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	Mt. Victoria Station – Re-Roofing, Drainage and Repair Works
Project/Program No	P.0080483

Scope of Works	Mt. Victoria Station Roof and storm water has several problems that need to be addressed to allow the site to have a fully functional stormwater system and life expired Roofs (Slate and Metal Roofs). Roof specialist, and Hydraulic engineer was engaged to inspect the general condition of the Roof, and storm water system and identify items which require repair/replacement/maintenance and provide recommendations for the remedial works. A report is prepared summarising the repair & replacement recommendations works necessary to maintain the building and roof. **The proposed Scope of Works is Multiyear and as detailed below:** All works to be done as per Franklins Australia report dated April 2024 – V4 and Heritage Architect advise. **Scope of Financial Year 2024-25 - Stage 1 - February 2025 to June 2025** **Platform 2 - Re Roofing, Drainage and Repairs Partial works (Slate roof R1 and metal roofs R3, R6 and R7) - (To be as per Heritage Specifications and Approval)** Remove old roofing with new as they have reached the end of life, the replacement material for the roofs to be **Slate and Galvanised / Colourbond Corrugated sheeting** (Subject to the Heritage architect assessment and approval) Slate Roof Platform No.2 (Main Station Building and Museum) - **condition very poor**. • The roof and flashings to be replaced. • Eaves and Facia need extensive repair. • Gutter and downpipe replacement and repair to be as per the Hydraulic assessment. Corrugated Roofs Platform No.2 - **condition very poor**. • The roof and flashings to be replaced. • Eaves and Facia need extensive repair. • Gutter and downpipe replacement and repair to be as per the Hydraulic assessment. **Drainage, Gutter and Downpipes** All required gutters and downpipes to be as per the hydraulic report from Sparks and Partners and as detailed below. Platform 2 Drainage – Condition Fair • Pit.10 will need to be investigated further to locate the outlet to the pit. • DP's 13,14 & 15 need to be connected to a working stormwater system. Platform 2 Drainage (DP.5 to DP.17) – Very Poor • Pipes between Pit.13 and Pit.14 need to be replaced. • Outlet to Pit.14 needs to be cleaned with a vacuum combo truck. • Clean line connecting to Dp.17 Pit No.15, 16, 17 to outfall • Cleaning required using a vacuum combo truck.

Scope of Financial Year 2025-26 - Stage 2 - July 2025 – August/September 2025

Platform 2 - Re Roofing, Drainage and Repairs of remaining works (Slate roof R2 and all other metal Roofs) and Slate supply for Platform 1 (storage with contractor until the start of the stage 3 works)

Scope of Financial Year 2026-27 - Stage 3 - March/April 2026 to July/August 2026

Platform 1 – Slate and Metal Roof (To be as per Heritage Specifications and Approval)
Remove old roofing with new as they have reached the end of life, the replacement material for the roofs to be **Slate and Galvanised / Colourbond Corrugated sheeting.**
(Subject to the Heritage architect assessment and approval)

Slate Roof Platform No.1 (Station Building) - **condition very poor.**

- The roof and flashings to be replaced.
- Eaves and Facia need extensive repair.
- Gutter and downpipe replacement and repair to be as per the Hydraulic assessment.

Corrugated Roofs Platform No.1 - **condition poor.**

- The roof and flashings to be replaced.
- Eaves and Facia need extensive repair.
- Gutter and downpipe replacement and repair to be as per the Hydraulic assessment.

Platform 1 - Toilet Block Roof (Toilet Building) -- condition poor to very poor.

- The roof is in fair condition and flashings are very poor recommendation is to be replaced.
-
- (due to the age of the roof)
- Gutter and downpipe replacement and repair to be as per the Hydraulic assessment.

Platform 1 and 2 Awnings – condition fair – (Last priority - Subject to fund availability)

- The roof and flashings, due to the age recommendation would be to replace to the roof.
- Gutter and downpipe replacement and repair to be as per the Hydraulic assessment.

Drainage, Gutter and Downpipes
All required gutters and downpipes to be as per the hydraulic report from Sparks and Partners and as detailed below.

Platform 1 Drainage (Dp.27 to Pit No.1)
The system has recently been installed and is in perfect working condition (require ongoing maintenance to remove debris from all the trees in the area)

Note: Minor Repairs Required

- Downpipes connections from above the cast-iron downpipe need to be replaced with the Correct pipe and fittings to allow the full required flow.

SPECIFIC SCOPE OF WORKS PLATFORM WISE

1 Platform 2 building (with the exception of the canopy roofing).

2 Demolition

2.1 Dismantle and cart away roof coverings and attendant roof plumbing as nominated.

4 Re-roofing

Roof 1:
Roof 1: Carefully remove slate and battening. Provide
new Del Carmen Ultra (Spanish) slating on new Oregon battening. Reset all chimney stack abutment flashings. Provide new lead hip and ridge flashings, assume reuse of existing timber rolls. Provide 150mm OG galvanised guttering with fabricated,
soldered corner pieces. Provide stop ends and lead
under-flashing at ridge abutment with Roof 8 to form weathertight intersection.

Roof 2:
Carefully remove slate and battening. Provide
new Del Carmen Ultra (Spanish) slating on new Oregon battening. Provide new lead abutment, valley, hip and ridge flashings, assume reuse of the existing timber rolls. Provide 150mm OG galvanised guttering with fabricated, soldered corner pieces. Provide 90mm dia. gal. DP's and spreaders generally as the present arrangement. Provide lead flashings at the abutments with Roof 3 to form a weathertight intersection. Provide GCI to south hip.

Roof 3:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide galvanised steel verge roll trim and hip flashing (to match Roof 15 profile). Provide lead ridge roll (provide new timber roll). Re-form flashings to chimney stack MV10 in Z600 galvanised steel. Provide 150mm OG guttering, 90mm dia. downpipes and spreaders to generally match present arrangement. Allow for the relocation and reinstation aerial following completion of the roofing works.

Roof 3 - Provision sum: for work in association with the isolation detailing of the electrification stanchion.

Roof 4 and Roof 5:
Remove existing roof sheeting and rooflight. Protect ridge mounted vents. Allow for an inspection of the roof timbers (Hold Point). Provide Z600 GCI on sarking and new battening. Provide Velux fixed roof light reference FSS06. Provide lead ridge rolls (with new timber rolls) and galvanised steel verge roll trims. Re-flash ridge vents and stack MV3 in lead. Provide new lead abutment stepped flashing. Lead flash sill of window abuting Roof 4. Re-form gutter to form a 3 bay tapered lead box gutter. Discharge via a sump to a new galvanised rainwater head (with spitter) and 100mm dia. DP using the existing discharge point. Provide 150mm OG guttering to the east and west eaves with fabricated stop ends. Provide a 90mm dia. DP and spreader to east. Provide new 90mm dia. DP to west, link to inground stormwater system.

Roof 6:
Remove existing roof sheeting. Allow for an inspection of the roof timbers (Hold Point). Allow to replace the trimming beam full length, support at two points with a fabricated galvanised steel brackets. Form 3 bay lead lined guttering. Provide Z600 GCI roofing on new battens and sarking. Provide new lead abutment flashings. Provide lead coping flashings, Provide new galvanised rainwater head with spitter. Provide new 90mm dia. DP, link to Inground stormwater system

Roof 7:
Remove existing roof sheeting. Provide new GCI sheeting. Provide new lead abutment flashings. Provide verge roll flashing. Provide 125mm OG guttering and 90mm dia. DP link to inground stormwater system

Roof 8:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide lead abutment flashing. Provide lead ridge and hip roll flashings (allow to re-use existing timber rolls). Flash vent pipe with a spigoted lead slate, extend sleeve to underside of terminal, lead burn seams. Provide 150mm OG guttering, 90mm dia. downpipes to match present arrangement. Re-form the abutment flashing between the timber clad wall beneath Roof 9 and Roof 8

Roof 9 (Provisional item):
Provide radiused galvanised 0.6mm TMT steel formed to match the existing roof. Provide lead hip rolls (using the salvaged timber roll) and form a lead hip valley gutter at the junction with Roof 8. Provide new abutment flashings (flash service penetrations). Provide 150mm OG guttering and 2no. 100mm dia. downpipes and spreaders aligned to mullions.

Roof 10:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide lead Abutment flashings. Provide new galvanised steel flashings to chimney stack no 6, extend back flashing to wall. Provide 150mm OG guttering in two sections and 2 no 90mm dia. downpipes at northern and southern ends of the gutter at each run. Link to inground stormwater system.

Roof 11:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide lead ridge and hip flashing (provide new timber rolls). Retain and protect flashings to chimney stack MV7 in lead. Provide lead valley flashings. Provide 150mm OG guttering, 90mm dia. downpipes to generally match present arrangement. Link to inground stormwater system.

Roof 12:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening to stair enclosure roof. Provide new stepped abutment flashing. Provide galvanised roll verge flashings. Lead flash the junction between the section of roofs. Provide a 150mm OG gutter to the southern section of the lower roof section, extend gutter to allow the connection of a new 100mm dia. DP to the eastern flank of the porch beneath roof 13. Link to inground stormwater system.

Roof 13:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening to stair entry roof. Allow to reset GCI wall cladding over roof section to fix new lead abutment flashing. Provide 125mm OG gutter, extend east to accommodate 75mm dia galvanised DP. Link to inground stormwater system.

Roof 14:
Provide replacement GCI to existing frame. Provide purpose made flashing extending 150mm beyond the sheeting, riveted to underside of the sheeting to provide a 50 x 50mm V gutter draining (as a spout) to the south.

CARPENTRY

Form new gutter to box gutter between roofs 4 and 5

Form new gutter to roof 6

Trim skylight opening in kitchen for new skylight, allow to reline upper surface of skylight opening.

Drainage,

Allow Provision Sum for drainage works as per Franklins and Sparks and Partners hydraulic report.

Paint all fascias, soffits, brackets, bargeboards to all Platform 2 roofs (except the platform side of Roof 15) to match.

Paint all gutters, downpipes and hoppers. Colour to match existing.

Paint ridge vents to roofs 4 & 5 and Roof 8 S&VP in micaceous iron paint

Paint gable vent to Roof 3

Paint new lining and roof light to kitchen roof light

Installation of fall arrest system including, fixing points and ladder support in accordance with the relevant Australian Standard. The system is to allow personnel to access and work on the roof.

PLATFORM 1

Roof 16:
Carefully remove slate and battening. Provide new Del Carmen Ultra (Spanish) slating on new Oregon battening over sarking. Reset all chimney stack abutment flashings. Carefully salvage the terracotta ridge tiling, clean up and prepare for reuse. Uncover the condition of the north west wall plate (Hold Point). Provide 150mm OG galvanised guttering with stop ends to east eaves. Carefully ease off miniorb facings to lantern, replace all abutment flashings. Refix cladding, taking care not to fix through lead upstand flashings Refix and point salvaged ridge tiles. Provide lead cover flashing to the full length of the abutment of the slate roof with the canopy, 30kg/m2 in lengths of 1500mm with 150mm side laps.

Provide new lead flashings to the south abutment of the eaves with the canted canopy roof. Replace penetration flashing to vent in lead to match the existing arrangement

Roof 17:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide galvanised steel verge roll trim, extend full length of bargeboard. Provide 150mm OG guttering, 90mm dia. Downpipes discharge via shoes to gullies. Provide cover flashing to R16 and reset

apron flashing to stack MV11

Roof 18:
Carefully remove slate and battening. Provide new Del Carmen Ultra (Spanish) slating on new Oregon battening and sarking. Set out over barge moulding as existing arrangement. Provide 125mm OG galvanised guttering with stopends.
Provide 80mm dia. gal. DP's and spreaders generally as the present arrangement. Salvage and reset terracotta ridge tiles.

Roof 19:
Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide galvanised steel verge roll. Protect the lead backflashings to chimney stack MV14, Provide a new abutment flashing leading water away from the flank of the stack in a 30kg/m2 tray, discharge to gutter. Provide 150mm OG guttering, 90mm dia. downpipes to generally match present arrangement.

Roof 20:
Replace GCI and lead flashings to match existing arrangement. Provide galvanised roll verge trim. Provide 125mm OG galvanised gutter and 80mm dia DP

Roof 21:
Protect GCI roof. Replace Alconite sheeting arrange electrification gantry with 30kgm2 lead. (Provisional item)

Provide 2 no downpipes to match existing (1800mm CI 75mm dia. eared bottom section, PVC upper section to match adjacent).

Roof 22:
Protect GCI roof. Replace abutment flashing with R21.

CARPENTRY

R16 northwest wall plate: Allow to replace 10 lin m (with attendant works to plate rafters) like fo

R16 northwest bargeboard: Scarf repair damaged board
end (800mm)

DRAINAGE

Clear all gullies of debris and Provide new links to platform drainage for 2 reinstated downpipe
lines.

PAINTING WORKS

Paint all fascias, rafter ends, soffits, brackets, bargeboards to all Platform 1 roofs (except the pl

Paint all gutters and downpipes. Colour to match platform 2.

Paint vents in micaceous iron paint
Paint Lantern
Paint gable end framing and infill panels to match existing

Installation of fall arrest system including, fixing points and ladder support in accordance with t
The system is to allow personnel to access and work on the roof.

What is the cost of the scope of works?	☑ Routine maintenance - any value - $2 million ☐ Capital investment - less than $5 million ☐ Capital investment - more than $5 million	
Location	Mt Victoria Station	
Attach applicable Environmental Work Method Statement (EWMS)	EWMS Number	EWMS Title
	EMS-03-EW-0296	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 t 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 environm 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*	22/02/2025 (Track Possession) Erection of Scaffolding around Building and Site Setup .....

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 **Stage 1 - February 2025 to June 2025 - FY 2024/25** - Platform 2 - Re Roofing, Drainage and Repairs Partial works (Slate roof R1 and metal roofs R3, R6 and R7) **Stage 2 - July 2025 – August/September 2025 - FY 2025/26** - Platform 2 Re Roofing, Drainage and Repairs remaining works (Slate roof R2 and all other metal Roofs) and Slate supply for Platform 1 (storage with AJB until the start of the stage 3 works) **Stage 3 - March/April 2026 to July/August 2026 - FY 2026/27** - All of the platform 1 Re Roofing, Drainage and Repairs works and all other remaining works Weekend possession: 22-23/02/2025 and 31-01/05-06/2025 Both days 6 AM to 6 PM ……
Works/program completion: *Including demobilisation and removal of all site offices, equipment and materials.*	30/08/2026

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: <Site description>

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 01203	Low Impact
TAHE Section 170 Register	SHI 4801007	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: Residence Distance: 105M.....

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	APPLICATION UNDER SECTION 60 OF THE HERITAGE ACT 1977 Mount Victoria Railway Station group State Heritage Register No. 01203 (Dated 12 November 2024)	12/11/2024	PM/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: *Staff unaware of the works' environmental controls and their responsibilities*	*Site supervisor* • 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
Dust: *Emissions of dust leaving site 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 road • Work carried out by Sydney trains Panel Plumbing Contractor and waste register will be maintained and provided after completion of the works
Environmentally sensitive sites:	• No Environmentally Sensitive Areas within immediate work area.

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*
Unintentional or unapproved impact on environmentally sensitive sites	
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) • Erosion and Sedimentation control will be provided onsite during excavation and connection to existing stormwater and sewer pit
Heritage: *Unintentional or unapproved impact on Aboriginal and non-Aboriginal heritage*	*Site supervisor* • Works to proceed in accordance with the conditions set out within the heritage approval dated APPLICATION UNDER SECTION 60 OF THE HERITAGE ACT 1977 Mount Victoria Railway Station group State Heritage Register No. 01203 (Dated 12 November 2024) • 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
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,
Noise and vibration: *Impact of works noise and vibration on neighbouring residents and properties – particularly the potential for sleep disturbance*	*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)
Plants and animals: *Unintentional or*	**Vegetation and wildlife management** • Vegetation maintained. Tree route discovery (arborist will be engaged during

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*
unapproved impact on native and protected plants, animals and communities and the spread of noxious weeds	construction)
	Pest and weed management. • Not Applicable
Plant and equipment emissions: *Smoke, fumes., odours and other emissions from plant and equipment*	*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
Soil contamination: *Contamination of worksite from stockpiling and chemical storage and 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, et • Waste register will be maintained, and stockpile will be covered with Geofab
Spills: *Unintentional loss of hydrocarbons, chemicals and materials from plant, equipment, storage and use*	*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
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 • Traffic management will be provided by supplier during works around car park
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
Waste: *Unnecessary generation of wastes and poor or illegal disposal of wastes*	**Construction waste (e.g. spoil, concrete, litter, etc)** • Waste register will be maintained
	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)

APPLICATION UNDER SECTION 60 OF THE HERITAGE ACT 1977 Mount Victoria Railway Station group
State Heritage Register No. 01203 (Dated 12 November 2024)

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: Project Manager/Delivery Infrastructure

Date of Determination: 12/12/2024

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	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 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.

Long Blackledge
Architects

Mount Victoria Railway Station. Platform Buildings 1 and 2 Re-roofing

SHR No 01203 (The Mount Victoria Station Group)

Heritage Impact Statement
For the re-roofing of the station platform buildings.

Mount Victoria Station c. 1900 Source: Extent Heritage

For Sydney Trains

Prepared by: William Blackledge, BSc. (Hons), B.Arch., Grad Dipl Cons (AA), ARAIA

Issue: D – October 2024

Nominated Architect:
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NSW Reg 9057

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Member Australian Institute of Architects

Preamble

The slate and GCI roofs (and their associated roof plumbing) are increasingly decaying and need replacement to protect the buildings

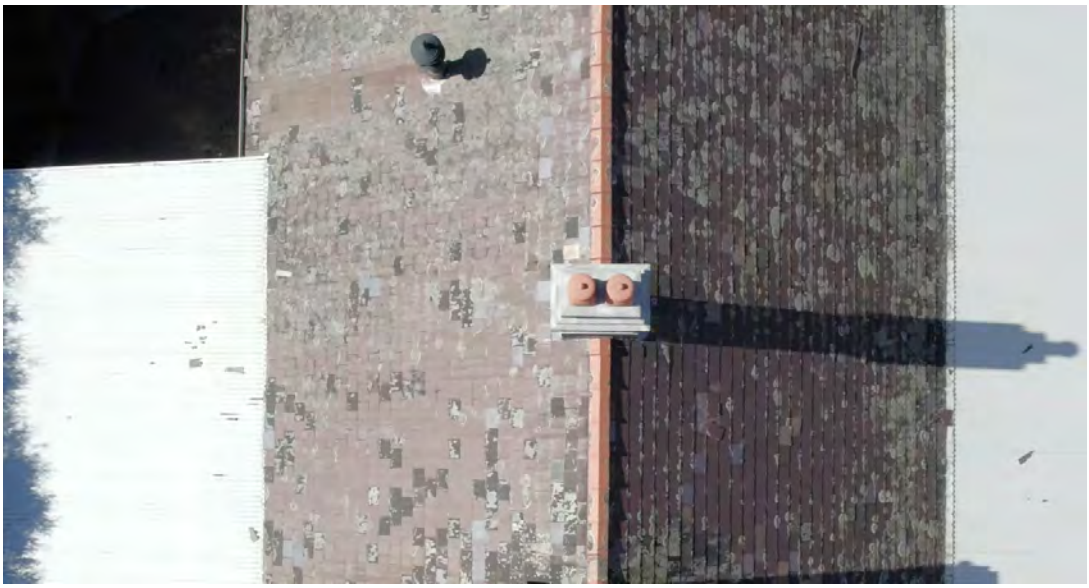

Figure 1 The slate roofs on both platform building are coming to the end of their service lives. The images shows debris shedding from the Platform 1 roof through delamination and nail fatigue. (2024) Source: Sydney Trains

S60 approval is sought for the replacement of the slate roofs with Spanish slate and to replace the profiled steel roofs with matching galvanised corrugated steel sheet. The quantum of work is wholesale replacement and therefore exceeding the 30% limit for significant fabric replacement.

The reconstruction of the narrow and shallow box gutters to the northern roofs of the Platform 2 building requires alteration to significant fabric and these works will require s60 approval.

1 The Heritage Item

1.1 Site description

Heritage item (Extent Heritage CMP)

The Station Building on Platform 1 is a single-storey face brick building, with a gable roof clad in slate and with terracotta ridge capping and a gabled lantern with multi-pane coloured cathedral glass. Gable ends have rusticated render and exposed timbers. The cantilevered awning over the platform is supported on steel brackets and posts. The building features timber, double-hung sash windows on all elevations; multi-paned upper sashes and fanlights over doors which have coloured cathedral glass, with most retaining their original or early coloured glazing. Brick segmental arches are over window and door openings; original 1912 door and window arches are generally finished with a red pigment and have remnants of black coloured pointing in protected areas; the red pigment and black pointing are also evident on the brick plinth and cornice of the western elevation; 1926 infill window arches on the eastern and southern elevations do not have this colouration.

The building retains an early layout. The former Refreshment Room is used as a large meeting room; it features exposed timber trussing, timber flooring, large fireplace, and internal window connecting the room with the former kitchen area; natural light is provided by platform side windows and the central lantern above. The waiting room includes a series of traditional fitted

timber benches in good condition, mini-orb corrugated iron ceiling, a ceiling rose with a modern pendant light, and a modern tiled floor. The small dining room has timber flooring, a mini-orb corrugated iron ceiling, and 2 decorative pressed metal ceiling roses with modern pendant lamps. It also includes a restored fabric pelmet over one window embroidered with the 'RRR' logo, and a reproduction fireplace. The former bar has been converted to modern staff offices. Former kitchens and service rooms at the rear of the building are in a dilapidated state, but retain good evidence of earlier paint schemes (possibly from the early-mid 20th century) and other fixtures and fittings from the time of the RRR. The service rooms are used to store a number of moveable heritage and miscellaneous items. The former station master's office and booking office have been converted into Sydney Trains staff rooms, retaining the use of the lavatories installed in 1926. These lavatories have timber cubicles, with timber panelled and glazed doors, and a painted concrete floor; these are rare extant examples of their type. The 1926 ticket window is also extant on the southern wall of the former parcels/booking office. The service rooms are used to store a number of moveable heritage and miscellaneous items. The former station master's office and booking office have been converted into Sydney Trains staff rooms, retaining the use of the lavatories installed.

