Sydney Trains Environmental Management System
Site Environmental Management Plan (SEMP)

Introduction

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 Environmental Planning and Assessment Act 1979 (EP&A Act) and Part 8 of the Environment Planning and Assessment Regulation 2021 (EP&A Reg). This SEMP forms the assessment when paired with the associated Environmental Work Method Statements.

The activity covered by this assessment 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 / Program details

Project / Program Details	
Project/Program Name	Parkes Station Chimney Refurbishment Works
Project/Program No	P.0045549
Scope of Works	**Parkes Station** During initial investigation ST Significant defects have been noted in chimney P1, P2 and P3 and minor damage to P4 including cracking in the cornice moulding visible through the paint and loss of structural integrity in the mortar. Additionally, the internal flue, topmost brick courses and mid-feather conditions are likely to be in the same state of disrepair as observed for chimney P2, given the extended period of exposure to the elements prior to capping. Considering the moisture trapping caused by the elastomeric paint covering the chimney, it is likely that the mortar integrity has been compromised for the full extent of the chimney above the roof line. Further investigations should be carried out to confirm this is the case and that a full rebuild of the chimney is required. **Chimney P1** – Repair Works Significant defects have been noted in chimney P1 including cracking in the cornice moulding visible through the paint and loss of structural integrity in the mortar. Additionally, the internal flue, topmost brick courses and mid-feather conditions are likely to be in the same state of disrepair as observed for chimney P2, given the extended period of exposure to the elements prior to capping. Considering the moisture trapping caused by the elastomeric paint covering the chimney, it is likely that the mortar integrity has been compromised for the full extent of the chimney above the roof line. Further investigations should be carried out to confirm this is the case and that a full rebuild of the chimney is required. The following schedule of works is to be carried out: 1. Strip away paint from chimney and assess extent of compromised mortar joints and brickwork. Allow for engineer's inspection (hold point). 2. Dismantle the chimney stack, allow to 600mm below roof ridge line, subject to finding a structurally sound and solid substrate. Allow for;

	engineer's inspection (hold point), salvaging of the dismantled bricks and taking profiles of the stack's mouldings. 3. Desalinate salvaged bricks. 4. Reconstruct portion of dismantled chimney stack to match the original appearance using combination of desalinated and new bricks, allow to provide 10 new bricks. Allow for mid-feather to be connected to outer shaft brickwork as part of the reconstruction. Allow for reconstruction of the cornice moulding. 5. Provide new lead flashings. 6. Provide cementitious flaunching to plinth and cornice moulding. 7. Provide stainless steel ventilation capping to flue, details as per Appendix C. 8. Limewash stack to match existing colour scheme. **Chimney P2** – Repair Works Same as for Chimney P1 Repair Works steps 1-8. **Chimney P3** 1. Repair Works Same as for Chimney P1 2. Repair Works steps 1-8. Plus: 3. Remove obsolete brackets. **Chimney P4 – Repair Works** Chimney P4 appears to be in a fair condition structurally based on the level of defects observed. Following minor works to be carried out: 1. Strip paint. 2. Provide stainless steel ventilation capping to flue, details as per Appendix C. 3. Limewash stack to match existing colour scheme. 4. Replace flashings.
What is the cost of the scope of works?	☐ Routine maintenance - any value ☑ Capital investment - less than $5 million ☐ Capital investment - more than $5 million
Location	Parkes Station .....
Attach applicable Environmental Work Method Statement (EWMS)	EWMS Number: EMS-03-EW-0296 — EWMS Title: Recladding Roofs and Walls EMS-030-EW-0299 — Station Refresh
Is any of the proposed work outside of the EWMS' scope?	☑ No: Continue to next question ☐ Yes: *Contact your environmental officer to determine how the works' environmental assessment can proceed*
Does this work have any steps or equipment that are not covered by the EWMS?	☑ No: Continue to next question ☐ Yes: Provide details below .....

Is the work part of a larger job?	☑ No: Continue to *Part 2 Project Timing and Location* ☐ Yes: Provide details of larger job and relationship to these works .....
	Contact your local environmental officer. 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 of approvals and control measures*

2 Project timing and location(s)

2.1 Project timing

Activity	**Dates & work hours, noting any 'Out of hour' periods** (Out of hour = outside of 7am–6pm Monday to Friday or 8am–1pm Saturday)
Works/program commencement: *Including pre-works, site establishment (including access, laydown/stockpiles, site amenities, parking), installation of erosion and sediment controls, etc*	09/10/2023 Monday to Friday 7 AM to 6 PM
Site construction and/or periodic maintenance activities *For programs/ recurring maintenance detail recurrence frequency and work hours of activities*	Monday to Friday 7 AM to 6 PM
Works/program completion: *Including demobilisation and removal of all site offices, equipment and materials.*	15/12/2023

2.2 Existing environment

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)

The descriptions are to be derived from desktop studies such as aerial photos, overlays and databases (e.g. WebGIS ME) and are to be confirmed, modified and expanded by a pre-work site inspection and. Descriptions must include aspects such as acute slope/fall, waterways, drains, vegetation and individual trees, heritage items or curtilage, difficult access, traffic, nearest neighbours etc

Site 1: Parkes Railway Station

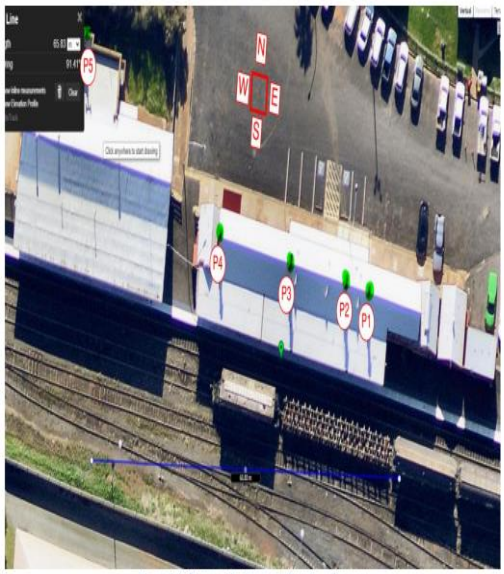


Figure 4-1: Chimney Numbers and Elevation references

Figure 4-2 Chimney Notation Diagram

Local environment includes:

☐ In, or near, residential area
☑ In, or near, customer areas
☐ Tunnel/underground location
☐ Easement/off corridor areas
☑ Open spaces
☐ Sparsely vegetated spaces
☐ Thickly vegetated spaces
☑ In, or near, waterways or drains
☐ Other (specify):

3 Consultation requirements

3.1 Consultation with adjoining land managers

Do the works require consultation with other land managers[1]?	
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)	☑ No: Continue to next question ☐ Yes: Identify requirements and how they were addressed: .....
Are the works adjacent to land reserved under the *National Parks & Wildlife Act 1974?*	☑ No: Continue to next question ☐ Yes: Identify requirements and how they were addressed: .....
Consultation required with other stakeholders (e.g. Roads, Crown Land, Private landholder etc.)	☑ No: Continue to next question ☐ Yes: Identify requirements and how they were addressed:
(1) Where consulted, all land managers must have a minimum 21 days to provide comments. Comments received must be considered and appropriate actions identified in *Part 5.1*	

3.2 Community consultation

Could there be community interest in the works?	
☑ No: Community consultation assessment not required	☐ Yes: Complete **EMS-03-FM-0104 *EIA Public Engagement Assessment*** and identify the assessment outcome; ☐ 'Outrage' risk management ☐ Targeted public consultation ☐ Public engagement not required Actions arising from this assessment are to be identified in *Part 5 Summary of approvals and control measures*

4 Environmental assessment

4.1 Working outside the Active Operational Zone (AoZ)

Are any works to be completed outside the AoZ?	
☑ No: Continue to Section *4.2 Vegetation condition*	☐ 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.*

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 landowner is not considered to form part of the works outside the AOZ

4.2 Vegetation condition

Has all the vegetation within the worksite been maintained[1] within the last 10 years?	
☑ Yes: Continue to Section 4.3	☐ No/Don't know 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
Note (1): 'Maintained' means pruned, weeded, mowed or other activity that significantly disturbed the vegetation.	

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 a Sensitive Site? (Ref: Web GIS ME)	
• Aboriginal heritage site or Environmentally Sensitive Site?	☐ Yes ☑ No
• Contaminated Site?	☐ Yes ☑ No
• Non-Aboriginal Heritage site?	☑ Yes ☐ 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** (Details from database or register)	**Potential for the works to impact [2]**
State Heritage Listed	Heritage Listed Item 4801352	Low Impact
TAHE Section 170 Register	SHI 4801352	Low Impact

Notes:
- Information about sensitive sites must be sufficient to be able to make an informed decision on potential impacts and appropriate project controls.
- 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.
- Where works have the potential to impact sensitive sites the required additional controls, approvals, notifications, etc must be listed in the relevant section of *Part 5 Summary of approvals and control measures*

4.4 Noise and vibration assessment of the works

A. Are there any noise sensitive receivers [1] within 350m of works?	
☑ No Works do not need further noise assessment, go to Section 5.	☐ Yes Describe receivers and continue to Part B. Receivers: ..... Distance: .....
B. Track work on a moving face	

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: ☐ Ballasting or ballast clean ☐ Resurfacing (tamping, stabilising, regulating) ☐ Rail profiling ☐ Continuous track welding / rail adjusting	☐ Yes	Works do not need noise and vibration assessment, go to Section 5.
	☑ No	Continue to Part C.
C. Answer the following		
Will there be any equipment producing noise levels of: ☐ more than 80 dBA (2) during Standard Hours (3), and/or ☐ more than 60 dBA (2) outside of Standard Hours (3) or ☐ Will the works use pile drivers, hydraulic hammers or vibratory rollers (or similar vibration inducing plant)? or ☐ Will works at any one location last more than 3 weeks in duration?	☑ No	Works do not need further noise and vibration assessment, go to Section 5.
	☐ Yes	Complete **EMS-09-FM-0166 *Maintenance Quantified Noise and Vibration Assessment*** and include any resulting actions in Section 5.
(1) Noise sensitive receivers include residences, hospitals, places of worship, schools, aged, childcare facilities, etc. (2) Noise levels are for the loudest equipment's 'Modified 10m Sound Pressure' as given in **EMS-09-FM-0166 *Maintenance Quantified Noise and Vibration Assessment*** ('SoundPressure' Table, 'References' Tab). (3) Standard Hours' = 7am-6pm Monday to Friday and 8am-1pm Saturday		

5 Summary of approvals and control measures

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 Permits, approvals and consultation

Describe all relevant permits, approvals and consultation requirements for the works.

Environmental Hazard	Permits/Other Requirements	Timing	Responsibility
Heritage site	Heritage approval received	10/06/22	Contractor

5.2 Environmental controls

Environmental Hazard	Work controls and responsibility *including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities*
Works community notification:	*Project manager* Letterbox notification provided: Local ☐ Possession ☐
Awareness and responsibility:	*Site supervisor*

Environmental Hazard	Work controls and responsibility *including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities*
Staff unaware of the works' environmental controls and their responsibilities	• Undertake site pre-work briefings and local inductions using the SEMP and the SECM to cover the work's environmental risks and controls and the workers environmental responsibilities • Delivery tool-box talks relevant to the environmental hazards • Maintain a readily accessible copy of the environmental approval (including all associated specialist approvals and plans) at the worksite whenever work is being undertaken. • Display prominently on site, where possible, the SECM and make sure it is accurate and used
Environmentally sensitive sites: *Unintentional or unapproved impact on environmentally sensitive sites*	*Not Applicable*
Erosion and sedimentation: *Loss of soil and sediment from worksite to surrounding environment, including tracking onto public roads*	*Site supervisor* • Site supervisor to have completed Level 1 Erosion and Sediment Control course • Install and maintain erosion and sediment control structures from prior to commencing site work until site has stabilised after the completion of works • Use a street sweeper to regularly remove mud and silt from public roads used for site access • Include sediment control in stockpile management • Complete post-work site rehabilitation and erosion and sediment control maintenance and inspections (transfer ownership to operational area at end of responsibility)
Heritage: *Unintentional or unapproved impact on Aboriginal and non-Aboriginal heritage*	*Site supervisor* • Isolate and demarcate heritage sites to prevent accidental damage • If a heritage or archaeological item is uncovered, immediately stop further disturbance, demarcate the site, contact your environmental support and follow EMS-09-PR-0164 Unexpected Archaeological Finds
Incidents and emerging issues *An incident or emerging issue is not controlled and causes an environmental impact*	*Project Manager* • Support management of emerging issues and incident management, notification, investigation and the completion of corrective and preventative actions *Site supervisor* • Complete daily inspections of the site, plant and equipment and the surrounding area • Implement incident procedures on unapproved impacts, spills and other environmental incidents • Notify incidents to the Incident and Injury Hotline 1800 772 779 or enter incident directly into SHEM
Noise and vibration: *Impact of works noise and vibration on neighbouring residents and properties – particularly the potential for sleep disturbance*	*Work will be done within standard hours*
Plants and animals: *Unintentional or unapproved impact on native and protected plants, animals and communities and the spread of noxious weeds*	**Vegetation and wildlife management** Vegetation maintained. Tree route discovery (arborist will be engaged during construction) **Pest and weed management** Not Applicable

Environmental Hazard	Work controls and responsibility *including those from the EWMS, PART 4 of this SEMP, specialist reports and/or licences and all other relevant activities*
Plant and equipment emissions: *Smoke, fumes., odours and other emissions from plant and equipment*	• Plant and equipment is operated and maintained in a proper and efficient manner with all of its pollution control equipment in place and functioning • Plant and equipment not used when needing repair • Plant and equipment is regularly checked for wear, leaks, odours, fumes and smoke
Soil contamination: *Contamination of worksite from stockpiling and chemical storage and use*	• Develop a stockpile management plan to segregate potentially contaminated materials from clean materials • Undertake daily inspections for spills and contamination (e.g. vehicle tracking, unauthorised material movement, containment failures, etc) • Check all imported material for contamination (including weeds, construction wastes, etc)
Spills: *Unintentional loss of hydrocarbons, chemicals and materials from plant, equipment, storage and use*	• All plant to have suitable spill kits and operators trained in their use and the disposal of used spill kit materials
Traffic: *Traffic disruption to community and other users around worksite*	*Site supervisor* • Plan all vehicle movements to occur outside of local peak traffic periods • Place offsite staging areas in low impact areas • Obtain a Road Occupancy Licence, as necessary • Utilise qualified traffic control staff
Waste: *Unnecessary generation of wastes and poor or illegal disposal of wastes*	**Construction waste (e.g. spoil, concrete, litter, etc)** *Site supervisor* • Do not overestimate quantities of materials required • Separate wastes, place all wastes in appropriate containers and dispose of them as they are generated • Prevent the mixing of similar new and waste materials • Classify all wastes in accordance with the NSW EPA Waste Classification Guidelines • Only use approved waste contractors and dispose of all wastes leaving site to facilities licenced to receive the waste • Keep records of all waste classification, transport, disposal, reuse and recycling activities
	Slurry wastes (e.g. concrete, supersucker, etc) N/A
	Vegetation management waste (e.g. clippings, branches, etc) N/A
	The works' SECM must illustrate the relevant work areas and site environmental controls described above

5.3 Biodiversity offset

Is a Biodiversity Offset required for the project?	
☑ No: Continue	☐ Yes: Provide the following information: Value[1]: _____

(1) All calculations are to be in accordance with ***EMS-06-WI-0177* Biodiversity Offsets Calculator**

5.4 SEMP documents

For environmental planning and assessment purposes the SEMP for this job comprises of:

☑ This SEMP

☑ The Environmental Work Method Statement (EWMS) referred to in Section 1

☑ The attached project's Site Environmental Control Map

Plus (tick as appropriate):

☐ **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 and Vibration Assessment*** (see Section 4.3)

☐ Additional environmental studies, approvals (including Aboriginal and non-Aboriginal heritage)

5.5 Environmental review requirements

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

Report all pollution and environment incidents immediately to SHEM or the Incident and Injury Hotline (1800 772 779) and your local environment officer.

