Leura Station Upgrade

Statement of Heritage Impact

Report to GHD on behalf of Transport for NSW

April 2016

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EXECUTIVE SUMMARY

Transport for NSW (TfNSW) is proposing to upgrade Leura Station as part of the Transport Access Program (TAP), an initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure where it is needed most.

Artefact has been engaged by GHD, on behalf of TfNSW, to prepare a Statement of Heritage Impact (SoHI) for the proposed Leura Station Upgrade (the 'Proposal'). The aim of the report is to identify heritage items which may be impacted by the proposed works, determine the level of heritage significance of each item, assess the potential impacts to those items, recommend mitigation measures to reduce any potential heritage impact and identify other management or statutory obligations.

Overview of Findings

- Leura Railway Station Group is a listed heritage item of local significance. This item is listed on multiple heritage registers:
  - Blue Mountains LEP 2015 Item no. LA 016
  - Sydney Trains (formerly RailCorp) Section 170 Heritage Register Item no. 4801024
- adjacent to Leura Station are a number of other locally significant heritage listed items. These items are:
  - Leura Railway Corridor (Blue Mountains LEP 2015 Item no. LA 016 and Sydney Trains s170 Register Item no. 4801024)
  - Central Leura Urban Conservation Area (Blue Mountains LEP 2015 Item no. LA 018)
  - Le Gobelet (Blue Mountains LEP 2015 Item no. LA 010)
  - single storey commercial building (Blue Mountains LEP 2015 Item no. LA 069)
  - Kinauld House (Blue Mountains LEP 2015 Item no. LA 084)
  - Waitangi House (Blue Mountains LEP 2015 Item no. LA 009)
  - Ilion House (Blue Mountains LEP 2015 Item no. LA 085)
- the proposed location has been assessed as having a nil-low potential to contain archaeological relics
- the installation of the lift shaft, staircase and canopies would result in:
  - minor physical impacts to Leura station
  - minor to moderate visual impacts from the installation of the lift housing on the rail overbridge
  - minor to moderate visual impacts due to the installation of a canopy over the new station entrance, stairs and part of the platform.
- anti-throw screens on the overbridge and the staircase would result in moderate visual impacts
- renovations to alter the station building, including the installation of two family accessible (one male and one female) toilets, and one staff toilet. These renovations would result in a moderate impact to heritage fabric

- the installation of privacy screens on Federation-style multi-paned sash windows would result in a minor visual impact
- the Proposal would result in minor visual and physical impacts as a result of removal of existing garden beds near the 'Out-of-Shed' building on the station platform
- the Proposal would result in minor visual impacts from the removal and partial replanting of vegetation along Railway Parade to incorporate an accessibility ramp
- the Proposal would result in minor visual impacts to the Leura Railway Corridor, Le Gobelet, the single storey commercial building on Leura Mall and the Central Leura Urban Conservation Area
- other works are likely to result in negligible to neutral heritage impacts.

Mitigation measures and recommendations

The following mitigation measures are suggested to minimise the impact of the proposed works:

- visual impacts could be partially mitigated by implementing the following design principles:
  - the design and materials for the proposed accessible lift, concourse and access stairs should be as sympathetic as possible to the existing character of the station with the aim of minimising visual impacts to the Leura Railway Station Group and adjacent heritage items.
  - The design should consider unobtrusive, modern, light materials, such as glass panelling and slim frame elements, which would reduce visual bulk
  - in addition to the use of unobtrusive and light materials, the canopies should be designed to permit as many sightlines from the overbridge to the station building as possible
  - materials used for anti-throw screens should be as light and transparent as possible
  - vegetation planting along the overbridge footpath to screen unsympathetic elements should be considered to reduce visual impacts to Leura Mall and adjacent heritage items
  - should the platform period-lighting need to be removed for canopy installation, it should be replaced elsewhere on the platform
- internal modifications that may impact original fabric such as cornices, window and door fittings, skirting boards and ceiling roses could be partially mitigated by implementing the following design principles.
  - modifications should be sympathetic to the historical characteristics of Leura Station. For example, it is recommended that original fabric be retained where possible, materials used during modifications should be congruent with the character of the station, and colour schemes should be as unobtrusive as possible
  - the waiting room interior should be reproduced with similar fittings and furniture as it presently has after the floor has been lowered
  - the replacement of the door to the men's bathroom at the western end of the station should aim to use materials and colour schemes as sympathetic to the existing door as possible
  - the removal of the garden bed to the west of the station building should be replaced with a new garden bed in a similar location between the station building and the out of shed

  - the installation of privacy film on station building windows should not be installed on the upper multi-paned sash clear glass windows, as this would detract from their appearance in the context of the station building as a whole
- to reduce visual impacts from works adjoining Leura Mall and Railway Parade,
  - the design of new accessible paths, parking and seating should be sympathetic to the existing character of the site location. For example, similar and/or sympathetic colour schemes to those existing within the site location should be incorporated into the final design
  - the design and materials used for the proposed accessibility ramp connecting Railway Parade should be sympathetic to the historical characteristics of the site location. For example, materials used in its construction should be consistent with the character of the station, and colour schemes should be as unobtrusive as possible
  - the construction of the access ramp on the north side of Railway Parade involves the removal of an area of vegetation. Replanting of vegetation along the margins of the ramp, or between the northern side of the ramp and the outer fencing of the rail corridor would reduce the visual impacts that this vegetation removal would cause
  - vegetation planting should be maintained where possible to enhance the garden character of Leura Station and Leura as a whole. Plantings should remain consistent with the exotic planted and garden species in the Leura area. Mature trees should be conserved wherever possible
  - as there are a number of locally listed heritage items that would be visually impacted as a result of the Proposal, Blue Mountains City Council should be notified of the proposed upgrade works
- the Ratner London Patent safe (moveable heritage) would be conserved and if relocation is required it should be kept in a safe and secure place during works and relocated back to the station building on completion of construction activities
- as the station is listed on the s170 register, consultation with Sydney Trains should be undertaken
- prior to works commencing, it is recommended that a program of archival recording is undertaken
  - this recording should include a photographic record of the station building and setting of the station, including a record of views that would be modified by the Proposal.
  - the recording should be undertaken in accordance with the NSW Heritage Office (1998) guidelines How to Prepare Archival Records of Heritage Items. As these elements have local heritage significance, the recording need only meet the minimum requirements for archival recording, measured drawings of the structures would not be necessary
- during construction works at Leura station, the following measures should be taken:
  - a heritage induction would be provided to workers prior to construction, informing them of the location of known heritage items and guidelines to follow if unanticipated heritage items or deposits are located during construction

  - in the event that any unanticipated archaeological deposits are identified within the project site during construction, the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW 2015) would be followed, and works within the vicinity of the find would cease immediately. The Contractor would immediately notify the TfNSW Project Manager and the TfNSW Environment and Planning Manager so they can assist in co-ordinating the next steps which are likely to involve consultation with an archaeologist and OEH. Where required, further archaeological work and/or consents would be obtained for any unanticipated archaeological deposits prior to works recommencing at the location
- should new design options or alterations be proposed, an updated heritage assessment may be required.

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1.0 INTRODUCTION

1.1 Background

Transport for NSW (TfNSW) has proposed upgrades to Leura Station as part of the Transport Access Program (TAP), an initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure where it is needed most.

Artefact has been engaged by GHD, on behalf of TfNSW, to prepare a Statement of Heritage Impact (SoHI) for the proposed Leura Station Upgrade (the 'Proposal'). Leura Railway Station Group is listed on the Blue Mountains Local Environmental Plan (LEP) 2015 and the Sydney Trains (formerly RailCorp) section 170 Register.

The aim of the report is to identify heritage items which may be impacted by the proposed works, determine the level of heritage significance of each item, assess the potential impacts to those items, recommend mitigation measures to reduce the level heritage impact and identify other management or statutory obligations.

1.2 Proposal

The Proposal would involve works to make Leura Station more accessible to customers, to improve customer safety and to upgrade existing facilities. Proposal details are discussed in detail in section 6.2 of this report. The primary works for the Proposal include:

- installing a new lift and stairs from the existing overbridge to the station platform
- constructing additional canopies
- installing anti-throw screens on the overbridge
- renovating existing bathrooms to provide a male and female family accessible toilets and a staff toilet
- constructing a new ramp from Railway Parade to the rail overbridge
- removing and partial replanting of vegetation along Railway Parade
- ancillary works such as installing wayfinding features, minor drainage works, adjustments to lighting, installing new CCTV cameras
- re-arranging parking, kiss and ride and taxi parking along Leura Mall and Railway Parade

1.3 Proposed location

The proposed location includes Leura Station (Lot 102/DP1167897), part of Leura Mall north of the station, and part of Railway Parade, south of the station (Figure 1). Leura Station is located on the Blue Mountains Line at Leura, which is located in the Blue Mountains City Council Local Government Area (LGA).

Figure 1: Map of proposed location

1.4 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*.*

In order to consistently identify the potential impact of the proposed works, the terminology contained in Table 1 has been referenced throughout this document. This terminology, and corresponding definitions, are based on those contained within guidelines produced by the International Council on Monuments and Sites (ICOMOS).[1]

Table 1: Terminology for assessing the magnitude of heritage impact

Grading	Definition
Major	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. These actions cannot be fully mitigated.
Moderate	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. The impacts arising from such actions may be able to be partially mitigated.
Minor	Actions that would result in the slight alteration of heritage buildings, archaeological resources, or the setting of an historical item. The impacts arising from such actions can usually be mitigated.
Negligible	Actions that would result in very minor changes to heritage items.
Neutral	Actions that would have no heritage impact.

1.5 Authorship

This report was prepared by Shona Lindsay (Graduate Heritage Consultant) and Duncan Jones (Heritage Consultant). Abi Cryerhall (Principal, Historic Heritage) and Dr Sandra Wallace (Director) reviewed the report.

:[1] Including the document *Guidance on Heritage Impact Assessments for Cultural World Heritage Properties*, ICOMOS, January 2011.

2.0 HISTORICAL CONTEXT

2.1 Early exploration of the Blue Mountains

In May 1813 Gregory Blaxland, William Charles Wentworth and William Lawson, assisted by an Aboriginal guide and three convicts, set out in search of grazing land along the Great Dividing Range. The party was the first to cross the Blue Mountains, although others had attempted the trip before them.

In 1793 William Paterson, a solider, explorer and amateur botanist followed the Grose River for some distance before stopping, content with his discovery of several new plant species. In 1796 George Bass ventured into the Lower Burragorang Valley, crossed the Wollondilly River and headed west to the Kanangra Plateau before turning back. John Wilson, a former convict and skilled bushman later led a party to the south-west. Most turned back at the Nepean River, but Wilson and two others continued to about 30 kilometres west of Mittagong. Francis Barrallier was sent by Governor Philip King to find a route through the mountains in 1802. He started at Picton and almost reached the Kanangra Plateau, coming within 25 kilometres of the Jenolan Caves. George Caley, botanist and plant collector for Joseph Banks reached the base of Mount Banks in 1804 and noted that the mountains were "impassable" and "must forever remain an unsurmountable barrier to the extension of the settlement".[2]

In 1813 the Colony had expanded across the Cumberland Plain to the Nepean and Hawkesbury Rivers at the foot of the Blue Mountains yet there was still a shortage of good grasslands. Blaxland, Wentworth, Lawson and their party followed a ridge in between the Grose and Cox Rivers to Mount York. They then trekked into the Kanimbla and Hartley Valleys where they found “forests all around them, sufficient to feed the stock of the colony” for the next thirty years.[3] On their return to Sydney, the men were each granted 400 hectares of land.