The Platform 2 Station Building is a two-storey sandstone station building flanked by single-storey wings. The dominant two-storey section of the building has Victorian Regency styling, but the overall form and massing of the extended structure is asymmetrical and picturesque due to many additions and alterations during the late nineteenth and early twentieth centuries. The original single-storey ashlar sandstone building (1868) now forms part of the main central section of the station building, but has been heavily altered to include a ashlar sandstone addition to the west (1873), a ashlar sandstone second storey above and single storey additions to the north and south (1885) and later brick extensions to the south and north. The 1926-1927 corrugated metal awning over the platform is supported off the building by means of bow-shaped cast-iron brackets, painted masonry corbels and a fretted timber valance. The awning is pierced by two OHWS, installed in the 1950s and upgraded in 2020.

The central portion of the building is entirely constructed of sandstone and features hipped slate roofs, paired eaves brackets, four tall brick chimneys, timber-framed, double-hung windows and timber-panelled doors. Architectural detailing includes subtly projecting sandstone quoins, and lugged stone architraves around the windows and doors. The original 1867-68 single storey station building has been incorporated into the lower storey of this section; later changes primarily date to 1873 and 1885. A former cantilever balcony on the west side of the central wing has been enclosed with a row of fixed glass louvres, with decorative iron lace mostly removed.

The 1873 single storey sandstone wing to the south of the central two-storey structure is also built of ashlar sandstone and has a hipped slate roof, timber-framed double-hung sash windows and timber-panelled doors. The single-storey wing to the north of the central two-storey structure features a gabled corrugated galvanised iron roof with a central roof vent. This portion of the building is a mix of sandstone and brickwork construction, incorporating a small portion of the original 1868 sandstone building within the eastern, platform facade. The western (rear) portion of the building was primarily designed for service rooms. It comprises various brick extensions, including a central c.1885 two-storey face-brick extension (now painted) with a hipped corrugated metal roof and external staircase enclosed with corrugation iron cladding; a smaller c.1885 single-storey face brick extension with a hipped roof toward the southwest (original designed as a toilet wing); and various other face-brick single-storey extensions and infill of c.1917 and later.

The layout of the building is largely consistent with that of the early 20th century. The southern part of the building houses NSW Trains staff offices and a general waiting room. The former Refreshment Room and accommodation rooms in the central two-storey section are

occupied by the Mount Victoria and District Historical Society Museum. The former bar on the ground floor is used for storage and communications equipment.

Due to extensive changes since 1868, the character of the interior is quite diverse. The single storey wing at the southern end of the building has been refurbished for use as modern offices and facilities for railway station staff; key features included painted cement sheet with timber battens to ceilings, timber floors with modern carpet, enclosed 1873 fireplaces, and rendered and painted walls. The former 1885 Telegraph Office is now a small public waiting room; key features include painted plaster ceiling and terracotta floor tiles, dating from the late twentieth century. The main, central two storey section of the building and rear service rooms are primarily used for Museum storage, offices, and display purposes. The former RRR and dining rooms on the ground floor are the largest rooms, used as display areas for museum objects. These rooms are characterised by rendered and painted masonry walls, painted tongue and groove timber panel ceilings with plaster ceiling roses, exposed timber floorboards and decorative fireplaces. Exposed ceiling beams in the RRR are supported by decorative cast iron columns, while the ceiling of the dining room has two levels, indicative of the gradual amalgamation of several earlier room. A former single-storey kitchen extension at the north-west corner of the building is characterised by rendered and painted masonry walls, a painted tongue and groove timber panel ceiling, and exposed timber floorboards, along with a large cast iron kitchen exhaust hood of the early-mid twentieth century. The former single-storey 'Bar' room at the northeast corner of the building (c1941) is characterised by rendered and painted masonry walls, a painted plaster board ceiling with cover strips, exposed timber floorboards, and a cast iron stove. An exterior double door retains evidence of painted signage on glass panels, including 'BAR'. A small brick addition at the northern end of the building has modern lavatories for men and women, with fixtures and finishes refurbished in 2015. The layout of the upper storey halls, bedrooms, kitchens and dining room are primarily as designed in 1885, with some alterations, fixtures and finishes dating to the 1930s and later twentieth century. Key features include rendered and painted walls with picture rails, timber door joinery, timber floor boards covered with carpet, painted FC sheet ceilings with timber battens, and timber tongue and groove ceilings.

Site and its context

Mount Victoria Station is located to the eastern boundary of the town. The Platform 2 Station Building is a dominant feature of the railway precinct which is visible from many key views. (Extent Heritage)

Figure 2 Location plan

Site for the currently proposed works
The works are proposed to the following areas:

- Re-roofing of the slate and galvanised profiled sheet roofing of the Platform 1 building
- Re-roofing of the slate and galvanised profiled sheet roofing of the Platform 2 building
- Replacement of roof plumbing (except flashing to recently overhauled chimney stacks)

Current use
Railway Station

Heritage listings

Listing type	*Item name and document details*	*Listing number*
State Heritage Register	'Mount Victoria Station Group	Item 01203
TAHE s170		SHI 4801007
Blue Mountains Council	Mount Victoria Railway Station, LEP 2015	Item MV027
Blue Mountains Council	Central Mount Victoria Urban Conservation Area	MV023

1.2 Site summary history

Documented history (TAHE s170 entry)
Mount Victoria has always been an important railway centre since its opening in 1868. It was the first platform structure made of material other than timber built after Penrith station. The original station building still remains and was to a design consistent with the time of John Whitton, Engineer-in-Chief of the NSW Railways. Further additions were carried out in 1899 to the ladies' toilet and other areas. The parcels office was added in 1911 to the Sydney end of the building.

In 1884, the two level stone addition containing the Railway Refreshment Room was built under the supervision of George Cowdery, Engineer-in-Chief for Existing Lines and was built by George

Dengate. The Refreshment Room contained on the upper level eight bedrooms for travellers and quarters for the Manager and family, again typical of NSW practice. Alterations to the Refreshment Room occurred in 1919 and additional bedrooms were built at the rear in 1943. The Refreshment Room closed in 1957.

A locomotive depot existed at Mount Victoria in 1897 and was greatly expanded in 1911-13 when duplication of the line through Mount Victoria was completed. The depot was home to the locomotives and crews who worked the famous 'The Fish' commuter train to Sydney. Mount Victoria also was the destination of the Caves Express from Sydney, which conveyed holidaymakers to the Blue Mountains.

Previous physical changes-Platform 1 Building
The building was built in 1912 as an RRR which closed in the late 1950's, the building has been lightly used ever since. It had minor alteration in 1926 when a ticket office was integrated into its southern end and other, more minor, changes. Some repair and redecoration occurred in 2015 with refurbishment of the bar for interpretation and office use. The platform awning roof was replaced c.2014.

Previous physical changes-Platform 2 Building

- 1868 Built as a single storey sandstone ashlar station
- 1873 Extended to the west
- 1885 A second floor was built over the station for accommodation
- 1885 Brick extensions to the north and south

Previous physical changes-Colour scheme
The building and structures have a consistent colour scheme based on TfNSW Heritage Paint Schemes ESB 010 (1856-1880)

2 Significance assessment

2.1 Statement of Significance

From the SHR listing:
Mount Victoria Railway Station Group is of state significance as a large complex of buildings illustrating clearly the pattern of development of railway facilities in the Blue Mountains area. It is the most substantial railway station complex in the Blue Mountains and indicates the former importance of the location with the former locomotive depot (now demolished) to service terminating trains for railway tourism associated with Jenolan Caves and handling goods trains over the steep grades of the Blue Mountains, particularly the section to Lithgow. The structures indicate the importance of Mt Victoria as a health and holiday resort, the RRR accommodation provided in the station building reinforcing this.

The Mount Victoria Railway Station Group has a high degree of research potential for its ability to demonstrate construction techniques and architectural character of various types of buildings in one station. The station is a fine example of railway architecture including Victorian Regency and Federation buildings and is an important landmark in the townscape of Mt Victoria being located at the lower end of the town at the termination of the main street vista. The Mount Victoria Railway barracks is an unusual surviving example of a purpose built rest-house still used by the railways for staff accommodation. The signal box is one of a few examples of brick on platform elevated signal boxes that remain in operation in the state.

The overall aesthetic character of the station is further enhanced by the setting of the station within the rock escarpment, a typical natural setting of the Blue Mountains stations, featuring a collection of numerous flora ranging from mature trees, shrubs and potted plants along both platforms.

The Mount Victoria Railway Station is associated with John Whitton, Engineer-in-Chief of the NSW Railways, as the original station building was built to a design from his time, and with George Cowdery, Engineer-in-Chief for Existing Lines, as the two-level stone addition containing the Railway Refreshment Room was built under his supervision.

The footbridge is rare as an intact example of a standard Warren Truss trestle and stairway with channel iron stair stringers. The footbridge was identified as an item of exceptional heritage significance in the 2016 'Railway Footbridges Heritage Conservation Strategy'. The Mount Victoria Station footbridge has high integrity and intactness. The footbridge is rare as an intact example of a standard Warren Truss trestles and stairway with timber handrails, decorative timber newels and channel iron stair stringers.

2.2 Significance of the proposed work area

The proposed works areas of varying degrees of significance. These areas are assessed in the Extent CMP as follows:

- The original slate roofs: Exceptional
- Metters vent on Platform 1 building: Exceptional
- Chimney Stacks (original to buildings): Exceptional
- Galvanised steel roofs: Moderate
- Colorbond platform canopy roofs: Moderate
- Guttering: Little

3 Proposed Works

Figure 2 Platform 2 aerial view Source: Franklins

Figure 3 Platform 1 and 2 from the south (2021)

Figure 4 Platform 2 from the north (2021)

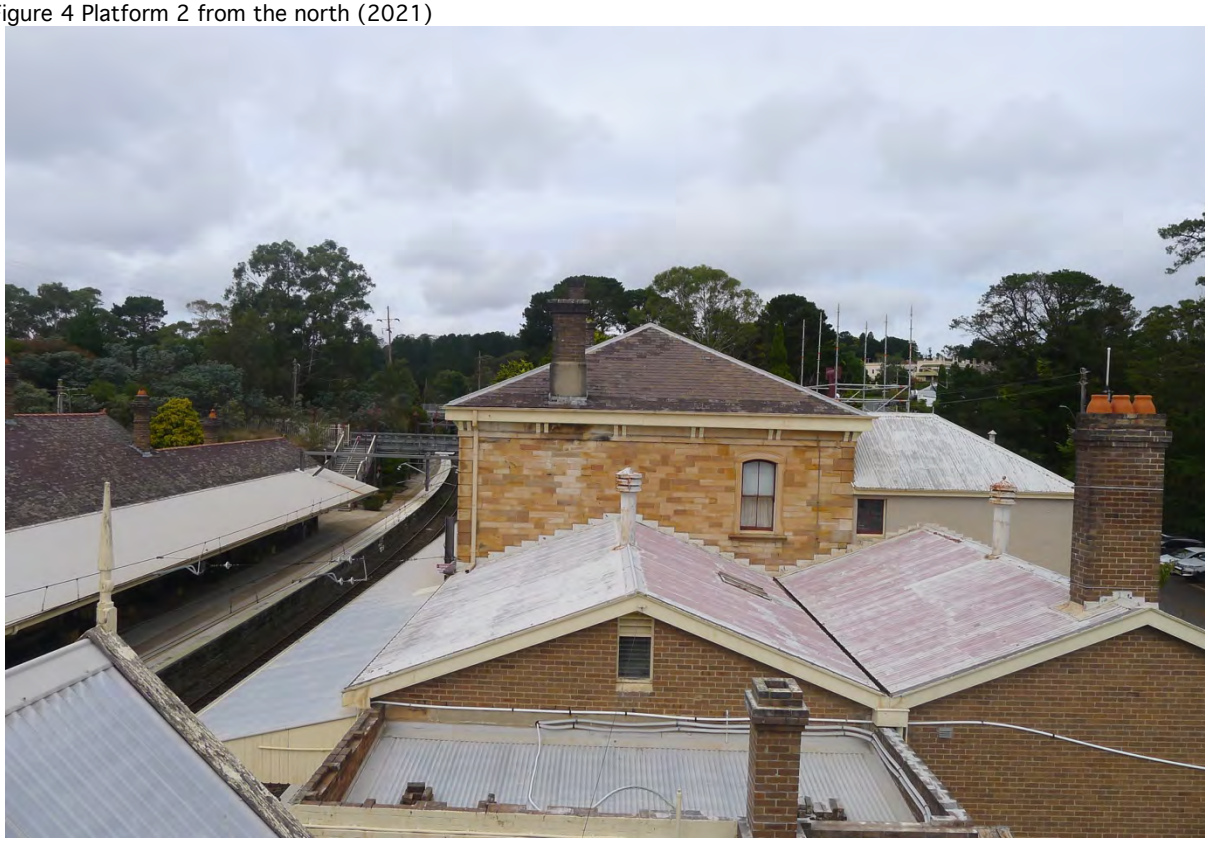

Figure 5 Platform 2 aerial view from north (2021)

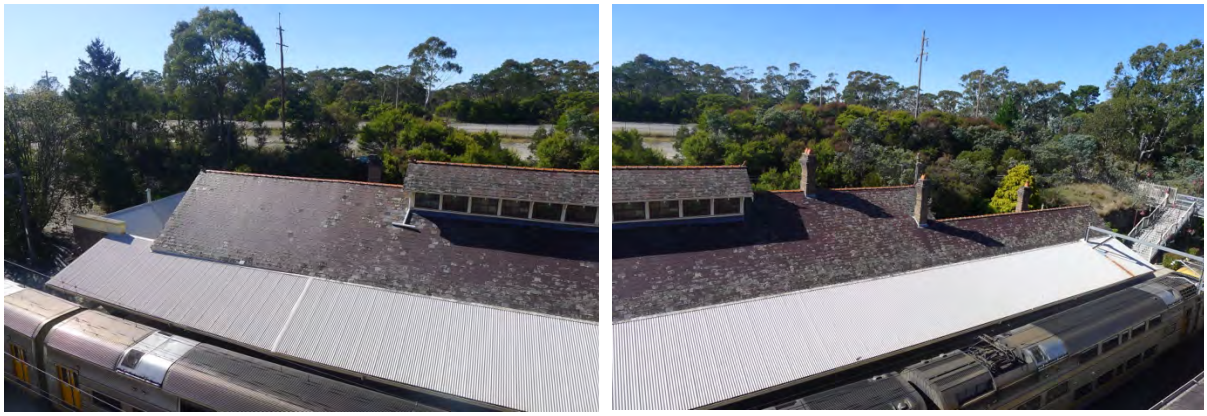

Figure 6&7 Platform 1 aerial view (2021)

3.1 The proposal

The following works are proposed:

Roofing Works:

- Replacement of all Welsh slate roofs with new Del Carmen Ultra Spanish slate.
- Replacement of galvanised corrugated roofs (Platform 1 annex accommodation)
- Replacement of galvanised corrugated roofs (Platform 2 west and north annex accommodation roofs and southern end roof)
- Adaptation of single bay riveted steel box gutters on roofs 4/5 and 6 to 3 bay lead gutters
- Replacement of galvanised corrugated roof to Male WC Platform 2
- Testing, clearing and probable repairs to the Platform 2 drainage, any replacement drainage will follow the line of the earlier drainage.

It is proposed to carry out the works in 2 phases, with the first phase replacing the Platform 2 roofs.

3.2 Background

Pre-lodgement consultation

None.

Consideration of alternatives

The original Welsh slate has survived (with some repair) for close to 140 years in the case of the Platform 2 building, slightly less in the case of the Platform 1 building. There is no more appropriate material for the replacement slates than slate for longevity. Ideally these Penrhyn slates would be replaced by similar slates from the same quarry, however geological problems with the quarry means no Penrhyn slates are available in Australia. An alternative Welsh slate Cwt-y-Bugail has some availability for the main platform 2 building roof however it cannot be guaranteed to be available for the remaining roofs, a potential change in slate between roofs would be visually disastrous.

Four sources of slate were investigated:

- Penrhyn: not available
- Cwy-y- Bugail: limited supply in Australia which cannot be guaranteed during the phasing of the works. A grey slate.
- Glendyne Canadian slate: a very flat high-quality slate but with some white streaking. The slate come with a 75-year material warrantee.

- Del Carmen “Ultra”: the premium grade of high-quality slates from north west Spain. Very good supplies. The slate is blacker than the heather blue coloured Penrhyn slates. The slate comes with a 100-year warrantee.

The Del Carmen slate provides a high-quality roofing slate with assured supply, its drawback is its darker colour, this is mitigated by the consistence appearance to the group’s roofs.

The Colorbond canopy roof over platform 2 is relatively recent (c.2014) and have a reasonable service life however, they are visually intrusive and incompatible with galvanised guttering and lead. The platform 1 galvanised steel canopy roof is also in reasonable condition and is scheduled to remain. These roofs will be retained (with their intrusive PVC downpipes) because they have a reasonably future service life and, with the Colorbond being downstream of the proposed GCI roofs, it will have little adverse effect on the new work.

4 Heritage Impact Assessment

4.1 Matters for consideration

Fabric and spatial arrangements
The fabric changes will be limited to the replacement of Welsh slate and galvanised corrugated steel. The existing quad guttering will (as recommended in the CMP) be changed to OG guttering throughout- sized for capacity with a maximum width of 150mm. The Colorbond roof of the platform 2 canopy and its return will be retained as it is recent and in good condition. Likewise, the galvanised steel canopy of Platform 1 will be retained with only renewal of the slip flashing between it and the slate in lengths of lead and potentially replacement of the isolating Alconite sheeting to the electrification gantry.

As noted above the supply of Welsh slate is problematic. It is imperative that any replacement slate is of premium quality and in ready supply during the 3-year phasing of the project. Quality and consistency of supply is paramount for the project therefore the proposed use of the Del Carmen slates.

A slight wave in the roofline either side of the Platform 1 refreshment north wall indicates the potential failure of the west wallplate. The condition of the plate will be exposed during the re-roofing and a provisional allowance for like for like replacement of the wall plate is allowed.

Fabric - Exterior Paint Finishes
The only element of the roofing to be painted will be eaves, gable and verge timbers, guttering and the Platform 1 ridge lantern (while there is good access). These will be repainted in the present colour scheme.

Setting, views and vistas
The slate roofs of the platform buildings are prominent and consistent, the proposal will not adversely affect this appearance other than a darker, more neutral, tone of slate.

Landscape
The impacts of this proposal do not apply to this heritage value.

Use
The impacts of this proposal do not apply to this heritage value.

Demolition

The works will remove all slates and sheet roofing from both platform buildings.

Curtilage
The impacts of this proposal do not apply to this heritage value.

Moveable Heritage
The impacts of this proposal do not apply to this heritage value.

Aboriginal Cultural Heritage
The impacts of this proposal do not apply to this heritage value.

Historical archaeology
The impacts of this proposal do not apply to this heritage value. The replacement drainage will generally follow the original lines of the surface water drainage

Natural heritage
The impacts of this proposal do not apply to this heritage value.

Conservation Areas
The impacts of this proposal do not apply to this heritage value.

Cumulative impacts
These works follow on from the recent repair (and in two instances, the reconstruction) of chimney stacks. That work carefully preserved the form of the stacks. The proposed works likewise will have only a beneficial, accumulative, impact on the station group.

Other heritage items in the vicinity
The impacts of this proposal do not apply to this heritage value.

Commonwealth/National heritage significance
The impacts of this proposal do not apply to this heritage value.

World Heritage significance
The impacts of this proposal do not apply to this heritage value. Whilst Mount Victoria is surrounded by the World Heritage Area, the township and Great Western Highway corridor is excluded from its curtilage.

4.2 Consistency of the proposal with the policies of the CMP

The conservation management plan policies prepared by Extent Heritage are compared to the proposal

Policy No.	CMP Policy	Consistency assessment
8	Elements of exceptional significance directly contribute to the place's overall significance and must be retained and conserved. 8.3 Where elements of exceptional significance have failed or been damaged, they must be repaired and maintained using traditional methods and	The proposed conservation actions are consistent with Policy 8.3 with the replacement of failed material with similar materials

Policy No.	CMP Policy	Consistency assessment
	with sympathetic materials in preference to replacement.	
10	Elements of moderate significance contribute to the place's overall heritage significance and should be retained and conserved. 10.2 Where elements of moderate significance have failed or been damaged, they should be repaired and maintained using traditional methods and with sympathetic materials in preference to replacement.	The proposed conservation actions are consistent with Policy 10.2. with the replacement of failed material with similar materials
13	Changes to significant elements or fabric should only be considered where it allows for conservation of elements of greater cultural significance or where it is essential for the conservation and/or ongoing traditional use of the place as a whole.	The proposed conservation actions are consistent with Policy 13.
20	Appropriate management of stormwater and drainage across the site is fundamental to ongoing railway operations, long- term conservation of heritage buildings and structures, and the maintenance of significant landscapes. Decisions regarding the management of stormwater and associated drainage systems should be based on an accurate understanding of the hydrology of the site. 20.2 Where existing drainage systems have inadequate capacity, significant historic drainage systems should be restored and expanded in preference to replacement or installation of additional new drainage systems (provided that this does not impact negatively on other significant elements or uses of the site).	The proposed investigation and works proposed for the Platform 2 stormwater drainage aligns with this policy
23	Preservation, conservation and maintenance of significant fabric must be carried out using best practice conservation methods. 23.1 In general, retention of significant fabric contributes to the heritage character and authenticity of the place. Worn and damaged significant fabric should be retained and repaired or conserved wherever possible in preference to replacement. Removal or replacement of fabric of exceptional or high significance should only take place as a last resort, after all other options have been considered.	The slate roofs are at the end of their service lives and need replacement.

