

Feeder 7U5

Statement of Heritage Impact

Report prepared for Transport for NSW

March 2019



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Report Register

The following report register documents the development and issue of the report entitled Feeder 7U5—Statement of Heritage Impact, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

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Date:	15 March 2019	Date:	15 March 2019

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Cover Image: Sandhills Cemetery (Devonshire Street Cemetery) after removal of remains and early preparation of the site for Central Station in Sydney, circa late 1901–1902. Elizabeth Street is on the right. Devonshire Street [Eddy Avenue] runs through the centre. (Source: State Library of New South Wales)

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1.0 Introduction

1.1 Project background

Transport for NSW is proposing to upgrade the 33kV Feeder 7U5 extending along a 1.2-kilometre route between the Chalmers Street substation and the Surry Hills Ausgrid substation (referred to as the ‘feeder route’ in this report). The works are to accommodate future transport network requirements, including Sydney Metro integration and upgrades associated with the New Intercity Fleet and Sydney Growth Train fleet.

Some proposed works are within the curtilage of the State Heritage Register (SHR) listed Central Station and through several streets in Surry Hills. This Statement of Heritage Impact (SoHI) identifies significant heritage fabric and areas of archaeological potential within the proposed feeder route. It also identifies potential heritage and archaeological impacts arising from the proposed works, mitigation recommendations and heritage approval requirements.

1.2 Site identification

The study area is located within Central Station and includes parts of Surry Hills (Figure 1.1). The proposed feeder route is from the Chalmers Street substation through the SHR curtilage of Central Station, north along Elizabeth Street, then through Albion, Commonwealth and Ann Streets and terminating at the Surry Hills substation (Figure 1.2). The study area is within the Sydney Local Government Area (LGA) and is also situated across two heritage conservation areas.

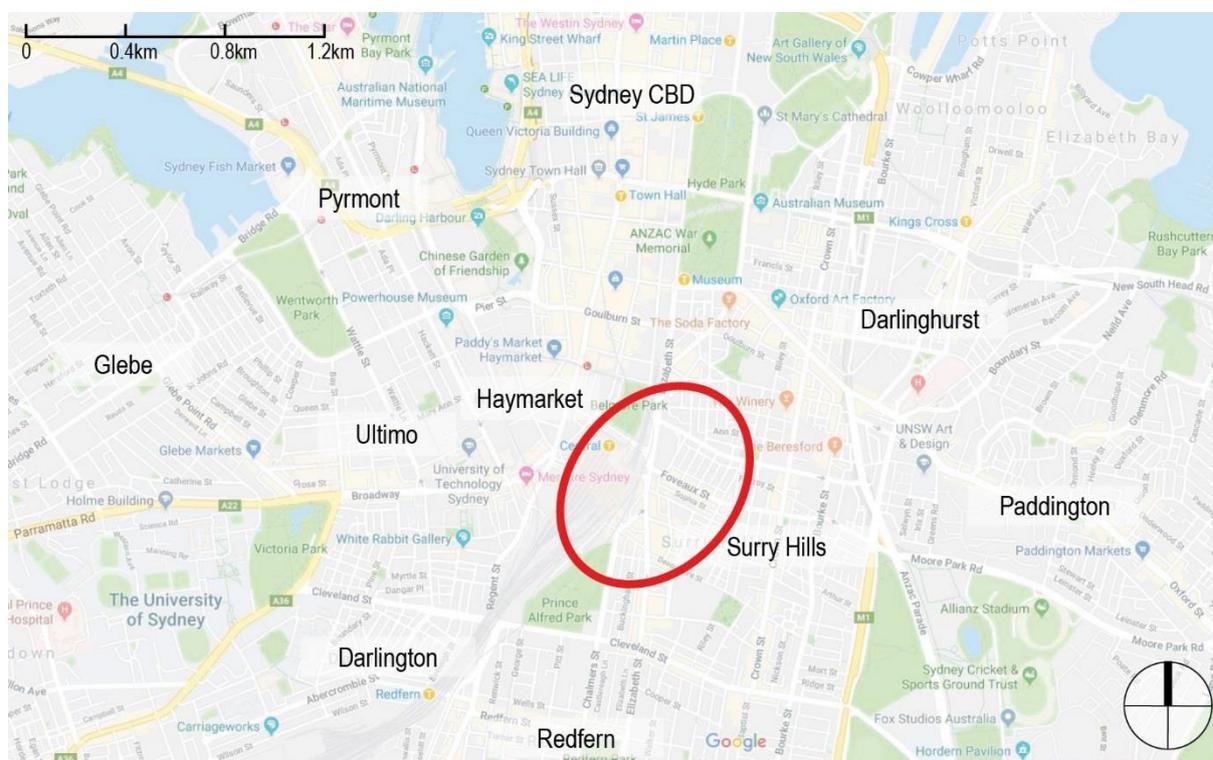


Figure 1.1 Location of the study area. (Source: Google Maps with GML overlay)



Figure 1.2 Proposed feeder route between the Chalmers Street substation and Surry Hills substation. (Source: Google Maps with GML overlay)

1.3 Statutory context

In NSW items of heritage significance and archaeological remains (referred to as ‘objects’ or ‘relics’) are afforded statutory protection under the following Acts:

- *Heritage Act 1977* (NSW) (the Heritage Act);
- *National Parks and Wildlife Act 1974* (NSW) (the NPWS Act); and
- *Environmental Planning and Assessment Act 1979* (NSW) (the EPA Act).

1.3.1 NSW Heritage Act 1977 (NSW)

State Heritage Register

The State Heritage Register (SHR) was established under Section 22 of the Heritage Act. It comprises a list of identified heritage items determined to be of significance to the people of New South Wales. The SHR includes items and places such as buildings, works, archaeological relics, movable objects or precincts. Central Station is listed on the SHR as item 01255, ‘Sydney Terminal and Central Railway Stations Group’.

Section 170 Heritage and Conservation Register

Section 170 of the Heritage Act, as amended, requires that all state government instrumentalities establish and keep a Heritage and Conservation Register of heritage assets in their ownership and control. The Heritage Regulation 2012 requires that the Heritage and Conservation Register include items that are listed as heritage items under an environmental planning instrument made under the EPA Act.

- (a) *Items that are subject to an interim heritage order*
- (b) *Items that are listed on the State Heritage Register*
- (c) *Items identified by the government instrumentality concerned as having State heritage significance.*

Section 170A of the Heritage Act requires each state government instrumentality to ensure appropriate management of items on the Heritage and Conservation Register, including any items that are on the SHR. Central Station is listed on the RailCorp Section 170 Heritage and Conservation Register (S170 Register) (#4801296).

Relics Provisions

Archaeological relics, outside SHR curtilages, are protected under the relics provisions (Section 139 to 146) of the Heritage Act.

The Act defines 'relic' as any deposit, object or material evidence that:

- a) *Relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
- b) *Is of State or local heritage significance*

Sections 139–145 of the Heritage Act prevent the excavation of a relic, except in accordance with an excavation permit (or an exemption from the need for a permit) issued by the Heritage Council of New South Wales.

Section 139 [1] of the Heritage Act states that:

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

Approval under these provisions is required to impact or harm archaeological relics.

