all fascias scheduled to have their associated gutters replaced. • Chimneys Re-pointing and Lead Flashing • Lead Ridge Capping replace existing with Lead roll-top ridge capping • Roof Valleys replace existing with V-shaped Lead valleys <p>Slate Tiles and Asbestos Shingles</p> <ul style="list-style-type: none"> • Remove asbestos shingles • Replace main roof cladding with Penryhn Capital Welsh Slates <p>Lead Flashings, Coverings and Box Gutters</p> <ul style="list-style-type: none"> • Preserve over flashings replace under flashings • Dress down bay window roof • Cover timber gable and barge rolls • Cover parapet with new lead flashing • Replace box gutter with 40kg lead box gutter renew base and sides increase outlet aperture <p>Timber Roof Elements and Eaves</p> <ul style="list-style-type: none"> • Clean, Repair and repaint gable ends and barge boards • Repair fascia's and round gable end louvres • Repair Barge Capping • Check and repair eaves • Test for Asbestos <p>Rain Heads, Gutters and Downpipes</p> <ul style="list-style-type: none"> • Install new galvanised ogee gutter and spreaders and down pipes including rain heads where specified • Install 1200mm cast iron downpipe to lower section of downpipe <p>Metal Roofing</p> <ul style="list-style-type: none"> • Replace metal roofing with 0.6mm thick galvanised custom orb • Install sarking, counter battens roof safety mesh and insulation • Parapet walls; Repair and patch drummy render • Remove and reinstate roof mounted air-conditioning systems (x3) • Mount air-conditioning system on suspended beams <p>Plans to be referenced along with the above scope of works</p>
What is the cost of the scope of works?	<input checked="" type="checkbox"/> Routine maintenance - any value <input type="checkbox"/> Capital investment - less than \$5 million

	<input type="checkbox"/> Capital investment - more than \$5 million	
Location (Line, KM, Suburb and/or Area)	Liverpool Station – 35.681KM	
Attach applicable Environmental Work Method Statement (EWMS)	EWMS Number	EWMS Title
	EMS-03-EW-0299	Station Refresh and Platform
	EMS-03-EW-0296	Recladding Roofs and Walls
	EMS-03-EW-0300	Hazardous Materials Removal
Is any of the proposed work outside of the EWMS' scope?	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes:  Contact your environmental officer to determine how environmental impact assessment for the works can proceed.	
Does this work have any steps or equipment that are not covered by the EWMS?	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes: <Describe>	
Is the work part of a larger job?	<input checked="" type="checkbox"/> No: Continue to Part 2 <input type="checkbox"/> Yes: <Provide details of larger job and relationship to these works>	
	 Contact your local environmental officer for assistance. The larger project may have environmental controls that need to be applied to this job. All relevant conditions and controls need to be added to PART 5 Summary Consultation and Mitigation Measures .	

2) Project Timing and Location(s)

2.1 Project Timing

Activity	Detail dates and work hours, noting in particular any 'Out of hour' periods (that is, outside of 7am–6pm Monday to Friday or 8am–1pm Saturday)
Site Mobilisation and site setup	Monday 9 th January 2023, 7AM to 5PM
Scaffold and fall protection	14 -24 th January 2023
Chimney Repairs	25 th January – 7 th February 2023
Timber Roof Elements / Barge Capping	8 th Feb – 4 th March 2023
Flat Roof area	8 th Feb – 6 th March 2023
Gutter and Downpipes	14 th Feb – 9 th March 2023
(Tentative Program) subject to Slate delivery New Slate Re-Roofing and Repair Works	10 th March – 13 th April 2023

Demobilisation / completion works including removal of scaffold, site offices and equipment	Standard hours after completion of all works (Expected to be end of April 2023)
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2.2 Existing Environment

 *Note: Where multiple sites are to be covered by this form each location is to be identified separately in the following question set (e.g. Site 1, Site 2, etc)*

Site 1: Liverpool Station Platform 1 Building

	<p>Local environment includes:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> In, or near, residential area <input checked="" type="checkbox"/> In, or near, customer areas <input type="checkbox"/> Tunnel/underground location <input type="checkbox"/> Easement/off corridor areas <input type="checkbox"/> Open spaces <input type="checkbox"/> Sparsely vegetated spaces <input type="checkbox"/> Thickly vegetated spaces <input type="checkbox"/> In, or near, waterways or drains <input type="checkbox"/> Other (specify):
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 <p><small>Figure 3 – Red hatch of plan shows the State Heritage Register listing boundary and curtilage for the Liverpool Railway Station group #01181. Source: Heritage NSW, February 2022.</small></p>	<p>Local environment includes:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> In, or near, residential area <input checked="" type="checkbox"/> In, or near, customer areas <input type="checkbox"/> Tunnel/underground location <input type="checkbox"/> Easement/off corridor areas <input type="checkbox"/> Open spaces <input type="checkbox"/> Sparsely vegetated spaces <input type="checkbox"/> Thickly vegetated spaces <input type="checkbox"/> In, or near, waterways or drains <input checked="" type="checkbox"/> Other (specify): Red hatch on plan shows the State Heritage Register listing boundary and curtilage for the Liverpool Railway Station group #01181. Source: Heritage NSW, February 2022.
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	<p>Local environment includes:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> In, or near, residential area <input checked="" type="checkbox"/> In, or near, customer areas <input type="checkbox"/> Tunnel/underground location <input type="checkbox"/> Easement/off corridor areas <input type="checkbox"/> Open spaces <input type="checkbox"/> Sparsely vegetated spaces <input type="checkbox"/> Thickly vegetated spaces <input type="checkbox"/> In, or near, waterways or drains <input type="checkbox"/> Other (specify):
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3) Consultation requirements

3.1 Consultation with adjoining land managers

Do the works require consultation with other land managers?	Comments
Will the works result in substantial impacts on Council related infrastructure and services or locally listed heritage items? (i.e. local heritage items, stormwater, traffic, sewerage, water or impact on public place or footpaths, or works that impact flood prone areas or coastal areas)	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes: Identify requirements and how they were addressed:
Are the works adjacent to land reserved under the <i>National Parks & Wildlife Act 1974</i> ?	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes: Identify requirements and how they were addressed:
Consultation required with other stakeholders (e.g. RMS, Crown Land, Private landholder etc.)	<input checked="" type="checkbox"/> No: Continue to next question <input type="checkbox"/> Yes: Identify requirements and how they were addressed:
Note 1: Where consulted, land managers must be given a minimum of 21 days to provide comments. Any comments received must be considered and appropriate actions identified in Part 5.	

3.2 Community Consultation

Could there be community interest in the works?	<input checked="" type="checkbox"/> No: Community consultation assessment not required. <input type="checkbox"/> Yes: Complete EMS-03-FM-0104 EIA Public Engagement Assessment and identify the assessment outcome; <ul style="list-style-type: none"> <input type="checkbox"/> 'Outrage' risk management <input type="checkbox"/> Targeted public consultation <input type="checkbox"/> Public engagement not required
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Actions arising from the assessment must be identified in Part 5.

4) Environmental Assessment

4.1 Working outside Active Operational Zone (AOZ)

Are any works to be completed outside the AOZ? <i>The definition of the AOZ is contained in EMS-03-PR-0008 Environmental Impact Assessment</i>	<input checked="" type="checkbox"/> No: Continue to next Question 4.2
	<input type="checkbox"/> Yes  Contact your environmental officer for support. EMS-03-FM-0249 EWMS activities outside AOZ must be completed by an environmental officer and must be attached to this SEMP.
Note: Vehicle access across land that is not in the control of Sydney Trains via roads, access ways, easements, or with the consent of the relevant land owner is not considered to form part of the works outside the AOZ.	

4.2 Vegetation condition

Is there any vegetation within the worksite that has not been maintained⁽¹⁾ within the last 10 years? <i>(1) Pruned, weeded, mowed or other activity that significantly disturbed the vegetation.</i>	<input checked="" type="checkbox"/> No: Continue to Section 4.3
	<input type="checkbox"/> Yes: Discuss with your local environmental officer whether the site should be considered as a sensitive site due to some biodiversity aspect. If so, add site to 4.3 Sensitive Sites as directed.

4.3 Sensitive Sites

For works undertaken outside of the AOZ the following section is to include all sites identified by the environmental officer in the activities' **EMS-03-FM-0249 EWMS activities outside AOZ**.

Will the works be located in, or within 100m of an:		
<ul style="list-style-type: none"> • Aboriginal heritage site or Environmentally Sensitive Site? • Contaminated Site? • Non-Aboriginal Heritage site? 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
A separate line is to be completed in the following table for each site/location identified		
Location and distance (m) from the worksite	Nature of site <small>(Details from database or register)</small>	Potential for the works to impact ⁽²⁾
Liverpool Station	SHR Listed Station (No 001181)	Minimum – Heritage approval/exemption from Heritage Council NSW obtained HMS ID 1521 dated 26/10/22 All workers to be briefed on the conditions of approval

Notes:

- (1) Information about sensitive sites must be sufficient to be able to make an informed decision on potential impacts and appropriate project controls.
- (2) Additional assessments may be required for works in or adjacent to some sensitive sites. Please see the environmental officer and/or individual subject matter procedures for specific requirements.
- (3) Where works have the potential to impact sensitive sites the required additional controls, approvals, notifications, etc must be listed in Section 5.1 (additional approvals/permits) and/or Section 5.2 (additional controls)

4.4 Noise and Vibration Assessment of Works

<p>4.4a) Are there any noise sensitive receivers⁽¹⁾ within 350m of works?</p>	<p><input checked="" type="checkbox"/> Yes Describe receivers and continue to 4.4b) Receivers*¹: __Residential_____ Distance: _____75m</p> <p><input type="checkbox"/> No Works do not need further noise assessment, go to Section 5.</p>
<p>4.4b) Will work be limited to track work on a moving face, be undertaken for less than five (5) consecutive days and consist only of one or more of the following activities:</p> <p><input type="checkbox"/> Ballasting or ballast clean</p> <p><input type="checkbox"/> Resurfacing (tamping, stabilising, regulating)</p> <p><input type="checkbox"/> Rail profiling</p> <p><input type="checkbox"/> Continuous track welding / rail adjusting</p>	<p><input type="checkbox"/> Yes Works do not need noise and vibration assessment, go to Section 5.</p> <p><input checked="" type="checkbox"/> No Continue to 4.4c).</p>
<p>4.4c) Answer the following questions:</p> <p>a) Will there be any equipment producing noise levels of: (see 'References Tab' in EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment)</p> <p><input checked="" type="checkbox"/> more than 80 dBA⁽²⁾ during Standard Hours ⁽³⁾, and/or</p> <p><input type="checkbox"/> more than 60 dBA⁽²⁾ outside of Standard Hours ⁽³⁾ or</p> <p>b) <input type="checkbox"/> Will the works use pile drivers, hydraulic hammers or vibratory rollers (or similar vibration inducing plant)?, or</p> <p>c) <input type="checkbox"/> Will works at any one location last more than 3 weeks in duration?</p>	<p><input type="checkbox"/> Yes to any of the questions Complete EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment and include any resulting actions in Section 5.</p> <p><input checked="" type="checkbox"/> No Works do not need noise and vibration assessment, go to Section 5.</p>

Notes

- 1: Noise sensitive receivers include residences, hospitals, places of worship, schools, aged and child care facilities, etc.
- 2: Noise levels are for the loudest equipment's 'Modified 10m Sound Pressure' as given in **EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment** ('Sound Pressure' Table, 'References' Tab).
- 3: 'Standard Hours' = 7am-6pm Monday to Friday and 8am-1pm Saturday

5) Summary of approvals and control measures

Note: For works undertaken outside of the AOZ, the following section is also to include all actions and controls arising from the project's *EMS-03-FM-0249 EWMS Activities Outside of AOZ*.