Policy No.	CMP Policy	Consistency assessment
24	Works to fabric of exceptional or high significance must be undertaken by tradespeople and contractors with demonstrated skills in traditional construction, conservation and maintenance materials and techniques.	The specification and procurement process will support this policy
31	Evidence of water ingress and issues of rising/falling damp in buildings must be actively managed to prevent long-term damage or deterioration of significant fabric.	The roofing works address falling damp issues

4.3 Summary of impacts

Item/SoW reference	Significance of fabric affected	Impact	% of element/ surface affected (by space)
Roofing works:			
Replacement of all slate roofs	Exceptional	Replacement with Spanish slate	100%
Replacement of profiled steel roofs	Moderate	Replacement like for like	100%
Replacement of quad guttering with OG profiled guttering	Little	Improvement in appearance and capacity	100%
Platform 2 drainage works:			
Investigation	Moderate	Temporary effect, depending on obstruction, may require some breaking out	little
Replacement drainage works	Moderate	Scope as yet unknown. Any replacement will follow the original drainage lines	unknown

5 Summary and Recommendations

The proposed roofing works replace roof finishes and roof plumbing generally at the limit of their serviceability.

The replacement of the slate and galvanised steel roof finishes with matching materials is an appropriate conservation action supported by the site's Conservation Management Plan.

We recommend the works as proposed are approved

APPENDIX A LONG BLACKLEDGE ARCHITECTS ROOF CONDITION REPORT

Long Blackledge
Architects

MOUNT VICTORIA STATION. OPTIONS FOR ROOFS

1 Background

Long Blackledge Architects have been commissioned by Franklins Plumbing to comment on the condition of the roofs and make recommendation for their repair or replacement.

We provided advice on the recent (2023) reconstruction/ repair of the chimney stacks. These works gave us close access to the roofs to allow us to judge their condition.

2 References

We have referred to the following references:

- Drone survey (for the stacks) dated 13th December 2021
- LBM Roofing. Report on the roof (focused on the Platform 2 GCI roofs) dated 10th May 2022
- Architectural Roofing Services, report dated 17th May 2022
- Franklin Plumbing report on roofs dated April 2024

3 Observations

3.1 Past reports

The Architectural Roofing Services inspection was carried out in May 2022 by Kevin Allan a highly experienced conservation roofing contractor. He appears to have accessed the roofs by EWP and rope access. Keven considered the Platform 1 slate roof to be “fair” and the Platform 2 roof to be “good”. He considered both roofs to be “repairable”.

Franklin Plumbing report on the roofs noted the extensive delamination, fracturing of slates and leaks into the roof-spaces which were evident on both slate roofs. Franklins considered the slate roofs not to be repairable.

3.2 Observations on the reports

Architectural Roofing Services would probably use rope access to undertake topical repairs to the inaccessible slopes of non–railway roofs. This form of access is problematic particularly on the trackside slopes. Mount Victoria Station is only accessible by EWP on the forecourt side of Platform 2. The extent of isolated failure of slates through delamination or nail fatigue will accelerate with the aging of the roof surface requiring more frequent access.

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Franklin Plumbing extensive experience working in the railway environment with an extensive knowledge of safe access requirements. The access issues inform their advice that the roof is beyond economic repair.

3.3 Observations on condition

2021 Debris on adjacent roof shed from roof (Platform 1 roof)

2024 Additional debris shed from roof (circled red), at least 3 slates are dislodged likely by nail fatigue (circled white). This appears to be typical to all slate roofs

The Welsh slate roof on the 2 storey Platform 2 building is about140 years old with evidence of inserted repairs. The Platform 1 building's slate roof is 110 years old. At these ages the roofs are coming to end of their economic service lives. We would expect the deterioration of the roofs through delamination,

splitting and nail fatigue to accelerate. This accelerating deterioration risks causing more extensive damage internally to timbers and finishes if repairs are not immediately undertaken. In a building like the former RRR building, which is presently unused, leaks could be undetected for a considerable time risking considerable additional damage.

We understand the stormwater drainage is in good condition.

4 Recommendations

- The slate roofs are at the end of their economic serviceable lives and should be replaced with new Welsh slate.
- The GCI roofs and all their attendant flashings are also in need of replacement.
- The capacity of the roof plumbing should be assessed and replacement goods sized to anticipate current capacity requirements

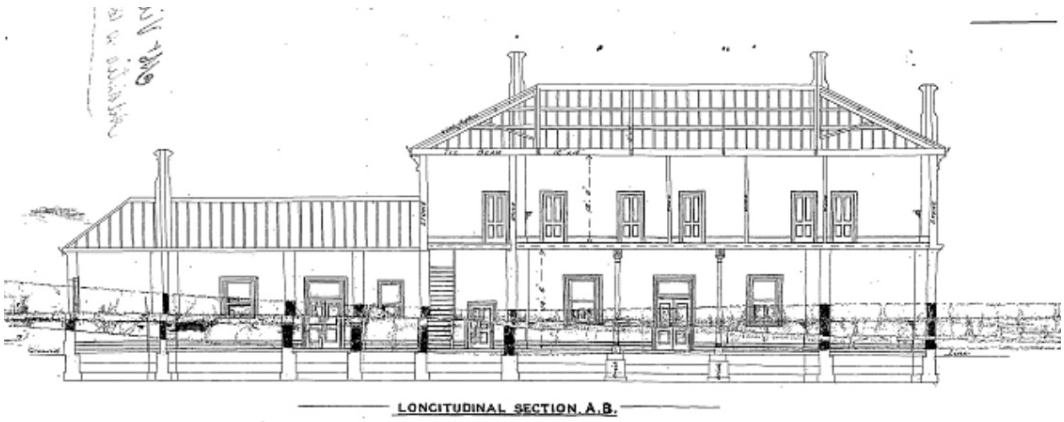
William Blackledge
For Long Blackledge Architects Pty Ltd

APPENDIX B LONG BLACKLEDGE ARCHITECTS SPECIFICATION

Long Blackledge
Architects

MOUNT VICTORIA STATION
RE-ROOFING

SPECIFICATION FOR THE WORKS



Prepared for

Sydney Trains

Issue B

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ABBREVIATIONS

ABS	As before specified
AS	Australian Standard
lin. m	Lineal metre
m	Metre
m2	Square metre
m3	Cubic metre
mm	Millimetre
max	Maximum
min	Minimum
CGI	Corrugated galvanised sheet
DP	Downpipe
S&VP	Soil and vent pipe
UOS	Unless otherwise Specified
UPVC	Unplasticised polyvinyl chloride
VC	Vitreous Clay

A
PRELIMINARIES-
PREAMBLE

GENERALLY .01

The Preliminaries must be based on the Contractor's own assessment of the period covered by the Construction Programme included in the Contract or the Construction Programme furnished to the Sydney Trains Project Manager.

The Contractor shall be deemed to have inspected the Site and:

- Examined all the information made available to them for the purpose of tendering, including the Design Drawings, Specification, Schedules, Conditions of Tendering, reports, maps, diagrams and Contract Conditions.
- Examined all information relevant to the risks, contingencies and other circumstances which could affect their Tender and which is obtainable by making reasonable enquiries.
- Examined the Site, its surroundings including all site conditions.
- Informed themselves as far as practicable of all relevant physical conditions on and below the surface of the Site and the climatic conditions at or near the Site.
- Informed themselves of the availability of labour and the accommodation required.
- Satisfied themselves as to the correctness and sufficiency of their Tender and that the lump sum price submitted covers the cost of performing all the obligations under the Contract.

Failure to do all or any of the above items will not relieve the Contractor of their liability to perform all the obligations under the Contract.

Where staff and labour costs are involved in the Preliminaries the lump sum shall include all on-costs such as accident compensation, insurance, superannuation, long service leave, holidays with pay, public holidays, sick leave, wet weather pay, payroll tax, Site allowances and any other indirect labour costs. They are to include future cost increases for the duration of the Contract.

Where selected and/ or nominated subcontract works are arranged by the Principal, tenderers shall expressly and specifically allow for the provision of all Preliminaries and attendance as set out in this tendering procedure. The lump sum for Preliminaries shall be deemed to include the provision of all Preliminaries and attendance free of charge to those selected or nominated Subcontractors and for any provisional sums.

The Preliminaries included in the tendered sum shall allow for the proper completion of the work and for the Contractor's attendance on all Subcontractors. Attendance is deemed to include but is not limited to:

- Management, supervision and coordination and making good of Subcontractor's work and supply agreements.
- Providing programming information, ensuring work is carried out in the proper sequence according to the accepted Construction Programme, and ensuring that all Subcontractors and suppliers carry out proper programming activities in accordance with the Specification and all associated documentation.

- Provide as necessary:

- Hardstand area for all Site facilities.
- All Site amenities including meeting rooms, lunch, change and ablution facilities and utility connections to the Site compound and security of same.

- Attending to progress claims and payments, variation claims, cash flow information and the like.

- Ensuring adherence by all Subcontractors and suppliers to the requirements of the Contract documents.

- Issuing of Contract documents to all Subcontractors and suppliers.

- Providing the necessary personnel and equipment for all hoisting and depositing of labour, materials, plant and equipment at the required levels, in locations from which access to the final positions is practicable, including all works associated with creating access to and egress from the building and subsequent making good. Provision of general construction plant.

Free use of water and electricity, including power for starting up and test running, and the provision of sufficient water and electrical outlets to all areas to facilitate the carrying out of all work. Sufficient water and electrical outlets must be provided to all external areas of the Site to facilitate the practical carrying out of external work.

- Free use of sanitary and messing accommodation and all other employee facilities required by the Site Agreement, industry practice, industrial relations agreements and industrial awards, such as covered ways, drinking fountains and the like.

- Management of Site industrial relations matters in accordance with the Contract and the Specification, including ensuring that all Subcontractors and suppliers comply with any Site agreement.

- Provision of Site communications, internet and telephone facilities as required to undertake and complete the work.

- Provision of covered space for the Contractor's and Subcontractors plant, storage of materials and the like.

- Affording all reasonable facilities, access and ample working space for carrying out work, including all necessary scaffold, scissor-lifts, boom lifts, means of access and the like.

- Provision of temporary shoring, temporary works and temporary retaining walls.

- Provision of survey information and setting out.

- Taking responsibility for setting out all chases, holes, sleeves, conduits, bolts, pipe hangers, concealed noggins brackets and the like, and building in the same.

- Cutting away and afterwards making good in all trades including rectifying defective work.

- Protecting finished work and the upkeep of the protection works.

- Obtaining all Shop Drawings, As-built Drawings, samples, operational and maintenance manuals, warranties and the like from Subcontractors and suppliers, as required by the Contract documents. Coordinate and review the same and all submittals and obtain acceptance from the Sydney Trains Project Manager.

- Provision of bins within reasonable proximity of the work and regular removal of rubbish and debris from the Site. Carrying out a thorough final clean of all areas.

- Provision of all Site security.

- Site safety (including Sydney Trains safety requirements).

- The health and safety of all persons employed on the Site and the occupants and users of areas adjacent to the Site including the general public.

- The protection of Sydney Trains and adjacent property.

- The provision of hoardings, fences, guard rails, barriers, overhead protection, waterproofing protection, temporary fire protection, warning lights, first aid services and the like.

- Ensure that Subcontractors and suppliers comply with the quality assurance requirements.

- Ensure that all Subcontractors and suppliers minimise inconvenience and disruption to any occupants as well as provide all facilities, protection and any other measures as required to ensure the same.

- Making good to all affected elements of the building following the removal of temporary facilities.

The works shall be carried out in strict accordance with this specification, schedule of works and the accompanying drawings and such future drawings and instructions as may be issued and/or given by the architect during the progress of the works.

Figured dimensions given on the drawings, schedule of works or specifications shall be preferred to scaled measurements. Discrepancies in the drawings and specification shall be immediately referred to the architect for direction before proceeding with the relevant part of the works. 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.

DESIGN DRAWINGS AND SPECIFICATION .02

The documents which constitute the Contract are mutually explanatory and anything contained in one but not in the other shall be equally binding as if contained in all.

Any ambiguity, discrepancy or inconsistency found in the documents shall be notified to the Sydney Trains Project Manager.

If the Contractor fails to notify the Sydney Trains Project Manager, in accordance with contract requirements, of any ambiguity, discrepancy or inconsistency, it shall be deemed that the Contractor has allowed in their Tender for the work constituting the greater expense.

Where repetitive features are not fully drawn, they shall be similar to those which are fully drawn.

The actual position and layout of existing services in relation to each other and to the surrounding work shall be verified on Site (VOS).

All measurements necessary to achieve a neat functional layout shall be taken on the Site by the Contractor who shall ensure that clearances for operation and maintenance are adequate and not in any case less than those indicated on the Design Drawings.

Any doubt regarding the clear intention of the Design Drawings shall be brought to the attention of the Sydney Trains Project Manager before proceeding with that specific portion of the work involved.

If either the Design Drawings or Specifications omit particulars of minor work which nevertheless is clearly to be inferred or is necessary for the proper execution and completion of the work, then such minor work shall be executed by the Contractor as part of the execution of the work and at no extra cost or charge to the Principal.

CONTRACTOR'S CONSULTANTS .03

Generally:

- Where the Contractor requires consultants (including surveyors, engineers and architects) to prepare submittals, or for advice and professional services regarding any part of the construction process, the Contractor shall engage and pay for such consultants.

- Consultants engaged by the Contractor shall be qualified and experienced, including experience in rail projects, currently practising in the type of work to be undertaken and possess all necessary certifications.

- Submit to the Sydney Trains Project Manager the names and details of such consultants.

- Properly manage, instruct and coordinate such consultants in a reasonable time.

- The consultants shall be required to enter into a collateral warranty agreement directly with the Principal if directed to do so by the Sydney Trains Project Manager.

Professional Indemnity Insurance:

- Consultants engaged by the Contractor shall obtain, pay premiums and maintain relevant professional indemnity insurance cover for the work carried out by that consultant.

- Submit evidence of such insurance before commencing the relevant work.

- The value of such insurance cover for each and any claim shall not be less than the capital value of the work which is the subject of the consultant's design, certification, submittals, advice or professional services.

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DIMENSIONS AND SCALES ON DRAWINGS .04

Wherever shown on the Design Drawings and on details issued during the Contract period, figured dimensions shall be read in preference to scale readings.

Larger scale Design Drawings shall be read in preference to smaller scale Design Drawings of the same work.

All dimensions indicated on the Design Drawings shall be checked on Site.

Discrepancies shall be referred to the Sydney Trains Project Manager before the job progresses to a stage where any adjustment to such dimensions would cause additional cost or substantial variation to the intent of the Contract, providing that the discovery of such discrepancies takes place at some antecedent time.

STATUTORY REQUIREMENTS .05

Comply with and give all notices required by any Act of Parliament, ordinance, regulation, agreement or by-law of any authority that has jurisdiction affecting the work or their workmen. Following a request from the Sydney Trains Project Manager, or at completion of the work or termination of the Contract for any reason, surrender to the Sydney Trains Project Manager any documents issued by or evidencing the approval of authorities in connection with the work. The Sydney Trains Project Manager may order that work to which any such requirement applies, shall not be undertaken until such evidence is supplied.

Coordinate all inspections and work required to achieve a Certificate of Occupancy and/ or Certificate of Final Inspection from the registered Building Surveyor. Arrange and pay for all mandatory inspections in relation to the work and for all inspections required by authorities.

OTHER REQUIRED APPROVALS .06

Unless otherwise indicated as obtained by the Principal or the Sydney Trains Project Manager, obtain all required approvals before commencing work, pay all associated fees, comply with all approval conditions and give all required notices to the Authorities.

Submit to the Sydney Trains Project Manager, copies of all approvals and associated correspondence with the Authorities immediately following receipt.

Arrange all inspections required by the authorities..

CERTIFICATION .07

Generally:

- Provide all certification and any other documentation associated with the construction and completion of the work as requested by the Building Certifier.

- Submit all certification properly signed and attested by the responsible parties. In addition, submit copies of all related correspondence and records.

Product Certification:

- Where nominated in the Specification, provide product certification in the form of a statutory declaration.

- The requirement to provide product certification shall not reduce or modify the requirement to provide a warranty.

Building Code Certification:

- Provide as necessary, all Building Code of Australia compliance certification including that required for Section J Energy Efficiency Compliance.

STAGING .08

Where staging of the work is required, the Contractor shall develop a staging plan, detailing the sequencing of work including the inter-relationship of the various stages, and submit to the Sydney Trains Project Manager and Principal for review and acceptance.

The staging plan shall be fully integrated into the construction programme, as developed by the Contractor, and shall indicate dates for the completion of each stage.

The Contractor shall undertake a periodic review of the staging plan to determine its effectiveness and implement any amendments where necessary.

The staging plan shall clearly identify all high risk (e.g. high traffic) and low risk areas.

LIABILITY AND INSURANCE .09

Prior to commencing work on the Site, obtain all necessary insurances, required in the Contract, and maintain in place for the full duration of the project.

NUISANCE .10

Work shall be carried out in and around existing buildings in a manner so as to cause the least possible inconvenience to the public, staff, clients and visitors.

Take all practicable means to minimise noise resulting from their activities. All construction equipment shall be fitted with noise suppressors, acoustic linings or shields. All tools and silencers shall be kept in first class condition at all times.

Permission shall be obtained before carrying out work involving high level noise.

Comply with AS 2436, Guide to Noise Control on Construction, Maintenance and Demolition Sites, and all statutory regulations and guidelines concerning noise and nuisance arising from the Contract being carried out.

In all aspects, take all reasonable precautions to minimise disruption to staff and the general public in and around the Site and elsewhere including, but not limited to the following items:

- Limiting noise levels and vibration during the work from tools, plant and operation.

- Respecting the rights of staff and the general public.

Not using radios, CD players or devices capable of similar outputs to play music or other broadcasts.

- Not using offensive language within the hearing of building occupants, users or the general public. Avoiding offensive behaviour such as wolf whistling.

- Sexual harassment or racial discrimination is illegal and regulations relative to such harassment will be enforced. Any person who in the opinion of the Sydney Trains Project Manager contravenes these regulations will be dealt with under the relevant Act and regulations.

- Limiting offensive odours or fumes arising from the work.

- Avoiding whenever possible the need for shouting in order to communicate.

- Provision and enforcement of suitable rules among the Contractor's staff and those of the Subcontractors, suppliers and others working on Site concerning the use of proper toilet facilities and the avoidance of spitting on Site.

- Consumption of alcohol and use of illegal substances while on Site is strictly prohibited.

- The avoidance of litter, trails of dirt and dust, etc.

- Dogs are not permitted on the Site.

- Adjoining building's staff, and the general public shall be protected against dust, dirt and water nuisance. The Contractor will be deemed to have made due allowance for this within their Tender.

- The area immediately around the Site shall be kept clean of dust, mud and debris at all times. Should the Contractor fail to clean or clear the area within four hours of a request to do so by the Sydney Trains Project Manager, the Sydney Trains Project Manager can at the Contractor's expense organise for such cleaning. The cost will be deducted from the Contract Sum.

MATERIAL HANDLING (VERTICAL AND HORIZONTAL MOVEMENT .11

Make allowance to offload and horizontally and/ or vertically handle all construction materials and equipment on Site and from the street. This includes any cranage requirements.

The Contractor shall make themselves aware of all restrictions and obstacles that may prevent materials being handled into position ready for inclusion into the work and make due allowance for all suitable alternative delivery arrangements. The Contractor's vehicle parking shall not impact on any neighbouring businesses or residential houses.

The Sydney Trains Project Manager reserves the right to turn away any delivery, and accept no responsibility for costs, where suitable provisions for handling of the delivered materials have not been arranged.

ACCESS/SCAFFOLDING .12

The contractor shall provide, erect and maintain all necessary temporary screens, hoardings, footways, cartways and night lights for the protection of the public, land and property and as required by all authorities, and remove entirely on completion.

The contractor shall provide all lifts and scaffolding as required for the construction of the works and for the use of subcontractors. All scaffolding, lifts etc shall be in accordance with the provisions of the relevant authority, AS 4576: *Guidelines for Scaffolding* and AS 1576: *Scaffolding General Requirements*.

MATERIALS GENERALLY .13

Unless specified otherwise, all materials, fittings and accessories shall be new and the best of their respective kinds and in accordance with the requirements of the current issues of the relevant Australian Standards specifications, where such exist, or other such standard accepted by the Sydney Trains Project Manager.

As soon as practicable after entering into the Contract, place orders for and take all measurements necessary to ensure the supply of all materials and goods necessary to carry out and complete the work and take all reasonable measures to ensure that deliveries of such materials and goods will be made at such times as to sustain the necessary rate of progress of the work to achieve Practical Completion by the due date.

All necessary scaffolding shall be erected by persons holding a Certificate of Competency as laid down in the Local Government Act.

Allow for all materials as specified.

In the event of any material not being available, refer to the Sydney Trains Project Manager for a decision on an alternative material.

Take all necessary action and be wholly responsible for ordering all materials and work in adequate time to meet the Construction Programme.

MATERIAL'S SAFETY DATA SHEETS (MSDS) .14

Provide suitable accepted industry-standard Materials Safety Data Sheets for all materials and products delivered to the Site.

Materials Safety Data Sheets shall be available on Site for inspection by the Sydney Trains Project Manager at any time without notice.

METHOD OF DESCRIBING ITEMS .15

Where an item is described in the Contract documentation as being "similar to" or "acceptable equivalent" to that listed in a particular company's catalogue, it is clearly understood that this has been done only to set an acceptable standard. The Sydney Trains Project Manager shall have absolute discretion in deciding whether alternative materials proposed by the Contractor are acceptable.

When selecting equipment "similar to" or "acceptable equivalent" to that nominated in the Specification, delivery dates and availability of spares shall also be equal to equipment specified, prior to their inclusion.

PROPRIETARY PRODUCTS .16

Handle, store, prepare and use or fix each product in accordance with its manufacturer's current printed or written recommendations/ instructions. Inform the Sydney Trains Project Manager if these conflict with any other specified requirement. Submit copies to the Sydney Trains Project Manager when requested.

The Tender shall be deemed to be based on the products as marketed and recommendations for their use current at the time of Tender.

Obtain confirmation from manufacturers that the products specified and recommendations for their use have not changed since that time. Where such change has occurred, inform the Sydney Trains Project Manager and do not place orders for or use the affected products without further instruction.

RIGHTS OF OWNERSHIP .17

Do not remove any goods or materials from the Site or an agreed delivery location. Ownership, but not the risk, of any goods or materials shall transfer to the Principal without recourse to the Contractor's terms and conditions once delivery occurs.