1.3.2 National Parks and Wildlife Act 1974 (NSW)

All Aboriginal objects and places receive statutory protection under the NPWS Act. Aboriginal objects are defined as:

... physical evidence of the use of an area by Aboriginal people. They can also be referred to as 'Aboriginal sites', 'relics' or 'cultural material' ...¹

Under the Act, applicants must seek approval prior to disturbance of sites with the potential to contain Aboriginal objects or cultural material. Harming Aboriginal objects and harming or desecrating Aboriginal places is also a liability offence under the Act. 'Harm' includes to destroy, deface, damage or move an Aboriginal object or declared Aboriginal place.

1.3.3 Environmental Planning and Assessment Act 1979 (NSW)

The EPA Act is administered by the NSW Department of Planning and Environment and provides for the protection of local heritage items and conservation areas through listings on Local Environmental Plans (LEPs) which guide local councils in making planning decisions.

Sydney Local Environmental Plan 2012 and Sydney Development Control Plan 2012

The *Sydney Local Environmental Plan 2012* (Sydney LEP 2012) provides the local development and planning framework for the City of Sydney Local Government Area. Part 5 Clause 10 provides objectives and requirements for the management of heritage items and archaeological sites in the City of Sydney Local Government Area, including the ability of council to request heritage assessments, conservation management plans and heritage impact assessments for proposed developments involving heritage items. The objectives of the clause are as follows:

- (a) *to conserve the environmental heritage of the City of Sydney,*
- (b) *to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
- (c) *to conserve archaeological sites,*
- (d) *to conserve Aboriginal objects and Aboriginal places of heritage significance*

The LEP includes a list of environmental heritage referred to as Schedule 5. Central Station is listed on the Sydney LEP as item 824—'Central Railway Station group including buildings, station yard, viaducts and building interiors'. Central is also the major component of the Railway Square/Central Station Special Character Area under the *Sydney Development Control Plan 2012* (SDCP 2012).

1.4 Methodology

This report has been prepared with reference to the following management documents and best practice guidelines:

- *Central Station Conservation Management Plan* (Rappaport / NSW Government Architect's Office, 2013)
- NSW Heritage Manual, *Statements of Heritage Impact* (NSW Heritage Office 2002)
- NSW Heritage Manual, *Archaeological Assessments* (NSW Heritage Office 1996)²
- *Assessing Significance for Historical Archaeological Sites and Relics* (NSW Heritage Branch 2009)³
- *The Australia ICOMOS Burra Charter, 2013* (the Burra Charter).⁴

1.4.1 Heritage impact rating definitions

Table 1.1 defines the terminology used in determining the level of heritage impact of the proposed works.

Table 1.1 Heritage impact rating definitions

Rating	Definition
Major adverse	Actions which will have a severe, long-term and possibly irreversible impact on the heritage item. Actions in this category would include partial or complete demolition of a heritage item or addition of new structures in its vicinity that would destroy the visual setting of the item. These actions cannot be fully mitigated.
Moderate adverse	Actions which will have an adverse impact on a heritage item. Actions in this category would include removal of an important aspect of a heritage item's setting or temporary removal of significant elements or fabric. The impact of these actions could be reduced through appropriate mitigation measures.
Minor adverse	Actions which will have a minor adverse impact on a heritage item. This may be the result of the action affecting only a small place or a distant/small part of the setting of a heritage place. The action may also be temporary and/or reversible.
Neutral	Actions which will have no heritage impact.
Minor positive	Actions which will bring a minor benefit to a heritage item, such as an improvement in the item's visual setting.
Moderate positive	Actions which will bring a moderate benefit to a heritage item, such as removal of intrusive elements or fabric or a substantial improvement to the item's visual setting.
Major positive	Actions which will bring a major benefit to a heritage item, such as reconstruction of significant fabric, removal of substantial intrusive elements/fabric or reinstatement of an item's visual setting or curtilage.

1.5 Limitations

- The historical overview is based on readily available information contained in the Central Station Conservation Management Plan (CMP) and other existing histories. No additional historical research has been undertaken.
- Aboriginal heritage has not been assessed as part of this report.
- The heritage impact assessment is based on designs and information provided by Novo Rail and Transport for NSW. Some design details are not yet confirmed as they are reliant in site conditions and further investigations during works. Maximums or 'worst case scenarios' are provided and assessed in this report. Minor changes to the design or methodology may be required during works, but these are expected to be lesser impact than assessed.
- Due to inaccuracies in nineteenth century surveys of Sydney, historical map overlays have not been georeferenced and the study area is approximate.

1.6 Authorship

This report has been prepared by Emily Bennett (Heritage Consultant, Archaeologist), Isabelle Rowlatt (Heritage Consultant) with input and review by Abi Cryerhall (Principal).

1.7 Endnotes

- 1 Office of Environment and Heritage 2012, 'Regulations of Aboriginal cultural heritage', viewed 5 April 2017 <<http://www.environment.nsw.gov.au/licences/achregulation.htm>>.
- 2 Heritage Office and Department of Urban Affairs & Planning 1996, *NSW Heritage Manual*, Department of Urban Affairs and Planning, Sydney.

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- ³ Heritage Branch, December 2009, *Assessing Significance for Historical Archaeological Sites and 'Relics'*, Heritage Branch of the Department of Planning, Sydney.
- ⁴ Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC.

2.0 Historical background

2.1 Introduction

The proposed works are located within two distinct historical areas—Central Station and Surry Hills. The Central Station Conservation Management Plan (CMP) includes detailed historical analysis and is summarised below. Several existing heritage and archaeological studies provide detailed accounts of the historical development of Surry Hills and are also summarised in this section. Of note to this project is that works are proposed within the former Devonshire Street Cemetery (Sands Hill Cemetery) site—now largely within the Central Station precinct—and adjacent parts of Chalmers Street.

2.2 Central Station

The current Central Station was constructed in the early 1900s. The large Central Station precinct incorporates first and second Sydney Terminus sites, the former Devonshire Street Cemetery, the remaining Government/Cleveland Paddocks and part of the former Benevolent Asylum site.

2.2.1 Central Station historical timeline

- 1820s—Government Paddocks, later known as Cleveland Paddocks
- 1820–1901—Devonshire Street Cemetery (Sand Hills Cemetery)
- 1855—first Sydney Station located to the south of the cemetery and Devonshire Street
- 1865—Cleveland Paddocks gazetted as a public reserve
- 1874—second Sydney Terminus replaced the first in the same location
- 1880s—development of the steam tram network out from the station
- 1887—main railway workshops transfer from Sydney Yards to Eveleigh Yards
- 1900–1901—lands resumed for third Sydney Terminus, including the cemetery
- 1901—exhumations from the cemetery (relocations to the Botany Cemetery)
- 1906—the third Sydney Terminus, now known as Central Station, was opened.

2.3 Belmore Park

Belmore Park is contained by Eddy Avenue, Pitt Street, Hay Street and the rail line on the north side of the Central Railway building. A rail viaduct from Central Station annexes a strip of the park on the eastern boundary from the main body of the park. Historically the area was Crown Land and contained elements of the Devonshire Street Cemetery, the Police Barracks and associated residence, the Female Refuge of the Good Samaritan, a Benevolent Asylum and a common.

