

New Intercity Fleet Springwood to Lithgow Rail Corridor Modifications - Eskbank Station

Statement of Heritage Impact

Report to Transport for NSW

July 2017



 artefact

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Acronyms

Acronym	Definition
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
ISEPP	<i>State Environmental Planning Policy (Infrastructure) 2007</i>
LEP	Local Environmental Plan
LGA	Local Government Area
NIF	New Intercity Fleet
OEH	Office of Environment and Heritage
REF	Review of Environmental Factors
SHR	State Heritage Register
SoHI	Statement of Heritage Impact

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EXECUTIVE SUMMARY

Transport for NSW (TfNSW) is the government agency responsible for the delivery of major transport infrastructure projects in NSW and is the proponent for the New Intercity Fleet - Springwood to Lithgow Rail Corridor Modifications (the Project).

In May 2014, the NSW Government announced it is delivering the New Intercity Fleet, to replace trains carrying customers from Sydney to the Central Coast, Newcastle, Blue Mountains and the South Coast. The introduction of the New Intercity Fleet would allow for the replacement of the older electric train fleets currently used to provide intercity services.

The New Intercity Fleet would:

- provide a more consistent and improved level of customer service for intercity customers
- facilitate the retirement of two electric train sets currently in operation
- reduce the costs of intercity operations
- increase capacity for intercity customers.

The Project would involve works within the curtilage of the Eskbank Railway Station Group. Eskbank Station is listed on the following heritage registers as State significant:

- State Heritage Register (SHR) as “Eskbank Railway Station Group”, SHR# 01138
- Schedule 5 of the Lithgow Local Environmental Plan 2014 (Lithgow LEP) as “Eskbank Railway Station Group including signal box”, I434
- RailCorp Section 170 register as “Eskbank Railway Precinct”, SH# 4801018.

The Project, within the curtilage of Eskbank Station would involve the following activities:

- modifications to platform 1 and platform 2 at Eskbank Station including adding to and cutting back platform copings (coping modifications) of up to 25 centimetres
- re-positioning of rail tracks (track slewing) in order to accommodate increased loadings and distance to platforms, and ensuring adequate passing distance between trains
- relocation of services where required, and installing additional support where cables are removed from the platform coping overhang
- adjusting overhead wiring configurations within the Eskbank Station to match track slewing arrangements on the north main track
- the establishment of temporary construction compounds during works.

An assessment of the proposed works showed that the original fabric lower brick courses of the platform 1 retaining wall at Eskbank Station would be cut to variable extents, with a minimum reduction of 95 millimetres and a maximum reduction of 156 millimetres. These works would result in a moderate physical and minor visual impact to Eskbank Railway Station Group. No other significant fabric or significant archaeological resources would be impacted by the proposed works.

Mitigation measures have been provided in this report to ensure the heritage significance of Eskbank Station is preserved during the works.

1.0 INTRODUCTION

1.1 Background

Transport for NSW (TfNSW) is the government agency responsible for the delivery of major transport infrastructure projects in NSW and is the proponent for the New Intercity Fleet - Springwood to Lithgow Rail Corridor Modifications (the Project).

In May 2014, the NSW Government announced it is delivering the New Intercity Fleet, to replace trains carrying customers from Sydney to the Central Coast, Newcastle, Blue Mountains and the South Coast. The introduction of the New Intercity Fleet would allow for the replacement of the older electric train fleets currently used to provide intercity services.

The New Intercity Fleet would:

- provide a more consistent and improved level of customer service for intercity customers
- facilitate the retirement of the two oldest electric train sets currently in operation
- reduce the costs of intercity operations
- increase capacity for intercity customers.

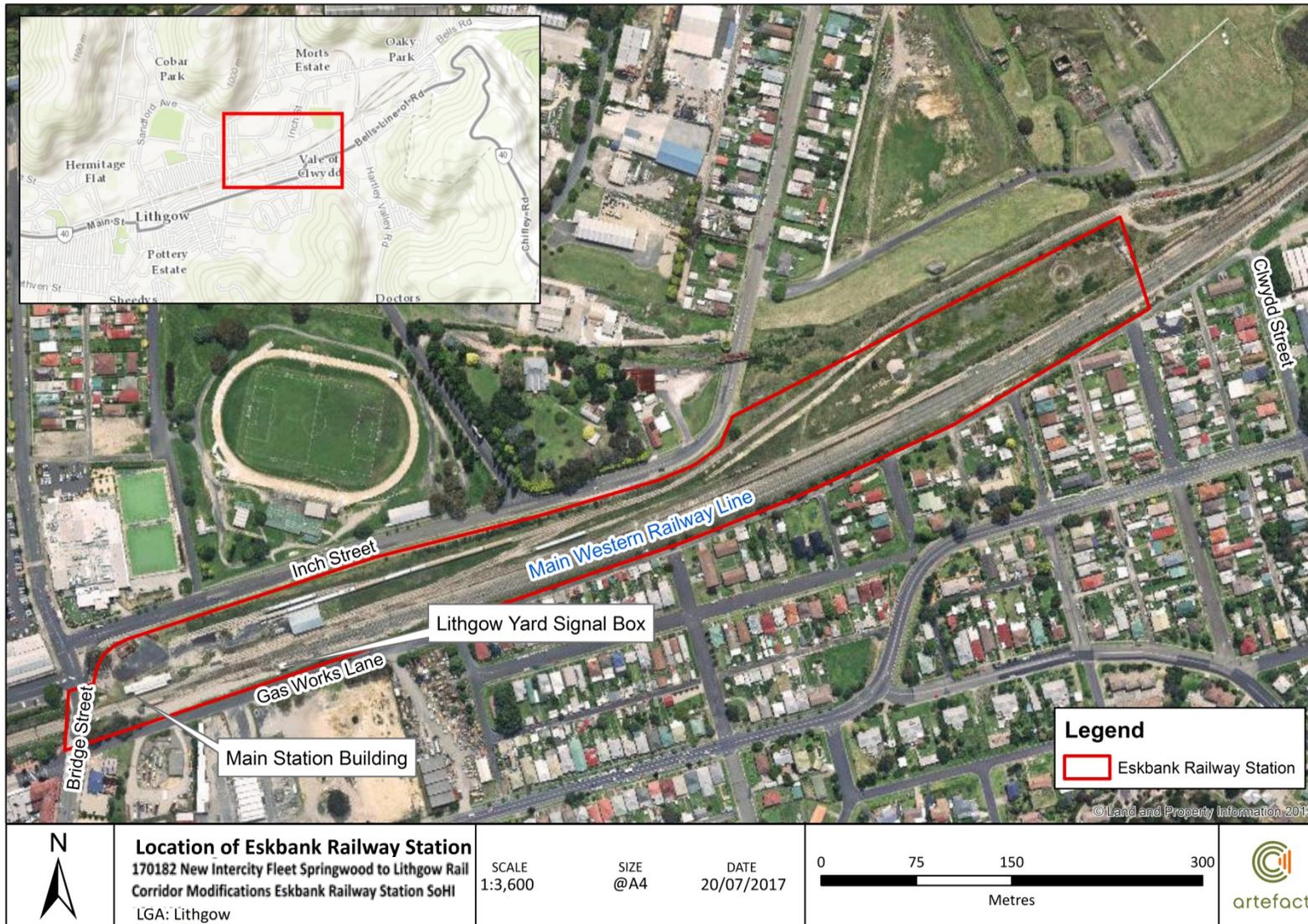
The Project would involve the following works with the curtilage of Eskbank Railway Station Group (Eskbank Station):

- modifications to platform 1 and platform 2 at Eskbank Station including adding to and cutting back platform copings (coping modifications) of up to 25 centimetres
- re-positioning of rail tracks (track slewing) in order to accommodate increased loadings and distance to platforms, and ensuring adequate passing distance between trains
- relocation of services where required, and installing additional support where cables are removed from the platform coping overhang
- adjusting overhead wiring configurations within the Eskbank Station to match track slewing arrangements on the north main track
- the establishment of temporary construction compounds during works.

1.2 Site location

Eskbank Station is an unused side platform station and former rail yard located in the city of Lithgow, in the Lithgow Local Government Area (LGA). Eskbank Station includes the former station platforms and buildings, as well as around one kilometre of main rail track and sidings. Eskbank Station is bounded by Gas Works Lane in the south, Bridge Street in the west and Inch Street in the north. The eastern boundary of the Eskbank Station is about in line with Clywdd Street at Coal Stage Hill.

The railway station buildings are located in the western portion of the Eskbank Station, near the Bridge Street overbridge. The location of the station and wider precinct including the signal box is illustrated in Figure 1.



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Figure 1: Location of Eskbank Station

1.3 Report methodology

This SoHI has been prepared using the document *Statement of Heritage Impact (2002)*, prepared by the NSW Heritage Office, contained within the *NSW Heritage Manual*, as a guideline and includes:

- desktop searches of relevant heritage registers
- review of Project drawings and concept design reports
- review of the following key documents:
 - heritage register listings for Eskbank Station
 - historic plans for Eskbank Station held by the Sydney Trains Plan Room
 - previous reports and other relevant documentation provided by Transport for NSW
- background research into the historical development of Eskbank Station using the historic plans, historical photographs, newspapers and other primary and secondary historical sources as relevant as referenced
- a site inspection was conducted by Artefact Heritage. Note: all photographs within this report were taken by Artefact during these site inspections unless otherwise stated
- assessment of the Project against the heritage significance of Eskbank Station. The assessment has been undertaken in light of the conservation processes and principles found in *The Burra Charter: The Australian ICOMOS Charter for Places of Cultural Significance (2013)*. *The Burra Charter* is considered to be the pre-eminent guidance document for the management of change for places of heritage significance within Australia.
- The Project has also been assessed against the Sydney Trains document *Heritage Platforms Conservation Management Strategy*, as the most relevant management document.

1.3.1 Impact assessment

In order to consistently identify the potential impact of the proposed works, the terminology contained in has been referenced throughout this document.

Table 1: Terminology for assessing the magnitude of heritage impact

Grading	Definition
Major	<p>Actions that would have a long-term and substantial impact on the significance of a heritage item. Actions that would remove key historic building elements, key historic landscape features, or significant archaeological materials, thereby resulting in a change of historic character, or altering of a historical resource.</p> <p>These actions cannot be fully mitigated.</p>
Moderate	<p>Actions involving the modification of a heritage item, including altering the setting of a heritage item or landscape, partially removing archaeological resources, or the alteration of significant elements of fabric from historic structures.</p> <p>The impacts arising from such actions may be able to be partially mitigated.</p>

Grading	Definition
Minor	<p>Actions that would result in the slight alteration of heritage buildings, archaeological resources, or the setting of an historical item.</p> <p>The impacts arising from such actions can usually be mitigated.</p>
Negligible	<p>Actions that would result in very minor changes to heritage items and no significant alteration of its heritage values.</p>
Neutral	<p>Actions that would have no heritage impact.</p>

1.3.2 Sydney Trains Heritage Platforms Conservation Management Strategy

A conservation management strategy (CMS) for heritage platforms managed and maintained by Sydney Trains was prepared by Australian Museum Business Consulting (AMBS) on behalf of Sydney Trains in 2015¹. This heritage strategy was produced in order to effectively and consistently manage modifications to heritage significant station platforms throughout NSW. The report provides an overview of historic station platforms, a comparative analysis of station platform materials, and produces strategic recommendations for future works at stations to provide consistent responses to heritage management of those stations.

Specific strategic recommendations relevant to the Proposal works are discussed in Section 7.3 of this report.

1.3.3 Eskbank Rail Heritage Precinct Conservation Management Strategy

A conservation management strategy (CMS) for the Eskbank Rail Heritage Precinct was prepared by Otto Cserhalmi and Partners PL for RailCorp Office of Rail Heritage in 2007². This heritage strategy was produced to provide an up-to-date assessment of significance of the Eskbank Railway Precinct and conservation management strategies for each asset within the site. Specific strategic recommendations relevant to the Proposal works are discussed in Section 7.4 of this report.

1.3.4 Report authorship and acknowledgements

This report has been prepared by Duncan Jones (Heritage Consultant). Background research and context has been provided by Charlotte Simons (Heritage Consultant). Dr Sandra Wallace (Director) and Josh Symons (Principal) provided management input and review.

1.4 Report limitations

The purpose of this report is to identify and assess historic heritage and archaeological potential which might be impacted by the Project. Predictions have been made within this report about the probability of subsurface archaeological materials occurring within the site, based on surface indications and environmental contexts. However, it is possible that materials may occur in areas without surface indications and in any environmental context. Any unexpected finds would be managed in accordance with Transport for NSW's Unexpected Heritage Finds Guideline (Transport for NSW, 2015). This report is based on the reference design for the Project. This report only assesses impacts to non-Aboriginal heritage and archaeological resources.

¹ Australian Museum Consulting, 2015. *Heritage Platforms Conservation Management Strategy*. Prepared for Sydney Trains.

² Otto Cserhalmi and Partners PL, 2017. *Eskbank Rail Heritage Precinct Conservation Management Strategy*. Prepared for RailCorp Office of Rail Heritage.

2.0 STATUTORY CONTEXT

2.1 Commonwealth legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legislative framework for the protection and management of matters of national environmental significance, that is, flora, fauna, ecological communities and heritage places of national and international importance. Heritage items are protected through their inscription on the World Heritage List, National Heritage List or the Commonwealth Heritage List.

The EPBC Act stipulates that a person who has proposed an action that will, or is likely to have; a significant impact on a World, National or Commonwealth Heritage site must refer the action to the Minister for the Environment (hereafter the Minister). The Minister would then determine if the action requires approval under the EPBC Act. If approval is required, an environmental assessment would need to be prepared. The Minister would approve or decline the action based on this assessment.

Eskbank Station is not registered on the World, National or Commonwealth Heritage Lists, the heritage provisions of this act do not apply and project works for the Proposal would not require referral to the Minister.

2.2 State legislation

2.2.1 Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) is the primary piece of State legislation affording protection to heritage items (natural and cultural) in NSW. Under the Heritage Act, 'items of environmental heritage' include places, buildings, works, relics, moveable objects and precincts identified as significant. Significance is based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values. State significant items can be listed on the NSW SHR and are given automatic protection under the Heritage Act against any activities that may damage an item or affect its heritage significance. The Heritage Act also protects 'relics', which can include archaeological material, features and deposits.