CONSTRUCTION PROGRAMME .18

Within 5 working days of the date that the Contract takes effect, provide a Construction Programme that indicates all major activities which are necessary for the work as required by the Contract. The submittal and subsequent acceptance by the Sydney Trains Project Manager of the Construction Programme shall be a condition precedent to the issue of any progress payment certificate.

Work shall commence immediately on receipt of an instruction to proceed from the Principal or Sydney Trains Project Manager.

All Site work must be complete by the "finish" programme date.

The Construction Programme shall indicate earliest and latest starting and finishing dates for each activity, milestone events, float times, resource levels and shall highlight critical path activities. Include dates for completion of significant stages of each major activity of the work, such as Shop Drawings, placing orders, manufacturing, delivery, installation on Site, placing into operation, adjustment, testing and other activities specified by the Sydney Trains Project Manager.

The Construction Programme must also detail day to day activities for the final stages of the work, including, without limitation, setting into operation, sub-let activities, adjustment, commissioning, testing and witnessing of acceptance tests.

The programmed start and finish dates, and hence the duration given, in general, must take into account:

- Relationship and sequence of each building activity.

- Earliest and latest starting date for each building activity, taking into account rostered days off (RDOs) and public holidays.

- Key milestone dates.

- Possession shutdown weekends or nights.

- Latest date for nomination of Subcontractors and suppliers and permission for use of Shop Drawings.

Latest date for receipt of details from the Sydney Trains Project Manager and the Subcontractors.

Failure to complete by the stipulated finish dates may make the Contractor at fault and liable for all subsequent costs and/ or charges associated with liquidated damages.

If the Sydney Trains Project Manager considers that the Construction Programme is not satisfactory, provide an amended Construction Programme within 5 working days of being requested to do so by the Sydney Trains Project Manager.

The provision of the Construction Programme and any revisions thereto, shall not relieve the Contractor of any obligations under the Contract, including the obligation to not, without reasonable cause, depart from an earlier Project Programme.

The Construction Programme shall be revised by the Contractor, as directed by the Sydney Trains Project Manager, incorporating the following:

- Any changes in the scope of the work.

- Any change in the Contractor's sequence of the execution of the work.

- Methods by which the Contractor proposes to accelerate and complete the work where delays in progress have occurred.

- Any extensions of time for Practical Completion given by the Sydney Trains Project Manager.

Provide a commissioning and handover programme during the build up to Practical Completion, which outlines the specific requirements to the reasonable satisfaction of the Sydney Trains Project Manager.

BUILDING PRACTITIONER'S REGISTRATION .19

The Contractor must hold Building Practitioner's Registration with the Building Control Commission as required to obtain a building permit and perform the required building works. A copy of certificates shall be provided to the Sydney Trains Project Manager

TRAFFIC MANAGEMENT PLAN .20

Prepare and implement a traffic management plan.

The traffic management plan shall indicate all pedestrian and vehicular traffic movements around the Site, and shall indicate all procedures, equipment and personnel required to ensure the continuous safe passage of pedestrians and vehicles.

Submit the traffic management plan to the authorities, if required, and include any additional requirements or directions of the authorities.

INFORMATION PROVIDED IN "SOFT "FORMAT .21

The Contractor shall be provided with one electronic copy of the Design Drawings and Specification in order to assist the Contractor's production of Shop Drawings and As-built Drawings subject to the following:

- All Design Drawings will be supplied in DWG format on compact disk or similar medium and will be suitable for use on an IBM-compatible personal computer provided with suitable software.

- The Sydney Trains Project Manager and the rest of the consultant team will not be responsible for errors, omissions or inaccuracies contained within the electronic files.

- The information supplied by the Sydney Trains Project Manager and the consultant team is subject to copyright and shall be used solely for the production of Shop Drawings and As-built Drawings and is not to be disclosed or sold to other parties.

- The information supplied by the Sydney Trains Project Manager and the consultant team in electronic format does not form part of the Contract Documents.

B
OCCUPATIONAL HEALTH AND SAFETY

GENERAL .1

Implement occupational health and safety procedures to comply with the Occupational Health and Safety Act and AS/NZS 4801.

Supply evidence to demonstrate that the Occupational Health and Safety Management System complies with the Occupational Health and Safety Act and AS/NZS 4801.

Prior to starting work on Site, provide the Sydney Trains Project Manager with a copy of the following (the list, below, is to act as a guide only and the Contractor may provide any other material which they consider relevant to comply with the Act):

- Project Occupational Health and Safety Policy and Plan.

- Site establishments.

- Responsibilities and duties of the project team and Subcontractors.

- Occupational Health and Safety Project check list and hazard inspection.

- Procedure for Site induction of all people entering the Site.

- Procedure for accident and incident reporting.

- Procedure for plant/ equipment maintenance and inspections.

- Procedure for competency assessment of operators.

- Emergency procedures, including building evacuation and meeting points. These shall comply with the Principal's requirements.

- Provision of adequately trained staff on call and provision of appropriate safety and medical equipment.

The Contractor controls the Site and shall induct the following people who enter the Site:

- Contractor's employees and Subcontractor's.

- Subcontractor's employees.

- Sydney Trains Project Manager, Sydney Trains Project Manager's Representative, Clerk of Works and Consultants.

- Principal's representative and the Principal's Safety Auditor.

- Any council, utility or authority representatives.

- Any member of the public or other visitor to the Site.

The induction shall outline the Site layout, identify hazards and describe requirements for PPE (personal protective equipment) and particular Site restrictions.

During and outside work hours, two Contractor's representatives shall be contactable and responsible for health and safety at the Site at all times. One of the safety representatives shall be on Site at all times during work hours. Their names and telephone numbers shall be listed in the Health and Safety Plan.

Hold daily Pre Start meetings and inductions and at least one "toolbox" meeting per week with all Subcontractors to ("toolbox" meetings are formal meetings where minutes are recorded):

- Take action, if any is needed, over hazards that are identified by staff.

- Discuss any improvements that can be made to working conditions.

- Reinforce project specific or other procedures operating on Site.

- Make their employees aware of good safety procedures.

- Do anything else the Contractor may want to discuss, direct or otherwise instruct.

- Minutes shall be taken and shall form part of the Health and Safety Plan.

Occupational Health and Safety Audits:

- The Health and Safety Plan shall be made available for inspection by the Sydney Trains Project Manager or by the Principal's Safety Auditor when requested. The Health and Safety Plan shall be submitted to the Sydney Trains Project Manager within 10 working days of the date of the letter of acceptance or the day the Contractor mobilises the Site, whichever comes first. The Sydney Trains Project Manager may permit the Contractor to mobilise on Site providing at least the job-specific Safety Analysis has been accepted by the Sydney Trains Project Manager and the balance of the Health and Safety Plan contents is submitted within 10 working days of mobilisation. An extension of time shall not be granted for any delay experienced by the Contractor for not having its Health and Safety Plan accepted.

Hold Point:

- Possession of Site shall not be granted until the Health and Safety / Emergency Response Plan has been accepted by the Sydney Trains Project Manager.

Health and Safety / Emergency Response Plan:

- Maintain a Health and Safety / Emergency Response Plan and when requested submit the plan to the Sydney Trains Project Manager for acceptance. The Health and Safety Plan shall include, as a minimum, the following items:

* A photocopy of all competency certificates and "tickets" as required by the Occupational Health and Safety (Certification of Plant Users and Operators) Regulations 1994.

* A documented "Work Method Statement".

* Documented "Job-specific Safety Analysis".

* Daily checklist that the plant operators and foreman propose to use.

* Personal protective equipment and rules for the Site.

* The Site Induction and Training Plan.

* Contact names and telephone numbers for the two senior staff who shall have responsibility for health and safety responsibilities for the project.

* A statement confirming that the project shall be conducted safely in accordance with the Contractor's safety management system as tendered or previously advertised.

* "Toolbox" meeting minutes.

Daily Site Inspections:

- Unless otherwise delegated the foreman shall conduct a daily Site inspection to identify any hazards that may not be controlled by the Job-specific Safety Analysis and take appropriate action to control any hazard that is discovered. Any hazard identified shall be recorded in the foreman's diary or other appropriate report together with the action taken.

Personal Protective Equipment:

- Where an unsolicited visitor to the Site must pass a hazardous area before being inducted, signs and/ or barricades shall warn visitors about the necessary personal protective equipment.

C
ADMINSTRATION

PROJECTED CASH FLOW .01

Prior to the first progress payment being made, provide an estimated monthly cash flow schedule for agreement by the Sydney Trains Project Manager.

SHOP DRAWINGS .02

General

Documentation: Include dimensioned drawings showing details of the fabrication and installation of structural elements, building components, services and equipment, including relationship to building structure and other services, cable type and size, and marking details.

Diagrammatic layouts: Coordinate work shown diagrammatically in the contract documents, and prepare dimensioned set-out drawings.

Record drawings: Amend all documented shop drawings to include changes made during the progress of the work and up to the end of the defects liability period.

Services coordination: Coordinate with other building and service elements. Show adjusted positions on the shop drawings.

Space requirements: Check space and access for maintenance requirements of equipment and services indicated diagrammatically in the contract documents.

Submission medium: Electronic and hardcopy.

Building work drawings for building services: On dimensioned drawings show all:

- Access doors and panels.

- Conduits to be cast in slabs.

- Holding down bolts and other anchorage and/or fixings required complete with loads to be imposed on the structure during installation and operation.

- Openings, penetrations and block-outs.

- Sleeves.

- Plinths, kerbs and bases.

- Required external openings.

SUBMITTALS .03

Make all required submittals nominated and described in the Specification.

Submittals shall be made progressively for each stage of work.

The purpose of submittals is limited to the following:

- Establishing quality standards.

- Providing permanent records for future maintenance and replacement.

- Providing additional construction details not indicated in the Contract Documents.
- Verifying compliance with the performance-based requirements.

Approval of submittals by the Sydney Trains Project Manager is limited to acceptance in relation to the purpose of submittals stated above.

Acceptance of submittals by the Sydney Trains Project Manager does not mean acceptance of:

- Suitability for intended purpose and durability.
- Sizes, weights and strength of products or components.
- Work that does not comply with legislative requirements.

Acceptance of submittals by the Sydney Trains Project Manager does not reduce or modify:

- The Contractor's responsibility to provide a warranty.
- The Contractor's obligations.
- Any right of the Principal.

CONTRACTORS'S REQUESTS FOR INFORMATION .04

The Contractor may issue requests for information (RFI) to the Sydney Trains Project Manager during the construction phase of the Project. It is the Contractor's responsibility to coordinate and consolidate all queries from its suppliers and Subcontractors and then determine whether there is a genuine need to issue an RFI.

SAMPLES .05

Incorporation of samples: Only incorporate samples in the works which have been endorsed for inclusion. Do not incorporate other samples.

Retention of samples: Keep endorsed samples in good condition on site, until the date of practical completion.

Unincorporated samples: Remove on completion.

CONFIDENTIALITY .06

Do not, without prior acceptance. either while work is in progress or after completion, disclose or permit disclosure by or to anyone, any matter or thing relating to the Site nor cause or permit such disclosure to occur on any film, photograph, video, soundtrack, printing or other media (whether for public broadcast or otherwise), as a direct or indirect result of possession of the Site.

INSPECTIONS AND TEST PLANS .07

Inspection and test plans (ITPs) are to be compiled for each trade indicating inspections, tests and submittals required in accordance with the relevant Specification. ITPs shall clearly show the parties responsible for each activity and the record form which is being used to verify the work.

COMMISSIONING AND ACCEPTANCE TESTS .08

Submit a programme itemising the systems and the proposed dates for conducting acceptance tests in accordance with the Construction Programme.

Tests shall be performed on dates agreed with the Sydney Trains Project Manager. Provide at least 5 working days notice of tests which are to be performed and require witnessing.

Keep a record of tests carried out and the results obtained and compile test reports.

Provide all necessary labour, materials, stores, apparatus, tools and instruments for Site tests.

Where tests are required to be performed away from the Site, provide everything necessary to carry out the tests.

Submit details of the proposed commissioning procedures and methods of measurement. Commissioning procedures and measurement methods which are not accepted or are not in accordance with methods detailed in the Specification will not be accepted as evidence that the systems have been correctly commissioned.

Start up, commission and test the systems in accordance with the accepted programme. A representative of the Contractor, who is qualified to commission the installation, shall remain on Site until the system is operating to the Sydney Trains Project Manager's satisfaction and signed off.

Arrange for the setting up of major equipment to be supervised by the manufacturer's representative, who shall remain on Site until the equipment is operating to the Sydney Trains Project Manager's satisfaction. Coordinate the manufacturer's representatives so that testing is carried out according to the accepted programme.

Record the results of commissioning tests on standard test forms.

When a system is operating satisfactorily, submit a copy of the test results on the standard test forms. Test forms shall be neatly hand written or typed.

Acceptance tests shall be witnessed when the test results are considered to be satisfactory. Any additional acceptance tests for each system shall be witnessed if necessary. If the equipment fails the second test, the cost of witnessing further tests will be charged to and payable by the Contractor at current hourly rates plus expenses and such charges will be deducted from payments.

Instruments shall be calibrated by a NATA certified testing authority within six months prior to the date of use. Instruments shall not be used to measure quantities which are outside their accurate measuring range. If there is reasonable doubt as to the accuracy of an instrument, the instrument shall be recalibrated or alternatively, quantities measured with the disputed instrument shall be remeasured with another accepted instrument.

Conduct the tests as detailed in the Specification and perform all additional tests as instructed to bring the systems, components and plant into running order.

D
SITE

ACCESS .01

At all times, take into account the nature of the Site and the requirements of the public and owners/ users of adjacent properties. The Contractor's personnel shall conduct themselves in a polite and understanding manner at all times.

Isolate work areas in a safe manner to prevent access of the general public from entering work areas.

Submit details of Site access for acceptance prior to starting work on Site. Provide all necessary temporary crossovers, ramps, and the like, for vehicular access to the Site.

Provide safe passage for pedestrians and vehicles on public land adjacent to the Site at all times. Provide and operate required traffic safety and control equipment, including barricades, signs and lights. Provide and operate additional traffic control equipment required by the relevant authorities, if any, and the personnel to operate such equipment if required.

SITE CONTROL PLAN .02

Prepare and submit a Site Control Plan within 10 working days of the commencement date.

The Site Control Plan shall include details and locations of:

- Site perimeter:

* Temporary fences and hoardings.

* Gates, security points and controls.

* Temporary walls, Site retention and supports.

* Temporary crossings and access.

- Loading areas:

* Locations of cranes and hoists, including mobile cranes.

* Loading and unloading areas.

- Temporary accommodation:

* Site offices.

* Toilets, lunch rooms, first aid and amenities.

* Storage areas.

- Pedestrian traffic:

* Vehicular traffic and public roads adjacent to the Site and adjacent property.

* Temporary obstructions, barriers, signs and lighting to public footpaths.

- Nuisance, water, dust and noise:

* Location of noisy equipment.

* Temporary drains, pumps, erosion and dust control.

- Vehicular traffic:

* Public roads and vehicular traffic adjacent to the Site and adjacent property.

* Temporary obstructions, barriers, signs and lighting to such roads.

* Temporary traffic controls, lights and personnel to operate such equipment if required.

Where the location of such items may change from time to time during the construction period the Site Control Plan shall be revised and resubmitted.

TEMPORY FENCING AND HOARDING .03

To AS 4687 and Sydney Trains/ ASA Standards.

Erect and maintain all necessary hoardings and fences, screen, gates, footways, gangways, gantries, platforms, temporary enclosures, etc, to protect the work, persons and property, as indicated on the Design Drawings or as otherwise required by the Principal, local and other authorities.

Provide a 2400mm high solid hoarding to separate public areas from the construction zone. Where hoardings are subject to crowd loads, the hoarding must be designed to support a load of 3kN/ m.

Provide a sketch of the temporary fencing to the Sydney Trains Project Manager for acceptance prior to erection.

Gates to temporary fencing shall be lockable and the fencing as a whole shall prevent the general public from entering work or storage areas. A key to lockable gates shall be provided to the Principal at the commencement of the work to enable emergency access.

The requirements of the Contractor's method of working shall be at their own responsibility in respect of erection and removal of fences and hoardings.

Paint temporary hoardings with colours and designs subject to acceptance by the Sydney Trains Project Manager.

Hoardings shall be inspected/ checked, at frequent intervals, by qualified personnel, with any defect or graffiti/vandalism being rectified immediately.

PROTECTION OF STRUCTURES AND SERVICES .04

Take care to protect all structures including walls and fences, and all services and property, during the execution of the work.

Give a minimum of 48 hours' notice, to the Sydney Trains Project Manager, prior to the disconnection of any existing services. Any disconnected services shall be properly tagged and signed to the Sydney Trains Project Manager's acceptance.

Payment for all restoration of existing structures, systems and services shall be deemed to be included in the Contract Sum.

At all times do everything prudent or necessary to ensure the safety and freedom from injury, damage or interference of all the adjacent public or private lands, properties, ways, services and all other adjacent real or personal property whatsoever and of persons at any time in the vicinity of the Site and, in particular, without affecting the generality of the foregoing. Carry out and provide such shoring or other forms of support, shielding, fencing and other protective and precautionary measures as may be necessary for any of the purposes aforesaid.

Provide such temporary paved areas, temporary roads, washing down facilities and associated drainage, etc, as are necessary to ensure that mud is not carried on to adjacent roads or paved areas by vehicles leaving the Site. Vehicles removing spoil, rubbish, etc, from the Site shall not be loaded beyond their normal capacity and shall be fitted with proper tail-boards and sideboards to eliminate the dropping of spoil or rubbish. Roads

and paths, if fouled by spoil, concrete or other material, shall be cleaned immediately to the extent of washing if necessary or as directed by the Sydney Trains Project Manager. The Contractor shall be held responsible for all damage caused by construction traffic (whether their own or that of Subcontractors or suppliers), workmen's vehicles, etc.

Ensure that access roads are cleaned on a daily basis and repair any damage to the road as a result of the work.

Remove from the Site all rubbish resulting from the work as it accumulates. Upon completion of the work, leave the Site in a clean, tidy and habitable condition.

SIGNBOARD .03

Do not install or display signs or advertisements without prior approval from the Sydney Trains Project Manager. Remove any signage or advertisements immediately if instructed to do so by the Sydney Trains Project Manager.

Supply and install appropriate signage for the Site to advise visitors clearly and in accordance with occupational health and safety guidelines. Do not erect any signs, signposts or advertisements on or near the Site except where allowed by the Principal.

ASBESTOS /HAZARDOUS MATERIALS .04

Asbestos and other hazardous materials, if found during the course of the work, shall be removed from Site in accordance with statutory requirements and the Occupational Health and Safety Regulations 2007.

Notify the Sydney Trains Project Manager and all of the Principal's project consultants, in writing, immediately following the discovery of hazardous materials or contaminated ground.

ELECTRICITY .05

Arrange a temporary electricity connection to the Site with the relevant supply authority and pay all associated charges and usage fees. Allow for all temporary electrical switchboards and cabling to service the Site. Provide lead stands to support extension leads a minimum of 2.5m above the ground.

TEMPORARY LIGHTING .06

Provide temporary access lighting and all necessary task lighting to undertake the work and surrounding areas as necessary.

NIGHT LIGHTING .07

Provide night lighting for any part of the Site which is potentially hazardous and which is not fully protected from contact by a person. Also provide night lighting for any part of the Site when directed by the Sydney Trains Project Manager to do so.

WATER .08

Arrange connection with the relevant supply authority and pay all connection and usage costs.

The Contractor shall be responsible for any adjustment and extension to the service that they may require.

Take all practicable steps to minimise the use of water and prevent wastage of water.

Comply with all current water restrictions imposed by the authorities.

Pay all fees and fines imposed by the authorities with regard to excess consumption or wastage of water, if any.

PLANT .09

Provide, either directly or through their Subcontractors, all necessary plant and equipment (including tackle, tools, cranes, hoists, gantries, mixers, pumps, scaffolding, timbering, braces, struts, forms, shutters, sheds and hoardings) required for the efficient and proper carrying out of the work and for its Practical Completion by the due date.

Plant equipment shall comply with all authority requirements, industrial agreements and accepted industry practices. Obtain all necessary permits, keep the equipment well maintained and regularly inspected.

Plant shall include suitable lighting to ensure a safe working environment.

SITE ACCOMMODATION AND AMENTIES .10

Erect all Site office, lunchroom, toilet (connected to sewer at Contractor's expense), first aid and other Site accommodation facilities as required to allow the work to proceed until completion.

Provide accommodation that is neat, clean, well constructed, watertight, well lit, ventilated and properly maintained.

Accommodation shall be erected before Site works commence and shall be removed at Practical Completion. The area shall be made good after their removal.

Provide a separate office on the Site for the use of the Sydney Trains Project Manager, with desk, drawing table, drawers, stool, etc, and also a separate office for Site meetings.

Amenities shall comply with legislative requirements, industrial agreements and accepted industry practice. The Contractor shall obtain all required permits, pay any applicable fees and comply with all conditions.

TEMPORARY STRUCTURES .11

All temporary structures erected on Site shall be maintained to present a neat, clean and orderly appearance including the condition of paintwork and structural repair.

PARKING ON SITE .12

The Contractor and their Subcontractors and personnel will be required to make their own car parking arrangements, either by using space available on the Site, where agreed with the Sydney Trains Project Manager, or by parking in surrounding streets or parking stations.

E
SUBCONTRACTS

GENERALLY .01

Bind all Subcontractors (whether nominated or otherwise) by signed agreements to all conditions, obligations and responsibilities to which they, themselves, are bound under the Contract. Submit evidence to the Sydney Trains Project Manager of the signed agreements with all Subcontractors, when requested.

Stipulate reasonable commencement dates and the order and manner for which the work is to be undertaken in conformance with the Contractor's Programme.

CONSENT FOR SUBCONTRACTING .02

In the event that the Sydney Trains Project Manager does not dissent in writing within 5 working days, then such acceptance shall be deemed as being granted.

