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Transport for NSW Transport Access Program 3

Glenbrook Station Upgrade - Statement of Heritage Impact



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Executive summary

RPS has been engaged by Transport for NSW (TfNSW) to prepare a Review of Environmental Factors (REF) for the proposed Glenbrook Station Upgrade (the Proposal) as part of the Transport Access Program (TAP). This Statement of Heritage Impact (SoHI) has been compiled to assess potential heritage impacts associated with the Proposal. The aim of this report is to identify the heritage values of items which may be impacted by the Proposal, assess the heritage significance of these items, identify the potential impacts of the Proposal and provide appropriate recommendations to manage and/or mitigate these impacts.

Glenbrook Station is located on the Blue Mountains Line within the town of Glenbrook and the Blue Mountains Local Government Area (LGA). The station is located approximately 67 kilometres west of Central Station.

Glenbrook Station is listed on the RailCorp s.170 register (SHI #4801053) and the Blue Mountains LEP register (G011). The subject site for this assessment incorporates the Glenbrook Railway Station Group and includes the Commuter Car Park to the north and west of the station.

The Proposal includes the following key elements:

- installation of a new lift on the platform to provide access to the existing footbridge (footbridge and stairs to be retained)
- provision of a new station entrance which would include demolition of the existing (non-compliant) ramp from the footbridge to Burfitt Parade to be replaced with new stairs and a new accessible path from the existing footbridge extending east to the raised pedestrian crossing
- landscaping around the station entrance
- internal reconfiguration of the station building to allow for a new Family Accessible Toilet, a new ambulant toilet, communications room and staff facilities
- installation of an external glass canopy at the entrance to the Family Accessible Toilet to provide weather protection
- new formalised kiss and ride on Burfitt Parade
- installation of a pad mount electrical transformer adjacent to the new stairs
- ancillary works including lighting, fencing, new bin storage, minor drainage works, seating adjustments, improvement to station communication systems (including CCTV cameras), hearing loops, installation of wayfinding signage and other signage to identify existing and new accessible features including installation of new tactile ground surface indicators (TGSIs).

This SoHI has identified nil to moderate heritage impacts associated with the Proposal. The following recommendations and mitigation measures have been compiled in accordance with the findings of this report, relevant legislative requirements and in consideration of the following Sydney Train's guidelines and strategies:

- *Moveable Heritage Management Strategy 2015* – Sydney Trains
- *Moveable Heritage Disposal Policy 2016* – Sydney Trains
- *Heritage Technical Note: Installation of New Electrical and Data Services at Heritage Sites 2017* – Sydney Trains
- *Heritage Platforms Conservation Management Strategy 2015* – AMBS for Sydney Trains
- *Railway Footbridges Heritage Conservation Strategy 2016* – NSW Government Architect's Office Heritage Group.
- *Station Component Guide 2017* – Sydney Trains and NSW TrainLink.

Recommendation one: lift shaft, canopies and footbridge works

The design of the lift shaft and associated canopy for the waiting bay should refer to Section 5.12 and 5.13 of *the Railway Footbridges Heritage Conservation Strategy* (NSW GAO Heritage Group 2016). The current designs include similar coloured brick to the Station Building for the base of the structure and minimal canopies over the waiting bay. The proposed lift and canopy additions should aim to include the following:

- sympathetic, minimalist & recessive in design without replicating historicist features
- finishing of the super structure in a neutral recessive colour and use of visually recessive materials such as glass and lightweight slim frames.

Any additions to the footbridge should be sympathetic to the current materials and finishes. This includes the use of similar colours in the proposed handrails and balustrades.

Recommendation two: station entrance and landscaping

The station entrance works should avoid the removal of mature vegetation where practicable. Any vegetation that is to be removed should be replaced with similar species, for example any trees that are to be removed should be replaced with a similar species and where practicable plants should be mature specimens. Where possible the works to the station entrance on Burfitt Parade should include screening vegetation to reduce visual impacts caused by the new lift shaft.

Recommendation three: Station Building interiors and exteriors

Heritage Architect

A project heritage architect should be engaged to assist with modifications to heritage fabric such as the widening of doors for the Family Accessible Toilet (FAT), lowering of internal floors and fire proofing works. The project heritage architect should be involved in the further development of the design to provide advice on minimising impacts, avoidance of inadvertent impacts and implementation of the recommendations this report.

Installation of services

All new electrical and data services should be installed in accordance with the Sydney Trains *Heritage Technical Note: Installation of New Electrical and Data Services at Heritage Sites* (2017). The exact locations of services are unknown at this stage of design. Installation of services should be carefully planned in consultation with the project heritage architect and aim to reduce visual impacts to the Station Building. Where possible services should be installed within established conduits to reduce cumulative impacts to heritage fabric.

Moveable heritage

The removal or transfer of any moveable heritage items should be undertaken in accordance with the Sydney Trains *Moveable Heritage Disposal Policy* (2016) and the Sydney Trains *Movable Heritage Management Strategy* 2015-2017. The following best practice guidelines should be followed to avoid and/or minimise impacts to Glenbrook Station moveable heritage:

Consult

TfNSW should consult with Sydney Trains Heritage to identify all listed moveable heritage items and potential moveable heritage items located within the Glenbrook Station Building. Where discrepancies with the State Heritage Inventory (SHI) sheet have been identified in this report for an item, these should be further investigated to ensure no inadvertent impacts to moveable heritage occur.

Retain and conserve *in-situ*

Moveable heritage is an important component of a heritage listed site and should be retained *in situ*, in the first instance where possible. Further options to retain the moveable heritage items within the Station Master's Office (within the Station Building) should be investigated. For example, the NSW mirror could be retained within the Station Master's Office.

Retain and store

Where moveable heritage items cannot be retained in their original locations, the items should be tagged, recorded, catalogued and stored in secure long-term storage until a decision is made. In this instance the Out of Shed is currently used to store moveable heritage items such as the Railway Stations Garden Awards. Options to relocate the moveable heritage items to this location should be investigated. The conditions within the Out of Shed for long term storage should also be investigated, and any necessary repairs implemented.

Disposal

Where all other options are exhausted, and the decision is made to dispose of the moveable heritage items, an inventory of movable heritage objects at Glenbrook Railway Station Group should be made and assessed for retention by Sydney Trains prior to sale or disposal. If a movable heritage object is no longer required for Sydney Trains' purposes, it may be disposed of in accordance with an agreed Sydney Trains' Heritage Disposal Policy.

Display, promotion and training

Options should be investigated for opportunities to display, promote and interpret the moveable heritage at Glenbrook Station. This could include the display of gardening awards within the waiting room or development of heritage interpretation strategy for the station (see Recommendation Six: Heritage Interpretation Strategy).

Lowering of existing floor levels, widening of doorways and installation of new toilets

The proposed FAT is to be located within the existing male toilet. This portion of the Station Building was subject to upgrades in 2015 which replaced the flooring of the male and female toilets and passenger waiting room, and installation of new toilets. The lowering of existing floor levels associated with the Proposal is unlikely to impact heritage fabric.

The widening of the entrance to the proposed FAT at the western end of the Station Building would require the removal of heritage fabric. Efforts should be made to minimise visual impacts to the Station Building as follows:

- all works that involve direct impacts to heritage fabric should be guided by advice from the project heritage architect to minimise impacts and avoid inadvertent impacts
- new brickwork should incorporate bricks of a similar colour to existing brickwork, this includes colour of mortar and tying the new doorway into the existing decorative rendered trims and moulded string courses
- the floor lowering works in the proposed FAT should avoid inadvertent impacts to heritage fabric during the works. This would be achieved by establishing exclusions zones around heritage elements and minimising the use of machinery near these elements. Vibration from machinery during construction has been considered in a separate technical report
- details of the privacy wall will be finalised during the detailed design phase. No heritage impacts have been identified with this component of the scope of works as the components are relatively modern.

However, the location of this wall should be guided from advice from the heritage architect and be comprised of similar brick to the Station Building and base of the lift.

FAT canopy

The detailed design for the proposed FAT canopy should be developed in consideration of the Sydney Trains *Canopies and Shelters Design Guide for Heritage Stations* (2016). In particular:

New design should enhance the setting and significance of a place. In rare cases, where the station has a significant overall character that has been preserved through time, it may be justifiable to design the new structures as reproductions of the existing ones. In most cases, the appropriate response will be a modern structure with design qualities that are sensitive to the original.

The proposed canopy should aim to reduce potential visual impacts through the use of visually recessive materials and sympathetic design to the heritage structure. Current designs could be reconsidered to blend with the existing heritage canopies in terms of height and form. Detailed design should be developed in consultation with the project heritage architect, particularly in regard to the locations of attachments to heritage fabric and the methodology of construction.

Measures should be put in place to protect heritage fabric from inadvertent impacts during the construction and installation of the canopy.

Recommendation four: platforms

Protective measures should be put in place to protect heritage structures on the platforms during the regrading works and during any required trenching. Following the completion of these works the platform surfaces should be reinstated similarly to their current condition. The current concrete surfaces of the platforms reference the former gravel surfaces and are considered to contribute to the significance of the platforms.

Addition of tactile surfaces should be limited to the minimum amount required to meet legislative requirements.

The addition of new station components such as seating, lighting and signage should adhere to the Sydney Trains and NSW TrainLink *Station Component Guide* (2017) and aim to be sympathetic to current seating, lighting and signage currently located on the platform. Consideration could be given to the reinstatement of original heritage features to the platforms such as bubblers and seating. This would aim to further reduce the cumulative impacts associated with the Proposal and reference the heritage significance of the station.

Recommendation five: gardens

The platform gardens at Glenbrook Station are an integral component of the item's heritage significance. It is recommended that works to enhance and refurbish the Glenbrook Station gardens should be included to mitigate against potential visual impacts from the lift shaft and associated canopy structure.

Garden beds removed to accommodate the platform regrading works should be replaced with garden beds of a similar size and nature. All stone edging used in the garden beds to be removed from the station should be collected and stored appropriately to be reused at the station.

This recommendation would also mitigate against cumulative impacts and the removal of some garden beds to facilitate the proposed works. Landscape works to the station should be heritage led and precinct wide and undertaken in consultation with Sydney Trains Heritage. Effort should be made to identify potential stakeholders in the community that may be able to provide input to the management of the gardens at the station.

Further historical research and community consultation should be undertaken to determine the most appropriate plant species for the station complex. This could be built into the heritage interpretation strategy recommended below.

Recommendation six: heritage interpretation strategy

Consideration should be given to the formulation and implementation of a heritage interpretation strategy for the station, in accordance with the NSW Heritage Office guideline *Interpreting Heritage Places and Items* (2005). Currently there is no heritage interpretation at the station and much of the moveable heritage is stored within the Out of Shed. Options to incorporate heritage interpretation at the station could include signage to communicate the significance of the gardens at the station with historical photos, or incorporation of the gardening awards within the Passenger Waiting Room.

Physical components of the station precinct could be incorporated into the heritage interpretation strategy such as the reinstatement and enlivening of the gardens of the station and the cementing and regrading of the platforms to reference the original gravel surfaces. The heritage interpretation strategy should undertake additional historical research to inform these aspects of the station.

Any heritage interpretation strategy compiled for the station should be precinct wide and present a cohesive narrative of the significance of the item. Consideration should be given to the Sydney Trains Draft *Heritage Interpretation Guideline* (July 2018) in consultation with Sydney Trains Heritage, during the preparation and implementation of a heritage interpretation strategy.

Heritage interpretation at the station would communicate the history of Glenbrook Station to the general public and enable customers to engage with the heritage significance of the station. Heritage interpretation at the station could include themes such as the Glenbrook deviation and the NSW Railway Stations Gardens Competitions.

Recommendation seven: photographic archival record

A photographic archival record of the Glenbrook Station and its setting should be prepared prior to the commencement of works, in accordance with the NSW Heritage Division publications, “*How to prepare archival records of heritage items*” and “*Photographic Recording of Heritage Items using Film or Digital Capture*”. The photographic archival record should include the current state of the Glenbrook Station Group prior to the works, the internal configuration of the station building and views and vistas within, to and from the item. The photographic archival record should also consider the use of current recording technology such as photogrammetry and 3D laser scanning that could be integrated into the heritage interpretation strategy.

Copies of the archival record should be deposited with the Heritage Division, the Blue Mountains City Council and Glenbrook and District Historical Society.

Recommendation eight: Section 170 Heritage Division notification

In accordance with Section 170a of the Heritage Act, Sydney Trains should provide notification of the works to Heritage Division 14 days prior to the commencement of the works.

Recommendation nine: unexpected heritage finds guideline

It is unlikely that any archaeological remains would be encountered during the proposed works. However, if any unexpected archaeological deposits are encountered during construction the TfNSW *Unexpected Heritage Finds Guideline* (2016) should be followed.

Abbreviations and terms used in this report

Abbreviation/Term Definition

CHL	Commonwealth Heritage List
CMP	Conservation Management Plan
DCP	Development Control Plan
DP	Deposited Plan
DUAP	Department of Urban Affairs and Planning (former)
DDA	<i>Disability Discrimination Act 1992</i> (Commonwealth)
EP&A	<i>Environment Planning and Assessment Act 1979</i>
EPBC	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FAT	Family Accessible Toilet
ICOMOS	International Council on Monuments and Sites
<i>In situ</i>	Latin, meaning “on site” or “in place”
Lamp Store	Structures / buildings typically constructed to house kerosene and where lamps could be cleaned, filled and have their wicks trimmed.
LEP	Local Environment Plan
LGA	Local Government Area
MCA	Multi criteria analysis
NHL	National Heritage List
NSW GAO	NSW Government Architects Office
NSWR	NSW Rail
OEH	Office of Environment and Heritage
Out of Shed	Small structure / building located within historical station precincts associated with the postal service.
REF	Review of Environmental Factors
RNE	Register of the National Estate
SHL	State Heritage List
SHI	State Heritage Inventory
SoHI	Statement of Heritage Impact
TAP	Transport Access Program
TfNSW	Transport for NSW
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHL	World Heritage List

1 Introduction

RPS has been engaged by Transport for NSW (TfNSW) to prepare a Review of Environmental Factors (REF) for the proposed Glenbrook Station Upgrade (the Proposal) as part of the Transport Access Program (TAP). This Statement of Heritage Impact (SoHI) has been compiled to assess any potential heritage impacts associated with the Proposal. The aim of this report is to identify the heritage values of items which may be impacted by the Proposal, assess the heritage significance of these items, identify the potential impacts of the Proposal and provide appropriate recommendations to manage and/or mitigate these impacts.

1.1 Site identification

Glenbrook Station is located on the Blue Mountains Line within the town of Glenbrook and the Blue Mountains Local Government Area (LGA). The station is located approximately 67 kilometres west of Central Station.

Glenbrook Station is listed on the RailCorp s.170 register (SHI #4801053) and the Blue Mountains LEP register (G011). The subject site for this assessment incorporates the Glenbrook Railway Station Group and includes the Commuter Car Park to the north and west of the station (Figure 1.1).

1.2 Project background

A Heritage Impact Assessment for the Glenbrook Station Upgrade was prepared by CCG Architects in 2018. This report followed on from an earlier Heritage Impact Assessment prepared by CCG Architects in 2015. The report provided the historic context and statement of significance taken from the SHI sheet for the Glenbrook Railway Station Group. It provided a summary of the proposed design and identified potential advantages and disadvantages of the preferred option. A brief heritage impact assessment was undertaken, however no management and mitigation measures or recommendations to reduce these impacts were provided.

A SoHI has been prepared as part of the TAP 2.5 scope of works by Artefact Heritage (in prep). This assessment is currently ongoing. Management and mitigation measures recommended by Artefact Heritage have been considered in the formulation of this report.

1.3 The Proposal

The Proposal involves an upgrade of Glenbrook Station as part of the Transport Access Program which would improve accessibility and amenity for customers.

The Proposal would include the following key elements:

- installation of a new lift on the platform to provide access to the existing footbridge (footbridge and stairs to be retained)
- provision of a new station entrance which would include demolition of the existing (non-compliant) ramp from the footbridge to Burfitt Parade to be replaced with new stairs and a new accessible path from the existing footbridge extending east to the raised pedestrian crossing
- landscaping around the station entrance
- internal reconfiguration of the station building to allow for a new Family Accessible Toilet, a new ambulant toilet, communications room and staff facilities
- installation of an external glass canopy at the entrance to the Family Accessible Toilet to provide weather protection
- new formalised kiss and ride on Burfitt Parade
- installation of a pad mount electrical transformer adjacent to the new stairs

- ancillary works including lighting, fencing, new bin storage, minor drainage works, seating adjustments, improvement to station communication systems (including CCTV cameras), hearing loops, installation of wayfinding signage and other signage to identify existing and new accessible features including installation of new tactile ground surface indicators (TGSIs).

Figure 1.1 shows the general layout of key elements of the Proposal. Figure 1.2 shows the existing and proposed layout of the Station Building.

1.4 Methodology

This SoHI provides an assessment of the concept design for the Glenbrook Station Upgrade prepared by Design Inc in July 2018. A list of the drawings referred to is included as Appendix A of this report.

This SoHI has been prepared in accordance with the NSW *Heritage Act 1977* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), with reference to *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Burra Charter) (2013) and associated Guidelines as well as best practice standards set by the NSW Heritage Division.

Best practice guidance followed in this report includes *Assessing Heritage Significance* (Heritage Office (former), 2001) and *Statements of Heritage Impact* (Heritage Office and Department of Urban Affairs & Planning (former) 2002).

A site inspection was conducted by RPS Heritage Consultants on 17 July 2018. The site inspection was undertaken in accordance with the relevant guidelines and legislation. All rooms of the Station Building were accessed and all areas of the proposed works were inspected.

1.5 Authorship and acknowledgements

This report was prepared by Claire Rayner (RPS Senior Heritage Consultant). This report was reviewed by Aly Howard (RPS Heritage Manager – Sydney/Melbourne).

1.6 Legislative context

Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Australian Government's key piece of environmental legislation. The EPBC Act provides a legal framework for the protection and management of matters of national environmental significance. Heritage places are protected through their inclusion on the World Heritage List (WHL), the National Heritage List (NHL) or Commonwealth Heritage List (CHL).

There is one World Heritage Listed and National Heritage list nominated item located within 200 metres of Glenbrook Station. The Greater Blue Mountains Area (WHL #105127, NHL #105999) is located approximately 170 metres west of the Cowdery Street over bridge.

Heritage Act 1977

Historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the NSW *Heritage Act 1977* (Heritage Act) (and subsequent amendments) and may be identified on the State Heritage Register (SHR) or by an active Interim Heritage Order.

Places included on the SHR are available on an online database, the NSW Heritage Inventory database. In order to reach the threshold for inclusion in the SHR, a place needs to meet one of more of the heritage criteria identified by the Heritage Council of NSW. Glenbrook Station is not included on the SHR. There are no SHR items within a 200 metre radius of Glenbrook Station.

Government agencies have responsibilities under Section 170 (s. 170) of the Heritage Act to identify, conserve and manage heritage assets owned, occupied or managed by that agency. The Glenbrook Railway Station Group is listed on the Sydney Trains s.170 heritage and conservation register (SHI #4801053).

Environmental Planning & Assessment Act 1979

The NSW *Environmental Planning & Assessment Act 1979* (EP&A Act) is administered by the Department of Planning and Environment and provides planning controls and requirements for environmental assessment in the development approval process. This Act has three main parts of direct relevance to heritage. Namely, Part 3 which governs the preparation of planning instruments, Part 4 which relates to development assessment process for local government (consent) authorities and Part 5 which relates to activity approvals by governing (determining) authorities. Planning decisions within LGAs are guided by Local Environmental Plans (LEPs). Each LGA is required to develop and maintain an LEP that includes Aboriginal and historical heritage items which are protected under the EP&A Act and the Heritage Act.