6 Determination

The works covered by this document have been determined to proceed under Division 5.1 of the *Environmental Planning & Assessment Act 1979* and Part 8 of the *Environmental Planning & Assessment Regulation 2021* subject to the implementation of all mitigation measures and actions identified in this document.

Position of Determiner: Environment and Sustainability Manager

Date of Determination: 28/09/2023

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

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

Acknowledgement of Country

Sydney Trains acknowledges the traditional custodians of the land on which we work and live. We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Recladding walls and roofs

Environmental Work Method Statement

Sydney Trains Incident Hotline
1800 772 779

Scope of EWMS:

EWMS works are limited to:

- 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

Not in Scope:

Works not in scope include:

- Enlargement or extension of building or increase in load-bearing capacity of any load-bearing component of building
- Structural alterations

Note: Works not in scope may require a different form of environmental assessment and approval, Contact local environmental officer for guidance

Project manager requirements:

- Has a Sydney Trains employee number
- Completed *Environmental Management for Projects* (online) and *SEMP Masterclass* training

External notifications:

Parties outside of Sydney Trains that are likely to require works' notification

- Letter box drop to residents (if identified in SEMP)

Permits / licences:

Licences and permits not issued by Sydney Trains that are likely to be needed for works

- Heritage approval (if identified SEMP)

Plant and equipment

- 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

Environmental Hazard Matrix

Job steps	Environmental hazard														
	Awareness and responsibility	Biodiversity	Chemical and fuel storage and decant	Dust	Erosion and sedimentation	Heritage	Incidents and emerging issues	Light Spill	Noise and vibration	Pesticides	Plant and equipment emissions and spills	Soil and water contamination	Traffic	Visual impacts	Waste
Site establishment (including material / plant delivery, establish site amenities, place skip bins, install erosion and sed control, etc)	Y	Y	Y	Y	Y	Y	Y	-	Y	-	Y	-	Y	Y	Y
Preliminary works • Erect scaffolding • Trim vegetation adjacent and overhanging	Y	Y	-	-	-	-	Y	-	Y	-	Y	-	-	-	Y
Remove existing roofing and flashings or cladding	Y	-	-	-	-	Y	Y	-	Y	-	Y	-	Y	-	Y
Painting: • 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	Y	-	Y	Y	-	Y	Y	Y	Y	-	Y	-	-	-	Y
Replace all roof and or cladding insulation and roof mesh Replace roof and or cladding with sheeting to match existing	Y	-	-	-	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y
Stockpile and disposal of waste (e.g. excavated spoil, vegetation)	Y	Y	-	Y	-	-	Y	-	Y	-	Y	Y	Y	Y	Y
Site demobilisation (including removing scaffolding, final waste disposal, site reinstatement, etc)	Y	-	-	-	-	-	Y	-	Y	-	Y	-	Y	-	-

Hazard Control Table

Environmental Hazard	Control and responsibility	Control reference
Awareness and responsibility: *Staff unaware of the works' environmental controls and their responsibilities*	*Project manager* • *SEMP*: The SEMP is signed by the site supervisor and they are aware of the environmental controls and conditions, including those within the SEMP's specialist studies and approvals *Site supervisor* • Undertake site pre-work briefings and inductions using the SEMP and the SECM to cover the work's environmental risks and controls and the workers environmental responsibilities • Delivery tool-box talks relevant to the environmental hazards • Maintain a readily accessible copy of the environmental approval (including all associated specialist approvals and plans) at the worksite whenever work is being undertaken. • Display prominently on site, where possible, the SECM and make sure it is accurate and used	• Site Environmental Management Plan • **SMS-06-OP-3114 *Pre-work Briefings***
Biodiversity: *Unintentional or unapproved impacts on native and protected plants, animals and ecological communities*	*Site supervisor* • Remove weeds from plant before leaving weed infested areas • Use tape or other suitable fencing around "no go zones" • Clear minimal vegetation and do not clear any vegetation outside of approved scope • Trim or remove trees under direction of an arborist • Keep vehicles and equipment away from areas of vegetation • Contact WIRES as required for injured animals • Complete post-work site rehabilitation works, maintenance and inspections and transfer ownership to operational area at end of responsibility	• Site Environmental Management Plan • **EMS-06-OR-1006 *Biodiversity***
Chemical and fuel storage and decant: *Unintentional loss of chemicals and fuels during storage and decanting*	*Project Manager* • *SEMP:* Check SDS for any chemicals being used (including pesticides) to determine if special storage and preparation controls are needed. Include controls in SEMP Section 5.2. *Site supervisor* • Maintain current SDS's onsite for all stored chemicals and follow any special precautions • Chemicals and fuels are stored in appropriately labelled and approved containers • Bund temporary fuel and chemical storage and decant facilities away from drains and waterways	• Site Environmental Management Plan • Safety Data Sheets (SDS)

Environmental Hazard	Control and responsibility	Control reference
Dust: *Emissions of dust leaving worksite from earthworks, stockpiles and works traffic.*	*Project manager* • *DESIGN*: Minimise and stage removal of vegetation from worksite during design and works planning *Site supervisor* • Select plant and equipment for the task that is fit for purpose and minimises dust generation • Use water cart to dampen exposed surfaces including access roads, work areas and stockpiles • Cover long term stockpiles • Minimise removal of vegetation from worksite • Keep vehicles to existing access roads	• Site Environmental Management Plan. • **EMS-05-GD-0013 *Air Quality Guide***
Erosion and sedimentation: *Loss of soil and sediment from worksite to surrounding environment, including tracking onto public roads*	*Project manager* • *SEMP*: Develop erosion and sediment control plan for site using suitably trained and qualified personnel. Note: level of ESC training required is dependent upon the area of ground to be disturbed. *Site supervisor* • Site supervisor to have completed Level 1 Erosion and Sediment Control course • Install and maintain erosion and sediment control structures from prior to commencing site work until site has stabilised after the completion of works • Use a street sweeper to regularly remove mud and silt from public roads used for site access • Include sediment control in stockpile management • Complete post-work site rehabilitation and erosion and sediment control maintenance and inspections (transfer ownership to operational area at end of responsibility)	• Site Environmental Management Plan • **EMS-14-PR-0012 *Erosion and Sediment Control***
Heritage: *Unintentional or unapproved impact on Aboriginal and non-Aboriginal heritage*	*Project manager* • *SEMP*: Use SEMP to identify and manage impact to Aboriginal and Non-Aboriginal Heritage sites. Contact a Transport Heritage Specialist for advice regarding approval to impact heritage sites. Add controls from approval to SEMP Section 5.2. *Site supervisor* • Isolate and demarcate heritage sites to prevent accidental damage • If a heritage or archaeological item is uncovered, immediately stop further disturbance, demarcate the site, contact your environmental support and follow **EMS-09-PR-0164 *Unexpected Archaeological Finds***	• **EMS-03-FM-0249 *EWMS Activities outside the AoZ*** • Site Environmental Management Plan • TAHE (former RailCorp) Section 170 Heritage and Conservation Register • Sydney Trains environment WebGIS • **EMS-09-PR-0164 *Unexpected Archaeological Finds***

Environmental Hazard	Control and responsibility	Control reference
Incidents and emerging issues *An incident or emerging issue is not controlled and causes an environmental impact*	*Project Manager* • *SITE*: Support management of emerging issues and incident management, notification, investigation and the completion of corrective and preventative actions *Site supervisor* • Complete daily inspections of the site, plant and equipment and the surrounding area to identify unexpected impacts and future potential impacts • Consider how changes in the weather could affect the works and the works controls (e.g. during high winds, heavy rainfall, etc) • Contact your environmental officer if the NSW EPA or other external party conducts an environmental site visit • Implement incident procedures on unapproved impacts, spills and other environmental incidents • If a spill occurs, then immediately notify incidents to the Incident and Injury Hotline 1800 772 779 or enter incident directly into SHEM • Refer all complaints to the *Sydney Trains & NSW TrainLink Environmental Feedback Line* on 1300 500 or https://transportnsw.info/contact-us	• Site Environmental Management Plan • **EMS-03-PR-0224 *Incident Environmental Management*** • **EMS-02-WI-0214 *Notify Pollution Incidents*** • **EMS-09-PR-0164 *Unexpected Archaeological Finds***
Light spill: *Impact of work light sources on neighbouring residents and properties - particularly the potential for sleep disturbance*	*Site supervisor* • Locate portable lighting towers so that they are not directed at residential properties • Ensure parked vehicles headlights do not shine into residences,	• Site Environmental Management Plan

Environmental Hazard	Control and responsibility	Control reference
Noise and vibration: *Impact of works noise and vibration on neighbouring residents and properties – particularly the potential for sleep disturbance*	*Project manager* • *SEMP*: Identify potentially sensitive noise receivers and identify relevant controls through the noise assessment (as required by SEMP) *Site supervisor* • Schedule more noisy work for 'standard hours' (7am to 9pm Monday to Friday, 8am to 1pm Saturday), where practical • Limit operating and idling plant and equipment on site, where practical • Locate noisy equipment, parking areas and assembly areas away from sensitive receivers, where practical and instruct workers to minimise noise during shift changes and at crib areas • Use non-tonal reversing alarms on vehicles, where practical • All plant and equipment to be operated with effective noise attenuation equipment (e.g. mufflers)	• Site Environmental Management Plan • **EMS-10-GD-0083 *Guide to Rail Infrastructure Noise and Vibration Management*** • **EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment**
Plant and equipment emissions and spills: *Smoke, fumes., odours and other emissions from plant and equipment. Spills of hydrocarbons from plant and equipment*	*Project Manager* • SEMP: Specify plant and equipment for the task that is fit for purpose and minimises offsite impacts (e.g. smoke, exhaust, noise, etc) *Site supervisor* • Plant and equipment is operated and maintained in a proper and efficient manner with all of its pollution control equipment in place and functioning • Plant and equipment not used when needing repair • Plant and equipment is regularly checked for wear, leaks, odours, fumes and smoke • All plant to have suitable spill kits and operators trained in their use and the disposal of used spill kit materials	• Site Environmental Management Plan • **SMS-16-OP-3076 *Inspection, Testing and Monitoring***
Soil and water contamination: *Contamination of worksite from stockpiling and chemical use*	*Site supervisor* • Develop a stockpile management plan to segregate potentially contaminated materials from clean materials • Undertake daily inspections for spills and contamination (e.g. vehicle tracking, unauthorised material movement, containment failures, etc) • Check all imported material for contamination (including weeds, construction wastes, etc)	• Site Environmental Management Plan • **EMS-07-PR-0004 *Contaminated Land Management***

Environmental Hazard	Control and responsibility	Control reference
Traffic: *Traffic disruption to community and other users around worksite*	*Project manager* • *SEMP*: Develop a Traffic Management Plan, where appropriate *Site supervisor* • Plan all vehicle movements to occur outside of local peak traffic periods • Place offsite staging areas in low impact areas • Obtain a Road Occupancy Licence, as necessary • Utilise qualified traffic control staff	• Site Environmental Management Plan
Visual impact: *Visual impact on community due to works and worksite facilities and activities*	*Project manager* • *DESIGN*: Consider visual amenity of structure or item (e.g. retaining walls) in design, e.g. tiering, climbing plants or other measures to soften structure *Site supervisor* • Place stockpiles and site amenities away from residents, and remove them as soon as possible • Create or maintain existing visual screens such as using vegetation, shade cloth on fences or natural site features • Keep the site tidy and free of litter	• Site Environmental Management Plan • **EMS-03-GD-0014 *Visual Amenity Guide***
Waste: *Unnecessary generation of wastes and poor or illegal disposal of wastes*	**Construction waste (e.g. spoil, concrete, litter and rubbish, etc)** *Project manager* • *SEMP:* Develop a Waste Management Plan if the works will generate a significant quantity of wastes, difficult wastes or waste of an unknown quantity/contamination *Site supervisor* • Do not overestimate quantities of materials required • Separate wastes, place all wastes in appropriate containers and dispose of them as they are generated • Prevent the mixing of similar new and waste materials • Classify all wastes in accordance with the NSW EPA Waste Classification Guidelines • Only use approved waste contractors and dispose of all wastes leaving site to facilities licenced to receive the waste • Keep records of all waste classification, transport, disposal, reuse and recycling activities	• Site Environmental Management Plan • **EMS-13-OR-1013 *Waste Management*** • EPA Waste Classification Guidelines

Environmental Hazard	Control and responsibility	Control reference
	Vegetation management waste (e.g. clippings, branches, etc) *Site supervisor* • 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 (where possible) • No spreading of weed infested material within corridor	• Site Environmental Management Plan • **EMS-13-OR-1013 *Waste Management***

Acknowledgement of Country

Sydney Trains acknowledges the traditional custodians of the land on which we work and live. We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Station refresh

Environmental Work Method Statement

Sydney Trains Incident Hotline
1800 772 779

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):

1) Maintenance and renewal of the following existing station components:
   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 handrails, 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

Renewal includes upgrading existing components to meet the requirements *Sydney Trains and NSW TrainLink: Station Components Guide (June 2017).*

Not in Scope:

Works not in scope include:

- 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

Note: Works not in scope may require a different form of environmental assessment and approval, Contact local environmental officer for guidance

Project manager requirements:

- Has a Sydney Trains employee number
- Completed *Environmental Management for Projects* (online) and *SEMP Masterclass* training

External notifications:

Parties outside of Sydney Trains that are likely to require works' notification

- Letter box drop to residents (if identified in SEMP)

Permits / licences:

Licences and permits not issued by Sydney Trains that are likely to be needed for works

- Heritage approval (if identified in SEMP)
- Road closure permits (if identified in SEMP

Plant and equipment

- 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

Environmental Hazard Matrix

Job steps	Awareness and responsibility	Biodiversity	Chemical and fuel storage and decant	Dust	Erosion and sedimentation	Heritage	Incidents and emerging issues	Light Spill	Noise and vibration	Pesticides	Plant and equipment emissions and spills	Soil and water contamination	Traffic	Visual impacts	Waste
	Environmental hazard														
Site establishment (including material / plant delivery, establish site amenities, place skip bins, install hoardings, etc)	Y	Y	Y	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	Y
Declutter, including • Removal redundant equipment and services • Removal of floor furnishings and tiles • Strip paint	Y	-	Y	Y	-	Y		Y	Y	-	Y	Y	Y	-	Y
Construction, including • 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	Y	-	Y	Y	-	Y		Y	Y	-	Y	Y	Y	-	Y
Stockpile and disposal of waste	Y	-	-	Y	Y	-	Y	-	Y	-	Y	Y	Y	Y	Y
Site demobilisation (including final waste disposal, site reinstatement, etc)	Y	-	-	Y	-	-	Y	-	Y	-	Y	-	Y	-	-