The park was utilised throughout the nineteenth century as a produce market, but also contained an open stormwater drain running from Elizabeth Street across the park towards the Haymarket which was designed to facilitate runoff from Surry Hills. Although dedicated for public recreation, the area was unofficially used as a rubbish dump for local residents.

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Resumption of Belmore Park to construct Central Station began in 1901 and included the importation of 80,000 cubic yards of fill. The parts of the park which were not used by the construction of Central Station were returned to the council in 1907. The council was responsible for planting the row of Plane Trees still extant along Elizabeth Street.

The construction of the City Circle Line in 1923 permanently annexed an eastern portion of the park with the construction of the rail viaduct. The Plane Trees were protected during this phase of construction.

The statement of significance of the park from the draft Plan of Management states:

The original Park has a simple asymmetric structure which responded to site boundaries and patterns of use and was representative of Victorian public garden design. The post 1906 Park was designed by the PWD [Public Works Department] as an elegant forecourt devoted to recreational use. Its layout reflected its purpose and was representative of Sydney park design. Elements of the 1906 design, particularly the landform and significant trees remain today.¹

2.3.1 Belmore Park historical timeline

- Early 1800s—Crown Land, Devonshire Street Cemetery, the Police Barracks and associated residence, the Female Refuge of the Good Samaritan, a Benevolent Asylum and a common
- 1860s—Produce Markets
- 1868—Belmore Park was dedicated for public recreation
- 1901—Whole park resumed for construction of Central Railway Station
- 1907—Remainder of park is returned to council management and Plane Trees planted as municipal beautification of the area
- 1923—rail viaduct constructed for City Circle Line, annexing eastern portion of park permanently along Elizabeth Street.

2.4 Surry Hills

Historically the area of Surry Hills lays outside the boundary of early Sydney, with the lands here originally granted in the 1790s. Subsequent subdivision and development of these large estates throughout the 1800s saw farms and market gardens replaced with residential development. During the latter half of the nineteenth century, Surry Hills became known for light industry and the clothing trade. In the 1900s, resumptions, slum clearance and the expansion of factory areas into Surry Hills (following World War II) saw many houses demolished and the area gained a reputation for crime and vice. A process of gentrification has since taken place in Surry Hills since the 1980s.

2.4.1 Surry Hills historic timeline

- 1790s—first land grants and 105 acres to Major Joseph Foveaux named Surry Hills Farm
- 1790s—early industries including market gardens, brick kilns, stone quarrying, woodcutters, turf cutters and stock grazing
- 1820s—Cleveland Garden Estate and Cleveland House
- 1826–1851—Albion Street Brewery
- 1830s—significant residential subdivision

- 1834—New Mitchell Road plan
- 1850–1890—residential occupancy growth
- 1851–1860—steam flour mill then a soap and candle factory on the Albion Street Brewery site
- 1873—Standard Brewery built on the Albion brewery location
- 1880s—development of the steam tram network
- 1901—bubonic plague in Sydney caused resumption and redevelopment
- c1905—demolition of Railway Place and extension of Chalmers Street, part of the construction of current Central Station
- 1906—new tram line on Eddy Avenue
- 1950s—Devonshire Street Housing Scheme demolitions along Devonshire Street.

2.5 Key historical maps

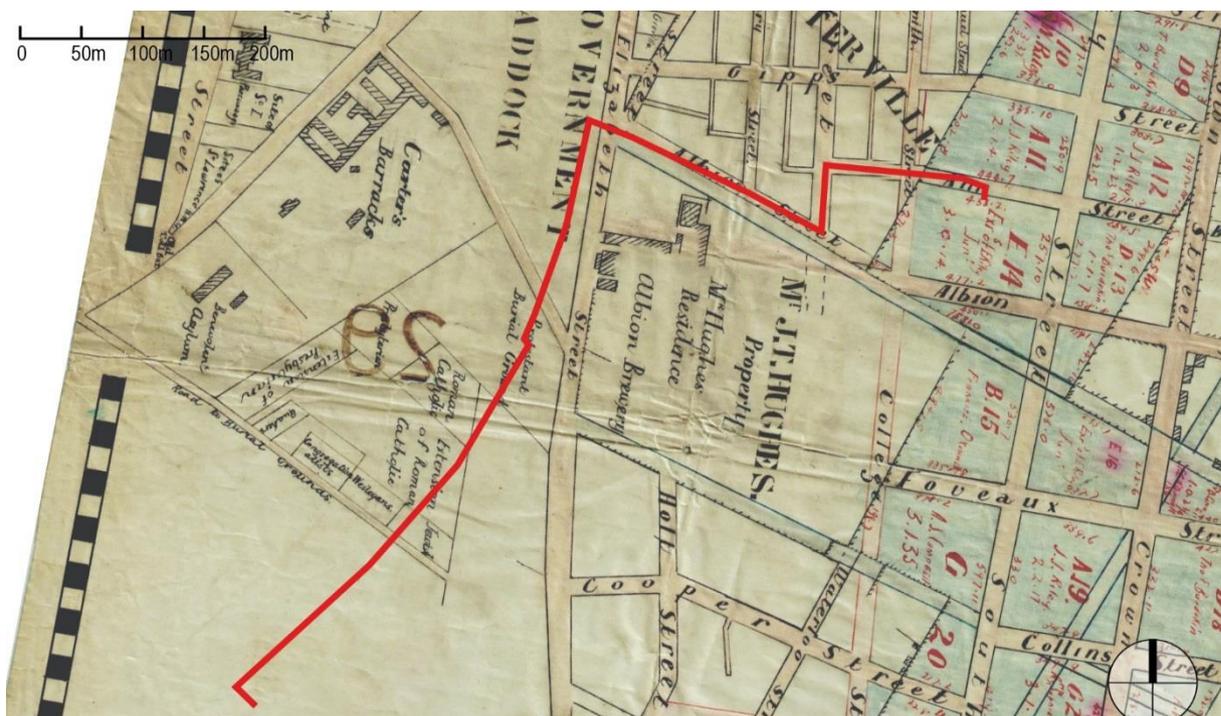


Figure 2.1 Detail of the 1844 Riley Estate plan showing the study area with the proposed feeder route in red. (Source: City of Sydney Archives Historical Atlas of Sydney with GML additions)