2.2 The Great Western Highway

Assistant surveyor George Evans was sent to map their route and “confirm and extend” the boundaries of the forest that they had recorded.[4] In July 1814 William Cox was appointed Superintendent of Works for the construction of a road that followed the “track laid down on Mr. Evans map”.[5] The road was to be “at least 12 feet wide so as to admit 2 carts or other wheeled carriages to pass each other”.[6] The difficult terrain limited the size of the crew and their equipment. Despite this the road was completed in six months.[7] For their work the convict crew, which consisted of 28 men, were granted their freedom.

Governor Lachlan Macquarie was the first official traveller on the Great Western Road on his trip to the Bathurst Plains in 1815.[8] His journey took nine days. The road has since been improved a number of times. Surveyor General Thomas Mitchell re-surveyed and re-aligned the route as the original descent from Mount York down the western escarpment was dangerous. Mitchell devised a route that descended from a ridge he named Mount Victoria, with the road across the Pass of Victoria opening in 1832.

[2] Australian Heritage Database, *The Greater Blue Mountains Area.*
[3] RTA Environment Branch 2008
[4] RTA Environmental Branch 2008: 5
[5] RTA Environmental Branch 2008: 5
[6] Karskens 1988: 18; RTA Environmental Branch 2008: 5-6.
[7] RTA Environmental Branch 2008: 6
[8] Blue Mountains Australia, *History in detail.*

2.3 The Main Western Railway Line

During the mid-nineteenth century, the extension of the railway westward to Bathurst was viewed as a priority by the Colonial Government in order to capitalise on the rich natural resources of the Bathurst Plains. By 1863, the Main Western Railway Line had reached Penrith, which was the terminus of the line for the next four years, while railway engineers developed a solution to the obstacle posed by the Blue Mountains.[9]

An extension of the Main Western Railway Line was opened from Penrith to Wentworth Falls on 11 July 1867, and later extended through Leura in 1868.[10] The railway was constructed to utilise natural grades, which meant that it often ran parallel to the existing road (now the Great Western Highway) which had been built to follow natural ridgelines.[11]

The Main Western Railway Line made the Blue Mountains accessible. In the nineteenth century parts of Sydney were poverty stricken and overcrowded and epidemics of cholera, typhoid and smallpox were a constant threat. The opening of the Great Western Railway line prompted the wealthy to move to the fresh air of the Blue Mountains for which it was renowned for.[12] The elite built country estates and summer residences in the mountains.

2.4 Leura and the railway station

When the railway line was extended through Leura in 1868 a gatehouse was erected where the line crossed the Western Road near the present Sorensen Bridge.[13] This land was part of Benjamin Backhouse's grant which would become the commercial area of Leura. In 1881 the land south of the railway line was subdivided for the proposed Leura estate by its then owner Frederick Clissold. A map of this subdivision was said to be the earliest appearance of the name Leura.[14] Clissold was a wool-merchant who also owned Leura Falls. The development was slow, and it was not until the opening of the railway station in 1890 that the town began to grow (Figure 2).[15]

[9] Croft & Associates 1985:40
[10] Croft & Associates 1985:42
[11] Biosis Research 2004:12
[12] For example, the tourist guide by Katoomba and Leura Tourist Association 1905.
[13] Rotary Club of Katoomba 1982:13; Blue Mountains Local Studies, *The Railway and the Blue Mountains.*
[14] Blue Mountains Local Studies, *The Railway and the Blue Mountains.*
[15] OEH 2015a

Figure 2: Photo of Leura Station c. 1891 – 1917 (Source: National Library of Australia)

The town developed into a resort town and as a tourist destination for walkers travelling to see the nearby waterfalls and mountain views. The town attracted affluent people wanting to purchase land for country residences, and large estates were subdivided and sold.[16] Businesses and local facilities, including a post office, developed to support the growing town. In 1892 the Palace Hotel (later known as the Ritz) was erected with substantial gardens and was the focal point in Leura.[17]The Mall leading south from the railway station became the commercial area of Leura at the start of the twentieth century (Figure 3). Businesses, such as Le Gobelet, were built in the Mall in the Federation style prominent of the time. Landscaping with large trees and flowering shrubs became an integral part of the town, leading to Leura being known as the Garden Suburb of Katoomba.[18] The Golf Links built near the town were also a prominent attraction for tourists at the start of the twentieth century.[19]

[16] Blue Mountains Local Studies, *The Railway and the Blue Mountains.*
[17] OEH 2015a
[18] Rotary Club of Katoomba 1982:13.
[19] Katoomba and Leura Tourist Association 1905:4.

Figure 3: Leura Mall taken from the railway station in c. 1900 (Source: National Library of Australia)

Queen Elizabeth visited Leura in 1954 on a train journey through the Blue Mountains (Figure 4). On 3 February 1957 the line was electrified, which aided in the town becoming favourable for commuters who worked in Sydney, but also witnessed a decline in long-stay holiday makers and the increase of day-trippers.[20]

Today, Leura is well known for its garden landscape, Leura Falls, and the views of the Blue Mountains. Leura Mall retains the village feel, with the majority of commercial business still operating out of this area maintaining the original shop frontages.

Figure 4: Photo of Queen Elizabeth at Leura Station in 1954 (Source: National Library of Australia)

[20] Blue Mountains Local Studies, *The Railway and the Blue Mountains*

3.0 STATUTORY CONTEXT

3.1 Legislation

3.1.1 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 New South Wales. Under the Heritage Act, 'items of environmental heritage' include places, buildings, works, relics, moveable objects and precincts identified as significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values. State significant items can be listed on the NSW State Heritage Register (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.

3.1.2 Environment 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 Proposal 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 Local Environmental Plans [LEPs] and Development Control Plans [DCPs]) in accordance with the EP&A Act to provide guidance on the level of environmental assessment required. The current Proposed location falls within the boundaries of the Blue Mountains City Council LGA. Schedule 5 of the Blue Mountains LEP 2015 includes a list of items/sites of heritage significance within the Blue Mountains City Council LGA.

3.1.3 State Environmental Planning Policy (Infrastructure) (ISEPP) 2007

In 2007, the ISEPP was introduced to streamline the development of infrastructure projects delivered by state agencies, including TfNSW. Generally, where there is conflict between the provisions of the ISEPP and other environmental planning instruments, the ISEPP prevails. Under the ISEPP, development for the purpose of rail infrastructure facilities may be carried out by a public authority without consent on any land. The ISEPP overrides the controls included in the LEPs and DCPs, and TfNSW is required to consult with the relevant local councils only when development "is likely to have an impact that is not minor or inconsequential on a local heritage item (other than a local heritage item that is also a State heritage item) or a heritage conservation area". When this is the case, the proponent must not carry out such development until it has:

- had an assessment of the impact prepared
- given written notice of the intention to carry out the development, with a copy of the assessment, to the council for the area in which the heritage item or heritage conservation area (or the relevant part of such an area) is located
- taken into consideration any response to the notice that is received from the council within 21 days after the notice is given.[21]

3.2 Heritage registers

Statutory registers provide legal protection for heritage items. In NSW, the Heritage Act and the EP&A Act provide for heritage listings. The State Heritage Register, the s170 registers, and environmental heritage schedules of Local Environment Plans (LEPs) are statutory listings. Places on the National Heritage List are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

A search of all relevant registers was undertaken on 17 February 2016. The results for Leura Station are displayed below in Table 2 and details of heritage items within or directly adjacent to the proposed location are provided in Table 3. The s170 curtilage of Leura Railway Station Group and a map of heritage items is provided in Figure 5.

Table 2: Register search for Leura Station

Register	Listing
Register of the National Estate (non-statutory)	Leura Railway Station **is not listed** on the Register of the National Estate.
National Heritage List	Leura Railway Station **is not listed** on the National Heritage List.
Commonwealth Heritage List	Leura Railway Station **is not listed** on the Commonwealth Heritage List.
State Heritage Register	Leura Railway Station **is not listed** on the State Heritage Register.
Section 170 Register	Leura Railway Station Group **is listed** on the Sydney Trains (formerly RailCorp) s170 register (4801024).
Blue Mountains LEP 2015	Leura Railway Station **is listed** on the Blue Mountains LEP 2015 (LA016).

[21] ISEPP Clause 79: http://www.austlii.edu.au/au/legis/nsw/consol_reg/sepp2007541/s79.html.

Table 3: Details of listed heritage items located near the proposed location

Item Name	Address	Lot No.	Significance	Item/Listing Number
Railway Corridor	Main Western Railway (near Leura Station), Leura	NA	Local	Blue Mountains LEP 2015 (LA030)
Central Leura Urban Conservation Area	Bounded by Railway Parade to the north, Megalong Street to the south, and the area around Leura Mall; Leura	NA	Local	RNE (R3314) Blue Mountains LEP 2015 (LA018)
Le Gobelet	131 Leura Mall, Leura	Lot A, DP 5590	Local	Blue Mountains LEP 2015 (LA010)
Single-storey commercial building	126–128 Leura Mall, Leura	Lot A, DP 302099	Local	Blue Mountains LEP 2015 (LA069)
Kinauld	87 Railway Parade	Lot 4, Section 6, DP 1175	Local	Blue Mountains LEP 2015 (LA084)
Waitangi	88 Railway Parade	Lot 55, DP 1126216	Local	Blue Mountains LEP 2015 (LA009)
Ilion	89 Railway Parade	Lot 56, DP 1126216	Local	Blue Mountains LEP 2015 (LA085)

Figure 5: Listed LEP heritage items within and adjacent to the proposed location

4.0 HERITAGE SIGNIFICANCE

4.1 Introduction

This section establishes the significance of listed heritage items within and near the proposed location. Heritage assessment and statements of heritage significance have been adapted from the State Heritage Inventory (SHI).

In order to aid in future planning with regard to the development of Leura Railway Station Group, this report includes as assessment of the relative contributions of individual components of the station to its heritage value. This assessment was based on the standard grades of significance set out in the NSW Heritage Office publication 'Assessing Heritage Significance' shown in Table 4[22].

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
Little (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

4.2 Section 170 listed items

4.2.1 Leura Railway Station Group | Sydney Trains s170 item no. 4801024 | Blue Mountains LEP 2015 item no. LA 016

Leura Railway Station Group consists of the main station building, the out of shed building, the platform, overbridge, a tree at the eastern end of the platform, and a Ratner London Patent safe (moveable heritage).