Hazard Control Table

Environmental Hazard	Control and responsibility	Control reference
Awareness and responsibility: *Staff unaware of the works' environmental controls and their responsibilities*	*Project manager* • *SEMP*: The SEMP is signed by the site supervisor and they are aware of the environmental controls and conditions, including those within the SEMP's specialist studies and approvals *Site supervisor* • Undertake site pre-work briefings and inductions using the SEMP and the SECM to cover the work's environmental risks and controls and the workers environmental responsibilities • Delivery tool-box talks relevant to the environmental hazards • Maintain a readily accessible copy of the environmental approval (including all associated specialist approvals and plans) at the worksite whenever work is being undertaken. • Display prominently on site, where possible, the SECM and make sure it is accurate and used	• Site Environmental Management Plan • **SMS-06-OP-3114 *Pre-work Briefings***
Biodiversity: *Unintentional or unapproved impacts on native and protected plants, animals and ecological communities*	*Site supervisor* • Remove weeds from plant before leaving weed infested areas • Use tape or other suitable fencing around "no go zones" • Clear minimal vegetation and do not clear any vegetation outside of approved scope • Trim or remove trees under direction of an arborist • Keep vehicles and equipment away from areas of vegetation • Contact WIRES as required for injured animals • Complete post-work site rehabilitation works, maintenance and inspections and transfer ownership to operational area at end of responsibility	• Site Environmental Management Plan • **EMS-06-OR-1006 *Biodiversity***
Chemical and fuel storage and decant: *Unintentional loss of chemicals and fuels during storage and decanting*	*Project Manager* • *SEMP:* Check SDS for any chemicals being used (including pesticides) to determine if special storage and preparation controls are needed. Include controls in SEMP Section 5.2. *Site supervisor* • Maintain current SDS's onsite for all stored chemicals and follow any special precautions • Chemicals and fuels are stored in appropriately labelled and approved containers • Bund temporary fuel and chemical storage and decant facilities away from drains and waterways	• Site Environmental Management Plan • Safety Data Sheets (SDS)

Environmental Hazard	Control and responsibility	Control reference
Dust: *Emissions of dust leaving worksite from earthworks, stockpiles and works traffic.*	*Site supervisor* • Select plant and equipment for the task that is fit for purpose and minimises dust generation • Use water cart to dampen exposed surfaces including access roads, work areas and stockpiles • Cover long term stockpiles • Minimise removal of vegetation from worksite • Keep vehicles to existing access roads	• Site Environmental Management Plan. • **EMS-05-GD-0013 *Air Quality Guide***
Erosion and sedimentation: *Loss of soil and sediment from worksite to surrounding environment, including tracking onto public roads*	*Site supervisor* • Use a street sweeper to regularly remove mud and silt from public roads used for site access • Include sediment control in stockpile management • Complete post-work site rehabilitation and erosion and sediment control maintenance and inspections (transfer ownership to operational area at end of responsibility)	• Site Environmental Management Plan • **EMS-14-PR-0012 *Erosion and Sediment Control***
Heritage: *Unintentional or unapproved impact on Aboriginal and non-Aboriginal heritage*	*Project manager* • *SEMP*: Use SEMP to identify and manage impact to Aboriginal and Non-Aboriginal Heritage sites. Contact a Transport Heritage Specialist for advice regarding approval to impact heritage sites. Add controls from approval to SEMP Section 5.2. *Site supervisor* • Isolate and demarcate heritage sites to prevent accidental damage • If a heritage or archaeological item is uncovered, immediately stop further disturbance, demarcate the site, contact your environmental support and follow **EMS-09-PR-0164 *Unexpected Archaeological Finds***	• **EMS-03-FM-0249 *EWMS Activities outside the AoZ*** • Site Environmental Management Plan • TAHE (former RailCorp) Section 170 Heritage and Conservation Register • Sydney Trains environment WebGIS • **EMS-09-PR-0164 *Unexpected Archaeological Finds***

Environmental Hazard	Control and responsibility	Control reference
Incidents and emerging issues *An incident or emerging issue is not controlled and causes an environmental impact*	*Project Manager* • *SITE*: Support management of emerging issues and incident management, notification, investigation and the completion of corrective and preventative actions *Site supervisor* • Complete daily inspections of the site, plant and equipment and the surrounding area to identify unexpected impacts and future potential impacts • Consider how changes in the weather could affect the works and the works controls (e.g. during high winds, heavy rainfall, etc) • Contact your environmental officer if the NSW EPA or other external party conducts an environmental site visit • Implement incident procedures on unapproved impacts, spills and other environmental incidents • If a spill occurs, then immediately notify incidents to the Incident and Injury Hotline 1800 772 779 or enter incident directly into SHEM • Refer all complaints to the *Sydney Trains & NSW TrainLink Environmental Feedback Line* on 1300 500 or https://transportnsw.info/contact-us	• Site Environmental Management Plan • **EMS-03-PR-0224 *Incident Environmental Management*** • **EMS-02-WI-0214 *Notify Pollution Incidents*** • **EMS-09-PR-0164 *Unexpected Archaeological Finds***
Light spill: *Impact of work light sources on neighbouring residents and properties - particularly the potential for sleep disturbance*	*Site supervisor* • Locate portable lighting towers so that they are not directed at residential properties • Ensure parked vehicles headlights do not shine into residences,	• Site Environmental Management Plan

Environmental Hazard	Control and responsibility	Control reference
Noise and vibration: *Impact of works noise and vibration on neighbouring residents and properties – particularly the potential for sleep disturbance*	*Project manager* • *SEMP*: Identify potentially sensitive noise receivers and identify relevant controls through the noise assessment (as required by SEMP) *Site supervisor* • Schedule more noisy work for 'standard hours' (7am to 9pm Monday to Friday, 8am to 1pm Saturday), where practical • Limit operating and idling plant and equipment on site, where practical • Locate noisy equipment, parking areas and assembly areas away from sensitive receivers, where practical and instruct workers to minimise noise during shift changes and at crib areas • Use non-tonal reversing alarms on vehicles, where practical • All plant and equipment to be operated with effective noise attenuation equipment (e.g. mufflers)	• Site Environmental Management Plan • **EMS-10-GD-0083 *Guide to Rail Infrastructure Noise and Vibration Management*** • **EMS-10-FM-0166 Maintenance Quantified Noise and Vibration Assessment**
Plant and equipment emissions and spills: *Smoke, fumes., odours and other emissions from plant and equipment. Spills of hydrocarbons from plant and equipment*	*Project Manager* • SEMP: Specify plant and equipment for the task that is fit for purpose and minimises offsite impacts (e.g. smoke, exhaust, noise, etc) *Site supervisor* • Plant and equipment is operated and maintained in a proper and efficient manner with all of its pollution control equipment in place and functioning • Plant and equipment not used when needing repair • Plant and equipment is regularly checked for wear, leaks, odours, fumes and smoke • All plant to have suitable spill kits and operators trained in their use and the disposal of used spill kit materials	• Site Environmental Management Plan • **SMS-16-OP-3076 *Inspection, Testing and Monitoring***

Environmental Hazard	Control and responsibility	Control reference
Soil and water contamination: *Contamination of worksite from stockpiling and chemical use*	*Project manager* • *DESIGN* and *SEMP*: Identify potential contaminants prior to commencing work on site • *DESIGN* and *SEMP:* Check SDS for any chemicals being used (including pesticides) to determine if special use controls are needed. Add any controls to SEMP Section 5.2. *Site supervisor* • Develop a stockpile management plan to segregate potentially contaminated materials from clean materials • Undertake daily inspections for spills and contamination (e.g. vehicle tracking, unauthorised material movement, containment failures, etc) • Check all imported material for contamination (including weeds, construction wastes, etc)	• Site Environmental Management Plan • **EMS-07-PR-0004 *Contaminated Land Management***
Traffic: *Traffic disruption to community and other users around worksite*	*Project manager* • *SEMP*: Develop a Traffic Management Plan, where appropriate *Site supervisor* • Plan all vehicle movements to occur outside of local peak traffic periods • Place offsite staging areas in low impact areas • Obtain a Road Occupancy Licence, as necessary • Utilise qualified traffic control staff	• Site Environmental Management Plan
Visual impact: *Visual impact on community due to works and worksite facilities and activities*	*Site supervisor* • Place stockpiles and site amenities away from residents, and remove them as soon as possible • Create or maintain existing visual screens such as using vegetation, shade cloth on fences or natural site features • Keep the site tidy and free of litter	• Site Environmental Management Plan • **EMS-03-GD-0014 *Visual Amenity Guide***

Environmental Hazard	Control and responsibility	Control reference
Waste: *Unnecessary generation of wastes and poor or illegal disposal of wastes*	**Construction waste (e.g. spoil, concrete, litter and rubbish, etc)** *Project manager* • *SEMP:* Develop a Waste Management Plan if the works will generate a significant quantity of wastes, difficult wastes or waste of an unknown quantity/contamination *Site supervisor* • Do not overestimate quantities of materials required • Separate wastes, place all wastes in appropriate containers and dispose of them as they are generated • Prevent the mixing of similar new and waste materials • Classify all wastes in accordance with the NSW EPA Waste Classification Guidelines • Only use approved waste contractors and dispose of all wastes leaving site to facilities licenced to receive the waste • Keep records of all waste classification, transport, disposal, reuse and recycling activities	• Site Environmental Management Plan • **EMS-13-OR-1013 *Waste Management*** • EPA Waste Classification Guidelines
	Slurry wastes (e.g. concrete, supersucker, etc) *Site supervisor* • Ensure proper and immediate disposal of slurry offsite, or construct a correctly sized, impermeable slurry holding facility and properly dispose of all dewatered wastes	• Site Environmental Management Plan • **EMS-13-WI-0183 *Hydrovac Slurry Management***
	Vegetation management waste (e.g. clippings, branches, etc) *Site supervisor* • 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 (where possible) • No spreading of weed infested material within corridor	• Site Environmental Management Plan • **EMS-13-OR-1013 *Waste Management***

Acknowledgement of Country

Sydney Trains acknowledges the traditional custodians of the land on which we work and live. We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Heritage NSW

HMS Application ID: 1055

[redacted]

Application under section 60 of the *Heritage Act 1977*
Parkes Railway Station group
State Heritage Register No. 01220

Address: May Street, PARKES NSW 2870
Proposal: Parkes Station Chimney Stack Refurbishment Works
Section 60 fast track application no: HMS ID 1055, received 29 April 2022.

As delegate of the Heritage Council of NSW (the Heritage Council), I have considered the above fast track application, including those matters identified under section 62 of the *Heritage Act 1977*. Pursuant to section 63 of the Act, approval is granted subject to the following conditions:

APPROVED DEVELOPMENT

1. All work shall comply with the information contained within:

   a) Report: Statement of Heritage Impact., Parkes Railway Station Chimney Stack Repairs., prepared by Long Blackledge Architects., dated 28 February 2022.;

EXCEPT AS AMENDED by the conditions of this approval:

SPECIALIST TRADESPERSONS

2. 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

3. 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.

COMPLIANCE

4. 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

5. 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.

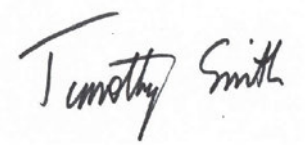
Right of Appeal
If you are dissatisfied with this determination appeal may be made to the Minister under section 70 of the Act.

It should be noted that an approval under the 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 Erin McWhirter, Customer Services Officer, at Heritage NSW on 8837 6397 or Erin.McWhirter@environment.nsw.gov.au.

Yours sincerely



Tim Smith OAM
Director, Heritage Assessments
Heritage NSW
Department of Planning and Environment
As Delegate of the Heritage Council of NSW
10 June 2022

cc: Parkes Council,

Long Blackledge
Architects

PARKES RAILWAY STATION
CHIMNEY STACK REPAIRS

STATEMENT OF HERITAGE IMPACT

Prepared for

Sydney Trains

Issue B 2022_02_28

Nominated Architect:
William Blackledge ARAIA
NSW Reg 9057

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CONTENTS:

1. Preamble

1.1 Background

All but one chimney stacks of the station platform building are in poor condition and require major work to stablise and weather–proof them.

The stacks were inspected by Aaron Wilson of Taylor Thomson Whitting (NSW) P/L and William Blackledge of Long Blackledge Architects P/L on 30th November 2021. Access was by boom lift.

1.2 The Purpose of this report

This report supports an application under s57 of the Heritage Act for approval to undertake the works by Sydney Trains internal approval.

1.3 References

- TTW Inspection Report dated 25th February 2022

1.4 Location

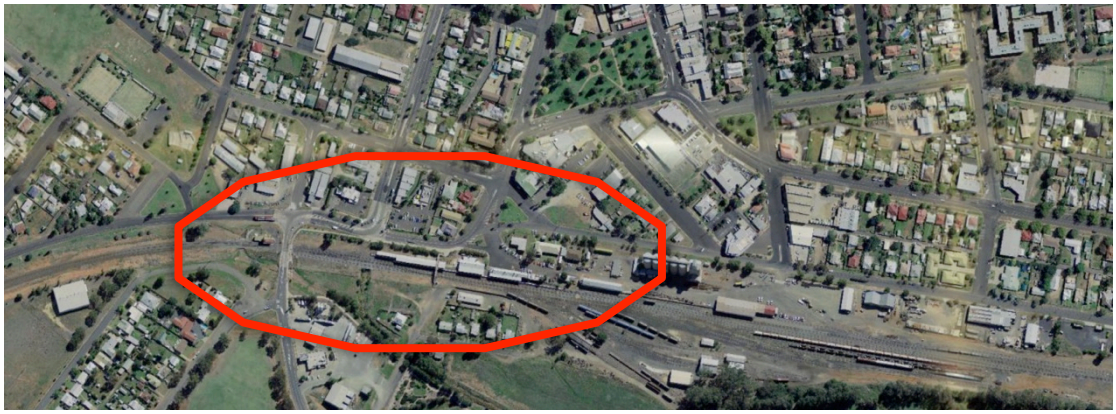


Figure 1 Parkes Railway Station

1.5 Statutory Listed status

Parkes Railway Station Group is State Heritage Listed (SHR 01220)

The item is listed in the Transport Asset Holding Entity section 170 register SHI number 4801352

The item is listed in Parkes LEP 2012 as a State Listed item of Environmental heritage (item 6)

2 Description of the Station

2.1 The Station Building

Figure 2 The station building (Google Streetview)

The station building is an altered example of an 1893 standard roadside building. Originally the building was a five room gabled building which featured a central waiting room with a Station Master's office and parcel office to the western side flanked by a shed and lamp room wing, with a ladies and gents waiting room to the east flanked by a bathroom wing. Historic plans show three brick chimneys and gablet vents and a front verandah to the entry which all still exist. Timber finials to gable ends still exist on the original detached wings.