5.1 Consultation, permits and approvals

Insert any relevant permits or requirements under other relevant legislation.

Environmental Hazard	Permits/Other Requirements	Timing	Responsibility
Heritage station	Heritage briefing prior to commencement.	Ongoing	PM, ST

5.2 Environmental Controls

Environmental Hazard	<u>All relevant work controls</u> including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities	Responsibility
Consultation	Letterbox notification provided Local <input type="checkbox"/> Possession <input checked="" type="checkbox"/>	
Heritage	<ul style="list-style-type: none"> All staff and their contractors to be briefed on site specific heritage matters and provided with relevant tool-box talks. Implement conditions as per approval from TfNSW Heritage approval Unexpected archaeological finds protocol to be implemented should archaeological items be uncovered during excavation works Change in scope may require additional assessment and approval. Consult with environment professional if changes in scope are proposed. 	PM/contractor
Noise	<ul style="list-style-type: none"> Delivery of tool-box talks Limit plant/equipment to minimum where possible Non-tonal reversing alarms for vehicles onsite Eliminate where possible idling of vehicles particularly nearby residential areas Plant and machinery to be fitted with noise mufflers Noise impacting generating works (during evening fire to emergency situations only, i.e. unforeseen circumstances) 	PM/contractor
Waste	<ul style="list-style-type: none"> All waste to be placed in specified bins and removed from site. Workers to be briefed about proper waste disposal processes. All wastes leaving the site will be disposed of at a licenced facility capable of receiving the waste. All waste classification will be in accordance with the NSW EPA Guidelines Litter to be continuously monitored and removed throughout the project, and redundant material to be removed by end of the possession 	PM/contractor

Environmental Hazard	All relevant work controls including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities	Responsibility
	<ul style="list-style-type: none"> • Stockpiles / leftover construction waste to be removed from site within one week. • Ensure the requirements of Sydney Trains EMS-09-PR-0018 Waste Management System Procedure are met (including classification, tracking, recovery and disposal) of 'waste' as required. 	
Stockpiles	<ul style="list-style-type: none"> • Installation of erosion and sediment controls • Stockpiles to be distanced from local drainage points. • Stockpiles to be adequately covered during windy and wet periods and not to exceed a height of 2 metres. • Provision of suitable stormwater management controls for potentially affected drainage points. • Visual monitoring of controls throughout the day and • Particularly after a major storm event. 	PM/contractor
Water Pollution / Sediment Runoff	<ul style="list-style-type: none"> • No excavation work to occur within vicinity of any waterways. • Install suitable erosion and sediment controls as per EMS-09-PR-0012 Erosion and Sediment Control. Including: • Installing silt fences in drainage lines down slope of disturbed areas. • Protecting drainage pits with sediment socks filled with non-erodible material. Protect drainage pits from silt run-off • Stabilising access to the site to prevent the tracking of mud • Installing suitable stockpile controls such as silt fencing and covers. • Daily inspections of the site will consider the performance of erosion and sediment controls, with any identified remedial action applied as soon as practical 	PM/contractor
Storage of liquids on-site (localised)	<ul style="list-style-type: none"> • Liquid containers to be tightly secured when not in use bundled enclosures where liquids (i.e fuel, solvents, paints, etc are stored at the work site) • Readily accessible and adequately sized spill kit(s) Contractor trained in the application of spill incident management. • All plant to be inspected and certified prior to commencement of work. • Liquids to be distanced from local drainage points and stormwater drains. 	PM/contractor
Dust Control	<ul style="list-style-type: none"> • Ensure appropriate dust mitigation controls are implemented. Where required, this may include the use of a water cart / water filled high rail dumpy to wet down potential dust causing surfaces 	PM/contractor
Vehicle movement/delivery of materials to job site	<ul style="list-style-type: none"> • Designated vehicle staging and delivery areas to be distanced from residential dwellings 	PM/contractor
Disturbance of asbestos	<ul style="list-style-type: none"> • Construction Environmental Management Plan and associated Documents • Testing (if required) to be undertaken by specialist if HAZMAT discovered / suspected. 	PM/contractor

Environmental Hazard	All relevant work controls including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities	Responsibility
Containing Materials and other unforseen HAZMAT materials	<ul style="list-style-type: none"> • Project Manager to inform Environment Professional. • Asbestos Control Plan 	
Peeling Lead paint remediation	<ul style="list-style-type: none"> • Remove only flaking lead paint and repaint and encapsulate in accordance with Lead paint Removal and Re-painting guidelines in Specifications for Remediation works. • Install plastic ground covers to exposed areas within work area to ensure no contamination occurs to office infrastructure. • Prevent water paint-stripping material and wastes from entering the building or spraying over surrounding areas. Suspend work during weather conditions. • Prevent runoff from the paint-stripping operations from marking or tracking across other surfaces. • Collect residual water and wastes and restrict them to an approved means of disposal. • Prevent water from soaking into the ground adjacent to the building. • Continuous dust and vacuum extraction within containment system to prevent dust build up. • Continuous air monitoring of Total Suspended Particulate (TSP) dust in accordance with AS4361.1 around the station building particularly in areas accessible to the staff and public. • Exclusion zone to prevent public accessing worksite area. Setup exclusion zone and decontamination unit onsite to prevent workers exposed to lead particles walking in public areas with contaminated PPE. Workers to use decontamination unit to clean and remove PPE before exiting exclusion zone. • Disposal of lead paint to be performed in accord with EPA guidelines. Material to be assessed classified and disposed at an appropriate tip site. Material to be collected in dust extractors. 	PM/contractor
Chemical Use	<ul style="list-style-type: none"> • Carry associated Material Safety Data Sheets (MSDS) for all chemicals. • Ensure appropriate spill kits, are available onsite • Liquid containers to be tightly secured when not in use bunded enclosures where liquids (i.e. fuel, solvents, paints, etc are stored at the work site) 	PM/contractor
 The works' SECM must illustrate the relevant work areas and site environmental controls described above		

5.3 Biodiversity Offset

<p>Is a Biodiversity Offset required for the project in accordance with EMS-06-OR-1006 Biodiversity</p> <p>Note: <i>All calculations are to be in accordance with EMS-06-WI-0177 Biodiversity Offsets Calculator</i></p>	<p><input checked="" type="checkbox"/> No Continue</p> <p><input type="checkbox"/> Yes Provide the following information:</p> <ul style="list-style-type: none"> • Value: _____
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5.4 For environmental planning and assessment purposes the Site Environmental Management Plan for this job comprises of:

- This SEMP document
 - The Environmental Work Method Statement (EWMS) referred to in Section 1
 - The attached project's Site Environmental Control Map
- Plus (tick as required)
- EMS-03-FM-0248 *EWMS Scope Exception*
 - EMS-03-FM-0249 *EWMS Activities outside AOZ* (see Section 4.1)
 - EMS-10-FM-0166 *Maintenance Quantified Noise Assessment* (see Section 4.3)
 - Additional environmental studies, approvals (including Aboriginal and non-Aboriginal heritage)

5.5 Is review required by an environmental assessor?

Is this for a program of work?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is any of the work to be completed outside of the Active Operational Zone (AOZ)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is any work being undertaken or will impact on land controlled by others?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is access required across land controlled by others that is not a road, easement or right of way?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were any sensitive sites identified in Section 4.2?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is any work being undertaken in embankments, cuttings or on the boundary fence?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is extensive Council or other Authority consultation required?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are environmental impacts "likely" and "significant"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Was an EMS-10-FM-0166 <i>Maintenance Quantified Noise Assessment</i> required (Section 4.3) AND was a work phase identified as High Risk?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is work likely to cause community concern (other than noise)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were additional environmental studies or approvals (e.g. heritage) required?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Were any biodiversity Offsets required for the project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



If "Yes" to any of the above, this form must be submitted to the local environmental officer for assessment at least 4 weeks prior to the planned commencement date of the works.

6) Determination

The works covered by this document can proceed under Division 5.1 of the EP&A Act and Part 8 of the EP&A Reg subject to the implementation of all mitigation measures and actions identified in this document.

Position of Determiner: Project Manager

Date of Determination: 02/12/2022

This version of the document has been redacted to remove personal information.

To provide comments or feedback on this EIA please complete a Sydney Trains Feedback Form or call the Sydney Trains Feedback Line on 131 500.

Re-cladding Roofs and Walls			Sydney Trains Incident Hotline: 1800 772 779
Environmental Work Method Statement			
Scope			Plant and Equipment:
<p>Scope of EWMS: Works covered by this EWMS are limited to:</p> <ul style="list-style-type: none"> • Re-cladding roofs or walls with similar materials • Installation of whirly birds • Installation of roof louvers and vents • Installation static lines and roof walkways • Guttering 	<p>Not in Scope: Works not in scope include:</p> <ul style="list-style-type: none"> • Enlargement or extension of building or increase in load-bearing capacity of any load-bearing component of building • Structural alterations. 	<p>Note: Works outside this scope may require an environmental assessment, and Construction EMP. Contact local Environmental Practitioner for guidance. This EWMS must be used in conjunction with the SEMP and SECM.</p>	<ul style="list-style-type: none"> • Crane truck • Lifting plant – Crane, EWP, Telehandler • Lighting towers • Oxy cutting equipment • Site amenities • Traffic control devices • Waste bins • Welding equipment • Work trucks / vehicles • Scaffolding • Ladder(s) • Water cart
Before works commence			
<p>Training/Qualifications required:</p> <ul style="list-style-type: none"> • Operators must be trained & currently accredited to use tools, plant and equipment. • Site Supervisor to have completed 1 day Erosion and Sediment Control course • Project Manager to have completed Environmental Management for Projects online training and EWMS Planning Pathway Masterclass 	<p>External notifications:</p> <ul style="list-style-type: none"> • Letter box drop to all affected residences where required. • Assess planning / heritage requirements 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> • Site Environmental Management Plan, • Construction or Maintenance Plan 	
During works			
<p>Inspections and Briefings:</p> <ul style="list-style-type: none"> • Pre-work brief, • Daily plant inspections, • Daily site inspections. 	<p>Permits / licences:</p> <ul style="list-style-type: none"> • Heritage s60 approval or s57 exemption from approval or notification as required • Hot work permit 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> • Pollution Incident Notification, • Records of inspection. 	
Post works			
<p>Inspections:</p> <ul style="list-style-type: none"> • Post work inspections. 	<p>Site Rehabilitation</p>	<p>Records/Reporting:</p> <ul style="list-style-type: none"> • Post work defect reporting, • Records of inspection. 	