The station buildings are brick Federation style, which was the prominent choice at the start of the twentieth century. The main brick building is a type A10 standard railway station building design on a brick-faced concrete island platform. A detached brick 'out of shed' is located to the west of the station building. A standard pre-stressed concrete plank overbridge supported on concrete columns adjoins Leura Mall with a single set of stairs to the platform. It spans over the tracks and marks the eastern end of the station.

A timeline of development of Leura Station is provided in Table 5 and Figure 7 shows the development of the rail line and buildings. Current photos of the station taken during the site visit are shown in Figure 7 to Figure 18.

[22] Heritage Division 2001. Assessing Heritage Significance.

Table 5: Timeline of development of Leura Station

Date	Description of events
1890	• Leura Station opens
1892	• unattended timber platform with waiting shed opened to public near later goods shed
1897	• per-way siding constructed with a crane located nearby
1902	• station building built • out of shed built
1912	• roof extended on main station building at eastern end to provide shelter for signal box prior to 1912 • signal box built • goods shed constructed by this time with per-way siding extended
1915	• extension of main station building at eastern end for Station Master's room
1921	• footbridge provided to the existing overbridge
1957	• line was electrified
1958	• signal box closed when automatic colour light signals were introduced
1974	• tenders called for the removal of the goods shed
1979	• per-way siding abolished
1985	• pre-stressed concrete overbridge erected
1994	• main station building internally upgraded

Figure 6: Development of the station buildings and rail line at Leura Station (Source: Australian Railway Historical Society)

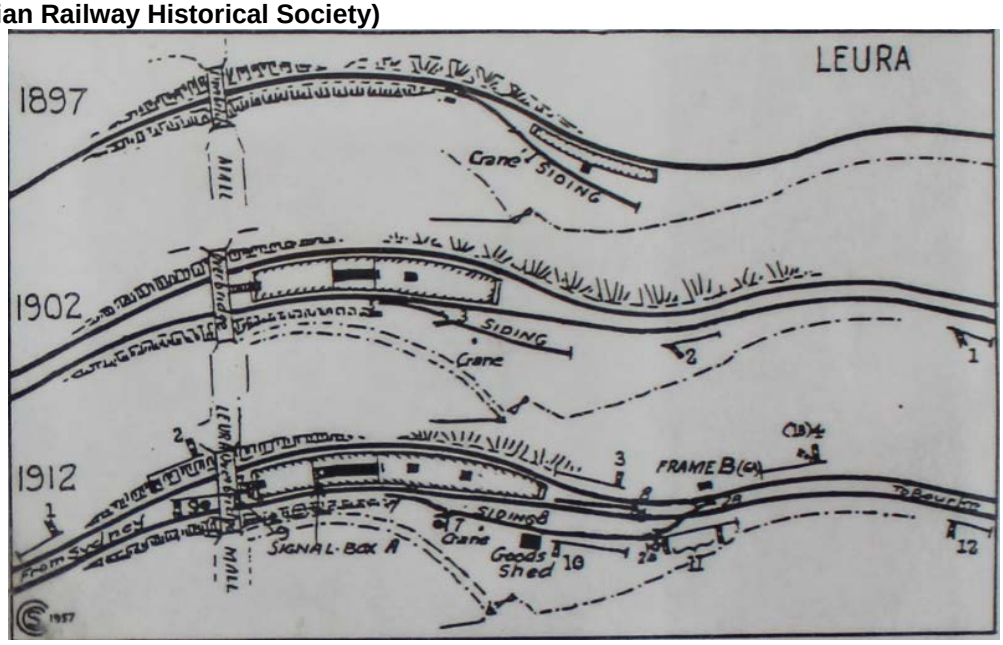


Figure 7: Station building facing west

Figure 8: Station building facing west

Figure 9: Station building facing east

Figure 10: Outdoor seating on platform

Figure 11: Current information window facing east

Figure 12: Internal view of station building with toplights and timber cornices facing north-west

Figure 13: Mature tree on platform facing east

Figure 14: Current stairs from platform to bridge facing east

Figure 15: Out of shed facing east

Figure 16: Out of shed facing west

Figure 17: View of platform facing east

Figure 18: View of platform facing west

Station Elements

Table 6 below lists the different elements of the station group and provides a significance grading for each.

Table 6: Grades of significance for Leura Railways Station Group components[23]

Grading	Description	Status
Station building 1902	External: Constructed of face brick with corrugated metal gabled roof extending as awnings to both platforms, the Leura Station building is an early island platform building in Federation style built to the standard design A10. It features nine bays with linear arrangement along the platform with tuck-pointed red brickwork and engaged piers between the bays. Other features include rendered and moulded two rows of string courses, moulded cornice, timber framed windows and doors with contrasting decorative trims and sills, standard iron brackets over decorative corbels supporting ample platform awnings, fretted timber work to both ends of awnings and gable ends, timber finials to gable apex, tall corbelled chimneys, timber framed double-hung windows with multi-paned and coloured upper sashes, and timber door openings with multi-paned fanlights with coloured glazing. The most eastern bay is enclosed by fibrocement panels, which had housed the interlocking frame between 1912 and 1958. The station building is slightly curved from the ticket office onwards to the west in line with the curve of the island platform. Internal: The station building appears to have maintained few of its original detailing and finishes due to the upgrade works in 1994. However, the original floor layout remains including former signal room (timber framed addition) combined with the Station Master's office and ticket office, general waiting room, ladies' toilets with waiting room, and male toilets at the western end. The interiors generally feature custom orb ceilings with ceiling roses to the offices and plasterboard ceiling to the other spaces, enclosed or adapted fireplaces, later floor tiling or carpet finish, and timber bead style moulded cornices. All toilet and light fittings are relatively new. Doors to both platforms of the general waiting room have been replaced.	**High**
Out of shed 1902	External: A small square shaped detached face brick shed featuring moulding and rendered string course detailing similar to the main station building. It is located on the west side of the station building. The shed features a gabled corrugated metal roof with timber bargeboard and narrow eaves with exposed rafters, contrasting rendered moulded trim above a single door on west side elevation and the two windows on side elevations, and two rows of string courses throughout all elevations. There is no opening on the eastern elevation of the building.	**High**
Island platform 1902 - 1912	Leura Station has an island platform curved with a pointed end to the west. The platform is brick faced with concrete deck and asphalt finish. A small number of concrete edged garden beds with plantings are located between the station building and the out-of-shed as well as towards the western end of the platform. A mature tree is located on the eastern part of the platform between the station building and the overbridge. Period and modern light fittings and timber bench seating, and modern signage, water fountain and aluminium palisade fencing at both ends of the platform are other features along the platform.	**Moderate**
Rail overbridge and footbridge 1985	A standard pre-stressed concrete plank overbridge supported on concrete columns adjoins Leura Mall with a single set of stairs to the platform. It spans over the tracks and marks the eastern end of the station.	**Little**
Movable items	A Ratner London Patent safe has been observed in the ticket office below the ticket window desk.	**High**

[23] Descriptions adapted from OEH 2008

Grading	Description	Status
Landscape features	The setting of the station within the rock escarpment is typical of the natural setting of the Blue Mountains stations. The only significant landscape element is the mature tree at the eastern end of the platform and planted gardens on the southern end of the overpass overbridge.	**High**

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[24]:

> *Leura Railway Station Group is of local significance as part of the early construction phase of railway line duplication on the upper Blue Mountains demonstrating the technological and engineering achievements in railway construction at the beginning of the 1900s. It was built in anticipation of a boom period in the mountains, particularly in connection with large holiday resorts in the area. The station group is a good example of a Federation free classical railway station combining a large station building with a signal room and detached out-of-shed, and are representative examples of the arrangement of Federation style buildings that were built between Penrith and Lithgow during the early twentieth Century. The station group maintains its overall architectural quality and setting within the townscape of Leura.*

4.3 Blue Mountains LEP 2015 listed heritage items

4.3.1 Railway Corridor (LA030)

An intact brick station with elegant detailing situated on an island platform in a deep railway cutting. Some 1868 masonry culverts also survive beneath the railway per-way formation (generally on the north side of the line) (Figure 19 and Figure 20).

Figure 19: Rock-cutting for rail line viewed station platform facing east

Figure 20: View of railway corridor from from bridge facing west

[24] OEH 2008

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[25]:

> *The transport corridor across the Blue Mountains, where rail jostled the existing roadway along the one viable ridge, is of state significance as a whole, because the road created the potential for expansion of New South Wales from the Cumberland Plain out beyond the Dividing Range and because the railway created an entirely new sort of tourism in the Mountains and the development of heavy extractive and secondary industry in the Mountains and Lithgow and the wheat industry of the black soil plains in the late Victorian period.*
>
> *The extent to which Leura was influenced by these general considerations is, of course, considerable. But at Leura the highway is less contiguous to the rail-line than in the other Mountain settlements and the road and rail corridors remain discernibly separate near Leura Station.*
>
> *The corridor at Leura is therefore a dual carriageway, not the usual tight-knit relationship of roadway and permanent way. The railway corridor has local significance as creating through its rock-cuttings and station-siting pre-conditions for the growth of Leura township. It is no coincidence that Leura grew rapidly only after 1892, when the railway station finally opened.*

4.3.2 Central Leura Urban Conservation Area (LA018)

The Central Leura Urban Conservation Area is situated around the early twentieth century Leura Mall (Figure 21 and Figure 22). It is a rare example of a high quality small commercial centre. The precinct is characterised by early twentieth century and inter-war commercial buildings of one to two stories fronting Leura Mall. The centre of the street has a generous grassed median strip which gives a transition in levels across the street and, with its plantings of cherry trees, provides a pleasant character to the town centre. A memorial to the former Presbyterian minister, Redmond, is located in the centre of the median strip.

Figure 21: View of Leura Mall facing south facing south

Figure 22: View of Leura Mall from bridge

[25] OEH 2015e

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[26]:

> *The commercial section of Leura Mall is of State significance because of the integrity of the assemblage of commercial and public service buildings which grew up rapidly after the railway station opened in Leura in 1890. This is also significant, like Katoomba, in having a major church building within the commercial precinct. The roadway itself is of significance because of the difficulties which it presented to the municipal authorities to maintain and beautify.*
>
> *The Central Leura Conservation Area retains a substantial number of early twentieth century buildings that combine to give the streetscape a distinctive character. A large number of early shopfronts with their recessed entries, metallic framing, marble and tiled work survive and provide important pedestrian interest. This aspect of the streetscape has been reinforced by mid twentieth century buildings with their chrome shopfronts and curved glass entries. The compactness of the commercial centre reinforces the village atmosphere of the precinct.*
>
> *Leura Mall is a rare example of a high quality small commercial centre retaining very substantial integrity.*
>
> *The Central Leura Urban Conservation Area retains the typical character of an early twentieth century commercial centre in a small town.*

4.3.3 Le Gobelet (LA010)

Le Gobelet, located at 131 Leura Mall, is a two storey commercial building in the Federation Arts and Crafts style constructed in 1906 (Figure 23 and 25). The north-east corner of the building is chamfered to create a shop entry. A separate entry to the first floor is located further west on Railway Parade.

The ground floor of the building has shopfront windows to both Railway Parade and Leura Mall. A pair of french doors with a four pane toplight opens to the corner.