The building underwent alterations in 1926 and further alterations in 1947 which extended the building to either end to incorporate the previous external wings in to the form of the main building and also altering the use of most rooms. The extensions were undertaken in a sympathetic manner including matching windows and an extended platform awning to match the existing. As such the building presents as a cohesive building that still retains its Victorian character.

The brick platform dates from 1893 and was extended c1928 and features modern asphalt surfacing. (SHI)

2.2 Refreshment Rooms

From historic plans it appears prior to the current building being erected on this site, that there were previously two small structures used as temporary Railway Refreshment rooms and accommodation for the staff.

Plans from c1928 show the demolition of the previous structures and the erection of the existing brick building on the same site.

Further historic plans show minor alterations in 1939 and a further extension to the west in 1943. The building is unusual in that it appears to be comprised of two different buildings with a gabled part fronting on to the platform with a cantilevered awning, and a rear kitchen wing with a brick parapet with projecting string course. (SHI listing adapted)

2.3 The chimney stacks

Figure 3 Stacks CP1, 2 and 3 (2021)

Figure 4 Stack CP4

The eastern chimney stacks of the main railway building are contemporary with the 1893 building, The western stack dates probably from the 1928 extension. All the stacks of the platform station building match and are constructed of face brick with rendered moulded detail. The stacks are all painted in what seems to be an elastomeric paint system (the effect of which is described in the condition report). All stacks are capped, the capping of the eastern 3 stacks is recent, the western stack capping is older.

Figure 5 Stack CP5 (2021)

Figure 6 Stack CP5

The stack to the refreshment room serves the kitchen, it is about 3m tall and set immediately adjacent to the north wall of the structure. There appears to be 3 flues: the two western flues are capped by a concrete slab, the eastern flue has been adapted (crudely) to incorporate a steel flue (which is now corroding). The base of the stack at its junction with the roof has an internal gutter and a mixture of lead (and possibly zinc/galvanised steel flashing).

3 Statement of heritage significance

Parkes Railway Precinct is of state significance as an important major railway junction that is associated with the earliest development of railway infrastructure in the west of NSW in the late 19th century. The precinct features a fine, albeit altered, example of a Victorian station building dating from the opening of the precinct in 1893. The precinct includes a locomotive depot with a partial roundhouse and remains of the former goods yard and a range of items typically found at many large railway complexes in NSW from the late 19th and 20th centuries including the footbridge, jib crane and dock platform, which all contribute to the significance of Parkes as a major railway junction. The Roundhouse is significant as only one of seven surviving structures. The footbridge is notable as the last riveted Warren truss footbridge constructed for the NSW network. (SHI).

4 Condition

The condition of stacks CP1, 2 and 3 is poor with extensive decay of mortar behind the impermeable paint, caused by the chronic saturation of the stack (when they were open). The western stack (CP4) is in better condition. The stack to the refreshment room (CP5) is in general good condition expect for the poorly made adaptation of the eastern flue (see the TTW report for detail).

5 Proposed Works

5.1 Stacks CP1, 2 and 3

Owing to the decayed nature of the mortar of the stacks it is necessary to reconstruct the stacks. It is proposed to carefully dismantle the stack down to sound work, accurately reconstruct the stacks with salvaged desalinated bricks and accurately reconstructed rendered mounding. The sealed cover on the stacks will be replaced with a stainless steel vented cover. Flashing will be replaced in lead. The stack will be limewashed to approximate the present colours.

5.2 Stack CP4

Strip the paint from the stack and limewash. Replace capping with stainless steel vented cover.

5.3 Stack CP5

Remove the decayed later accretion on the east flue. Provide a single concrete capping to the whole stack. Ventilate the east flue into the middle flue by removing one internal brick.

6 Assessment of Impact.

6.1 The following aspects of the proposal respect or enhance the heritage significance of Parkes Railway Station for the following reasons:

The following actions will enhance the heritage significance of the building:

- Repair of original fabric

6.2 The following aspects of the proposal could detrimentally impact on heritage significance and measures to be taken to minimise impacts:

Dismantling original fabric will affect significance, this is mitigated by the salvaging and reuse of brick where possible and the accurate reconstruction of the stacks.

The capping of flues with a ventilated stainless steel capping will introduce new fabric to the station, this long lasting essential covering of the now disused flues will better protect fabric.

6.3 The following sympathetic solutions have been considered and discounted for the following reasons:

None

7 Conclusion

The reconstruction and repairs to the stacks at Parkes Station is an appropriate action to preserve the design quality of the station whilst addressing serious structural issues with three of the station's five chimney stacks.

APPENDIX A TTW Parkes Railway Station Chimney Inspection 25_02_2022

TTW Structural Civil Traffic Façade

Parkes Station Chimney Inspection

Sydney Trains Chimney Investigations

Prepared for Sydney Trains / 25th Feb 2022

211700

Issue A 2022-02-25

Taylor Thomson Whitting (NSW) Pty Ltd (ACN 113 578 377)
as trustee for the Taylor Thomson Whitting NSW Trust
(ABN 59 514 956 558) I Consulting Engineers
Level 6, 73 Miller Street, North Sydney NSW 2060

Your Partner in Engineering

Contents

1.0 Executive Summary

An inspection of Parkes Station's 5 masonry chimneys was undertaken by Taylor Thomson Whitting (NSW) Pty Ltd Structural Engineers and Long Blackledge Architects on the 30th of November 2021. The purpose of the inspection was to assess the condition of the above-mentioned chimneys and provide repair advice as necessary.

The 3 eastern most chimneys (P1, P2 & P3) were found to be generally in a state of disrepair with local exposure of mortar joints behind the paint having lost structural integrity. Further investigations are recommended for these chimneys to determine the extent of the compromised mortar. We believe it likely that extensive repairs, being demolition and rebuild, are required to restore these three chimney stacks to original conditions.

The western most chimney of the main station building (P4) was found to be generally in good condition, the capping for this chimney is advised to be replaced with a new stainless-steel detail.

The westernmost chimney in the refreshments building was found to be generally in good condition. The existing steel flue and associated brick work on this chimney were found to be in a state of disrepair and should be demolished and replaced with a new precast capping detail.

Inspection findings, including photos, descriptions and recommended rectifications of each identified defect are detailed in the body of this report. Repair advice for all chimneys has been provided in the form of a schedule of works. These works are to be completed in accordance with the repair notes and trade specification appended to this report (Appendix B).

2.0 Introduction

Parkes Station was built in circa 1890, the station is still currently in use situated on the Central-Broken Hill lines. TTW have been engaged by Sydney Trains to investigate the 4 chimneys within the primary station building and the 1 chimney in the refreshments building, east along the platform of the station building, to provide repair advice as necessary. A brief history of the station's 5 chimneys, obtained from historic drawings provided in the project brief, is below:

- c.1893: Original station building built containing chimneys P1-3, Lamp room built containing Chimney P4
- c.1927: Refreshments building built east along the platform of the station building, containing chimney P5 in the kitchen
- c.1947: Parcel Office extension to the main station building, chimney P4 re-built / extended during the renovations.

The purpose of the inspection was to report the general condition of the chimneys and identify items which may require repair or replacement.

Prior to conducting the chimney inspections, the following existing documentation was received in the project brief:

- Shreeji Consulting report: 1809002 Sydney Trains Central West Chimney Inspections (Date unknown, assumed to have been completed in the last 12 months).

Shreeji's report identified 3 of the 5 chimneys at Parkes Station to be at risk and tagged as high priority for further close hand inspection and likely requiring repair works.

All descriptions, references to conditions and other details are a general guidance only and are given as our opinion but any interested parties should not rely on them as statements or representations of fact and must satisfy themselves as to the correctness, quantity, costs, etc of each of them.

3.0 Inspection Methodology and Scope

Refer to Appendix A for the methodology that was used to complete the chimney inspections.

Note that material testing did not form part of the inspection.

Defects identified were limited to accessible areas of the chimneys. An allowance should be made for potential further defects which are revealed during the repair works.

4.0 Chimney Inspections

4.1 Inspection Observations

Mr Aaron Wilson from the Sydney office of Taylor Thomson Whitting and Mr William Blackledge from Long Blackledge Architect carried out the site inspection of Parkes Station chimneys on the 30th November 2021. Weather conditions were predominately sunny on the day of the inspection, with overcast clouds and rain interrupting the final inspection of chimney P5.

For the purpose of this report, the chimneys have been numbered and elevation (North, East, South, West) notations assigned as per Figure 4-1. Similarly, the chimney elements referenced throughout section 4.0 are as per the naming convention shown in Figure 4-2.

The following tables document the findings of the visual inspections. The naming convention consists of Chimney No.-Image No., example P1-1 is Parkes Chimney 1 (as per Figure 4-1) image 1, P1-2: Parkes Chimney 1 image 2 etc.

Measurements taken on site indicate the bricks are of standard dimensions: Width x Length x Height – 110 x 230 x 76mm.

Noted during the inspection that the entire station building, including chimneys P1-4, have recently been painted. Observations recorded in Shreeji Consultant's report show the chimneys and building to be an orange, maroon colour, whereas the station and chimneys are now yellow. This coating of paint generally obscured the external condition of the bricks and mortar joints. Similarly, chimneys P1 & P3 have recently had sheet metal caps installed, these were not present in Shreeji Consultant's report. It is assumed that P1 & P3 were exposed to weather conditions for an extended period of time prior to capping and the internal flue conditions are similar to P2 which had no capping and was built at the same time as these chimneys.

Inspection of all 5 chimneys fireboxes was not possible as they have all been boarded up.

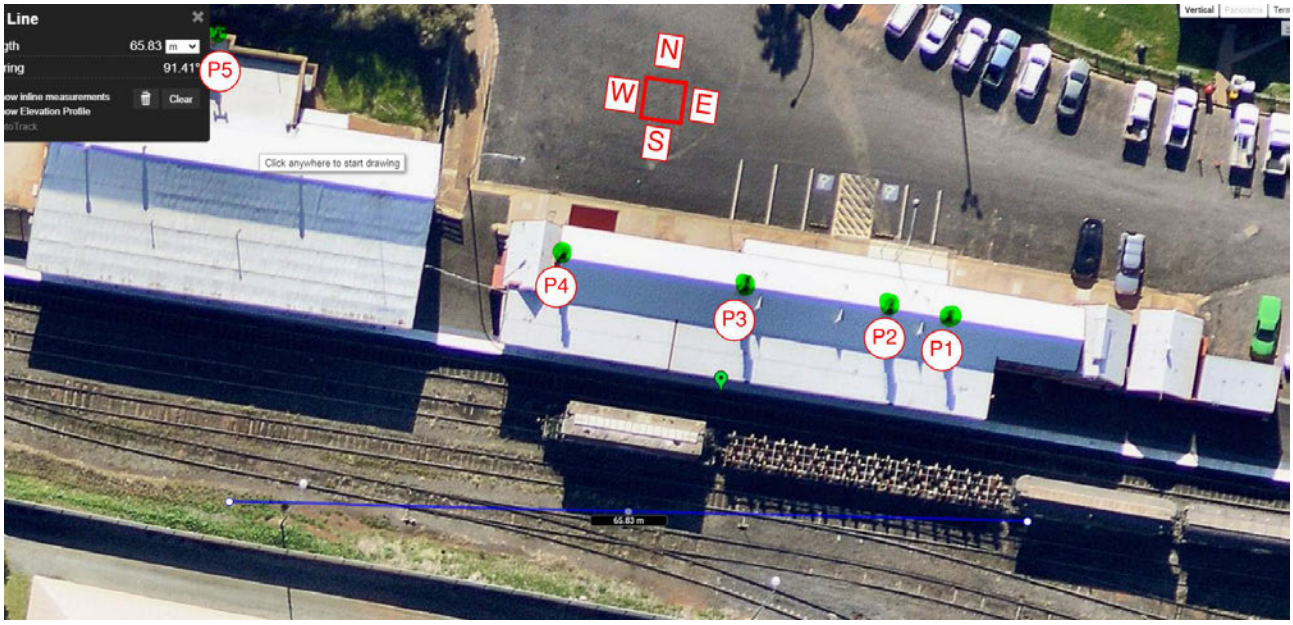


Figure 4-1: Chimney Numbers and Elevation references

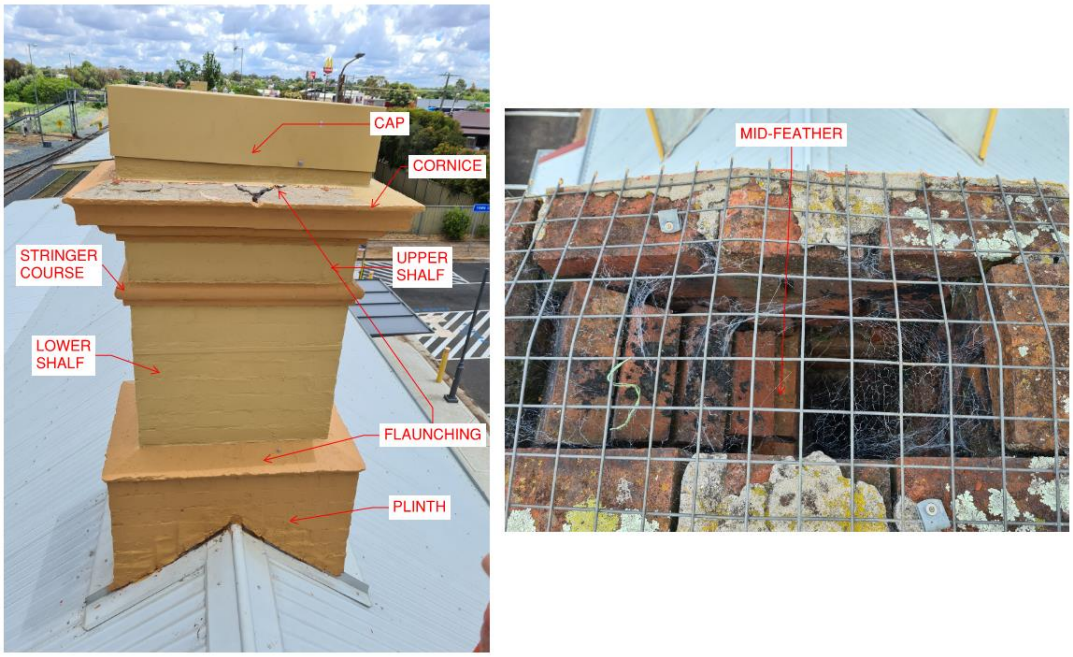


Figure 4-2 Chimney Notation Diagram

4.1.1 Chimney P1 Findings

Approximate dimensions measured from top of chimney:

- Plan width (2 bricks) x length (2 bricks): 480 x 480mm
- Plan width x length cornice: 780 x 780mm
- Height above roof ridge (~20 courses): 1700mm
- Dims indicatively shown in P1-3