The Sydney Trains Project Manager shall not unreasonably dissent to the subcontracting of any portion of the work and, in any case of such consent not being given the Sydney Trains Project Manager shall state the reason to the Contractor. The Sydney Trains Project Manager may issue conditional approval.

CONTRACTOR'S RESPONSIBILITY .03

An acceptance to subcontract any part of the work shall not relieve the Contractor from any of their liabilities or obligations under the Contract.

Notwithstanding any such acceptance to subcontract, the Contractor shall be liable to the Principal for the acts, defaults and neglect of any Subcontractor or any employee or agent of the Subcontractor as fully as if they were the acts, defaults or neglect of the Contractor or the employees or agents of the Contractor.

F
SYDNEY TRAINS PROJECT MANAGER

SERVICE OF NOTICES .01

Verbal service of notices to the Contractor's responsible Site personnel by the Sydney Trains Project Manager shall be an acceptable form of transmission of urgent instructions. Such instruction shall be later confirmed in writing as soon as practicable.

INSPECTION OF WORK BY SYDNEY TRAINS PROJECT MANAGER .02

Provide facilities for the Sydney Trains Project Manager and any person nominated by the Sydney Trains Project Manager to facilitate inspection of the work including:

- Use of the Contractor's scaffolding, personnel lifts, swing stages, safety harnesses and the like.

- Protective clothing, including not less than four sets of new safety helmets, jackets, eye protection and boots, kept in new condition.

Inspection, testing of or comments made by the Sydney Trains Project Manager or the Principal or any agent or employee of the Principal on any of the Design Drawings, Shop Drawings, As-built Drawings, Specification and / or works completed by the Contractor, shall not impose liability for defective works upon the Principal and shall in no way reduce or cancel the Contractor's obligations under the Contract.

Engineering inspection, termed "supervision" means that work shall be inspected during construction and after completion for the purpose of determining whether such work has been conducted and completed in substantial conformity with the Design Drawings and Specification.

Work shall be inspected to determine whether the quality of materials is as specified, to witness such tests as are specified and considered necessary to confirm that materials, plant and equipment comply with and perform in accordance with the Design Drawings and Specification.

Inspected work which does not conform to the Contract documentation will be advised in writing to the Contractor giving the reason(s) for the nonconformity. Reinspection will occur when written advice is received from the Contractor advising that the defective work has been completed and now conforms to the Specification. If reinspection of previously advised defective work is found to be incomplete, the cost of all further reports and inspections shall be charged to and payable by the Contractor at current hourly rates plus expenses and such charges may be deducted from the Contract Sum.

Inspection does not guarantee that the work accepted conforms with the Design Drawings and Specification notwithstanding approval of such work by any notice in writing.

Inspection does not imply supervision of the conduct of the work, or the construction or the safety procedures followed in execution of the work.

If directed, give the Sydney Trains Project Manager access to off-Site factory locations to inspect products and fabrication procedures before delivery to the Site.

Where any work is to be covered over or have other work fixed to it, give sufficient notice before such covering over.

Provide the Sydney Trains Project Manager 48 hrs notice before all hold and witness point inspections.

SYDNEY TRAINS PROJECT MANAGER'S REASONABLE SATISFACTION .03

No expression of the Sydney Trains Project Manager's reasonable satisfaction or acceptance shall be deemed to be an acceptance of defective materials or workmanship not complying with the terms of the Contract, nor as authority for any variation, except where such variation is authorised as provided in the Contract.

AUTHORITY TO GIVE INSTRUCTIONS .04

The Contractor shall not accept instructions in relation to this Contract, other than those issued by the Sydney Trains Project Manager.

G
CONDUCT OF SITE ISSUES

LABOUR, DIRECTION AND COORDINATION .01

Provide, either directly or through their Subcontractors, all necessary labour for the carrying out and completion of the work in accordance with the provisions of this Contract, including properly qualified personnel such as project engineers, expediters, general and assistant foremen, leading hands and all other staff as may be necessary to ensure constant and competent direction and superintendence of all trades in all phases and parts of the work to comply with the required standards of the Contract.

The Contractor is responsible for the proper coordination of all work, including the work of all Subcontractors, and of all suppliers.

Manage all building components expressly made for the work manufactured off Site or stored or stockpiled off Site.

Ensure that the sequence of work prevents damage to completed work or delays to the programme.

Take full responsibility for employing effective methods to comply with the requirements of this Contract. Acceptance of such methods, if given by the Sydney Trains Project Manager, shall be given without prejudice and shall not relieve the Contractor of their responsibility.

Unless otherwise specified, all workmanship shall conform to the appropriate Australian Standards.

Workmanship described in one section of the Specification and referred to in another section shall be of equivalent quality.

CONTRACTOR'S PERSONNEL .02

Appoint qualified and experienced people for the duration of the work.

Submit details of all key people to be appointed and retain the same key people for the duration of the construction period, unless otherwise accepted in writing.

All key people shall be able to speak, write and understand the English language.

Provide the Sydney Trains Project Manager with the mobile telephone numbers of key people for communication at all reasonable times.

SITE INDUCTION .03

Provide and ensure that all construction personnel attend and receive a compulsory Site induction session in accordance with the legislative requirements before entering the Site for the first time.

The Site induction session shall instruct construction personnel on safety, conduct and all other relevant and project particular matters.

Keep records of attendance and issue all attendees with appropriate printed Site safety instructions.

Provide Site induction to any other person nominated by the Sydney Trains Project Manager who may have reason to enter the Site.

SITE MEETINGS .04

Fortnightly site meetings, or intervals as directed the Sydney Trains Project Manager, will be conducted at which a senior representative of the Contractor and the Sydney Trains Project Manager shall be present to discuss progress and any other Site issues. Arrangements shall be made for the attendance of other staff members and representatives of Subcontractors and suppliers as may be required. Representatives of the Principal and the consultants may also attend such meetings.

Chair such meetings, prepare records of the proceedings (Site meeting minutes) and distribute them within 3 working days after the meeting to the Principal, the Sydney Trains Project Manager and relevant consultants. Provide copies of relevant portions to the Subcontractors and suppliers as necessary.

The inclusion in the Site meeting minutes of any instruction given by the Sydney Trains Project Manager shall, upon confirmation of such record at a subsequent meeting, cause such instruction to be deemed a Sydney Trains Project Manager's written instruction in accordance with the Contract. Alternatively, confirm such an instruction, especially in writing, to the Sydney Trains Project Manager in accordance with the Contract.

At each Site meeting, submit to the Sydney Trains Project Manager:

- An update to the fortnighly monthly progress report containing the requirements of the Contract.

- An updated programme in bar chart format showing the work planned for the next fortnight.

REPORTS AND RECORDS .05

Fortnightly progress report:

- Submit a written monthly progress report describing the progress of the work in relation to the Construction Programme, including work being carried out off-Site.

- Submit the fortnightly progress report to the Sydney Trains Project Manager 2 working days before the last Site meeting in each calendar month.

- As a guide, the progress report shall include:

* Status against the Construction Programme and changes made to the Construction Programme since the previous report.

* Current critical path and near-critical paths indicating total float and constraints.

* Actions and corrections required to achieve Practical Completion.

* Status of Contract variation claims pending and approved, and forecast of variations anticipated, if any.

* Updated forecasting (cash flow) to completion

* Achievements including activities started and finished, milestones, outstanding information or approvals required and submittals completed and approved.

Submit monthly, a current and complete list of Subcontractors including full name and contact details, scope of the subcontract work, status of required submittals, status of work completed and any other relevant information.

Daily diary:

- Keep a diary to record general progress of the work, any significant events, construction personnel numbers and Subcontractors on-Site, temperature and weather conditions, meetings, visitors to the Site, inspections, delays, unusual events, on-Site accidents and the like.

- The original copy of the Site diary shall be available for inspection by the Sydney Trains Project Manager at any time without notice.

- Submit copies of the daily diary in part or in full, if directed by the Sydney Trains Project Manager.

PHOTOGRAPHS .06

Make a photographic record of construction progress prepared by a competent photographer with suitable equipment, and submit photographs regularly.

Photographs shall be made using a digital camera with suitable resolution to meet the current standard of technology and output in .JPG format.

Submit an electronic copy by email or on USB stick as directed by the Sydney Trains Project Manager.

Photographs shall be automatically date stamped.

Take at least 50 views each week. The required views shall include:

- General views of the work, taken from constant positions.

- Each fit-out and installation area.

- Work to be demolished, before and after demolition.

- Work to be concealed, including services, concrete reinforcement and embedment's before placing for each floor and installation area.

The Sydney Trains Project Manager may nominate the required date, time and location and direction of each view and may direct additional views. Photographs shall be clear and sharp, showing work without obstruction by equipment, vehicles and the like, except where such equipment is relevant to the work.

Take photographs of particular stages of the work and construction details.

Send digital photographs to the Sydney Trains Project Manager by email not later than close of business on the day of taking the photographs. Electronic documents shall be named to identify the project, location, level and date.

SITE SECURITY .07

The Contractor shall be wholly responsible for the proper and adequate safeguarding of the work and of fixed and unfixed materials on the Site during both working and non-working hours. This shall include but not be restricted to the risk of fire, water damage, theft, loss and interference.

No claims for extensions of time or extra costs will be allowed where damage or loss of materials or interruption of work was a result of the Contractor's failure to provide adequate safeguards.

At all intervals between work (eg overnight, public holidays, weekends, shutdowns), the Site shall be left in a secure condition that will not be considered an enticement for trespass, theft or other interference.

Nominate a person who is responsible for securing the Site at night. The after hours home phone number of this person shall be given to the Sydney Trains Project Manager at the commencement of the project.

BUILDING SET OUT .08

Upon taking possession of the Site, carry out a features and levels survey to establish or confirm title boundaries, existing levels, etc. Verify to the Sydney Trains Project Manager that these are in accordance with the Contract documents prior to the commencement of Site work or bulk excavations.

Engage and pay for a licensed surveyor to establish or verify Site boundaries and datum points as required.

Upon completion of the project a check survey is to be made and the exact relationship of the building to adjacent structures is to be recorded.

A copy of both survey reports (in hard copy and electronic format on disc) shall be provided to the Principal for record purposes.

COORDINATION SET OUT .09

Coordinate the setting out of the Site in an accurate manner and within the tolerances specified or implied in the Contract.

PERSERVATION OF BENCHMARKS .10

Preserve benchmarks at all times. If, for any reason, any are removed or obliterated they shall, at the cost of the Contractor, be replaced by a licensed surveyor acceptable to the Sydney Trains Project Manager.

CONSTRUCTION LOADS .11

Ensure that no excessive loads are put on any parts of the structure during construction work. On request, supply to the Sydney Trains Project Manager details of the loads for which the various parts of the structure were designed.

WORKING HOURS AND OVERTIME .12

Adhere to any time restrictions laid down by local council or any other authority having such jurisdiction with regard to construction activities and noise. Should work be required to be done during these restricted times, obtain approvals as necessary.

Working hours shall be as approved by the Environmental Development Record issued by Sydney Trains.

Allow for whatever hours are necessary, including overtime, to complete all work by the date of Practical Completion nominated in the contract.

Allow for working 24hrs during possession weekends.

Access to the Site and working hours are to be agreed with the Sydney Trains Project Manager. Normally in off peak hours for low risk work, as approved by the Sydney Trains Project Manager. High risk work must be completed during weekend possessions or between last and first train.

SAFETY WARNING SIGNS .13

Provide and display in prominent positions warning signs of dangerous activities, in accordance with AS 1319 and current dangerous goods legislation, and comply with all regulations appertaining thereto.

PROTECTION OF TRENCHES .14

Ensure that adequate safety barriers are provided and lit where trenches or other excavations are left open and shall provide suitable bridges and hoardings where access is required across them or covers as necessary.

WELDING, CUTTING OR GRINDING IN SITU (HOT WORK) .15

All operations shall be carried out in accordance with AS 1674 Cutting and Welding Safety Code. Some important features of the code are:

- Before work commences a Hot Work Permit must be submitted by the Contractor's Project Manager/ Supervisor with 48hrs notice to Sydney Trains for approval with RERU.

- Before issue of the permit the Site foreman shall inspect the Site and ensure that:

* All combustible materials shall be moved at least 10m clear of the work. Where this is not practicable combustible materials, including structural timber, shall be kept damp or shielded against the gas flame, sparks, slag or falling hot metal by sheet metal, fire resistant curtains, or similar (not ordinary tarpaulins).

* Any floor openings within 10m are covered, or if not possible, the floor below shall be protected.

* The area on the opposite side of a wall through which heat from a torch or flame might be conducted is clear of combustibles.

* A person is designated to stand by to watch for sparks, slag or hot metal that may penetrate the shields, and take action when necessary.

* Fire extinguishers are placed in special readiness in the area, and that the positions of hoses and hose reels are noted.

* Welders, assistants and watchers are instructed on the use of fire fighting equipment present.

- After operations are complete, or during interruptions (lunch or tea breaks), patrol areas shall be maintained, including surroundings and lower floors where smouldering fires may start, for one hour after work ceases.

- Special precautions must be taken where work in or near hazardous locations is unavoidable, eg where flammable solvents, gases or combustible dusts are present, on tanks, ovens, ducting or near spray shops. Refer to AS 1674 for particulars.

- Equipment that is damaged in any way must never be used. Regular inspection is necessary. Replacement of hoses at least annually is highly desirable.

FIRE PROTECTION .16

To minimise fire risk during construction, provide an adequate number of temporary fire extinguishers throughout the Site. As early as practicable, install and temporarily equip the fire hydrants where nominated in the Contract.

DISPOSAL OF CONTAMINANTS .17

The Contractor and any Subcontractors shall properly dispose of all solid, liquid and gaseous contaminants in accordance with statutory requirements. A waste management plan shall be submitted to the Sydney Trains Project Manager for acceptance, prior to commencement.

DISPOSAL OF REFUSE .18

Remove, from Site, all refuse including food scraps and the like, resulting from the work.

Refuse which is dropped from upper floors shall be discharged in hoppers, shutters, chutes or refuse buckets which are covered or designed to confine the material completely and prevent dust emission.

CLEAN SITE POLICY .19

Keep the Site clean and tidy at all times and as directed by the Sydney Trains Project Manager.

Progressively clean up the Site and remove all accumulated, discarded and surplus building material and debris.

On completion of the works and prior to handing over to the Principal:

- Remove all temporary buildings, structures, fences, services, plant and equipment.

- Remove all surplus materials and debris and clean the Site.

DISPUTES FROM NEIGHBOURS .20

The Contractor shall not be entitled to any extension of time under the Contract where such proceedings or disputes with adjacent or neighbouring owners or occupiers are due to any default of the Contractor or to any act of the Contractor, other than an act required by this Contract.

If the Contractor receives a request or complaint from an adjacent property owner, the public or any other source:

- Respond courteously, and with regard to any previous directions by the Sydney Trains Project Manager.

- Record all such requests and complaints received.

Notify the Sydney Trains Project Manager immediately.

EVACUTION PLAN .21

Prior to Practical Completion, prepare evacuation plans in accordance with the Principal's and Sydney Trains Project Manager's requirements and any local station evacuation requirements. Allow for evacuation plans to be placed at all exits. The evacuation plans shall be produced in A3 format and framed to the acceptance of the Sydney Trains Project Manager.

H
EXISTING SERVICES

GENERAL PROCEDURE .01

All work to existing services shall proceed without disruption to adjoining properties and building sites.

Existing services, where disrupted, shall be reconnected.

EXISTING SERVICES- DETERMINATION PRIOR TO EXCAVATION .02

Apply to Sydney Trains for a detailed site survey. The Contractor shall be aware that the lead time for provision of the site survey (DSS/ISS) from Sydney Trains can be up to 16 weeks.

Before commencing any work, locate and identify all existing utilities on or adjacent to the Site that might be affected by the work and assess whether the utilities are active or inactive.

Contractors are to complete their own services search scan, identifying any buried services prior to excavation.

Record the location of all utilities on As-Built documentation including inactive utilities and progressively record any other utilities discovered during the work.

Locations of utilities indicated in the Contract Documents and other documents made available to the Contractor are approximate only. The Principal and the Sydney Trains Project Manager shall not be responsible for the accuracy or completeness of such information.

Coordinate with and notify the authorities before commencing any work that affects the utilities provided by such authorities.

Obtain written confirmation from the authorities verifying that work has been carried out correctly.

Submit such written confirmation from the authorities progressively.

A minimum of 5 working days prior to commencing excavation on Site, forward to the Sydney Trains Project Manager an application for permission to commence excavation.

Ascertain the exact location of existing services by undertaking exploratory hand excavation prior to machine excavation.

Disruption or damage to the existing services shall be the responsibility of the Contractor and all costs incurred shall be borne by the Contractor.

Work on utilities:

- Carry out all work on utilities, including inactive utilities, in accordance with the requirements of the authorities.

- Protect and maintain all existing active utilities on or adjacent to the Site at all times.

- Relocate utilities if required and provide temporary utilities in accordance with the requirements of the authorities.

- Do not disrupt or prevent the continuous and proper supply of utilities during relocation.

Damage to utilities: In the event of any damage or disruption to any utilities on or outside the Site, immediately notify the Sydney Trains Project Manager and the authorities.

INTERRUPTION OF EXISTING SERVICES .03

The Contractor shall be responsible for the full liaison with the relevant authorities. Similarly, give due notice of intended reconnection of services.

Sydney Trains requires a minimum of 2 weeks' notice prior to any interruption of electrical services.

Sydney Trains requires a minimum of 3 weeks' notice prior to any interruption of SPI/PA services.

All services to be identified by the Contractor for the Sydney Trains Project Manager assessment.

CONNECTION TO EXISTING SERVICES .04

The Contractor shall be responsible for the full liaison with the relevant authorities. Similarly, give due notice of intended reconnection of services.

Sydney Trains requires a minimum of 2 weeks' notice prior to any interruption of electrical services.

Sydney Trains requires a minimum of 3 weeks' notice prior to any interruption of SPI/PA services.

All services to be identified by the Contractor for the Sydney Trains Project Manager assessment. The inclusion in the Site meeting minutes of any instruction given by the Sydney Trains Project Manager shall, upon confirmation of such record at a subsequent meeting, cause such instruction to be deemed a Sydney Trains Project Manager's written instruction in accordance with the Contract. Alternatively, confirm such an instruction, especially in writing, to the Sydney Trains Project Manager in accordance with the Contract.

At each Site meeting, submit to the Sydney Trains Project Manager:

- An update to the fortnighly monthly progress report containing the requirements of the Contract.

- An updated programme in bar chart format showing the work planned for the next fortnight.

I
CERTIFICATION & VARIATION

PAYMENTS .01

If no dispute arises over the value and/ or quality of the work, payment shall be made as provided in the Contract. All progress payments shall be deemed to be on account only. Payment may be made by electronic transfer, payee or order sent by prepaid post to the payee's address.

Before any payment is made, provide the Sydney Trains Project Manager with a certificate or statement in writing, in a form accepted by the Sydney Trains Project Manager and in accordance with the Contract certifying that the Contractor has paid all contributions in respect of the Contractor's employees, as required by any Act of Parliament, ordinance, regulation or otherwise. The programme must be provided in accordance with the relevant clauses of this document before any payment will be made to the Contractor.

Before becoming entitled to the final payment in respect of the work (including any variations or retentions), sign a Deed of Release prepared by the Sydney Trains Project Manager certifying that:

- They agree to the final Contract Sum as stated on such certificate.

- Payments due and owing to their employees and all sums due and owing to their Subcontractors have been paid.

- The Contractor has no further claims under or arising from the Contract.

Payments will only be made in strict accordance with the Sydney Trains Project Manager's Progress Claim format. As part of the progress claim, submit one copy of the monthly computerised payment records for:

- Superannuation.

- Redundancy payment scheme.

- Construction industry long service leave.

The Sydney Trains Project Manager reserves the right not to process progress claims if the Contractor does not provide computerised payment records in accordance with the above. Detail, in all progress claims, the value of any and all taxes paid or payable in relation to the work.

Provide the Sydney Trains Project Manager with a Quality Assurance Compliance Certification which states that the quality assurance verification of works has been undertaken.

PRELIMINARIES IN INTERRIM PAYMENTS .02

Preliminaries will be valued for the purpose of inclusion in interim payments on the following basis:

- Fixed charge items will be valued as and when the charge is properly incurred.

- Time related charge items will be expressed as a percentage of the Contract Sum excluding the value of all preliminary items and provisional sums. This percentage will be added to the value

of work properly executed and referred to in the Contract clause "Certificates and Payments" excluding the value of Changes. This method of valuing preliminary items is for the purposes of interim payments only and shall not be construed as setting a precedent for adoption in the valuation of Changes.

GST REQUIREMENTS .03

Comply with all current GST legislation.

SUPERANNUATION .04

Ensure that all superannuation obligations are met in accordance with statutory requirements and/ or relevant industrial awards and enterprise bargaining agreements. Make all records relating to superannuation payments on behalf of its employees available to the Sydney Trains Project Manager (or their nominated representative) within 5 working days from the date of request.

PROGRESS CLAIMS .05

Unless stated otherwise in the Contract, progress claims by the Contractor shall be issued to the Sydney Trains Project Manager for work completed to the last day of each month.

Progress claims shall set out the value of work completed for each major trade, nominated Subcontractors and nominated suppliers as defined in the form of Tender.

Variation claims are also to be submitted each month and are to include details of work and costs and must reference the Sydney Trains Project Manager's instruction.

Provide evidence with each progress claim that all amounts due to Subcontractors and suppliers have been paid

PAYMENT AGAINST PROGRESS CLAIMS .06

Progress payments by the Principal to the Contractor will only be made when the Contractor has submitted the Sydney Trains Project Manager's certificate together with the Contractor's tax invoice.

CONTRACT VARIATIONS .07

Notwithstanding the provisions of the Contract, the following requirements shall also apply regarding variations:

- Prior approval is required for all variations.

- Request for variations outside the scope of the above are required to be submitted through the Sydney Trains Project Manager to the Principal for formal approval before being put in hand. In this regard, the commitment shall be entered into, except upon issue of a notice to the Contractor by the Sydney Trains Project Manager on behalf of the Principal.