The Blue Mountains LEP 2015 includes provisions for Heritage in Part 5 as well as a list of Heritage Items within the LGA in Schedule 5. Glenbrook Railway Station (G011) is included in Schedule 5 of the Blue Mountains LEP 2015. The Glenbrook Garden Centre (G12) is also listed in the Blue Mountains LEP and is located approximately 135 metres to the north.

1.7 Summary of heritage listings

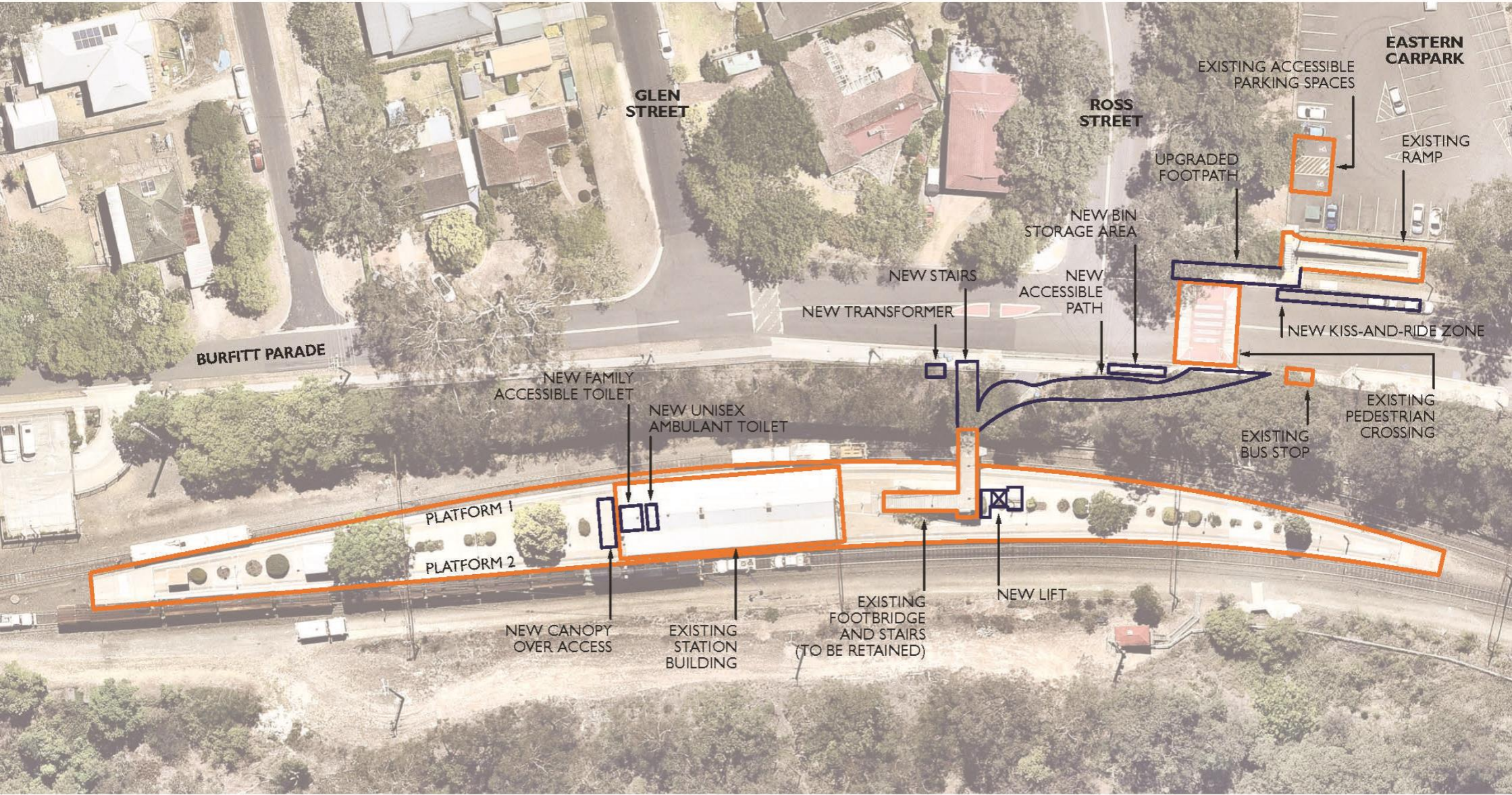
A summary of the relevant heritage listings for Glenbrook Station and the nearby area is provided in the table below and Figure 1.4.

Table 1.1: Summary of heritage listings

Name	ID	Listing	Location in relation to Glenbrook Station
Glenbrook Railway Station Group	SHI #4801053	s.170	Within
Glenbrook Railway Station	G011	LEP	Within
Glenbrook Garden Centre	G012	LEP	135 metres north
Greater Blue Mountains Area – additional values	AHD #105127	WHL/NHL	170 metres west

Key elements of the Proposal

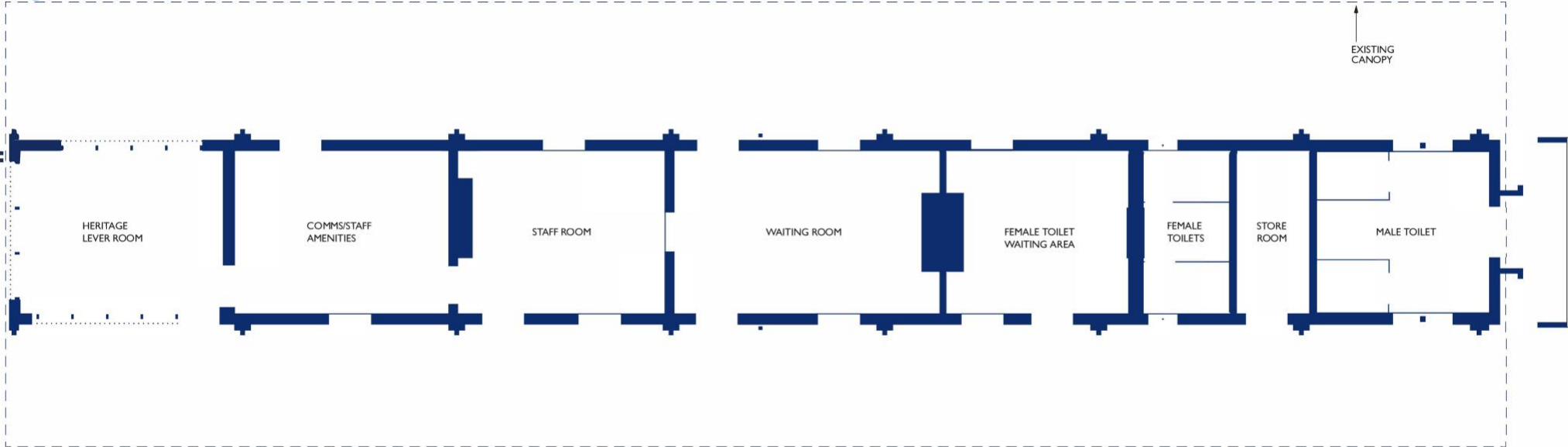
PROPOSED
EXISTING



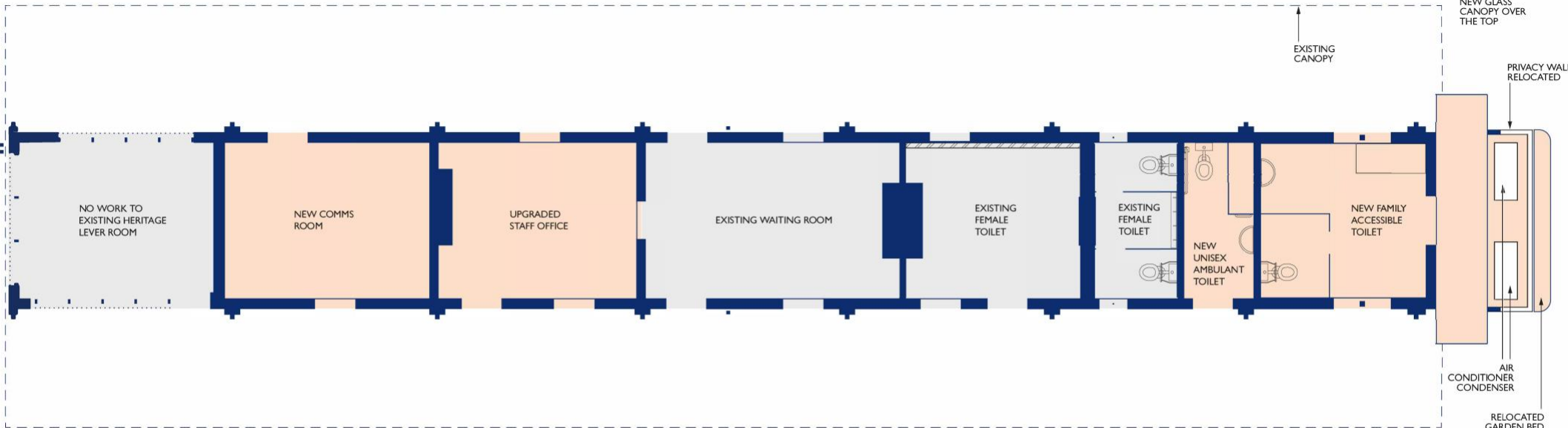
Indicative only. Subject to detailed design.



Figure 1.2



Existing station building layout



Proposed station building layout (indicative only)



Legend

-  S. 170 Register
-  EPBC Act World Heritage List
-  Blue Mountains LEP 2015
-  Glenbrook Station Upgrade

The Greater Blue
Mountains Area

The Greater Blue
Mountains Area -
Additional Values

Deane St

Cowdery St

Burfitt Pde

Mann St

Park St

Lucasville

G012, Glenbrook
Garden Centre

Glenbrook
Railway
Station
G011,
Glenbrook
Railway Station

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FIGURE 1.4: HERITAGE LISTED ITEMS

0 50 100 150 m
SCALE 1:3,500 AT A4 SIZE

LOCATION:

GLENBROOK

PURPOSE: HERITAGE

Technician: claire.rayner

Date: 14/09/2018

Path: N:\Projects\Conics_Sydney\PR138951 - TAP3\3
Cultural Heritage REF\1 Glenbrook\GIS\mxd\Figure 1.3
Heritage Items.mxd

VERSION (PLAN BY): C. Rayner

DATUM: GDA94
PROJECTION: MGA Zone 56

Data Sources:
RPS, Land and Property 2015, ESRI

CLIENT: TFNSW
JOB REF: PR138951-3

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FIGURE 1.3: SITE IDENTIFICATION

0 10 20 30 m
SCALE 1:1,400 AT A4 SIZE

LOCATION:
GLENBROOK

PURPOSE: HERITAGE
Technician: claire.rayner
Date: 14/09/2018

Path: N:\Projects\Conics_Sydney\PR138951 - TAP3\3 Cultural Heritage REF\1 Glenbrook\GIS\mxd\Figure 1.2 Site Identification.mxd

VERSION (PLAN BY): C. Rayner

DATUM: GDA94
PROJECTION: MGA Zone 56

Data Sources:
RPS, Land and Property 2015, ESRI

CLIENT: TFNSW
JOB REF: PR138951-3

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2 Historical background

2.1 Timeline

A brief timeline of contextual historical events is provided in Table 2.1.

Table 2.1: Key dates and events

Year	Event
1848	Main Western Line route first surveyed
1851	Construction on Main Western Line to Parramatta begins
1855	Main Western Line to Parramatta completed
1863	Main Western Line constructed to Penrith
1867	Main Western Line extended to Wentworth falls as single track, first railway siding at Glenbrook opened, known as "Water Tank" named for the water tank located nearby that was used to fill the steam engines.
1870	"Water Tank" renamed to Wascoe's Siding
1877	Wascoe's Siding opens to railway passengers
1878	Wascoe's Siding renamed to Brookdale Station
1879	Brookdale Station renamed to Glenbrook Station
1884	Glenbrook Village established
1885	Glenbrook Village gazetted
1898-1912	Further land is released and subdivided at Glenbrook Village although population growth is slow
1911	The Glenbrook deviation and track duplication commences
11 May 1913	Glenbrook deviation and track duplication completed, Glenbrook Station relocated south to its current position. Station consisted of island platform, pedestrian footbridge and goods siding. The Station Building, Out of Shed and goods shed were constructed later the same year.
1916	Renewal of footbridge, old footbridge transferred to Douglas Park
1926	Great Western Highway replaces pre-1913 Main Western Line route
1940s	Lamp Store constructed
1956	Main Western Line electrified
1990s	Footbridge upgraded, all components replaced other than the 1916 steel structure
2013-2014	Goods siding track removed and new commuter car park constructed along western side of curtilage boundary

2.2 Glenbrook Village

Multiple factors influenced early European interest in the Blue Mountains area soon after colonisation. The demand for suitable arable land was growing as the population increased towards the beginning of the 19th century (Thorpe 1998). Amateur botanists were drawn to the area to collect unique flora and fauna samples spurred by a growing demand for specimens in England and Europe (Karskens 2010). Whilst the seemingly

insurmountable barrier posed by the Blue Mountains attracted explorers and soldiers determined to be the first to discover a pathway across them.

The development of villages and towns is generally influenced by topography and means of communication (Jack 2000:6). For Glenbrook, the communication lines provided by road and rail can be seen to have influenced the development of the village over three phases. These are the arrival of the railway in the late 1860s, the Glenbrook deviation in 1913 and the realignment of the Great Western Highway in 1926 (Jack 2000).

Glenbrook village was originally laid out on both sides of the Main Western Railway in 1884. It was officially gazetted in 1885 and further subdivisions on the southern side of the rail line, close to the current Glenbrook Station, were established. The early development of shops and residences focussed on the original location of the Glenbrook Station. A number of shops and a passenger refreshment-room were constructed on Wascoe Street (Jack 2000: 8). Further subdivisions were released in 1898, 1903 and 1912 (Jack 2000). However, residential construction occurred at a slow pace and the population was generally very small. In 1902 the Emu Plains police constable described the area as *'a very scrubby place, overgrown with undergrowth; very few of the streets are cleared ...the area about nineteen permanent family's resident there'* (Aston 1992 in Jack 2000: 8).

2.3 The Western Railway

Plans to construct a railway between Sydney and Goulburn were first discussed in 1845 when the directors of the Great Southern and Western Railways presented them to Governor George Gipps (Rowland 1954). The route was surveyed in 1848 and the Sydney Railway Company was formed in the same year (Rowland 1954). Construction on the line to Parramatta began in 1851 and was completed in 1855 (Rowland 1954). The line continued west gradually reaching Penrith in 1863 (Rowland 1954). From Penrith passengers continued their journey over the mountains via coaches.

The continuation of the rail line over the Blue Mountains presented an engineering challenge for the Sydney Railway Company, primarily due to steep gradients and dense natural vegetation. John Whitton was Chief Engineer of Railways at the time and it was Whitton who designed the Lapstone Zig Zag, which was considered an engineering feat at the time (Rowland 1954). Four years after the completion of the Main Western Line to Penrith, in 1867, the extension to Wentworth Falls, including Glenbrook was opened (Rowland 1954).

The first railway siding (used for trains, not passengers) in Glenbrook was opened in 1867 and named 'Water Tank' due to the pipeline that brought water from Glenbrook Lagoon to a tank beside the line for refilling the steam engines (SHI 4801053). The name was later changed in Wascoe's Siding in 1870 for a nearby inn (SHI 4801053). The siding later became a passenger station 1877 and the name was changed again in 1878 to Brookdale, and in 1879 to Glenbrook (SHI 4801053).

Although originally designed as a double track the Main Western Line remained a single track rail between Emu Plains and Glenbrook until 1913. Towards the end of the 19th Century bottlenecks were causing significant delays to rail traffic at the Lapstone Zig Zag and the Glenbrook Tunnel. Added to this was the poor ventilation in the Glenbrook Tunnel that resulted in overpowering smoke and fumes for passengers and staff (Plate 2.1). A deviation following the gorge of Glenbrook Creek begun in 1911. The deviation ran to the south of the existing rail line (Plate 2.2). The deviation was constructed as a double track and completed in 1913. With the completion of the deviation, the old line was closed and Glenbrook Station relocated to its current location in the same year (Rowland 1954).

Plate 2.1: Steam train exiting Glenbrook Tunnel (Rowland 1954)

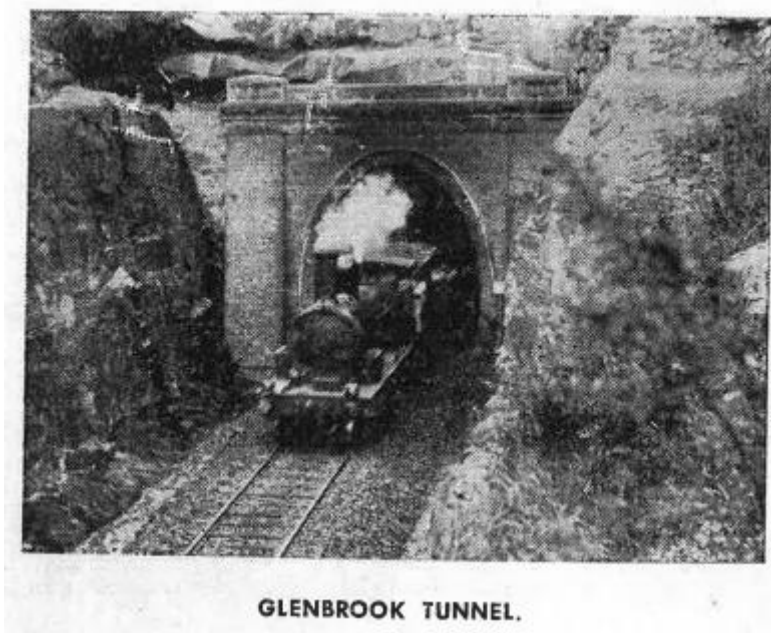
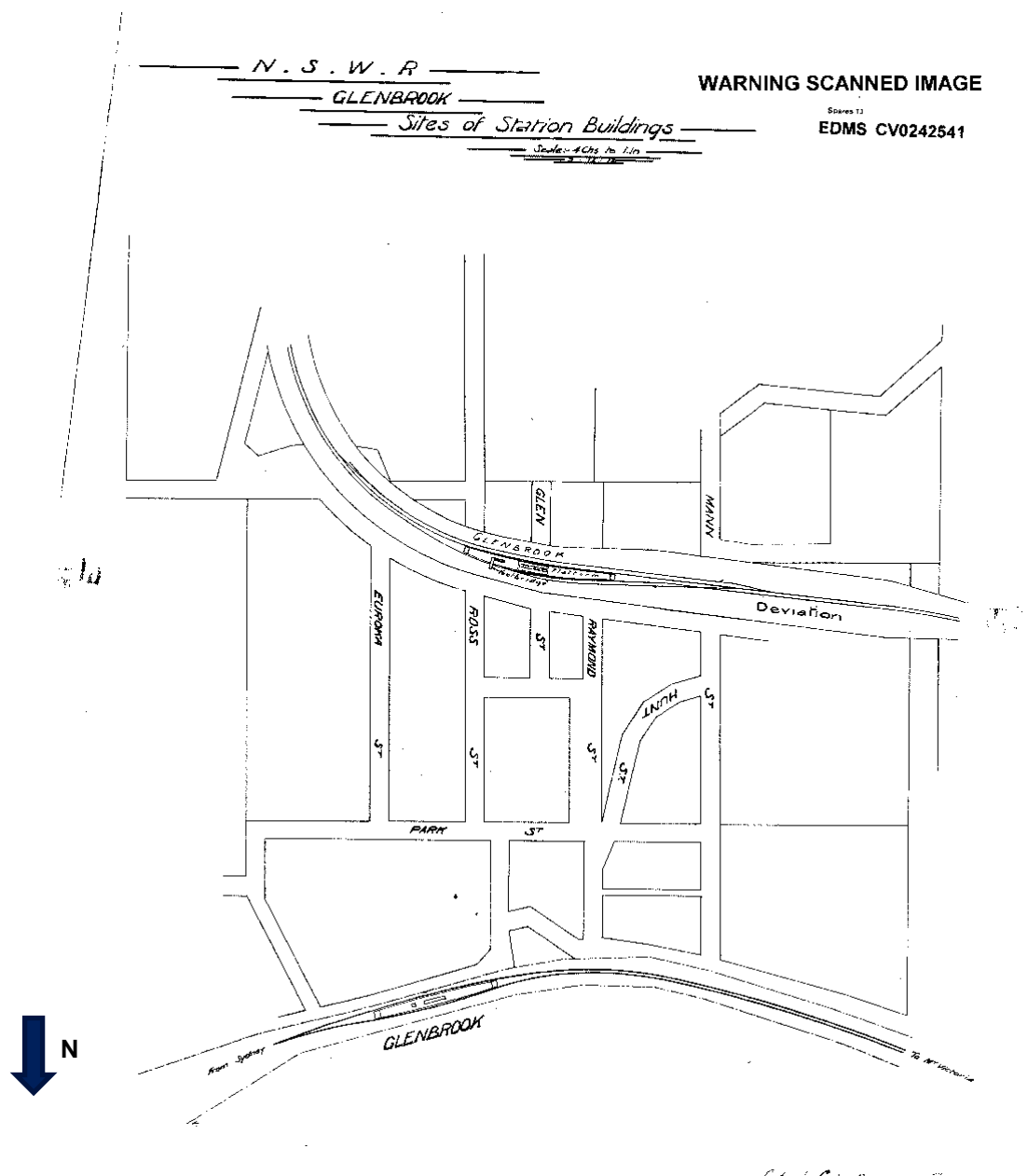


Plate 2.2: NSW plan showing location of the 1913 Glenbrook station and the 1877 Glenbrook Station (source: TfNSW)



2.4 Glenbrook Railway Station

Glenbrook Railway Station was opened in its current location in 1913. It was the final station to be duplicated on the Main Western Rail Line. At this time, it consisted of an island platform, footbridge and goods siding on the Up Side (ngh Heritage 2012). The station originally serviced up trains only until the Glenbrook Tunnel closed to rail traffic later the same year (SHI 1170260). The Station Building, Out of Shed and a goods shed were all completed later that year. The Station Building was constructed in the Federation style with a signal box at the Sydney end.