Under the Heritage Act, all government agencies are required to identify, conserve and manage heritage items in their ownership or control. Section 170 requires all government agencies to maintain a Heritage and Conservation Register that lists all heritage assets and an assessment of the significance of each asset. They must also ensure that all items inscribed on its list are maintained with due diligence in accordance with State Owned Heritage Management Principles approved by the Government on advice of the NSW Heritage Council. These principles serve to protect and conserve the heritage significance of items and are based on NSW heritage legislation and guidelines.

The Heritage Act also provides protection for 'relics', which includes archaeological material or deposits. Section 4 (1) of the Heritage Act (as amended in 2009) defines a relic as:

"...any deposit, artefact, object or material evidence that:

(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and

(b) is of State or local heritage significance”

Sections 139 to 145 of the Heritage Act prevent the excavation or disturbance of land known or likely to contain relics, unless under an excavation permit. Section 139 (1) states:

A person must not disturb or excavate any land knowingly or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, damaged or destroyed unless the disturbance is carried out in accordance with an excavation permit.

Excavation permits are issued by the Heritage Council of NSW, or its Delegate, under Section 140 of the Heritage Act for relics not within SHR curtilages, or under Section 60 for significant archaeological remains within SHR curtilages.

2.2.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the framework for cultural heritage values to be formally assessed in the land use planning and development consent process. The EP&A Act requires that environmental impacts are considered prior to land development; this includes impacts on cultural heritage items and places as well as archaeological sites and deposits. The project is subject to assessment under Part 5 of the EP&A Act.

The EP&A Act also requires that local governments prepare planning instruments (such as LEPs and Development Control Plans [DCPs]) in accordance with the EP&A Act to provide guidance on the level of environmental assessment required. The station falls within the boundaries of the City of Lithgow local government area. Schedule 5 of the Lithgow LEP includes a list of items/sites of heritage significance within this LGA.

2.2.3 State Environmental Planning Policy (Infrastructure) [ISEPP] 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the state. ISEPP clarifies the consent arrangements for certain infrastructure projects.

As the Proposal meets the definitions of ‘rail infrastructure facilities’ provided for by clause 78, and is being carried out by Transport for NSW, it is permissible without consent under ISEPP. As a result, it can be assessed under Part 5 of the EP&A Act. Development consent from Lithgow City Council is not required. Part 2 of the ISEPP contains provisions for public authorities to consult with local councils and other public authorities before the commencement of certain types of development.

2.3 Local government

2.3.1 Lithgow Local Environmental Plan 2014

Part 5, Section 5.10 of the Lithgow LEP deals with heritage conservation within the area covered by this LEP. All heritage items listed on the LEP are included in Schedule 5. The Lithgow LEP states:

- (1) The objectives of this clause are as follows:
 - a. to conserve the environmental heritage of Lithgow

- b. to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- c. to conserve archaeological sites,
- d. to conserve Aboriginal objects and Aboriginal places of heritage significance.

(2) Development consent is required for any of the following:

- a. demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):
 - i. a heritage item,
 - ii. an Aboriginal object,
 - iii. a building, work, relic or tree within a heritage conservation area,
- b. altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,
- c. disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation would or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,
- d. disturbing or excavating an Aboriginal place of heritage significance,
- e. erecting a building on land:
 - i. on which a heritage item is located or that is within a heritage conservation area, or
 - ii. on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,
- f. subdividing land:
 - i. on which a heritage item is located or that is within a heritage conservation area, or
 - ii. on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

Eskbank Station is listed as an item of environmental heritage on Schedule 5 of the Lithgow LEP.

2.4 Heritage registers

Eskbank Station is listed on several heritage registers, summarised in Table 2 and shown in Figure 2.

Table 2: Results of register search for Eskbank Station

Register	Listing
World Heritage List	Eskbank Station is not registered on the World Heritage List
National Heritage List	Eskbank Station is not registered on the National Heritage List
Commonwealth Heritage List	Eskbank Station is not registered on the Commonwealth Heritage List
State Heritage Register	Eskbank Station is registered on the State Heritage Register as “Eskbank Railway Station Group”, SHR# 01138
Section 170 Registers	Eskbank Station is registered on the RailCorp s170 Register as “Eskbank Railway Precinct”, SHI# 4801018.
Lithgow Local Environmental; Plan 2014	Eskbank Station is registered on the Lithgow LEP as “Eskbank Railway Station Group including signal box”, item I434

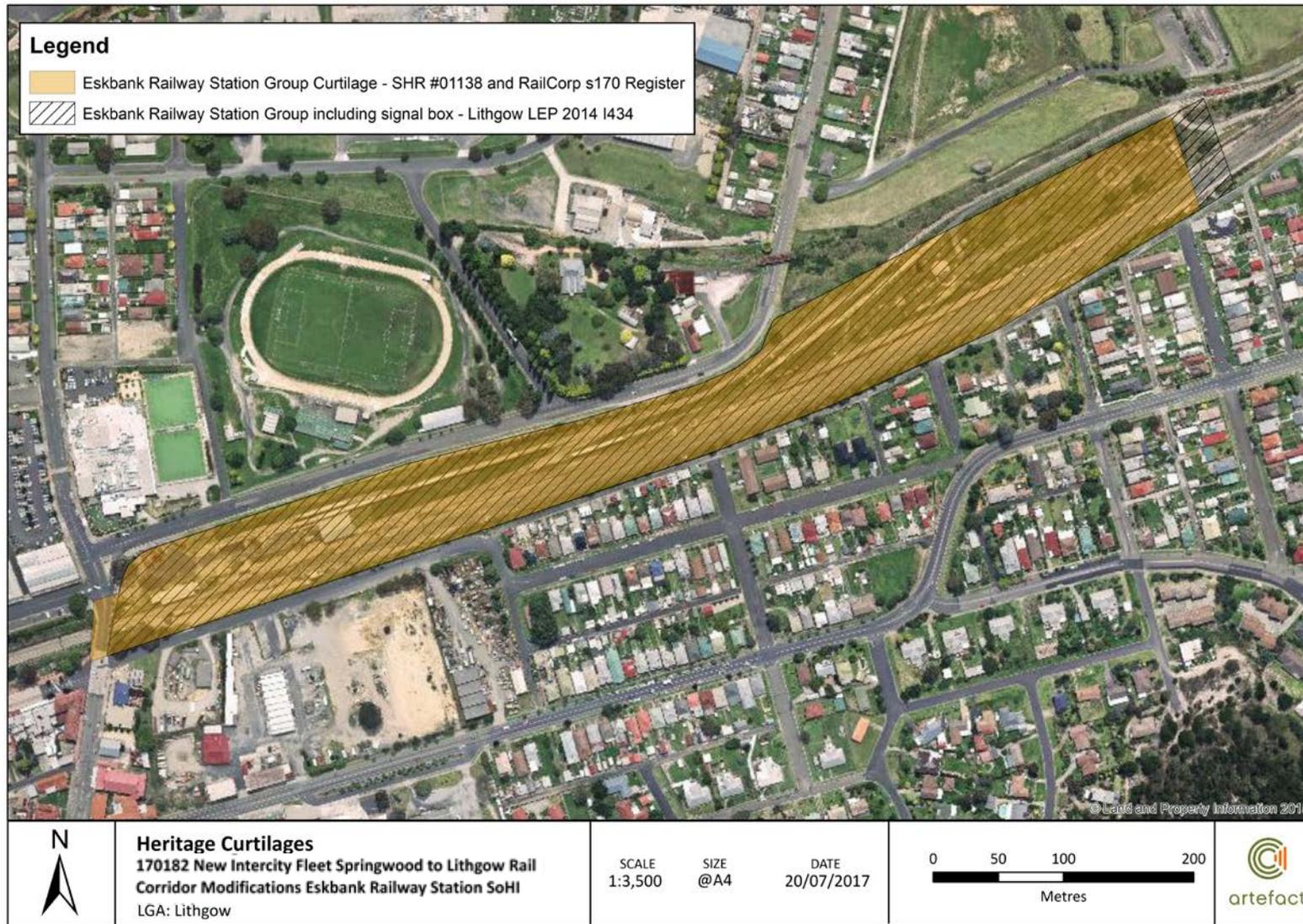


Figure 2: Location of heritage listing curtilages for Eskbank Station

3.0 HISTORICAL CONTEXT

3.1 Eskbank Station

3.1.1 Establishment of Eskbank Station & Eskbank Locomotive Depot

On 1 March 1882, the new Eskbank Station (Figure 3) was opened following duplication of the Main Western Railway Line through Lithgow in October 1880. Two side platforms were erected in a battered masonry style (Figure 4). The main station building was erected on the city-bound platform. Constructed with locally resourced sandstone brick, the station building was designed in the Victorian Italianate style developed by John Whitton for important railway buildings at significant locations during the first decades of railway construction. In 1882, a simple gabled 'through' design goods shed with an open loading platform and goods loading crane on the west end was built to the east of the station, along with a timber frame horse dock (Figure 5).³

In 1882, the Eskbank Locomotive Depot was established to support Eskbank Station and its operations. The first locomotive depot in the region, the Eskbank Locomotive Depot provided servicing and stabling facilities to locomotives on the Main Western Railway Line, and local industrial and colliery branch locomotives. The depot featured a sixty-foot Sellars cast iron turntable, stores, coal loading ramps and a timber-framed corrugated iron-clad engine shed with a central ventilating ridge. Each of the three roads within the engine shed featured separate overhead smoke chutes and sub-ground inspection and servicing pits. Watering facilities were located at the south-west corner of the depot, and an enginemen's barracks was situated at the north-west corner.⁴

In 1885, a signal box containing signal and control level mechanisms was constructed near Eskbank Station to the east on the southern side of the Main Western Railway Line. The small elevated structure, with timber-frame construction, weatherboard cladding and a gabled corrugated roof with cantilevered iron awnings, was of early standard design.⁵ In circa 1890, a platform shelter was established on the country-bound platform at Eskbank Station. Constructed in brick, this small shelter was built in a style to match the main station building. The shelter originally featured two small enclosed rooms with an open area between. The shelter was modified in circa 1900 involving demolition of the walls of the two rooms to make the shelter entirely open on the trackside.⁶

³ OEH SHI Database 'Eskbank Railway Precinct'

⁴ OEH SHI Database 'Eskbank Railway Precinct'

⁵ OEH SHI Database 'Eskbank Railway Precinct'

⁶ OEH SHI Database 'Eskbank Railway Precinct'



Figure 3: Eskbank Station, c1880
(Source: Blue Mountains Local Studies Collection - LS Images SHS 256)

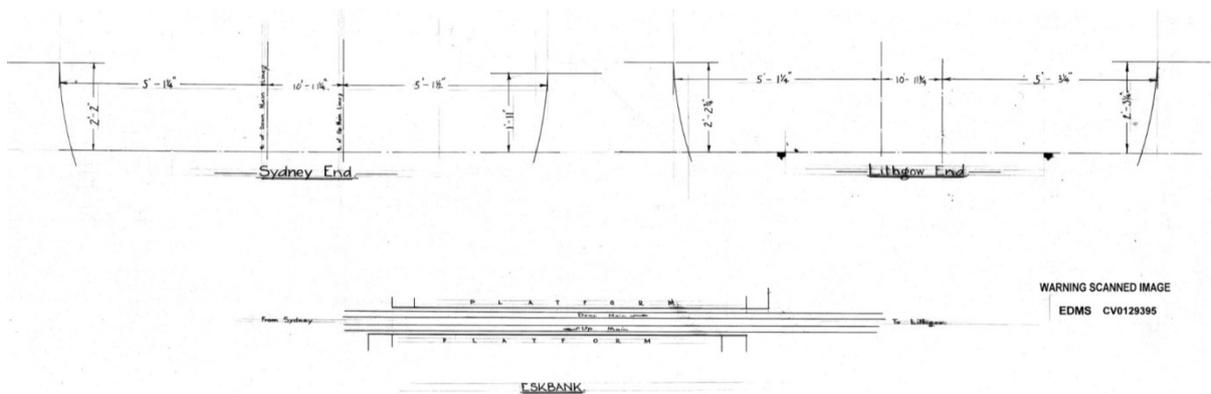
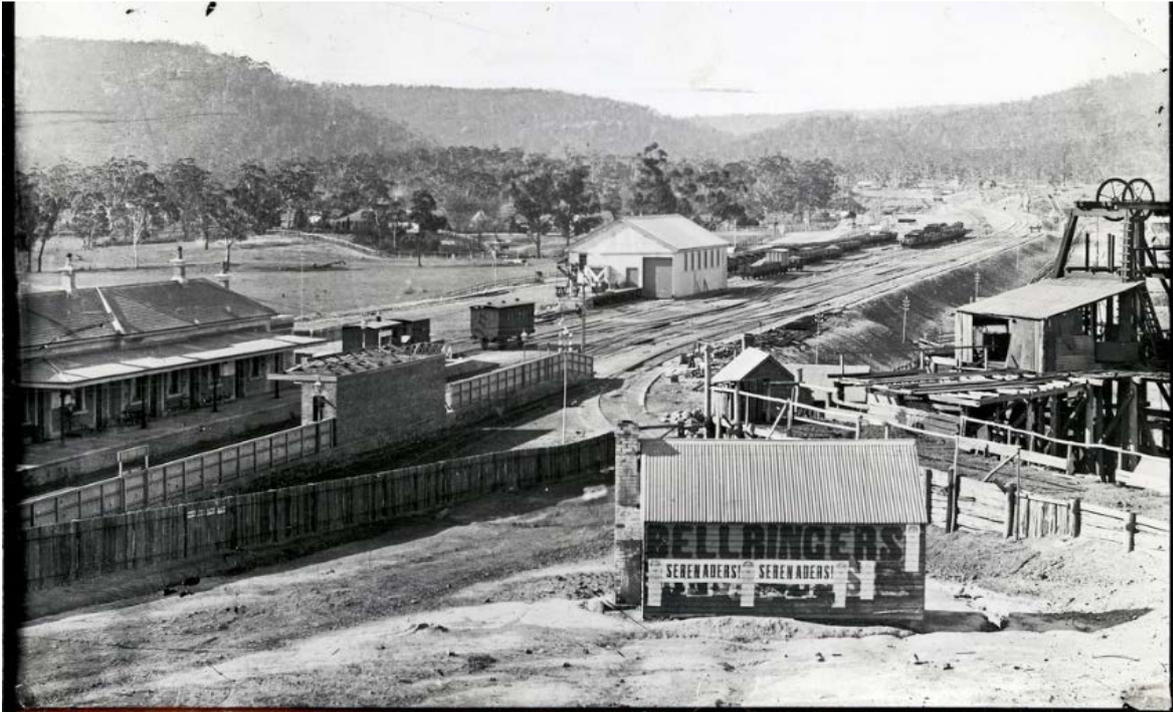


Figure 4: Detail of Eskbank Station platform profiles, 1927
(Source: State Rail Archives CV 0129395)



**Figure 5: Eskbank Station precinct showing station building to left, goods shed and Eskbank House in distance, 1882 (platform 2 shelter still under construction and Eskbank yard signal box yet to be constructed)
(Source: Blue Mountains Local Studies Collection - LS Images SHS 256)**

3.1.2 Consolidation of Railway Activities at Eskbank

In the decades that followed its opening, Eskbank was the epicentre for steam operations and railway activities in the Lithgow Valley. The station was the location for steam trains replenishing their water as they commenced and terminated their journeys into our out of the region. During the 1880s and 1890s, Eskbank played a role in the trials undertaken to ascertain suitable types of locomotives utilised for freight and passenger haulage on the Main Western Railway Line.⁷

The original 1880s Eskbank locomotive depot, which was becoming increasingly overcrowded and cramped with the rise of local industrial activities, remained in operation until 1915 when the new and larger purpose built locomotive depot was established around 500 metres to the north-east.⁸ These new Lithgow Yards became the primary locomotive maintenance centre west of the Blue Mountains until steam locomotives were phased out of service in the 1970s. The Lithgow Yards operate today as a privately-run freight rail stabling and maintenance depot.