- Where a variation is proposed, the Sydney Trains Project Manager shall negotiate directly with the Contractor and, if outside the scope of the intent of the contingency sum, recommend same to the Principal.

- Where the Sydney Trains Project Manager considers a variation so large or so involved as to require the services of a Quantity Surveyor for assessment of the value of the variation, they shall make a recommendation to the Principal.

J
COMPLETION

GUARANTEES AND WARRANTIES .01

All guarantees and warranties available for the supply and installation of materials, goods and equipment, which extend beyond the defects liability period, shall be assigned to the Principal prior to Practical Completion.

Submit written warranties for all items as nominated.

Warranties associated with service trades will be included in the relevant service specification.

Normal guarantees on workmanship according to the Contract shall also apply.

OPERATION AND MANUALS .02

General

Authors and compilers: Personnel experienced in the maintenance and operation of equipment and systems installed, and with editorial ability.

Referenced documents: If referenced documents or technical worksections require that manuals be submitted, include corresponding material in the operation and maintenance manuals.

Subdivision: By installation or system, depending on project size.

Contents

Requirement: Include the following:

- Table of contents: For each volume. Title to match cover.

- Directory: Names, addresses, and telephone and facsimile numbers of principal consultant, subconsultants, contractor, subcontractors and names of responsible parties.

- Record drawings: Complete set of record drawings, full size.

- Drawings and technical data: As necessary for the efficient operation and maintenance of the installation. Include:

. Switchgear and controlgear assembly circuit schedules including electrical service characteristics, controls and communications.

. Charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

- Installation description: General description of the installation.

- Systems descriptions and performance: Technical description of the systems installed and mode of operation, presented in a clear and concise format readily understandable by the principal's staff. Identify function, normal operating characteristics, and limiting conditions.

- Systems performance: Technical description of the mode of operation of the systems installed.

- Baseline data: To AS 1851 and AS/NZS 1668.1.

- Documentation to AS 1851 including the schedule of essential functionality and performance requirements.

- Digital photographic records to Underground services.

- Equipment descriptions:

. Name, address, email address and telephone and facsimile numbers of the manufacturer and supplier of items of equipment installed, together with catalogue list numbers.

. Schedules (system by system) of equipment, stating locations, duties, performance figures and dates of manufacture. Provide a unique code number cross-referenced to the record and diagrammatic drawings and schedules, including spare parts schedule, for each item of equipment installed.

. Manufacturers' technical literature for equipment installed, assembled specifically for the project, excluding irrelevant matter. Mark each product data sheet to clearly identify specific products and component parts used in the installation, and data applicable to the installation.

. Supplements to product data to illustrate relations of component parts. Include typed text as necessary.

- Certificates:

. Certificates from authorities.

. Copies of manufacturers' warranties.

. Product certification.

. Test certificates for each service installation and all equipment.

. Test reports

. Test, balancing and commissioning reports.

. Control system testing and commissioning results.

- 7 day record of all trends at commissioning.

- Operation procedures:

. Manufacturers' technical literature as appropriate.

. Safe starting up, running-in, operating and shutting down procedures for systems installed. Include logical step-by-step sequence of instructions for each procedure.

. Control sequences and flow diagrams for systems installed.

. Legend for colour-codes services.

. Schedules of fixed and variable equipment settings established during commissioning and maintenance.

. Procedures for seasonal changeovers.

. If the installation includes cooling towers, a water efficiency management plan.

- Maintenance procedures:

. Detailed recommendations for periodic maintenance and procedures, including schedule of maintenance work including frequency and manufacturers' recommended tests.

. Manufacturer's technical literature as appropriate. Register with manufacturer as necessary. Retain copies delivered with equipment.

. Safe trouble-shooting, disassembly, repair and reassembly, cleaning, alignment and adjustment, balancing and checking procedures. Provide logical step-by-step sequence of instructions for each procedure.

. Schedule of spares recommended to be held on site, being those items subject to wear or deterioration and which may involve the principal in extended deliveries when replacements are required. Include complete nomenclature and model numbers, and local sources of supply.

. Schedule of normal consumable items, local sources of supply ,and expected replacement intervals up to a running time of 40 000 hours. Include lubrication schedules for equipment.

. Schedules for recording recommissioning data so that changes in the system over time can be identified.

. Instructions for use of tools and testing equipment.

. Emergency procedures, including telephone numbers for emergency services, and procedures for fault finding.

. Safety data sheets (SDS).

. Instructions and schedules conforming to AS 1851, AS/NZS 3666.2, AS/NZS 3666.3 and AS/NZS 3666.4.

- Maintenance records:

. Prototype service records conforming to AS 1851 prepared to include project specific details.

. Prototype periodic maintenance records and report to AS/NZS 3666.2, AS/NZS 3666.3 and AS/NZS 3666.4 as appropriate, prepared to include project specific details.

. For hard copies: In binders which match the manuals, loose leaf log book pages designed for recording completion activities including operational and maintenance procedures, materials used, test results, comments for future maintenance actions and notes covering the condition of the installation. Include completed log book pages recording the operational and maintenance activities performed up to the time of practical completion.

. Number of pages: The greater of 100 pages or enough pages for the maintenance period and a further 12 months.

Format – electronic copies

Scope: Provide the same material as documented for hardcopy in electronic format.

Quantity and format: Conform to Submissions – electronic submissions.

Printing: Except for drawings required in the RECORD DRAWINGS clause provide material that can be legibly printed on A4 size paper.

Format – hard copy

General: A4 size loose leaf, in commercial quality, 4 ring binders with hard covers, each indexed, divided and titled. Include the following features:

- Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE MANUAL, to spine. Identify title of project, volume number, volume subject matter, and date of issue.

- Dividers: Durable divider for each separate element, with typed description of system and major equipment components. Clearly print short titles under laminated plastic tabs

- Drawings: Fold drawings to A4 size with title visible, insert in plastic sleeves (one per drawing) and accommodate them in the binders.

- Pagination: Number pages.

- Ring size: 50 mm maximum, with compressor bars.

- Text: Manufacturers' printed data, including associated diagrams, or typewritten, single-sided on bond paper, in clear concise English.

Number of copies: 3.

Date for submission

Draft submission: The earlier of the following:

- 2 weeks before the date for practical completion.

- Commencement of training on services equipment.

Final submission: Within 2 weeks after practical completion.

MAINTENANCE .03

Prior to commencement of the defects liability period, submit a maintenance schedule for the Sydney Trains Project Manager's appraisal, setting out maintenance procedures and frequencies to ensure trouble free operation and maintain plant operating efficiency. The maintenance schedule shall be included in the Operation and Maintenance Manuals.

Routine maintenance of services is required in accordance with Australian Standards and the BCA.

Maintenance of essential services shall be included in the maintenance schedule and is typically referred to in the "Certificate of Occupancy" and/ or the "Certificate of Final Inspection".

Perform maintenance in accordance with statutory regulations and in accordance with the schedule. Maintenance shall be conducted in accordance with AS 1851 (all levels).

Perform maintenance at times and in a manner which will cause the least inconvenience to the normal operation and occupants of the building.

Coordinate, as necessary, the maintenance of the work with maintenance of other services to ensure all necessary Subcontractors are present when required for coordinated essential services tests.

Notify the Principal of intent to perform service at least 3 working days prior to each visit. Obtain the representative's signature on a service report at the end of each visit and leave a copy on Site. The service report shall detail the work carried out and shall list any adjustments and/ or rectification work found to be necessary.

Unsigned reports shall not be recognised and the Principal, at the end of the maintenance period, may elect to:

- Have additional services carried out to make up the number of signed reports at the Contractor's expense, or

- Deduct the cost of disputed visits at the pro rata rate for each of the maintenance visit(s) disputed.

At least 10 working days before carrying out the final service, request that an inspection be arranged to coincide with this service.

During the defects liability period, as defined in the Contract, the Contractor's responsibility shall include the provision of all labour and materials and the meeting of all other costs associated with the removal of defective parts and the installation, adjusting and testing of replacements. Carry out such work within a reasonable time.

This condition shall operate irrespective of the fact that payment for such part or parts may have been included in a Certificate of Payment issued by the Sydney Trains Project Manager.

Under certain circumstances, particularly where an inherent defect is suspected in any item of plant or equipment, the Sydney Trains Project Manager may direct that the defects liability period shall apply in full to that plant or equipment from the date of making good any replacement or otherwise and not from the original date of Practical Completion.

FURNITURE FITTINGS AND EQUIPMENT .04

The Contractor acknowledges Principal-supplied furniture, fittings and equipment must be picked up by the Contractor from Chullora Depot and delivered to Site prior to Practical Completion and that the Contractor has allowed for pick up, delivery and installation of those items within their Contract price and within their Construction Programme:

- Acceptance of deliveries, storage and protection of all furniture, fittings and equipment to be purchased by the Principal.

- Coordination of the installation of all furniture, fittings and equipment purchased directly by the Principal.

Take responsibility for all Principal-purchased furniture, fittings and equipment to be stored and/ or installed prior to Practical Completion. Make good any damage to furniture, fittings and equipment while on-Site prior to Practical Completion. Return to Chullora Depot of all replaced furniture, fittings and equipment unless directed by the Sydney Trains Project Manager for disposal.

CERTIFICATE OF OCCUPANCY .05

Obtain the Certificate of Occupancy and meet any regulatory requirements associated with the Certificate of Occupancy.

FINAL CLEANING .06

On completion, after all trades are finished and before the issue of a Certificate of Practical Completion:

- Thoroughly scrub, clean and seal all floors.

- Thoroughly clean all aluminium work (frames, kickplates, louvres, etc) and clean and polish all glass and mirrors.

- Ensure that all light fittings and mechanical air registers are cleaned.

- Check that all door closers are clean and correctly adjusted.

- Clean out all cupboards and shelves and any ducts and recesses.

- Clean all surfaces to the satisfaction of the Sydney Trains Project Manager.

PRACTICAL COMPLETION .07

Further to the provisions of the Contract, the following shall apply:

- The Certificate of Practical Completion will not be issued until all the requirements of the Contract are met.

Notwithstanding the issue of the Certificate of Practical Completion, the Contractor shall diligently complete the Contract, including the following items:

- Clean and remove all surplus materials, rubbish, dirt, etc.

- Make good all damage, stains and blemishes and replace materials where necessary.

- Clean all surfaces and clean and polish glass, tile and natural or chromed metal finishes.

- Bring all surfaces to the specified finishes.

- Check, test and ensure that all services and equipment are functioning efficiently and satisfactorily.

- Label all keys and hand over to the Sydney Trains Project Manager.

- Submit to the Sydney Trains Project Manager all guarantees, warranties, etc, specified within the Contract, including complete operation and maintenance manuals.

- Return all Contract documents.

OCCUPATION ON PRACTICAL COMPLETION .08

Further to the provisions of the Contract, the Principal shall be entitled to occupation of the whole of the work upon issue of the Certificate of Practical Completion.

Notwithstanding the Principal's occupation, the Contractor shall be granted access to the Site during the defects liability period to carry out any work required under the Contract. Such work shall be carried out at such times and in such a manner so as not to unreasonably interfere with the Principal's occupation.

In addition, provide a continuous maintenance service during the defects liability period to make adjustments to locks, doors, windows, drawers, catches, etc, without awaiting the report of these defects by the Sydney Trains Project Manager. This service shall consist of visits being made during the defects liability period with the Principal being given 48 hours notice before each visit.

BUILDING KEYS .09

All keys to completed buildings are required to be individually mounted on a purpose built key cabinet, numbered in accordance with the room numbering system and handed to the Principal via the Sydney Trains Project Manager upon the date of Practical Completion.

DEFECTS LIABILTY .10

The defects liability period shall be as stated in the Contract.

During the defects liability period, in addition to all other obligations, replace or otherwise make good:

- Any defect which becomes apparent.

- Any damage which results from such defect or from work to remedy such defect and which becomes apparent during the defects liability period.

Adjust and test equipment replaced during the defects liability period to show that the system of which it forms a part is giving commercial operation and the replaced items are performing according to the specified operating conditions.

Equipment repaired or replaced during its defects liability period shall have an 18-month defects liability period commencing from the date of making good, renewal or replacement.

Perform such rectification work as may be instructed in writing within 5 working days of notice. If the Contractor fails to rectify the work to the satisfaction of the Sydney Trains Project Manager, the Principal may engage others to finish such work without further notice and deduct the costs of same from amounts otherwise due or payable, or to recover such costs if they exceed the amounts due or payable. Such action shall not vitiate any of the responsibilities implied.

MAKING GOOD PRIOR TO ISSUE OF FINAL CERTIFICATE .11

Prior to the issue of the Final Certificate, upon written notification to the Sydney Trains Project Manager and without cost to the Principal, make good all defects, however caused (except where due to fair wear and tear occurring after Practical Completion) and including:

- Shrinkage and/ or expansion cracks in concrete, brickwork, blockwork, timber, plaster, cement, plasterboard, granolithic, monolithic, tiling.

- Warped and/ or twisted timber, doors, frames, windows, shelves.

- Loose and/ or drummy areas of plaster, cement render, granolithic, sheet vinyl, ceramic tiles, terrazzo, parquet, carpet.

- Stained and/ or marked off-form concrete, face blockwork, plaster, cement render, fibrous plaster, plasterboard, exposed granolithic, monolithic, sheet vinyl, carpet, paint, clear finish, and other applied finishes.

- Loose door furniture, window furniture, sanitary fittings, shelves, cupboards, supports, taps and outlets and flashings.

- Other defects as identified by the Sydney Trains Project Manager.

FINAL COMPLETION .12

Final completion shall mean the end of the defects liability period or when defects notified during the defects liability period have been made good to the satisfaction of the Sydney Trains Project Manager, whichever is later.

Final completion will not be granted until the Contractor provides evidence that they have undertaken maintenance of essential services as identified on the "Certificate of Final Inspection".

FINAL CERTIFICATE .13

The Sydney Trains Project Manager shall not issue the Final Certificate until the Contractor has furnished:

- Evidence that they have lodged applications for Certificates of Final Approval required by any statutory authorities having jurisdiction over the work, or required by the Contract.

- As-built Drawings warranties, Operating and Maintenance manuals, software and training.

- Spare parts and materials as required by the Specification.

- Where deemed necessary by the Sydney Trains Project Manager, a signed release.

A joint inspection shall be held prior to the completion of the defects liability period and all items noted for attention shall be completed to the satisfaction of the Sydney Trains Project Manager and the Principal's representative before the Final Certificate is issued.

Drawings on disk, supplied to the Principal at the time of Practical Completion shall be reissued to the Principal upon issue of the Final Certificate. All changes, new works or other alterations shall be shown and identified with revision labels.

K
PROVISIONAL SUMS

PROVISIONAL SUMS .01

Allow for the following procedure associated with the tendering and letting of all provisional sum packages:

- Allow, in the Tender, for all overhead costs and profit associated with the preparation, tendering, award and supervision on Site and off Site of all provisional sum packages as defined under the Contract.

- All provisional sum packages will be accepted by the Sydney Trains Project Manager prior to being released for Tender by the Contractor.

- All provisional sum packages will be tendered by the Contractor.

- The Contractor and Sydney Trains Project Manager will jointly select Subcontractors to be invited to Tender for the provisional sum packages.

- Ensure a minimum of three trade prices are received for each provisional sum Tender.

- The Contractor and the Sydney Trains Project Manager will work together to ensure the scope of the provisional sum package can be achieved within the allocated budget.

- All provisional sum packages will be considered when assessing Practical Completion of all work.

- Any provisional sum allowance stated in the documents must not be exceeded without the written approval from the Sydney Trains Project Manager.

EXCAVATOR AND LABOURER

EXTENT OF WORK .01

Carry out all excavation and backfilling necessary to complete the works shown and scheduled including for new services, footings, alterations of finished ground level, improvement of subfloor ventilation etc.

Limit clearing to area to be occupied by construction, paving or landscaping.

Keep bearing level solid and in the case of masonry walls stepped in masonry courses.

Erect and maintain planking and strutting to all trenches to prevent collapse.

Erect barriers and cover trenches to prevent accidents.

All investigation is to be carried out in accordance with AS 1726*: Geotechnical site investigation* and AS 1289: *Methods of testing soil for engineering*. All excavation is to be carried out in accordance with AS 3798*: Guidelines on Earthworks for Commercial and Residential Developments.*

COORDINATION .02

Discuss necessary excavation with the architect at the earliest opportunity and maintain communication during the works.

Excavation shall be made along the routes and at the places shown and scheduled.

Any significant variation in the length of the service lines shall be treated as a contract variation.

No claim for contract sum adjustment shall be considered for delays resulting from failure of the contractor to discuss all necessary excavation immediately following the letting of the contract for the works.

GENERALLY .03

Tenderers shall include in their tender for removal of all material other than rock, which may be encountered in excavations.

Remove everything on or above the site surface, including rubbish, grass, vegetable matter, , boulders and rubble.

Where a breach in a wall is required, carefully remove brick and stonework to provide the smallest practical opening. Following service installation, replace masonry around service in original positions using mortar ABS.

All superfluous excavated material to be carted away, or if so directed by the architect, spread and levelled on site where directed.

ROCK .04

Rock measured shall include only material which is found in ledges, masses, bedded or conglomerate deposits so firmly cemented as to present all the characteristics of solid rock and which, in the opinion of the architect, could not be removed with reasonable economy by hand pick or mechanical excavators and would require the use of pneumatic tools, wedges and sledge hammers, blasting, or special boring rig for its dislodgment. Floaters in excavation shall be classified and measured as rock, only when their least dimension exceeds 600 mm or when their volume exceeds one-quarter cubic metre.

If the contractor elects to move floaters and in so doing increases the widths or depths of excavation as specified, such additional excavation shall be made at the contractor's expense. They shall be filled with materials similar to those specified for the work, or with approved materials, compacted as specified at no extra cost to the principal.

MATERIALS OTHER THAN ROCK .05

Materials other than rock shall be defined as including material not covered by the foregoing definitions and includes all remaining portions of buildings footings, pipes, building materials and the like on the site.

QUANTITIES OF RO .06

Quantities of rock shall be measured jointly by representatives of the contractor and the architect in accordance with the current edition of the *Australian Standard Method of Measurement of Building Works (Institute of Quantity Surveyors)* .

The contractor shall draw the attention of the architect to the existence of rock before any backfilling is carried out so that quantities involved may be calculated. Failure to take this action shall result in rejection of any clams for extras in this regard.

EXCAVATION FOR TRENCHES ETC .07

Wherever possible excavation for services etc is to follow the route of existing trenches and site disturbances so as to minimise destruction of archaeological deposits.

EXCAVATION IN CONCRETE SLABS .08

Saw through existing for full thickness of pavement and remove concrete.

BACKFILLING .09

Backfill over new footings to provide minimum of 150mm depth of earth cover above top of footings.

Backfill new trenches for stormwater and sewerage drains to provide minimum of 300mm depth covering of new service lines.

Backfill all retaining walls and agricultural drains with granular fill to a level 150mm below finished ground level.

Fill remainder with excavated material.

EROSION CONTROL .10

Avoid erosion, contamination and sedimentation of the site, surrounding areas and drainage systems.

Keep the site free of water and prevent water flow over the works.

DRAINER

SCOPE .01

Refer also to the section on Excavator and Labourer: Excavation for Trenches etc.

The architect's drawings have been prepared to form a general guide only and the builder is responsible for setting out and excavation to the satisfaction of the architect.

The builder is responsible for obtaining a diagram from Sydney Trains and is to allow in his tender to locate and install the various lines in the area nominated in an approved and workmanlike manner.

The stormwater drainage is to be carried out in accordance with AS/NZS 3500*: National Plumbing and Drainage Code.*

No extras shall be allowed for modifications found necessary in site, or arising from failure to discuss the work with the authorities concerned and the architect before putting the work in hand.

DRAINAGE LAYOUT .02

Refer also to Excavator and Labourer: Excavation for Trenches, etc.

The architect's drawings have been prepared to form a general guide only and the builder is responsible for setting out and excavation to the satisfaction of the architect.

The builder to locate and install the various lines in an approved and workmanlike manner that is in accordance with AS 2566: *Plastics Pipelaying Design.*

No extras shall be allowed for modifications found necessary on site, or arising from failure to discuss the work with the authorities concerned and the architect before putting the work in hand.

COMPLETION CERTIFICATES .03

No work shall be covered of concealed from view before it has been inspected, tested and approved by the authority having jurisdiction over the works.

Where applicable, a certificate showing satisfactory completion and approval of each component of the works shall be obtained from the appropriate local authority and furnished to the architect before the Certificate of Practical Completion is issued.

WORK AS EXECUTED DRAWINGS .04

The builder shall supply to the architect before practical completion of the work a set of drawings clearly annotated to show all work as executed for the drainage services constructed under this contract, showing locations of pipes and fittings, including inspection openings, cleaning eyes, pits, control valves, and the like , and the depths of underground pipework. Give coordinate dimensions where applicable.

The architect shall supply a set of reproducible transparencies of the relevant contract drawings to the builder as the basis for this work.

DISRUPTION OF EXISTING SERVICES .05

Work shall be scheduled in such a manner as to reduce to the practicable minimum any interruption of existing services. The times of interruption of existing services shall be arranged beforehand with all persons affected by the interruption.

PIPES AND FITTINGS .06

Sewerage drains

Unplasticised PVC to AS 2340 and AS 2032 solvent welded with purpose-made UPVC fittings 100 mm diameter unless otherwise required.

Stormwater drains

Unplasticised PVC to AS 1254 and AS 2032 solvent welded with purpose-made UPVC fittings 80 mm diameter unless otherwise required.

Accessories

Provide all necessary traps, bend, junctions, inspections, risers, vents etc in accordance with SAA MP52: *Plumbing and Drainage Products.*

PIPELAYING .07

All pipelaying is to be carried out in accordance with AS 2032: *Code of practice for installation of UPVC pipe systems*.

Accurately grade bottoms of trenches falling to falling to outlets to provide continuous uniform bearing along the entire length of each section of the pipe. Allow for required depths for boundary traps, pits and other drainage accessories.

Keep grade trench base free of any large objects such as tree roots, rocks or other large protruding objects having any dimensions greater than 75 mm. Keep all main runs at least 300 mm clear of footings.