The 1912 Glenbrook Deviation Plan shows the arrangement of structures on the platform. A rectangular structure labelled "Out of Room" is located to the east of the footbridge, and a faint rectangle labelled "store" is located within the general location of the Out of Shed today. This may indicate that plans were made to place the Out of Shed to the east of the Station Building rather than its current position.

A structure labelled as “Lamp Room” is located to the east of the platform ramp. This may indicate the original location of the lamp room prior to the construction of the current lamp room during the 1940s. Lamp rooms were used to store kerosene for the lighting of signals as well as platform lighting (Sharp 1982). From the 1880s onwards, these were generally constructed separate to the main station building (Sharp 1982). By the 1930s the growing use of electricity and introduction of power signalling significantly reduced the requirement for separate lamp rooms (Sharp 1982). Lamps were generally stored in a store room or low cost shed away from the station building from this point on (Sharp 1982). This likely explains the location of the Lamp Room as well as the form of the structure.

Design drawings for the Glenbrook Station Building indicate that there has been little change to internal configuration of rooms (Figure 2.1 and see Appendix B). The locations of fire places in the Station Master’s Office and Ladies Room in the Station Building that have since been enclosed are also noted on this plan. The elevation from the same set of drawings indicates the depth of footings of the buildings into the platform as well as the height of the internal floor above the platform (Figure 2.3).

The footbridge comprises a twin beam construction typical of NSW Government Railway footbridges at the time (ngh Heritage 2012). The original 1913 bridge structure was replaced in 1916 with steel for the bridge supports supplied by Dorman Long & Co, a British steel supplier (Fraser 1996). Prior to the 1920s it was common for all steel components to be imported from Britain. Dorman Long & Co. were the principal steel suppliers for rail projects in NSW and went on to provide the majority of steel for the Sydney Harbour Bridge (Fraser 1996: 108).

An important feature of the history of Glenbrook Station are the garden beds located on the platforms as is the station’s participation in the NSW Railway Stations Gardens Competitions. Early photographs of the original 1902-1913 Glenbrook Station show the well-established platform gardens, including stone edged garden beds, plants and groomed topiary shrubs (Plate 2.3). These gardens were likely transferred to the current Glenbrook Station soon after construction (AMBS 2015: 52). The NSW Railway Stations Gardens Competitions ran from 1899 to the 1990s (Betteridge 1993). Glenbrook was a strong contender in the competition winning awards from at least 1920 and going on to win the overall State Championship for four years running (AMBS 2015: 52). The gardens made the station distinct with the vibrant displays identifying Glenbrook Station to passengers without seeing the platform nameboards (SHI 4801053). Notable additions include the “Little Blue Pool” named after a popular swimming hole on Glenbrook Creek and a cactus garden named “The Pyramids” which incorporated a “Blue Nile” flowing past the pyramids (AMBS 2015: 52; see Plate 2.4). In the 1970s the station was described as having lavish displays, water features and signposts (Betteridge 1993). The station today still retains some garden beds.

Plate 2.3: 1900 view of the early Glenbrook Station with established garden beds (Source: TfNSW)

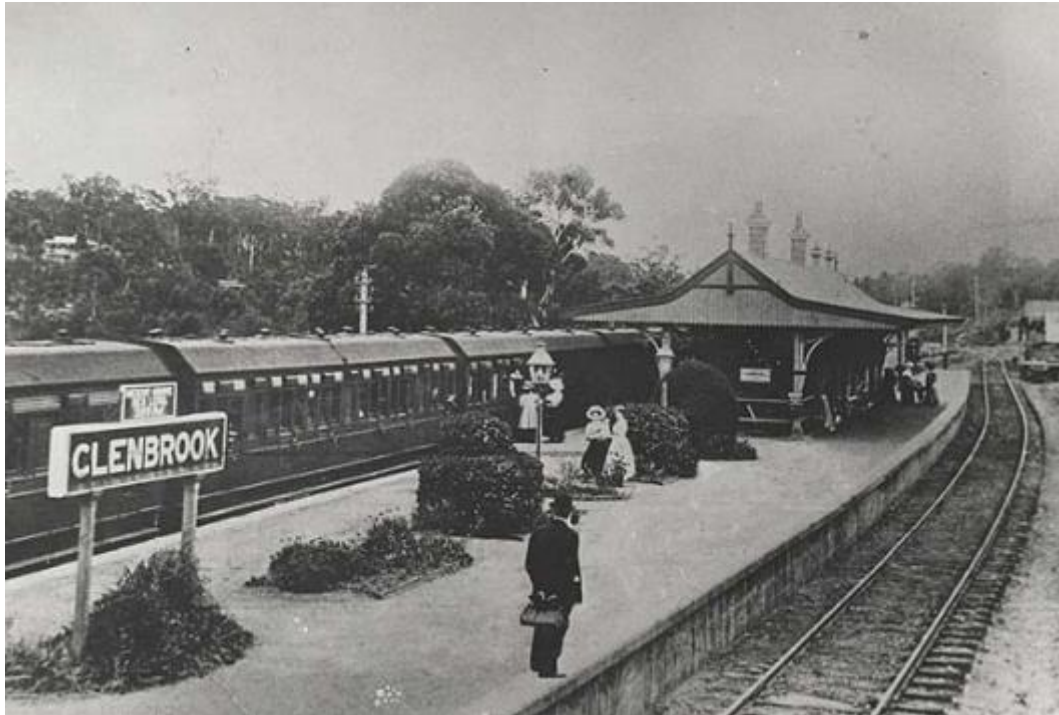


Plate 2.4: Station Master Harald Clark with award winning “Little Blue Pool” at current Glenbrook Station c.1959 (Source: TfNSW)



Figure 2.1: Excerpt from NSW Rail Glenbrook Deviation Station Arrangements at Glenbrook plan dated March 1912, planned Out of Shed location indicated by blue arrow, planned lamp room location indicated by red arrow. These structures are today both located on the western end of the platform.

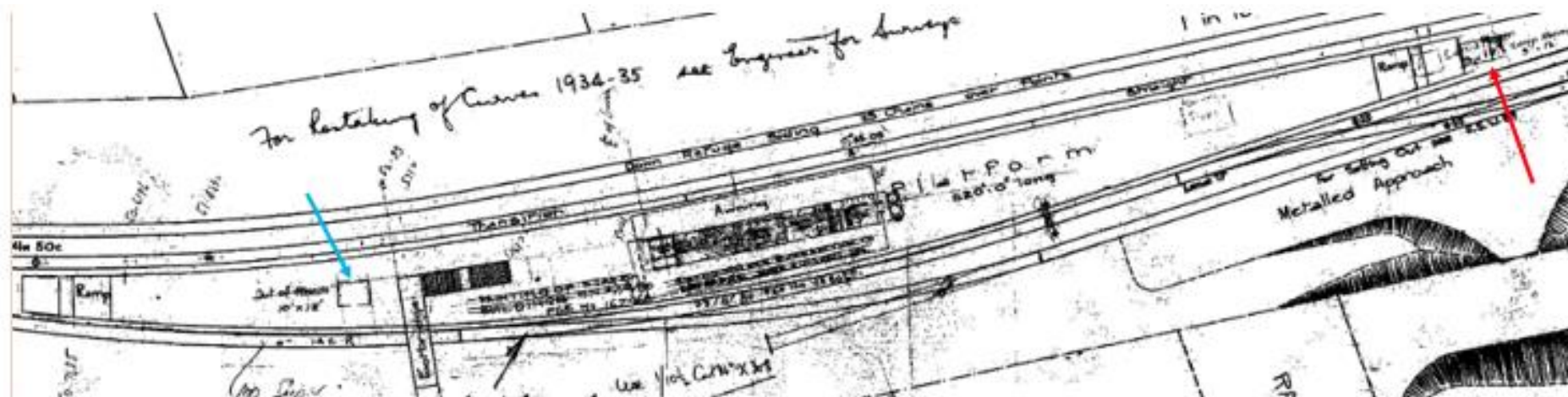


Figure 2.2: Floor plan of Glenbrook Station Building, excerpt from NSW Glenbrook Station Building Drawing No. 1 dated 1912

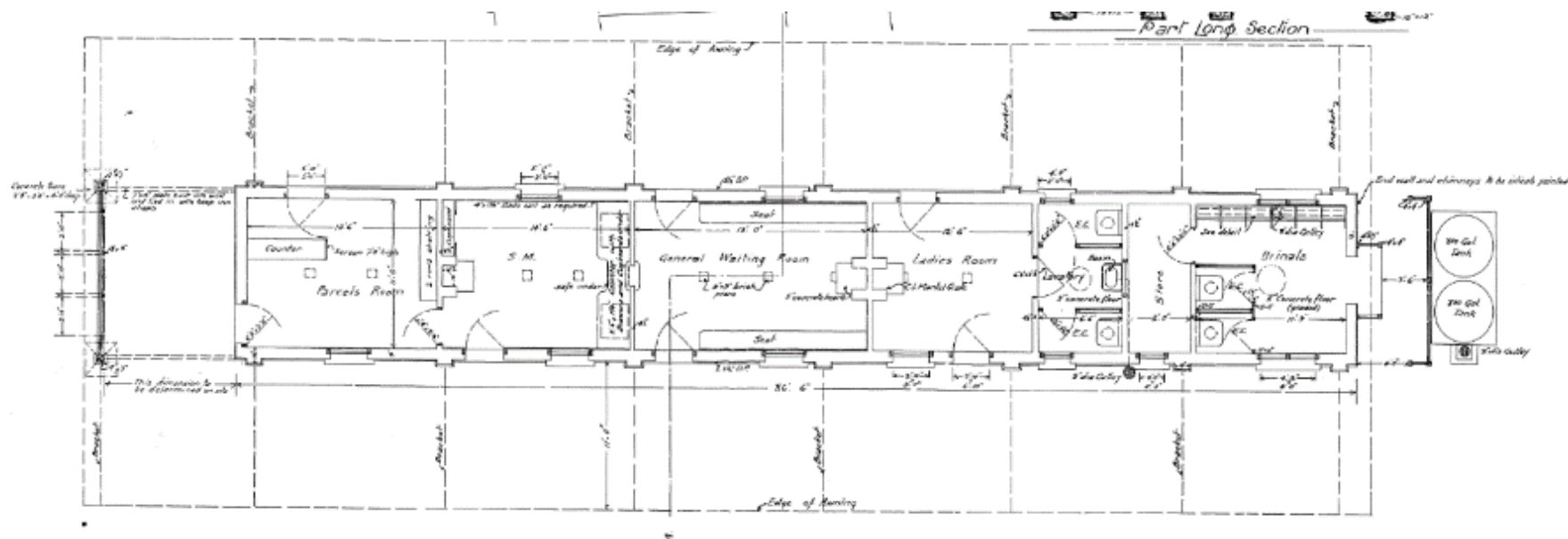
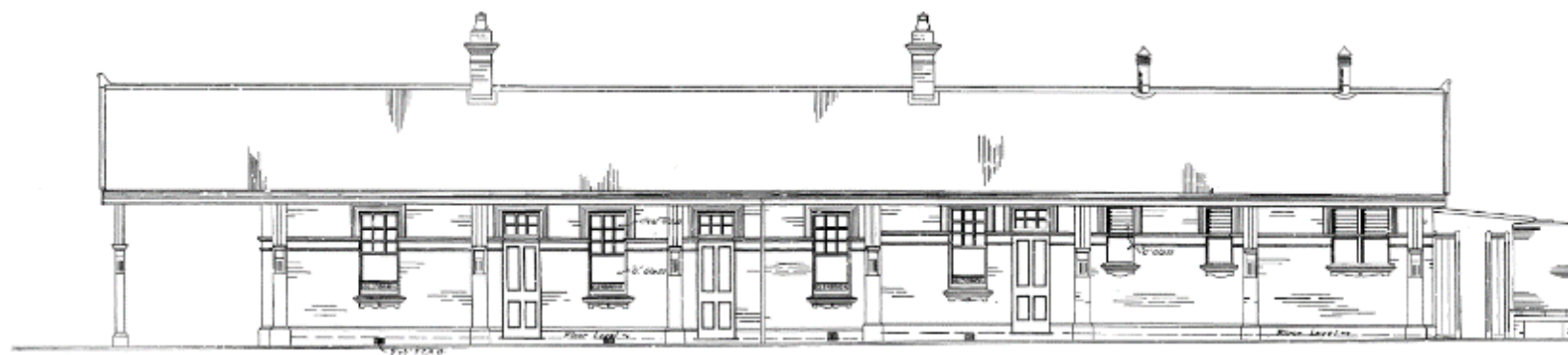


Figure 2.3: Rail elevation, excerpt from NSW Glenbrook Station Building Drawing No. 1 dated 1912



3 Description and physical evidence

3.1 Landscape setting and features

Glenbrook Station is located within a cutting to the south of Burfitt Parade. The area north of the station group is characterised as low density residential and dense bushland occupies the area to the south of the station group. The setting of the station within the rock escarpment is typical of the natural settings of Blue Mountains stations. The plantings on the platform as well as the natural bush to the south and remnant bush to the north give the station a lush and natural overall aesthetic (**Plate 3.1** and **Plate 3.2**). Community artwork comprised of mosaics made by Glenbrook Primary School are located along the path between the station entrance and bus stop on Burfitt Parade (**Plate 3.3** and **Plate 3.4**).

Plate 3.1: View east from footbridge (RPS 2018)



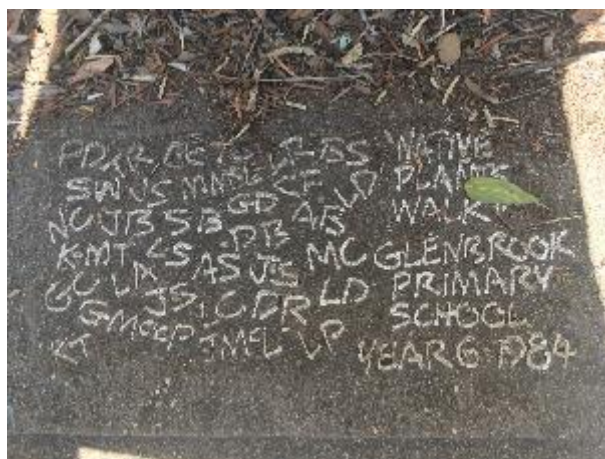
Plate 3.2: View west from footbridge (RPS 2018)



Plate 3.3: Example of mosaic outside station entrance



Plate 3.4: example of mosaic identifying Glenbrook Primary School

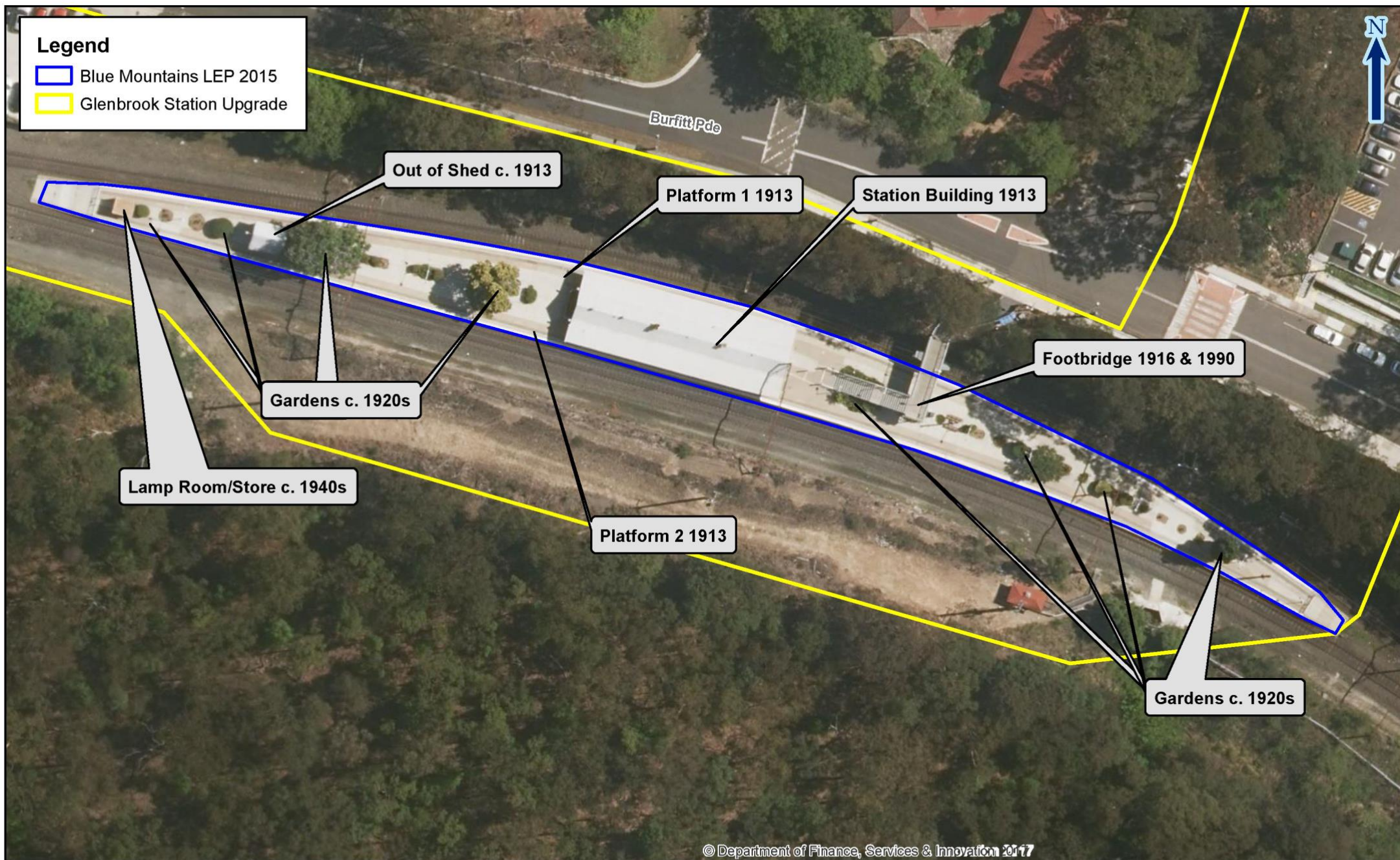


Condition and modifications

The landscaped garden beds of the station generally appear to be in a moderate to good condition. Some plants appeared in an unhealthy condition and flaking paint was noted on the stones lining some of the garden beds. Gardens have been documented at Glenbrook Station since the 1920s. It is likely that some plants have been replaced over time since the station was constructed. However, there is no documented evidence of this. The mosaics outside of the station generally appear to be in an intact and good condition.