The upper floor has a parapet wall with a frieze panel featuring pediments to the side panels and the date 1906 in the centre panel. Two over two pane double hung windows are in the chamfered bay over the shopfronts and in the north facing bays on the western part of the building. A larger double hung window is in the east facing bay.

The rear (west) part of the building is constructed of brickwork. There are two chimneys finished with spatterdash.

[26] OEH 2015a

Figure 23: View of Le Gobelet facing west

Figure 24: View of Le Gobelet from station path facing south

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[27]:

> *These business premises have local significance as representative offices distinguished by the occupants, A.C. Craig, a very prominent real estate agent and hotel proprietor, and the highly significant architect of the Carrington, Edward Hogben.*
>
> *131 Leura Mall is a good example of a Federation Arts and Crafts building with parapet interest created with the use of spatterdash and brickwork. The street corner is acknowledged with the chamfered entry.*
>
> *With its prominent position at the north entry to Leura Mall shopping precinct it has importance in establishing the character of the commercial precinct and makes a positive contribution to the streetscape.*
>
> *131 Leura Mall is a good example of a Federation Arts and Crafts building, a style which was common in the upper Blue Mountains. As an example of this style it makes a positive contribution to the streetscape.*

4.3.4 Single storey commercial building (LA069)

The commercial building at 126-128 Leura Mall is a single storey building with Federation arts and crafts influences and dates between 1912 and 1914 (Figure 25). The building fronts both Leura Mall and Railway Parade and has a splayed corner. The parapet wall is divided into spatterdash panels with brick piers and a moulded cornice below. The detail at the top of the parapet has been removed. The date "1912" is inscribed on the corner panel.

Below the cantilevered cornice the original shopfronts survive with brass mullions, timber framing and toplights. At the Railway Parade tenancy and 128 Leura Mall, the shopfronts have recessed entries. 126 Leura Mall has its entry on the splayed corner.

[27] OEH 2015d

Figure 25: View of single storey commercial building facing south-east

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[28]:

> *The shops on the corner of Railway Parade have significance as a good representative example of the sort of modest commercial development which was occurring in Leura Mall just before World War I.*
>
> *126 Leura Mall has aesthetic significance for its surviving shopfronts featuring a combination of timber and brass detailing. Its surviving parapet wall detailing establishes a presence at the top of the Leura commercial centre.*
>
> *The shops on the corner of Railway Parade have significance as a good representative example of the sort of modest commercial development which was occurring in Leura Mall just before World War I.*

4.3.5 Kinauld (LA084)

Kinauld is a substantial two-storey Federation house built of red brick roofed with Marseilles tiles and dates between 1915 and 1916 (Figure 26). It has a hipped roof with a projecting gabled front, a verandah, now enclosed, wraps around the north (front) and east sides of the house. On the west side a separate entry porch provides access to the former consulting rooms, now an art gallery. Projecting bay windows in the gabled front are shaded by a skillion roof of pressed metal in a shingle pattern. Paired double-hung windows are used on the upper floor.

[28] OEH 2015f

Figure 26: View of Kinauld from Railway Parade facing south

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[29]:

> *Kinauld is a representative example of closer development near the business centre of Leura and the railway station in the 1910s. Its significance is enhanced as the house and surgery of the founding local doctor, with his personal experience of tuberculosis. The survival of the ceramic basin, manufactured by G.E. Crane & Sons Ltd, is also of local significance, since the Crane family lived in Springwood for almost a century.*
>
> *Dr Alex McIntosh is a significant figure in Leura, where the first sanatorium for tubercular patients was founded in 1900, as a physician with personal knowledge of recovery from tuberculosis, and as a general practitioner of good and long standing.*
>
> *For over thirty years Kinauld was a social focus as the first doctor's consulting-rooms. It retains social esteem as an art gallery, currently showing the significant local works of John Ellison.*

4.3.6 Waitangi (LA009)

Waitangi, at 88 Railway Parade, is a single storey house, dating from c.1890 with a Victorian character (Figure 27). Its main wing, facing Railway Parade, has a steeply pitched gabled roof on an east-west axis. A bullnosed verandah wraps around the north, east and west sides and is terminated by a skillion roofed section, to the south (rear). Further south are two additional gabled wings, connected by a box gutter.

The roof is sheeted with corrugated steel and features scalloped timber bargeboards and turned timber finials. The verandah is supported on cast iron columns, and uses cast iron for the balustrade and the valance fringe. The house is clad with wide rusticated weatherboards.

The front door is four panelled with a toplight, sidelight and its original hardware. French doors open to the verandah. Two dormer windows have been added to the north roof slope, and a juliet balcony is in the west gable, reached by french doors with arched panels.

[29] OEH 2015c

Figure 27: View of Waitangi from Railway Parade facing south

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[30]:

> *Waitangi is a good representative example of development along Railway Parade in the two decades after Leura Station opened in 1892. It is characteristic in starting as a summer house for a coastal owner and then fluctuating in use between a permanent and an occasional residence.*
>
> *88 Railway Parade has aesthetic significance as a rare surviving house with a Victorian character in the upper Blue Mountains. It has additional importance with the retention of the rear gabled wings that break down the scale of the building.*
>
> *88 Railway Parade is a rare survivor of nineteenth century houses with a Victorian character in the upper Blue Mountains.*

4.3.7 Ilion (LA085)

Ilion is a single storey house in the Federation Bungalow style (Figure 28). The house has a low-medium pitched roof with gables facing east and north. A flat roofed verandah is on the north side and wraps around the east, terminating at the east gable. The roof is clad in terracotta tiles with crenelated ridging and rams horn finials. The two chimneys have terracotta pots and the walls of the house are brick.

The gable facing north is shingled at the top, half-timbered in the centre - with roughcast to the panels, and roughcast at the base. The chimney, which rises through the centre of the gable is made a feature of the composition. The verandah has brick piers with paired timber posts above. The balustrade is of timber slats. The name "ILION" features in plaster on the north wall.

The house has a four panelled front door with a toplight and sidelight opening to the eastern verandah. French windows with slate thresholds open to the verandah. Internally the house has boarded ceilings and plastered walls.

[30] OEH 2015g

Figure 28: View of Ilion from Railway Parade facing south

Statement of Significance

The NSW SHI database contains the following statement of significance for the item[31]:

> *Ilion is a representative example of the good quality housing constructed near the railway station which opened at Leura in 1892 and of the brisk speculation which was going on during the early years of the twentieth century in Leura*
>
> *Ilion is a fine and highly intact example of a Federation bungalow featuring unusual detailing to the main gable.*
>
> *Brick Federation bungalows are somewhat unusual in the upper Blue Mountains and Ilion is a fine and intact example of this style.*

[31] OEH 2015b

5.0 ARCHAEOLOGICAL POTENTIAL

Background and archival research has not identified any former structures located within the proposed location prior to the development of the railway line that was extended in 1868 through what was to become Leura. The first known structure was the timber platform that was built near the later goods shed and opened to the public in 1892.

The goods shed was located west of the current station building on the north side of the railway line and is visible in the 1954 image (Figure 29), before its removal in 1974. This image shows the per-way siding on the left (north), which was removed in 1979. No visible traces of the timber platform, goods shed, or the per-way siding were identified during the site visit. It is unlikely that remains of these structures would have survived upgrade of the rail line.

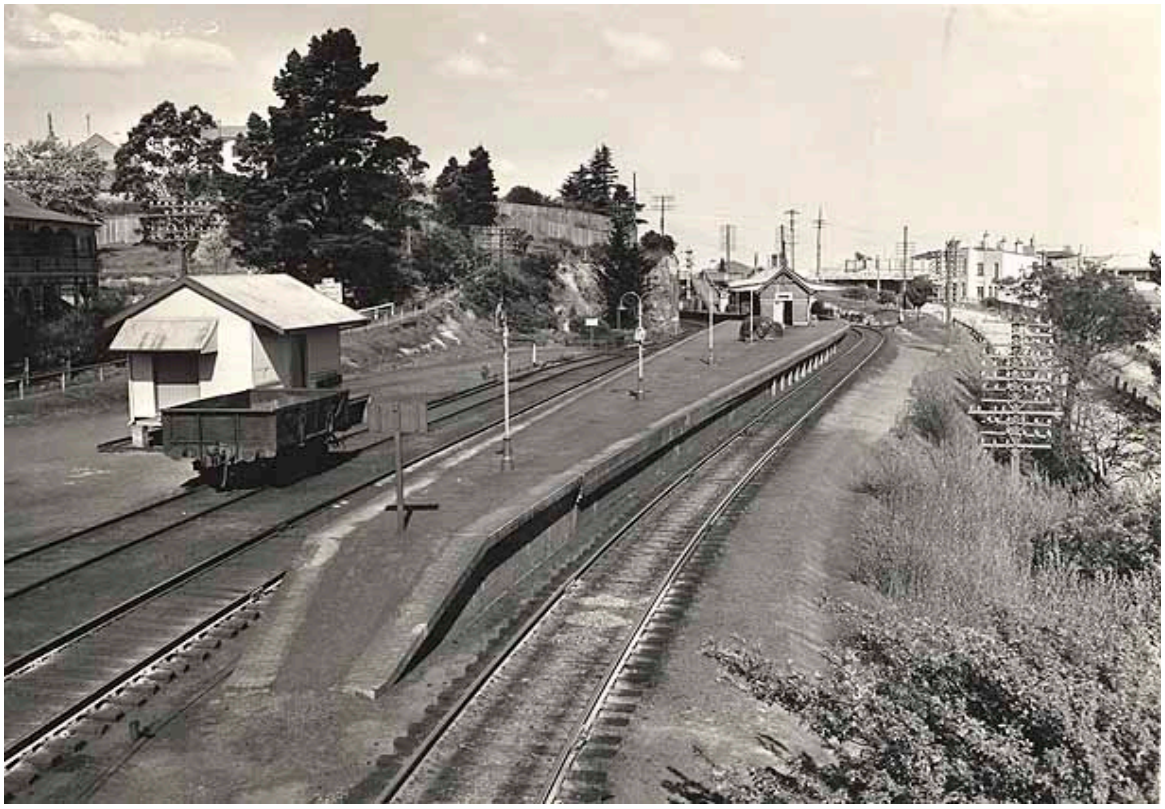
The heritage listing for the railway corridor notes that 1868 masonry culverts may survive beneath the railway per-way formation (generally on the north side of the line).

Successive upgrades to the station facilities and railway track have reduced the likelihood that any archaeological remains would be located within the proposed location. Likely archaeological remains would consist of former tracks or points, signalling or communication systems or other rail and station infrastructure. Remnant rail infrastructure would be classified as 'works' under the Heritage Act and would not require management under provisions for 'relics' or the TfNSW Unexpected Finds Guidelines.

The likelihood of recovering non-rail infrastructure archaeological relics around the station platform and rail overbridge is nil-low.

The archaeological potential of the proposed location has therefore been assessed as nil-low.

Figure 29: Photo of Leura Station in 1954 with goods shed on left (Source: National Library of Australia).