Observe all given dimensions, grades etc. Excavations in excess of that needed in trenches shall be filled in with sand.

Lay pipes to required depth but not less than to provide minimum cover of 300 mm.

Installation

Locate pipe at centre of trench to required grade not less than 1:40 for 100 mm diameter pipes and 1:60 for 150 mm diameter pipes, with spigot ends pointing in direction of flow.

Allow to provide adequate number of inspection openings at locations approved by architect.

DRAIN CLEARANCE AND TRACING .08

Clearance

When scheduled to "clear drains": Form access into the drainage system and jet, rod or physically clear all accessible drainage. Where unsurmountable blockages are

discovered locate and request instruction to excavate, repair and make clear. Jetting shall be sufficient to allow CCTV inspection of the condition of the drains. Make good access points.

Tracing and Condition Reporting

When scheduled to "trace drains" "report condition": Following jetting and clearance undertake a CCTV to record the condition and map the configuration and depth of the drainage. Drainage location may be by sonar, radar or by physical observation. Provide a written report and CCTV footage referencing accurately mapped drains detailing the drainage system's condition; the location of faults; drain material types and size. When required provide invert levels of drains at outfalls, manholes and pits.

CARPENTRY AND JOINERY

GENERALLY .01

The joinery of the works shall be carried out by a joiner approved by the architect. Approval of a tradesman shall be based on his experience in traditional joinery work.

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.

MATERIALS AND WORKMANSHIP .02

Materials and shrinkage

All timbers are to be the best quality of their respective kind, sound and well seasoned, free from sap, shakes, large or loose knots and other defects.

Any joiner's work which may split, fracture, shrink, part in the joints, or show flaws or other defects or unsoundness due to want of seasoning or bad workmanship is to be removed and replaced with new materials, together with all other work thereby affected.

Timber sizes

In accordance with AS 1684: *National Timber Framing Code.*

Scantlings to be sawn square to the size specified, allowance shall only be made for saw cuts and dressing.

Except where 'finished size' is specified, joinery shall be accepted with a fair trade allowance for working.

All joists, studs, plates etc are to be thicknessed a uniform size to eliminate checking and packing.

Levelling

All level of joists, plates, beams etc brickwork shall be done with compressed fibre cement sheet, cement mortar, or other such enduring material.

The use of wooden packing or wedges shall not be allowed.

Priming

Prime all external timbers before fixing. Prime on all faces before leaving the joinery shop.

Re-prime built in surfaces of door and window frames before installing.

Surfaces scheduled to be clear finished are to be sprayed with a water-repellent agent prior to transportation to AS 1606: *Code of practice for water-repellent treatment of timber, joinery and other timber products* and AS 1607: *Water Repellent solutions for the treatment of Timber, joinery, and other timber products.*

Workmanship

The whole of the carpenter's work throughout is to be framed, trimmed and finished in the best and most workmanlike manner; all necessary templates, linings, blocks, stops, ironwork, ironmongery, rebating, housing, beading, mitring, throating etc incidental to carpenter's and joiner's work is to be done although not specially mentioned herein.

All parts usually framed or scheduled as shown to be framed are to be morticed and tenoned; dowel joints shall not be permitted unless specifically scheduled.

Framing up to be performed as soon as possible and framing stacked horizontally to season with fillers between until required to be fixed in position, when they are to be wedged, glued up and finally cleaned off.

Fixing of woodwork

All timber work is to be fixed to masonry surfaces employing traditional timber grounds, wedges, plugs etc and all hardware fixed to masonry or plastered surfaces is to be fixed employing a timber mounting block, plate, batten, cleat etc.

Excepting where patent plastic plugs are specifically approved, all plugging and wedging is to be done with dry pine or cedar.

Unless otherwise approved by the architect, all fixing of woodwork shall be by nails driven by hand.

SCHEDULE OF TIMBER SPECIES .03

Except for where a particular item of work is specified elsewhere, the following timbers are to be used. Other species may be used with the architect's approval.

Meranti shall NOT be accepted.

Beams, bearers, joists	Seasoned select grade south-eastern Australian hardwood
Roof framing	Seasoned select engineering Oregon, stress grade F11
Roofing battens	ABS ROOFER & ROOF PLUMBER
Fascias, barge boards soffits etc	Clear Western Red Cedar to AS 1787

SEASONING .04

All joinery timbers to be seasoned so that moisture content is between 10% and 15%. The contractor shall submit satisfactory proof of moisture content if called upon by the architect.

FRAMING GENERALLY .05

Except where otherwise specified, cut, fix and erect all timber framing in accordance with
AS 1684: *National Timber Framing Code*

Timber sizes and joints to match existing configuration.

Patch

Where an element is scheduled 'patch', check out defective areas to square section and glue, pin and clamp new patch into cavity. The new section is to fit tightly showing minimum evidence of patching. Timber colour, species and grain is to match existing.

Plane off and stop up.

Where doors have been cored for lock cylinders patching may not be done with dowel.

Splice on (or piece in)

Where an element is scheduled 'splice on' or 'piece in', check out defective areas to form a scarf joint. Scarf on new piece of same cross-section to original and securely glue, clamp and otherwise fix to ensure adequate bearing. Recess fixings and conceal. For example, bolt heads and nuts to be concealed with timber patches.

Matching joinery

Where scheduled 'to match existing', new elements shall do so exactly in outward appearance. Moulding, profiles member sizes, construction etc must match that nominated which shall be preserved for comparison. The contractor is not expected to match things such as timber species, construction methods etc that are not exposed to view at completion.

ROOFER AND 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.*

Slating works shall be carried out in accordance with British Standards 5534 and 8000. AS 2597 *Installation of Roof Slates and Shingles (2002)* shall be not be referenced for workmanship but is referenced for its co-ordination with complimentary Australian Standards.

Leadwork shall be carried out in general accordance with the British Lead Sheet Association's *"Rolled Lead Sheet. The Complete Manual"*

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.

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

Avoid bringing copper into contact with galvanised steel, steel, iron or other ferrous material.

No roofing or roof plumbing is to be arranged so that water runs from a copper surface onto galvanised steel.

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

ROOF BATTENS .04

For slates

63 x 25 mm oregon or approved other species double nailed at every support.

For metal roofs

75 x 25 mm hardwood fixed as above

SARKING (MEMBRANE) .05

Slate Roofing Material

In accordance with AS 4200.1: *Pliable building membranes and underlay*. High vapour permeability with a flammability index not greater than two in accordance with AS 1530-2: *Test for flammability of materials.*

Selection: Klober Breathable Sarking "Permo Air"

Metal Roofing Material

In accordance with AS 4200.1: *Pliable building membranes and underlay*. Double-sided reinforced aluminium foil insulation with a flammability index not greater than two in accordance with AS 1530-2: *Test for flammability of materials.*

Installation

In accordance with AS/NZS 4200.2: *Installation of pliable building membranes and underlays*

UOS lay sarking with 150 mm lap and turned down 40 mm into gutter so that water penetrating roofing shall flow to gutter.

Keep sarking 100 mm clear of ridge to permit natural ventilation.

Provide anti-ponding sheeting at eaves made up of cement fibreboard or the like.

ROOF INSULATION .06

Material

Purpose-made polyester fibre insulation bats.

Where ceiling linings fixed to ceiling joists

Install 100 mm thickness between joists.

LEAD FOR FLASHINGS .07

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 .08

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

	lb/sq ft	kg/m²	Thickness (mm)
Box gutters	8	40	3.5
Wall top flashing	7	35	3.1

Hips, ridges and valleys. Over (cover) flashings to box gutters	6	30	2.6
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.

LEAD ROOFING .09

Generally

In accordance with the British Lead Sheet Association *"Rolled Lead Sheet. The Complete Manual"*

POINT UP .10

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

Compo mortar

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

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

SLATING .11

New Slates

Where 'new' slates are scheduled, supply new Del Carmen "Ultra" slates of uniform thickness and colour. Slate size to be 500 x 250mm. Provide sample to the architect for approval before proceeding. Where a "slate and a half" is specified (at alternative verge courses and where necessary at hips and valleys) provide 500 x 375mm slates.

Thickness: 5.5mm

Clout Nails

Each slate shall be double nailed with copper or bronze alloy clout nails 40 x 3.2mm.

Sarking

Klober "Permo Air"

WORK TO SLATE ROOFS .12

Workmanship

Cover the roofs nominated for slating with close joined slates (ABS) laid to the an 80mm head lap. The horizontal and vertical joints to range perfectly straight and the slates to be cut and dressed to ridges, gables, hips, valleys and verges. Each course of slate to be laid flat on the previous course and properly bonded in every part. Each slate to be fixed with 2 copper or bronze clout nails (ABS).

Alternative verge courses and where valley or hip abutting slate would reduce to less than 150mm shall be "slate and a half".

Silicon shall not be used at verges. Set slate over barge bed mould to match existing detail.

CORRUGATED METAL ROOFING .13

In accordance with AS 1562.1: Design and Installation of metal sheet roof and wall cladding

Replace

Where existing roofing is scheduled or shown to be 'replaced' remove existing roofing and supply and fix new roofing as below.

Unless otherwise scheduled, supply and fix new abutment, valley, hip and ridge flashings. Provide new chimney back, abutment and apron flashings.

Galvanised Profiled Steel

0.6 mm Fielders Z600 "S Rib" corrugated galvanised steel (not the zinc/aluminium type) fixed with galvanised steel roofing screws. Screws: Type 17 B8 corrosion resistant coating (Class 4), EPDM bonded washer. Bremick "Topgrip".

Where unsupported at side laps, fix with 4 mm dia galvanised steel bolts and square nuts.

Profiled fillers: Type: Purpose-made closed cell polyethylene foam profiled to match the roofing profile.

Location: Profiled fillers under flashings to the following:

- Eaves.

Insulation

Bradford "Anticon" FC FBS-1 Glasswool blanket 60mm thickness.

Insulation spacer

Description: Proprietary spacer system to prevent excessive compression of insulation between roof sheeting and framing.

Size spacers to suit the required insulation thickness documented and/or create an air space as required.

Safety mesh:

Standard: To AS/NZS 4389.

Coordinate with *0471 Thermal insulation and pliable membranes*. Do not call up welded safety mesh in more than one spot.

Accessories:

Material: Provide accessories with the same finish as roofing sheets, or as documented.

Sealant: 100% natural cure non-acid based silicone rubber to match roofing.

Installation

Set out in single lengths without end laps. Side lap 1–1/2 corrugations.

Fix and support in accordance with the manufacturer's written recommendations to suit the existing roof structure.

Where the sheeting abuts wall flatten corrugation and run up wall 100mm. Dress over with new stepped lead flashing,

BARGE ROLLS .14

Material to be same as adjacent roofing 50 mm dia to traditional profile. Finish at lower ends with an open roll and upper ends with end stop.

HIP AND RIDGE FLASHINGS .15

Lead

Fix timber ridge poles of elliptical profile 70 x 50 mm finished with flattened base packed off existing ridge and hip boards.

Under ridge flashing provide 50 mm wide, 30 kg/m^2 lead tacks at 600 mm centres fixed to pole with copper nails and of sufficient length to give a 30 mm clasp.

Dress over pole 30 kg/m^2 lead ridge flashing in max. 1.2 m lengths with 125 mm overlap joints with tacks.

In the case of hips to verandah roofs, scale down dimensions of pole and lead in discussion with architect.

VALLEY GUTTERS .16

Lead

Fix 19mm valley timber boarding to align upper face of gutter boarding with top face of jack rafters. Dress gutter run with 4mm external plywood, pinned and punched to substrate. Dress with Bidim underlay. Provide fillets to valley edge aligned with battening.

30 kg/m^2 lead with 450 mm cover installed in max 1200 lengths and lapped min 150 mm turnover min 25 mm at edges. Tack and clip to keep in place without fixing through the lead.

COVER AND OVER FLASHING .17

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 box gutter linings, apron flashings etc to finish minimum 20 mm clear of horizontal surface of same to prevent leakage by capillary action.

Point up in compo mortar ABS.

Copper clips

0.7 mm half-hard copper.

APRON FLASHING .18

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 .19

25 kg/m^2 lead or 0.7 mm soft zinc set out to allow min25 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 .20

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. Where close to ridge flash tray up to ridge flashing (or the like).

SOAKER FLASHINGS .21

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.

GUTTER AND ROOF BOARDING .22

Provide and fix gutter bearers and boarding under all areas shown for new box and tapered gutters and tray roofing.

Gutter boarding to be min 15 mm waterproof plywood arranged and fixed to be perfectly smooth and provide continuous support to coverings with falls as follows:

- lead gutters and roofs: 1:100
- stainless steel gutters and roofs 1:100

Round off all sharp edges and provide fillets at acute angles.

Provide treated timber framing to form up box gutter support. Isolate framing from masonry with pvc dpc material.

Form drips ABS TAPERED BOX & GUTTERS. Where drips are less than 75 mm high, form recess in drip to prevent leakage by capillary action.

TAPERED AND BOX GUTTERS .23

Lead

Form up trays of sheet lead ABS over gutter boarding ABS max length 1200 mm. Extend up adjacent roof slopes min 150 mm and turn over min 25 mm.

Unless otherwise scheduled, form 75 mm high drip joints at edges of trays. Where 50 mm drips are shown form recess at back of drip to prevent leakage by capillary action. Where trays abut against vertical surfaces turn tray up min 75 mm and provide and fix cover flashing ABS.

Form sumps and outlets as shown by traditional lead burned joints.

Trays should overlap in loose joint to allow for thermal expansion and contraction. Lead linings are to remain in position by weight alone and no fixings are to be made through lead.

Stainless Steel

Gutter and sump support: Provide framing and lining to support box gutters and sumps. Line the whole area under the gutters and sumps.

Fall: 1:100

Drips: 50mm step, allow for capillary break.

Underlay: "Bidem" non-woven polyester fabric.

Box gutter: Prefabricate box gutters to the required section and shape. welt to sump/scupper outlet as shown. Provide new stainless steel cover flashings inserted beneath original copper flashing position. Neatly dress cover flashing to dress flank and face of scupper. Clip cover flashings at 600 mm centres. Where indicted provide 50mm drips, formed to allow movement and to be anti-capillary. Allow for movement with sliding clips.

Hail guards: Install grating over the whole of the box gutter, over all box gutter sumps and over the edges of roofing sheeting entering box gutters.

Overflows: Where indicated provide overflows to prevent back-flooding. Size to pass 100% of the design rainfall. Discharge overflows in visible locations and so water does not enter the building or cause damage to the building.

Sumps: Minimum 50 mm deep and the full width of the box gutter, precise align to scupper. Laid over flaunching and underlay.

EAVES GUTTERS .24

Galvanised Steel

0.69 mm galvanised steel, rivet and sweat at joints.

Supplier, Size and profile

Mack Bris Roofing Products (tel 03 9571 7911) OG Gutter 150mm and 125mm as nominated, high back.

Installation

Reinforce all angles with gussets. Return ends where they do not butt against walls etc. Set to even falls (min 1:500) and provide thimbles for connection of downpipes.

Lap 30 mm at joints and paint with two coats bituminous paint to internal surfaces before final fixing.

Gutter brackets and accessories

Unless otherwise scheduled, support gutters on gutter brackets at max. 900 mm centres. Unless otherwise scheduled, brackets shall be of the same material and profile as the gutter.

Set out brackets to coincide with joints in guttering.

- Galvanised steel brackets: Mack Bros purpose made support bracket
- Stop ends: and RH) Mack Bros purpose made stop ends (LH
- Return Stop End: Mack Bros purpose made (LH and RH)
- External and internal corners: Mack Bros purpose made

DOWNPIPES .25

Galvanised steel

Form from 0.69 mm sheet by lock seaming. 90 mm diameter unless otherwise noted.

Cast iron

75mm internal dia 1800 mm length eared. Supplied by Architectural Leadwork

Installation

Form bends, offsets, junctions and shoes, well entered and soldered at joints so that downpipes follow profile of background. Angles in downpipes shall not be less than 120 degrees to minimise the chances of blockage.

Where downpipes abut masonry walls, fixing shall be by means of rod fixed astogal driven into timber wedges at approximately 1800 mm centres unless otherwise scheduled.

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.

RAINWATER HEADS .26

Steel

0.69 mm galvanised steel.

Fabrication

Fabricate to design shown or noted.

Reinforce all angles with gussets, return ends and the like. Reinforce unsupported edges with compatible metal rods worked into sleeves to provide a strong and durable configuration.

SPREADERS .27

Material

To match downpipes.

Fabrication

Make up with two sections of downpipe forming an inverted tee.

The horizontal section shall be 600 mm long and shall be perforated with 30 mm diameter holes at maximum 100 mm centres.

The ends of the horizontal section shall be partly closed by soldering in a semi-circle stop end to the lower portion of each end.

CLEANING DOWN .28

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, general metal work and aluminium work 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.

IRONWORK .02

The cast iron cresting for the principal ridges and hip ridges of roofs 4 and 13 shall be made by Wagga Iron (tel 02 6921 3387) (maker of the cast iron of the earlier phase and holder of the pattern).

Provide precise dimensions to the foundry for their preparation of the shop drawings, adaptation of patterns and casting.

Casting quality: the casting shall be sharp and of the exact form required, shaped to fit the parts accurately and to be free from air holes and flaws.

PROTECTION AND MAKING GOOD .03

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 of cast iron, 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 .04

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.

GALVANISING .05

UOS all steel/ironwork incorporated into the works shall be galvanised.

Galvanising shall be applied by the hot dip process to AS 1650: *Hot dipped galvanised coatings on ferrous articles* and AS 1214: *Hot dipped galvanised coatings on threaded fasteners*.

No drilling, tapping, cutting or welding shall be permitted after galvanising.

UNGALVANISED STEELWORK .06

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.

EXISTING METALWORK .07

Allow for all work in repairs, conversion, relocation and removal of existing metal items and the supply and fixing of new metal items to match existing as noted in the schedules.

WORK TO EXISTING .08

New metalwork is to be as all previously specified.

Replace: Where specified or scheduled "Replace' remove existing and UOS install new work to match original exactly. Provide all grounds, fixings to original detail.

Make good: Where an element is specified or scheduled "Make Good" cut out defective work and replace to match original.

Relocate: Where an element is specified or scheduled "Relocate", dismantle together with fastenings, fixings and install in new location nominated to match original details. Provide all necessary new fastenings, fixings to match original details.

Repair/Put in Working Order:

Where an element is specified or scheduled "Put in working order", check over, ease, refit and generally make good as necessary to put in good working condition.

PAINTER

SCOPE .01

Paint finishes to be applied only to surfaces scheduled.

PREPARATION .02

All surfaces shall be cleaned, firm and dry, and shall be thoroughly prepared before the application of any paint.

Unless otherwise specified do NOT remove existing paint layers.

All edges of paint layers and other imperfections are to be smoothed and feathered by sanding. Mechanical and disc-type sanders and water jetting shall NOT be used.

The extent of all preparation work is to be assessed by the contractor before tendering and no variation shall be allowed for same.

MATERIALS .03

All materials shall be of best respective kinds supplied on the job in sealed containers. Trade lines shall not be used.

Paint shall conform to the Australian Standard specifications nominated, in accordance with HB 73: *Handbook of Australian paint standards*, and AS 3730: *General information on the specification, purchasing and testing of paints for buildings*.

Internal acrylic paints are to be of the washable type equal to 'Wash and Wear' and the like.

APPLICATION .04

The work is to be carried out by a painter, experienced in this class of work, and in accordance with AS 2311: *The painting of Buildings*.

No painting shall be carried out in the damp or foggy weather nor shall painting be carried out under conditions that are not conducive to best results.

Ample time shall be allowed for drying between successive coats of paint.

All woodwork scheduled for paint finish is to be primed before being fixed and an additional coat given on all faces which shall be built in.

All paint shall be used in strict accordance with the manufacturer's recommendations.

The finish shall be smooth and free from brush marks, and consistent with the surface to which it is applied. All preparation shall be approved by the superintendent before applying any paint.

The use of paint rollers shall NOT be allowed for any work.

All finishing colours shall be verified in consultation with the superintendent and the colours scheduled shall be applied in two coats.

Prior to the application of the second coat, approval of the colour under full artificial light is to be obtained.

EXTERNAL WOODWORK .05

Woodwork finished in light colours

Sand down and spot prime bare areas with primer sealer conforming to AS 2311: *The painting of buildings (covers, surfaces and preparation).*

Putty up and make good cracks, nail holes and damaged areas. Sand down and dust off between each coat and paint:

- Primer: Dulux Precoat Step Oil Primer Sealer Undercoat
- Intermediate: Dulux Precoat Step Oil Primer Sealer Undercoat
- Two coats of Dulux Weathershield Gloss

Woodwork finished in dark colours

Sand down and spot prime bare areas with pink primer (red lead primer in exposed or damp situations) conforming to AS 2311.

Putty up and make good cracks, nail holes and damaged areas. Sand down and dust off between each coat and paint:

- One undercoat (tinted), AS 2311
- Two coats of gloss enamel paint, AS 3730.6

EXTERNAL METALWORK .06

Unpainted metalwork surfaces

Ironwork

Paint:

- Spot prime Dulux Durebild STE-PC237 2 pack epoxy resin based primer
- Primer: Dulux Durebild STE-PC237 2 pack epoxy resin based primer
- 2 top coats Dulux Metalshield Prem UV Resistant Enamel Topcoat gloss

Rust proofing

When a 'rust proofing' paint is scheduled, remove bulk of rusted material by scraping, wire brushing and the like, wash with proprietary phosphoric acid-type rust converter solution and dust off.

Prime and paint as for 'Ironwork'.

Non-ferrous metals and galvanised steel/cast iron

Paint:

- One etch primer, AS 3884: *Etch primers for pre-treating metal surfaces.*
- Primer: Dulux Durebild STE-PC237 2 pack epoxy resin based primer
- 2 top coats Dulux Metalshield Prem UV Resistant Enamel Topcoat gloss

Previously painted metalwork

Sand down and dust off and then paint:

- One undercoat (tinted), AS 3730.14
- Two coats of gloss enamel paint, AS 3730.6

PAINT REPAIRS .07

Making good

Where scheduled 'make good' surfaces shall be primed where bare metal or timber is showing, then painted with the same number and type of coats as adjacent paintwork. Finish coat to surfaces to be 'made good' shall be applied to whole areas, ie to nearest edge or re-entrant or salient angle.