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Environmental Hazard Matrix

Applicable Job Steps	Environmental Hazard															
	<u>Staff unaware</u>	<u>Environmentally sensitive site damage</u>	<u>Erosion and sedimentation</u>	<u>Noise and vibration</u>	<u>Dust (from earthworks)</u>	<u>Damage to adjacent property</u>	<u>Traffic</u>	<u>Wastes</u>	<u>Soil contamination</u>	<u>Hydrocarbon spill</u>	<u>Plants and Animals</u>	<u>Light spill</u>	<u>Fumes/Smoke from diesel equipment</u>	<u>Aesthetics</u>	<u>Heritage</u>	<u>Bush fires</u>
Preliminary works Material / plant delivery and storage, site amenities, skip bins Erect scaffolding Trim vegetation adjacent and overhanging	✓	✓	✓						✓	✓	✓					✓
Remove existing roofing and flashings or cladding				✓		✓	✓	✓	✓				✓		✓	✓
Painting: <ul style="list-style-type: none"> Abrasive blast / high pressure water clean Paint the prepared steel surfaces Regular clean up / disposal of spent abrasive and paint debris Painting roof purlins and substructure 				✓	✓	✓		✓	✓			✓	✓			✓
Replace all roof and or cladding insulation and roof mesh Replace roof and or cladding with sheeting to match existing				✓			✓		✓			✓	✓	✓	✓	✓
Demobilisation, remove scaffolding, site tidy, waste disposal				✓			✓	✓						✓		

Hazard Control Table

Environmental Hazard	Control	Responsibility for control	Controls reference
Site pre-work briefing and local induction not completed:	<ul style="list-style-type: none"> Undertake site pre-work briefing and give local induction. 	Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan. SMS-06-FM-4163 "Pre-work Briefing".
Damage to environmentally sensitive site or receptor:	<ul style="list-style-type: none"> Demarcate sensitive sites and prevent entry into sensitive site, Prevent entry into delineated areas, Identify no-go areas in Pre-work briefings, Daily inspections. 	Project Manager Site Supervisor Site Supervisor Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan. Environmentally Sensitive Site List. SMS-06-FM-4163 "Pre-work Briefing."
Erosion and sedimentation:	<ul style="list-style-type: none"> Develop erosion and sediment control plan for site and install erosion and sediment control structures prior to commencing site work, Maintain erosion and sediment control structures during works and until site has stabilised after completion of works, Provide sediment protection for worksite, Daily inspection. 	Project Manager Site Supervisor Site Supervisor Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-14-PR-0012 "Erosion and Sediment Control".
Offensive noise:	<ul style="list-style-type: none"> Plan to conduct works during normal work hours where possible, or to less sensitive times of the day, Locate noisy equipment, parking areas and operations away from sensitive receivers where practical, Carry out letterbox notifications to all impacted residents, Daily inspection. 	Project Manager Site Supervisor Project Manager Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-10-GD-0048 "Guide to Managing Noise and Vibration from Rail-related Construction and Maintenance".
Dust from works impacting non-Sydney Trains controlled property):	<ul style="list-style-type: none"> Use water cart to dampen exposed surfaces including access roads, work areas and stockpiles, Cover long term stockpiles, Keep vehicles to existing access roads, Minimise removal of vegetation from worksite, Daily inspections. 	Site Supervisor Site Supervisor Site Supervisor Project Manager Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-05-GD-0013 "Air Quality Guide".

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Environmental Hazard	Control	Responsibility for control	Controls reference
Damage to adjacent properties:	<ul style="list-style-type: none"> • Liaise with adjacent land holder and undertake agreed actions, • Conduct pre-work dilapidation risk assessment, including site photos. 	<p>Project Manager</p> <p>Site Supervisor</p>	<ul style="list-style-type: none"> • Site Environmental Management Plan.
Traffic disruption around worksites:	<ul style="list-style-type: none"> • Implement Traffic Management Plan, • Plan all vehicle movements to occur outside of local peak traffic periods, • Ensure offsite staging areas in low impact areas, • Utilise qualified traffic control staff. 	<p>Project Manager</p>	<ul style="list-style-type: none"> • Site Environmental Management Plan.
Generation of wastes from vegetation management:	<ul style="list-style-type: none"> • Ensure wastes are placed in appropriate bags or containers, • All cut vegetation (clippings (mower/whipper sniping clippings, leaves, branches & other) to be removed from site and recycled, • Remove stockpiles as soon as possible, • No spreading of weed infested material within corridor. 	<p>Site Supervisor</p>	<ul style="list-style-type: none"> • Site Environmental Management Plan. • EMS-13-OR-1013 "Waste Management".
Generation of wastes from construction:	<ul style="list-style-type: none"> • Do not overestimate quantities of materials required, • Separate wastes into recyclable categories, • Ensure wastes are placed in appropriate containers, • Daily inspections, • Check and clean spoil wagons / trucks before leaving worksite, • Remove stockpiles as soon as possible, • No spreading of weed infested material within corridor • Hazardous materials to be disposed of in accordance with DECC 2009 Waste Classification Guidelines. 	<p>Site Supervisor</p>	<ul style="list-style-type: none"> • Site Environmental Management Plan. • EMS-13-OR-1013 "Waste Management".

Environmental Hazard	Control	Responsibility for control	Controls reference
Soil contamination:	<ul style="list-style-type: none"> Identify potential contaminants prior to commencing work on site, Ensure segregation of potentially contaminated materials from clean materials, Daily inspections. 	<p>Project Manager</p> <p>Site Supervisor</p> <p>Site Supervisor</p>	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-07-PR-0004 <i>“Contaminated Land Management”</i>.
Hydrocarbon / paint spill:	<ul style="list-style-type: none"> Ensure daily plant checklists completed and repairs made as required, Ensure all plant has suitable spill kits and operators trained in use and disposal of used materials, Notify Pollution Incidents to the Safety Incident and Injury Hotline 1800 772 779, Ensure SDS onsite for all stored chemicals Bund all chemicals including paints and solvents 	<p>Site Supervisor</p>	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-02-WI-0124 <i>Notify Pollution Incidents</i>
Threats to biodiversity via native vegetation or habitat clearing, and the spread of noxious weeds:	<ul style="list-style-type: none"> Maintain tape or other suitable fencing around “no go zones”, Clear minimal vegetation, only as approved, Trim or remove trees under direction of an arborist, Keep vehicles and equipment away from vegetation, Preserve wildlife / habitat where possible. Contact WIRES as required for injured animals, Remove weeds from plant before leaving infested sites, Use weed control process (spray qualifications, data sheets), Revegetate disturbed areas using locally native, appropriate species, in an approved vegetation plan. 	<p>Site Supervisor</p> <p>Site Supervisor</p> <p>Site Supervisor</p> <p>Site Supervisor</p> <p>Site Supervisor</p> <p>Site Supervisor</p> <p>Project Manager</p>	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-06-OR-1006 <i>Biodiversity</i>. EMS-11-WI-0053 <i>Noxious and Environmental Weed Herbicide Application</i>. EMS-11-PR-0017 <i>Pesticide System Procedure</i>.
Light spill:	<ul style="list-style-type: none"> Locate portable lighting towers so that they are not directed at residential properties, Ensure parked vehicles headlights do not shine into residences, Daily inspections. 	<p>Site Supervisor</p>	<ul style="list-style-type: none"> Site Environmental Management Plan.

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Environmental Hazard	Control	Responsibility for control	Controls reference
Fumes and smoke from diesel, petrol or LPG equipment including all plant and vehicles:	<ul style="list-style-type: none"> Maintain equipment in accordance with manufacturer's written specification, Ensure plant checklists completed and repairs made as required. 	Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan. SMS-16-SR-0057 "Workplace Health and Safety Inspection, Testing and Calibration."
Threats to visual aesthetics including placement of stockpiles, removal of vegetation screens, and creation of visually unattractive structures:	<ul style="list-style-type: none"> Place stockpiles and site amenities away from residents, and remove them as soon as possible, Create or maintain existing visual screens using vegetation, shade cloth on fences or natural site features, Consider visual amenity of building in design phase, including colour, materials and texture. 	Site Supervisor Site Supervisor Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan.
Heritage	<ul style="list-style-type: none"> Check the S170 Register for any heritage structures that may be impacted. Contact Sydney Trains' Heritage Specialist (SER Directorate) for advice regarding Statements of Heritage Impact Demarcate heritage site to prevent entry into heritage site If a heritage item is uncovered, Stop further disturbance, demarcate the site and contact the Environment Officer. 	Project Manager Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan Sydney Trains Heritage and Conservation Register
Bush and/or grass fires	<ul style="list-style-type: none"> Obtain Hot Work permit for site work Operate in accordance with requirements of Hot Work Permit Provide firefighting equipment suitable to operations 	Project Manager Site Supervisor Site Supervisor	<ul style="list-style-type: none"> Site Environmental Management Plan SMS-06-FM-0382 Hot Work Permit