6.0 HERITAGE IMPACT ASSESSMENT

6.1 Introduction

This section will assess potential heritage impacts to the listed items within and adjacent to the study area. It will first discuss the proposed works in detail, then provided an assessment of the impacts to the heritage items.

The Proposal consists of a number of modifications to the station platform and station building, as well as landscaping on Railway Parade adjacent to Leura Station. The Proposal would also consist of the installation of a lift shaft and the replacement of existing stairs from the Leura Mall overbridge to the station platform; the installation of new canopies on the station entrance, staircase, and part of the platform; the installation of anti-throw screens on the staircase and overbridge; the conversion of existing bathrooms to two family accessible toilets (male and female) and a staff toilet; resurfacing areas of the station platform subject to ground disturbance and a number of minor works.

The Proposal is described in detail below.

6.2 Proposed works

6.2.1 Station accessibility lift and staircase

- lift shaft to connect the station platform with the Leura Mall overbridge (see Figure 30 and Figure 31 below). The lift shaft would:
  - be constructed from aluminium with transparent glass panelling around the lift housing
  - feature a low-hipped roof with square ventilation louvres at the top of the roof
- Extension of overbridge to facilitate the new lift
- new staircase would be installed to replace the existing station staircase
- anti-throw screens would be installed along the Railway Parade overbridge and side of the staircase
- new canopy would be installed around the new lift shaft on the overbridge, over the staircase to the station platform, and over a portion of the station platform
- canopy designs are the preferred option but may be subject to refinement during further design stages
- the existing mature tree on the station platform would remain.

6.2.2 Leura Station buildings and platform

The Proposal would include the following works to the station building and platform at Leura Station (see Figure 32 below):

- minor platform resurfacing to install hearing loop infrastructure
- male toilets at the western end of the station building would be renovated. This would include:
  - removal of all existing fixtures, walls, cubicles and applied finishes. New finishes would be installed to make the bathroom accessible for customers with a disability and families
  - replacement of the existing door

- female toilets in the western section of the station building would be renovated. This would include:
  - demolition of an existing partition wall in the female toilet
  - removing all of the existing fixtures, walls, cubicles and applied finishes. New finishes would be installed to make the bathroom accessible for customers with a disability and families.
- a new unisex ambulant/staff toilet on the northern side of the station building would be built within a section currently used for the female toilets
- in the waiting area, the existing floor would be regraded and a new reinforced concrete slab floor constructed at the level of the new platform
- other works within the station building would include:
  - privacy film on existing window glass near toilets, and visual indicators to all glass doors or glazed sidelights
  - the lowering of the existing information window on the eastern end of the station building
  - install hearing augmentation loops across the platform and upgrading the PA system
  - smoke and thermal detectors to be installed or upgraded in waiting rooms and toilets, and connected to Sydney Trains alarm systems
  - repaint station building walls to match existing walls
- proposed works on the platform would include:
  - the demolition of existing concrete hob and garden beds at western end of station building
  - replacing all seats on platforms and outdoor waiting areas with new seats
  - provide all required tactile ground surface indicators for direction and warning indicators throughout the station and platform edge, doors, access and ramps.
  - signage and wayfinding.
  - regrade the existing footpath as required.

6.2.3 Leura Station taxi rank and Railway Parade street frontage

- construct new accessibility ramp with metal balustrade and handrail, with a brick wall supporting the ramp base for stability. New stairs and balustrade would provide access between Railway Parade and Leura Mall
- new trees and shrub landscaping with seating integrated into the design
- new security fence along rail corridor
- provide approximately six line-marked taxi parking spaces, new kerb and gutter and a new paved footpath on Railway Parade.

6.2.4 Footpath on existing overbridge on Leura Mall

- footpath to be widened on the western side, and a new kerb, gutter and kerb ramp to be installed
- construct two-line marked kiss and ride parking spaces and a new accessible walkway

6.2.5 Temporary works

- install temporary footbridge for station access
- establishment of site compound(s) (erect fencing, tree protection zones, site offices, amenities and plant/material storage areas)
- establishment of temporary facilities as required (e.g. temporary pedestrian access to station, temporary toilets).

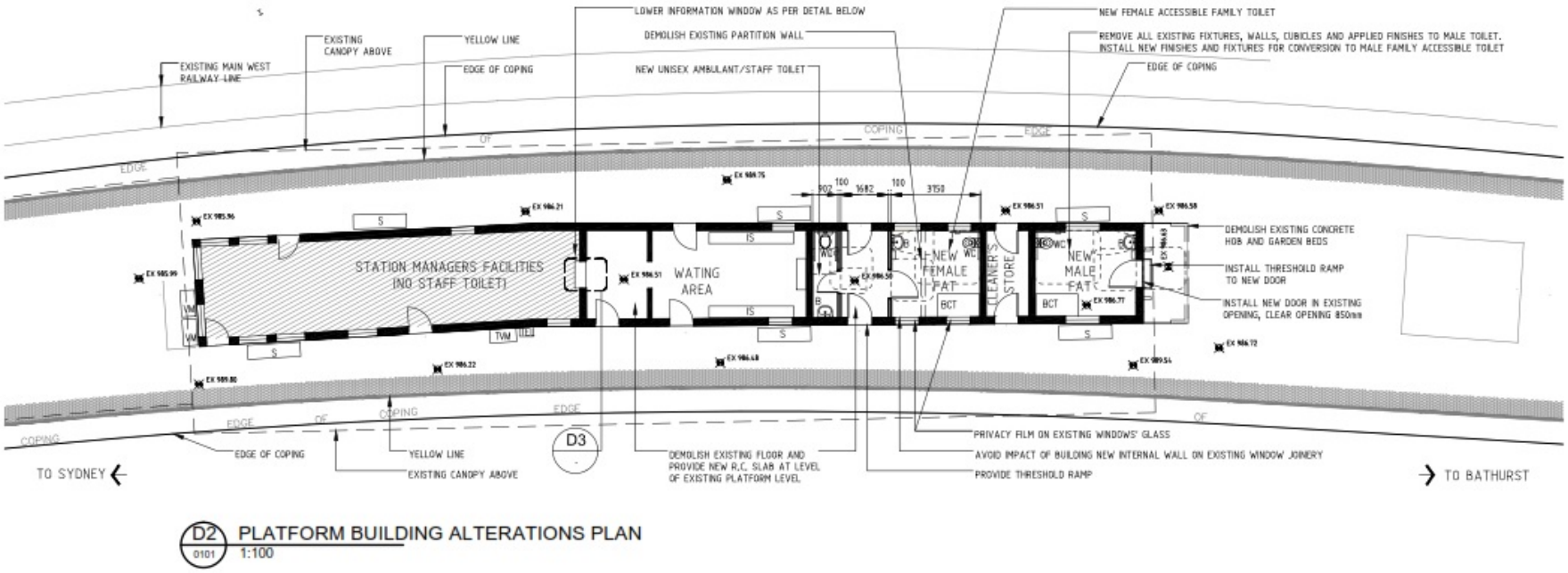
Figure 30: Proposed design showing Leura Station Upgrade from Leura Mall shopping area

Indicative image

Figure 31: Proposed canopy design viewed from north of the station looking southeast.

Indicative image

Figure 32: Proposed works for station platform building



Indicative design only

6.3 Potential impacts to Leura Railway Station Group from the Proposal

6.3.1 Physical impact assessment

Lift, concourse, stairs and overbridge

The development of the proposed lift, concourse (access walkway) and stairs (with steel truss), would involve construction adjacent to the rail overbridge and the removal of the existing concrete stairs from the street to the platform.

The existing stairs from the overbridge (street level) to the platform are an element of little heritage significance and their removal would not impact significant fabric. There would be negligible impacts to fabric of the overbridge (an element of little significance) where it is attached to the existing stairs. Minor impacts to the fabric of the overbridge may also result from the construction of the new concourse which would house the lift.

The construction of the lift shaft would require the excavation of the island platform. The brick-lined asphalt-surfaced platform is an element of moderate significance. As the surface of the platform has been regraded and modified several times and the excavations would be located away from the outer brick-lining of the platform, these works would only cause a minor impact.

A new canopy would be constructed to surround the lift housing on the overbridge, the staircase and for a portion of the station platform. The canopy is the preferred design option but may be subject to refinement during further design stages. Excavation work for installation of columns would be limited and confined to the resurfaced platform surface. The canopy would not be attached to the station building roof. The canopy design would preserve the mature tree on the station platform. The canopy design would not remove period-design platform lighting on which the Leura station platform sign is mounted. This canopy design would result in negligible impacts to heritage fabric.

An accessible ramp would be constructed from the overbridge and concourse to allow access to Leura Mall and Railway Parade. Ramps with metal balustrades would provide an accessible path. Vegetation removal along Railway Parade would be required, with a new landscaped area provided around the ramp along Railway Parade. The footpath on Railway Parade is not considered heritage-significant fabric of the station. The construction of the ramp would result in neutral impacts to heritage fabric.

Station building and platform renovations

Minor platform resurfacing would be required in order to install infrastructure associated with the construction of hearing loops on the station platform. The platform surface has been altered and re-graded a number of times since its original construction. These works would only impact the surface of the platform and not the heritage-significant outer brick edging of the platform. These works would result in negligible impacts to heritage fabric.

The station building is an element of high significance. Renovations within the station building to upgrade the female bathroom into one female accessible toilet and one staff toilet would involve the demolition of an original internal wall and alteration of the room's original configuration. Renovation of the male bathrooms would primarily involve replacement of walls and fixtures to provide a male accessible toilet. These renovations would result in moderate impacts to heritage fabric.

The removal of internal fixtures, cubicles and applied finishes in the station bathrooms would not involve impacts to the physical fabric of the heritage item, as these fixtures were installed during renovations in the 1990s and are elements of little heritage significance. These works would result in negligible impacts to heritage fabric.

The installation of the threshold ramp on the western side of the station building to allow wheelchairs to access the men's bathroom would involve the removal of the existing garden bed located between the station building and the out of shed. These works would also require the replacement of the existing door to the bathroom. The present door is part of the original heritage fabric of the station building, although the metal security gate which is located on the outside of this door is a later addition. The replacement of the bathroom door and removal of the garden bed would result moderate impacts to the station building and island platform.

The lowering of the existing information window in the station building would involve the removal of the existing window and part of the internal wall of the station building. As this information window was renovated during works in the 1990s and is an element of little significance, the reconfiguration of the window itself would cause only minor impacts to original fabric by removal of masonry and repainting required for the works.

The waiting room floor would be lowered to match the new platform level. The existing waiting room floor treatment was modified during renovations in the 1990s and alterations are unlikely to result in impacts to original fabric of the station building. These works would result in a negligible impact to heritage fabric.

Platform seating

The existing outdoor seating on the station platform is not original, however the painted wooden design of the seating is consistent with the heritage character of the station. Replacement of seating would not impact significant fabric.

Gardens and setting

Garden vegetation that is located on the southern side of the station adjoining Railway Parade, while not an original part of the railway station, is considered consistent with the garden village character of the station and of Leura as a whole. This vegetation would require removal for renovations to install a ramp from Leura Mall to Railway Parade and to expand the taxi parking area and footpath. Landscaping would be re-established in area surrounding the ramp and taxi waiting area.