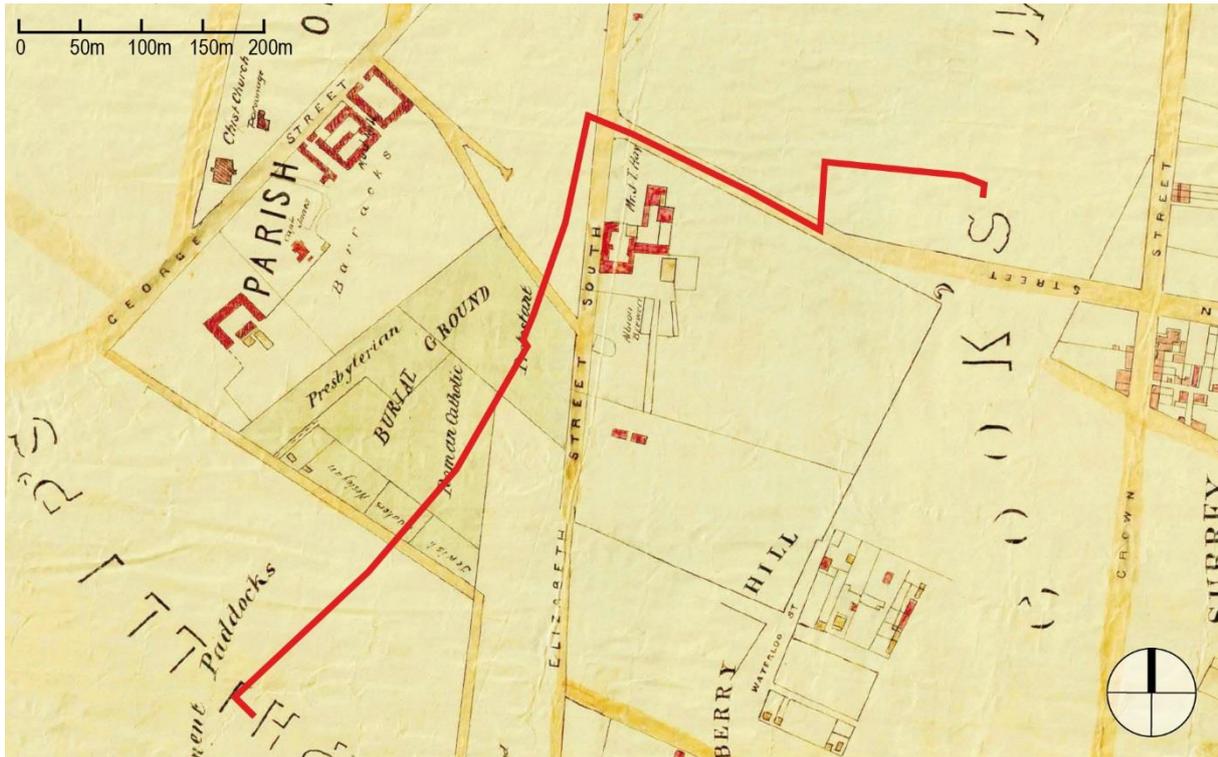


Figure 2.2 Detail of Sheild's Plan of Sydney in 1845 showing the study area, with the proposed feeder route marked in red. (Source: City of Sydney Archives Historical Atlas of Sydney with GML additions)

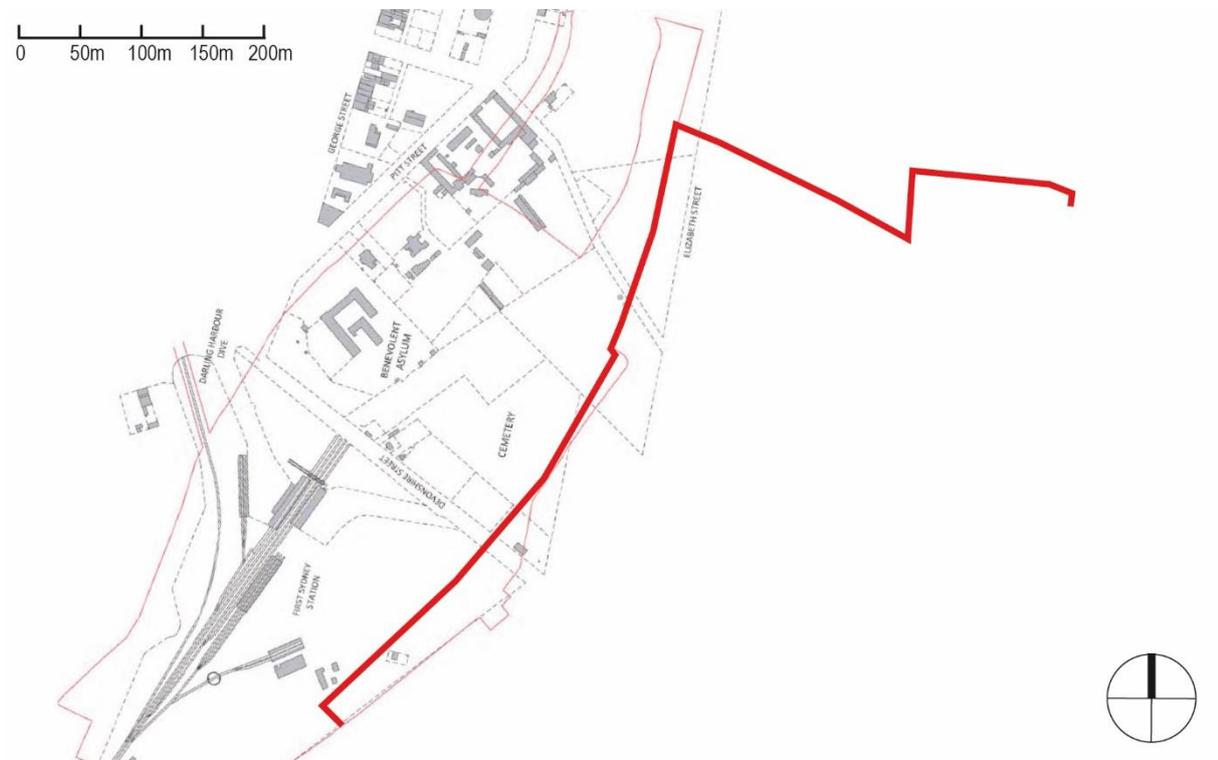


Figure 2.3 Illustration of Central Station in 1855, with the proposed feeder route marked in red. (Source: Central Station CMP with GML additions)²