Station Refresh			Sydney Trains Incident Hotline: 1800 772 779
Environmental Work Method Statement			
Scope			Plant and Equipment:
<p>Scope of EWMS: Works covered by this EWMS are limited to the 'refurbishment of the station' including the following elements to meet the requirements Sydney Trains and NSW TrainLink: Station Components Guide (June 2017):</p> <ol style="list-style-type: none"> 1) Maintenance and renewal of the following existing station components: <ol style="list-style-type: none"> a. Flooring, surfaces (including asphalt, tiles, plaster, sandstone, timber surfaces, etc), tuck pointing and tactiles b. Gutters, drains and downpipes, doors and doorways, glazing and footings c. Seats, bubblers, bins, ticketing systems and customer information systems d. Lighting systems and security systems e. Toilets including pans, mirrors, basins and seats f. Stairs including hand rails, tactiles, stair nosing and balustrades 2) Removal of redundant services, removal of redundant fixtures, fittings and operational items (including ticket booths, safes, etc), removal of internal non-load bearing walls and false ceilings 3) Cleaning and pressure washing of station assets and infrastructure 4) Pest bird proofing including netting and spikes <p>Renewal includes upgrading existing components to meet the requirements <i>Sydney Trains and NSW TrainLink: Station Components Guide (June 2017)</i>.</p>	<p>Not in Scope: Works not in scope include:</p> <ul style="list-style-type: none"> • Installation of new components (including toilets, ticketing systems, security systems, customer information systems, etc) • Any alteration or removal of original Heritage fabric without approval • Any alteration, removal or enlargement of the existing buildings or station infrastructure • Any outdoor commercial advertising signage or other advertising infrastructure • Garden Landscaping 	<p>Note: If any works outside of the scope of applicable EWMS then contact your environmental practitioner to determine how environmental impact assessment for the works can proceed.</p> <p>This EWM must be used in conjunction with the Site Environmental Management Plan (SEMP) and Site Environmental Control Map (SECM).</p>	<ul style="list-style-type: none"> • Hand tools/Power tools • Jackhammer • Truck • Concrete saw • High rail equipment • EWP • Platform ladder • Scaffolding • Extraction fan • Core borer • Hoarding • Crane truck • Skip bin • Portable toilets • Oxy cutting equipment • Lighting • Generator • Pressure washer • Whacker packer

Before works commence		
Training/Qualifications required: <ul style="list-style-type: none"> • Operators must be trained & currently accredited to use tools, plant and equipment. • Project manager to have completed online training Environmental Management for Project and EWMS Masterclass 	External notifications: <ul style="list-style-type: none"> • Letter box drop to all affected residences where required. • Assess planning / heritage requirements • Poster signs at stations • Website update 	Records/Reporting: <ul style="list-style-type: none"> • Site Environmental Management Plan • Site Environmental Control Map
During works		
Inspections and Briefings: <ul style="list-style-type: none"> • Pre-work brief, • Daily plant inspections, • Daily site inspections. 	Permits / licences: <ul style="list-style-type: none"> • Heritage s60 approval or s57 exemption from approval or notification as required • Hot works permit 	Records/Reporting: <ul style="list-style-type: none"> • Pollution Incident Notification, • Records of inspection. • Waste receipts
Post works		
Inspections: <ul style="list-style-type: none"> • Post work inspections. 	Site Rehabilitation <ul style="list-style-type: none"> • Usually not required 	Records/Reporting: <ul style="list-style-type: none"> • Post work defect reporting, • Records of inspection • Waste receipts

Environmental Hazard Matrix

Applicable Job Steps	Environmental Hazard																	
	<u>Scope outside EWMS</u>	<u>Unsuitable plant and equipment</u>	<u>Staff unaware</u>	<u>Environmentally sensitive site damage</u>	<u>Erosion and sedimentation</u>	<u>Noise and vibration</u>	<u>Dust (from earthworks)</u>	<u>Damage to adjacent property</u>	<u>Traffic</u>	<u>Wastes</u>	<u>Soil contamination</u>	<u>Hydrocarbon spill</u>	<u>Plants and animals</u>	<u>Light spill</u>	<u>Fumes/Smoke from diesel equipment</u>	<u>Aesthetics</u>	<u>Heritage</u>	<u>Bush fires</u>
Site establishment, including <ul style="list-style-type: none"> Material/plant delivery and storage Site amenities Skip bins Hoardings Compound establishment Land shipping containers or other temporary buildings 	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Declutter <ul style="list-style-type: none"> Removal redundant equipment and services Removal of floor furnishings and tiles Strip paint 	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
Construction, including <ul style="list-style-type: none"> Asphalting Installation of new plumbing Painting and touch ups Fencing Rust repairs Glazing Install bird proofing Toilet refurbishing Ceiling / underside of awning / gable repairs Install new gutters Tuck pointing Stair nosing Crimp safe mesh installation over windows Screen door replacement General make good works Site demobilisation 	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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Hazard Control Table

Environmental Hazard	Control	Responsibility for control	Controls reference
Staff not aware of local hazards and controls	<ul style="list-style-type: none"> Undertake site pre-work briefing and give local induction 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. SMS-06-FM-4163 "Pre-work Briefing".
Damage to environmentally sensitive site or receptor:	<ul style="list-style-type: none"> The SEMP must identify any environmentally sensitive sites that may be impacted by the activity. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. Environmentally Sensitive Site List. SMS-06-FM-4163 "Pre-work Briefing".
Erosion and sedimentation:	<ul style="list-style-type: none"> Develop erosion and sediment control plan for site and install erosion and sediment control structures prior to commencing site work, Maintain erosion and sediment control structures during works and until site has stabilised after completion of works, Provide sediment protection for worksite, Daily inspection. 	Project Manager Site Manager Site Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-14-PR-0012 "Erosion and Sediment Control".
Offensive noise:	<ul style="list-style-type: none"> The SEMP must identify potentially sensitive receivers and identify relevant controls through the noise assessment. 	Project Manager Site Manager Project Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-10-GD-0048 "Guide to Managing Noise and Vibration from Rail-related Construction and Maintenance".
Dust from earth works impacting non-Sydney Trains controlled property):	<ul style="list-style-type: none"> Daily inspections. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-05-GD-0013 "Air Quality Guide".
Damage to adjacent properties:	<ul style="list-style-type: none"> The SEMP must identify potentially sensitive receivers and relevant controls based on vibration assessment, where required. Liaise with adjacent land holder and undertake agreed actions. 	Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan.

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Environmental Hazard	Control	Responsibility for control	Controls reference
Traffic disruption around worksites:	<ul style="list-style-type: none"> • Implement Traffic Management Plan, • Plan all vehicle movements to occur outside of local peak traffic periods, • Ensure offsite staging areas in low impact areas, • Utilise qualified traffic control staff. 	Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan.
Generation of wastes from construction (spoil, concrete wastes, litter):	<ul style="list-style-type: none"> • Do not overestimate quantities of materials required, • Separate wastes into recyclable categories, • Ensure wastes are placed in appropriate containers, • Daily inspections, • Check trucks before leaving worksite, 	Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan. • EMS-13-OR-1013 "Waste Management".
Soil contamination:	<ul style="list-style-type: none"> • Identify potential contaminants prior to commencing work on site, • Ensure segregation of potentially contaminated materials from clean materials, • Daily inspections. 	Project Manager Site Line Manager Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan. • EMS-07-PR-0004 Contaminated Land Management.
Hydrocarbon / paint spill:	<ul style="list-style-type: none"> • Ensure daily plant checklists completed and repairs made as required, • Ensure all plant has suitable spill kits and operators trained in use and disposal of used materials, • Notify Pollution Incidents to the Safety Incident and Injury Hotline 1800 772 779, • Ensure SDS onsite for all stored chemicals. 	Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan. • EMS-02-WI-0214 Notify Pollution Incidents
Light spill:	<ul style="list-style-type: none"> • Locate portable lighting towers/reflective surfaces so that they are not directed at residential properties, • Ensure parked vehicles headlights do not shine into residences, • Daily inspections. 	Site Manager	<ul style="list-style-type: none"> • Site Environmental Management Plan.

Environmental Hazard	Control	Responsibility for control	Controls reference
Fumes and smoke from diesel, petrol or LPG equipment including all plant and vehicles:	<ul style="list-style-type: none"> Maintain equipment in accordance with manufacturer's written specification, Ensure plant checklists completed and repairs made as required. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. SMS-16-SR-0057 "Workplace Health and Safety Inspection, Testing and Calibration."
Threats to visual aesthetics including alteration to the character of the place or, creation of visually unattractive structures	<ul style="list-style-type: none"> Create or maintain existing visual screens using vegetation, shade cloth on fences or natural site features, Consider visual amenity in design phase, 	Site Manager Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan.
Heritage	<ul style="list-style-type: none"> Demarcate heritage site or area to prevent entry or inadvertent damage to heritage items or fabric If any unexpected finds are uncovered stop works and contact the Environmental Professional in accordance with the Unexpected Archaeological Finds Procedure. 	Project Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan Sydney Trains Heritage and Conservation Register EMS-09-PR-0164 Unexpected Archaeological Finds
Bush and/or grass fires	<ul style="list-style-type: none"> Obtain Hot Work permit for site work Operate in accordance with requirements of Hot Work Permit Provide firefighting equipment suitable to operations 	Project Manager Site Manager Line Manager	<ul style="list-style-type: none"> Site Environmental Management Plan SMS-06-FM-0382 Hot Work Permit

Hazardous Materials Removal and Replacement			Sydney Trains Incident Hotline: 1800 772 779
Environmental Work Method Statement			
Scope			Plant and Equipment:
<p>Scope of EWMS: Works covered by this EWMS are limited to the following activities on Sydney Trains assets (including buildings, rollingstock and electrical equipment):</p> <ul style="list-style-type: none"> • Removal, encapsulation and/or replacement of asbestos containing materials (ACM) • Removal and/or encapsulation of lead-based paint • Removal and/or replacement of light fittings containing polychlorinated biphenyls (PCBs) • Removal of materials containing synthetic mineral fibres (SMFs) • Vacuum removal of hazardous material debris & dust <p>Note: All works:</p> <ul style="list-style-type: none"> • must be undertaken in accordance with WHS Act and relevant codes of practice and • must comply with all aspects of the Sydney Trains SMS 	<p>Not in Scope: Works not in scope include:</p> <ul style="list-style-type: none"> • Contaminated Land remediation • Removal and alteration of original heritage fabric without approval 	<p>Note: If any works outside of the scope of applicable EWMS then contact your environmental practitioner to determine how environmental impact assessment for the works can proceed</p> <p>This EWMS must be used in conjunction with the Site Environmental Management Plan (SEMP) and Site Environmental Control Map (SECM)</p>	<ul style="list-style-type: none"> • Hand tools/Power tools • Truck • Concrete saw • High rail equipment • EWP • Platform ladder • Scaffolding • Extraction fan • Core borer • Hoarding • Crane truck • Skip bin • Portable toilets • Oxy cutting equipment • Lighting • Generator • Pressure washer • Manitou • Asbestos / lead vacuum cleaner
Before works commence			
<p>Training/Qualifications required:</p> <ul style="list-style-type: none"> • Contractor must be competent and trained as per SMS training requirements. • Project Manager to have completed Environmental Management for Projects online training and EWMS Planning Pathway Masterclass. 	<p>External notifications:</p> <ul style="list-style-type: none"> • Letter box drop to all affected residences where required. • Assess planning / heritage requirements • Poster signs at stations • Website update • Signage 	<p>Records/Reporting:</p> <ul style="list-style-type: none"> • Site Environmental Management Plan • Site Environmental Control Map • Pre work dilapidation survey as required • Hazardous Materials Register • Asbestos Management Plan / 	