P1-1 North Face

P1-2 East face

P1-3 South Face

P1-4 West Face

P1-5

P1-6

P1-7

P1-8

P1-9

Observations	
1	Cracking noted in stringer course visible through paint, as per P1-3,4 & 6.
2	Cracking noted in all four sides of the cornice flaunching, as per P1-3 to P1-8
3	Vertical crack completely through the eastern side of the cornice noticeable through paint finishing, as per P1-2 & P1-7
4	Loss of mortar bed joint noticed on east side of stack through paint, as per P1-4 & P1-8.
5	Stack has been recently capped with metal sheeting, it is assumed the stack had been open to the elements for a protracted period prior to this.
6	Stack has recently been painted with a thick elastomeric type of paint (i.e. greater elasticity than a standard acrylic coating), which is generally obscuring external condition of bricks and joints.
7	Localised exposure of mortar joint in the upper shalf was damp and lacking in integrity, mortar was crumbly and erodible to finger pressure.
8	Firebox boarded up and obstructing further investigations, as per P1-9

4.1.2 Chimney P2 Findings

Approximate dimensions measured from top of chimney:

- Plan width (2 bricks) x length (3.5 bricks): 480 x 840mm
- Plan width x length cornice: 780 x 1040mm
- Height above roof ridge (~20 courses): 1700mm
- Dims indicatively shown in P2-2

P2-1 North face

P2-2 East Face

P2-3 South Face

P2-4 West Face

P2-5

P2-6

P2-7

P2-8

P2-9

P2-10

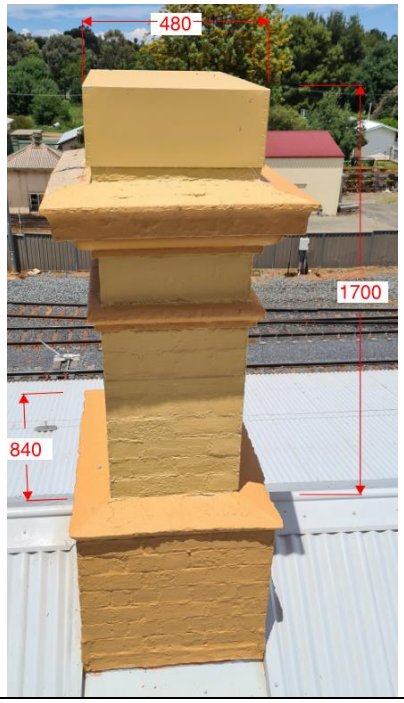
Observations	
1	Stack is open to the elements and sections of mortar bedding depth lost (vertical and horizontal) noted inside the flue. In sections of the top two courses there is 100% loss of mortar, as per P2-4 & P2-5.
2	Top four courses of mid-feather brick work collapsed, as per P2-4.
3	Cracking noted in all four sides of the cornice flaunching, as per P2-2 to P2-9
4	Vertical cracks completely through all four sides of the cornice noticeable through paint finishing, as per P2-6 to P2-9
5	Loss of mortar bed joint noticed on west side of stack through paint, as per P2-4 & P2-9.
6	Cracking noted in all four sides of stringer course visible through paint, as per P2-4, P2-7 & P2-9.
7	Stack has recently been painted with a thick elastomeric type of paint (i.e. greater elasticity than a standard acrylic coating), which is generally obscuring external condition of bricks and joints.
8	Localised exposure of mortar joint in the upper shalf and plinth was damp and lacking in integrity, mortar was crumbly and erodible to finger pressure.
9	Firebox boarded up and obstructing further investigations, as per P2-10

4.1.3 Chimney P3 Findings

Approximate dimensions measured from top of chimney, same as chimney P2:

- Plan width (2 bricks) x length (3.5 bricks): 480 x 840mm
- Plan width x length cornice: 780 x 1040mm
- Height above roof ridge (~20 courses): 1700mm
- Dims indicatively shown in P3-1

P3-1 North face



P3-2 East Face

P3-3 South Face

P3-4 West Face

P3-5

P3-6

P3-7

P3-8

P3-9

P3-10

Observations

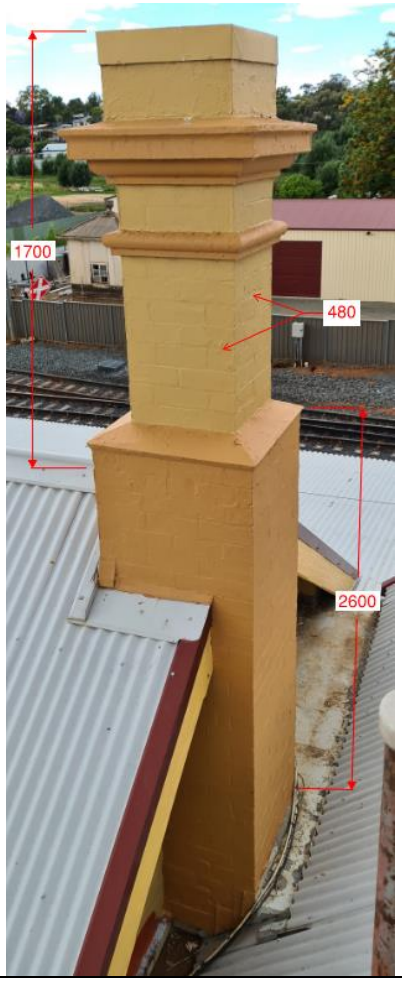
1	Cracking noted in all four sides of the cornice flaunching, as per P3-2to5, P3-7 & P3-8
2	Vertical crack completely through the eastern side of the cornice noticeable through paint finishing, as per P3-7
3	Loss of mortar bed joint noticed on west side of stack through paint, as per P3-4 & P3-6.
4	Stack has been recently capped with metal sheeting, it is assumed the stack had been open to the elements for a protracted period prior to this.
5	Stack has recently been painted with a thick elastomeric type of paint (i.e. greater elasticity than a standard acrylic coating), which is generally obscuring external condition of bricks and joints.
6	Localised exposure of mortar joint in the lower & upper shalf and plinth was damp and lacking in integrity, mortar was crumbly and erodible to finger pressure.
7	Firebox boarded up and obstructing further investigations, as per P3-10

4.1.4 Chimney P4 Findings

Approximate dimensions measured from top of chimney, similar to chimney P1:

- Plan width (2 bricks) x length (2 bricks): 470 x 470mm
- Plan width x length cornice: 780 x 780mm
- Height above roof ridge (~20 courses): 1700mm
- Height of plinth above lower roof line (~30 courses): 2600mm
- Dims indicatively shown in P4-1

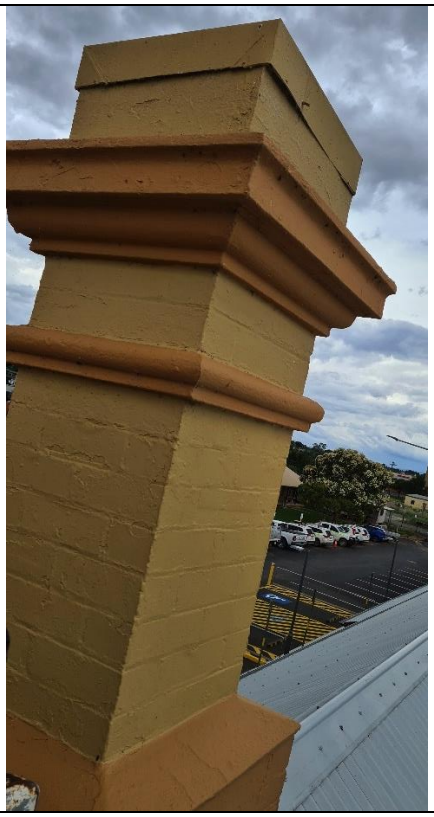
P4-1 North face



P4-2 East Face

P4-3 South Face

P4-4 West Face



P4-5

P4-6

P4-7

P4-8

Observations

1	Cracked noted in south side of cornice flashing, as per P4-6 & P4-7
2	Slight crack noted in stringer course through paint, as per P4-8
3	Stack has recently been painted with a thick elastomeric type of paint (i.e. greater elasticity than a standard acrylic coating), which is generally obscuring external condition of bricks and joints.
4	Localised exposure of the mortar in the upper shalf and plinth was solid and of sound consistency.

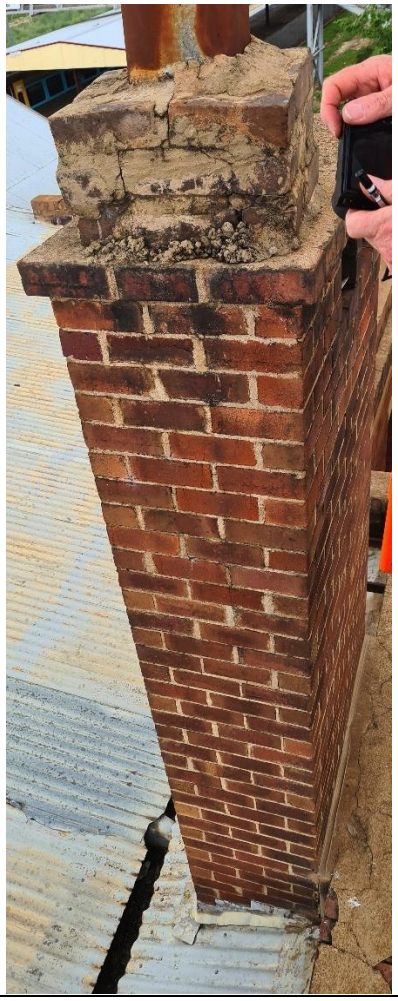
4.1.5 Chimney P5 Findings

Approximate dimensions measured from top of chimney:

- Plan width (2.5 bricks) x length (5.5 bricks): 600 x 1300mm
- Plan width x length concrete lid: 1380 x 680mm
- Height above roof level (36 courses): 3100mm
- Dims indicatively shown in P5-4

P5-1 North face

P5-2 East Face



P5-3 South Face

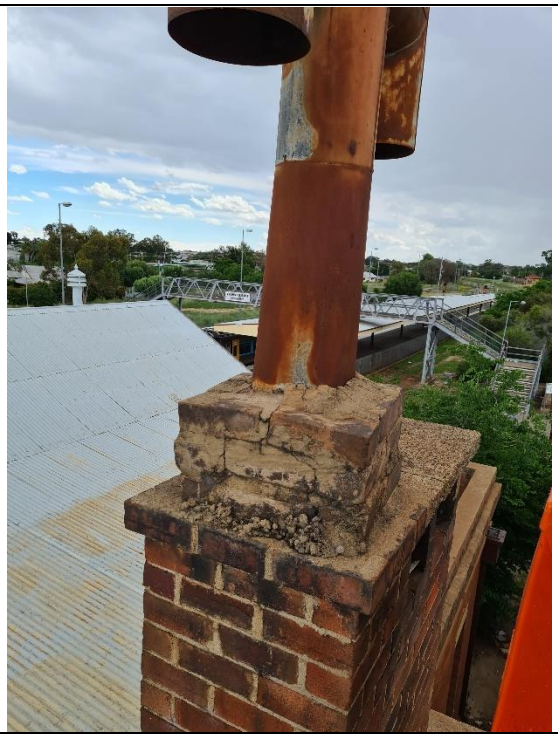
P5-4 West Face

P5-5

P5-6

P5-7

P5-8



P5-9

P5-10

Observations

1	Steel flue and associated brick work on eastern portion of flue are in a general state of disrepair, as per P5-1to4, P5-6 & P5-8
2	Fibreboard type sheet and bricks loosely covering middle flue, as per P5-7
3	Slight crack and weathering noted in concrete lid over the western flue, as per P5-5
4	Mortar joints observed both external and internal to the flue appear solid and fully bedded, as per P5-1to10

4.2 Inspection Comments

The elastomeric paint coating applied to chimneys P1-3 appears to have exacerbated the weathering process of the mortar joints. This barrier is unbreathable and seems to have trapped moisture in the mortar joints resulting in the joints losing structural integrity. To determine the full extent of compromised mortar and bricks the paint will need to be removed to allow for further inspection.

Based on the observations and removal of small areas of the paint during the inspection, we believe it likely that extensive repairs are required to restore these three chimney stacks to original conditions.

Chimneys P4 & P5 stacks were found to be in good condition, with the steel flue and associated brick work of chimney P5 found to be in a state of disrepair.

5.0 Schedule of Works

The following schedule of repair works is advised for Parkes Station's 5 chimneys. These works are recommended based of the findings presented in section 4.0 and are to be carried out in accordance with the repair advice in section 6.0 and the trade specification, located in Appendix B.

5.1 Chimney P1 – Repair Works

Significant defects have been noted in chimney P1 including cracking in the cornice moulding visible through the paint and loss of structural integrity in the mortar. Additionally, the internal flue, topmost brick courses and mid-feather conditions are likely to be in the same state of disrepair as observed for chimney P2, given the extended period of exposure to the elements prior to capping. Considering the moisture trapping caused by the elastomeric paint covering the chimney, it is likely that the mortar integrity has been compromised for the full extent of the chimney above the roof line. Further investigations should be carried out to confirm this is the case and that a full rebuild of the chimney is required. The following schedule of works is to be carried out:

1. Strip away paint from chimney and assess extent of compromised mortar joints and brickwork. Allow for engineer's inspection (hold point).
2. Dismantle the chimney stack, allow to 600mm below roof ridge line, subject to finding a structurally sound and solid substrate. Allow for; engineer's inspection (hold point), salvaging of the dismantled bricks and taking profiles of the stack's mouldings.
3. Desalinate salvaged bricks.
4. Reconstruct portion of dismantled chimney stack to match the original appearance using combination of desalinated and new bricks, allow to provide 10 new bricks. Allow for mid-feather to be connected to outer shaft brickwork as part of the reconstruction. Allow for reconstruction of the cornice moulding.
5. Provide new lead flashings.
6. Provide cementitious flaunching to plinth and cornice moulding.
7. Provide stainless steel ventilation capping to flue, details as per Appendix C.
8. Limewash stack to match existing colour scheme.

5.2 Chimney P2 – Repair Works

Same as for Chimney P1 – Repair Works steps 1-8.

5.3 Chimney P3 – Repair Works

Same as for Chimney P1 – Repair Works steps 1-8.

Plus: Remove obsolete brackets.

5.4 Chimney P4 – Repair Works

Chimney P4 appears to be in a fair condition structurally based on the level of defects observed. Following minor works to be carried out:

1. Strip paint.
2. Provide stainless steel ventilation capping to flue, details as per Appendix C.
3. Limewash stack to match existing colour scheme.
4. Replace flashings.

5.5 Chimney P5 – Repair Works

Chimney P5's stack appears to be in a fair condition structurally based on the level of defects observed. The existing steel flue and associated brick work are in a state of disrepair and should be demolished. Following schedule of works to be carried out:

1. Dismantle and remove steel flue and associated brick work. Allow for disposal of materials. Carefully dismantle brick corbelled capping course to east flue.
2. Provide new precast concrete capping to whole flue capping, details as per Appendix C. Remove one brick between east flue and central flue to ventilate east flue.
3. Inspect flashing- (assume still sound).

6.0 Repair Notes

The schedule of repair works as detailed in section 5.0 are to be carried out in accordance with the combined architectural and engineering trade specification, refer to Appendix B. Additionally, the following is to be taken into consideration for the repair works.

Where repointing or relaying of bricks is required, tolerance of the reconstructed stack is to be in accordance with AS3700:2018 Chapter 12. At a maximum 10mm out of vertical alignment per 3m height (0.19°) in accordance with AS3700:2018 Table 12.1(c). Mortar class as per trade specification.