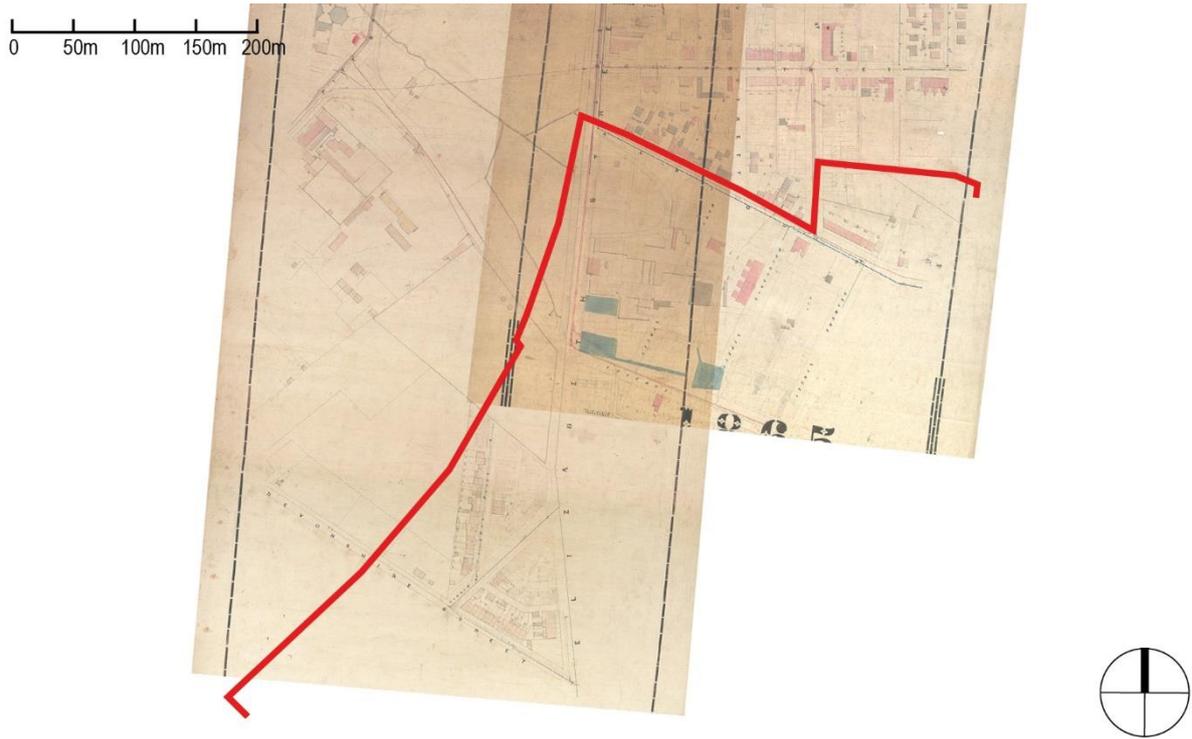


Figure 2.4 Composite plan of the 1865 Trigonometrical Survey of Sydney showing the study area and proposed feeder route marked in red. (Source: City of Sydney Archives Historical Atlas of Sydney)

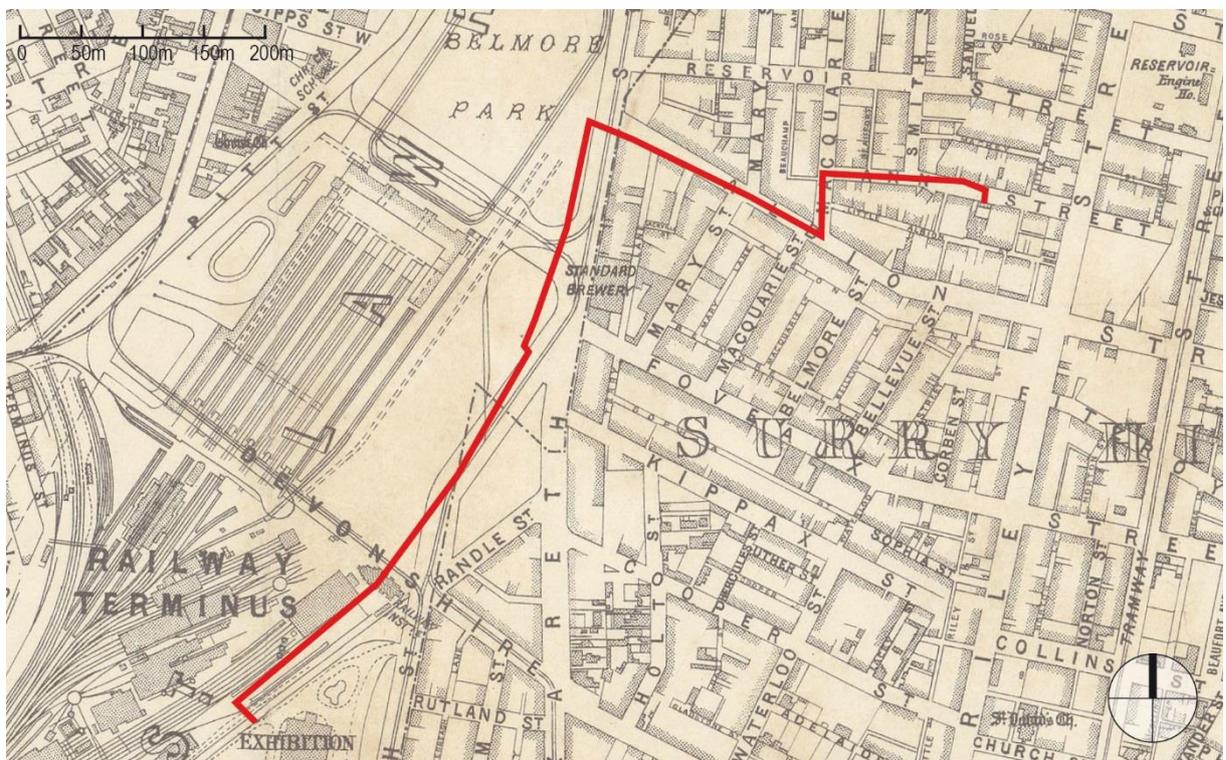
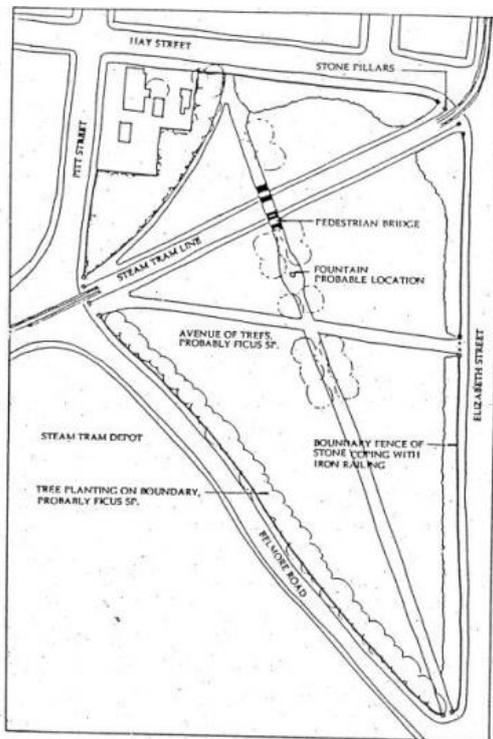


Figure 2.5 Detail of the Civic Plan of Sydney from 1910 showing the study area with the proposed feeder route marked in red. (Source: City of Sydney Archives Historical Atlas of Sydney with GML additions)

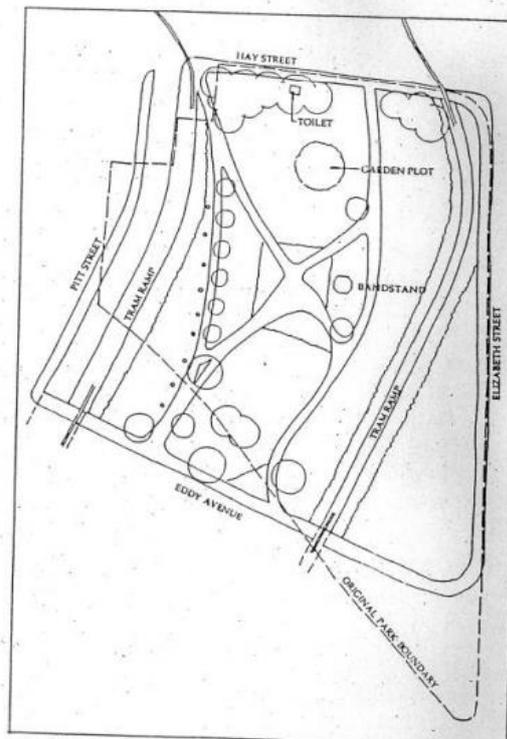
0 50m 100m 150m 200m



Figure 2.6 Detail of the Civic Plan of Sydney from 1950 showing the study area and proposed feeder route marked in red. (Source: City of Sydney Archives Historical Atlas of Sydney with GML additions)