3.2 Glenbrook Railway Station Group – major group elements

Glenbrook Railway Station Group contains a number of components constructed in accordance with standard designs popular at the time. The following discussion is largely based on the SHI sheet for the Glenbrook Railway Station Group (SHI #4801053) and observations made on site by RPS heritage consultants. The layout of the group components is shown in Figure 3.1.



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**FIGURE 3.1: GLENBROOK RAILWAY STATION GROUP:
MAJOR GROUP ELEMENTS**

0 10 20 30 m
SCALE 1:700 AT A4 SIZE

LOCATION: GLENBROOK	PURPOSE: HERITAGE Technician: claire.rayner Date: 06-Aug-18	Path: N:\Projects\Conics_Sydney\PR136951 - TAP3\3 Cultural Heritage REF\1 Glenbrook\GIS\mxd\Figure 3.1 Group Elements.mxd VERSION (PLAN BY): C. Rayner	DATUM: GDA94 PROJECTION: MGA Zone 56 Data Sources: RPS, Land and Property 2015, ESRI

CLIENT: TFNSW
JOB REF: PR138951-3

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3.2.1 Station Building (1913)

Exterior

The Station Building is constructed of face brick with corrugated metal gabled roof extended as awning over platform 1 and 2. The building is a type 11 (standard design A8-A10) island building in the standard Federation style design (OEH SHI # 4801053). Distinctive features are the light coloured brickwork with rendered and moulded string courses to both rail elevations, timber framed windows and doors with contrasting decorative rendered trims and sills, standard iron brackets over corbels supporting ample platform awnings, fretted timber work to both ends of awnings, tall corbelled chimneys (terracotta pots appear in original drawings but are not extant), roof vents over toilets, timber framed double-hung windows with multi-paned upper sashes, and timber door openings with multi-paned fanlights (Plate 3.5 to Plate 3.7).

The Sydney end of the Station Building is a weatherboard enclosure accommodating the decommissioned signal box levers and features large three to four panelled windows with security grills to its three elevations (Plate 3.5). The western end of the building is a simply detailed gabled façade with rectangular gable vent and a brick privacy wall to hide the men's toilet entrance (Plate 3.8).

Plate 3.5: Station Building, eastern elevation showing fretted work to ends of awnings and weatherboard signal room (RPS, 2018)



Plate 3.7: View west, platform 1 (RPS, 2018)



Plate 3.6: View west, platform 2 showing distinctive brick work and iron brackets over corbels (RPS, 2018)



Plate 3.8: Station Building, western elevation showing privacy wall (RPS, 2018)



Interior

The Station Building interior consists of eight rooms. The original layout remains and includes the former signal room (at the eastern most end), parcels office and Station Master's office which are used by staff and linked by internal doors as well as external doors to platform 1 (Plate 3.9). The Station Master's office overlooks the general waiting room through a ticket window (Plate 3.10). The general waiting room can be accessed by the public from either platform 1 or 2. A square foyer opens onto the ladies toilets with access from platform 1 and 2 (Plate 3.11 and Plate 3.13). A storeroom (for staff) is located between the ladies and men's toilets (Plate 3.14). The location of a former doorway to the male toilets is evident on the western wall of the storeroom. The men's toilets are located at the western most end of the Station Building (Plate 3.15).

The interiors generally feature custom orb ceilings with ceiling roses, enclosed or adapted fireplaces, later floor tiling or carpet finish, timber flooring to signal room and concrete flooring to the storeroom and timber bead style cornices to ceiling and wall junctions (Plate 3.16 to Plate 3.18).

Plate 3.9: Interior of signal room (RPS 2018)



Plate 3.10: Interior of Station Master's office (RPS 2018)

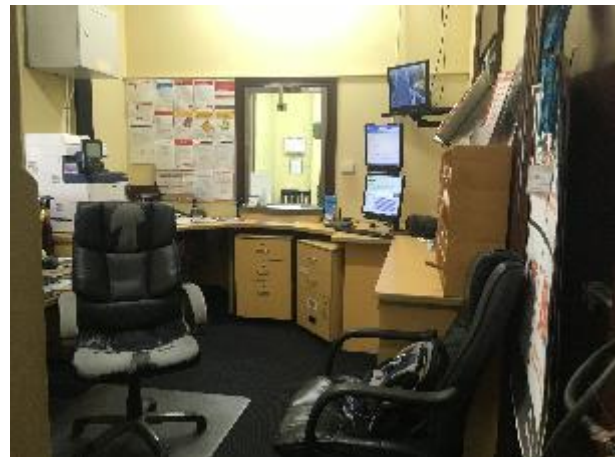


Plate 3.11: View into female toilet waiting room from platform 2 through to platform 1 (RPS 2018)

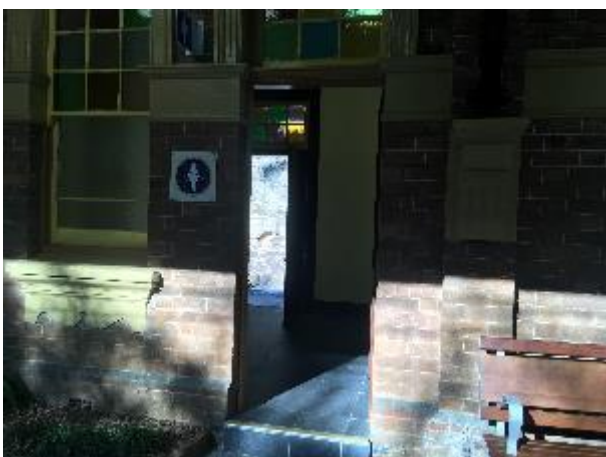


Plate 3.12: Interior of female toilet waiting room, doorway exits onto platform 1 (RPS 2018)

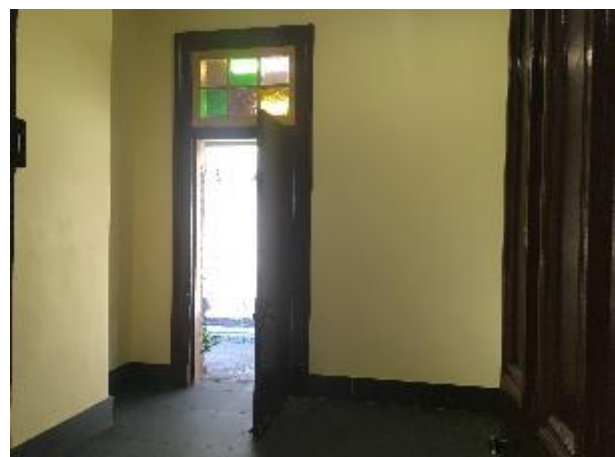


Plate 3.13: View to female toilets from waiting room. Female toilets have recently been upgraded (RPS 2018)



Plate 3.14: Interior of store room, note former doorway on right hand side of image (RPS 2018)



Plate 3.15: Male toilets, recently upgraded (RPS 2018)



Plate 3.16: Custom orb ceiling with ceiling roses (RPS 2018)



Plate 3.17: Fire place in waiting room (RPS 2018)

Plate 3.18: Timber bead style cornices to ceiling and wall junction (RPS 2018)



Condition and modifications

Overall the interiors and exteriors of the station building appear to be in very good condition. The bathrooms and waiting room were upgraded in 2015 with new toilets, basins and flooring. Many original features are still extant including ceiling roses and cornices, iron brackets and multipaned stained glass windows.

It is unknown the exact date when the signal room at Glenbrook Station was decommissioned. However, single light signalling between Glenbrook and Valley Heights was introduced on 16 September 1958.

3.2.2 Out of Shed (c. 1913)

Exterior

The Out of Shed building consists of a small square shaped brick shed featuring moulding and rendered string course detailing similar to the Station Building (Plate 3.19 and Plate 3.20). It is located west of the Station Building towards the end of the platform. The shed features a gabled corrugated metal roof with timber bargeboard and narrow eaves, contrasting rendered moulded trim above a single door on the west side elevation and a string course throughout all elevations. There are no other openings on the building.

Plate 3.19: Western elevation of Out of Shed (RPS 2018)



Plate 3.20: Eastern elevation of Out of Shed (RPS 2018)



Interior

The interior of the Out of Shed was not accessed during the site inspection for this assessment.

Condition and modifications

The condition of the Out of Shed is considered to be very good. No documented modifications to this building are known.

3.2.3 Lamp Room/Store (c. 1940)

Exterior

The Lamp Room is located west of the Out of Shed at the western end of platform (Plate 3.21 and Plate 3.22). Lamp rooms were typically constructed to house kerosene and where lamps could be cleaned, filled and have their wicks trimmed. The Glenbrook Lamp Room consists of a small brick shed with a metal door on the western elevation and flat metal roof. There are no other openings on the shed. This room is currently used to store cleaning equipment.

Plate 3.21: View south towards Lamp Room/Store from commuter carpark (RPS 2018)



Plate 3.22: Eastern elevation of Lamp Room/Store (RPS 2018)



Interior

The interior of the Lamp Room/Store was not accessed during the site inspection for this assessment.

Condition and modifications

The condition of the Lamp Store is considered to be good. No documented modifications to this building are known.

3.2.4 Platforms 1 and 2 (1913)

Glenbrook Station has an island platform in an elliptical shape, curved in accordance with the deviation of the line. The platforms are characterised as vertical brick platforms typical of the 1910s with corbelled coping (AMBS 2015: 33). The platform is brick faced with concrete surface (Plate 3.23 and Plate 3.24). The pattern of concrete paving reflects an earlier pattern of gravel surfacing material (AMBS 2015: 92). OHW structures were likely installed following the electrification of the Main West Rail Line (Plate 3.24). The structure shown is comprised of a steel structure with wiring extending to the southern side of the platform.

A number of designated and stone edged garden beds with plantings and trees are scattered along the centre line of the platform and rail elevations of the buildings, reflecting the trademark floral garden of Glenbrook Station (Plate 3.25 and Plate 3.26). Modern light fittings, signage, water fountain, timber bench

seating, rubbish bins and aluminium palisade fencing at both ends are other features along the platform (Plate **3.27** to Plate **3.30**).

Plate 3.23: Example of brick facing, western end of platform 1 (RPS 2018)



Plate 3.24: Example of concrete surface, view west platform 2 (RPS 2018)



Plate 3.25: Example of garden beds down central axis of platform (RPS 2018)



Plate 3.26: Example of garden beds along rail elevations of Station Building, view east platform 2 (RPS 2018)



Plate 3.27: Example of lighting, view west (RPS 2018)



Plate 3.28: Example of station seating (RPS 2018)



Plate 3.29: View west, modern bin (RPS 2018)



Plate 3.30: Modern Glenbrook Station sign (RPS 2018)



Condition and modifications

The condition of the platform is considered to be good and demonstrates the original profile of the corbelled brick coping. The electrification of the rail line in 23 October 1956 would have resulted in the installation of Over Head Wiring (OHW) structures along the platform which were observed in several locations.

3.2.5 Footbridge (1916 & 1990s)

The footbridge comprises a standard steel beam bridge supported on steel trestle with bracing extending from the street ramp over the Up main tracks with stairs to the island platform (Plate 3.31). With exception of the original steel structure, all components of the bridge have been replaced since the 1990s (Plate 3.32). The SHI sheet for the station group describes the footbridge as having a concrete deck over the top of timber. However, the under deck of the bridge also appears to be concrete with a concrete upper deck (Plate 3.33 and Plate 3.34). The Glenbrook Footbridge is included in the *Railway Footbridges Heritage Conservation Strategy* prepared for Sydney Trains by the NSW Government Architect's Office (GAO) Heritage Group (2016). This Conservation Strategy graded the Glenbrook Footbridge to be of moderate heritage significance and recommended retention of the structure as a first preference in all station works (GAO Heritage Group 2016: 83).

Plate 3.31: View west towards footbridge (RPS 2018)



Plate 3.32: View east showing original steel structure of footbridge (RPS 2018)



Plate 3.33: View north west showing under deck of footbridge (RPS 2018)



Plate 3.34: View south showing deck leading from Burfitt Parade to stairs (RPS 2018)



Condition and modifications

The condition of the footbridge is considered to be good. The original 1913 footbridge was replaced in 1916. Modifications in the 1990s include addition of a concrete deck, stairs and new balustrades.

3.2.6 Overbridge (1912)

As part of the deviation and nature of the railway construction through the Blue Mountains a number of culverts and overbridges had to be constructed. The Cowdery Street overbridge is a concrete and brick arch Monier arch bridge supported on rock abutments, which is clearly visible from the western end of the platform approximately 155 metres to the west.

Condition and modifications




The overbridge was not inspected for this assessment. The SHI sheet notes that the overbridge is in good condition and does not note any modifications.




3.2.7 Moveable heritage



A number of moveable heritage items are located within the Glenbrook Railway Station Group. Not all of these items were inspected during the site inspection undertaken for this assessment. Table 3.1 lists items identified during the site inspection with photos. Items that were not identified are listed in Table 3.2. Some of the items listed in Table 3.2 could be located within the Out of Shed which was not inspected for this assessment.

Table 3.1: Moveable heritage items identified during site inspection

Item	Location	Photo (all RPS 2018)
------	----------	----------------------

Item	Location	Photo (all RPS 2018)
Two single timber rollover indicator boards with clock faces, blackboards and foot pedals	Waiting room	
Cast iron grate in fireplace (hearth and surround removed)	Waiting room	
20 lever ground frame (decommissioned)	Signal room	

Item	Location	Photo (all RPS 2018)
1985 State Rail Authority Rail Centenary historic photo of the Zig Zag in white frame	Signal room	
Collection of early station books and ledgers	Signal room	
Wall-mounted board with 10 station bells	Signal room	

Item	Location	Photo (all RPS 2018)
Early cast iron network telephone	Signal room	
Fitted timber bench	Signal room	See cast iron network telephone sitting on bench above
Timber-framed mirror with etched "NSW Railways"	Station Master's office	Noted mounted on north wall near entrance door from parcel room wall, but no photo taken
Timber Station Master's desk	Station Master's office	


Item	Location	Photo (all RPS 2018)
Milners patent fire resisting safe in the ticket office including two original steel coin boxes inside	Station Master's office	

Table 3.2: Moveable heritage not identified during site inspection

Item	Location listed on SHI
Collection of timber framed poster cases and signs: <ul style="list-style-type: none"> White timber framed poster case with early station garden prizes inside Ticket office/waiting room sign in steel frame/stand 	Out of Shed
Guards flags and wall-mounted rack	Staff offices (not specified if parcel office or Station Master's Office on SHI)
First aid stretcher in orange vinyl zip bag	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Several cast iron points clips	Signal room (not specified if parcel office or Station Master's Office on SHI)
White metal first aid box	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Red and white "Emergency Response" box with contents list	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Two orange "NSWTD" lamps	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Timber framed poste case painted red	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Glenbrook credit card swipe machine	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Set of office stamps	Staff offices (not specified if parcel office or Station Master's Office on SHI)
Collection of framed historic photos and awards from the Railway Station Garden Competition dating from the 1950s to the 1990s	Staff offices (although these may be located in the Out of Shed)

Item	Location listed on SHI
Several canvas bag ("Emergency", "Glenbrook to Trackfast Chullora" "Glenbrook")	Staff offices

3.3 Potential archaeological features

There are no known potential archaeological elements on the station, however remnants of former station yard sidings and decommissioned electric wiring towers/poles indicate possible archaeological findings within the railway corridor outside the station platforms. The siding was removed in 2013 to make way for a car park, following archaeological monitoring.

The construction of the railway cutting in which Glenbrook Station is located is likely to have removed any archaeological remains associated with early land uses in the area. Plans available for the construction of the platforms indicate that the bulk of the platforms were formed by hand packed rubble enclosed by brick facing. This rubble was likely sourced by spoil from the rail cutting. There is very low potential that items such as coins or other domestic demolition materials would be identified within this rubble.

Early photographs, plans and aerials available for the station and surrounds indicate that buildings were not constructed to the north or south of the railway cutting near the station (Figure 3.2, Plate 3.35 to Plate 3.36 and see Appendix B). Therefore, there is no potential for archaeological remains to be located in these areas.

Former inventory forms for Glenbrook Station note a number of culverts or overbridges other than Cowdery Street overbridge. These were not inspected for the current assessment. The Proposal does not include impacts within the rail corridor other than within the Glenbrook Railway Station Group.

Figure 3.2: Excerpt from 1912 plan for Glenbrook Station platforms

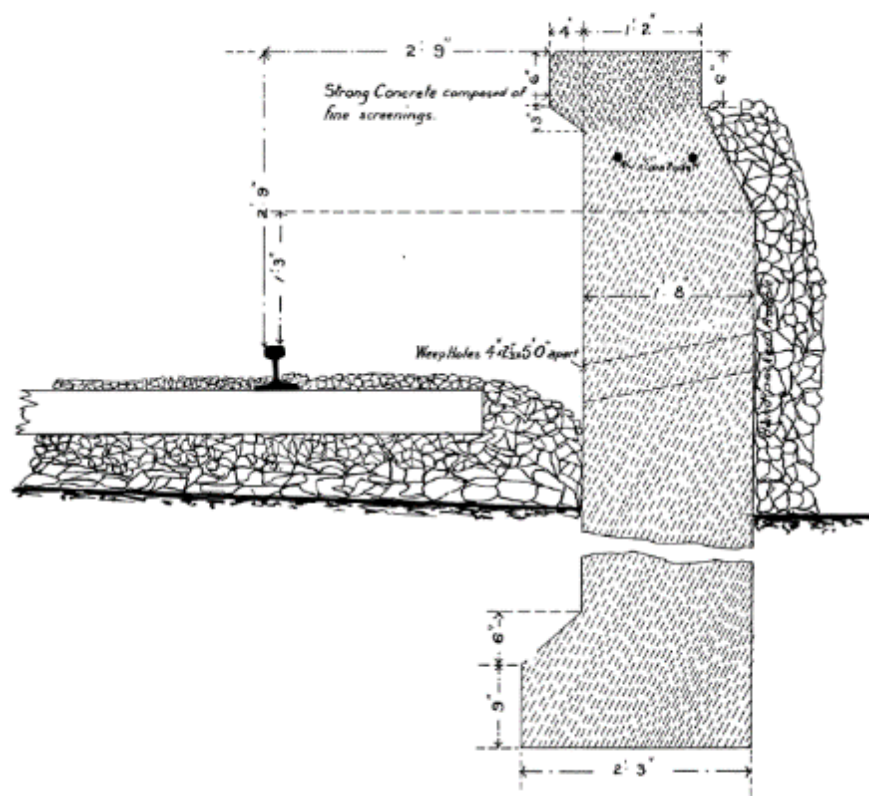


Plate 3.35: 1959 Photograph of Glenbrook Station view west showing extant structure on southern side of rail cutting (Source: TfNSW)



Plate 3.36: 1943 aerial view of Glenbrook Station and surrounds, no structures located on southern or northern sides of railway cutting (source: NSW SIXMaps)



3.4 Summary

The table below summarises the major group elements discussed above.