3.1.3 Lithgow Goods Station and later modifications

In 1925, the significant historic role of Eskbank Station as the region's railway centre was diminished following establishment of the new Lithgow Station around five hundred metres to the west. The new Lithgow Station was established in response to mounting local agitation to establish a single central station at Lithgow. This decision was preferred to the alternative of continuing with two smaller stations in close proximity to one another.⁹

⁷ OEHSI Database 'Eskbank Railway Precinct'

⁸ OEHSI 'Eskbank Railway Precinct'

⁹ OEHSI 'Eskbank Railway Precinct'

Following establishment of the new Lithgow Station in 1925, Eskbank Station was abandoned as a passenger station and was converted to the Lithgow Goods Station and Station Master's Headquarters, which remained in operation from the mid-1920s to the 1980s.¹⁰ From the 1980s to 2005, the former Eskbank Station served as a depot for local railway maintenance operations.¹¹

With the closure of the passenger use of Eskbank Station and expanding rail systems, many of the buildings associated with the Eskbank Locomotive Depot were removed from the site in the late 1920s, with only basic infrastructure remaining. The 1880s turntable was relocated to the Coolah locomotive depot, and the remaining yard area was reused for other railway needs.¹²

In circa 1940, a workshop/gang shed, simple timber-framed gable roofed structure, with corrugated steel roof sheeting and cliplock profile steel wall cladding, was established to the north of the main station building, within the site of the former station forecourt. Around this time, a type 2 welded steel tripod crane No. T499 on a concrete base was added to the yard.¹³

In 1996, a major fire caused considerable damage to the 1882 goods shed at Eskbank. Timber roof framing members, wall and roof sheeting that had sustained damage were subsequently repaired. The shed was reduced in length at this time and one timber door was salvaged and stored in the building. A modern concrete platform was built north of the loading dock, and an open loading platform on the west end of the goods shed was established. The station building at Eskbank remained in use as an office for railway staff until being vacated in 2005, with a lease being taken out by the State Mine Railway.¹⁴

¹⁰ 'The History of the Construction of the Western Railway Line' (22 February 1954), *Wellington Times (NSW: 1899-1954)*, p6. Retrieved from: <http://nla.gov.au/nla.news-article139106997>

¹¹ Eskbank Rail Heritage Centre, 2013 'History'. Accessed at: <http://eskbankrailheritagecentre.blogspot.com.au/p/history.html> (24/04/2017)

¹² Eskbank Rail Heritage Centre, 2013 'History'. Accessed at: <http://eskbankrailheritagecentre.blogspot.com.au/p/history.html> (24/04/2017)

¹³ OEH 'Eskbank Railway Precinct'

¹⁴ OEH 'Eskbank Railway Precinct'

4.0 PHYSICAL DESCRIPTION

4.1 Introduction

A site inspection was conducted by Duncan Jones (Heritage Consultant) and Shona Lindsay (Heritage Consultant) on 20 April 2017 during a period of rail track possession. The aim of the site inspection was to inspect the area of proposed impacts and to inform an assessment of archaeological potential. The inspection was undertaken on foot and a photographic record was made.

All elements of the Eskbank Station were examined during the site inspection. Elements of Eskbank Station which are relevant for the assessment of potential project impacts are described in this section. These are provided for context in regard to visual impacts and impacts to setting.

4.2 Station platform

4.2.1 Platform 1

The existing platform 1 at Eskbank Station is a side platform 50 metres long. The platform commences from a ramp around seven metres east of the Bridge Street overbridge and terminates 10 metres to the east of the Eskbank Station building. The current platform surface consists of a thin (10 millimetre) layer of concrete capping overlying the brick masonry retaining wall. Upper brick courses consist of grey-brown brick in an English bond with the top course in rowlock orientation. Below these vertically aligned courses, the platform retaining wall steps out towards the rail corridor 70 millimetres with a course of rowlock bricks in poor condition. These overlie concrete capping which steps out a further 180 millimetres. Below the concrete capping, original outer facing brick courses are evident in two exposed courses of English bond, which are stepped out towards the rail corridor a further 15 millimetres (refer to Figure 6).

Overall the platform edge is in poor condition. At the western and eastern ends of the platforms thick of concrete capping (up to 250 millimetres) has been laid on the top course of platform bricks. Former weepholes are evident along the outer surface of the platform retaining wall. Brick courses located at the country-end of the platform have been rough cut from earlier trimming of the platform edge. Moss has grown over large portions of the brick retaining wall (refer to Figure 6).



Figure 6: View of platform 1 coping, north-east aspect

4.2.2 Platform 2

The existing platform 2 at Eskbank Station is single-sided island platform, located between the main southern track and a siding further to the south. Platform 2 is 18 metres in extent with a five metre ramp at the Central end of the platform.

The current main platform consists of a thick (130 millimetre) aggregate concrete capping surface overlying two courses of red-brown machine brick. The concrete capping projects 170 millimetres towards the rail corridor compared to the underlying brick courses, and has a roughly damaged lower edge. The underlying two brick courses project a further 55 millimetres above a further underlying brick course, which also projects 55 millimetres towards the rail corridor. Below these projected brick courses, the remainder of the platform wall consists of ten courses of red-brown brick laid in a stretcher bond in a vertical profile (Figure 7).

Platform 2 is in a poor state of intactness. The original extent of the platform on both the Central and Lithgow ends has been removed. The exposed side course of the platform shows that only two courses of brick are present within the platform 2 retaining wall, behind which aggregate concrete has been poured to create the one-sided island platform.



Figure 7: View of platform 2 coping, west aspect

4.3 Rail corridor

The main western railway line passes through the centre of Eskbank Station and the rail corridor takes up the majority of the area within the Eskbank Station Group SHR curtilage. The rail corridor consists of a largely straight section of track orientated north-east to south-west about 920 metres long. The Main Western Line consists of the main line double track, with a number of sidings on each side. These sidings are predominantly branch refuge and stabling sidings, with the southern sidings located on the same elevation as the main lines and the northern sidings detaching to the north on lowered embankments.

The majority of the rail corridor is constructed on a high artificial and level embankment, with small cuttings through hills located at the far western portion of the rail corridor (where the Bridge Street overbridge is located) and at the eastern end of the SHR curtilage at Coal Stage Hill (around in line with Clwydd Street). The embankment is up to five metres high while cuttings at the eastern and western ends of the SHR curtilage are up to five metres deep.

The rail track is constructed of concrete sleepers overlying a thick support of rail ballast up to 500 millimetres above the level of the exposed embankment. The majority of sidings in the area are also constructed of concrete sleepers on raised ballast, with the exception of the southern-most siding which is laid on wooden sleepers at embankment level. This siding is disused.

Overhead wiring stanchions in the rail corridor are largely older models, with cantilevered arched stanchions dating from the original electrification of the railway line in the 1950s as well as later portal overhead wiring structures (Figure 8). Stanchion supports are located lineside on both the northern and southern main tracks and are in a variable condition of physical intactness.

Line side equipment along the Main Western Line include signalling lights, structures and conduits as well as point controls, switch levers, point rods and locking mechanisms. The majority of this infrastructure is late twentieth-century to modern equipment, with some earlier mid-twentieth century switch rods and point rodding remaining in the corridor.



Figure 8: Western main lines near station platforms, showing portal overhead wiring structure and signalling lights. West aspect

5.0 ASSESSMENT OF SIGNIFICANCE

5.1 Assessment criteria

5.1.1 Significance assessment criteria

The significance of heritage items addressed in this report have been assessed in accordance with the criteria outlined in the significance assessment guidelines provided by the Heritage Division of the Office of Environment and Heritage¹⁵. The criteria specified by the Heritage Division encompass the values identified in the *Burra Charter*¹⁶. These heritage assessment guidelines also include two thresholds (state or local) for assessing the relative level of significance of heritage items.

A description of the significance assessment criteria used in this report is provided in Table 3.

Table 3: Significance assessment criteria

Criterion	Inclusions/exclusions
A – Historical significance	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).
B – Associative significance	An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local to area)
C – Aesthetic or technical significance	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).
D – Social significance	An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.
E – Research potential	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area). Significance under this criterion must have the potential to yield new or further substantial information.
F – Rarity	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).
G – Representativeness	An item is important in demonstrating the principal characteristics of a class of NSW's (or local area's): cultural or natural places cultural; or natural environments.

5.1.2 Significance grading

This report includes an assessment of the relative contributions of individual components at Eskbank Station to its overall heritage value. Components are assessed according to the grading provided in Table 4.

¹⁵ Heritage Division 2001. Assessing Heritage Significance

¹⁶ Australia ICOMOS 2013 *The Burra Charter*

Table 4: Standard grades of significance

Grading	Justification	Status
Exceptional (E)	Rare or outstanding element directly contributing to an item's local and state significance.	Fulfils criteria for local or state listing
High (H)	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 (M)	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
Low (L)	Alterations detract from significance. Difficult to interpret.	Does not fulfil criteria for local or state listing
Intrusive (I)	Damaging to the item's heritage significance.	Does not fulfil criteria for local or state listing

5.2 Assessment of significance for Eskbank Railway Station Group

The following assessment of significance has been adapted from the SHR¹⁷ and RailCorp s170 heritage register¹⁸ entries for the Eskbank Railway Station Group.

Table 5: Assessment of significance for the Eskbank Railway Station Group

Criterion	Explanation
A – Historical Significance	<p>Eskbank Station is of historical significance as an important place in the railway history of New South Wales and Lithgow. It was the first railway yard and locomotive depot in the Lithgow Valley and served as a major locomotive depot through the 1880s boom, the 1890's depression and the era of Federation. Eskbank Station has high significance as the terminating place of locomotive trials undertaken in the 1880s and 1890s, which evaluated the technologies and design principles which were to influence locomotive design in New South Wales until the close of the steam era.</p> <p>Eskbank Station has high significance for its association with the state mining and industrial developments within the Lithgow Valley from the 1870s until the 1920s. The precinct played an important role in housing, maintaining and servicing the locomotives which operated on the railway lines in the Lithgow Valley and that transported goods to Sydney and greater NSW.</p> <p>Lithgow Yard Signal Box is of historical significance as the oldest known surviving railway signal box in NSW remaining in near original condition with most of its equipment dating back to 1884. It is closely related to the early development of the Eskbank Station Precinct and branch colliery lines.</p> <p>The Eskbank Railway Station Group is considered State significant under this criterion.</p>

¹⁷ SHI Entry for State Heritage Register item "Eskbank Railway Station Group" (SHR# 01138) accessed online 17 April 2017, <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=5012005>

¹⁸ SHI Entry for RailCorp s170 item "Eskbank Railway Precinct" (SHI# 4801018), accessed online 17 April 2017, <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801018>

Criterion	Explanation
<p>B – Associative Significance</p>	<p>Eskbank Station is of significance for its association with John Whitton, Engineer-in-Chief of the NSW Railways, and his colleagues and successors. Eskbank Station is one of the now small number of purpose-built railway stations introduced by John Whitton for a then new function.</p> <p>The Eskbank Railway Station Group is considered State significant under this criterion.</p>
<p>C – Aesthetic or Technical Significance</p>	<p>Eskbank Station is of aesthetic significance as a fine example of the first stations built on the NSW railway system. The station building is aesthetically significant as an example of a Victorian Italianate style station building utilising tuckpointed brickwork to the body of the wall and classically detailed stone quoins, cornices and a pedimented bay window. The masonry details and Victorian ironwork was both functional and decorative and was a forerunner to the next generation of grander stations in NSW. Eskbank has significance as a relatively intact railway station that has more or less survived in the form it was in the 1920s. Lithgow Yard signal box is of aesthetic significance as an excellent and intact example of the traditional smaller timber elevated signal boxes.</p> <p>The Eskbank Railway Station Group is considered locally significant under this criterion.</p>
<p>D – Social Significance</p>	<p>Eskbank Station has social significance as an important site in the social history of Lithgow up to the 1920s. The place is now held in high esteem by the rail heritage groups, local council and volunteers who continue to be associated with the site and promote its conservation.</p> <p>The Eskbank Railway Station Group is considered locally significant under this criterion.</p>
<p>E – Research Potential</p>	<p>Eskbank Station has research significance as a railway yard with varying buildings and infrastructure that remain partly intact and as an example of traditional country railway station yards in New South Wales. The weighbridge, yard crane, horse dock, gantry crane, two major bridges and the branch line contribute to the significance of the precinct.</p> <p>The signal box has a high level of both technical and research potential for its ability to demonstrate characteristics and design requirements of standard elevated timber boxes of the 1880s as well as changing technology in the signalling system.</p> <p>The archaeological remains of the locomotive depot have moderate technical significance for their connection to the evaluation and adaptation of comparative British and American technologies which took place in the 1880s and 1890s. The challenge of moving freight across the rugged Blue Mountains and through the demanding Zig Zags from Eskbank to Penrith led local engineers into a world-wide search for steam engineering solutions, which were tested between Sydney and Eskbank. The results of the trials were then translated into purchasing and design decisions which led to the creation of Australian locomotives which were an amalgam of British and American design and construction principles.</p> <p>The Eskbank Railway Station Group is considered State significant under this criterion.</p>
<p>F – Rarity</p>	<p>The Eskbank Station has rarity significance for its collection of distinctive railway buildings and infrastructure. The goods shed has significance as an early, albeit altered, example of a through-shed and is one of only a few of its type that remain in the Metropolitan area. The platform 2 structure has significance as an early and rare platform shelter. The locomotive depot is an archaeological site with remnants of a turntable pit that has been rimmed with sandstone coping. This gives the pit some significance, as it is possibly the only remaining pit of this type. The yard signal box is one of the oldest in NSW and one of only six similar boxes remaining in the State.</p> <p>The Eskbank Railway Station Group is considered State significant under this criterion.</p>

Criterion	Explanation
G - Representativeness	<p>The Eskbank Station is of representative significance as one of a large number of purpose built railway stations in NSW built in the period of intense activity between the early 1860s and the late 1880s. It is a representative example of the first group of linear station buildings built in a simple but elegant domestic style with some decorative elements in the Victorian Italianate style. The station building is representative of the John Whitton style and the yard layout is typical of the period. The signal box is a representative example of traditional timber elevated signal boxes of its design.</p> <p>The substantial archaeological remains of the locomotive depot are representative of a medium sized locomotive servicing depot of the 1880s. They and the branch line also represent the link between industrial and railway development. It is not considered to be rare as many other locomotive depots of this era survive in a far more complete state but it enhances the value of the overall site.</p> <p>The Eskbank Station Group is considered locally significant under this criterion.</p>

5.2.1 Statement of significance

The Eskbank Railway Station Group is of State heritage significance.