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	<ul style="list-style-type: none"> • WorkCover notification 	Asbestos Removal Control Plan	
During works			
Inspections and Briefings: <ul style="list-style-type: none"> • Pre-work brief • Daily plant inspections • Daily site inspections 	Permits / licences: <ul style="list-style-type: none"> • Heritage s60 approval or s57 exemption from approval or notification as required • Asbestos removal contractors must have an appropriate asbestos removal licence Class A - friable or bonded Class B - bonded • Licenced Asbestos Assessor / or competent person 	Records/Reporting: <ul style="list-style-type: none"> • Waste tracking documentation / receipts • NSW EPA Waste Locate • Asbestos clearance certificate • Air monitoring results • Pollution Incident Notification • Records of inspection 	
Post works			
Inspections: <ul style="list-style-type: none"> • Post work inspections 	Site Rehabilitation <ul style="list-style-type: none"> • Usually not required 	Records/Reporting: <ul style="list-style-type: none"> • Post work dilapidation / defect survey • Records of inspection • Updated Asbestos Management Plan • Updated Hazardous Materials Register 	

Environmental Hazard Matrix

Applicable Job Steps	Environmental Hazard																
	<u>Scope outside EWMS</u>	<u>Unsuitable paint and equipment</u>	<u>Staff unaware</u>	<u>Environmentally sensitive site damage</u>	<u>Erosion and sedimentation</u>	<u>Noise and vibration</u>	<u>Dust (from earthworks)</u>	<u>Damage to adjacent property</u>	<u>Traffic</u>	<u>Wastes</u>	<u>Soil contamination</u>	<u>Hydrocarbon spill</u>	<u>Plants and Animals</u>	<u>Light spill</u>	<u>Fumes/Smoke from diesel equipment</u>	<u>Aesthetics</u>	<u>Heritage</u>
Site establishment, including <ul style="list-style-type: none"> Material/plant delivery and storage Site amenities Skip bins Hoardings Compound establishment Temporary containers or other temporary buildings 	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
Removal / management of: <ul style="list-style-type: none"> ACM; Lead-based paint systems; PCBs in lights SMFs; Dust and debris (containing asbestos and / or lead pain flakes) 	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓
Reinstatement: <ul style="list-style-type: none"> Reinstatement of removed material Painting and touch ups Rust repairs General make good works Site demobilisation 	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓

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Environmental Hazard	Control	Responsibility for control	Controls reference
Dust from works	<ul style="list-style-type: none"> Daily inspections. Engage appropriately experienced and licenced contractor Use wetting techniques Restrict dust generating activities (such as vehicle traffic speed / sweeping) Limit works completed in windy weather Air monitoring to determine effectiveness of controls 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-05-GD-0013 <i>Air Quality</i>
Damage to adjacent properties:	<ul style="list-style-type: none"> Liaise with adjacent land holder and undertake agreed actions, Conduct pre and post work dilapidation surveys, including detailed 'time and date' stamped site photos. 	Project Manager	<ul style="list-style-type: none"> Site Environmental Management Plan.
Traffic disruption around worksites:	<ul style="list-style-type: none"> Implement Traffic Management Plan, Plan all vehicle movements to occur outside of local peak traffic periods (where possible), Ensure offsite staging areas in low impact areas, Utilise qualified traffic control staff. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan.
Hydrocarbon/paint spill:	<ul style="list-style-type: none"> Ensure daily plant checklists completed and repairs made as required, Ensure all plant has suitable spill kits and operators trained in use and disposal of used materials, Notify Pollution Incidents to the Safety Incident and Injury Hotline 1800 772 779, Ensure SDS onsite for all stored chemicals. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. EMS-02-WI-0214 <i>Notify Pollution Incidents</i>
Light spill:	<ul style="list-style-type: none"> Locate portable lighting towers/reflective surfaces so that they are not directed at residential properties, Ensure parked vehicles headlights do not shine into residences, Daily inspections. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan.

Environmental Hazard	Control	Responsibility for control	Controls reference
Fumes and smoke from diesel, petrol or LPG equipment including all plant and vehicles:	<ul style="list-style-type: none"> Maintain equipment in accordance with manufacturer's written specification, Ensure plant checklists completed and repairs made as required. 	Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan. <i>SMS-16-SR-0057 Workplace Health and Safety Inspection, Testing and Calibration</i>
Impact to a heritage item	<ul style="list-style-type: none"> Actual and potential impacts on heritage will be assessed as part of the SEMP Where required, heritage approvals and/or exemptions must be obtained prior to any works commencing on heritage assets Appropriate heritage controls will be identified through the process and implemented on site. If any unexpected finds are uncovered stop works and contact the Environmental Professional in accordance with the Unexpected Archaeological Finds Procedure. 	Project Manager Project Manager Site Manager Site Manager	<ul style="list-style-type: none"> Site Environmental Management Plan <i>Sydney Trains Heritage and Conservation Register</i> <i>EMS-09-PR-0164 Unexpected Archaeological Finds</i>

15 August 2022

Our Reference: 22002

Sydney Trains
34 – 46 George Street
Burwood NSW 2134

Attention: Asim Khan

RE: STATEMENT OF HERITAGE IMPACT FOR LIVERPOOL STATION PLATFORM 1 BUILDING ROOF

Dear Sir,

OCP Architects have been engaged by Transport New South Wales to prepare a Statement of Heritage Impact for proposed works in relation to the existing roof of platform 1 building at Liverpool Railway Station. Following is a brief overview and assessment of the heritage impact from the proposal.

Background

This Statement of Heritage Impact Report has been prepared in order to assess the impact of the proposed conservation and repairs to the existing slate roof on the heritage significance of Liverpool Railway Station.

Site identification

Liverpool is a suburb of Greater Western Sydney, within the Local Government Area of Liverpool City Council, approximately 27km south-west of the Sydney CBD. Three train lines stop at Liverpool Station. T3 terminates at Liverpool; and T2/T5 Leppington Lines. The real property description for the site is Lot 1 of DP 1053994.

The subject building is located at Liverpool Railway Station, off Bigge Street and forms part of State listed, "Liverpool Railway Station group". The proposed scope of works is for repairs to the slate roof of the most western heritage listed building, adjacent to city bound railway tracks that service Platform number 1.

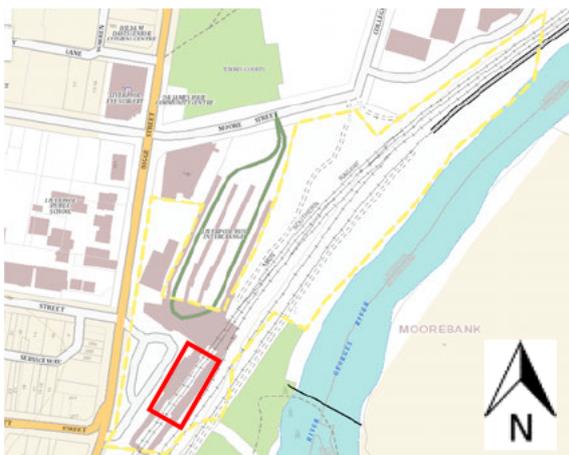


Figure 1 – Location Plan of Liverpool Station Group outlined in yellow dashed line. The red line locates the subject site in context within Liverpool Station. Source: ePlanning Spatial Viewer, 2022.



Figure 2 – Aerial view showing outlined in red the subject site at Liverpool Station. Source: LPI, SIX Maps 2022.

Site Description

The primary entry to Liverpool Station is on the west side via Bigge Street.

The old station building to platform 1 (subject site), is adjacent to a triangular area used as the drop off zone/taxi stand and carpark. Public access to Platform 1 is on the east side of the subject building, via the new north footbridge (built 2000). A galvanised steel fence separates the car park from platform 1.

Heritage Status

The following table provides a summary of the statutory heritage listings that apply to the Liverpool Railway Station Group site:

Item name	Address	Statutory instrument	Item no.
Liverpool Railway Station Group	Bigge Street (off)	Liverpool Local Environmental Plan 2008	I 72
		NSW State Heritage Register, Heritage Act 1977	01181
Liverpool Railway Station and Goods Shed	Bigge Street (off)	Railcorp Section 170 Register	4801090
Bigge Park Conservation Area	Area bounded by and including College, Goulburn, Railway, Scott and Bigge Streets.	Liverpool Local Environmental Plan 2008	C01

Heritage Items in the Vicinity

As evident in Figure 4, there are numerous heritage items in the vicinity of the site. Those near the study area are identified in the table below.

Item Name	Item Number	Address	Significance
Liverpool Courthouse (former) and Potential Archaeological Site	01999	251 Bigge Street	State
Liverpool Public School	I 71 (LLEP 2008)	Bigge Street, Liverpool	Local
Liverpool Courthouse (former)	I 73(LLEP 2008)	Corner of Bigge and Moore Streets	Local
Commercial Hotel (former Marsden's Hotel)	I 74(LLEP 2008)	Bigge and Scott Streets	Local
Plan of Town of Liverpool (early town centre street layout–Hoddle 1827)	I 89 (LLEP 2008)	Streets in the area bounded by the Hume Highway, Copeland Street, Memorial Avenue, Scott Street, Georges River and Main Southern Railway Line (excluding Tindall Avenue and service ways)	Local

Dr James Pirie Child Welfare Centre Building	I 100 (LEP 2008)	cnr Moore and Bigge Streets	Local
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Figure 3 – Red hatch on plan shows the State Heritage Register listing boundary and curtilage for the Liverpool Railway Station group #01181. Source: Heritage NSW, February 2022.



Figure 4 – Plan showing subject site within red circled area. Tan notes locally listed items and red hatch notes Bigge Park Conservation Area. Source: Liverpool LEP 2008, Sheet 11 & 12, February 2022.

Local History – Establishment of Liverpool

The following history of the founding of Liverpool, has been extracted from Liverpool City Council’s website and supplemented by additional research.

The original inhabitants of the Liverpool area were the Cabrogal people who spoke the Darug language. The Georges River provided a natural boundary between the Darug or ‘wood tribes’ and the neighbouring Tharawal or ‘coast tribe’. These tribes knew the area as Gunyungalung and evidence suggests they have been here for up to 40,000 years.

European settlement within the present-day Liverpool and its surrounds began as early 1795 following the expedition of George Bass, a naval surgeon and Matthew Flinders, a naval officer, who sailed up the Georges River in a small boat and led to the establishment of the area Banks Town. This led to further exploration into the Liverpool district with large portions of land being granted to those

individuals who were financially capable of investing in and working their land. Thomas Moore was granted 750 acres in 1805 in Moorebank and would subsequently acquire more land in the locality.