BELMORE PARK PRE 1900



BELMORE PARK PRE 1925

Figure 2.7 Plans of Belmore Park showing the new boundaries before and after the construction of Central Railway Station. (Source: EDAW).³

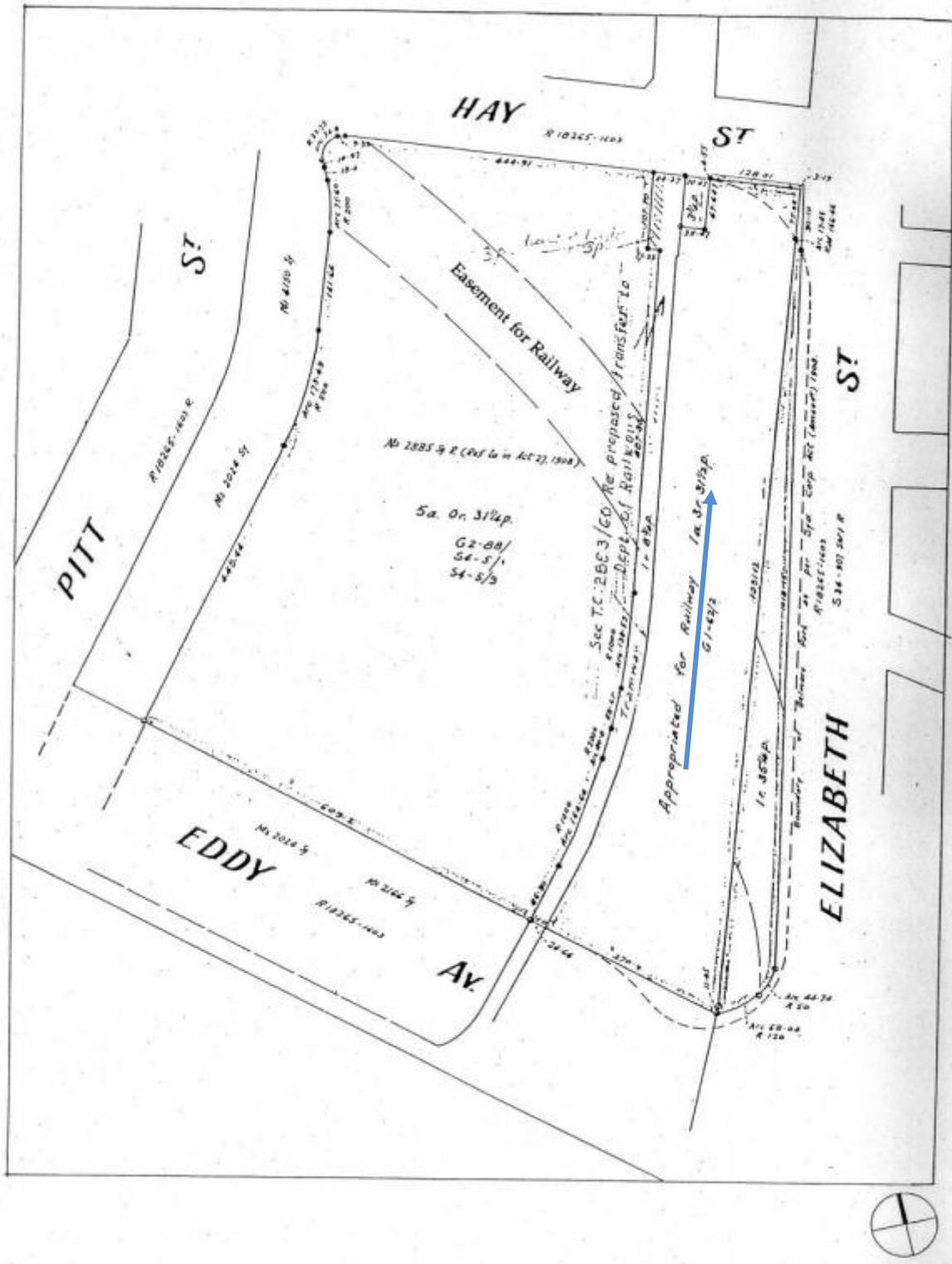


Figure 2.8 Plan showing the location of the rail viaduct for the City Circle Line (blue arrow) and the railway easement for the Eastern Suburbs Rail Tunnel approximately 15 metres below the current ground surface. (Source: EDAW).⁴

2.6 Endnotes

- ¹ EADW, Belmore Park Draft Plan of Management, report for City of Sydney, 1993.
- ² Transport for NSW, Rail Corp, Central Station Conservation Management Plan, 2013, p61.
- ³ EDAW, Belmore Park Draft Plan of Management, report for City of Sydney Council, 1993.
- ⁴ EDAW, Belmore Park Draft Plan of Management, report for City of Sydney Council, 1993, p2.12.

3.0 Site analysis

The proposed works are located in areas within the SHR curtilage of Central Station, the City of Sydney LEP curtilage of Belmore Park and neighbouring streets to the east within Surry Hills. The following section provides a description of the study area and should be read in conjunction with the Central Station CMP and the Belmore Park Draft Plan of Management. ¹

3.1 Central Station

A detailed description of Central Station is included in the CMP. An extended description and summary history of the place is also included within the NSW State Heritage Inventory citation for the Sydney Terminal and Central Railway Stations Group [refer to Appendix A—State Heritage Inventory Listings].

3.1.1 Central Station precincts

Table 3.1 outlines the Central Station precincts according to the CMP. The proposed feeder route works are located within Precinct 2—Prince Alfred Sidings and Precinct 5—Central Electric.

Table 3.1 Central Station precincts and their major elements. The feeder route is indicated in red on the map below. (Source: Central Station CMP, 2013, with GML overlay 2018)

Precinct number	Precinct name	Major elements
1	The Western Yards	Ultimo Railway Overbridge & Darling Harbour Cut Mortuary Station Henry Deane Plaza
2	Prince Alfred Sidings	Prince Alfred Substation Prince Alfred Workshops
3	Sydney Terminal	Country and Interstate platforms 1–15 Main Terminus building Eddy Avenue colonnade Western forecourt Main Terminus Upper Concourse Main Terminus Office spaces Clocktower
4	Sydney Yards	Rolling Stock Officers Building, Cleaners Amenities Building
5	Central Electric	Above ground suburban platforms 16–23 Underground platforms and Eastern Suburbs Line (24–27) Central Electric Building and Yard Northern Concourse

Precinct 2—Prince Alfred Sidings is located on the eastern side of Central Station, bounded by Prince Alfred Park to the east, the Devonshire Street Pedestrian Subway to the north, and the Cleveland Street bridge to the south. Prominent buildings within the precinct include the former Railway Institute, an item of local heritage significance, and the Prince Alfred Substation, a building of high significance. The Chalmers Street substation is located to the south of the Railway Institute and is shown in

Figure 3.1. Most of the area is hard landscaping, with some mature trees located on the embankment adjacent to Prince Alfred Park.