The following statement of significance has been sourced from the SHR entry¹⁹ for the Eskbank Railway Station Group:

The Eskbank Railway Station is of state significance as an early railway precinct, important in the course of NSW's history due to its key role in the industrial development of the Lithgow Valley. It was the first railway yard and locomotive depot in the Lithgow Valley and served as a major locomotive depot through the 1880s boom, the 1890's depression and the Federation era. Eskbank Railway Station is of further significance as the terminating place of locomotive trials undertaken in the 1880s and 1890s, which evaluated the technologies and design principles which were to influence locomotive design in New South Wales until the close of the steam era. The Eskbank station and the nearby remains of the locomotive depot, branch line and associated infrastructure demonstrate a class of first generation railway places. The site was established within the context of other economic and industrial developments including mining, housing, transportation of goods to Sydney and greater NSW, and it is from these that it draws its greater significance. The precinct retains most of the original structures including one of the oldest goods sheds in the State; however, the demolition of all above ground locomotive depot structures in the 1920s has compromised the overall value of the place.

Eskbank Railway Station is of aesthetic significance as a fine example of the first stations built on the NSW railway system. The station building is aesthetically significant as an example of a Victorian Italianate style station building utilising tuck pointed brickwork to the body of the wall and classically detailed stone quoins, cornices and a pedimented bay window. The masonry details and Victorian ironwork was both functional and decorative and was a forerunner to the next generation of grander stations in NSW.

¹⁹ *op. cit.*

The Eskbank station building is of state heritage significance as a largely intact example of the simple, classically-inspired, masonry station building type introduced by John Whitton in the 1860s. Its history is closely associated with an area that is sometimes referred to as the cradle of Australian industry. As such it has a high level of significance due to its association with important developments in transport, technology and industry. The goods shed and the remains of the locomotive depot contribute to the overall value of the place, as well as the link to the State Mine site.

Eskbank Railway Station has research significance as a railway yard with varying buildings and infrastructure that remain partly intact and as an example of traditional country railway station yards in New South Wales. The weighbridge, yard crane, horse dock, gantry crane, two major bridges and the branch line contribute to the significance of the precinct. The archaeological remains of the locomotive depot have moderate technical significance for their connection to the evaluation and adaptation of comparative British and American technologies which took place in the 1880s and 1890s.

Lithgow Yard signal box is of state significance as a small and intact elevated signal box dating from 1885, and as the oldest operating in the state. The signal box retains most of the original equipment and still operates a number of original semaphore signals in the yard. It forms a classic 19th century railway structure in the historic Eskbank station yard. It is closely related to the early development of the Eskbank station precinct and branch colliery lines.

5.2.2 Eskbank Station components

Table 6 summarises the heritage significance of the components of the station.

Table 6: Grades of significance for components of the Eskbank Railway Station Group

Component	Description	Grading
Bridge Street Overbridge (1869; 1880; 1957)	The Bridge Street overpass was first constructed in 1869 with the original development of the single line Main Western Rail Line. This original overbridge was the first rail overbridge west of the Blue Mountains. With the duplication of the railway line in 1880 and the construction of Eskbank Station in 1882, the existing sandstone abutments to the bridge likely date from this time. The iron-plate deck and extension of the brick abutments on the country side of the overbridge were constructed in 1957 with the electrification of the railway line and the widening of the overbridge for two-way vehicle traffic.	High
	The sandstone abutments of the overbridge are original late 19 th century fabric and the location of the overbridge is particularly significant as evidence of the original location of the first rail overbridge west of the Blue Mountains. 1950s additions to the bridge are of less significance as they are not original fabric, but remain significant as material evidence of the development of the railway line over time.	

Component	Description	Grading
Main Station Building (1882)	<p>The main station building on the northern line at Eskbank is aesthetically significant as an example of a Victorian Italianate style station building which served as an architectural forerunner of later and larger station designs in NSW. Its design is also associated with the late 19th century NSW railway engineer John Whitton. The building was converted into use as a goods station in 1925 when the new Lithgow Station superseded it as Lithgow's primary passenger station.</p> <p>The fabric of the building remains demonstrative of the original design and the exterior has not been extensively modified with the exception of the timber telegraph office installed at the western end and the recladding of the roof with corrugated metal instead of tile. The building has not been utilised for railway activities since 2005 and is in a deteriorating physical state.</p>	High
Platform 1 (1882)	<p>Platform 1, adjacent to the Main Station Building at Eskbank, was originally constructed in 1882 with the development of the formal station at that location. This original platform consisted of a brick masonry wall with a battered profile, with plans indicating that it was between 584mm and 692mm in height above rail level. Photographs from the 1880s show that the original battered brick masonry retaining wall also had stone capping at the upper platform edge.</p> <p>The platform edge has been substantially modified since its original 19th century construction, with the current platform wall having a vertical stepped-out profile and also being up to 300mm higher than the original level. Platform trimming works have removed the former original outer brick facing of the battered profile, and the sandstone capping stones have been removed. Exposed concrete has been infilled to stabilise the lower brick courses, which are the only remaining originally exposed brick fabric.</p> <p>The platform remains at its original length and shows much of its original brick fabric, however because of platform trimming, the exposed fabric represents interior courses of brick of the original retaining wall. The original footprint of the platform remains significant as it is demonstrative of the original material organisation of Eskbank Station. This is of further significance due to the heavily impacted and less demonstrative remains of platform 2 opposite.</p>	Moderate
Platform 2 (1882)	<p>Platform 2 was constructed in 1882 as a single facing island platform. Designs indicate that the original platform 2 was constructed of brick masonry with a battered profile and stone capping at the upper platform edge. The original platform extended from the Bridge Street overbridge (with pedestrian stairs leading down from Bridge Street) to a point around 15 m to the east of where the current city-end ramp terminates.</p> <p>The platform edge has been substantially modified with the removal of the original sandstone platform capping and the alteration of the battered profile to a new stepped out vertical profile. The concrete capping at the upper level of the platform is also non-original fabric. The extant extent of the platform is also less than half the size of the original platform and has had its pedestrian access steps removed. Due to the high degree of alteration of fabric and the truncation of the platform, the material remains of the platform do not strongly demonstrate the original architecture or layout of Eskbank Station.</p>	Low
Platform 2 Shelter (1882)	<p>The platform 2 shelter was originally constructed in 1882 as a brick building with segmented arch windows and internal rooms for goods storage. Since that time, the building has been heavily modified, with the removal of internal walls and the installation of timber support posts and bargeboards. However, the original rear brick wall, roof design and layout of the platform 2 shelter remains intact. Despite the alterations to the structure since its construction, the building materially demonstrates the role of the goods storage facility on the platform 2 at Eskbank Station.</p>	Moderate

Component	Description	Grading
Goods shed and loading platform (1880; 1940s; 1996)	<p>The goods shed to the east of the main station building was originally constructed in 1880 as a timber clad, metal roofed goods loading building with an internal through track on the southern side and a side platform on the northern side. A wooden loading platform was also constructed on the western side of the building, with a loading crane in place at the western end.</p> <p>The building has undergone substantial refurbishment since its original construction, including the reconstruction of the northern side platform with concrete and the redevelopment of the western loading crane. A fire in 1996 damaged the timber frame of the building and resulted in the reconstruction and shortening of the footprint of the structure.</p> <p>However, the outer cladding of the goods shed was reconstructed in a similar architectural style and much of the timber frame of the building is original fabric. The timber deck to the west of the goods shed is also original fabric, although the original crane pivot was replaced during the 20th century. The layout, arrangement and function of the goods shed and loading platform has continued in the same use until the present day and remains materially demonstrative of the heritage significance of the industrial and logistical role of the Eskbank Railway Station Group.</p>	Moderate
Yard Signal Box (1885)	<p>The Eskbank Yard signal box (also described as the Lithgow Yard Signal Box) was constructed at its present location by 1885 and was originally used to control the points for a number of rail sidings that converged at Eskbank for colliery and industrial branch lines. The signal box has been in continuous use since its original construction, albeit with a reduction in number of the branch sidings it once used to control.</p> <p>The majority of the signal box is original fabric, with modern steel stairs installed on the western side of the building as the most apparent piece of intrusive fabric. The signal box has been maintained in a sympathetic colour and material scheme and continues in use to control railway points in the Eskbank Precinct to the present.</p>	Exceptional
Point control equipment and signalling structures, (mid-20th century to present)	<p>Point control equipment and signalling structures are located within the rail corridor at Eskbank Station. While this equipment has been established in the rail corridor since the construction of the Lithgow Yards signal box in the early 1880s, the majority of this infrastructure is late 20th century or later equipment. Archival records have shown the redesign of track configuration and crossover locations throughout the 20th century until today, and as such control mechanisms for the existing crossovers have been modified or constructed at these times.</p>	Low
Overhead wiring structures (1957 – present)	<p>Overhead wiring structures were constructed within the rail corridor with the electrification of the Main Western Line to Lithgow in 1957. Since that time, overhead wiring and overhead wiring structures (principally stanchions) have been erected, maintained and replaced as rail work proceeds. A number of original 1950s-era stanchions remain in place in the rail corridor.</p> <p>While the electrification of the rail corridor is consistent with the railway line's technological development over time, the Eskbank Station was never used as a commuter station for electrified trains, nor were electrified trains built, maintained or regularly stabled there and is not demonstrative of the precinct's heritage significance.</p>	Low

6.0 ARCHAEOLOGICAL ASSESSMENT

6.1 Land use summary

A summary of the historical land use of Eskbank Station is provided in Table 7.

Table 7: Historical land use at Eskbank Station

Phase	Discussion
<p>Phase 1 – Main Western Railway Line (1869 – 1882)</p>	<p>With the completion of the Great Zig Zag in 1869, the Main Western Railway Line was extended from its then terminus to a new final station at Bowenfels, to the west of the present-day township of Lithgow. At that time, Bowenfels was the only railway station present in the Lithgow valley area. During this time, the railway line embankment and rail cuttings were constructed for the single track railway line that extended from the Great Zig Zag to the Main Western Railway Line terminus at Bowenfels. With the construction of the line, the first rail overbridge was built west of the mountains which crossed the railway track where the Bridge Street overpass is located today (the existing sandstone abutments however likely date from the duplication of the railway line and expansion of the width of the cutting in 1880).</p> <p>In 1875, Thomas Brown opened his own private rail stopping place for loading coal from his Eskbank colliery, at the site of the current Eskbank Station. While historical descriptions situate this stopping place near Coal Stage Hill (at the eastern end of the Eskbank Railway Station Group SHR curtilage), plans from 1879 indicate that this siding was located on the main northern line at a mileage around where the Lithgow Yard signal box is today (Figure 9 on page 27).</p> <p>The Main Western Railway line was duplicated in 1880.</p>
<p>Phase 2: Eskbank Station and Locomotive Depot (1882 – 1925)</p>	<p>With the duplication of the railway track in 1880, Eskbank Station was constructed and opened in 1882. The primary buildings at Eskbank Station were constructed at this time, including the northern side platform main station building, the platform 2 shelter and the goods shed with open loading platform and loading crane. These buildings are clearly visible in a photo from 1882 (Figure 5 on page 12). In this photograph, it is also clear that the original Brown's Siding had been removed, presumably to make room for the additional goods siding and goods loading shed. By 1914, Eskbank Station also included the Lithgow Yard signal box, work and storage buildings and pedestrian stairs that linked the south-eastern corner of Bridge Street and Main Street with platform 2 at the station (Figure 10 on page 28).</p> <p>The Eskbank locomotive depot was also constructed in 1882 and became the primary locomotive maintenance and works depot that serviced the Main Western Railway Line west of the mountains at that time. The locomotive depot was located to the south of the northern line in a lower elevation terrace below the main line embankment. The principle features of the locomotive depot consisted of a 60' locomotive turntable, a locomotive shed with three maintenance pits and track, water tanks, general stores, offices, outbuildings and coal stages. By 1914, rail worker accommodation and amenities had also been constructed, at a location around 500 metres to the east of the Eskbank Station northern platform main station building (Figure 11 on page 28).</p> <p>As the central NSW railway lines expanded during the late nineteenth and early twentieth centuries, and traffic increased into the Lithgow Valley with the construction of the Ten Tunnels Deviation by 1910, the Eskbank Locomotive Depot was deemed too small and constrained to manage the locomotive service needs in the area. A new rail yard to the north-east (the current Lithgow Yards) was surveyed in 1914 and was operational by 1915 with substantially larger facilities. The Eskbank Locomotive Depot was closed at this time and its buildings dismantled.</p>