The Commission to Macquarie (dated 8 May 1809), gave Governor Macquarie as Governor of the colony the powers, amongst other issues, to create new towns. During 1810, Governor Macquarie toured the outer regions of the Cowpastures and Hawkesbury region and established new town sites which would become the first planned townships in the colony. Of the eleven towns in NSW that Macquarie helped to plan during his time as Governor, Liverpool was the first Macquarie Town established:

On November 7, 1810, Governor Lachlan Macquarie founded Liverpool and named it in honour of the Earl of Liverpool, then Secretary of State for the Colonies...

...After planning the Town Square, Macquarie appointed emancipated architect Francis Greenway to design a church. In 1818 he laid the foundation stone and named the church St Lukes. Another monument to Greenway's genius is the TAFE College which was built as the first hospital.

Liverpool was one of a number of locations designed to function as produce depots and convict administrative centres to support the growing colony. The new town was laid out with a rectangular road grid and contained a town square (later gazetted as Bigge Square in 1826) surrounded by public buildings. The plan of Liverpool was to contain a convict barrack and military barrack, a courthouse, gaol, hospital and church. Moore was established as the local magistrate and appointed each year between 1810 and 1821. His duties included responsibility for allocation of the town's allotments when the town plan was gazetted.

The coming of the railway, opened in September 1856 and the electric telegraph in 1858, provided speedy, safe transport and communication and began the transformation of Liverpool into a major regional city.

The history of Local Government in Liverpool dates back to 1848 when a district Council was formed. It was not until June 27, 1872, that the Liverpool Municipality was proclaimed, and Richard Sadleir became the first Mayor.

The first World War brought changes to Liverpool. There were extensive military training activities in the area and German prisoners of war were held at Holsworthy.

The Holsworthy-Moorebank area was again used during World War II to train and house thousands of troops. The Army has maintained its long association with the Liverpool community through the Holsworthy barracks and field training establishment...

...The Liverpool local government area covers 305 square kilometres and is incredibly diverse. Pertaining to its heritage, Liverpool still consists of semi-rural areas but also has an expanding and lively city centre where major commercial and retail opportunities exist

Site History

The following history of Liverpool Station has been extracted from NSW State Heritage Inventory.¹

¹ 'Liverpool Railway Station and Goods Shed', S170 Heritage and Conservation Register listing, accessed via the State Heritage Inventory, <https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801090> accessed February 2022

After completion of the initial rail line from Sydney to Parramatta, work soon proceeded on the Main South line from Granville Junction to Goulburn. The first section from Granville to Liverpool was constructed quickly over easy terrain and was opened on 26 September 1856. Campbelltown was reached in 1858, that section opening on 17 May 1858. The line was duplicated in 1891. This line was constructed as a rural railway and had no suburban purpose until well into the twentieth century. Its stations served what were then rural settlements and only later were adapted as commuter stations.

Liverpool station was opened on 26 September 1856 as the temporary terminus for the Great Southern railway.

In 1865 an engine house was erected on the site. A new station was constructed in 1879 to replace the original station structures including a new gatehouse and station master's residence. Because of the rural nature of settlements along this line, freight was a significant component of the operation. As a major centre, Liverpool had a goods shed and in 1881 a new brick shed was built to replace the original. This goods shed is a single storey building constructed of English bond brick with corrugated iron gable roof and an internal rail track and platform. Apart from a similar shed at Goulburn, it is the only surviving example of this type. The existing wooden platform and crane platform also date from 1881. Other early structures from the period also included a parcels office, well, cattle truck platform, weighbridge, store buildings and numerous sidings - all since demolished.

The line was duplicated in 1891 and two additional platforms were built including a new Down platform and building. An engine shed and coal stage were erected in 1908. Horse stockyards were provided in 1916 as was a new signal box and steel footbridge. In 1927 the back platform was extended for stabling trains. A new Signal Box was completed in 1929. In 1943 a new footbridge and overhead booking office were provided. The platforms were extended in 1945. No. 3 Platform was extended in 1956. The nine-span road overbridge was opened in 1958. A pre-cast footbridge with two ramps was completed in 1981.

The station was subject to major reconstruction in 2000. The new station features a modern complex of retail shops and booking office linked to the bus interchange.



Figure 5 – Close view of subject site circled in red, from map 'Highly Valuable Allotments Railway Station Liverpool' c1860?. Source: Trove, National Library of Australia, 2022.

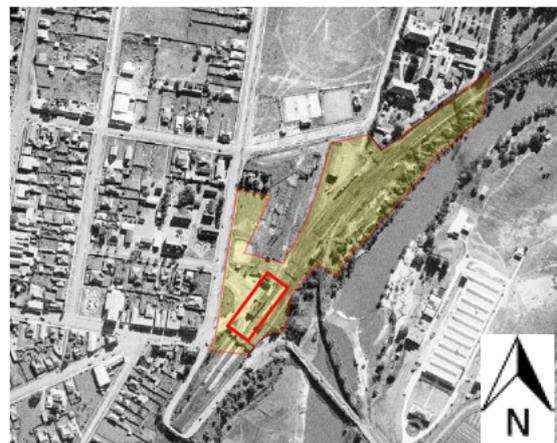


Figure 6 – 1943 aerial view showing subject site within red outline at Liverpool Station. Source: LPI, SIX Maps 2022.



Figure 7 – 2020 image to east facade of Platform 1 (Station Building) off Bigge Street. Source: Google Maps 2022.



Figure 8 – Chimney detail.



Figure 9 – Typical gable timber fretwork and finial detail.



Figure 10 – East veranda, noting close view of timber posts with concrete base.

Source: Heritage NSW, February 2022



Figure 11 – 4 inch downpipe, ogee rainwater head and ogee gutter. Source: Liverpool Heritage Collection, date unknown.

Platform 1 Building

While Liverpool Railway Station opened in 1856 as the terminus of the great southern line, construction of a new station was commenced in 1879 to replace the original structures, and the Platform 1 Building dates to this period (completed c.1880). The station building's east facade was where one would board and/or alight the train from platform 1 at Liverpool Station. The Platform 1 Building is a standard Type 4 design of the Whitton era. Known as 'Third Class Station Buildings' or 'Standard Roadside Station Buildings', Type 4 Buildings were constructed between 1857 and 1894, mostly at smaller metropolitan or regional locations in the 1880s. Metropolitan types (including Liverpool) were constructed mostly of brick, while regional types were more commonly of timber. Common features of Type 4 included:

- Roof – Gable, sometimes with centre transverse gable;
- Floor Plan – Central building with symmetrical layout and wings at one or both ends;
- Awning Support – timber or metal posts.

The building was later extended to both the north and south.

The following has been extracted from NSW State Heritage Inventory and describes the exterior of Liverpool station building (Platform 1). The interior description is not included, as the proposal is for external conservation works only.

The station building on Platform 1 is a single-storey building of Victorian Rustic Gothic design. It is constructed of tuck-pointed Flemish bond brickwork and has a gable roof of slate with a projecting transverse gable on the street (car park) side. This gable features projecting bay windows. All the gables on the building have decorative timber barge boards, finials and a decorative vent. The building has been extended to both the north and to the south, with most details matching the existing, including the rendered quoins on the corners of the building. The windows to the southern end have simpler arched brick heads and concrete sills. The building features original timber double hung sash windows, with moulded cement architraves and sills, and original timber panelled doors with bolection mouldings and moulded cement architraves. In some instances, modern steel mesh security doors have been fitted to the outside. Some of the doorways are no longer operational and the original thresholds have been removed. The building also has two remaining chimneys.

The timber framed veranda on the western side (facing the car park) runs along what would have been the original extent of the building. This veranda is supported on timber posts with concrete bases. The detailing includes cast iron filigree to the bracing and frieze panels. This awning is clad in corrugated metal sheeting. The awning on the platform side is a timber framed structure supported on Corinthian cast iron columns with decorative cast iron brackets. To the southern end, where the building has been extended, the awning is supported by steel brackets on stanchions which are independent of the building. The soffit is the underside of the corrugated steel fixed to intermediate exposed purlins. A simple timber fascia runs along the front edge of the awning and at each end there is decorative timber and cast iron detailing.

Established Statement of Significance

The following Statement of Significance is available for the site on NSW's State Heritage Inventory: 'Liverpool Railway Station and Goods Shed' and 'Liverpool Railway Station group'.

Liverpool Railway Station has state significance as one of the earliest railway stations established during the first phase of NSW railway construction in the 1850s. Opened in 1856 the station was one of only two stations, the other being Fairfield, on the section of the Main

South Line constructed between Granville and Liverpool. The extant 1880s 'Third Class Station Building' which has a high level of integrity is the only historic structure, apart from the nearby Liverpool goods shed, remaining on the station site that is able to demonstrate the development of the railways during the late 19th and early 20th Century. The station group as a whole has been impacted by modern developments that have resulted in the loss of historical station components and the addition of modern structures.

Liverpool station building is a good example of a third class station building in the centre of a large scale redevelopment of the site. It indicates the change in technology and approach to railway construction. Liverpool goods shed is a rare brick structure on the State system which is substantially intact with platforms and jib crane. It is located in an historic town and is the last remnant of the early station and yard complex at the site. It is rare as one of the last two surviving brick goods sheds in the State.²

Assessment of Significance

The following assessments of significance included below, is in relation to Platform 1 Station building. It has been sourced from both the State Heritage Register database listing for 'Liverpool Railway Station and Goods Shed' and 'Liverpool Railway Station group'. Key aspects of significance for consideration of the development of the site are highlighted in **bold**.

Criterion	Assessment
<p>A. Historical significance It is important in the course, or pattern, of NSW's cultural or natural history – known as historic significance</p>	<p><i>Liverpool Railway Station is historically significant as one of the earliest railway stations established during the first phase of NSW railway construction in the 1850s. Opened in 1856 the station was one of only two stations, the other being Fairfield, on the section of the Main South Line constructed between Granville and Liverpool. The extant 1880s 'Third Class Station Building' which has a high level of integrity is the only historic structure, besides the nearby Liverpool goods shed, remaining on site that is able to demonstrate the development of the railways during the late 19th and early 20th century...</i></p>
<p>C. Aesthetic/Technical Significance It is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW – known as aesthetic or technical significance</p>	<p><i>Liverpool Railway Station has aesthetic significance with its 1880s 'Third Class Station Building' which has characteristic features of this type of railway design with its transverse gable roof and awnings supported on timber posts and cast iron columns...</i></p>

² 'Liverpool Railway Station and Goods Shed', S170 Heritage and Conservation Register listing, accessed via the State Heritage Inventory, <https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801090> accessed February 2022

<p>D. Social/Cultural Significance It has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons – known as social significance</p>	<p><i>The place has the potential to contribute to the local community's sense of place and can provide a connection to the local community's history.</i></p>
<p>F. Rarity An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history.</p>	<p><i>This item is assessed as historically rare. This item is assessed as scientifically rare. This item is assessed as architecturally rare. This item is assessed as socially rare.</i></p>
<p>G. Representative It is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments – known as representative significance</p>	<p><i>The 'Third Class' platform building at Liverpool Railway Station is largely intact and retains a lot of original fabric externally and internally and is therefore an excellent representative example of this type of platform building...</i></p>

Condition assessment options

From the March 2022 inspection OCP finds the Station Building (Platform 1) roof to be in very poor condition.