Alterations to the existing street kerbing and gutters on Railway Parade would not impact heritage fabric.

Works associated with traffic management such as the kiss and rise to the north, and taxi parking spaces along Railway Parade would not result in impacts to heritage fabric.

Minor and temporary works

A number of other minor and temporary works are proposed such as installation of smoke alarms, hearing loops, warning indicators and establishment of site compounds. It is expected that impacts to heritage fabric as a result of these works would be negligible.

6.3.2 Visual impact assessment

Lift shaft housing, canopies and anti-throw screens

The Proposed design would feature modern light-weight materials and light colour schemes. The low-hipped roof of the lift shaft reduces the visual profile of the structure. This low elevation and low-hipped roof design is consistent with a modern interpretation of a village aesthetic. The lift housing at pedestrian level is predominantly composed of transparent glass. The building would be visually prominent from Railway Parade and the station platform to the west.

The installation of the access lift would partially obstruct views of the Federation station building from the rail overbridge. The obstruction of this view would also detract from the setting of the station which is currently dominated by the rock cutting to the south. The ability to discern the station building as original would be compromised by the addition of the new structure and their relative visual dominance from the overview, which is the most common view point for the public. The use of transparent glass for much of this structure would result in the preservation of some sightlines. The installation of the lift housing would result in minor to moderate visual impacts.

The installation of a new canopy over the station entrance, staircase and part of the station platform would result in the obstruction of views of the Federation station building from the overbridge. The installation of the staircase and platform canopies would result in a minor to moderate visual impact.

Anti-throw screens would be installed along the overbridge over the rail corridor and on the station staircase on each side. The screens would be highly visually prominent from both the station building and the overbridge. The anti-throw screens would result in a moderate visual impact to Leura station.

Renovations to station buildings

Proposed works to the station building would not noticeably alter the exterior appearance of the station building and are mostly concerned with internal renovation and modifications. These works would result in negligible visual impacts.

The installation of privacy film on the window glass would not impact heritage fabric, however they may obscure the detailing on the Federation-design multi-paned glass windows. This would result in a minor visual impact.

Removal of garden bed west of station building

The removal of the concrete hob and garden bed west of the station building would improve the visibility of the station building when viewed from the western area of the platform. The removal of the vegetation plantings would, however, reduce the garden aesthetic of the station. This would result in a minor visual impact.

Railway Parade ramp installation

Although vegetation would be removed to the south of the station along Railway Parade to allow construction of the accessible ramp, the area would be partially revegetated. At present the vegetation includes flowering shrubs and trees which add to the character of the station and adjacent heritage items. These works would result in a minor visual impact.

Moveable heritage

The Ratner London patent safe is located in the service counter room near the ticket window. While the station office would not be renovated, the location of the safe near the ticket window to be renovated could require the temporary removal of this item. The temporary removal of the safe would be considered a minor heritage impact.

6.3.1 Archaeological impact assessment

The Leura Railway Station Group has been assessed as having a having a nil-low archaeological potential. Archaeological relics may be located to the north of the railway line on the western side of the station within the rail corridor in an area where the former goods shed was located. This area of archaeological potential is located outside of the area of proposed works.

Masonry culverts dating from 1868 are located to the north of the railway corridor and are not situated within the area of proposed works.

The Proposal would involve subsurface works to install the lift housing below the level of the station island platform. This excavation would be located on the eastern side of the proposed location adjacent to the present rail overbridge. As the station island platform is a built structure constructed inside a sandstone cutting into bedrock significantly below street level, the likelihood of recovering intact archaeological deposits is nil-low.

6.3.2 Summary of heritage impacts

A summary of the potential heritage impacts from the Proposed design are presented in Table 7 below.

Table 7: Summary of impacts to Leura Railway Station Group from the Proposed design

Proposed work	Visual impact	Impact to fabric	Impact to archaeological remains
Installation of lift housing on overbridge and station platform	Minor to moderate	Minor	Neutral
Replacement of existing staircase with new staircase	Neutral	Negligible	Neutral
New canopy on staircase and platform	Minor to Moderate	Negligible	Neutral
New anti-throw screen and balustrade on Leura Mall and along edge of staircase	Moderate	Neutral	Neutral
Renovations to male toilets at western end of the station building, including threshold ramp	Negligible	Moderate	Neutral
Renovations to female toilets at western section of the station building including threshold ramp	Negligible	Moderate	Neutral
New unisex/ambulant toilet with ramp at the northern side of station building	Negligible	Moderate	Neutral
Lowering of information window in station building	Negligible	Minor	Neutral
Lowering of waiting room floor	Negligible	Negligible	Neutral
The demolition of existing concrete hob and garden beds at western end of station building	Minor	Minor	Neutral
Privacy film on glass windows and visual indicators to all glass doors	Minor	Negligible	Neutral
Installation of hearing loops and upgrade of smoke alarms	Neutral	Negligible	Neutral
Repaint station building walls to match existing walls	Negligible	Negligible	Neutral
Replacing all seats on platforms and outdoor waiting areas with new seats	Negligible	Negligible	Neutral

Proposed work	Visual impact	Impact to fabric	Impact to archaeological remains
Provide all required temporal geographical information systems (TGIs) for direction and warning indicators throughout the station and platform edge, doors, access and ramps	Neutral	Neutral	Neutral
Regrade existing footpath	Neutral	Neutral	Neutral
Removal of garden bed and vegetation on Railway Parade	Minor	Negligible	Neutral
Construct new accessible ramp with metal balustrade and handrail, with a brick wall under ramp for stability. New stairs and balustrade would provide access between Railway Parade and Leura Mall	Minor	Negligible	Neutral
New security fence along rail corridor	Negligible	Neutral	Neutral
Provide approximately six line-marked taxi parking spaces and new kerb and gutter on Railway Parade, with a new wider paved footpath.	Negligible	Neutral	Neutral
Construct two line-marked kiss and ride parking spaces and new accessible walkway and kerbing	Negligible	Neutral	Neutral

6.4 Railway Corridor

6.4.1 Physical impact assessment

Widening of the footpath on the Leura Mall Overbridge may be undertaken which may require additional supporting structures to be installed onto or into the sandstone cutting on the northern and southern sides of the railway corridor. However, pre-existing cutting into the sandstone wall has already impacted the sandstone cutting and the Proposal is not likely to significantly expand these impacts (Figure 33).

Figure 33: View of northern half of overbridge showing cut into sandstone embankment for the road surface. East aspect

6.4.2 Visual impact assessment

The proposed lift, stairs and new canopies would impede heritage significant views of the sandstone cutting and railway line from both the overbridge and from the station setting due to the visual prominence of the proposed lift shaft construction. However, pre-existing visual obstructions from non-heritage significant components of the present Leura Station (particularly the concrete stairwell and concrete overbridge) have already reduced these heritage views. The Proposal would not significantly increase the degree of these pre-existing visual impacts.

6.4.3 Archaeological impact assessment

No impacts to archaeology are expected.

6.5 Heritage impacts to adjacent heritage items

The six heritage listed items located adjacent to the proposed location would not be physically impacted by the proposed works. However, the visual heritage character of the Leura village precinct is significant for many of the adjacent heritage items. Impacts to heritage views and vistas are outlined in Table 8 below.

Table 8: Visual impacts

Item name and listing	Visual Impacts
Central Leura Urban Conservation Area **Blue Mountains LEP 2015 Item no. LA 072**	There is a direct sightline between the Proposal location and sections of the heritage item. The lift, canopied stairwell and ramp would be seen from the northern section of the conservation area but would not be visible from the majority of the mall. There would not be significant visual obstructions from the rail bridge overpass towards the conservation area. **The Proposal would result in a minor visual impact to the Central Leura Urban Conservation Area.**
Le Gobelet **Blue Mountains LEP 2015 Item no. LA 010**	There is a direct sightline between the Proposal and the heritage item. The lift, ramp and potential canopied stairwell would be seen from Le Gobelet. The alteration of vegetation on the southern side of the station facing Railway Parade could increase the visual characteristics of the Proposal by increasing the number of sightlines towards the Proposal. Heritage views and vistas of Le Gobelet from the point of view of Leura Station would not be noticeably diminished. The alteration of the vegetation on the southern side of the station facing Railway Parade could increase the number of sightlines towards Le Gobelet, which would enhance its heritage visual characteristics. **The Proposal would result in a minor visual impact to the Le Gobelet heritage item.**
Single storey commercial building, Leura Mall **Blue Mountains LEP 2015 Item no. LA 069**	There is a direct sightline between the Proposal and the heritage item. The lift, ramp and potential canopied stairwell would be seen from the single storey commercial building. The lift on the overbridge would be particularly visually prominent from the building facings on both on Leura Mall and on Railway Parade. Heritage views and vistas of the single storey commercial building from the point of view of Leura Station would not be noticeably diminished by the proposed works. **The Proposal would result in a minor visual impact to the single storey commercial building.**
Kinauld **Blue Mountains LEP 2015 Item no. LA 084**	Sightlines between the Kinauld heritage item and the Proposal are largely obstructed by mature trees on the northern side of Railway Parade. The Proposal would not involve the construction of any structures that would be noticeably visible from the point of view of the Kinauld heritage item. **The Proposal would result in a neutral visual impact to the Kinauld heritage item.**
Waitangi **Blue Mountains LEP 2015 Item no. LA 009**	Sightlines between the Waitangi heritage item and the Proposal are entirely obstructed by mature trees on the northern side of Railway Parade, and the sloping topography of the road. **The Proposal would result in a neutral visual impact to the Waitangi heritage item.**
Ilion **Blue Mountains LEP 2015 Item no. LA 085**	Sightlines between the Ilion heritage item and the Proposal are entirely obstructed by mature trees on the northern side of Railway Parade, and the sloping topography of the road. **The Proposal would result in a neutral visual impact to the Ilion heritage item.**

6.6 Statement of heritage impact

A statement of heritage impacts has been prepared for the Proposed design. They are presented in Table 9 below.

Table 9: Statement of heritage impact for the Proposed design

Development	Discussion
What aspects of the Proposal respect or enhance the heritage significance of the study area?	By making Leura Station compliant with *Disability Standards for Accessible Public Transport 2002* and the *Commonwealth Disability Discrimination Act 1992* (DDA) as part of the Transport Access Program, the Proposal would allow the station to continue in its historical use as well as allowing for increased public access to the station and its amenities.
What aspects of the Proposal could have a detrimental impact on the heritage significance of the study area?	The construction of the lift shaft housing on the overbridge and station platform would involve excavation of the station platform. The lift housing on would obscure views of the station building from the overbridge, although its design respects the village aesthetic of the locality. The construction of the lift shaft would result in minor impacts to fabric and minor to moderate visual impacts. The preferred canopy design would be constructed over the station entrance, stairs and part of the platform. This would obstruct sightlines from the overbridge to the station building and would result in a minor to moderate visual impact, depending on the outcome of further design refinements. The installation of anti-throw screens on the overbridge and staircase would obstruct views of the station building, and result in a moderate visual impact. Renovations to the interior of the station building would result in a moderate impact to significant fabric as a result of demolition of one internal wall and other minor modifications resulting from the renovation of the toilet facilities. The lowering of the existing information window would involve the removal of part of the brick structure of the station building, to be replaced during works. This would result in a minor impact to fabric. The installation of privacy film to the Federation-style multi-pane windows would result in a minor visual impact. The removal of the concrete hob and garden bed to the west of the station building would result in a minor physical impact and minor visual impact. The removal and partial replanting of vegetation and the installation of a new access ramp on Railway Parade would result in a minor visual impact. There would be minor visual impacts to the adjacent Le Gobelet, Single Story Commercial Building and the Central Leura Urban Conservation Area heritage items.