Phase	Discussion
	<p>In 1925, the current Lithgow Station was constructed in a location closer to the commercial centre of the township. Because of this, Eskbank Station declined in utility for alighting commuting passengers. The station was renamed the Lithgow Goods Station and was closed for passenger traffic, instead being used for goods and parcel loading of carriages. Station buildings to the north of the northern platform main station building were used for station master's offices and worker's storage and amenities buildings by 1935 (Figure 12 on page 29).</p>
Phase 3: Lithgow Goods Station (1925 – 1980)	<p>Following the closure of the Eskbank Locomotive Depot, the depot area was repurposed as a refuge and repair siding area. The railway accommodation buildings continued in use and a small number of new weatherboard and fibro work sheds were also constructed near the accommodation area (Figure 13).</p> <p>Aerial imagery shows that platform 2 was largely demolished except for a small platform area around the platform 2 shelter building, between 1975 and 1979. Storage and utility buildings located at Eskbank Station to the north of the northern platform main station building have been demolished by 1975 to provide vehicle access to loading facilities for freight trains. Eskbank ceased operation as a railway station altogether in 1980.</p>
Phase 4: Rail maintenance depot (1980 – present)	<p>Eskbank Station has continued in use as a RailCorp office and maintenance depot since the station formally closed in 1980. No substantial new buildings have been constructed at the site since 1980 with the exception of the reconstruction and refurbishment of the goods shed following a damaging fire in 1996.</p> <p>Aerial imagery show that rail workers' accommodation and amenities buildings were demolished between 1984 and 1991, with the refuge and repair sidings located in the area of the former locomotive depot also removed between 1991 and 1998. Following the removal of the former rail sidings in this area, ground excavation was conducted by 2002 which revealed the remains of the former locomotive depot which are still visible today. Recently (between 2012 and 2016), freight carriage stabling and maintenance operations have been conducted in the area between the former workers' accommodation and former locomotive depot.</p>

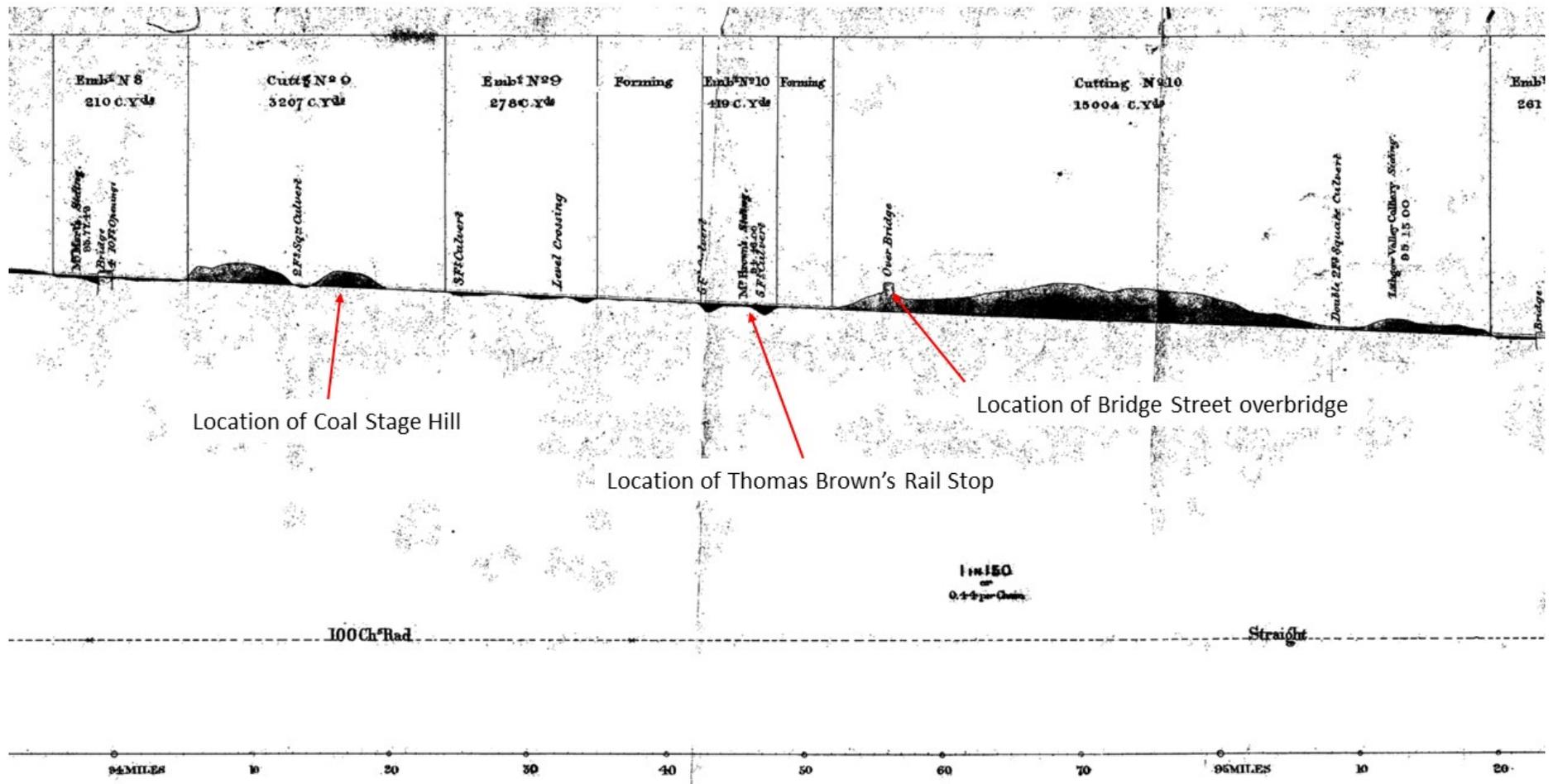


Figure 9: Detail of Main Western Line survey from 1879, location of Thomas Brown's siding and Bridge Street overbridge added (Source: State Rail Archives CV-129078)

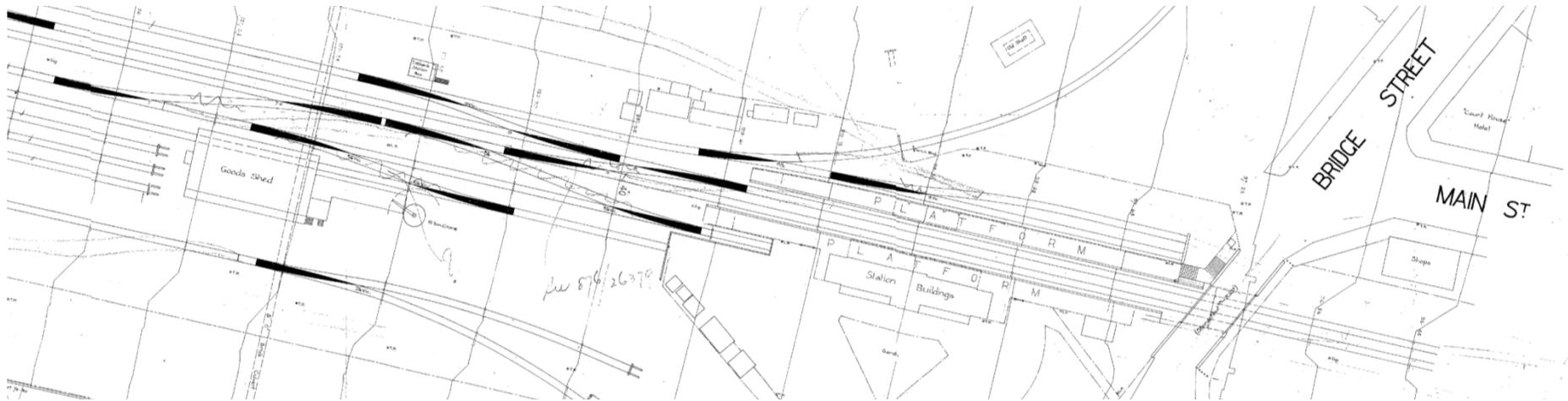


Figure 10: Detail of Eskbank Station from rail plan in 1914 (Source: State Rail Archives CV-55896)

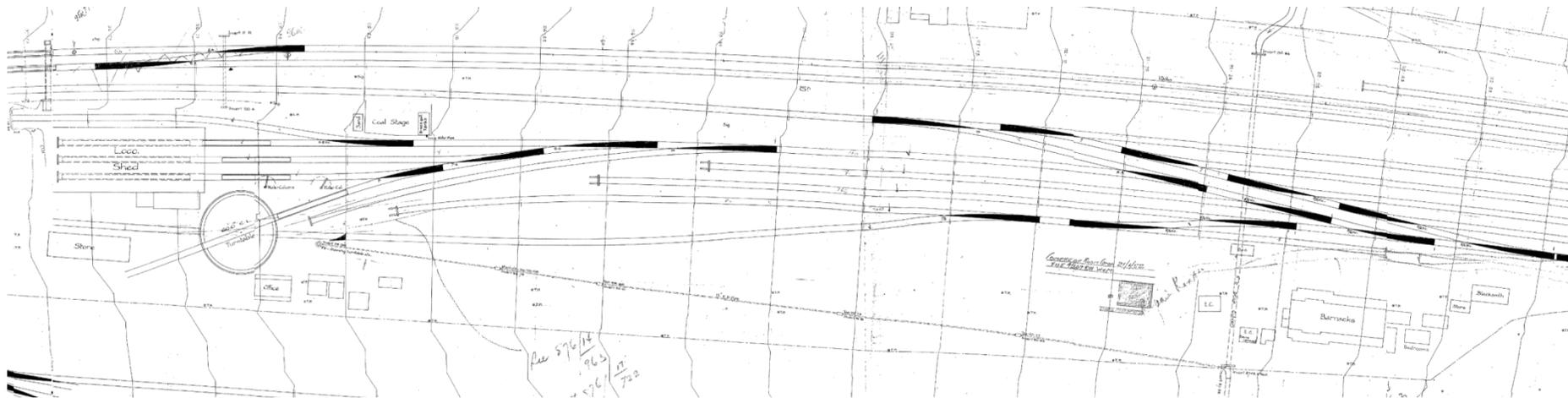


Figure 11: Detail of Eskbank locomotive workshop and rail worker amenities in 1914 (Source: State Rail Archives CV-55896)

6.2 Previous impacts

The Main Western Railway Line has been continually modified for rail use since it was first constructed in 1869. The present embankments and cuttings for the main line date from the duplication of the line in 1880, however the railway line has been raised considerably with ballast compared to the original embankment level (apparent in the discrepancy between the in-use main track and the disused southern-most siding). The continual renovation of crossover tracks, signalling alterations, track slewing and provision of overhead wiring structures mean that former structures located within the footprint of the current Main Western Railway Line, or directly adjacent to it, are likely to have been heavily impacted by these ongoing works.

While the preservation of structural remains of the former turntable and maintenance tunnels for the former Eskbank Locomotive Depot is good, excavation of the site following the decommissioning of the 1950s-era refuge and stabling sidings in the early 2000s removed earth and fill materials which had been located between the sidings and the underlying structural footings. It is likely that this excavation also removed potential artefactual material to expose these structural features as well. This has reduced the potential to recover artefactual remains that may have been located within the now-exposed below-ground structures (turntable footprint and maintenance tunnels in particular).

6.3 Potential remains

A summary of potential remains at Eskbank Station is provided in Table 8.

Table 8: Potential archaeological remains at Eskbank Station

Phase	Discussion
Phase 1 – Main Western Railway Line (1869 – 1882)	<p>Archaeological remains relating to this first phase of the railway track consisted of the original single track railway through the area and the embankment that the Main Western Line is presently located on. Archaeological remains related to this phase would include early rail beams, timber sleepers and rail ballast. The railway track has been continuously developed and upgraded in this area since it was first constructed in 1869, particularly with the line duplication in 1880 and electrification in 1957. The potential for recovering recognisable and legible rail infrastructure-related archaeological remains from this phase would be nil.</p> <p>Thomas Brown's rail stopping point was likely situated in a location near the current Lithgow Yard signal box. There are few established historical details of the material and size of this stopping point. Furthermore, a photograph of the area from 1882 shows that there was no evidence of its preservation. It is likely that the stopping point had been removed to make way for the expansion of the Eskbank Station goods loading facilities. The potential for recovering recognisable and legible archaeological remains relating to this original stopping point would be nil.</p>
Phase 2: Eskbank Station and Locomotive Depot (1882 – 1925)	<p>A portion of the structural remains relating to the original Eskbank Locomotive Depot are currently exposed however the complete extent of the former workshops encompasses a wider area. In addition to the exposed structural features, archaeological remains at this site would include: brick, stone and concrete footings, footings, tunnel flooring and walling; former workshop and yard surfaces; discarded industrial tools, equipment and machinery; rubbish deposits and isolated artefact deposits. Despite the likelihood that prior excavation in the area may have removed artefactual material in upper stratigraphic deposits, or that later rail activities in the area may have incised into archaeological deposits, the potential for recovering archaeological remains of the Eskbank Locomotive Depot is high.</p> <p>The former rail workers' accommodation and amenities buildings were constructed in the 1880s and continued in use until the 1980s when they were demolished. Archaeological remains relating to these buildings would include brick, concrete and stone footings, former drainage services, wooden post-holes and evidence of former fence-lines; former workshop and yard surfaces; possible cesspits, wells and cisterns; rubbish deposits and isolated artefact deposits. These buildings were machine demolished in the 1980s and part of the area of these former buildings is covered over with a new rail siding. The potential for recovering archaeological remains relating to the former rail workers' accommodation and amenities buildings is moderate to high.</p>

6.4 Significance assessment of potential archaeological remains

An assessment of the significance of potential archaeological remains at Eskbank Station is provided in Table 9.

Table 9: Significance assessment of potential archaeological remains at Eskbank Station

Potential archaeological remains	Significance assessment	Significance
Former Eskbank Locomotive Depot	<p>The Eskbank Locomotive Depot was constructed in 1882 as the first locomotive maintenance and repair centre west of the Blue Mountains. The depot was the location of the historically important trials that evaluated locomotive designs that was to operate up and through the Great Zig Zag; these locomotive trials had long-lasting technical ramifications in train design in NSW. The remains of former structures at the depot are of aesthetic and technical significance as they demonstrate the remains of a first-generation railway depot. The closure of the depot in 1915 has prevented the site from being altered or adapted for ongoing use, preserving its architectural and industrial layout since that time.</p> <p>Archaeological remains relating to the former Eskbank Locomotive Depot would be of State heritage significance.</p>	State
Former rail workers' accommodation and amenities buildings	<p>The rail workers' accommodation building was constructed in the 1880s to house rail workers and enginemen on the railway line on the western side of the Blue Mountains, and up until its demolition in the 1980s the accommodation quarters continued in that role. The former rest lodge was also originally surrounded by a number of amenities structures, including lavatories, storage facilities and workshops. Archaeological remains related to these buildings could demonstrate the daily lifestyles of rail workers on the NSW network, including their living, occupational and recreational habits, for a period of over a century. Due to the large number of workers who resided in these buildings over the period of their use, archaeological remains relating to these structures and their inhabitants would also have strong social significance to former rail workers.</p> <p>Archaeological remains relating to the former rail workers' accommodation and amenities buildings at Eskbank would be of State heritage significance.</p>	State

6.5 Summary of archaeological significance and potential

A summary of the archaeological potential and significance of archaeological remains at Eskbank Station is provided in Table 10 and illustrated in Figure 14.