Precinct 5—Central Electric is located north of Precinct 2, bounded by Chalmers Street to the east and the main Sydney Terminal to the west. The proposed feeder route is located on the eastern boundary of this precinct. The boundary is a high face brick wall, inlaid with rail-themed murals facing Chalmers Street. There is existing rail infrastructure fixed to the wall on the station side. The neo-classical sandstone Chalmers Street entrance to Central is also within the study area, as is the sandstone retaining wall at the corner of Elizabeth Street and Eddy Avenue (Figure 3.8).

3.1.2 Site photographs



Figure 3.1 View of the Chalmers Street substation within Precinct 2. The Feeder 7U5 would begin here and connect to the Surry Hills substation on Ann Street (refer to Figure 3.2). (Source: GML 2018)



Figure 3.2 The Feeder 7U5 is to be located beneath this section of road between the substation and the rail line. (Source: GML 2018)



Figure 3.3 View of the eastern elevation of the Railway Institute building opposite the proposed works, viewed from Chalmers Street. (Source: GML 2018)



Figure 3.4 Detail view of the Railway Institute building. (Source: GML 2018)



Figure 3.5 View of the external side of the boundary wall of the SHR listing for Central Station. The feeder would be constructed [against/next to TBC] the wall inside the boundary and would not be visible from this location. This area falls within Precinct 5—Central Electric, as identified in the CMP. (Source: GML 2018)



Figure 3.6 Closer view of the internal side of the boundary wall and the above-ground platforms beyond. (Source: GML 2018)



Figure 3.7 View of the park on the corner of Foveaux and Elizabeth Streets, looking south towards the SHR boundary wall of Central. The feeder is proposed to bore [through/under TBC] the sandstone wall foundations adjacent to the station entrance (refer to Figure 3.8) and link to the rail corridor through a riser shaft. (Source: GML 2018)

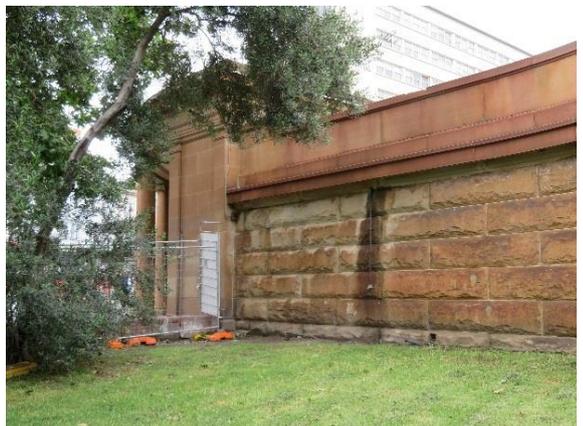


Figure 3.8 Detailed view of the sandstone boundary wall and the approximate location where the underboring is to occur. Note the Elizabeth Street entrance to Central Station at the left. (Source: GML 2018)

3.2 Belmore Park

A portion of Belmore Park is located on the eastern side of the sandstone rail viaduct. It comprises a narrow strip of landscaping with a group of significant street trees, wide footpaths, and road infrastructure. The group of Plane trees makes a significant contribution to the visual and aesthetic quality of the streetscape and is considered to have local group significance in terms of its outstanding visual and historic values.

The proposed feeder route exits Central Station and passes through the small garden near the Chalmers Street entrance. It crosses underneath Eddy Avenue, and continues into the portion of Belmore Park on the eastern side of the railway viaduct and along Elizabeth Street, before exiting the park curtilage east up Albion Street.



Figure 3.9 View north along Elizabeth Street, north of Eddy Avenue, showing the sandstone viaduct. Note the row of London Plane trees at right, listed on City of Sydney's significant tree register. (Source: GML 2018)



Figure 3.10 View looking south along Elizabeth Street. (Source: GML 2018)

3.3 Surry Hills

The proposed feeder route turns east from Elizabeth Street up Albion Street, extends north along Commonwealth Street and terminates at the Ann Street substation.

East of Elizabeth Street, the streetscape is characterised by abundant street vegetation, narrow lots with shallow street frontages and prominent corner buildings. The architectural style within Surry Hills is predominantly Victorian terrace housing with some Federation commercial buildings and modern infill buildings dotted through the streetscape. The original subdivision pattern of the area is still perceptible and several historical periods of development are evident.

3.3.1 Site Photographs



Figure 3.11 View looking east along Albion Street from the boundary of Central Station. (Source: GML 2018)



Figure 3.12 View looking east along Albion Street at its intersection with Mary Street. This is approximately where the Albion Estate Heritage Conservation Area (HCA) and Reservoir Street HCA begin. (Source: GML 2018).



Figure 3.13 View looking west along Albion Street from Mary Street back towards Central Station. (Source: GML 2018)



Figure 3.14 View of the William Booth Institute Building (heritage item No. 1409), on the corner of Albion and Commonwealth streets. (Source: GML 2018)



Figure 3.15 View of the Children's Court (heritage item No. 1408) on the corner of Albion and Commonwealth streets opposite the William Booth Institute. (Source: GML 2018)



Figure 3.16 View north along Commonwealth Street from Albion Street. (Source: GML 2018)



Figure 3.17 View south along Commonwealth Street from Ann Street. The Former Children's Court building can be seen at right. (Source: GML 2018)



Figure 3.188 View looking east along Ann Street from Commonwealth Street. (Source: GML 2018)



Figure 3.19 View of the Surry Hills substation on Ann Street, where the feeder would terminate. (Source: GML 2018)