Below three options are discussed in relation to conservation of the roof of the Station Building at Platform 1.

The first option is to not do any works in the immediate future and **retain** all fabric. However, the roof is assessed to be in very poor condition. The asbestos shingles show advanced deterioration. To not proceed with conservation works as soon as possible, would be construed as irresponsible and unsafe for rail patrons and employees.

The second option would be to **repair** existing fabric. However, as outlined in the March 2022 Condition Assessment in Section 3's fabric survey, the slate tiles have already been subject to recycle and reuse over forty years ago. To try and re-nail the slate tiles a third time, would lead to perforated tiles that would split off soon after re-fixing.

The third option is to re-roof and **replace** the entire main Station Building's slate roof, which would consequently require conservation work replacement in its entirety, for flashings, rainwater goods, and to the corrugated galvanised steel roofs of the verandah and north-east parapet.

The option to retain and repair have served their use in past conservation works to the Station Building. However, option number one and two are no longer considered viable to ensure future protection of this heritage asset.

Therefore, OCP Architects strongly recommend for the entire slate roof to be **replaced** using similar 'like for like' slate roof tiles.

Description of proposed works

The proposed works to the roof of Station Building (Platform 1) consists of a series of measures to rectify ongoing deterioration issues. The slate and asbestos roof tiles are generally noted to be in poor to very poor condition. In addition, inadequately executed waterproofing details undertaken during the last fifty years, combined with the progressive changes of ad hoc utilities to the roof; have compounded to a critical point requiring rectification, before any irreversible damage to the original fabric occurs. As such, the sole conservation option remaining for the works to the roof and associated elements; is for 'like for like' replacements utilizing fabric that would have been applied originally.

The proposed works are informed and guided by professional reports commissioned by Sydney Trains, by a Roof Inspection Report (By Spark + Partners, June 2022), a Stormwater Assessment report for Roof and Drainage (By Spark + Partners, June 2022), a Hygienist Report (WSP Australia, May 2022), Termite Detection Report (Forensic Pest Management Services, February 2022), a Moisture and Timber Inspection Report (City Building Consultants, May 2022), Condition Assessment (OCP Architects, March 2022) and an inspection by heritage architect (OCP Architects). The works are confined to the pertinent roof repairs and associated elements only, which are the areas most likely to be afflicted by water ingress if not conserved.

As such, the works involve the careful repair and maintenance to the slate roof of the Station Building (Platform 1), which includes the following:

- Repointing of the chimney brickwork.
- Lead capping to chimney tops.
- Hand removal of the previously recycled slate tiles and asbestos shingles and replaced with Welsh slate in accordance with the schedule of works and specifications.
- Removal and replacement of the lead (in correct weight) 'under' and 'over' flashing detailing to the ridge, verandah hipped roof junctions, chimneys; and optional addition to parapet walls.
- Removal of the galvanised steel roof valleys; and replaced with the correct weight and lead detailing.
- Re-sheeting and repainting of the corrugated verandah roof on the Bigge Street side of the station.
- Re-sheeting of the pitched roof behind the brick parapet to the north wing of the station.
- Installation of double battens to increase the box gutter capacity and correct the north wing's pitched roof fall.
- Box gutters, eaves gutters, outlets, downpipes and rainwater goods to be brought up to current code.
- Include new lead lined chute outlets to existing box gutters to north wing's parapet - to compensate for missing sump details to box gutters.
- Historic ogee gutter profile and ogee rainwater head to be restored in galvanised steel.

- Downpipes to be replaced and brought up to current code in galvanised steel as per the original specification.
- Timber roof elements to be repaired, conserved and painted.
- Industrial Hygienist to clean ceiling cavity, ceiling cavity timbers, firewalls and exterior corrugated roofing for lead dust and asbestos.
- Repair / install all other fabric identified in the Schedule of Works and Specifications.

Note: No internal works are proposed.

Assessment of heritage impact

In summary form, this section assesses how the proposed works to the roof of the Station Building (Platform 1) impacts the heritage significance of the site.

The works are considered to be in line with the requirement for minimum standards of maintenance and repair under the *Heritage Act 1977*, which specifically relates to weatherproofing, security, and essential maintenance. These works also fall under RailCorp Agency Specific Exemptions of the NSW Heritage Act 1977, Section 57(1).

Under the Statement of Environmental Planning Policy (Transport and Infrastructure) 2021, a public authority may be allowed by the provisions of the SEPP to carry out certain defined activities without development consent and the policy includes provisions for exempt and complying development under Part 2, Divisions 4 and 5 respectively.

The proposed works to the tiling, gutters, flashings and downpipes will reduce the risk of water ingress and overflow, which has been a source of consequent deterioration to the roof structure and the building

In the table below is an itemised assessment of works, significance and impacts to fabric:

FABRIC	SCOPE OF WORKS ITEM	FABRIC	PHYSICAL CONDITION	LEVEL OF SIGNIFICANCE	IMPACT OF WORKS
Chimney 1	Retain - Repoint using 3:1 Lime mortar. Provide new lead over and under flashing; and chimney top covering to correct lead weight.	Original	Good - However, inappropriately repointed in hard cement, causing exfoliation of the surrounding brickwork	Exceptional	Positive
Chimney 2	Retain - "As above for Chimney 1"	Original	Good - "As above for Chimney 1"	Exceptional	Positive
Chimney 3	Retain - "As above for Chimney 1"	Original	Good - "As above for Chimney 1"	Exceptional	Positive
Slate Tiles	Replace - Previously recycled slate tiles and contemporary	30% Original	Poor - Tiles are slipping and have been re-nailed in past	Moderate	Positive

FABRIC	SCOPE OF WORKS ITEM	FABRIC	PHYSICAL CONDITION	LEVEL OF SIGNIFICANCE	IMPACT OF WORKS
	asbestos shingles with Welsh slate.		works. Cracked tiles noted. Lower tiles show evidence of organic growth.		
Asbestos Tiles	Replace - - "As above for Slate Tiles"	Non-Original	Very Poor - Tiles are slipping, crumbling, porous and friable,	Intrusive	Positive
Corrugated sheeting to verandahs on Bigge Street	Replace – Re-sheeting of the roof.	Non-Original	Fair- Peeling paint. Corrugating sheeting is nearing end of life expectancy in protecting the heritage item.	Moderate	Positive
Corrugated sheeting to north-east parapet's roof	Replace - Re-sheeting and instillation of double battens to increase the box gutter capacity and correct the roof fall.	Non-Original	Fair - Sheeting at incorrect fall to box gutters. During rainfall, water penetration is evident	Intrusive	Positive
Lead Ridge Flashing	Replace - With the correct weight and lead detailing.	Non-Original	Poor - Uplifting of lead, cracks and incorrect lead strap detail and weight.	Moderate	Positive
Galvanised ridge flashing	Replace - With the correct lead detailing.	Non-Original	Fair- Incorrect galvanised fabric used to hip flashings. Original detail for this building, would have been lead flashing that is moulded to existing corrugated profile.	Little	Positive

FABRIC	SCOPE OF WORKS ITEM	FABRIC	PHYSICAL CONDITION	LEVEL OF SIGNIFICANCE	IMPACT OF WORKS
Valley flashing	Replace - Lead flashing of the correct weight and detailing is proposed be reinstalled.	Non-Original	Fair - Joins not sealed in galvanised flashing. Incorrect material used to valley flashings. Original detail for this building, would have been lead flashing.	Little	Positive
Step flashing to chimney	Replace - Lead flashing of the correct weight and detailing should be reinstalled	Non-Original	Poor - 'Under' flashing missing to some areas. Sub-standard clip system used instead of traditional lead wedge details for fixing the 'over' lead flashing.	Little	Positive
Apron flashing to chimney	Replace - Lead flashing of the correct weight and detailing should be reinstalled	Non-Original	Poor - 'Under' flashing missing to some areas. Sub-standard clip system used instead of traditional lead wedge details for fixing the 'over' lead flashing.	Little	Positive
Chimney capping (weathering)	Install new - Lead flashing of the correct weight and detailing to chimney tops	N/A	N/A	N/A	Positive
OPTIONAL Parapet flashing (weathering)	Install new - Lead flashing of the correct weight and detailing to parapet wing.	N/A	N/A	N/A	Positive
Timber finials	Repair - Repair and repaint	Original	Good - Cracks and peeling paint to original timber finials. Some finials have	Exceptional	Positive

FABRIC	SCOPE OF WORKS ITEM	FABRIC	PHYSICAL CONDITION	LEVEL OF SIGNIFICANCE	IMPACT OF WORKS
			misaligned overtime and are no longer accurately upright.		
Gutters	Replace - Restore the historic ogee gutter profile and replace the current contemporary box gutters to the historic photograph, Figure 11. Use galvanised steel.	Non-Original	Good - Verandah gutter filled halfway up with soil. Non-original gutters are undersized. Gutter 'over' straps missing.	Little	Positive
Box Gutters	Replace - Increase the box gutter size using lead.	Non-Original	Fair - Galvanised box gutter would not be compliant with current building codes. The box gutters are undersized, with no sump and their overflows are inadequate. Original box gutter would have been lead. Note: The current fall of the roof sheeting has reduced box gutter depth.	Little	Positive
Rainwater heads and downpipes	Replace - Restore the original ogee rainwater head profile in galvanised steel to the historic photograph, Figure 11.	Non-Original	Good - Non-original powder coated steel rainwater heads in different styles. Downpipes appear undersized.	Little	Positive
Roof void to main building	Retain - Repair and clean.	Original	Good - Industrial	High	Neutral

FABRIC	SCOPE OF WORKS ITEM	FABRIC	PHYSICAL CONDITION	LEVEL OF SIGNIFICANCE	IMPACT OF WORKS
			Hygienist to clean ceiling cavity, ceiling cavity timbers, firewalls and exterior corrugated roofing for lead dust and asbestos		
Roof Vent	Replace - Replace current PVC vent with a galvanised vent and lead flashing.	Non-Original	Good - Missing flashing to PVC roof vent.	Intrusive	Positive
Air conditioning	The mechanical and electrical services noted to the roof area should be rationalised. A service report would identify redundant services, implement efficient services; and reduce the number of intrusive elements to the roof. Provide new suspended parallel beams to seat remaining Air conditioning units.	Modern – late twentieth century – early twenty first century	Currently four outdoor air conditioning units are located on the north-east parapet’s roof. The two units on platform no. 1’s roof fall, are on a timber platform that is rotting and failing to keep the units’ plumb.	Intrusive	Positive
Painting	Paint new downpipes, gutters, and corrugated roof to match existing.	N/A	N/A	Colour scheme: moderate Existig paint finish: little	Positive

For a detailed itemised scope, refer to the Station Building (Platform 1) Schedule of Works, August 2022 (OCP Architects), Specification, August 2022 (OCP Architects) and associated architectural drawings, which can be found at Appendl A.