Table 10: Summary of potential and discussion of significance of archaeological remains at Eskbank Station

Phase	Significance assessment	Significance
Phase 2: 1882 – 1925	Former Eskbank Locomotive Depot – brick, stone and concrete footings, footings, tunnel flooring and walling; former stone and brick footings of 1880s locomotive turntable; former workshop and yard surfaces; discarded industrial tools, equipment and machinery; rubbish deposits and isolated artefact deposits	High State
	Former rail workers' accommodation and amenities buildings - brick, concrete and stone footings, former drainage services, wooden post-holes and evidence of former fence-lines; former workshop and yard surfaces; possible cesspits, wells and cisterns; rubbish deposits and isolated artefact deposits	Moderate to High State

6.6 Statement of archaeological significance

The following statement of archaeological significance has been modified from the SHR entry²⁰ for the Eskbank Railway Station Group:

The archaeological remains of the locomotive depot may exist however; they have moderate technical significance for their connection to the evaluation and adaptation of comparative British and American technologies which took place in the 1880s and 1890s. The site also contains a number of ground level and sub-ground relics relating to past site activities and in particular steam railway activities. They include remains of loading banks, tracks and points and communications structures. The turntable pit has a sandstone coping that is rare and possibly the only remaining example of its type. It has not been modified since the 1920s

Archaeological remains relating to the former rail workers' accommodation and amenities buildings have the potential to demonstrate the changing role of travelling rail workers in the NSW rail network in its use for over a century of rail use in the Lithgow region.

Archaeological remains relating to the former Eskbank Locomotive Depot and former rail workers' accommodation and amenities buildings would be State heritage significant.

²⁰ SHI Entry for State Heritage Register item "Eskbank Railway Station Group" (SHR# 01138) accessed online 17 April 2017, <http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?id=5012005>

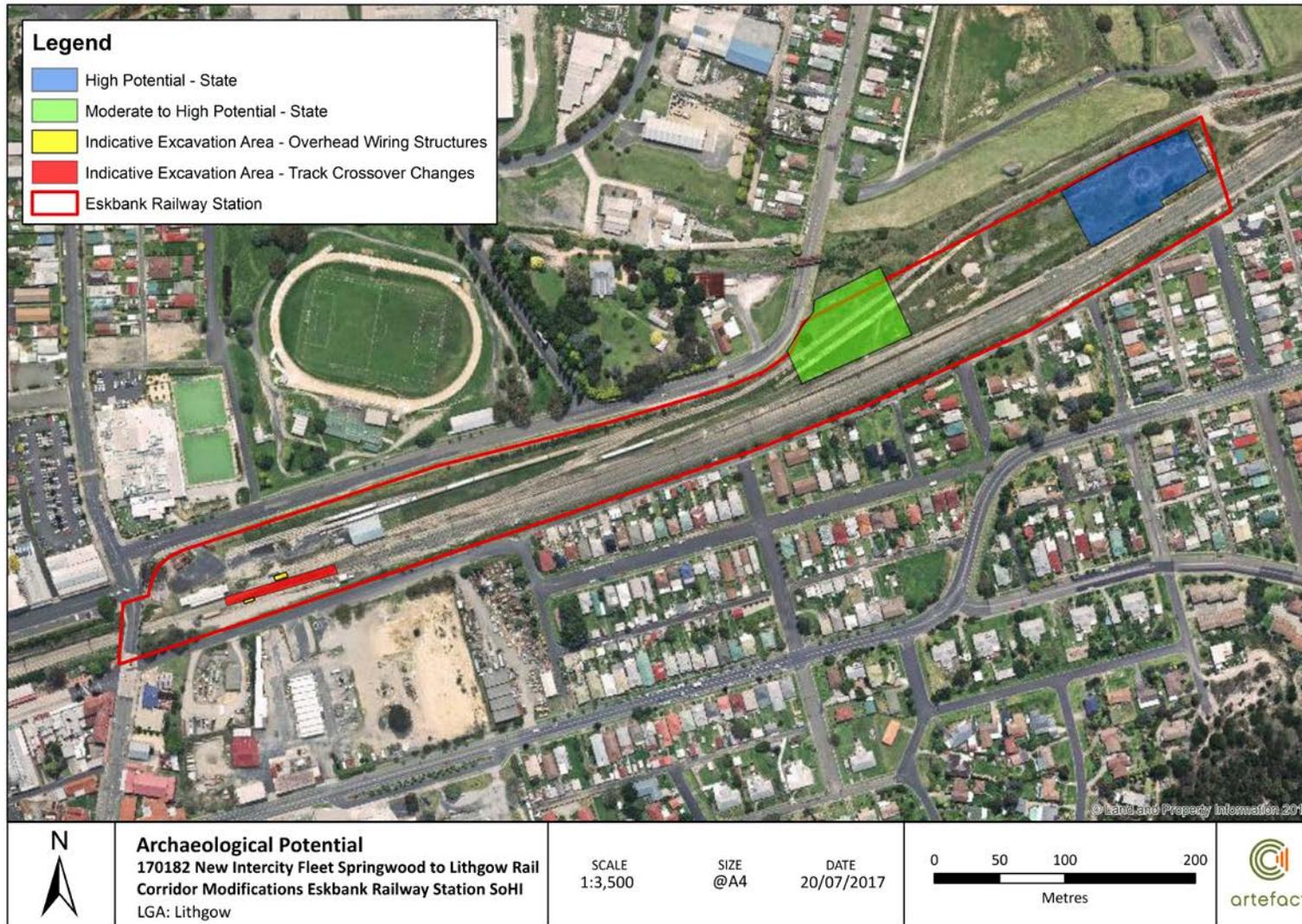


Figure 14: Areas of archaeological potential at Eskbank Station

7.0 IMPACT ASSESSMENT

7.1 Proposed works

7.1.1 Overview

The proposed works at Eskbank Station would involve:

- modifications to platform 1 and platform 2 at Eskbank Station including adding to and cutting back platform copings (coping modifications) of up to 25 centimetres
- re-positioning of rail tracks (track slewing) in order to accommodate increased loadings and distance to platforms, and ensuring adequate passing distance between trains
- relocation of services where required, and installing additional support where cables are removed from the platform coping overhang
- adjusting overhead wiring configurations within the Eskbank Station to match track slewing arrangements on the north main track
- the establishment of temporary construction compounds during works.

An overview illustration of works at Eskbank Station is provided in design document SK-H901 Rev C.

7.1.2 Platform coping modifications

To incorporate the New Intercity Fleet trains, existing platform horizontal dimensions would be modified to ensure compliance with relevant rail standards. At Eskbank Station this would involve cutting back the coping on platform 1 and extending the coping on platform 2 to meet these standards. Coping reduction to platform 1 would involve the use of a demolition saw or a road saw to cut back excess platform. The new platform alignment would be marked out on the platform prior to cutting, and any services which are located underneath the existing coping of the platform removed. Any areas of the cut coping which showed imperfections or exposed joints would be treated with a thin grout or epoxy.

Modifications to platform 1 would involve cutting the platform between 95 millimetres and 156 millimetres away from the rail corridor.

Platform coping on platform 2 would be increased in size by laying additional layers of concrete out to the required height and width. The process would generally involve:

- cut back the existing edge by about 50 millimetres
- application of a corrosive inhibiting compound to the existing exposed cut steel
- drilling of holes for anchors, surveying and marking coping set-out
- installation of temporary timber framework and the use of packers as required to ensure formwork does not project past the coping edge
- installation of new galvanised steel plates and anchors
- installation of infill repair mortar
- trowelling a 15 millimetre deep joint in the new repair mortar as a continuation of the existing platform slab joints
- installation of tactiles and painting.

Modification to platform 2 would involve extending the coping between 25 millimetres and 79 millimetres towards the rail corridor.

The extent of coping cutbacks on platform 1 are shown in Table 11 and the extent of coping extensions on platform 2 are shown in Table 12. Coping modifications are shown on SK-H903 Rev B.

Table 11: Platform 1 coping reduction at Eskbank Station

Kilometrage	Horizontal difference. negative value = coping cutback in mm	Kilometrage	Horizontal difference. negative value = coping cutback in mm
155.257	-95	155.305	-131
155.272	-141	155.318	-139
155.281	-113	155.329	-136
155.292	-136	155.332	-140
155.303	-156		

Table 12: Platform 2 coping extensions at Eskbank Station

Kilometrage	Horizontal difference. negative value = coping cutback in mm	Kilometrage	Horizontal difference. negative value = coping cutback in mm
155.322	79	155.342	25
155.332	34		

7.1.3 Track slewing

In order to ensure adequate passing clearance for New Intercity Fleet trains, the northern main track at Eskbank Station has been proposed to be slewed to the north for an extent of 425 metres. The maximum extent of slewing would be 100 millimetres and the minimum extent 1 millimetre. Track slewing would occur between kilometrage 154.925 and 155.350, roughly aligning with the area of track adjacent to Knight Street in the east and a point five metres west of the Bridge Street overbridge in the west.

Design detail of the track slewing on the north track is illustrated in SKH-902 Rev B.

The realignment of the track to the north would potentially involve reducing passing clearances to a number of signalling and train stop structures adjacent to the slewing alignment. These structures would require repositioning outside of the New Intercity Fleet trains passing clearance.

Due to the scale of track slewing for the north track, machine excavation of ballast and ground, and machine movement of rail and sleepers would be required.

The track slew would also reduce the passing clearance to signalling train stops in the rail corridor. Signalling train stop 96.4 is located on the western side of the Bridge Street overbridge, on the northern side of the track and would be relocated 100 millimetres to the north of its current location.

Signalling train stop 96.2, to the west of the Eskbank Station goods shed, would be relocated 30 millimetres to the north of its current location.

The extent of track slewing in the platform 1 rail corridor are shown in Table 13.

Table 13: Track slewing in the platform 1 rail corridor at Lithgow Station

Kilometrage	Track slewing (positive = millimetres of the track centreline moved to the south)	Kilometrage	Track slewing (positive = millimetres of the track centreline moved to the south)
154.925	1	155.150	131
154.950	32	155.175	139
154.975	89	155.200	100
155.000	100	155.225	100
155.025	100	155.250	100
155.050	100	155.275	100
155.075	100	155.300	100
155.100	100	155.325	100
155.125	100	155.350	100

7.1.4 Reconfiguration of crossover points

Reference design documents have indicated that the track slew would occur in an area (between around kilometrage 155.250 and 155.300) where existing crossovers are located. Track slewing would therefore require moving the existing layout of points, point rods and signalling mechanisms in this area.

Crossover points 8 and 12 would be reconfigured by extending the existing point rodding 100 millimetres to the north to take into account the new track configuration. If during detailed design it is determined that the proposed modification to the point rodding mechanisms would be required within the Lithgow Yard Signal Box, further assessment would be required.

7.1.5 Overhead wiring reconfiguration

Track slewing the northern main track up to 100 millimetres for a length of 425 metres would also involve the relocation of overhead wiring on the northern main line in order to accommodate the new track alignment. With the movement of track towards the north cess, this would also involve reducing the train passing clearances with lineside overhead wiring structures.

Two overhead wiring structures would be removed for the proposed works (refer to SK-904 Rev C). These structures are:

- SL155+278 would be dismantled and removed due to its poor condition. A new overhead wiring structure would be constructed in its place four metres to the west of the present structure
- SL155+250 would be dismantled and removed, with a new overhead wiring structure established in its place.

7.1.6 Temporary construction compound

The location of two temporary site compounds have been proposed in the Eskbank Station SHR curtilage. These include one site located on a flat, grassed, area between Tank Street and the western side of the Eskbank Station building, and a second site located on a cleared, gravel covered vehicle access track adjacent to Gas Works Lane. The use of each area for a temporary compound would involve the stockpiling of construction equipment, materials and temporary office structures. The use of these areas would not involve any ground-breaking activities.

7.2 Project justifications and options

7.2.1 Justification

Improving transport customer experience is a focus of the NSW Government's transport initiatives. Trains are an important component of the transport system and, as such, play a critical role in shaping the customer's experience and perception of public transport. The introduction of the New Intercity Fleet would allow for the replacement of the existing intercity trains that are approaching the end of their service life and are experiencing a number of adverse operational impacts including declining reliability, lower availability (due to maintenance and failures), higher maintenance costs and lower customer amenity. The New Intercity Fleet would provide a better experience for public transport customers by delivering an accessible, modern, safe and comfortable travel experience.

The NSW Government's decision to introduce the New Intercity Fleet would result in a number of changes from the existing fleet increasing the length of the trains up to 205 metres and an increased train width to cater for growing customer patronage and improved customer comfort. Modifications to existing rail infrastructure are essential to accommodate and operate the new trains while meeting appropriate safety and design standards. It should be noted that a number of existing trains cannot run on the Blue Mountains Line and work to standardise the line is needed, regardless of the New Intercity Fleet.

The Project includes essential enabling works that would facilitate the safe and reliable operation of New Intercity Fleet between Springwood and Lithgow on the Blue Mountains Line. The Project would also allow the Blue Mountains Line to be compatible with the existing electrified rail network.

7.2.2 Project options to achieve necessary width clearances

TfNSW commissioned the development of a series of design reports for the early development of the Project. The outcomes of these assessments then informed the scope of works needed to allow for the safe operation of the New Intercity Fleet along the Blue Mountains Line. Options for enabling the safe and efficient operation of the New Intercity Fleet on the Blue Mountains Line were developed following a succession of workshops with TfNSW, relevant stakeholders (including Sydney Trains and NSW TrainLink) and the project team.

TfNSW assessed four options to achieve necessary width clearances for the Proposal. These options are provided in Table 14.