Development	Discussion
Have more sympathetic options been considered and discounted?	Canopy designs for the overbridge lift housing, staircase and platform are the preferred canopy option, however they may be subject to further refinement during detailed design stages. Opportunities exist to ensure that this canopy design is heritage sympathetic. In particular, the use of light-weight unobtrusive materials, such as glass panelling and slim frame elements, would reduce visual bulk. Canopy designs could be constructed to ensure the retention of as many sightlines between the overbridge and the station building as possible. Colour schemes should be sympathetic to existing colour schemes on the station building. Garden vegetation could be planted to screen less heritage sympathetic elements.

7.0 MITIGATION MEASURES AND RECOMMENDATIONS

The following mitigation measures are suggested to minimise the impact of the proposed works:

- visual impacts could be partially mitigated by implementing the following design principles:
  - the design and materials for the proposed accessible lift, concourse and access stairs should be as sympathetic as possible to the existing character of the station with the aim of minimising visual impacts to the Leura Railway Station Group and adjacent heritage items.
  - The design should consider unobtrusive, modern, light materials, such as glass panelling and slim frame elements, which would reduce visual bulk
  - in addition to the use of unobtrusive and light materials, the canopies should be designed to permit as many sightlines from the overbridge to the station building as possible
  - materials used for anti-throw screens should be as light and transparent as possible
  - vegetation planting along the overbridge footpath to screen unsympathetic elements should be considered to reduce visual impacts to Leura Mall and adjacent heritage items
  - should the platform period-lighting need to be removed for canopy installation, it should be replaced elsewhere on the platform
- internal modifications that may impact original fabric such as cornices, window and door fittings, skirting boards and ceiling roses could be partially mitigated by implementing the following design principles.
  - modifications should be sympathetic to the historical characteristics of Leura Station. For example, it is recommended that original fabric be retained where possible, materials used during modifications should be congruent with the character of the station, and colour schemes should be as unobtrusive as possible
  - the waiting room interior should be reproduced with similar fittings and furniture as it presently has after the floor has been lowered
  - the replacement of the door to the men's bathroom at the western end of the station should aim to use materials and colour schemes as sympathetic to the existing door as possible
  - the removal of the garden bed to the west of the station building should be replaced with a new garden bed in a similar location between the station building and the out of shed
  - the installation of privacy film on station building windows should not be installed on the upper multi-paned sash clear glass windows, as this would detract from their appearance in the context of the station building as a whole
- to reduce visual impacts from works adjoining Leura Mall and Railway Parade,
  - the design of new accessible paths, parking and seating should be sympathetic to the existing character of the site location. For example, similar and/or sympathetic colour schemes to those existing within the site location should be incorporated into the final design
  - the design and materials used for the proposed accessibility ramp connecting Railway Parade should be sympathetic to the historical characteristics of the site location. For example,

materials used in its construction should be consistent with the character of the station, and colour schemes should be as unobtrusive as possible
  - the construction of the access ramp on the north side of Railway Parade involves the removal of an area of vegetation. Replanting of vegetation along the margins of the ramp, or between the northern side of the ramp and the outer fencing of the rail corridor would reduce the visual impacts that this vegetation removal would cause
  - vegetation planting should be maintained where possible to enhance the garden character of Leura Station and Leura as a whole. Plantings should remain consistent with the exotic planted and garden species in the Leura area. Mature trees should be conserved wherever possible
  - as there are a number of locally listed heritage items that would be visually impacted as a result of the Proposal, Blue Mountains City Council should be notified of the proposed upgrade works
- the Ratner London Patent safe (moveable heritage) would be conserved and if relocation is required it should be kept in a safe and secure place during works and relocated back to the station building on completion of construction activities
- as the station is listed on the s170 register, consultation with Sydney Trains should be undertaken
- prior to works commencing, it is recommended that a program of archival recording is undertaken
  - this recording should include a photographic record of the station building and setting of the station, including a record of views that would be modified by the Proposal.
  - the recording should be undertaken in accordance with the NSW Heritage Office (1998) guidelines How to Prepare Archival Records of Heritage Items. As these elements have local heritage significance, the recording need only meet the minimum requirements for archival recording, measured drawings of the structures would not be necessary
- during construction works at Leura station, the following measures should be taken:
  - a heritage induction would be provided to workers prior to construction, informing them of the location of known heritage items and guidelines to follow if unanticipated heritage items or deposits are located during construction
  - in the event that any unanticipated archaeological deposits are identified within the project site during construction, the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW 2015) would be followed, and works within the vicinity of the find would cease immediately. The Contractor would immediately notify the TfNSW Project Manager and the TfNSW Environment and Planning Manager so they can assist in co-ordinating the next steps which are likely to involve consultation with an archaeologist and OEH. Where required, further archaeological work and/or consents would be obtained for any unanticipated archaeological deposits prior to works recommencing at the location
- should new design options or alterations be proposed, an updated heritage assessment may be required.

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Appendix H Arborist methodology and biodiversity offset requirement

An assessment of the trees and shrubs which occur within the proposed construction area at and adjacent to Leura Station has been undertaken. This assessment identified trees within the subject site that require removal, those that can be retained and determined the likely significance of impacts of the proposed works on threatened biota listed under the NSW TSC Act and Commonwealth EPBC Act.

This appendix lists the arborist assessment methodology and offset requirements.

Tree assessment methodology

Trees were assessed individually and the Safe Useful Life Expectancy (SULE) and Sustainable Retention Index Value (SRIV) determined. The SULE code is presented in Table I. 1and the SRIV matrix is presented in Table I. 2. No diagnostic equipment was used. No aerial inspection (climbing) or tree root mapping was undertaken. In the interests of minimising harm, the trees were not tagged. Details of each tree are provided in Table I. 3.

The height and crown spread of trees were estimated and the diameter at breast height (DBH) measured using a forestry measuring tape. For each tree, the SULE and SRIV were determined based on the health and structure of the subject tree (after Barrell, 2001; IACA 2010).

The estimate of a tree's age was based on the definitions outlined by Draper and Richards (2009). Trees were considered young (Y) if they were judged to be of an age <20% of their life expectancy in situ. Trees of mature age (M) are defined as trees being aged between 20 to 80% of their life expectancy in situ, while trees aged >80% of their life expectancy in situ were described as over-mature (OM) (Draper & Richards, 2009). The calculation of the Tree Protection Zone (TPZ) was based on the tree's DBH and the calculation of the Structural Root Zone (SRZ) was based on the difference between the tree's DBH and the diameter near the tree's base, as outlined in Australian Standard 4970 'Protection of Trees on Development Sites' (SA, 2009).

Searches were carried out for self-recruited native plants, including threatened plant species previously recorded or predicted to occur in the locality, within the garden bed containing Tree Group 2 and on the railway batters either side of the railway station.

Fauna habitat assessments in the subject site included active searches for the following:

- bird nests or other potential fauna roosts
- tree hollows and evidence of use (e.g. worn edges, whitewash)
- specific food trees and evidence of foraging
- evidence of fauna activity, such as feeding scars, scratches and diggings
- distinctive scats or pellets at the base of trees.

Details of surveyed trees are presented in Table I. 3.

All of the trees are exotic species which have been planted. Trees 1 and 3 are probably more than 50 years old, while all plantings in Tree Group 2 are probably less than 25 years old. All trees assessed are in good condition and form.

The SULE value generated by the below Table I. 1 gives an indication of the time a tree is expected to be usefully retained: Adapted from Barrell (2001).

Table I. 1 SULE Matrix

	1 Long SULE	2 Medium SULE	3 Short SULE	4 Removal	5 Move or Replace
A	Trees that appear to be retainable at the time of assessment for >40 years with an acceptable degree of risk, assuming reasonable maintenance.	Trees that appear to be retainable at the time of assessment for 15 to 40 years with an acceptable degree of risk, assuming reasonable maintenance.	Trees that appear to be retainable at the time of assessment for 5 to 15 years with an acceptable degree of risk, assuming reasonable maintenance.	Trees which should be removed within the next 5 years.	Trees which can be readily moved or replaced.
B	Structurally sound trees located in positions that can accommodate for future growth.	Trees that may only live for 15-40 years.	Trees that may only live for another 5-15 years.	Dead, dying, suppressed or declining trees.	Small trees <5 (m) in height.
C	Trees that could be made suitable for retention in the long term by remedial tree care.	Trees that could live for more than 40 years but may be removed for safety or nuisance reasons.	Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.	Dangerous trees because of instability or loss of adjacent trees.	Young trees less than 15 years old but over 5m in height.
D	Trees of special significance that would warrant extraordinary efforts to secure their long term retention.	Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide for new planting.	Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.	Dangerous trees because of structural defects.	
E		Trees that could be made suitable for retention in the medium term by remedial tree care.	Trees that require substantial remedial tree care and are only suitable for retention in the short term.	Damaged trees not safe to retain.	
F				Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.	
G				Trees that are damaging or may cause damage to existing structures within 5 years.	

Table I. 2 SRIV Index Developed by IACA (2010) – Institute of Australian Consulting Arborists

Age Class	Vigour Class & Condition Class					
	Good Vigour & Good Condition (GVG)	Good Vigour & Fair Condition (GVF)	Good Vigour & Poor Condition (GVP)	Low Vigour & Good Condition (LVG)	Low Vigour & Fair Condition (LVF)	Low Vigour & Poor Condition (LVP)
	Able to be retained if sufficient space available above and below ground for future growth. No remedial work or improvement to growing environment required. Retention potential – Medium- Long Term	Able to be retained if sufficient space available above and below ground for future growth. Remedial work may be required or improvement to growing environment may assist. Retention potential – Medium Term Potential for longer with remediation or more favourable environmental conditions.	Able to be retained if sufficient space available above and below ground for future growth. Remedial work unlikely to assist condition, improvement to growing environment may assist. Retention potential – Short Term. Potential for longer with remediation or more favourable environmental conditions.	May be able to be retained if sufficient space available above and below ground for future growth. No remedial work required, but improvement to growing environment may assist vigour. Retention potential – short Term. Potential for longer with remediation or more favourable environmental conditions.	May be able to be retained if sufficient space available above and below ground for future growth. Remedial work or improvement to growing environment may assist condition and vigour. Retention potential – Short Term. Potential for longer with remediation or more favourable environmental conditions.	Unlikely to be able to be retained if sufficient space available above and below ground for future growth. Remedial work or improvement to growing environment unlikely to assist condition or vigour. Retention potential – likely to be removed immediately or retained for Short Term. Potential for longer with remediation or more favourable environmental conditions.