Where the mid-feather is to be reinstated it is to either be keyed into the stack perimeter brick work or tied back to the stack perimeter brick work with stainless steel ties, for either option the mid-feather is to be keyed into the cavity of the stringer course.

Where a structurally sound and solid substrate is called for in demolition and rebuild repair, the mortar at this level is to have solid integrity against mechanical abrasion. At a maximum the mortar bedding loss from the flue side of this solid substrate is to be less than 20mm. If mortar bed loss is significant (> 20mm) then the demolition and re-build of the stack is to be extended till such a structurally sound and solid substrate is reached. Structural engineer to be notified prior to extending the demolition works (hold point).

Structural engineer to be notified for any issues identified during deconstruction and repair which have not been identified in this report (hold point). Specifically, but not limited to, structural steel and concrete (i.e. not render/mortar).

Contractor to allow for temporary screens, access, and protection in accordance with all relevant standards which includes but is not limited to; ASA, Sydney trains standards and SafeWork NSW.

7.0 Conclusions

Chimneys P1, P2 & P3 inspected at Parkes station were found to be in a state of disrepair with local exposure of mortar joints behind the paint having lost structural integrity. Further investigations are recommended for these chimneys to determine the full extent of the compromised mortar. We believe it likely that these are required to be demolished and rebuilt in a top-down approach until a structurally suitable substrate is reached.

Chimney P4 was found to be generally in good condition, the capping for this chimney is advised to be replaced with a new stainless-steel detail.

Chimney P5 was found to be generally in good condition. The existing steel flue and associated brick work on this chimney were found to be in a state of disrepair and should be demolished and replaced with a new precast capping detail.

We estimate costs as follows:

- Deconstruction and rebuild each chimney (i.e Chimneys P1-P3): $25,000.
- Paint stripping, repainting and capping – P4: $6,000
- Deconstruction and capping – P5: $6,000
- Total estimate: $87,000.

TTW provide this as a rough estimate only and take no responsibility for final pricing. Costs should be verified by a cost planner.

The basis of the rectifications outlined in this report are as follows:

- Durability – 50-year design life
- Ongoing inspections to be conducted every 15 years or after major wind events (>100kph) or any earthquake event.
- Structural adequacy – To match original design*.

* Should Sydney trains wish to bring structural adequacy in line with the current BCA, the scope of the chimney repairs would grow to include the supporting building. Costs to repair chimneys would be at least double the estimate provided above. This would not include engineering costs and strengthening of building (expected to be an order of magnitude greater than the chimney repair alone). There is no BCA requirement to bring existing structures in line with current wind and earthquake codes unless the lateral load resisting system is modified. The repairs outlined in this document do not constitute a change to the lateral load resisting system.

The condition of the structure reviewed during the inspection will deteriorate with time, making observations in this report obsolete. If the client doesn't act on the recommendations within 12 months then the report cannot be relied upon as an accurate record of the conditions of the structure and a new inspection should be undertaken prior to commissioning rectification works.

If the client does not act on the recommendations contained in this report Taylor Thomson Whitting cannot accept responsibility for any liability arising from a failure relating to the recommendations contained herein.

Prepared by

TAYLOR THOMSON WHITTING (NSW) PTY LTD
in its capacity as trustee for the
TAYLOR THOMSON WHITTING NSW TRUST

Aaron Wilson
Engineer

Authorised By

TAYLOR THOMSON WHITTING (NSW) PTY LTD
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TAYLOR THOMSON WHITTING NSW TRUST

John Van Rooyen
Associate Director

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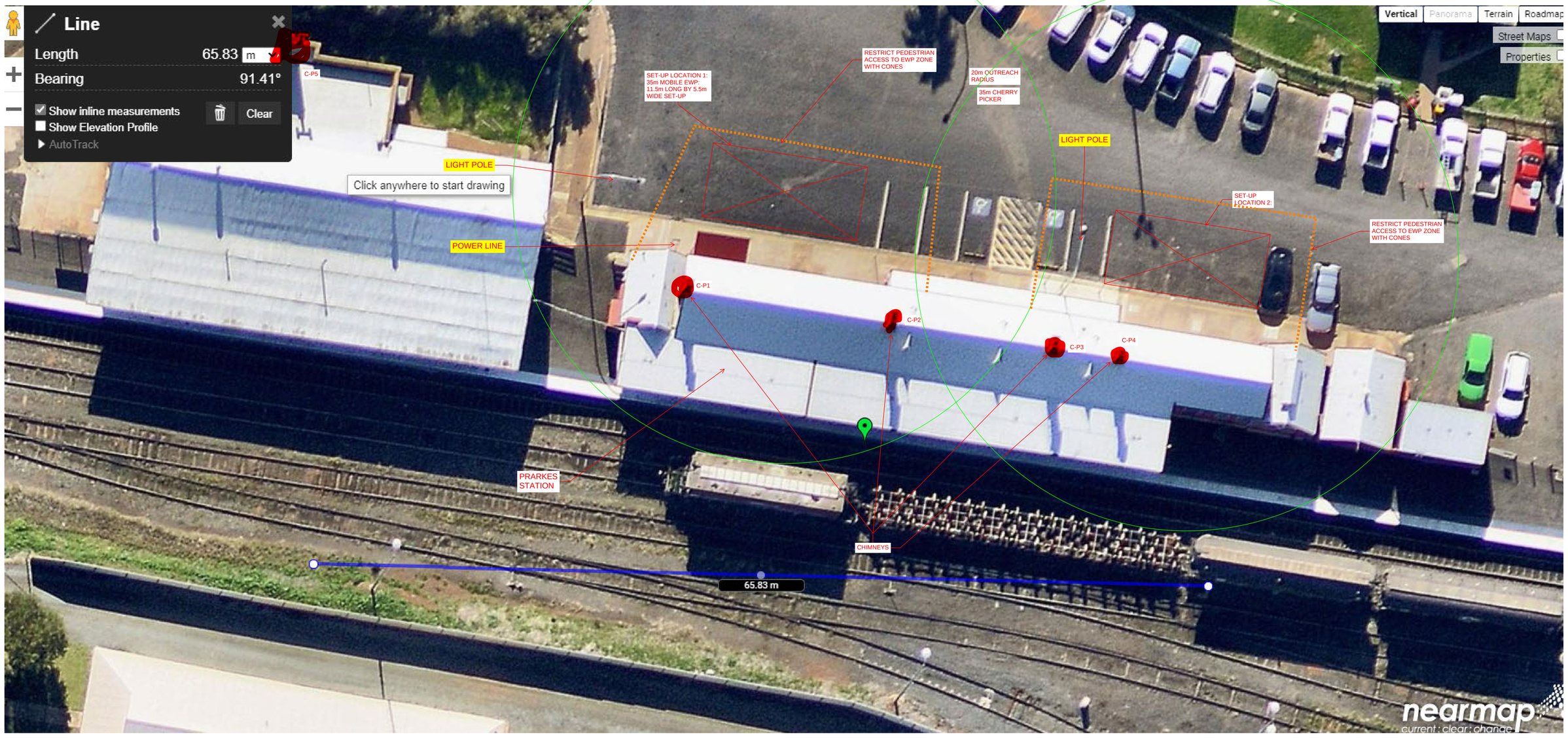
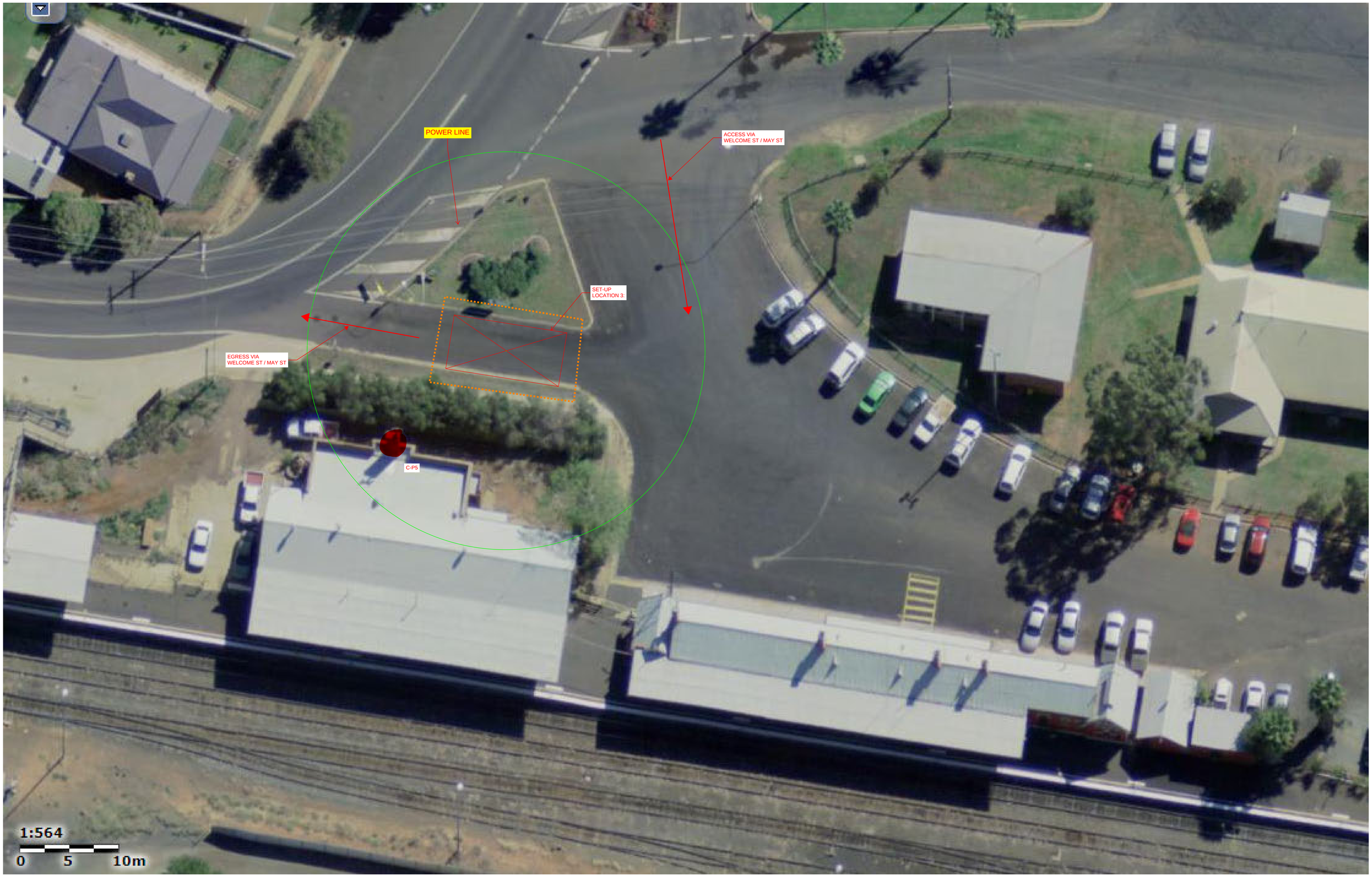
Appendix A

Inspection Methodology

PARKES STATION



PARKES STATION



Appendix B

Trade Specification

Long Blackledge
Architects

REPAIR AND RECONSTRUCTION OF CHIMNEY STACKS AT SIX STATIONS

TRADE SPECIFICATION

Issue	Date	Reason for issue
A	2021_12_22	Issued with Blayney Inspection Report

Nominated Architect:
William Blackledge ARAIA
NSW Reg 9057

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TABLE OF CONTENTS

DEMOLISHER

GENERALLY .01

All demolition works are to be carried out to comply with AS 2601: *Demolition of Structures.*

Contractor is to be licensed for demolition works and evidence of its currency is required.

The contractor is to make the workmen and subcontractors aware that the building is old and fragile. Care is to be exercised throughout the contract to subject the building fabric to as little shock as possible and all demolition is to be carried out within this context.

Protect property and services which are to remain on or adjacent to the site from interference or damage. Use appropriate means including shoring, protective screens and sheeting.

All damage sustained to the building during the demolition work is to be rectified by the contractor to the architect's approval at no variation to the contract sum.

All demolition and preparation of existing work for alterations is to be carried out in a careful and systematic manner.

Properly shore up and support all work where necessary in such a manner and for a period as shall allow the affected works to be supported and completed.

The builder shall be responsible at all times during the period of the contract for the safety and stability of the works.

Cut away, break down, take up and remove such portions of existing work as may be required to make way for the new work, as scheduled or outlined in the inspection reports.

Demolish or preserve surfaces, hardware and services as scheduled.

Should confusion arise, or the documents conflict, as to whether or not an item is to be preserved, the contractor is to consult the architect for a decision.

Carefully set aside and protect all items scheduled to be salvaged, re-used in new locations, or to remain the property of the owner.

WATER ENTRY AND PROTECTION .02

Ensure that the existing structure is at all times maintained in a waterproof condition during the carrying out of the works.

If walls or roofs are opened for alterations and additions or the surfaces of adjoining buildings are exposed, provide temporary covers to prevent water penetration. Provide covers to protect existing plant and equipment and materials intended for re-use.

The contractor shall accept the responsibility for any damage resulting from the failure to prevent water entry, and reinstate damaged building fabric and contents at no variation to contract sum.

DEMOLISHED MATERIALS .03

Unless otherwise scheduled, all building materials are to be carefully salvaged from the demolitions for possible re-use. These are to be inspected by the architect who shall determine if they are to be kept on site for possible re-use.

Except for materials to be salvaged or otherwise specified to remain the property of the principal, demolished materials shall be the property of the contractor.

The remaining demolished materials are to be carted from the site and deposited in accordance with the rules of the local authority after first being inspected by the architect or his representative. Do not burn or bury demolished materials on site.

SALVAGED BRICKS .04

Carefully dismantle brickwork and stonework elements so that elements can be desalinated and cleaned for re-use in the repair works. These elements are to be stored/stacked on site in a location as directed by the architect, away from possible damage. Care is to be taken to protect arrises, etc from damage during both demolition and storage.

OPENING UP .05

If, on opening up or dismantling, the configuration of elements or the elements themselves are not as anticipated, stop work immediately and contact the architect for further instruction.

BRICKLAYER

GENERALLY .01

The brickwork of the works shall be carried out by experienced tradesmen.

Unless otherwise specified, AS 3700: *SAA Masonry Structures Code* shall apply in respect to all materials, components and construction. Masonry Units shall be to AS/NZS 4455: *Masonry Units and Segmental Pavers.*

NEW BRICKS .02

All new bricks shall be sound machine-made bricks, well burnt, hard, square and with good arrises. All new brickwork to be in commons.

New bricks are to be used for all concealed work unless size of existing bricks entails use of salvaged bricks.

SALVAGED BRICKS .03

Carefully salvage and clean off and desalinate all reusable old bricks from demolition for re-use in repair work or to rebuild stacks.

DESALINATING BRICKS .04

Carefully open stack brick within a suitably sized bath. Soak in clean water over 2 weeks minimum. Change water at least 5 times during this period. Provide salt readings for each soaking using an EC tester see:

http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/519632/Salinity-training-manual.pdf

Carefully stack/pallet bricks for reuse.

SUPPLY OF OLD BRICKS .05

The builder shall keep a record of old bricks obtained from demolition and calculate additional old bricks that are required for face work.