Touch up

Where scheduled 'touch up', surfaces shall be painted ABS MAKING GOOD except that finished coat is to be close match to colour and finish or existing paint and be applied only to area of new or repaired work.

APPENDIX C LONG BLACKLEDGE ARCHITECTS SCHEDULE OF WORKS

Phase 1 and 2 works

Long Blackledge
Architects

MOUNT VICTORIA STATION RE-ROOFING WORKS
PHASE 1 WORKS (PLATFORM 2)

SCHEDULE OF WORKS FOR REPAIRS

Issue C 2024_10_01

Nominated Architect:
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NSW Reg 9057

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SCHEDULE OF WORKS

Referenced documents:

- Trade Specification
- Drawings AR001
- Sparks and Partner’s drawing H2102

1	General	
1.1	The purpose of works is to replace the roof plumbing, slating and corrugated steel sheeting to the whole of Platform 2 building (with the exception of the canopy roofing).	
1.2	Works shall be carried out in accordance with TfNSW/Sydney Trains protocols.	
2	Demolition	
2.1	Dismantle and cart away roof coverings and attendant roof plumbing as nominated.	
3	Protection	
3.1	Provide all hoardings, barriers and notices necessary for the works.	
3.2	Ensure the buildings remain watertight during the works	
4	Re-roofing	
4.1	Roof 1: Carefully remove slate and battening. Provide new slating on new Oregon battening. Reset all chimney stack abutment flashings. Provide new lead hip and ridge flashings, assume reuse of existing timber rolls. Provide 150mm OG galvanised guttering with fabricated, soldered corner pieces. Provide stop ends and lead under-flashing at ridge abutment with Roof 8 to form weathertight intersection.	
4.2	Roof 2: Carefully remove slate and battening. Provide new slating on new Oregon battening. Provide new lead abutment, valley, hip and ridge flashings, assume reuse of the existing timber rolls. Provide 150mm OG galvanised guttering with fabricated, soldered corner pieces. Provide 90mm dia. gal. DP's and spreaders generally as the present arrangement. Provide lead flashings at the abutments with Roof 3 to form a weathertight intersection. Provide GCI to south hip.	
4.3	Roof 3: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide galvanised steel verge roll trim and hip flashing (to match Roof 15 profile). Provide lead ridge roll (provide new timber roll). Re-form flashings to chimney stack MV10 in Z600 galvanised steel. Provide 150mm OG guttering, 90mm dia. downpipes and spreaders to generally match present arrangement. Allow for the relocation and reinstation aerial following completion of the roofing works.	

4.4	Roof 3: Provision sum: Allow $3,000 ex GST for work in association with the isolation detailing of the electrification stanchion.	
4.5	Roof 4 and Roof 5: Remove existing roof sheeting and rooflight. Protect ridge mounted vents. Allow for an inspection of the roof timbers (Hold Point). Provide Z600 GCI on sarking and new battening. Provide Velux fixed roof light reference FSS06. Provide lead ridge rolls (with new timber rolls) and galvanised steel verge roll trims. Re-flash ridge vents and stack MV3 in lead. Provide new lead abutment stepped flashing. Lead flash sill of window abuting Roof 4. Re-form gutter to form a 3 bay tapered lead box gutter. Discharge via a sump to a new galvanised rainwater head (with spitter) and 100mm dia. DP using the existing discharge point. Provide 150mm OG guttering to the east and west eaves with fabricated stop ends. Provide a 90mm dia. DP and spreader to east. Provide new 90mm dia. DP to west, link to inground stormwater system.	
4.6	Roof 6: Remove existing roof sheeting. Allow for an inspection of the roof timbers (Hold Point). Allow to replace the trimming beam full length, support at two points with a fabricated galvanised steel brackets. Form 3 bay lead lined guttering. Provide Z600 GCI roofing on new battens and sarking. Provide new lead abutment flashings. Provide new galvanised rainwater head with spitter. Provide new 90mm dia. DP, link to inground stormwater system.	
4.7	Roof 7: Remove existing roof sheeting. Provide new GCI sheeting. Provide new lead abutment flashings. Provide verge roll flashing. Provide 125mm OG guttering and 90mm dia. DP link to inground stormwater system.	
4.8	Roof 8: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide lead abutment flashing. Provide lead ridge and hip roll flashings (allow to re-use existing timber rolls). Flash vent pipe with a spigoted lead slate, extend sleeve to underside of terminal, lead burn seams. Provide 150mm OG guttering, 90mm dia. downpipes to match present arrangement. Re-form the abutment flashing between the timber clad wall beneath Roof 9 and Roof 8	

4.9	Roof 9 (provisional item): Provide radiused galvanised 0.6mm TMT steel formed to match the existing roof. Provide lead hip rolls (using the salvaged timber roll) and form a lead hip valley gutter at the junction with Roof 8. Provide new abutment flashings (flash service penetrations). Provide 150mm OG guttering and 2no. 100mm dia. downpipes and spreaders aligned to mullions.	
4.10	Roof 10: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide lead abutment flashings. Provide new galvanised steel flashings to chimney stack no 6, extend back flashing to wall. Provide 150mm OG guttering in two sections and 2 no 90mm dia. downpipes at northern and southern ends of the gutter at each run. Link to inground stormwater system.	
4.11	Roof 11: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide lead ridge and hip flashing (provide new timber rolls). Retain and protect flashings to chimney stack MV7 in lead. Provide lead valley flashings. Provide 150mm OG guttering, 90mm dia. downpipes to generally match present arrangement. Link to inground stormwater system.	
4.12	Roof 12: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening to stair enclosure roof. Provide new stepped abutment flashing. Provide galvanised roll verge flashings. Lead flash the junction between the section of roofs. Provide a 150mm OG gutter to the southern section of the lower roof section, extend gutter to allow the connection of a new 100mm dia. DP to the eastern flank of the porch beneath roof 13. Link to inground stormwater system.	
4.13	Roof 13: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening to stair entry roof. Allow to reset GCI wall cladding over roof section to fix new lead abutment flashing. Provide 125mm OG gutter, extend east to accommodate 75mm dia galvanised DP. Link to inground stormwater system.	
4.14	Roof 14: Provide replacement GCI to existing frame. Provide purpose made flashing extending 150mm beyond the sheeting, riveted to underside of the sheeting to provide a 50 x 50mm V gutter draining (as a spout) to the south.	
4.15	Roof 15: Retain and protect the Colorbond canopy roof (and roof plumbing).	
5	Carpenter	

5.1	Form new gutter to box gutter between roofs 4 and 5	
5.2	Form new gutter to roof 6	
5.3	Trim skylight opening in kitchen for new skylight, allow to reline upper surface of skylight opening. 	
6	Drainer	
6.1	Allow a provision sum of $50,000 ex GST for drainage works	
	Painter	
6.2	Paint all fascias, soffits, brackets, bargeboards to all Platform 2 roofs (except the platform side of Roof 15) to match.	
6.3	Paint all gutters, downpipes and hoppers. Colour to match existing.	
6.4	Paint ridge vents to roofs 4 & 5 and Roof 8 S&VP in micaceous iron paint	
6.5	Paint gable vent to Roof 3	
6.6	Paint new lining and roof light to kitchen roof light	

Long Blackledge
Architects

MOUNT VICTORIA STATION RE-ROOFING WORKS
PHASE 2 WORKS (PLATFORM 1)

SCHEDULE OF WORKS FOR REPAIRS

Issue C 2024_10_01

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SCHEDULE OF WORKS

Referenced documents:

- Trade Specification
- Drawings AR002
- Sparks and Partner’s drawing H2102

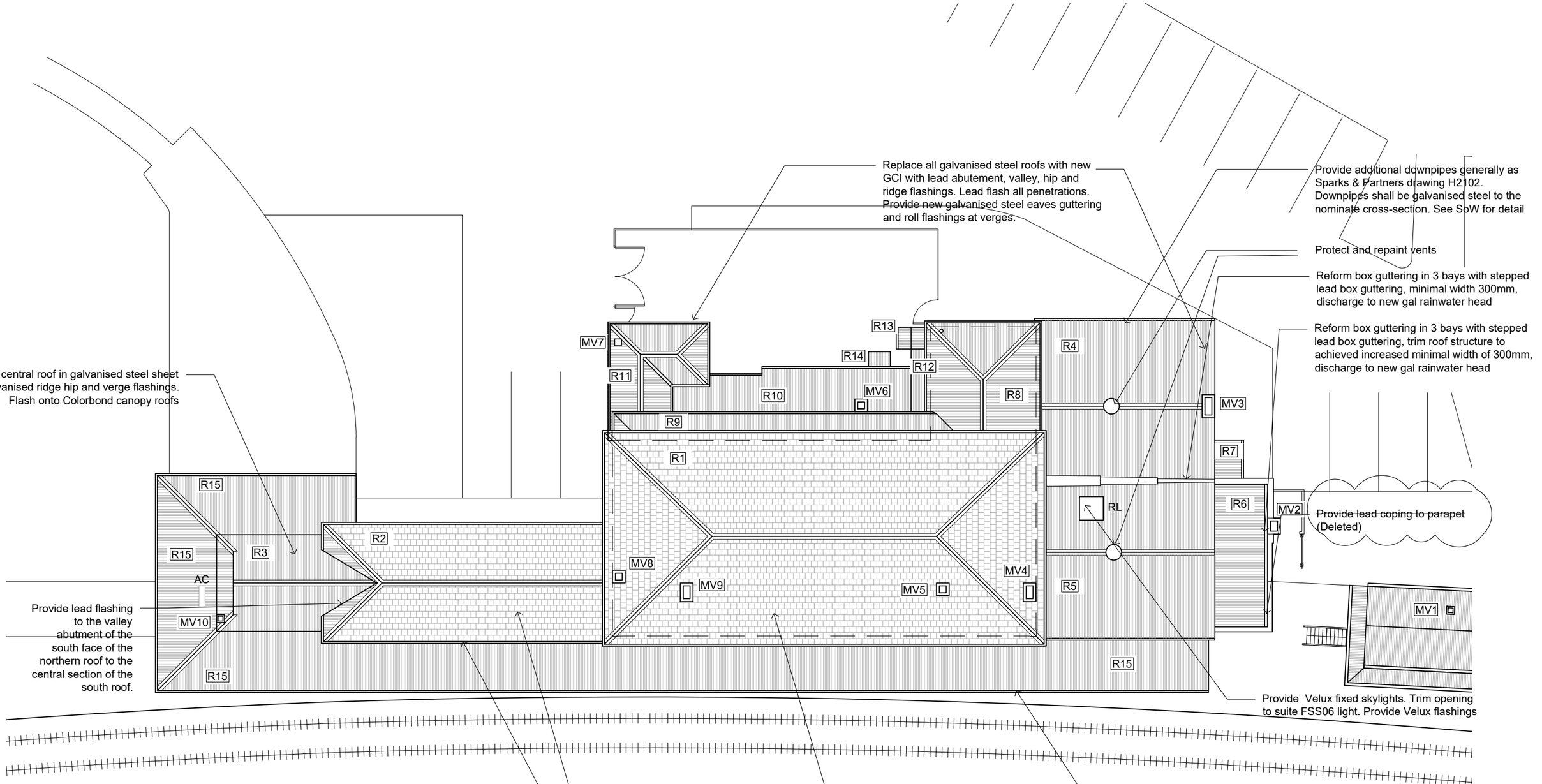
1	General	
1.1	The purpose of works is to replace the roof plumbing, slating and corrugated steel sheeting to the whole of Platform 1 building (with the exception of the canopy and freestanding WC roofing).	
1.2	Works shall be carried out in accordance with TfNSW/Sydney Trains protocols.	
2	Demolition	
2.1	Dismantle and cart away roof coverings and attendant roof plumbing as nominated.	
3	Protection	
3.1	Provide all hoardings, barriers and notices necessary for the works.	
3.2	Ensure the buildings remain watertight during the works	
4	Re-roofing	
4.1	Roof 16: Carefully remove slate and battening. Provide new slating on new Oregon battening over sarking. Reset all chimney stack abutment flashings. Carefully salvage the terracotta ridge tiling, clean up and prepare for reuse. Uncover the condition of the north west wall plate (Hold Point). Provide 150mm OG galvanised guttering with stop ends to east eaves. Carefully ease off miniorb facings to lantern, replace all abutment flashings. Refix cladding, taking care not to fix through lead upstand flashings Refix and point salvaged ridge tiles. Provide lead cover flashing to the full length of the abutment of the slate roof with the canopy, 30kg/m2 in lengths of 1500mm with 150mm side laps. Provide new lead flashings to the south abutment of the eaves with the canted canopy roof. Replace penetration flashing to vent in lead to match the existing arrangement.	
4.2	Roof 17: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide galvanised steel verge roll trim, extend full length of bargeboard. Provide 150mm OG guttering, 90mm dia. downpipes discharge via shoes to gullies. Provide cover flashing to R16 and reset apron flashing to stack MV11	

4.3	Roof 18: Carefully remove slate and battening. Provide new slating on new Oregon battening and sarking. Set out over barge moulding as existing arrangement. Provide 125mm OG galvanised guttering with stopends. Provide 80mm dia. gal. DP's and spreaders generally as the present arrangement. Salvage and reset terracotta ridge tiles.	
4.4	Roof 19: Remove existing roof sheeting. Provide Z600 GCI on sarking and new battening. Provide galvanised steel verge roll. Protect the lead backflashings to chimney stack MV14, Provide a new abutment flashing leading water away from the flank of the stack in a 30kg/m2 tray, discharge to gutter. Provide 150mm OG guttering, 90mm dia. downpipes to generally match present arrangement.	
4.5	Roof 20: Replace GCI and lead flashings to match existing arrangement. Provide galvanised roll verge trim. Provide 125mm OG galvanised gutter and 80mm dia DP.	
4.6	Roof 21: Protect GCI roof. Replace Alconite sheeting arrange electrification gantry with 30kgm2 lead. (Provision item) Provide 2 no downpipes to match existing (1800mm CI 75mm dia. eared bottom section, PVC upper section to match adjacent).	
4.7	Roof 22: Protect GCI roof. Replace abutment flashing with R21.	
5	Carpenter	
5.1	R16 north west wallplate: Allow to replace 10 lin m (with attendant works to plate rafters) like for like).	
5.2	R16 north west bargeboard: Scarf repair damaged board end (800mm)	
6	Drainer	
6.1	Clear all gullies of debris	
6.2	Provide new links to platform drainage for 2 reinstated downpipe points. Provide rodding eye to both lines.	
7	Painter	
7.1	Paint all fascias, rafter ends, soffits, brackets, bargeboards to all Platform 1 roofs (except the platform side of Roof 21) to match.	
7.2	Paint all gutters and downpipes. Colour to match platform 2.	
7.3	Paint vents in micaceous iron paint	

7.4	Paint Lantern	
7.5	Paint gable end framing and infill panels to match existing	

APPENDIX D LONG BLACKLEDGE ARCHITECTS RE-ROOFING DRAWING

AR001and AR002



1 - PLATFORM 2 BUILDING ROOF PLAN

1:200@A3

REV	DATE	ISSUE
A	10.07.24	Draft
B	23.07.24	Coping to R6 Parapet omitted

70 60 50 40 30 20 10 0 10mm

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tel: 0410 401 390
Nominated Architect:
William Blackledge NSW Architects Registration No. 9057

DRAWING TITLE: Mount Victoria Station Re-Roofing — Platform 2 Building Roof Plan

DRAWING NO.: AR001

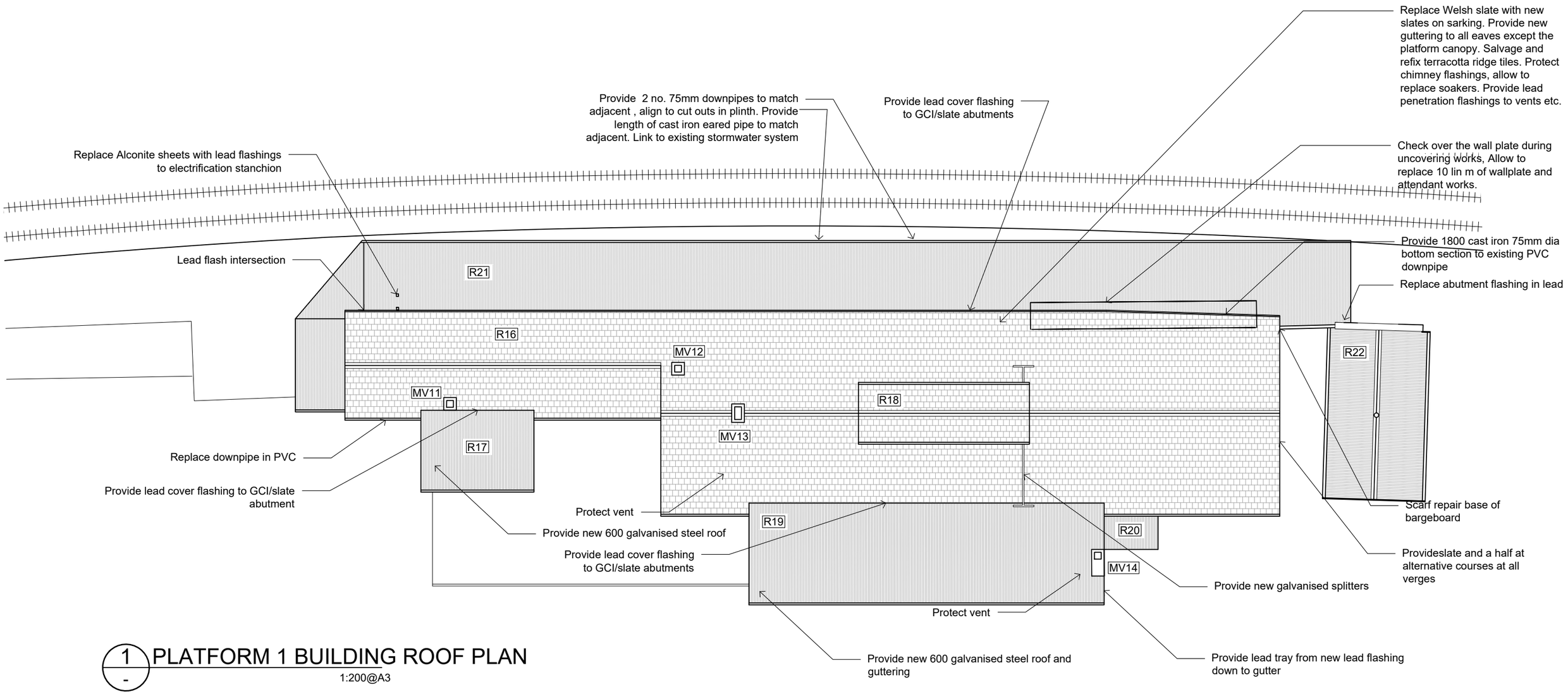
CLIENT: Sydney Trains

PROJECT: Mount Victoria Station

SCALE: 1:200@A3

DATE: JUN 24

REV: B



1 - PLATFORM 1 BUILDING ROOF PLAN

1:200@A3

REV	DATE	ISSUE
A	19.06.24	For Review

70 60 50 40 30 20 10 0 10mm

Long Blackledge Architects
Suite 303, Valhalla Studios, 166 Glebe Point Road
GLEBE, NSW 2037

tel: 0410 401 390
Nominated Architect:
William Blackledge NSW Architects Registration No. 9057

DRAWING TITLE: Mount Victoria Station Re-Roofing — Platform 1 Building Roof Plan		DRAWING NO.: AR002	
CLIENT: Sydney Trains	PROJECT: Mount Victoria Station	SCALE: 1: 200@A3	REV: A
		DATE: JUN 24	

HMS Application ID: 7529

[redacted]

Dear [redacted]

APPLICATION UNDER SECTION 60 OF THE *HERITAGE ACT 1977*

Mount Victoria Railway Station group
State Heritage Register No. 01203

Address:	Main Western railway, MOUNT VICTORIA NSW 2786
Proposal	S60 approval is sought for the replacement of the slate roofs with Spanish slate and to replace the profiled steel roofs with matching galvanised corrugated steel sheet.
Section 60 application no:	HMS ID 7529, received 14/10/2024

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

APPROVED DEVELOPMENT

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

Dwg No	Dwg Title	Date	Rev
Project Name: Mount Victoria Station Re-Roofing			
AR001	Platform 2 Building Roof Plan	June 2024	B
AR002	Platform 1 Building Roof Plan	June 2024	A

   b) Report: Heritage Impact Statement, Mount Victoria Railway Station, Platform Buildings 1 and 2 Re-Roofing prepared by William Blackledge, dated October 202
   c) Report: Roof Condition Report, Mount Victoria Station Re-Roofing prepared by Long Blackledge Architects, undated.

d) Report: Specification for the Works, Mount Victoria Station Re-Roofing prepared by Long Blackledge Architects, undated – Issue B.
e) Schedule of Works for Repairs, Mount Victoria Station Re-Roofing Works Phase 1 Works (Platform 2) prepared by Long Blackledge Architects, dated 1/10/2024 - Issue C.
f) Schedule of Works for Repairs, Mount Victoria Station Re-Roofing Works Phase 2 Works (Platform 1) prepared by Long Blackledge Architects, dated 1/10/2024 - Issue C.

EXCEPT AS AMENDED by the conditions of this approval:

HERITAGE CONSULTANT

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

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

SPECIALIST TRADESPERSONS

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

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

SITE PROTECTION

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

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

COMPLIANCE

5. 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

6. 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.

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 Rebecca Zulaikha, Senior Assessments Officer - TfNSW at Heritage NSW on (02) 9873 8500 or heritagemailbox@environment.nsw.gov.au

Yours sincerely

Ruth Berendt

Ruth Berendt
Senior Assessments Officer, Practice Lead, TfNSW MOU
As delegate of the Heritage Council Heritage NSW
Department of Climate Change, Energy, the Environment and Water
As Delegate of the Heritage Council of NSW
12 November 2024

cc: Blue Mountains City Council, council@bmcc.nsw.gov.au