In conclusion, the proposed works consists of a series of measures to rectify the ongoing deterioration issues to the roof and associate elements. If not conserved, these areas are most likely to be afflicted by water ingress and will inevitably contribute to the roofs ongoing deterioration, thereby impacting its structural integrity. Notwithstanding, the replacement of any new elements is done in accordance to the early historic photograph and would be “like for like” in terms of material, quality, profile and dimensions.

Recommendations

The following recommendations / mitigation measures have been made to provide guidance for the maintenance and repair work to the Station Building (Platform 1) roof at Liverpool Station.

The following recommendations by OCP Architects have been devised to mitigate any potential adverse heritage impacts associated with the works:

- All work is to be undertaken with the objective of leaving intact as much as practically possible. Permanent removal of heritage fabric that is not specified above **is not** permitted. If removal of any heritage fabric is required, seek advice from the heritage architect.
- Carry out the works in accordance with Sydney Trains’ preliminaries, site safety protocols, procedures, guidelines, and approvals
- Provide two (2) copies of photographic dilapidations survey showing the context of the proposed works and any appropriate surrounding fabric or structures including recording the condition of these areas with any exiting defects. This document will be used to ascertain any non- existing defects and it’s need for repair at the completion of the project
- Ensure that all significant fabric of the station is treated with care during works. If required, cover significant fabric in areas of remediation works for protection. Moveable heritage items may require temporary relocation; however, these items must be returned after the completion of works.
- Any moveable heritage items requiring temporary relocation are to be weather protected and securely stored. These items must be returned upon completion of works.
- Where earlier details are exposed during building works, notify the Sydney Trains Heritage Specialists. They may advise that the original fabric / features be reinstated.
- Hold Points to be approved by Superintendent and Heritage Architect and not proceed with an item until approval has been given. For further details, refer to Schedule of Works.
- A Heritage architect should attend site visits during construction works to witness hold points, to ensure that heritage fabric is protected, and that proposed works are completed in a skilled manner, that is sympathetic to the surrounding heritage fabric.
- Any accidental damage caused to heritage items/fabric must be reported immediately to the Project Manager and Sydney Trains Heritage Specialist. Damage is to be made good in accordance with specialist heritage advice.
- Follow instructions of Schedule of Works report, Drawings and Specifications and obey all hold points.
- Only Contractors and tradespersons skilled in restoration and conservation works shall be employed to perform the tasks scheduled below.
- All contractors and subcontractors involved in the construction works should be briefed on the heritage significance of the building prior to work commencing.
- All areas affected by the work must be cleaned and restored after completion of works (including removal of site debris, cleaning all affected surfaces, painting to match existing surrounds).

The following are additional recommendations noted on NSW State Heritage Inventory and would be ideal for the longer-term maintenance of the Station building (Platform1).

1. Prepare a maintenance schedule or guideline, for medium- and long-term maintenance of, in particular the maintenance of the proposed new replacement slate roof and rainwater goods.

Conclusion

The assessment contained within this report has found that the proposal will not have a detrimental impact on the heritage significance of the Liverpool Station (Platform 1) roof. The works are considered to be positive in its conservation of the heritage fabric, the restoration of historic profiles, the removal of intrusive elements, and the preservation of the structural integrity of the roof form from wind and water ingress. As a result, these works positively increase the longevity of the Station Building by enabling its future use.

Notwithstanding, the proposed works respect and are sympathetic to the heritage significance of the subject site, the heritage group, and the Bigge Park Conservation area. To ensure these outcomes are achieved, the proposed works are the product of extensive investigation by a specialist team of consultants. Upon following the recommendations outlined in the Recommendations Section, above, the proposed works are considered to be a positive heritage outcome that satisfies best practice heritage guidelines from the *Burra Charter 2013* and requirements of the *Heritage Act 1977*.

The total replacement for all roof fabric and associated rainwater goods, exceed the Standard Exemptions and the Agency Specific Exemptions granted to RailCorp under the Heritage Act 1977, and will therefore **require a Section 60 application to the Heritage item**. Despite this, the proposed works will bring the building in line with the minimum standards of maintenance and repair required under the *Heritage Act 1977*.

The proposal would have a positive heritage outcome and for these reasons is acceptable in heritage terms.

Yours faithfully,

Katrina Blando
Architect and Heritage Consultant
NSW ARB 7987
On behalf of OCP Architects.

Dear [REDACTED]

APPLICATION UNDER SECTION 60 OF THE HERITAGE ACT 1977

**Liverpool Railway Station group
STATE HERITAGE REGISTER N^o 01181**

Address: Great Southern Railway, LIVERPOOL NSW 2170
Proposal: Liverpool Station - Platform 1 Building Roof Replacement and repair works
Section 60 application no: HMS ID 1521, received 16/09/2022

As delegate of the Heritage Council of NSW (the Heritage Council), I have considered the above Section 60 application. Pursuant to section 63 of the *Heritage Act 1977*, approval is granted subject to the following conditions:

APPROVED DEVELOPMENT

1. All work shall comply with the information contained within:
 - a. Architectural drawings, prepared by OCP Architects as listed below:

Dwg No	Dwg Title	Date	Rev
Project Name: Conservation and Repairs – Liverpool Train Station Platform 1 – Slate Roof			
A01	Diagram of Proposed Roof Plan	15/08/22	A
A02	West Elevation	15/08/22	A
A03	North and South Elevations	15/08/22	A
A04	Details A, B, C	15/08/22	A
A05	Details D, E, F, G	15/08/22	A
A06	Details D, E, F, G	15/08/22	A

- b. *Statement of Heritage Impact for Liverpool Station Platform Building Roof*, prepared by OCP Architects, dated 15 August 2022
- c. *Condition Assessment Report and Preliminary Management Recommendations*, prepared by OCP Architects, dated 25 March 2022
- d. *Liverpool Railway Station – Platform 1 Building Roof Schedule of Works*, prepared by OCP Architects, dated August 2022
- e. *Liverpool Railway Station - Slate Roof Replacement and Roof Repairs – Specifications*, prepared by OCP Architects dated 15 August 2022.

EXCEPT AS AMENDED by the conditions of this approval:

HERITAGE CONSULTANT

2. A suitably qualified and experienced heritage consultant must be nominated for this project. The nominated heritage consultant must provide input into the detailed design, provide heritage information to be imparted to all tradespeople during site inductions, and oversee the works to minimise impacts to heritage values. The nominated heritage consultant must be involved in the selection of appropriate tradespersons and must be satisfied that all work has been carried out in accordance with the conditions of this consent.

Reason: So that appropriate heritage advice is provided to support best practice conservation and ensure works are undertaken in accordance with this approval.

SPECIALIST TRADESPERSONS

3. All work to, or affecting, significant fabric shall be carried out by suitably qualified tradespersons with practical experience in conservation and restoration of similar heritage structures, materials and construction methods.

Reason: So that the construction, conservation and repair of significant fabric follows best heritage practice.

SITE PROTECTION

4. Significant built and landscape elements are to be protected during site preparation and the works from potential damage. Protection systems must ensure significant fabric, including landscape elements, is not damaged or removed.

Reason: To ensure significant fabric including vegetation is protected during construction.

PHOTOGRAPHIC ARCHIVAL RECORDING

5. A photographic archival recording must be prepared prior to the commencement of works/ during works/ at the completion of works. This recording must be in accordance with the Heritage NSW publication '*Photographic Recording of Heritage Items using Film or Digital Capture*' (2006). The digital copy of the archival record must be provided to Heritage NSW.

Reason: To capture the condition and appearance of the place prior to, and during, modification of the site which impacts significant fabric.

UNEXPECTED FINDS

6. The Applicant must ensure that if substantial intact archaeological deposits and/or State significant relics or any other buried fabric such as works not identified are discovered, work must cease in the affected area(s) and the Heritage Council of NSW must be notified. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

Reason: This is a standard condition to identify to the applicant how to proceed if historical archaeological relics, or other unexpected buried discoveries such as works are identified during the approved project.

COMPLIANCE

7. If requested, the applicant and any nominated heritage consultant may be required to participate in audits of Heritage Council of NSW approvals to confirm compliance with conditions of consent.

Reason: To ensure that the proposed works are completed as approved.

DURATION OF APPROVAL

8. This approval will lapse five years from the date of the consent unless the building works associated with the approval have physically commenced.

Reason: To ensure the timely completion of works

Advice

Section 148 of the *Heritage Act 1977* (the Act), allows people authorised by the Minister to enter and inspect, for the purposes of the Act, with respect to buildings, works, relics, moveable objects, places or items that is or contains an item of environmental heritage. Reasonable notice must be given for the inspection.

Unexpected discoveries during works

If during works under this approval, you unexpectedly discover a relic or believe you may have discovered an historical archaeological 'relic', notification is required under s146 of the *Heritage Act 1977*. If you believe you have unexpectedly discovered an Aboriginal object, notification is required under s89A of the *National Parks and Wildlife Act 1974*.

In these scenarios work must cease in the affected area(s) and the following notifications are required (a relic - the Heritage Council of NSW and an Aboriginal object – Heritage NSW). Additional assessment and approval may be required under the relevant legislation prior to works continuing in the affected area(s) based on the nature of the discovery.

Right of Appeal

If you are dissatisfied with this determination appeal may be made to the Minister for Heritage under section 70 of the Act. It should be noted that an approval under the *Heritage Act* is additional to that which may be required from other Local Government and State Government Authorities in order to undertake works.

Stamped documents

Any stamped documents (e.g. approved plans) for this application are available for the Applicant to download from the Heritage Management System at <https://hms.heritage.nsw.gov.au> under 'My Completed Applications.'

If you have any questions about this correspondence, please contact Mariyam Nizam, Senior Assessments Officer, at Heritage NSW on 88376375 or [Mariyam.Nizam@environment.nsw.gov.au](mailto:Mariam.Nizam@environment.nsw.gov.au).

Yours sincerely

Rajeev Maini

Rajeev Maini

Manager, Assessments Team 3

Heritage NSW

Department of Planning & Environment

As Delegate of the Heritage Council of NSW

26 October 2022

cc: Liverpool Council, lcc@liverpool.nsw.gov.au