Table 3.3: Item type identification

Component	Year Constructed	Type	Modifications	Condition
Station Building	1913	Type 11, Island building, brick, includes signal box	16 Sep. 1958 – single light signalling introduced. Signal room decommissioned at some point after this.	Very good
Out of Shed	1913	brick	None	Very good
Lamp Room/Store Room	1940	brick	None	Good
Platforms 1 & 2	1913	Curved, island	23 October 1956 – line electrified, installation of OHW Structures, resurfaced (date unknown)	Good
Footbridge	1916 & 1990s	Standard steel beam and trestle	1916 – replacement of structure 1990s – replacement of stairs and deck	Good
Cowdery Overbridge	1912	Concrete and brick Monier arch bridge	None	Good
Platform gardens	Unspecified	Various plant	Potential replacement of plants over time	Moderate to

Component	Year Constructed	Type	Modifications	Condition
		species, garden beds edged in rock		good

4 Assessment of heritage significance

4.1 Glenbrook Railway Station Group (SHI # 4801053)

The Glenbrook Railway Station Group statement of significance is as follows:

Glenbrook Railway Station is of local significance as an excellent example of a standard Federation station building design set within a distinctive landscape setting with platform gardens that are a landmark as the gateway to the Blue Mountains line. The gardens have been an iconic railway landscape due to being the recipient of many awards in the annual NSW Railway Station Garden Awards, six of which were first prize, since the early 1950s to the 1990s. The existing station was the last station to be built along this section of the line and replaced the earlier 1860s Glenbrook Station for duplication and deviation of the line in 1913, and as such is significant for demonstrating the engineering achievements associated with the last major construction works of the Blue Mountains line.

Assessment of significance

The assessment of significance in Table 4.1 is included on the SHI for the Glenbrook Railway Station Group

Table 4.1: Significance assessment (adopted from SHI #4801053 sheet)

Criteria	Description
A) Historical Significance	Glenbrook Station is of historical significance as the last station to be built along this section of the Blue Mountains line. It replaced the earlier 1860s Glenbrook Station for duplication and deviation of the line in 1913. It demonstrates the engineering achievements associated with the last major construction works of the Blue Mountains line.
C) Aesthetic Significance	Although of a standard design, Glenbrook Station building was built in lighter coloured bricks compared to other stations on the Blue Mountains. It is an excellent example of a standard Federation station building design set within a distinctive landscape setting. The station building together with its matching out of shed and platform gardens maintains its iconic gateway station qualities and setting.
D) Social Significance	The place has the potential to contribute to the local community's sense of place, and can provide a connection to the local community's past.
E) Research Potential	Glenbrook Station has research significance due to existence of remnants of the former station yard siding and decommissioned electric wiring towers/poles indicating possible archaeological findings outside the platform of the station. It may also have further research significance because of the culverts or overbridges that may exist, obscured behind the plantings of the rocky escarpment within the immediate surroundings of the station. The remnants of the former station yard siding were removed during archaeological monitoring in 2015 for the construction of a new commuter carpark.
G) Representativeness	Glenbrook Station is a representative example of a 'A8-A10' standard design station building with matching out of shed, demonstrating the construction techniques and characteristics of commonly used railway design in the 1910s, and is representative of station buildings built on this line between Lithgow and Penrith for duplication works. The footbridge and overbridge contribute to the station's significance demonstrating typical standard design features of their type, though the overbridge is physically separated from the station. The footbridge was identified as an item of moderate heritage significance in the comparative analysis from the 2016 'Railway Footbridges Heritage Conservation Strategy'.

Integrity/Intactness

Glenbrook Station, including the Station Building, Out of Shed, platforms, footbridge, gardens and overbridge, is intact externally with minor internal modifications that do not reduce its integrity.

Historic themes

The following themes in Table 4.2 are identified on the SHI #4801053 sheet.

Table 4.2: Historic themes present (adopted from SHI #4801053 sheet)

Australian theme (abbrev)	New South Wales theme	Local theme
1. Environment-Tracing the evolution of a continent's special environments	Environment – naturally evolved- Activities associated with the physical surroundings that support human life and influence or shape human cultures.	Gardens
3. Economy-Developing local, regional and national economies	Transport- Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements.	Building the railway network
4. Settlement-Building settlements, towns and cities	Towns, suburbs and villages- Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages.	Impacts of railways on urban form
8. Culture-Developing cultural institutions and ways of life	Creative endeavor- Activities associated with the production and performance of literary, artistic, architectural and other imaginative, interpretive or inventive works; and/or associated with the production and expression of cultural phenomena; and/or environments that have inspired such creative activities.	Evolution of design in railway engineering and architecture

Grading of significant elements

Different elements of an item can provide different contributions to the item's heritage significance. It is sometimes beneficial to identify significant elements and how they contribute to the overall heritage significance. The NSW Heritage Division provide the grading criterion in Table 4.3 below.

Table 4.3: Grading of significance criteria (NSW Heritage Office 2001:11)

Grading	Justification	Status
Exceptional	Rare or outstanding element directly contributing to an item's local and State significance.	Fulfils criteria for local or State listing
High	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance.	Fulfils criteria for local or State listing
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Fulfils criteria for local or State listing
Little	Alterations detract from significance. Difficult to interpret.	Does not fulfil criteria for local or State listing
Intrusive	Damaging to the item's heritage significance.	Does not fulfil criteria for local or State listing

Based on the grading of significance above Table 4.4 provides a summary of the significance of each of the components of the Glenbrook Railway Station Group

Table 4.4: Glenbrook Railway Station Group Grading of Significant Fabric

Station Component	Grading	Comments
Station Building <ul style="list-style-type: none"> • Moveable heritage components • Original layout of building • Original features such as multi-paned windows, ceiling roses and cornices • Signal Room 	Exceptional	The Station Building is an excellent example of a Federation type railway station building. Alterations such as the 2015 bathroom upgrades have not detracted from the overall significance of this element. The moveable heritage located within the Station Building contributes to a rich sense of history and illustrates changes within rail technology through time.
Out of Shed <ul style="list-style-type: none"> • Moveable heritage components 	High	The Out of Shed is of the same Federation style as the Station Building creating tangible links between the structures and contributing to the overall aesthetic of the railway station group. The moveable heritage components included in this element demonstrate the significance of the gardens in the past.
Lamp Room/Store	Moderate	Whilst not associated with the early use of the item the Lamp Room provides evidence for the changing uses of technology and the move away from kerosene manual lamps to electrical lighting methods.
Platforms	High	The platforms are a good example of platform construction in the early 20 th Century with little alteration to the vertical brick walls. The attachment of multiple services to the platform walls are considered to detract from the elements aesthetic value. The pattern of concrete paving references the former gravel surfacing material.
Footbridge	Moderate	The Glenbrook Station footbridge is a standard steel beam bridge supported on steel trestle with bracing. With the exception of the original steel structure, all components of the footbridge have been replaced since the 1990s, however the form of the footbridge contributes to an otherwise relatively intact railway station precinct (NSW GAO Heritage Group 2016: 70).
Gardens	High	The gardens have played an important role in the identity of the Glenbrook Railway Station Group in the past. The gardens contribute to the setting of the item and the overall significance of the item.

5 The Proposal

5.1 Introduction

The Proposal involves an upgrade of Glenbrook Station as part of the Transport Access Program which would improve accessibility and amenity for customers. The key elements of the Proposal are shown in Figure 1.1. This section outlines the scope of works, the justification of the Proposal and the design process that has led to the current designs.

5.2 Scope of works

5.2.1 Station upgrade

Details of the proposed works to take place at the station to improve accessibility are provided below:

- construction and installation of a lift on the island platform that would connect to a small extension to the existing footbridge (with covered waiting bay) The installation of a narrower lift would allow for retention of the adjacent overhead wiring structure.
- existing footbridge and stairs to the platform to be retained but with new handrails, nosings and TSGIs installed to achieve DDA compliance
- demolition of the existing (non-compliant) ramp from the footbridge to Burfitt Parade to be replaced with new stairs and construction of a new accessible path extending further east to connect to the raised pedestrian crossing and car park
- landscaping at the station entrance
- internal reconfiguration of the station building, including closure of some doors to public:
 - installation of a Family Accessible Toilet in the area currently occupied by the male toilets which includes lowering the existing concrete floor to ensure accessible entry, installing floor / wall tiling, and ceiling for fire safety standard compliance and installing a false wall to enclose the toilet cistern
 - installation of a new unisex ambulant toilet in the area currently occupied by the store room and ceiling for fire safety standard compliance, the floor would also be lowered in this toilet to ensure accessible entry and a false wall would be installed to enclose the toilet cistern and hot water tank
 - modifications to establish a separate communications room (i.e. installation of new switchboards and equipment, permanent closure of two doors and installing a false ceiling for fire safety standard compliance) and upgrades to the existing staff office (i.e. new furniture)
- external modifications to the station building:
 - removal of the existing partition/ nib walls, and relocation of the privacy wall on the western end of the station building further west to house relocated condensers
 - installation of an external glass canopy over the entrance to the Family Accessible Toilet for weather protection (between the station building and privacy wall)
 - widening of the existing door opening for the proposed Family Accessible Toilet
 - relocation of existing access ramps
 - minor intrusions to building facade to allow for communication cables, CCTV etc.
- removal / relocation of some existing seats and installation of new seating on the platform
- removal/ relocation of some platform landscaping to allow installation of the lift and to allow access to the Family Accessible Toilet

- localised platform regrading and trenching for services and to ensure accessible entry to the Family Accessible Toilet
- installation of CCTV and lighting improvements where required, including under the stairs and at the lift landing
- provision of hearing loops to improve customer experience and safety
- installation of wayfinding signage and other signage to identify existing and new accessible features
- installation of TSGIs on the platform surface
- installation of a pad mount electrical transformer adjacent to the new stairs

5.2.2 Interchange facilities

- line marking and signage to establish three kiss and ride spaces on the northern side of Burfitt Parade, adjacent to the eastern car park
- upgrade of the existing footpath between the eastern car park and raised pedestrian crossing to achieve compliant grades
- relocation of bin storage area
- fencing adjustments and bollards.

5.2.3 Materials and finishes

Materials and finishes for the Proposal have been selected based on the criteria of durability, low maintenance and cost effectiveness, to accord with heritage requirements, to minimise visual impacts, and to be aesthetically pleasing.

Subject to detailed design, the Proposal would include the following:

- Station building canopy - glass
- lower lift shaft – brick facade (of similar colour to the brick of the existing heritage station building)
- upper lift shaft – steel, glass with steel and aluminium louvres
- lift waiting bay– steel frame, glass roof cladding
- access path – concrete base, brick and steel balustrade with steel hand rails
- access stairs – concrete base, brick and steel balustrade with steel handrails and non-slip tread.

The design would be submitted to TfNSW's Urban Design and Sustainability Review Panel at various stages for comment before being accepted by TfNSW. An Urban Design Plan (UDP) and/or Public Domain Plan (PDP) would also be prepared by the Contractor, prior to finalisation of detailed design for endorsement by TfNSW.

5.2.4 Need for the Proposal

Upgrades under the Transport Access Program are designed to ensure that stations are fully accessible to a wider range of customers, to deliver improved travel to and between modes, encourage greater public transport use and better integrate interchanges with the role and function of town centres.

The Proposal would also ensure that Glenbrook Station would meet legislative requirements under the Commonwealth *Disability Discrimination Act 1992* (DDA) and the *Disability Standards for Accessible Public Transport 2002* (DSAPT).

In summary, the Proposal fulfils the Transport Access Program objectives as it would provide:

- a station that is accessible to people with a disability, limited mobility and parents with prams

- buildings and facilities for all modes that meet the needs of a growing population
- interchanges that support an integrated network and allow seamless transfers between all modes for all customers.

The Proposal is also consistent with NSW planning strategies including *NSW: Making It Happen* (NSW Government, 2015) and *Future Transport 2056* (TfNSW, 2018).

5.2.5 Design development

Options for improving access at Glenbrook Station were developed following a series of workshops with TfNSW, relevant stakeholders (including Sydney Trains) and the Proposal design team. Two options were developed which both focused on meeting DDA requirements, their key elements are outlined below:

- Option 1: installation of a lift, retention of the existing (non-compliant ramp) with installation of a new compliant access path
- Option 2: installation of a lift, removal of the existing (non-compliant ramp) to be replaced with new stairs and a new compliant access path.

Option 2 is the preferred option, the Proposal, and the subject of this SoHI.

Assessment of the options was based on a MCA undertaken with the key internal stakeholders. The assessment of options was informed by a workshop and with reference to relevant standards and guidelines.

Option 1 was not progressed because the area where the proposed ramp would connect to the existing ramp and connect to the footbridge would not meet DDA requirements. This option would also increase the construction footprint as it would require the new ramp to be larger (when compared to then new ramp with stairs for Option 2).

Option 2 was selected as the preferred option based on the outcome of the MCA. This option optimises accessibility, achieves better integration with the existing footbridge and optimises amenity improvements while acknowledging the existing heritage and ecological values and constraints. The option would achieve better Glenbrook precinct outcomes with reduced ecological and visual amenity impacts, when compared with Option 1, as the new access path and stairs would minimise tree removal helping to maintain the overall natural character of the area.

Option 1 included extensive modification to the internal layout of the Station Building. These modifications would have required the construction of new walls to split the female toilet waiting room and installation of new doorways. These works would have had involved significant direct impacts to heritage fabric and potential loss of heritage values. Option 1 would also have involved significant modifications to the station entrance including the removal of several OHW structures which would have resulted in greater cumulative impacts as these structures would need to be replaced elsewhere.

Where possible the preferred option has sought to reduce impacts to heritage fabric and heritage setting. For example, works have been consolidated into the main Station Building, avoiding the need to undertake works in other heritage buildings and tree removal has been minimised. The works within the Station Building have further been refined to minimise heritage impacts. For example, the FAT was originally proposed within the female toilet waiting room. This would have involved extensive works within the existing room and sealed off the current female toilets from use. The male toilets were proposed to be converted to a cleaner's store room and an ambulant toilet was proposed for the current cleaner's store room. These works would have required extensive intrusions into heritage fabric to service new toilets and handbasins as well as reconfiguring what is considered to be a very intact example of a Federation Style Station Building.

The current designs propose the FAT to be located within the current male toilets. No works are proposed for the female toilets and the proposed location of the ambulant toilet remains the same. This design reduces the extent of the installation of new services by utilising more of the existing services. The male toilets were recently extensively remodelled indicating that the conversion to a FAT toilet will require less impacts on heritage fabric than the original design.

Materials and finishes for the lift shaft have also been selected with consideration for the heritage setting and landscape character (e.g. a brick facade of similar colour to the brick of the existing heritage station building, with glass for the upper lift shaft to reduce visual impact).

6 Heritage impact assessment

6.1 Methodology

The assessment of heritage impact has been undertaken in accordance with the Heritage Division guidelines (Heritage Office & DUAP 2002). The assessment of the levels of impact are outlined in Table 6.1.

Table 6.1: Heritage Impact Assessment Methodology

Level of impact	Description
Moderate	The proposed works would impact defining elements inherent to the item's heritage significance such as built fabric, archaeological remains, defining landscape characteristics and/or associated aesthetic elements. Although the integrity/intactness of the item would be impacted, some defining elements of the item would be retained. Therefore, there is potential for the heritage significance of the item to be retained.
Minor	The proposed works would impact defining elements inherent to the item's heritage significance such as built fabric, archaeological remains, defining landscape characteristics and/or associated aesthetic elements. However, these impacts are not considered to detract from the heritage significance of the item.
Nil	The proposed works would not impact defining elements inherent to the item's heritage significance such as built fabric, archaeological remains, defining landscape characteristics and associated aesthetic elements. The works are not considered to detract from the heritage significance of the item.

6.2 Heritage impact assessment

This section considers the potential heritage impacts associated with the Proposal summarised in Section 5. Section 6.2.1 considers the heritage impacts associated with the station upgrade components of works summarised in Table 6.2 to Table 6.7. Section 6.2.2 considers the proposed interchange facilities. Potential impacts to views and vistas are considered in Section 6.3. Potential Impacts to archaeological potential are considered in Section 6.4. A summary of all heritage impacts identified is provided in Section 6.5 and an overall statement of heritage impact for the Glenbrook Railway Station Group is provided in Section 6.6.

6.2.1 Station upgrade

Table 6.2: Heritage Impact Assessment: Glenbrook Station Building

Station Building	
Grading of significant fabric	Exceptional
Description of works	<p>Internal modifications to the Station Building:</p> <ul style="list-style-type: none"> installation of a Family Accessible Toilet in the area currently occupied by the male toilets. This would include: <ul style="list-style-type: none"> lowering the existing concrete floor to the level of the platform to ensure accessible entry installing a false ceiling for fire safety standard compliance installation of floor and wall tiling removal of one of the existing toilets and remediation works installation of false wall to enclose the toilet cistern

Station Building

- modification of existing amenities such as hand dryers and installation of new amenities with associated electrical cables
- installation of a new ambulant toilet in the area currently occupied by the store room. This would include:
 - installation of new toilet and basin with associated plumbing
 - tiling of walls and floor
 - installation of false wall to enclose toilet cistern and hot water tank
 - installation of false ceiling and lighting, with associated electrical cables
- modifications to establish a separate communications room in the former parcel's office including:
 - installation of new switchboards and equipment
 - installation of associated services for new infrastructure
 - installation a false ceiling for fire safety standard compliance
 - permanent closure of two doors
- upgrades to furniture in Station Master's office including replacement of moveable heritage such as the Station Master's desk

External modifications to the station building:

- removal of the existing partition/ nib walls, and relocation of the privacy wall on the western end of the station building further west to house relocated condensers
- installation of a glass canopy over the entrance to the Family Accessible Toilet for weather protection (between the station building and privacy wall)
- widening of the existing door opening for the proposed Family Accessible Toilet
- relocation of existing access ramp
- minor intrusions into building facade to allow for communication cables, CCTV etc.

Impact Type	Direct
Visual Impacts	Yes
Level of Heritage Impact	Moderate

Heritage Impact Assessment

Internal Modifications

The Proposal would not impact the original internal layout of the Station Building. Rather the function of the former parcel office, male toilets and store room would be altered.