Unless otherwise specified, *do not* allow for supply of old bricks. Should additional old bricks be required this shall be treated as a contract variation.

MATERIALS AND MORTAR .06

Generally

All materials to be new, defect free, the best of their respective kinds, in full compliance with the relevant S.A.A. Codes of B.S.S. specification, except demolished materials approved for re-use.

Protect and cover from weather all perishable materials fixed or unfixed.

All metal dowels and fixings shall be of non-corrodible non-ferrous metal or stainless steel of approved alloy.

Proportioning of materials to be made dry in proper gauge boxes before mixing, or in other approved manner.

In facework mortar colour shall match that of original mortar by the careful selection of sand and natural earth pigments.

Cement, lime, sand

Cement

Cement to be an approved brand of masonry cement to AS 1316.

Lime

Limes for building: To AS 1672.1.

Hydraulic Lime (NHL)

St Astier Natural Hydraulic Lime supplied by Westox Building supplies. Supplied in NHL 2 and NHL 3.5 used as scheduled.

Prepare the mortar in strict accordance with the technical advice of St Astier http://www.stastier.co.uk/guides.htm

Prepare the mortar 24 to 48 hours in advance of use. Larry mix the correct proportion of NHL lime to sand with enough water to form a "fresh ricotta" consistency.

Admixtures

On no account shall admixtures be added to the pointing mix to improve workability ie clay or plasticisers like "liquid ball bearings". Workability shall be achieved by correct sand gauging and the correct proportion of lime to the mix

Sand

Clean, well graded, sharp, free from impurities such as silt and organic matter and salts. Sieve to screen up to 98% pass at 2.36mm. Sizing proportions as British Standard 1200-1984.

Fine aggregate with low clay content and free from efflorescing salts, selected for colour and grading. The clay shall have a sieve grading curve as shown in AS 3700 commentary clause 2.2.2.2 and the fine material smaller than 75 microns size shall not be greater than 4%.

Compo mortar

Classification M3 (1:1:6) shall have an average compressive strength at 28 days of 2.8 MPa. Use only where specifically scheduled:

- 1 part cement

- 1 part hydrated
- 6 parts sand.

Hydraulic Lime mortar

Use for remainder of work:

- 2.5 parts sand
- 1 part NHL.2

Brick Reinforcement

Galvanised welded wire mesh equal to M.E.T galvanised masonry reinforcement or Ancon SMR stainless steel masonry reinforcement.

Width: Equal to the width of the masonry leaf, less 15 mm cover from each exposed surface of the mortar joint.

Installation

General: Lap 450 mm at splices. Fold and bend at corners so that the longitudinal wires are continuous. Stop 200 mm short of control joints.

Location:

- In third bed joint above the bottom of the wall.
- In second bed joint below the top of the wall.
- In the first 2 bed joints above and below openings.
- In the first 2 bed joints above and below head and sill flashings to openings.

Maximum vertical intervals: 500 mm.

Wall Ties

Wall ties are to be 316 stainless steel medium strength cavity ties and shall comply with AS/NZS 2699.1: Location of ties to be in every second course but not in reinforced courses.

JOINTS .07

Work to existing walls

Where rebuilding, repointing or making good to existing face work, match sound original joints as determined by examination of adjacent areas and approved by the architect. Reconstruct to the original configuration.

A sample of the proposed jointing profile for each area of brickwork is to be approved by the architect before the work is carried out.

BRICK REPAIRS .08

Work to chimney stacks

Rebuild and make good to match standard of best existing adjacent work.

Replace

Where scheduled 'replace', carefully dismantle stack nominated down to sound work and build new work matching exactly the original work.

Make good or repair

Where scheduled 'make good' or 'repair' existing brickwork, remove all decayed or faulty brickwork from area or element nominated and build in salvaged bricks of same size and jointing pattern as original. Rake out or remove remainder of loose or faulty mortar from joints and repoint ABS POINTING.

Shaped corbelled brickwork

Where scheduled 'reconstruct profile', reconstruct shaped brickwork to form the substrate for reconstructed rendered profile. Leave perpend joints slightly open for render key and control suction of the work immediately prior to the first render coat.

Flaunching

Provide flaunching in 3 layers of increasing strength mortar, weather to feathered edge at stack edge.

POINTING .09

Generally

On no account is any joint to be widened to admit pointing.

Stronger mortar may be used only as directed in very exposed positions.

Do not allow mortar to spread over face of bricks.

Following pointing joints are to be kept damp for a minimum 14 days to prevent premature drying out and consequent cracking and loosening of mortar.

Point up

Where scheduled 'point up', thoroughly wet open joints and flush up with mortar. Finish joint ABS JOINTS.

Repoint

Where scheduled 'repoint', cement on other jointing shall be removed/raked out to a minimum depth of 20 mm, the joint thoroughly wetted and flushed up and finished as above.

COMPLETION .10

On completion clean walls of all mortar droppings, smears, efflorescence etc and brush down.

Cleaning work shall be carried out by trained and experienced tradesmen. Cleaning procedure shall be under strict surveillance to ensure no damage is caused to the stone faces by bleaching or overcleaning. No cleaning shall commence prior to the architect approving proposed cleaning method.

Before application of approved cleaning agent, wall shall be well dampened and the surrounding area protected. Wash the whole wall with clean water on completion of cleaning procedure.

All brushing shall be carried out using an approved nylon bristle brush. Metal brushes, scrapers or tools shall be avoided. Prior to removal of any scaffolding, obtain architect's detailed approval of repairs.

RENDERER

GENERALLY .01

The plasterer is to be experienced in the preparation, repair and application and finishing of lime based moulded work.

Protect adjacent surfaces from defacement and damage due to droppings and traffic.

PREPARATION .02

Remove all loose, drummy and defective work to areas scheduled for render replacement. Rake out joints of brickwork to a depth of 10 mm.

No coats shall be applied on any work until the authority to proceed with rendering has been given by the superintendent.

Thoroughly wet all brickwork, etc and prepare the surface to ensure a good key before applying render.

Scratch or cross broom all first coats to provide key for subsequent coats.

MATERIALS .03

Accessories

Lath: Provide a proprietary product manufactured from raised expanded metal for use with plaster.

The use of admixtures should not be permitted unless there is confidence that there will be an improved outcome (e.g. waterproofing admixtures). Their use in lieu of suitable sands should be resisted unless no reasonable alternative is available.

Aggregates

Sand:

Course Stuff: Sharp, well-graded sand with a clay content between 1% and 5% and free from efflorescing salts.

Finishing Coat: Soft, well graded sand

Bonding products

General: Provide proprietary products manufactured for bonding cement-based plaster to solid substrates.

Lime

Limes for building: To AS 1672.1.

Natural Hydraulic Lime

St Ashier Natural Hydraulic Lime NHL2 supplied by Westox

Hair

Horse or cow hair. Artificial fibre can be used subject to approval

Mixes

The actual proportions of mixes should be selected by the plasterer who must have regard to a range of conditions including the materials available, the substrates to be coated, the finish coat or treatment to be applied and the weather conditions.

There is no right mix and various sources have been used to arrive at the ranges given. The table reflects the principle that a strong base coat should not be used on a weaker substrate and a strong finish should not be put on a weaker base coat.

For most plaster base coats, the general rule the world over (with some unexplained variations) is that the ratio of binders to sand should be about 1:2.5. Around about this value the proportion of individual binders can be adjusted to best suit the substrate and the type of finish required.

General: Select a mix proportion to suit the conditions of application conforming to the **Mix proportion table**.

Measurement: Measure binders and sand by volume using buckets or boxes. Do not allow sand to bulk by absorption of water.

Plaster mixing: Hand work with hoe or rotatory mixer.

Mix proportion table – NHL render, by volume

Mix type	Substrate	NHL 2	Sand	Hair kg /m3 course stuff
Render and undercoat	Regular clay brick	1	2.5 (sharp)	3kg
Finish coat - External	Render base coats	1	2 (soft)	-

Water

General: Clean and free from any deleterious matter.

PREPARTION OF SUBSTRATE .04

Substrates

General: Provide substrates as follows:

Clean and free from any deposit or finish which may impair adhesion of plaster.

If framed or discontinuous, support members in full lengths without splicing.

If solid or continuous, remove excessive projections and fill voids and hollows with plaster stronger than the first coat and not weaker than the substrate.

Absorbent substrates: If suction is excessive, control it by dampening but avoid over-wetting and do not render substrates showing surface moisture.

Painted surfaces: Remove paint and hack the surface at close intervals.

Untrue substrates: If the substrate is not sufficiently true to ensure conformity with the thickness limits for the plaster system, or has excessively uneven suction resulting from variations in the composition of the substrate, apply additional coats without exceeding the thickness limits for the substrate or system.

There may be particular locations, or particular types of substrates (e.g. dense concrete, existing brickwork) required to achieve particular types of plaster finish. Such variations are best minimised. Particular substrate preparation may be required e.g. Scabbling, Bonding treatment, or a combination of methods. If so, specify them but only if it is certain what is required.

Proprietary bonding products may be used.

Embedded items

General: If there are water pipes and other embedded items, sheath them to permit thermal movement.

Lath

Location: Provide lath as follows:

Chases: If chases or recesses are 50 mm wide or greater, fix metal lath extending 75 mm or more beyond each side of the chase or recess.

Metal and other non-porous backgrounds: Fix metal lath to provide a key.

Material and workmanship except where superseded by this specification shall be carried out in accordance with AS CA27–1959: *Code of recommended practice for internal plastering on solid backgrounds.*

WORKMANSHIP .05

Pricking up/render coat

Base coats: Scratch-comb each base coat in two directions when it has stiffened.

Metal lath: Press the plaster through the apertures of expanded metal lath and wings of beads.

Finishing treatments

Moulding

Prepare an accurate profile of the existing work in a zinc edged running mould

Muffle running mould in base coats 10/12mm thickness

Run final mould with un muffled profile accurately reconstructing the original mould, 3mm thick.

Use plasterers' small tools to construct mitres and the like.

Joining up

General: If joining up is required, make sure joints are imperceptible in the finished work after decoration.

The plaster thicknesses are from SAA HB 161 Table 4.

Temperature

General: If the ambient temperature is 10°C or less or 30°C or more make sure that the temperature of mixes, substrates and reinforcement at the time of application are between 5°C and 35°C.

Tolerances

General: Finish plane surfaces within a tolerance of 6 mm in 2400 mm, determined using a 2400 mm straightedge placed anywhere in any direction. Finish corners

Ashlar lining

Incise "ashlar" lines whilst the finishing coat is "leatherhard" to match the original work.

FINISHING .06

Limewash

Apply 4 coats limewash coloured to match the wall finishes of the building.

COMPLETION .07

Curing

General: Prevent premature or uneven drying out and protect from the sun and wind.

Keeping moist: keep the render moist as follows:

Base coats: Keep continuously moist for 2 days and allow to set to a leather hard consistency before applying further coats.

Finish coats*:* Keep continuously moist for 14 days.

ROOF PLUMBER

GENERALLY .01

Roofing work is to be carried out by a roofer approved by the architect in accordance with AS 3500.3.2: *Stormwater drainage acceptable solutions* and AS/NZS 2904: *Damp proof courses and flashings.*

Approval of the use of a particular tradesman shall not relieve the contractor of any of his responsibilities regarding the performance of the works. Failure to approve a particular tradesman shall not constitute grounds for an adjustment to the contract sum. Approval of a tradesman shall be based on his experience in traditional roofing and roof plumbing work.

Provide all accessories to render the roof watertight and properly finished. Accessories shall be of a traditional pattern.

Provide all ladders and other equipment as directed by the architect so that he may fully inspect the works.

Work shall be carried out in general accordance with the British Lead Sheet Association *"Rolled Lead Sheet, the Complete Manual*"

METAL RAINWATER GOODS MATERIALS .02

All materials for metal rainwater goods and accessories shall be in accordance with AS/NZS 2179.1: *Metal shape or sheet rainwater goods and metal accessories and fasteners.*

INCOMPATIBLE MATERIALS .03

Should contact between incompatible materials be unavoidable, i.e. lead over Colorbond separate with purpose-made pressure-sensitive tape similar to 'Densochrome' to the approval of the architect.

LEAD FOR FLASHINGS .08

Lead shall be direct cast method lead with a minimum copper content of 0.01%.

The type and manufacture of the lead is to be approved by the architect before the commencement of the works on the basis of a sample and details supplied by the contractor.

LEAD WEIGHTS .09

Unless otherwise specified or scheduled, lead shall be used in the following weights:

	lb/sq ft	kg/m^2	Thickness (mm)
Stepped, raking and horizontal over-flashings, roof penetrations and apron flashings	5	25	2.2
Soaker flashings	3	15	1.3

Lead tacks

To be of the same weight as the flashing they fix and are to be fixed with nails compatible with adjacent metal roofing.

POINT UP .10

Compo mortar

Where specified 'point up', thoroughly wet open joints and flush up with mortar. Strike joint to match best of adjacent work.

Use for pointing up where flashings are let into chimneys or the like:

- 10 parts sand
- 2 parts lime putty
- 1 part white Portland cement.

For materials see BRICKLAYER.

Mastic

Where specified 'point up with mastic" apply to cleaned joints,

Polysuphide mastic light grey to match the pointing

COVER AND OVER FLASHING .11

Lead

Install in maximum 1200 mm lengths with 150 mm clipped dry laps. Let into wall a min of 25 mm and fix at max 300 mm centres with lead wedges.

Dress down neatly min 50 mm over upstands of apron flashings etc to finish minimum 20 mm clear of horizontal surface of same to prevent leakage by capillary action. Lead wedge at 300mm centres.

Point up in compo mortar ABS.

APRON FLASHING .12

Lead

25 kg/m^2 installed in max 1200 mm lengths with 150 mm clipped dry laps.

Extend up wall in 75 mm and out over roofing in 150 mm and dress down.

STEPPED OVER FLASHINGS .13

25 kg/m^2 lead set out to allow min 25 mm upstand on apron and soaker flashings and to minimise overall length of flashing.

Let into joint min 25 mm and fix with two lead wedges and point up ABS. Lap min 25 mm and clip at lower leading edge. Trim neatly to rake of roof.

PENETRATION FLASHINGS .14

25 kg/m^2 lead or 0.7 mm soft zinc shaped apron flashing with min 50 mm upstand.

Cover with purpose-made sleeve in penetrating pipe vent etc sealed with either purpose-made gasket or by soldered joint.

SOAKER FLASHINGS .15

15 kg/m^2 lead hooked over each course of slate or shingles with 25 mm clear upstand behind raking or stepped overflashings, extending min 150 mm out over roofing and concealed by subsequent courses of roofing.

Fit downpipes to discharge into upturns of drains and connect to thimble outlets of eaves gutters. Fit shoes so that downpipes discharge easily into drains.

CLEANING DOWN .16

At all times the roofing and gutters shall be kept free of metal particles, soldering spatter and all other debris.

Thoroughly clean and wash down all roofing and guttering where cutting or soldering has been carried out.

On completion, clean out roof gutters and leave the whole of the roof area clean and in good working condition.

METALWORKER

GENERALLY .01

Provide, besides particular metalwork to this trade, all metalwork specified in other parts of this specification and in general all steelwork required to construct and complete the work.