Age Class	Vigour Class & Condition Class					
Young (Y)	Index value 9 Retention potential – Medium – Long Term Likely to provide minimal contribution to local amenity if height <5m High potential for future growth and adaptability. Retain, remove or replace	Index value 8 Retention potential – Short –Medium Term. Potential for longer with improved environmental conditions. Likely to provide minimal contribution to local amenity if height <5m Medium-High potential for future growth and adaptability. Retain, remove or replace	Index value 5 Retention potential – Short Term. Potential for longer with improved environmental conditions. Likely to provide minimal contribution to local amenity if height <5m Low-medium potential for future growth and adaptability. Retain, remove or replace	Index value 4 Retention potential – Short Term. Potential for longer with improved environmental conditions. Likely to provide minimal contribution to local amenity if height <5m Medium potential for future growth and adaptability. Retain, remove or replace	Index value 3 Retention potential – Short Term. Potential for longer with improved environmental conditions. Likely to provide minimal contribution to local amenity if height <5m Low-Medium potential for future growth and adaptability. Retain, remove or replace	Index value 1 Retention potential – Likely to be removed immediately or retained for Short Term. Likely to provide minimal contribution to local amenity if height <5m. Low potential for future growth and adaptability
Mature (M)	Index value 10 Retention potential – Medium – Long Term	Index value 9 Retention potential – Medium Term. Potential for longer with improved environmental conditions.	Index value 6 Retention potential – Short Term. Potential for longer with improved environmental conditions.	Index value 5 Retention potential – Short Term. Potential for longer with improved environmental conditions.	Index value 4 Retention potential – Short Term. Potential for longer with improved environmental conditions.	Index value 2 Retention potential – Likely to be removed immediately or retained for Short Term
Over-mature (O)	Index value 6 Retention potential – Medium – Long Term	Index value 5 Retention potential – Medium Term	Index value 4 Retention potential – Short Term	Index value 3 Retention potential – Short Term. Potential for longer with improved environmental conditions.	Index value 2 Retention potential – Short Term	Index value 0 Retention potential – Likely to be removed immediately or retained for Short Term

Table I. 3 Tree description

Tree No.	Species	Common name (number of individuals)	Height (m)	Dia. Spread (m. radius)	DBH (m) D. at base	Age Class[1]	Health[2]	Structure[3]	SULE[4]	SRIV[5]	TPZ radius (m) SRZ	Comments
1	*Arbutus unedo*	Irish Strawberry	7	2.5	(av.) 0.05 x 16 0.34	M	G	G	1D	MGVG -10	±4 2.1	To be retained
2 (Group)	**Prunus* Sato-Zakura Group	Flowering Cherry (12)	4 (av.)	2 (av.)	0.12 (av.) 0.22	EM	G	G	2A	MGVG -10	1.5 1.75	Proposed for removal, to allow for widening of existing parking area
	**Malus* x 'Purpurea'	Crab Apple (7)	4 (av.)	1.5	0.14 (av.) 0.26	M	G	G	2A	MGVG -10	1.6 1.88	
	**Acer palmatum*	Japanese Maple (3)	4.5 (av.)	2	0.15 (av.) 0.29	M	G	G	2A	MGVG -10	1.8 1.97	
	**Rhododendron* (?) *falconeri* CV	Rhododendron (8)	3 (av.)		0.10 (av.) 0.14	M	G	G	2A	MGVG -10	1.4 1.45	
	**Rhododendron subg. Tsutusi Kurume* CV	Azalea (16)	1.2 (av.)		0.03 (av.) 0.05	M	G	G	2A	MGVG -10	1 0.94	
	**Camellia japonica*	Camelia (6)	1.4 (av)		0.03 (av.) 0.04	EM	G	G	2A	MGVG -10	1 0.90	

Tree No.	Species	Common name (number of individuals)	Height (m)	Dia. Spread (m. radius)	DBH (m) D. at base	Age Class[1]	Health[2]	Structure[3]	SULE[4]	SRIV[5]	TPZ radius (m) SRZ	Comments
	**Chamaecyparis lawsoniana* Érecta Viridis	'Lawson's Cypress	5	2.5	0.21 0.31	EM	G	G	1A	MGVG-10	2.5 2.02	
	Ceanothus velutinus var. *hookeri*	Hooker's Ceanothus (3)	1.4	1	0.05 av. 0.06	OM	Moderate	M	3A	OLVF2	1 1	Located in bed adjacent to stairway; also proposed for removal
3	**Cupressus torulosa*	Bhutan Cypress	15	4	0.87 0.99	M	G	G	1A	M MGVG-10GV G-10	10.4 3.3	Unlikely to be affected, although part of canopy projecting over footpath may need protection during construction if tall machinery is used.

* non-indigenous species

Note 1 EM = Early Mature; M = mature; OM = Over-mature
Note 2 G = good; M = Moderate
Note 3 G = good; M = Moderate
Note 4 See SULE matrix
Note 5 See SRIV matrix

Biodiversity offsets

Trees and shrubs that may require removal at or adjacent to Leura Station will be offset in accordance with TfNSW's "Vegetation Offset Guide" (2012) and the requirements for offsetting individual trees or groups of trees that do not form part of a native vegetation community. The 56 trees earmarked for removal would be offset with a minimum of 109 trees as indicated in the table below.

Table I.4 Biodiversity offsets

Tree	Location	Tree type	Number of Individuals	Replacement no.	Offset (no. to be planted)
Tree Group 2: Japanese Maple	Adjacent to taxi rank	Medium tree	3	4	12
Tree Group 2: Lawson's Cypress	Adjacent to taxi rank	Medium tree	1	4	4
Tree Group 2: Flowering Cherry	Adjacent to taxi rank	Small tree	12	2	24
Tree Group 2: Crab Apple	Adjacent to taxi rank	Small tree	7	2	14
Tree Group 2: Rhododendron	Adjacent to taxi rank	Small tree	8	2	16
Tree Group 2: Azalea	Adjacent to taxi rank	Small tree	16	2	32
Tree Group 2: Camellia	Adjacent to taxi rank	Small tree	6	2	12
Tree Group 2: Hooker's Ceanothus	Adjacent to taxi rank	Small tree	3	2	6
Totals			**56**		**109**

It is recommended that offsetting will be achieved through planting exotic species consistent with the existing landscape character of the heritage-listed Station and surrounds.

The following indigenous tree and shrub species could be considered for planting if the replacement of exotic species is not desired or if a mixture of exotic and native plantings are required:

Medium trees

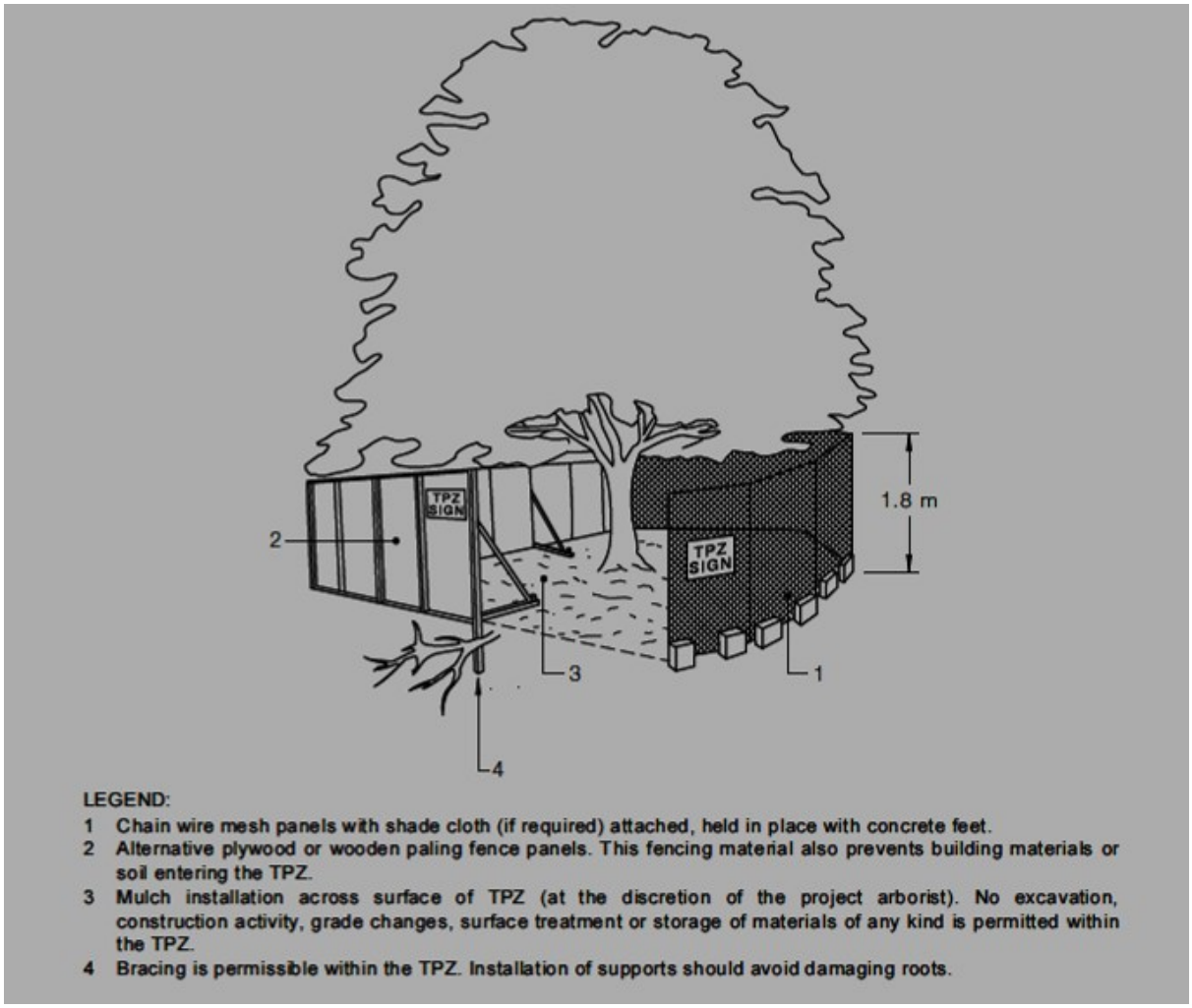
- *Eucalyptus stricta* Blue Mountains Mallee Ash
- *Eucalyptus dendromorpha* Budawang Ash
- *Eucalyptus cunninghamii* Cliff Mallee Ash

Small tree/shrub

- *Banksia marginata* Silver Banksia
- *Banksia spinulosa var. spinulosa* Hairpin Banksia
- *Leptospermum trinervium* Slender Tea-tree

- *Persoonia laurina subsp. laurina* Laurel Geebung
- *Leucopogon lanceolatus var. lanceolatus* Lance-leaf Beard-heath

Tree protection zone fence example



Source: Australian Standard: Protection of trees on development sites, AS 4770-2009.