The modifications required for the installation of a FAT would include direct impacts to the fabric of the Station Building. This includes the widening of a doorway and lowering of the floor in the current male toilets and conversion of the store room to accommodate an ambulant bathroom. The door to the current male toilets would be widened to 850mm. The door widening would require the removal of heritage bricks and installation of new door. The installation of toilets and basins would require piping and plumbing to service the new facilities which may need to penetrate or be attached to heritage fabric. It is assumed that the FAT would be able to utilise some of the existing basins and toilets currently in the male toilets.

The passenger waiting room, female and male toilets were upgraded in 2015. These works included removing the original flooring and replacement with poured concrete and tiles. There are no works proposed within the passenger waiting room or female toilets.

Modifications to the former parcels' office (currently used by staff and for communications equipment) to construct a new communications room would include installation of new switchboards and communications equipment. This is likely to require additional installation of wiring through heritage fabric to service the switchboards and equipment. These impacts would also involve minor impacts to the exterior façade of the Station Building also. The modifications would require the permanent closure of doors between the former parcels' office and Station Master's office as well as the signal room. Fire proof linings would be installed to the ceiling and

Station Building

walls of the room as well as the permanently closed doors potentially obscuring heritage features such as ceiling cornices and requiring penetration into heritage fabric. This lining would have a moderate visual impact to the former parcel room. The installation of electrical wiring and fireproof lining are likely to have moderate cumulative impacts on the former parcel room.

Upgrades to the Station Master's Office would require the removal of moveable heritage items such as the original Station Master's desk, NSW mirror and fire proof safe.

Privacy Wall

The demolition and relocation of the privacy wall and wall nibs/partitions on the western end of the station building would not involve direct impacts to heritage fabric as it is a modern addition to the item (circa mid to late 20th Century). Visual impacts are likely to be minor as the proposed privacy wall would be similar in form to the current privacy wall.

Canopy

The proposed canopy to be installed over the entrance to the current male toilets (proposed FAT) would consist of a steel frame with clear glass panels. This addition to the station building would have direct impacts to heritage fabric for the installation of the canopy. Current designs indicate that the proposed canopy would be lower than the existing canopies over platforms 1 and 2, extending perpendicular from the entrance to the male toilets and sitting just below the over-door window. This would create a visual impact to views towards and of the Station Building from the western end of the platform. These visual impacts are considered to be moderate in nature.

Views

The construction of the lift shaft would impact views towards the Station Building from Burfitt Parade and the eastern end of the platform. The location of the Station Building within the railway cutting obstructs views towards the building from Burfitt Parade. The footbridge and garden beds restrict views towards the Station Building from the eastern side of the platform. Views towards the Station Building from the footbridge would not be impacted. The location of the proposed lift structure to the east of the footbridge would provide a physical separation between the new element and the heritage station building. Overall the proposed lift shaft would have minor impacts to views and vistas to and from the station building.

Summary

The proposed works would retain the original layout of the building but result in the removal of moveable heritage elements from the Glenbrook Station building, and alterations to the male toilets which have recently been upgraded as well as the former parcels' office. The proposed works also include the installation of new services and a glass and steel canopy over the male toilets. Proposed works within the Station Master's office would remove moveable heritage items from that room. There are no works proposed to the signal room, passenger waiting room or the female toilets and waiting room. These works would involve direct impacts to heritage fabric and visual impacts to the western end of the station building. The Proposal is considered to have a moderate heritage impact on the Glenbrook Station building.

Table 6.3: Heritage Impact Assessment: Out of Shed

Out of Shed

Grading of significant fabric	High
Description of works	The Proposal does not include works to the Out of Shed
Impact Type	None
Visual Impacts	No
Level of Heritage Impact	Nil

Out of Shed

Heritage Impact Assessment The are no direct impacts to the heritage fabric of the Out of Shed.

There are not considered to be any visual impacts to the Out of Shed as the bulk of the Station Building would block views towards the proposed lift shaft.

Table 6.4: Heritage Impact Assessment: Lamp Room/Store

Lamp Room/Store

Grading of significant fabric	Moderate
Description of works	The Proposal does not include works to the Lamp Room/Store
Impact Type	None
Visual Impacts	No
Level of Heritage Impact	Nil
Heritage Impact Assessment	The are no direct impacts to the heritage fabric of the Lamp Room/Store. There are not considered to be any visual impacts to the Lamp Room/Store as the bulk of the Station Building would block views towards the proposed lift shaft.

Table 6.5: Heritage Impact Assessment: Platforms 1 and 2

Platforms 1 and 2

Grading of significant fabric	High
Description of works	<ul style="list-style-type: none"> • construction and installation of a lift on the island platform that provide access to the existing footbridge (with covered waiting bay) • removal / relocation of some existing seats and installation of new seating on the platform • localised platform regrading and trenching for services and to ensure accessible entry to the Family Accessible Toilet and lift landing • installation of CCTV and lighting improvements where required, including under the stairs and at the lift landing • provision of hearing loops to improve customer experience and safety • installation of wayfinding signage and other signage to identify existing and new accessible features • installation of TSGIs on the platform surface
Impact Type	Direct
Visual Impacts	No
Level of Heritage Impact	Minor
Heritage Impact Assessment	<p>The proposed works include subsurface impacts to the platforms to install the proposed lift and associated services as well as localised grading of the platform surfaces to ensure that cross falls are compliant from the lift to the boarding point of the platform. These works would have minor impacts to the platforms.</p> <p>The works would not impact the brick walls of the platforms.</p> <p>The current seating and lighting on the platforms are modern and do not contribute to the heritage significance of the component and so any proposed adjustments would have a negligible impact.</p>

Platforms 1 and 2

The proposed works involve direct impacts to the heritage fabric of the platforms. The proposed works would not include impacts to the 1913 brick walls of the platforms. The proposed works would have minor impacts on the Glenbrook Station platforms.

Table 6.6: Heritage Impact Assessment: Footbridge

Footbridge

Grading of significant fabric	Moderate
Description of works	<ul style="list-style-type: none"> construction and installation of a lift on the island platform that provide access to the existing footbridge (with covered waiting bay) existing footbridge and stairs to the platform to be retained but with new handrails, nosings and TSGIs installed to achieve DDA compliance demolition of the existing (non-compliant) ramp from the footbridge to Burfitt Parade to be replaced with new stairs and construction of a new accessible path extending further east to connect to the raised pedestrian crossing and car park landscaping at the station entrance.
Impact Type	Direct
Visual Impacts	Yes
Level of Heritage Impact	Moderate
Heritage Impact Assessment	<p>The installation of the lift and connection to the existing footbridge would have direct impacts to the 1916 steel component of the bridge. These impacts involve the addition of new materials to the 1916 component of the bridge. The <i>NSW Rail Footbridge Conservation Strategy</i> recommends the retention of the Glenbrook Footbridge. The retention of the original steel structure is in keeping with the policies of the Conservation Strategy.</p> <p>The concrete deck, stairs and balustrades were added to footbridge in the 1990s, these elements do not contribute to the heritage significance of the footbridge. The demolition of the existing ramp, construction of a new accessible path and additional landscaping would not impact the heritage significance of the footbridge.</p> <p>The proposed lift shaft would impact views towards the station from the end of the footbridge on Burfitt Parade. The use of minimalist materials, canopies and small lift size aids to reduce the visual impacts. The current design proposes a smaller lift structure than previous designs, this would further reduce potential visual impacts. Overall these visual impacts would alter the current setting of the station and are considered to be moderate in nature.</p> <p>The proposed works include moderate direct impacts and visual impacts to the Glenbrook Station footbridge. However, the retention of the 1916 heritage fabric of the structure is in keeping with the <i>NSW Rail Footbridge Conservation Strategy</i>. The proposed works are considered to have a moderate heritage impact.</p>

Table 6.7: Heritage Impact Assessment: Gardens

Gardens

Grading of significant fabric	High
Description of works	<ul style="list-style-type: none"> construction and installation of a lift on the island platform that would connect to a small extension to the existing footbridge (with covered waiting bay) removal of some platform landscaping to allow installation of the lift and to allow access to the Family Accessible Toilet localised platform regrading and trenching for services and to ensure accessible entry to the Family Accessible Toilet.

Gardens

Impact Type	Direct
Visual Impacts	Yes
Level of Heritage Impact	Minor
Heritage Impact Assessment	<p>The proposed works would require the removal and relocation of some of the existing garden beds. The current designs do not involve direct impacts to the garden beds beneath the footbridge and stairs, however inadvertent impacts may occur during construction of the lift.</p> <p>It is unclear from the current designs if the platform regrading would require the removal of garden beds or if it would be undertaken around the garden beds. The garden bed located at the western extent of the Station Building on platform 1 is proposed to be relocated to the western end of the station building next to the privacy wall. This is due to accessibility for customers exiting the ambulant toilet and FAT.</p> <p>The removal, relocation and potential inadvertent impacts to garden beds by the proposed works would have minor impacts on this element of the station group. Overall the majority of the station gardens and mature established vegetation would be retained.</p>

6.2.2 Interchange facilities

The proposed interchange facility works are located outside of the heritage curtilage of the Glenbrook Station Group. These works include the reconfiguration of car park spaces, widening of footpaths and adjustment of fencing, bollards and hand rails. These works do not include any direct impacts to the heritage fabric of the item and would not impact the views and vistas to and from the item. There are no heritage impacts associated with the proposed interchange facility works.

The proposed interchange facility works are concentrated to the northern side of Glenbrook Station. There are no heritage impacts to the WHL Blue Mountains Area.

The proposed interchange facility works would not cause any heritage impacts to local LEP item Glenbrook Garden Centre (G012).

6.3 Views and vistas

The potential impacts to the views and vistas of the components of the Glenbrook Railway Station Group have been discussed in Table 6.2 to Table 6.7. The potential impacts to the overall views and vistas to and from the heritage item should also be considered. The Glenbrook Railway Station Group is located within the railway cutting. As such views towards the item from Burfitt Parade are generally limited (Plate 6.1). The proposed lift shaft would be visible from some locations on Burfitt Parade (Figure 6.1). The proposed works to the station entrance are generally minimal in nature and would be unlikely to impact the heritage item.

On the station platform visual impacts associated with the lift structure would vary depending on screening vegetation. Views from the eastern end of the platform would be generally screened by existing tall shrubs and trees (

Plate 6.2). Views from the western end of the platform would also be largely screened by existing tall shrubs and trees (Plate 6.3). The lift shaft and station entrance works would not impact views towards the station from the western commuter car park (Plate 6.4).

The retention of screening vegetation and replacement of vegetation with like for like would reduce these visual impacts. By utilising visually recessive materials and limiting the height and form of the lift canopy these visual impacts can also be reduced.

The visual impacts of the proposed works with consideration to the heritage setting are considered to be minor in nature.

[illegible]

Plate 6.2 Artist Impression view west along platform 2 (RPS 2018)



Plate 6.3 View towards the Station Building and proposed lift structure from western end of Station Building (RPS 2018)



Plate 6.4: View south east from western commuter car park (RPS 2018)

6.4 Archaeological potential impact assessment

The archaeological potential assessment has identified nil to low potential for archaeological remains to be located within the platform structures. The floors within the Station Building female toilets were replaced in 2015 therefore there is no potential for archaeological sub-floor deposits to be identified during the proposed works in this area.

No areas of archaeological potential have been identified within the Glenbrook Station Upgrade Proposal site (Figure 1.1). The location of the proposed footpath and transformer would not impact potential archaeological remains.

The Proposal would not impact any areas of archaeological potential.

6.5 Summary

The potential heritage impacts associated with the Proposal are summarised in Table 6.8 below.

Table 6.8: Summary of identified heritage impacts

Item		Type of Impact	Heritage Impact Assessment	Visual Impact Assessment
Glenbrook Railway Station Group (G011; s.170 SHI #4801053)	Station Building (including moveable heritage)	Direct	Moderate	Minor
	Out of Shed (including moveable heritage)	None	No Impact	None
	Lamp Room/Store	None	No Impact	None
	Platforms 1 and 2	Direct	Minor	None
	Footbridge	Direct	Minor	Minor
	Overbridge	None	No Impact	None
	Gardens	Direct	Minor	Minor

Item	Type of Impact	Heritage Impact Assessment	Visual Impact Assessment
Archaeological potential	None	No Impact	N/A
Glenbrook Garden Centre (G012)	None	No Impact	None

6.6 Statement of Heritage Impact

This assessment has identified minor visual impacts associated with the Proposal and minor to moderate impacts to heritage fabric associated with the Proposal. The following statement of heritage impact in Table 6.9 has been compiled based on the Proposal and this assessment.

Table 6.9: Statement of Heritage Impact

Statement of Heritage Impact

<p>The following aspects of the Proposal respect or enhance the heritage significance of the item or conservation area for the following reasons.</p>	<ul style="list-style-type: none"> the Proposal would ensure Glenbrook Station is accessible to all customers. This would ensure the continued use of the station as an active railway station into the future whilst retaining the exceptional and highly significant heritage elements of the station the Proposal does not include the demolition of any significant heritage fabric in the Station Building. The Proposal would preserve the internal layout of the Glenbrook Station Building retaining the intactness and integrity of the station. Works within the Station Building would be restricted to the former parcel office, store room and male toilets opportunities exist to enhance the heritage significance of the station group, these are provided as recommendations to this report. Consideration should be given to include these recommendations into the final design such as heritage interpretation and rejuvenation of the station gardens.
<p>The following aspects of the Proposal could detrimentally impact on heritage significance. The reasons are explained as well as the measures to be taken to minimise impacts.</p>	<ul style="list-style-type: none"> the construction of the proposed lift shaft would have minor visual impacts on the Glenbrook Railway Station Group. The use of visually recessive materials (such as glass and steel frame) and design of the lift shaft and incorporation of similar coloured brick to the station building in the base of the structure would help reduce these visual impacts. The installation and maintenance of screening vegetation at the station entrance would further reduce visual impacts to views towards the heritage item from Burfitt Parade the proposed lift shaft would be connected to the 1916 steel structure of the footbridge. These works may have minor impacts to this component of the bridge for example if portions of fabric need to be removed from the structure and through the attachment of new fabric to the heritage fabric. Measures to reduce harm should be put in place during these works such as protective material to elements of the structure adjacent to the works to avoid inadvertent impacts the proposed canopy over the western end of the station building would include direct impacts to the heritage fabric and visual impacts to the station building. The materials are considered to be visually recessive however the current design of the canopy does not conform to the height of form of the existing canopies over platform 1 and 2. Consideration should be given to blend the proposed canopy with the existing structure better whilst still utilising modern materials the removal of moveable heritage from within the station building would result in negative impacts to heritage significance. Measures should be put in place to protect these moveable items during their removal. Consultation with Sydney Trains should take place to determine an appropriate location to move these items to. Keeping these moveable heritage items within the

Statement of Heritage Impact

	<p>Station Building would be the best heritage outcome for the project</p> <ul style="list-style-type: none"> the removal of some garden beds on the platform would impact significant heritage fabric. These impacts could be mitigated through the restoration of some of the existing garden beds, including repainting of stones lining the beds and replacement of unhealthy and dying plants. Plans to install previous gardening awards within the passenger waiting room should be considered as a heritage interpretation component in consultation with Sydney Trains.
Have sympathetic solutions been considered and discounted for the Proposal?	<ul style="list-style-type: none"> the 'do-nothing' option is not a feasible option as it is inconsistent with NSW Government objectives and would not encourage the use of public transport or meet the needs of the Glenbrook community previous options for the Proposal have been considered during the planning process (see Section 5.2.5). These options have included reconfiguring the internal layout of the Station Building to split the female toilet waiting room into a FAT whilst still providing access to the existing female toilets or installing the FAT within the female toilet waiting room and permanently closing the female toilets. These options would have required significant modifications to the Station Building and potential loss of heritage values. Other options considered included constructing a new ramp access to the footbridge as well as the existing ramp, however this option would have required the removal of several OHW structures. The design of the lift structure has been developed to make the structure as visually recessive as possible within the station setting. Previous designs have included larger lift structures whilst the current lift design will have fewer visual impacts. A muted colour scheme and light materials such as glass aim to further reduce visual impacts associated with the lift structure the current option is considered the most sympathetic solution to achieve the accessibility requirements for the station whilst limiting the impacts to heritage fabric. The current Proposal would not impact the internal layout of the station building and the removal of garden beds is limited. The current Proposal would ensure that Glenbrook Railway Station would meet accessibility standards meeting the needs of customers and the Glenbrook community.
Conclusion	<ul style="list-style-type: none"> the Proposal includes the addition of new elements, alteration and removal of existing elements from the Glenbrook Railway Station Group. The Proposal is considered necessary to provide a station that is accessible to customers with a disability, the ageing and parents/carers with prams and customers with luggage. Visual impacts associated with the Proposal are considered to be minor in nature. Direct impacts to heritage components of the Glenbrook Railway Station Group range from moderate to minor there are no archaeological impacts associated with the Proposal.

7 Recommendations and mitigation measures

The following recommendations and mitigation measures have been compiled in accordance with the findings of this report, relevant legislative requirements and in consideration of the following Sydney Train's guidelines and strategies:

- *Moveable Heritage Management Strategy 2015* – Sydney Trains
- *Moveable Heritage Disposal Policy 2016* – Sydney Trains
- *Heritage Technical Note: Installation of New Electrical and Data Services at Heritage Sites 2017* – Sydney Trains
- *Heritage Platforms Conservation Management Strategy 2015* – AMBS for Sydney Trains
- *Railway Footbridges Heritage Conservation Strategy 2016* – NSW Government Architect's Office Heritage Group.

7.1 Recommendation one: lift shaft, canopies and footbridge works

The design of the lift shaft and associated canopy for the waiting bay should refer to Section 5.12 and 5.13 of *the Railway Footbridges Heritage Conservation Strategy* (NSW GAO Heritage Group 2016). The current designs include similar coloured brick to the Station Building for the base of the structure and minimal canopies over the waiting bay. The proposed lift and canopy additions should aim to include the following:

- sympathetic, minimalist & recessive in design without replicating historicist features
- finishing of the super structure in a neutral recessive colour and use of visually recessive materials such as glass and lightweight slim frames.

Any additions to the footbridge should be sympathetic to the current materials and finishes. This includes the use of similar colours in the proposed handrails and balustrades.

7.2 Recommendation two: station entrance and landscaping

The station entrance works should avoid the removal of mature vegetation where practicable. Any vegetation that is to be removed should be replaced with similar species, for example any trees that are to be removed should be replaced with a similar species and where practicable the plantings should be mature specimens. Where possible the works to the station entrance on Burfitt Parade should include screening vegetation to reduce visual impacts caused by the new lift shaft.

7.3 Recommendation three: Station Building interiors and exteriors

Heritage Architect

A project heritage architect should be engaged to assist with modifications to heritage fabric such as the widening of doors for the FAT, lowering of internal floors and fire proofing works. The project heritage architect should be involved in the further development of the design to provide advice on minimising impacts, avoidance of inadvertent impacts and implementation of the recommendations this report.

Installation of services

All new electrical and data services should be installed in accordance with the Sydney Trains *Heritage Technical Note: Installation of New Electrical and Data Services at Heritage Sites* (2017). The exact locations of services are unknown at this stage of design. Installation of services should be carefully planned in consultation with the project heritage architect and aim to reduce visual impacts to the Station Building.

Where possible services should be installed within established conduits to reduce cumulative impacts to heritage fabric.

Moveable heritage

The removal or transfer of any moveable heritage items should be undertaken in accordance with the Sydney Trains *Moveable Heritage Disposal Policy* (2016) and the Sydney Trains *Movable Heritage Management Strategy* 2015-2017. The following best practice guidelines should be followed to avoid and/or minimise impacts to Glenbrook Station moveable heritage

Consult

TfNSW should consult with Sydney Trains Heritage to identify all listed moveable heritage items and potential moveable heritage items located within the Glenbrook Station Building. Where discrepancies with the State Heritage Inventory (SHI) sheet have been identified in this report for an item, these should be further investigated to ensure no inadvertent impacts to moveable heritage occur.