Cut holes clean, free from burrs or rugged edges, all holes to be drilled, do not plane or shear edges. Keep all members true, free from twist and other distortion.

PROTECTION AND MAKING GOOD .02

Protect all metalwork whilst on site, before or after erection, by whatever means necessary (in addition to those specified below) against damage by impact, staining, corrosion, scratching or other defacement, in accordance with AS/NZS 2312: *Guide to the protection of iron and steel against exterior atmospheric corrosion,* AS 1627: *metal finishing*, and AS 2832: *Guide to the cathodic protection of metals.*

During the handling, transporting and storing, protect from damage. Store material under cover clear of the ground and away from risk of damage by building operations. Avoid contact with cement dust, lime and abrasive dust.

Replace or repair parts damaged or injured during erection to the standard of the specified requirement. After erection, provide adequate protection and thoroughly clean down to approval on completion of the job.

JUNCTION OF DISSIMILAR METALS .03

Where two metals of dissimilar nature are to be used in contact or joined to each other, electrolytic corrosion shall be prevented by insulating layers between same by the use of cadmium plated fixing screws, metal parts and bolts.

Contact between metals is to be prevented by using PVC sleeves or washers where sections are bolted.

Use bitumen and/or PVC based paints for separation where contact by touch may be obtained.

STAINLESS STEEL .04

Type: 316 linished finish (where exposed). 1.6mm gauge

Stainless steel rivet

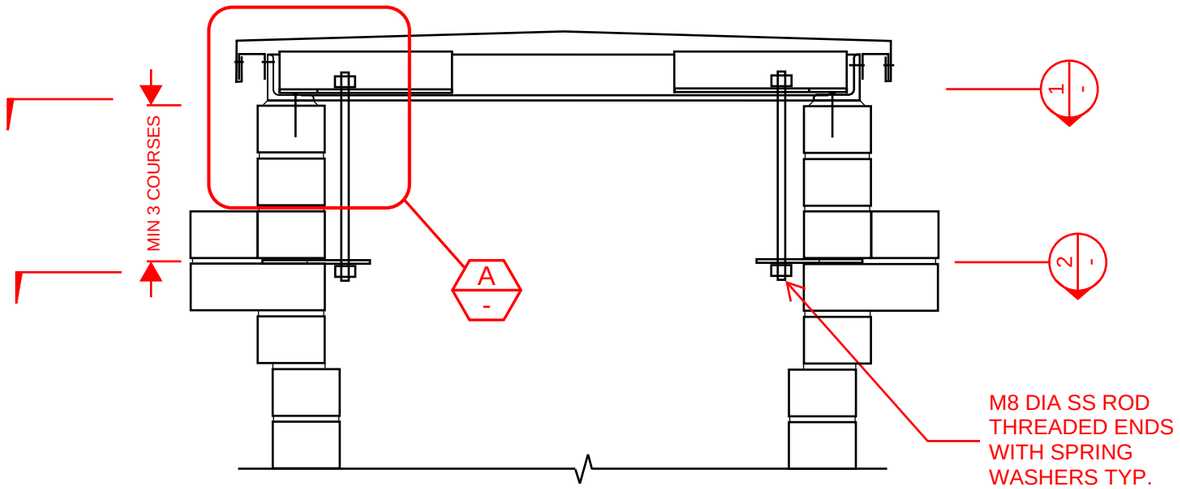
Mesh channel 2mm aperture at 4mm triangular pitch in perforated sheet. Formed into channel.

UNGALVANISED STEELWORK .05

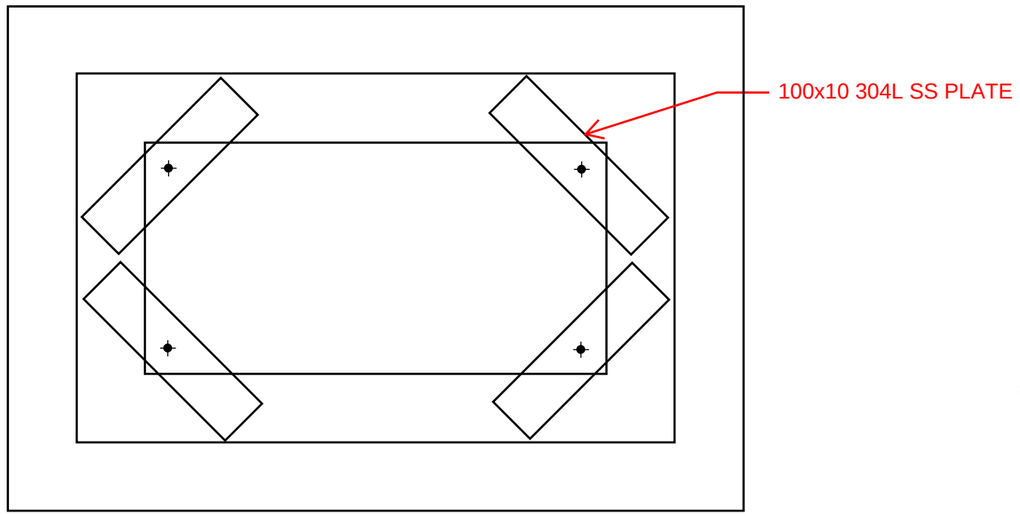
Where galvanising is deleted, clean and degrease fabricated metalwork and prepare surfaces in accordance with AS 1627: *Metal finishing* to a class 2 profile by grit blasting and prime with an approved inorganic zinc silicate paint containing not less than 90% zinc in the dry film. The dry film thickness shall not be less than 0.08mm.

Appendix C

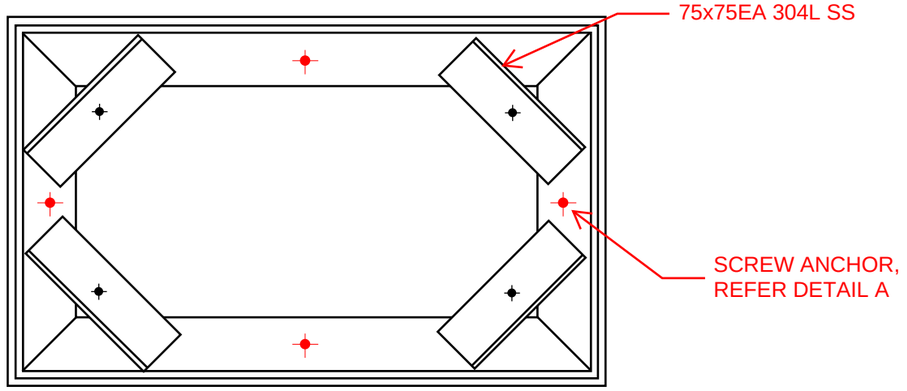
Repair Details



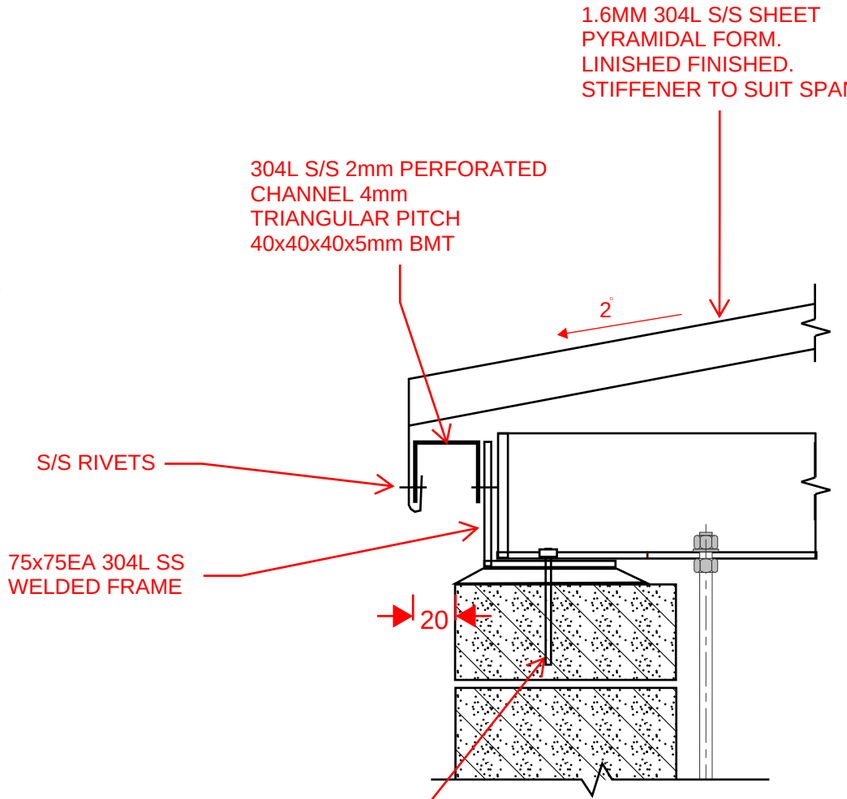
TYPICAL ELEVATED SECTION THROUGH
MIDDLE OF CHIMNEY STACK



SECTION 1



SECTION 2

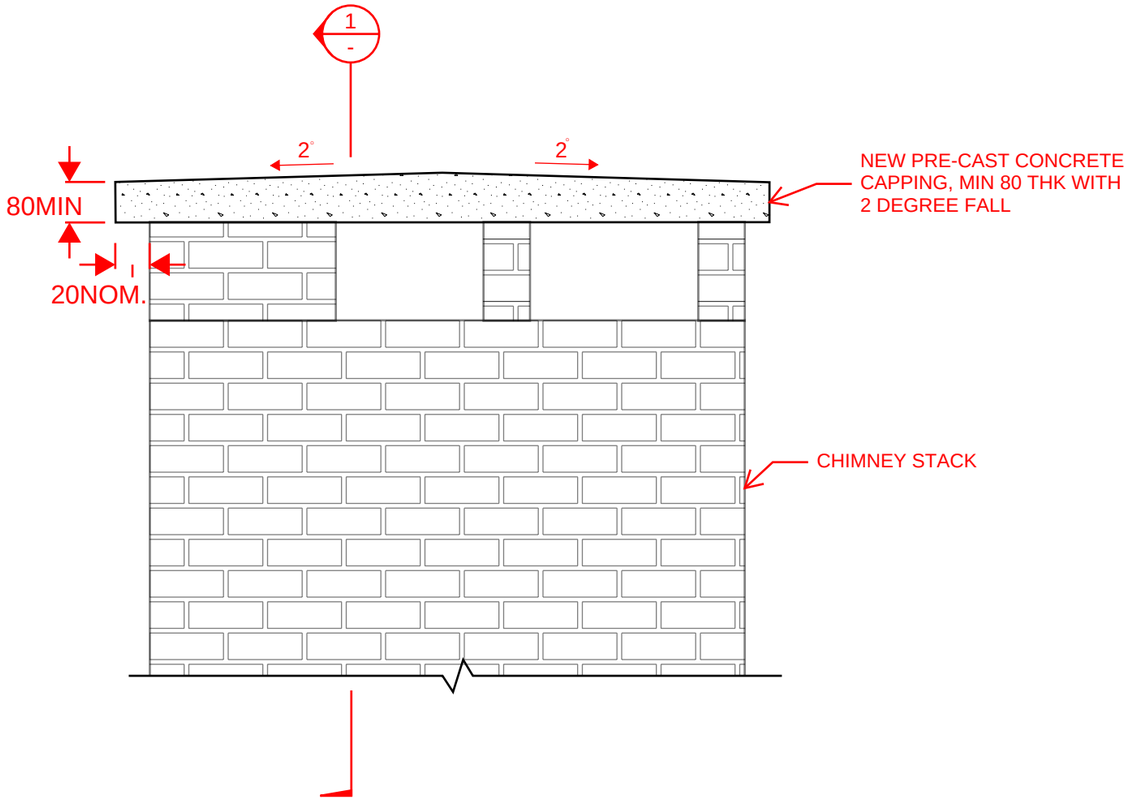


DETAIL A

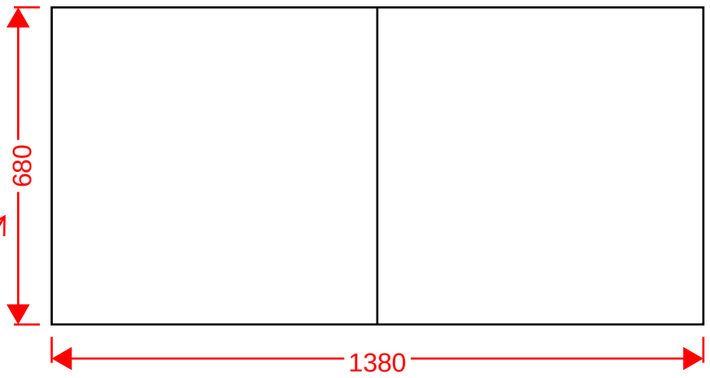
Job Name : CHIMNEY INVESTIGATION WORKS
Sketch Title:
PROPOSED STAINLESS STEEL CAPPING DETAIL

Date: 09/02/2022
By: A.W.

TTW Taylor Thomson Whitting
Job Number: 211700
Sketch No. : SK01-RevA

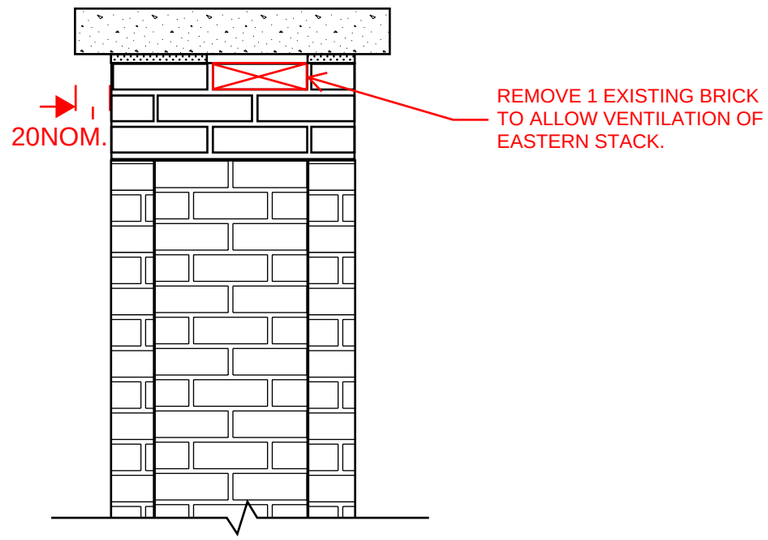


NORTH ELEVATION OF CHIMNEY STACK P5



PLAN VIEW OF PRE-CAST CONCRETE CAPPING

DIMENSIONS INDICATIVE, TO BE CONFIRMED ON SITE.



SECTION 1: ELEVATION OF EASTERN FLU

NOTES:
- MINIMUM CONCRETE COMPRESSIVE STRENGTH $f'_c = 25$ MPa
- CENTRAL LAYER OF SL 92 MESH
- 40MM BOTTOM & SIDE COVER

Job Name : CHIMNEY INVESTIGATION WORKS
Sketch Title:
PROPOSED PRE-CAST CONCRETE CAPPING DETAIL
Date: 11/02/2022
By: A.W.
Taylor Thomson Whitting
Job Number: 211700
Sketch No. : SK02