Table 14 Summary of width clearance design options

Option	Design detail	Options discussion
1 – Track slewing only	Movement of rail laterally within the rail corridor to provide necessary clearances from nearby objects	The slewing of track would not impact heritage significant fabric or heritage significant views of Eskbank Station. This would result in neutral physical and visual impacts to the platform coping at Eskbank Station. This option was discounted because widespread track slewing would result in significant readjustments of existing overhead wiring structure configurations throughout the Blue Mountains Line.
2 –Coping modification only	Leaving existing track in its present configuration and ensuring necessary clearances by reducing platform width. Also involves the removal of intervening or overhanging objects (specifically, the canopies of platform buildings)	This option would involve a greater amount of removal of existing platforms and station buildings than the preferred option (Option 3). This option would result in the trimming of the canopies of the island platform station building at Eskbank Station, which would result in greater heritage impacts.
3 – Combination of track slewing and coping modification (the preferred option)	Design detail for this option has been provided in Section 7.1	This option presents a balanced approach between potentially deep platform and building excisions in Option 2, and the necessity to readjust overhead wiring structures implicit in Option 1. As described in Section 7.5, this option would result in a moderate physical and minor visual impacts to the heritage significance of Eskbank Station.
4 – Do nothing option	No modifications to platform edges or existing track configuration	Due to the larger size of the New Intercity Fleet, the do nothing option would fail to meet safety and operational standards for the introduction of the new fleet. This option would fail to meet the objectives of the Project.

7.3 Heritage Platform Conservation Management Strategy

The Heritage Platform CMS identified nine relatively common platform design types and seven rare platform design types of stations in NSW. Eskbank Station was originally constructed with a brick masonry wall with a battered profile, which is considered a relatively common design²¹. Works to Eskbank Station in the mid-twentieth century have resulted in the angled batter of the platform retaining wall being heavily trimmed, resulting in a brick masonry wall with a vertical profile, with stepped out brick and concrete courses at lower levels towards the rail corridor. This type is also considered a relatively common design, and in the case of Eskbank Station, includes intrusive fabric and clear damage to original fabric.

This section addresses relevant strategies provided in the heritage platform CMS in relation to the Project at Eskbank Station.

²¹ AM Consulting 2015, p. iv.

7.3.1 Recognising and conserving heritage significance

Strategy 1: *Manage and operate heritage platforms in a way that recognises the heritage values of each place. This includes the heritage value of each platform, its associated elements, and the overall heritage value of its station or place.*

The heritage value of the platform has been recognised through the design process and by limiting the impacts to Eskbank Station as a whole. Track slewing has been used to minimise the extent of the coping modifications. Reliance on coping modifications alone to achieve the required width clearance may have resulted to impacts to the heritage canopy associated with the platform building. Conversely, track slewing only may have resulted in substantial upgrades to overhead wiring structures throughout Eskbank Station. The implementation of both track slewing and coping modifications achieves the necessary width clearances, while reducing the level of impact to heritage fabric and the need to relocate other structures, principally overhead wiring stanchions, along the rail corridor.

Strategy 2: *Conserve a representative sample of principal platform types, and other key aspects of heritage platform design and arrangement in use within the Sydney Trains managed railway network.*

Explanatory notes for this strategy include the following provision:

Careful consideration should also be given to identifying typical, well-preserved examples of the other, more common types, which retain all the characteristic features of their type

The original platform retaining walls at Eskbank Station were constructed of brick masonry with sandstone platform capping and a battered vertical profile. Battered masonry platforms are not considered rare although the sandstone capping that was once present would be considered to be uncommon variation of this design.

The original platform wall profile has been heavily damaged due to platform trimming and renovation of Eskbank Station throughout the twentieth century. The current platforms at Eskbank Station no longer clearly demonstrate their original design and have only been inferred from remnant physical evidence and archival resources.

Strategy 3: *Where there are numerous, good representative examples of a type, more significant heritage platforms with good integrity should be prioritised for proactive conservation*

Due to the high degree of damage and intrusive fabric of the platforms at Eskbank Station compared to other existing battered masonry profile platforms at other stations in NSW, the platforms at Eskbank would not be considered good representative examples of their design. The poor intactness of these platform walls would not consider them to qualify for preferential preservation compared to other station platforms, as they would not be demonstrative of their original architectural form.

Strategy 5: *Conserve and manage the fabric of heritage platforms in accordance with statutory requirements and heritage best practice*

The impacts have been minimised by limiting the works to the coping through the implementation of a combination of slewing the tracks and coping modifications. The proposed works would blend into the Eskbank Station environment due to the fabric and surface treatments.

7.3.2 Maintaining physical condition and fabric

Strategy 7: *Retain and conserve original or other historic platform detailing and surface features where these contribute to the heritage significance of the platform and the station precinct*

Explanatory notes for this strategy include the following provision:

Ad hoc grinding or cutting back of heritage platform walls or coping fabric is not generally appropriate. In cases where it is necessary to alter a platform wall or coping to accommodate the structure gauge, careful consideration should be given to the method of works, including the use of appropriate tools and tradespeople for the specific fabric, and strategies to minimise or mitigate the physical and/or visual effects of the works. In rare cases, it may be more appropriate to replace the entire coping with a sympathetic fabric than to alter the existing fabric, particularly when the coping fabric is not itself significant.

The platform coping at Eskbank Station will be saw cut to the new coping width, resulting in cutting through original brick fabric on the lower courses of the platform 1 retaining wall. While some bricks would be removed entirely (the lowest course in stretcher orientation in those areas of largest platform cutback), the majority of brick courses would be cut through the centre of their mass. The Project at Eskbank Station would therefore be in contravention of this conservation strategy.

Not all brick courses can be removed and preserved due to the non-uniform nature of coping reduction across the platforms. Uneven cut brick surfaces would be treated to show the original arrangement of the platform brickwork and given a clean outer appearance. Sympathetic grouting materials to those already used within the existing platform brickwork would be used to support uneven surfaces.

7.3.3 Managing major change

Strategy 8: *Major change should be managed through an integrated planning process, which considers measures to avoid, minimise, or mitigate adverse impacts on the heritage significance of the platform and the broader place at each stage of the process*

Explanatory notes for this strategy includes a number of relevant provisions which are addressed individually:

Can the significant platform structural design, fabric, surface, or detailing be retained in tandem with the new structures, fabric or reinforcing elements?

The modification of the coping would remove both original and non-original platform detailing, subject to detailed design. The brick coping is considered to be significance fabric associated with the

platforms, and the modifications would result in a loss. This is unavoidable as leaving the copings intact may have resulted in greater impacts to other aspects of the stations, modifications to awnings associated with the significant station building.

Strategy 11: *Heritage opportunities and constraints should be carefully considered throughout the options analysis and design process*

Heritage constraints of Eskbank Station have been carefully considered, with the option selected that minimises impacts to fabric, setting and the layout of station arrangements. See Section 7.2 for more details.

Strategy 12: *Make a record of existing structural designs, fabric, and uses before changes are made*

Archival recording of the existing platform prior to impacts is recommended, and all design information for the platform modifications would be preserved with Sydney Trains as part of their records.

7.4 Eskbank Rail Heritage Precinct Conservation Management Strategy

This section addresses relevant strategies provided in the Eskbank Rail Heritage Precinct CMS in relation to the Project at Eskbank Station.

7.4.1 Archival recording and interpretation

Strategy 7.1.5: *All changes to rooms and spaces should be recorded and those records archived in the same places as this document. Archival Recording should be informed by best practice as recommended by the NSW Heritage Office.*

Archival recording of the existing station platform prior to impacts is recommended, and all design information for the platform modifications would be preserved with Sydney Trains as part of their records.

7.4.2 Conserving significance and skilled tradespeople

Strategy 7.8.4: *Ensure that all building works, including maintenance, are undertaken by skilled tradespeople, familiar with conservation methodology and practice, under the supervision of a suitably qualified architect.*

Platform modifications, involving cutting of lower brick courses on the platform 1 retaining wall, would be undertaken by skilled tradespeople. Exposed cut brick courses would be treated to present a clean appearance to allow the original pattern of brickwork to remain visible and intact. Materials utilised to support, grout or repoint cut brick would be sympathetic to existing grouting and pointing on the platform retaining wall.

Strategy 7.8.6: *Removal or relocation of significant fabric or items must only be undertaken after approvals have been obtained from ORH of State Rail Authority, and the element has been recorded in situ.*

The cutting of lower brick courses on the platform 1 retaining wall would involve removal of fabric that has been assessed as being of moderate significance, and require archival recording of the existing station platform prior to impacts as covered above. Removal of overhead wiring structures would involve removal of fabric that is of low significance, having been assessed in the CMS as being generic to the railway environment of the site.

7.5 Heritage impact assessment

7.5.1 Impacts to heritage significance fabric of Eskbank Railway Station Group

Modifications of platform coping

Coping cut backs at platform 1 would result in the removal of a maximum of 156 millimetres of platform fabric from the point of furthest projection of the platform retaining wall into the rail corridor. As such, this would result in the removal of the entire bottom course of stretcher-orientated bricks as well as the incision of over half of the second lowest course of header-orientated bricks. Where platform cutbacks are less severe (a minimum of 95 millimetres), this would also result in the incision of the lowest course of stretcher-orientated bricks as well.

Platform 1 has been assessed as fabric of moderate value to the heritage significance of Eskbank Station. The lowest courses of brick are the only remaining exterior facing bricks of the original battered wall profile of the station platform. The cutting of original fabric, as opposed to the removal of whole bricks, would be non-reversible, and would be considered a moderate impact to the heritage significance of the Eskbank Station.

Platform 2 at Eskbank Station has also been heavily modified since its original construction as a battered brick masonry retaining wall, involving trimming and reconstruction of the platform as a corbelled brick vertical profiled wall. The upper level of the platform coping consists of aggregate concrete which projects 170 millimetres into the rail corridor over the underlying brick courses. Due to the modification of the platform retaining wall, as well as the demolition of a large portion of the former extent of the platform (between the platform 2 shelter and the Bridge Street overbridge), platform 2 has been assessed as fabric of low value to the heritage significance of Eskbank Station.

Coping extension on platform 2 would not involve the removal of existing fabric, however it would require existing fabric to be covered over with concrete capping up to 79 millimetres in thickness. This would cover over non-original fabric on platform 2 and not impact any original fabric at lower levels. This would result in a negligible impact to the heritage significance of Eskbank Station.

Track slewing the northern track

Track slewing of the northern track has been proposed for a 425 metre stretch of the track, with a maximum movement of the track of 100 millimetres (excluding track slews near the station platform). The majority of the track slew would involve moving existing rail and sleepers, with possible instatement of new material. Ground excavation would also likely be required in areas of the track slew. The existing rail and sleepers on the both main tracks at Eskbank Station are largely modern physical fabric, with concrete sleepers in place throughout the area. These materials are supported on a base of modern ballast up to 400 millimetres above the level of the embankment.

The movement of rail materials up to 100 millimetres, or the replacement of these materials with similar modern fabric, would result in a negligible impact to the heritage significance of Eskbank Station. Ground excavation that removed and replaced modern ballast with similar material would also result in negligible physical impacts.

Existing signalling train stop structures which are required to be repositioned would be moved a maximum of 100 millimetres in order to ensure adequate passing clearances along the northern track. These signalling structures have been assessed as fabric of low significance and their reinstatement in a new location a short distance away would not impact these items (refer to SK-H905 Rev A). These works would result in negligible physical impacts to the Eskbank Station.

Reconfiguration of crossover points

The reconfiguration of crossover points 8 and 12 would involve extending the existing mechanical point rodding mechanisms by up to 100 millimetres in extent (refer to SK-H906 Rev A). The point rodding mechanisms are of twentieth century provenience and are widespread throughout the wider Eskbank railway yards area. Extending the point rodding with similar mechanical equipment would not result in impacts to original fabric and would be considered a negligible physical impact to Eskbank Station.

Further details on the proposed modification to point rodding mechanisms within the Lithgow Yard Signal Box would be required during detailed design to confirm whether these works will have any impact on significant fabric associated with the Lithgow Yard Signal Box, which is an element of exceptional value within the Eskbank Station SHR item. If works did directly impact upon the Signal Box, it is anticipated that the impacts would be minor.

Overhead wiring reconfiguration

Overhead wiring reconfiguration at Eskbank Station would be required in order to realign the overhead wiring with the northern line track slew towards the northern cess. Overhead wiring and overhead wiring structures have been constructed in the area since the electrification of the railway line in 1957. The removal, replacement or alteration of existing wiring and overhead wiring structures would not impact heritage significant fabric and would result in a negligible physical impact to the Eskbank Railway Station Group.

Existing overhead wiring structures SL155+278 and SL155+252 would be dismantled and removed for new structures. These structures do not represent original fabric and their removal would result in a negligible physical impact to the heritage significance of Eskbank Station.

Temporary construction compound

The establishment of temporary construction compounds on the northern and southern sides of the rail line at Eskbank Station would not involve any physical impacts to items of significant heritage fabric.

7.5.2 Impacts to the heritage views and setting of Eskbank Railway Station Group

Modifications of platform coping

Horizontal coping reduction would result in cutting existing brick fabric on platform 1 at the base of the retaining wall. Some brick would be removed entirely from the lowest course although the majority of bricks would be trimmed and incised with a saw cutter. Exposed coping modifications would be sealed with grout or epoxy finishes. The coping reduction would extend along the whole length of Platform 1.

The cutting would result in reducing the stepping out of the base of the platform retaining wall, which although in poor condition is the only remaining visual remnant of the original battered platform retaining wall profile. While the stepped out lower profile of the wall would remain, it would be highly reduced (more than half of its present width for much of the platform width).

The platform 1 retaining wall, particularly the lower courses of brick and concrete which are to be trimmed, are obscured by moss, partially damaged by former trimming and also show surface damage from track and ballast wear. Due to these factors, the stepped-out profile of the lower courses of the wall are not easily discernible as remnant portions of the original profile of the retaining wall. Because of the existing damage to the wall, alterations to the wall's profile would result in a minor visual impact to the Eskbank Railway Station Group.

Coping extensions to platform 2 would introduce concrete surfaces to the existing outer concrete coping at the top of the platform. This would not noticeably alter the visual profile of the platform, and would result in negligible visual impacts to Eskbank Station.

Track slewing the northern track

Track slewing of the northern track would involve rearranging modern concrete sleepers, active rail and gravel ballast within the rail corridor to a small degree (less than 100 millimetres). These movement of rail this small distance would not be discernible within the active rail corridor. In addition, the repositioning of lineside rail equipment (signalling structures and train stops) up to 100 millimetres would cause a discernible change to the setting and layout of the Eskbank Railway Station Group. These works would therefore result in negligible visual impact.