Retain and conserve *in-situ*

Moveable heritage is an important component of a heritage listed site and should be retained *in situ*, in the first instance where possible. Further options to retain the moveable heritage items within the Station Master's Office (within the Station Building) should be investigated. For example, the NSW mirror could be retained within the Station Master's Office.

Retain and store

Where moveable heritage items cannot be retained in their original locations, the items should be tagged, recorded, catalogued and stored in secure long-term storage until a decision is made. In this instance the Out of Shed is currently used to store moveable heritage items such as the Railway Stations Garden Awards. Options to relocate the moveable heritage items to this location should be investigated. The conditions within the Out of Shed for long term storage should also be investigated, and any necessary repairs implemented.

Disposal

Where all other options are exhausted, and the decision is made to dispose of the moveable heritage items, an inventory of movable heritage objects at Glenbrook Railway Station Group should be made and assessed for retention by Sydney Trains prior to sale or disposal. If a movable heritage object is no longer required for Sydney Trains' purposes, it may be disposed of in accordance with an agreed Sydney Trains' Heritage Disposal Policy.

Display, promotion and training

Options should be investigated for opportunities to display, promote and interpret the moveable heritage at Glenbrook Station. This could include the display of gardening awards within the waiting room or development of heritage interpretation strategy for the station (see Recommendation Six: Heritage Interpretation Strategy).

Lowering of existing floor levels, widening of doorways and installation of new toilets

The proposed Family Accessible Toilet (FAT) is to be located within the existing male toilet. This portion of the Station Building was subject to upgrades in 2015 which replaced the flooring of the male and female toilets and passenger waiting room, and installation of new toilets. The lowering of existing floor levels associated with the Proposal is unlikely to impact heritage fabric.

The widening of the entrance to the proposed FAT at the western end of the Station Building would require the removal of heritage fabric. Efforts should be made to minimise visual impacts to the Station Building as follows:

- all works that involve direct impacts to heritage fabric should be guided by advice from the project heritage architect to minimise impacts and avoid inadvertent impacts
- new brickwork should incorporate similar coloured existing brickwork, this includes colour of bricks and mortar and tying the new doorway into the existing decorative rendered trims and moulded string courses
- the floor lowering works in the proposed FAT should avoid inadvertent impacts to heritage fabric during the works. This would be achieved by establishing exclusions zones around heritage elements and minimising the use of machinery near these elements. Vibration from machinery during construction has been considered in a separate technical report
- details of the privacy wall will be finalised during the detailed design phase. No heritage impacts have been identified with this component of the scope of works. However the location of this wall should be guided from advice from the heritage architect and be comprised of similar brick to the station building and base of the lift

FAT canopy

The detailed design for the proposed FAT canopy should be developed in consideration of the Sydney Trains *Canopies and Shelters Design Guide for Heritage Stations* (2016). In particular:

New design should enhance the setting and significance of a place. In rare cases, where the station has a significant overall character that has been preserved through time, it may be justifiable to design the new structures as reproductions of the existing ones. In most cases, the appropriate response will be a modern structure with design qualities that are sensitive to the original.

The proposed canopy should aim to reduce potential visual impacts through the use of visually recessive materials and sympathetic design to the heritage structure. Current designs could be reconsidered to blend with the existing heritage canopies in terms of height and form. Detailed design should be developed in consultation with the project heritage architect, particularly in regards to the locations of attachments to heritage fabric and the methodology of construction.

Measures should be put in place to protect heritage fabric from inadvertent impacts during the construction and installation of the canopy.

7.4 Recommendation four: platforms

Protective measures should be put in place to protect heritage structures on the platforms during the regrading works and during any required trenching. Following the completion of these works the platform surfaces should be reinstated similarly to their current condition. The current concrete surfaces of the platforms reference the former gravel surfaces and are considered to contribute to the significance of the platforms.

Addition of tactile surfaces should to be limited to the minimum amount required to meet legislative requirements.

The addition of new station components such as seating, lighting and signage should adhere to the Sydney Trains and NSW TrainLink *Station Component Guide* (2017) and aim to be sympathetic to current seating, lighting and signage currently located on the platform. Consideration could be given to the reinstatement of original heritage features to the platforms such as bubblers and seating. This would aim to further reduce the cumulative impacts associated with the Proposal and reference the heritage significance of the station.

7.5 Recommendation five: gardens

The platform gardens at Glenbrook Station are an integral component of the item's heritage significance. It is recommended that works to enhance and refurbish the Glenbrook Station gardens should be included to mitigate against potential visual impacts from the lift shaft and associated canopy structure.

Garden beds removed to accommodate the platform regrading works should be replaced with garden beds of a similar size and nature. All stone edging used in the garden beds to be removed from the station should be collected and stored appropriately to be reused at the station.

This recommendation would also mitigate against cumulative impacts and the removal of some garden beds to facilitate the proposed works. Landscape works to the station should be heritage led and precinct wide and undertaken in consultation with Sydney Trains Heritage. Effort should be made to identify potential stakeholders in the community that may be able to provide input to the management of the gardens at the station.

Further historical research and community consultation should be undertaken to determine the most appropriate plant species for the station complex. This could be built into the heritage interpretation strategy recommended below.

7.6 Recommendation six: heritage interpretation strategy

Consideration should be given to the formulation and implementation of a heritage interpretation strategy for the station, in accordance with the NSW Heritage Office guideline *Interpreting Heritage Places and Items* (2005). Currently there is no heritage interpretation at the station and much of the moveable heritage is stored within the Out of Shed. Options to incorporate heritage interpretation at the station could include signage to communicate the significance of the gardens at the station with historical photos, or incorporation of the gardening awards within the Passenger Waiting Room.

Physical components of the station precinct could be incorporated into the heritage interpretation strategy such as the reinstatement and enlivening of the gardens of the station and the cementing and regrading of the platforms to reference the original gravel surfaces. The heritage interpretation strategy should undertake additional historical research to inform these aspects of the station.

Any heritage interpretation strategy compiled for the station should be precinct wide and present a cohesive narrative of the significance of the item. Consideration should be given to the Sydney Trains Draft *Heritage Interpretation Guideline* (July 2018) in consultation with Sydney Trains Heritage, during the preparation and implementation of a heritage interpretation strategy.

Heritage interpretation at the station would communicate the history of Glenbrook Station to the general public and enable customers to engage with the heritage significance of the station. Heritage interpretation at the station could include themes such as the Glenbrook deviation and the NSW Railway Stations Gardens Competitions.

7.7 Recommendation seven: photographic archival record

A photographic archival record of the Glenbrook Station and its setting should be prepared prior to the commencement of works, in accordance with the NSW Heritage Division publications, "*How to prepare archival records of heritage items*" and "*Photographic Recording of Heritage Items using Film or Digital Capture*". The photographic archival record should include the current state of the Glenbrook Station Group prior to the works, the internal configuration of the station building and views and vistas within, to and from the item. The photographic archival record should also consider the use of current recording technology such as photogrammetry and 3D laser scanning that could be integrated into the heritage interpretation strategy.

Copies of the archival record should be deposited with the Heritage Division, the Blue Mountains City Council and Glenbrook and District Historical Society.

7.8 Recommendation eight: Section 170 Heritage Division notification

In accordance with Section 170a of the Heritage Act, Sydney Trains should provide notification of the works to Heritage Division 14 days prior to the commencement of the works.

7.9 Recommendation nine: unexpected heritage finds guideline

It is unlikely that any archaeological remains would be encountered during the proposed works. However, if any unexpected archaeological deposits are encountered during construction the TfNSW *Unexpected Heritage Finds Guideline* (2016) should be followed.

References

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- NSW Heritage Office 2001, Assessing heritage significance.
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- Rowland, E 1954. 'The Story of the New South Wales Railways' in *Royal Australian Historical Society Journal and Proceedings*. vol 40, part 5, pp. 245-286.
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- Sydney Trains 2015, *Moveable Heritage Management Strategy*.
- Sydney Trains 2016, *Moveable Heritage Disposal Policy*.
- Sydney Trains 2017, *Heritage Technical Note: Installation of New Electrical and Data Services at Heritage Sites*.
- Thorp, W 1998. *Heritage Impact Statement & Conservation Policy Former School of Arts Site Springwood*. Report to Blue Mountains City Council.
- Transport for NSW 2018, Future Transport 2056

Appendix A

Proposal Designs

Drawings considered as part of this assessment:

- TAP -150068- GB-AR-1120
- TAP -150068- GB-AR – 1200
- TAP -150068- GB-AR – 1300
- TAP -150068- GB-AR – 1500
- TAP -150068- GB-AR – 1502
- TAP -150068- GB-AR - 1510

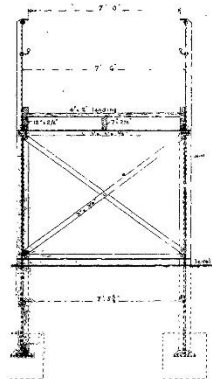
Appendix B

Historical Station Drawings

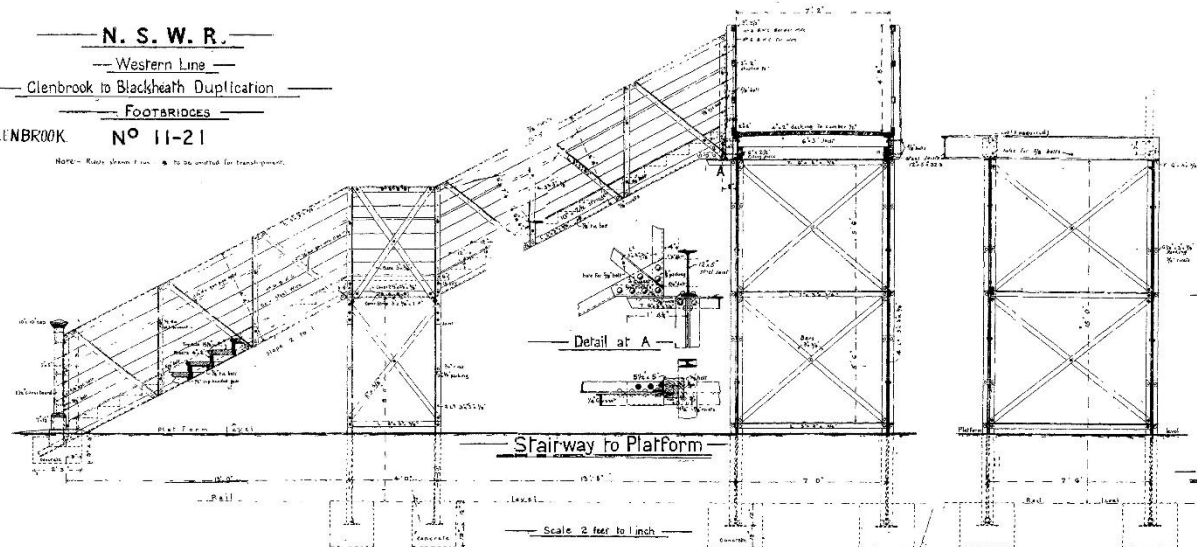
set N^o 1.

N. S. W. R.
 — Western Line —
 — Glenbrook to Blackheath Duplication —
FOOTBRIDGES
GLENBROOK N^o 11-21

Note: Rails shown in cut. • To be omitted for transportation.

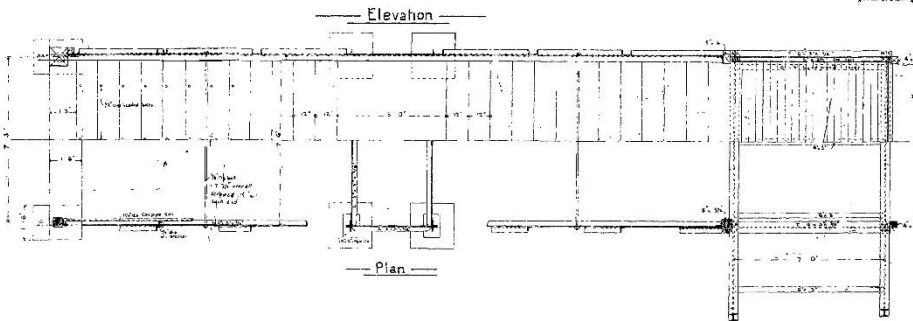


Section thro. Landing



Stairway to Platform

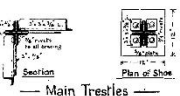
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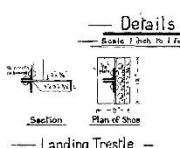
Elevation

Plan

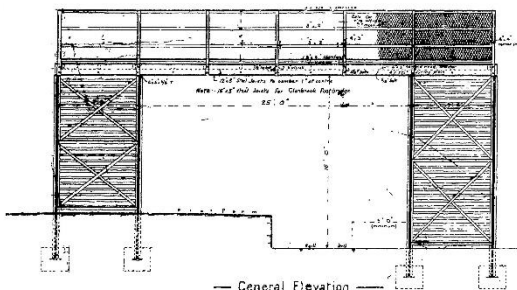
Back Elevation of Main Trestle



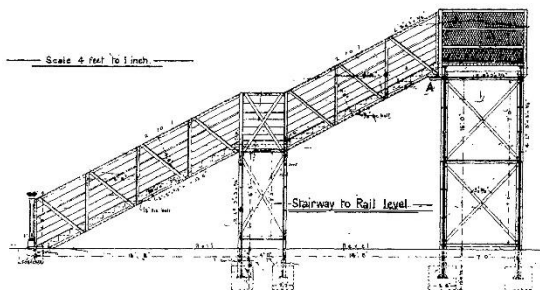
Main Trestles



Landing Trestle

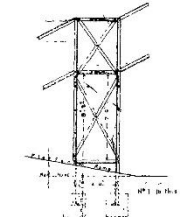


General Elevation

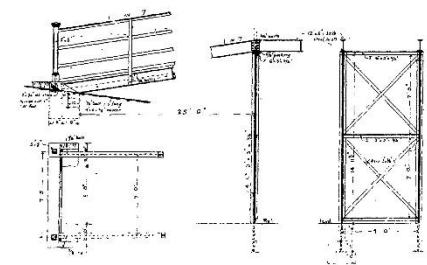


Elevation

Scale 4 feet to 1 inch



Trestle to Landing
Glenbrook, New South Wales



Abutment

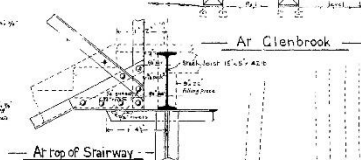
Single Trestle

Linden Footbridge

Diagrams of Footbridge

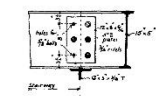


Elevation



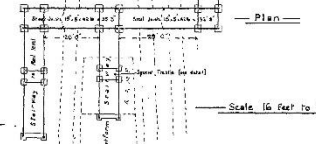
At Glenbrook

At top of Stairway



Joint in Steel Joist

Details for Glenbrook Footbridge



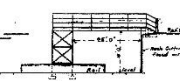
Plan

Scale 16 feet to 1 inch

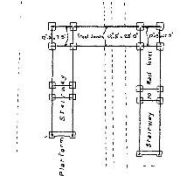


Elevation

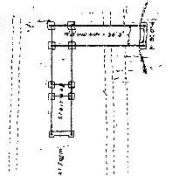
At Valley Heights



At Faulconbridge



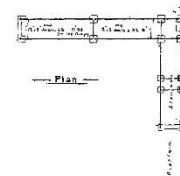
Plan



Plan



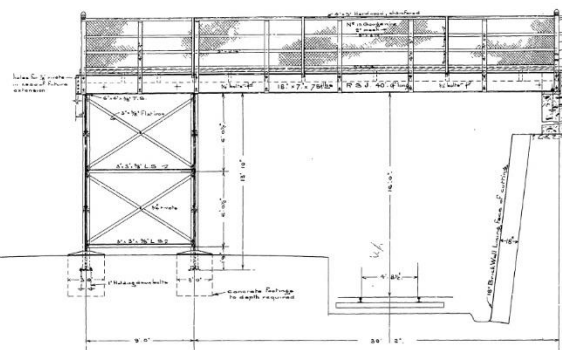
At Linden



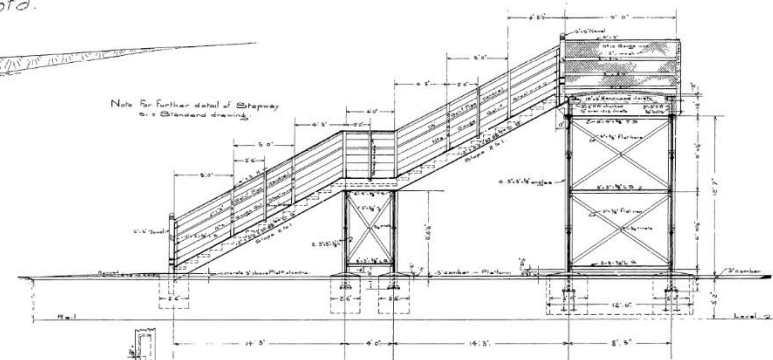
Plan

N.S.W.R.
Glenbrook
Footbridge at New Station.
Scale 1" = 10' = 1 Foot.

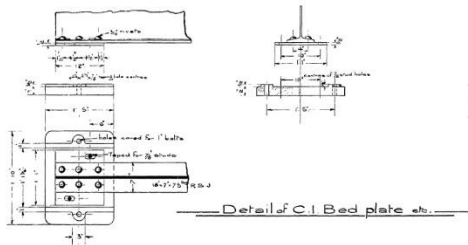
41° 52' 0" total.



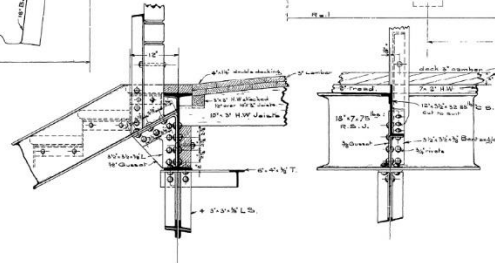
Elevation



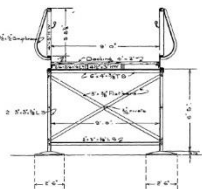
End Elevation



Detail of C.I. Bed plate etc.