Reconfiguration of crossover points

The reconfiguration of crossover points at Eskbank Station would involve the removal and replacement of modern rail infrastructure fabric with similar rail infrastructure fabric. The heritage setting of Eskbank Station is associated primarily with its platform 1 station building, the intact Lithgow Yard signal box, and to a lesser extent, the exposed remnants of the original locomotive depot archaeological site. These items are remnants of late nineteenth century industrial and railway architecture. The modification of twentieth century to modern point control equipment would not overwhelm or dominate views of the nineteenth century architectural items. As a result, works to reconfigure the crossover points at Eskbank Station would result in negligible visual impacts.

Overhead wiring reconfiguration

Overhead wiring reconfiguration throughout Eskbank Station would be required in order to realign the overhead wiring with the northern line track slew towards the northern cess. Overhead wiring and overhead wiring structures have been constructed in the area since the electrification of the railway line in 1957. Overhead wiring and overhead wiring structures are not associated with the heritage views and setting of Eskbank Station, which are related to the nineteenth century industrial and rail architectural forms of the platform 1 station building and Lithgow Yard signal box.

Replacing, updating or reconfiguring existing overhead wiring and overhead wiring structures would alter the existing mid-twentieth century to modern materials within the active rail corridor. This would result in negligible visual impacts to Eskbank Station.

Temporary construction compound

The establishment of temporary construction compounds on the northern and southern sides of the rail line at Eskbank Station would involve the setting up of demountable buildings and the stockpiling of machine plant and material. These facilities would be removed following the completion of the construction phase of the proposed works.

The establishment of the temporary construction compound between Tank Street and the Eskbank Station platform building is situated at the base of an artificial earthen embankment for Tank Street and Inch Street. As such, views of the temporary construction compound will be partially obscured by the embankment, and the temporary construction compound would result in a temporary negligible impact to the heritage significance of Eskbank Station.

The establishment of the temporary construction compound adjacent to Gas Works Lane would partially impinge on sight lines to Eskbank Station from the south, however the medium density commercial character to the precinct to the south of Lithgow Station already provides significant visual clutter from this location. As such, the temporary construction compound would result in a temporary negligible impact to the heritage significance of Eskbank Station.

7.5.3 Impacts to archaeological resources

Archaeological resources of State significance have been identified in the north-eastern area of Eskbank Station. These archaeological resources are located a significant distance (in excess of 150 metres) of the any proposed ground disturbing impacts. No archaeological resources would be impacted by the proposed works.

7.6 Cumulative Impacts

While this document assesses the impacts of the New Intercity Fleet works on Eskbank Station in isolation, it is recognised that works will be necessary at other stations along the Blue Mountains Line, which are listed in Table 15. All of these stations are listed on the RailCorp Section 170 Heritage and Conservation Register, with six stations also listed on the State Heritage Register.

Table 15: Stations included in the New Intercity Fleet project

Station	SHR?	Station	SHR?
Faulconbridge	No	Katoomba	Yes
Linden	No	Medlow Bath	Yes
Woodford	No	Blackheath	Yes
Hazelbrook	No	Bell	No
Lawson	Yes	Newnes Junction (not in use)	No
Bullaburra	No	Eskbank (not in use)	Yes
Wentworth Falls	No	Lithgow – the subject of this assessment	Yes
Leura	No		

The original development of the Blue Mountains Line out to Lithgow was largely undertaken in the 1860s. Stations were developed and added at later dates in response to ongoing residential development and the expansion of businesses. Many of the original timber items have since been replaced with brick and concrete structures, however there are a number of elements within each curtilage that retain their original heritage value and any works along the length of the line has the potential for cumulative impacts. Since the original construction there have been a number of alterations and modifications to each station within the Project site. The Project would result in coping impacts (both cutbacks and addition) to every station along lengths of both the original fabric as well

as fabric that has been previously modified. Where works are required, it has been recommended that the bricks show the original arrangement and give a clean outer appearance. As a result, the overall visual appearance and fabric arrangement would largely be retained, minimising any cumulative impacts. Through an assessment of the works, impacts to the heritage settings have been determined to be negligible to minor.

In the case of platform extensions at Katoomba Station and Lithgow Station, the works are unlikely to have a substantial cumulative impact as the design has located the extensions along sections of the platform that have been previously modified and are relatively minor in length when compared to the platform as a whole. As a result, the cumulative impacts from the platform extensions are anticipated to be negligible to minor.

Track slewing, overhead wiring system modification, signalling works and earthworks have been assessed as not contributing to the heritage of each of the station areas and as a result, no cumulative impacts would result from these works.

The additional elements that largely characterise the Blue Mountains Line (station buildings, signalling boxes, stabling yards and other structures that form part of the listing) would not be impacted as a result of the Project. The nature and visual character of the stations within the context of the greater Blue Mountains would be retained and any impacts would be largely temporary. As a result, given the nature of the works, the extent of physical impacts and mitigation measures proposed, cumulative impacts as a result of the Project are not anticipated. Stations are active heritage sites that need to be adapted and modified to meet modern customer expectations. It is a balancing act to meet these expectations while preserving the fabric that contributes to the heritage significance of the stations.

7.7 Summary of heritage impacts

A summary of the heritage impacts to the Eskbank Railway Station Group is provided in Table 16.

Table 16: Summary of impacts to Eskbank Railway Station Group (SHR# 01138)

Proposed work	Impact to fabric	Visual impact	Impact to archaeological remains
Modification of platform coping	Moderate	Minor	Neutral
Track slewing near station platforms	Negligible	Negligible	Neutral
Track slewing of up main track	Negligible	Negligible	Neutral
Reconfiguration of crossover points during track slewing	Negligible	Negligible	Neutral
Reconfiguration of overhead wiring	Negligible – to be confirmed	Negligible	Neutral
Temporary construction compounds	Neutral	Negligible (temporary)	Neutral

8.0 STATEMENT OF HERITAGE IMPACT

A statement of heritage impact for the Eskbank Railway Station Group is provided in Table 17.

Table 17: Statement of heritage impact for the Eskbank Railway Station Group (SHR# 01138)

Development	Discussion
What aspects of the Proposal respect or enhance the heritage significance of the study area?	<p>The Project would result in improving and modernising the rail infrastructure of the wider NSW rail network. Upgrading the facilities at Eskbank Station is consistent with the station's history as a rail maintenance and stabling facility since the late 19th century.</p> <p>The Project would not likely result in impacts to elements of exceptional or high significance of the Eskbank Railway Station Group. The Project would not impact the State significant archaeological remains located at Eskbank Station.</p>
What aspects of the Proposal could have a detrimental impact on the heritage significance of the study area?	<p>The trimming of the lower courses of brick coping on platform 1 would result in the removal and irreversible cutting of original brick fabric at Eskbank Station. These works would result in a moderate impact to heritage significant fabric. Due to the poor state of intactness of the platform coping however, the reduction in the remnant stepping-out of the platform wall's original battered profile would not be clearly discernible along the already heavily damaged platform wall. This would result in a minor visual impact to the Eskbank Railway Station Group.</p> <p>The reconfiguration of the crossover points at Eskbank Station would involve renovation of the point-controlling equipment within the Lithgow Yard signal box, an element of exceptional value. Depending on the extent of works in detailed design, this may result in a minor impact to heritage significant fabric at Eskbank Station.</p>
Have more sympathetic options been considered and discounted?	<p>Due to the nature of platforms, they must be in close proximity to the carriage. TfNSW commissioned the development of a series of design reports for the early development of the Project. The outcomes of these assessments then informed the scope of works needed to allow for the safe operation of the New Intercity Fleet along the Blue Mountains Line. Options for enabling the safe and efficient operation of the New Intercity Fleet on the Blue Mountains Line were developed following a succession of workshops with TfNSW, relevant stakeholders (including Sydney Trains and NSW TrainLink) and the project team. The following options were considered to obtain the required width clearances:</p> <ul style="list-style-type: none"> • slewing only • coping modifications only • combination of both slewing and coping modifications (with ASA concessions) • do nothing. <p>The Project includes essential enabling works that would facilitate the safe and reliable operation of New Intercity Fleet between Springwood and Lithgow on the Blue Mountains Line. The Project would also allow the Blue Mountains Line to be compatible with the existing electrified rail network</p>

9.0 CONCLUSIONS AND RECOMMENDATIONS

The Project would result in a moderate physical and minor visual impact to the State Heritage Listed Eskbank Railway Station Group (SHR# 01138).

9.1 Modifications during detailed design

This report assesses heritage impacts based upon Reference and Concept Design information for the Project. Detailed designs and constructability assessments are still required to complete the planning for the project. Further heritage assessment would be required following the finalisation of detailed designs in order to reassess heritage impacts. Opportunities to minimise or mitigate potential impacts to heritage values may be possible during later design phases.

Selection of material finishes

The removal of the lower brick courses of the platform 1 retaining wall would cut through brick courses and expose the interior of bricks as open faces. Stabilisation of these cut bricks, should it be required, should utilise sympathetic materials for new grouting and pointing, without using modern materials like epoxy which may obscure or occlude surfaces. The final brick surface should demonstrate the original brick alignment following cutting.

Structural integrity of platform following modification of platform coping

The effects of proposed platform modification on the structural integrity of the platform should be determined during detailed design.

Reconfiguration of crossover points

Further details on the proposed modification to point rodding mechanisms within the Lithgow Yard Signal Box would be required during detailed design to confirm whether these works will have any impact on significant fabric associated with the Lithgow Yard Signal Box, which is an element of exceptional value within the Eskbank Station SHR item.

9.2 Recommendations

- A Section 60 permit under the NSW Heritage Act 1977 would be required prior to impacts occurring within the Eskbank Railway Station Group curtilage.
- A heritage conservation architect should provide ongoing heritage and conservation advice throughout detailed design and any subsequent relevant design modifications. The nominated heritage architect should provide advice regarding the scope of works and ensure that the final design adheres to the *Sydney Trains Heritage Platforms Conservation Management Strategy* (Australian Museum Business Services, 2015).
- The nominated heritage conservation architect would be responsible for ensuring that material finishes and heritage recommendations provided in this Statement of Heritage Impact are enacted during detailed design and construction works.
- It is not anticipated the works would weaken or undermine the integrity of the platform. Further structure integrity investigations will be undertaken as part of the detailed design process. The results of the integrity investigations should be reviewed by the heritage conservation architect.
- The existing platform 1 and platform 2 retaining walls would be archivally recorded prior to works. Archival recording of elements of Eskbank Station that would be impacted would be undertaken in accordance with the relevant NSW Heritage Council guidelines. These archival records and design plans for the proposed works would be lodged with Sydney Trains and Heritage Division for their records.

- Cutting of the lower brick courses on the platform 1 retaining wall would be conducted by suitably qualified tradespeople. Exposed cut brick courses would be given a clean appearance so that the original pattern of brickwork is clearly visible and intact. Materials used to support, grout or repoint cut brick would be sympathetic to existing grouting and pointing on the platform retaining wall.
- The materials used should be compatible with the heritage brickwork and concrete and not adversely impact the material.
- The concrete coping of the proposed platform extensions and the mortar associated with the brick facade used in the works should adhere to Strategy 7 of the *Heritage Platforms Conservation Management Strategy*.
- The Construction Environmental Management Plan (CEMP) must include stop work procedures in accordance with TfNSW's Unexpected Heritage Finds Guideline (Transport for NSW, 2015) to manage activities in the unlikely event that intact archaeological relics or deposits are encountered
- Significant fabric which is adjacent to the compound site should be protected during construction. An exclusion zone, along with installation of physical protective barriers, would be considered.
- A heritage induction should be provided to all on-site staff and contractors involved in the Project. The induction should clearly describe the heritage constraints of the site.

REFERENCES

- Australian Museum Consulting, 2015. Heritage Platforms Conservation Management Strategy. Prepared for Sydney Trains.
- Bayley, William, 1973, *Lithgow Zig Zag Railway*, Third Edition, Austrail Publications.
- Blaxland, Gregory, 1823, *A journal of a tour of discovery across the Blue Mountains in New South Wales*.
Accessed online at:
<http://acms.sl.nsw.gov.au/album/albumView.aspx?itemID=846609&acmsid=0>
(19/04/2017).
- Cremin, Aedeon, 1989 'The Growth of an Industrial Valley: Lithgow, New South Wales' in Australian Historical Archaeology, Vol 7 1989.
- Cremin, Aedeon, with Jack, Ian [et al.] 1987, *Survey of Historical Sites Lithgow Area*, Department of Environment and Planning, University of Sydney.
- Croft & Associates Pty Ltd, 1985, 'Blue Mountains Heritage Study', Blue Mountains City Council.
- Eskbank Rail Heritage Centre, 2013 'History'.
Accessed online at:
<http://eskbankrailheritagecentre.blogspot.com.au/p/history.html>
(24/04/2017)
- GHD, 2016. *New Intercity Fleet Enabling Works TA: Preliminary Geotechnical Desktop Study, Blue Mountains & Main West Line Stations*, (ISD-15-4794).
- Lewis, Robert, and Gurry, Tim 2012, *Myths and Mysteries of the Crossing of the Blue Mountains*, National Museum of Australia
- National Museum of Australia, 'Blue Mountains Crossing'.
Accessed online at:
http://www.nma.gov.au/online_features/defining_moments/featured/blue_mountains
(19/04/2017).
- New South Wales Government Railways and Tramways, 1886. *The Railway guide of New South Wales: for the use of tourists, excursionists, and others : a convenient volume of reference to railway routes, stations, and places of interest on the lines of railway : containing various maps and numerous illustrations*.
Accessed online at:
<http://nla.gov.au/nla.obj-286375440>
(19/04/2017).
- Office of Environment and Heritage (OEH) 2009: "Lithgow Railway Station Group and Residence".
Accessed online at:
<http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801025>
(18/04/2017).
- Office of Environment and Heritage (OEH) 2009: "Eskbank Railway Precinct".
Accessed online at:
<http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801018>
(24/04/2017).

Office of Environment and Heritage (OEH) 2009: "Great Zig Zag Railway and Reserves"

Accessed online at:

<http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5045513>
(18/04/2017).

Office of Environment and Heritage (OEH) 2001: "Blast Furnace Site"

Accessed online at:

<http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=1960020>
(24/04/2017).

Otto Cserhalmi and Partners PL, 2017. *Eskbank Rail Heritage Precinct Conservation Management Strategy*. Prepared for RailCorp Office of Rail Heritage.

State Library NSW, 2014, 'Discover Collections: Crossing the Blue Mountains'.

Accessed online at:

http://www2.sl.nsw.gov.au/archive/discover_collections/history_nation/exploration/blue_mountains/
(18/04/2017).



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