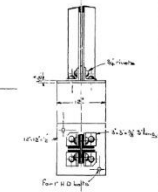
Detail of Stepway attachment



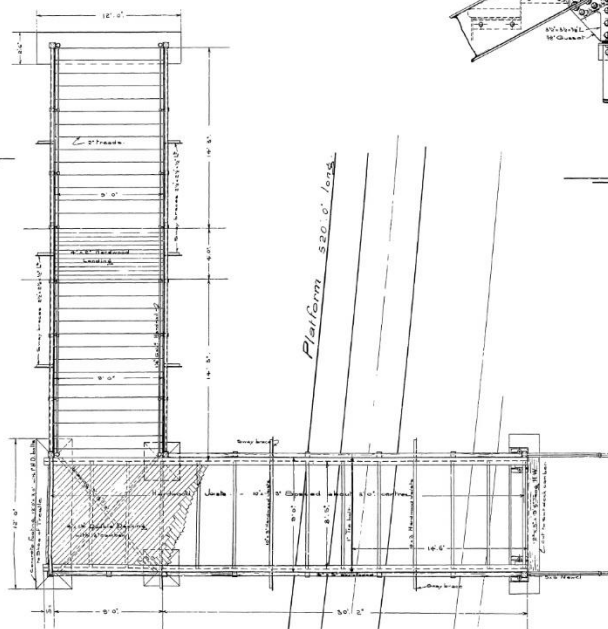
Cross Section of Landing



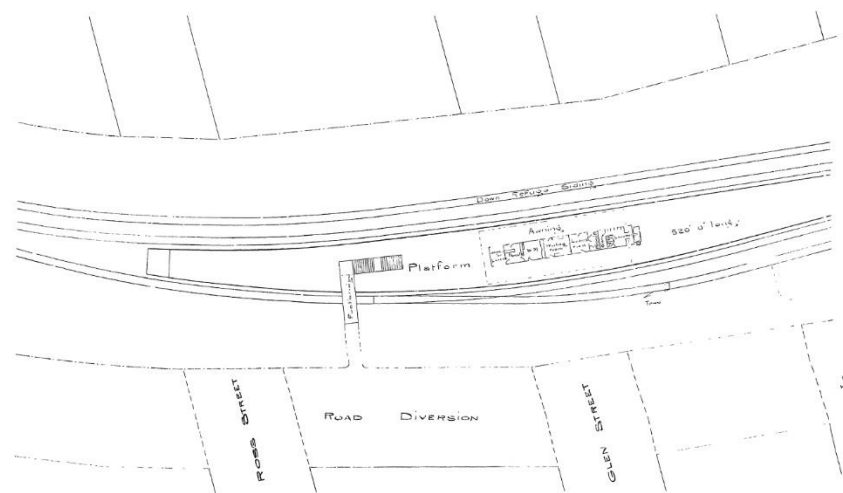
Tie Bolts



Detail of Shoe



Plan

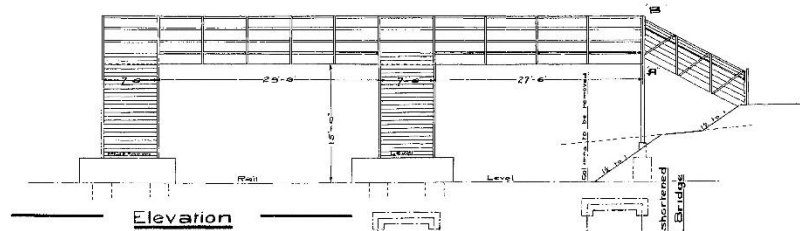


Site Plan

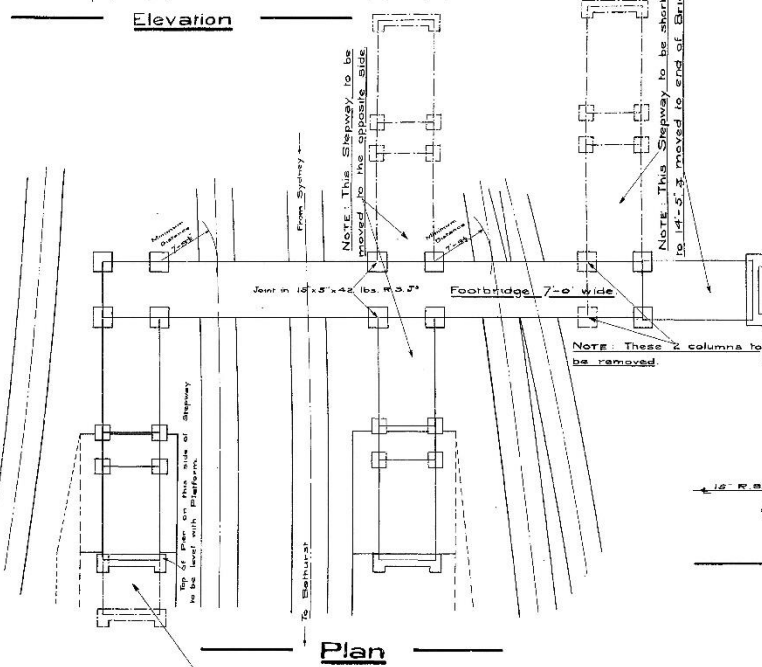
EDMS CV0052983
 WARNING SCANNED IMAGE

N. S. W. R.
Cox's Creek to Sodwalls Duplication.
Removal & Rearrangement
Of Old Glenbrook Footbridge to
Sodwalls.

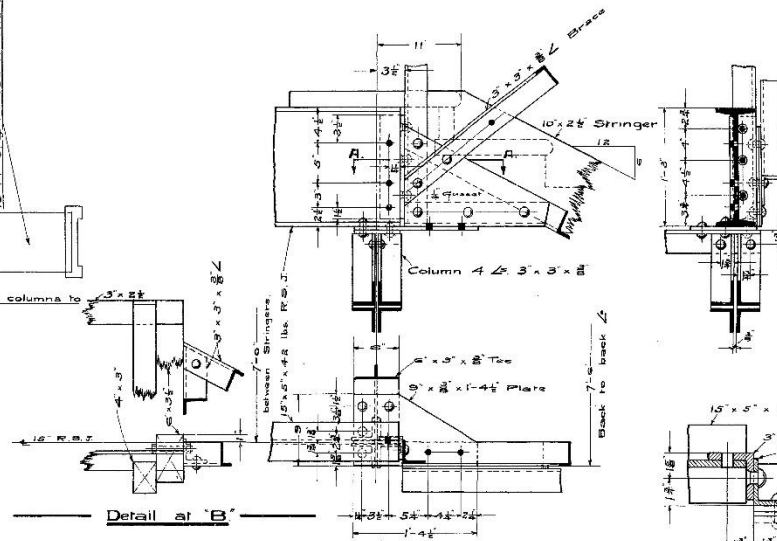
Scale 1/4" = 1'-0" 12'-0" = 1"



Elevation



Plan

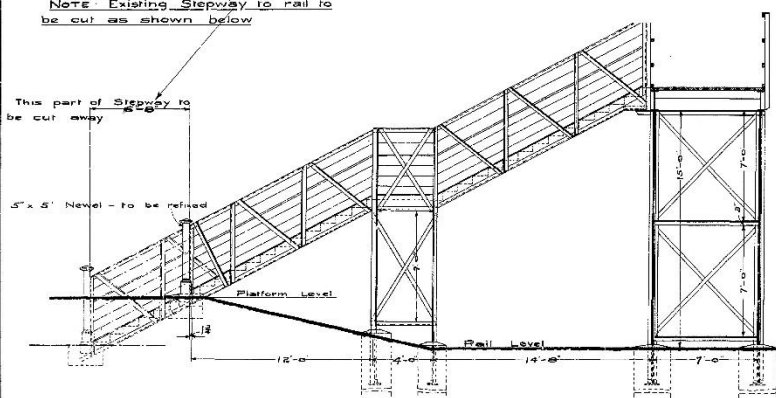


Detail at 'B'

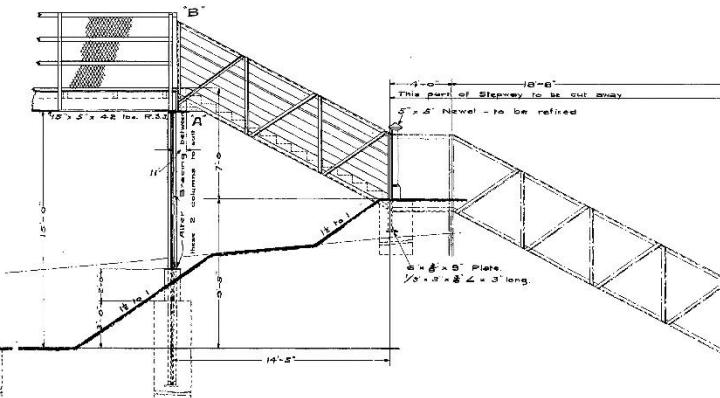
Detail at 'A'

Section A-A

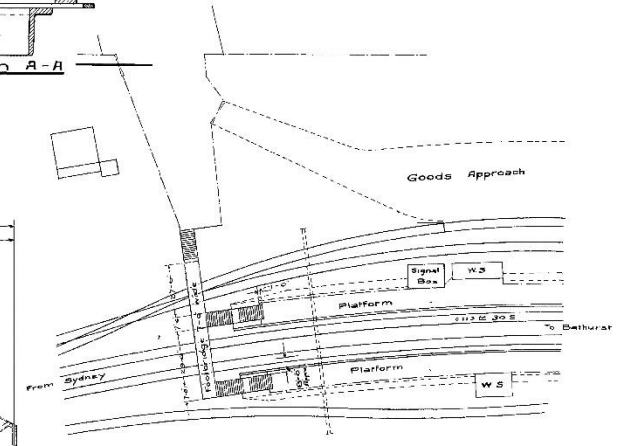
Note: Existing Stepway to rail to be cut as shown below



Elevation of Side Stepway



Elevation of End Stepway



Site Plan

Scale 3/32" = 1" inch

EXISTING LINES DEPT.
PLAN ROOM
No. 11
OFFICE COPY

N.S.W.R.
Glenbrook
Station Building
Scale 4 ft to 1 inch

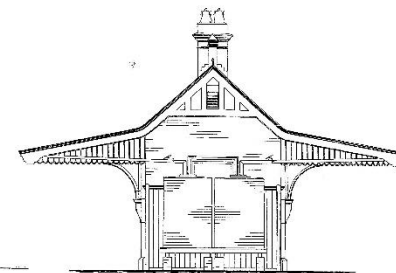
WARNING SCANNED IMAGE
EDMS CV0053116

Drawing No. 1

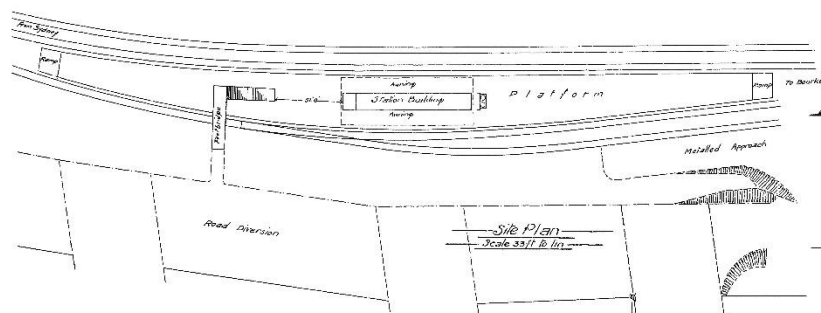


Elevation to Rail

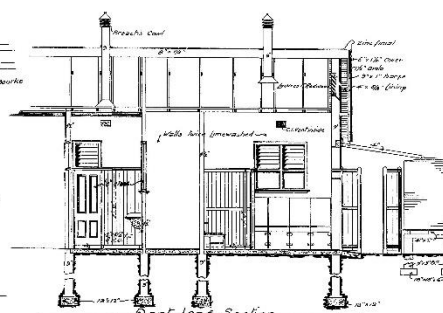
Paint all woodwork, & counter, & coats
Drainage & footings to be indicated on site



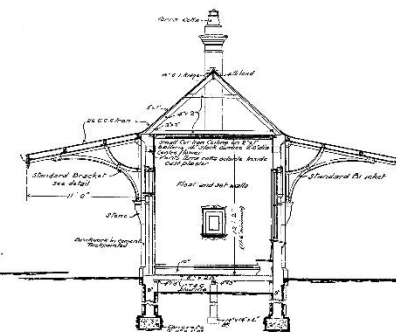
End Elevation



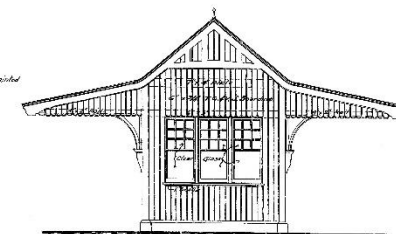
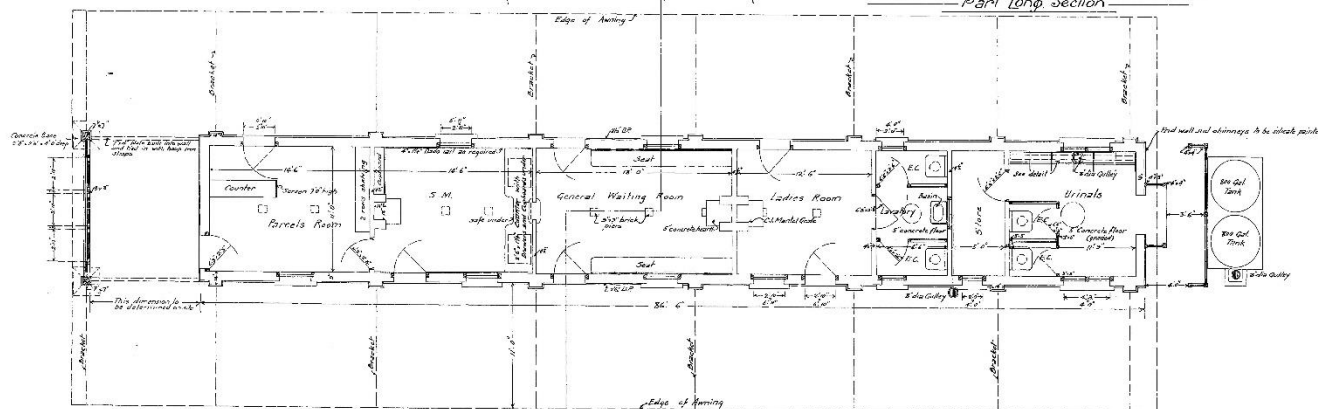
Site Plan
Scale 33 ft to 1 in



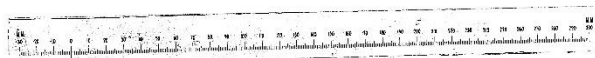
Part Long Section

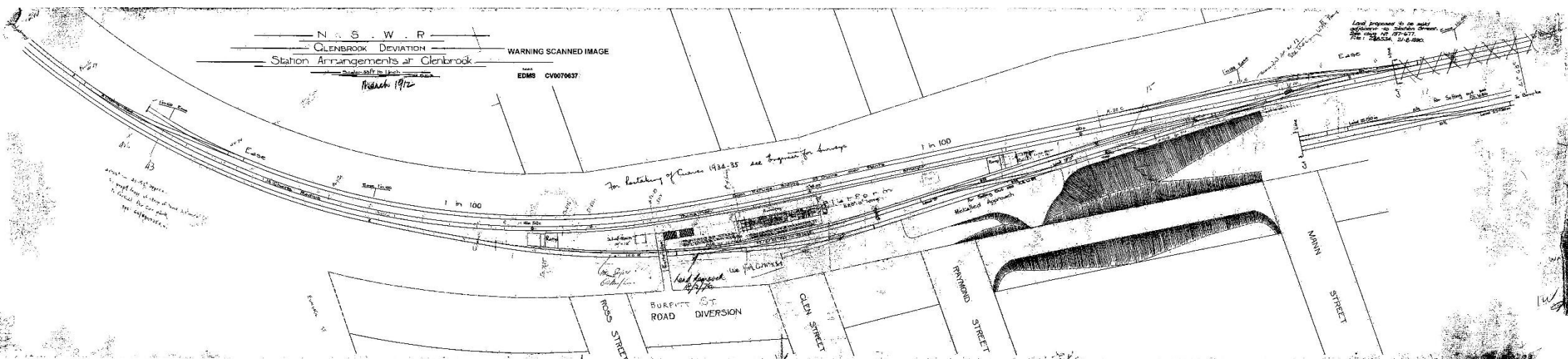


Cross Section A.A.



End Elevation





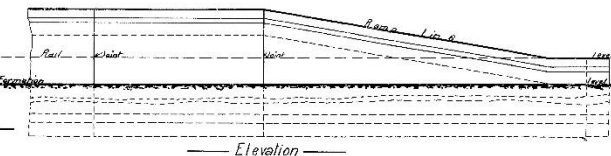


Scale 4 feet to 1 inch

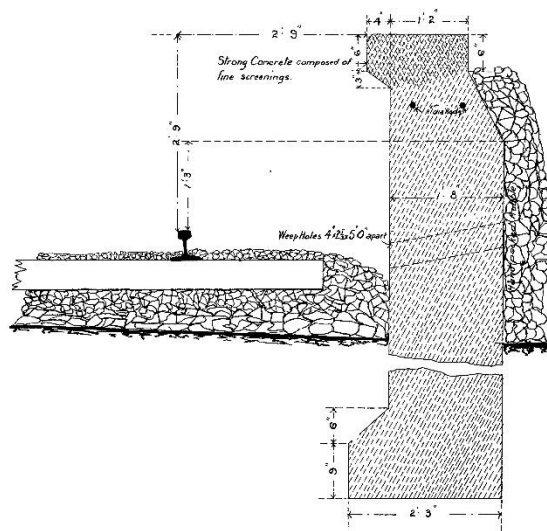
NSWR
Duplication between Glenbrook and Blackheath

Concrete Platform Walls

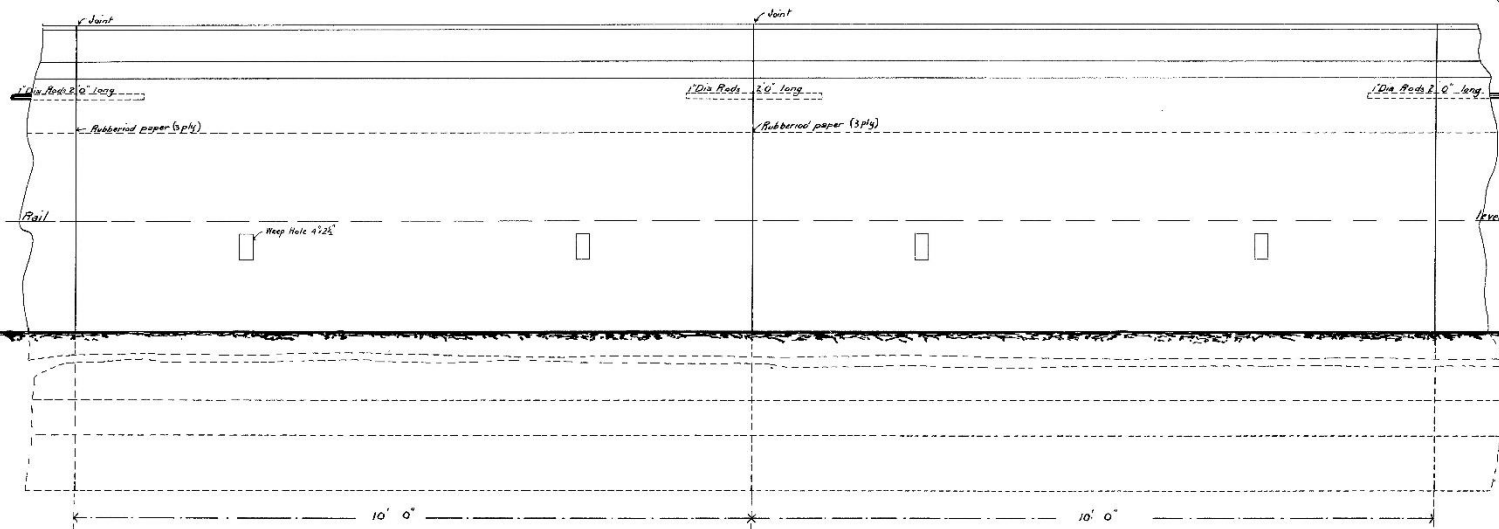
Scale 1 inch to 1 foot



Plan



Section



Elevation

EDMS CV0214330
WARNING SCANNED IMAGE

15-66

with
3/18/04

N. S. W. R.

GLENBROOK

Sites of Station Buildings

Scale: 4 Chs to 1 in

WARNING SCANNED IMAGE

Spares 13

EDMS CV0242541