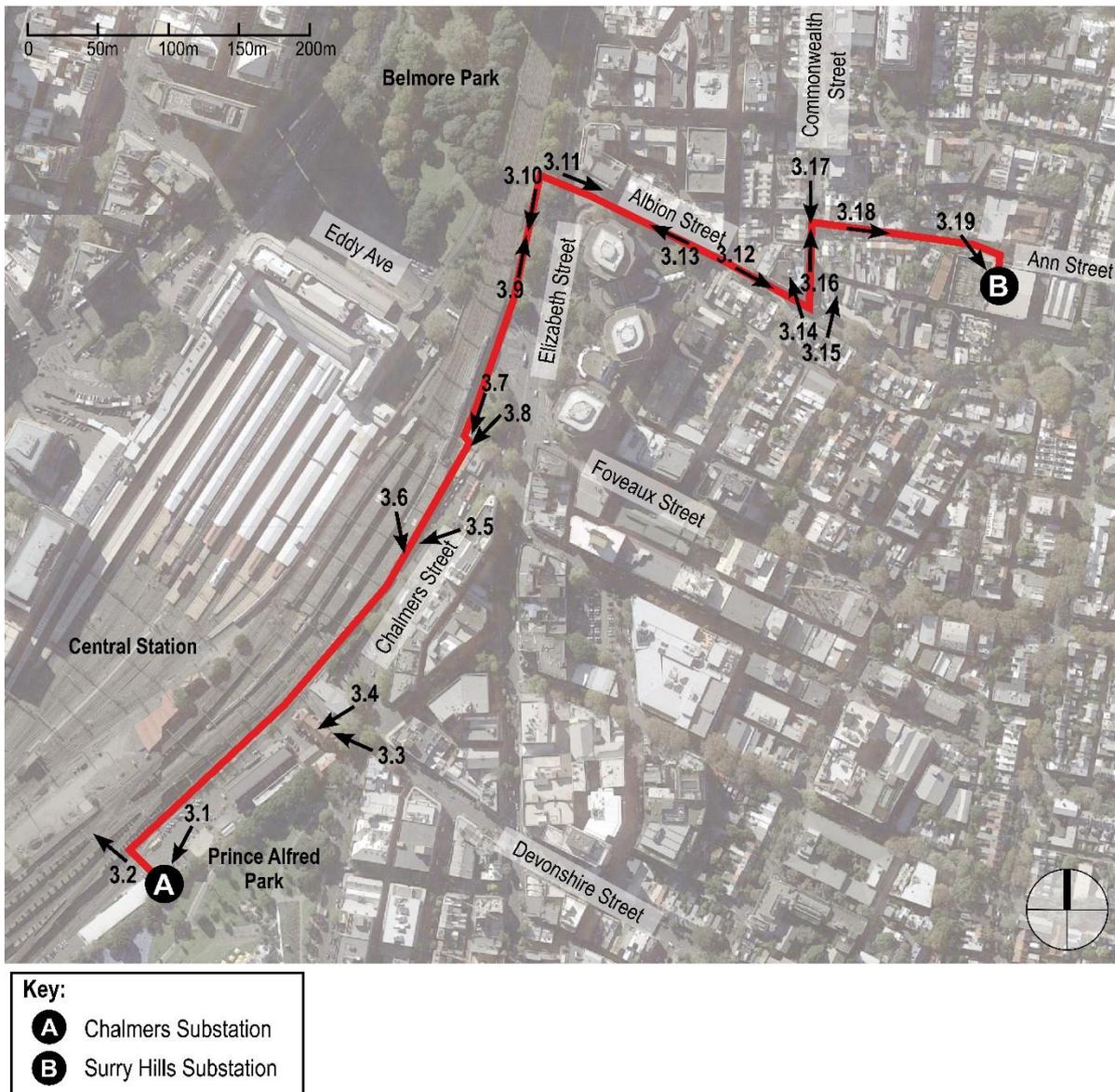


Figure 3.20 Map showing viewpoints and locations of the above site photographs. (Source: Google Maps with GML overlay 2018)

3.4 Endnotes

¹ EDAW (Aust) Pty Ltd, Belmore Park Draft Plan of Management, 1993. Accessed 9 January 2019 <https://www.cityofsydney.nsw.gov.au/_data/assets/pdf_file/0009/138753/BelmoreDraftPoM1993.pdf>

4.0 Built heritage

4.1 Introduction

The study area is within the SHR listed Central Station and two heritage conservation areas identified in the Sydney LEP. There are also a number of listed heritage items and significant trees adjacent to the proposed feeder route. This section describes the heritage context of the study area. The listed heritage items are illustrated in Figure 4.1.

4.2 Central Station

Central Station is of state heritage significance and is included on the NSW SHR and RailCorp's Section 170 Register. The station is significant under criteria A—Historical Significance, C—Aesthetic Significance, D—Social Significance, E—Research Potential, F—Rarity and G—Representativeness.

The Central Station CMP provides the following Statement of Significance:

Central Station is the largest railway station and transport interchange in NSW and is of State significance for its historical, aesthetic, technical values and for its research potential. With its grand sandstone edifices and approaches it is a well known landmark in Sydney. The site contains the original Sydney Railway Company grant on which the first Sydney Station and yards were opened, in 1855, and so represents over 150 years of railway operations in the same place, making it the oldest and the longest continuously operated yard in Australia.

The Sydney Terminal precinct has a high level of historic significance associated with its early government and institutional uses, as well as being the site of Sydney's second major burial ground, the Devonshire Street cemetery. Archaeological evidence of the government and institutional uses is rare and has high research potential. Central Station site contains evidence of the first phase of railway construction in NSW and has been the major hub of rail transportation in NSW since the mid-19th century and has the ability to demonstrate the evolution of changes in the NSW railways and in railway technology over the past 150 years, from steam to electric, reflected in the changes in yard layout and in signaling work practices. The Darling Harbour branch line and associated sandstone Ultimo Railway Overbridge is the only remaining example of railway infrastructure built for the Sydney Railway Company and is the oldest piece of railway infrastructure in NSW.⁶ The Prince Alfred Sidings contains some of the oldest remaining workshops in the NSW railway system. The Prince Alfred Substation is part of the Bradfield 1926 electrification works and was designed by Bradfield himself. The site has technical heritage value in such elements as: the Darling Harbour Dive; Central Electrics flyovers; the elliptical arch construction of the Elizabeth Street Viaduct; the western approach ramp underbridge the three pin truss roof of the portecochère; the Devonshire Street subway (probably the first of its type in Australia); the underground men's toilets; and the early mail, parcels and luggage subway system.

The main terminus building, accentuated by its clock tower and approach ramps, exemplifies the predominant use of sandstone at the site and it has been sited to dominate its surroundings and to mark the importance of the railway to both the city and the State. The construction of the Sydney Terminus was the largest planned intervention into the urban fabric of Sydney at the time and it was the only major complex of the period where the urban setting was consciously designed to enhance and provide views to and from the main structure. With its multi layered access modes and above ground level platforms not only was the development extraordinarily innovative but also the largest incursion into the southern part of Sydney prior to World War I.

Some of Sydney's most notable 19th and 20th century architects and engineers have worked on the Central Station site, including: James Wallace and William Randle who together designed and built the first railway from Sydney to Parramatta and the associated Darling Harbour Branch Line; the last serving Colonial Architect, James Barnet (Mortuary Station); the first NSW Government Architect, Walter Liberty Vernon (the main Terminus building and the Parcels Post Office); and the Chief Engineer for the City Underground and Sydney Harbour Bridge, Dr John Jacob

GML Heritage

Crew Bradfield (Central Electric). Mortuary Station, the main terminus building and the Parcels Post Office were the only designs undertaken for the NSW Railways by the Colonial Architect and the Government Architect within the Department of Public Works.

The main terminus building is enhanced by its Neo-classical architectural features together with the high-quality workmanship and materials it contains, from carved sandstone, marble and terrazzo to cedar joinery, acid etched glazing and metalwork balustrades. The same fine quality in design, materials and workmanship is seen in Mortuary Station, the Railway Institute and also in the Neo-classical Chalmers Street Entrance, the Central Electric Station main façade and the Parcels Post Office, all of which tends to unify these buildings with the main terminus.

The Mortuary Station is a fine and rare example by James Barnet of the Gothic Revival architectural style and is the only remaining example of a mortuary station in NSW. The exemplary Federation Anglo-Dutch architectural style of the Railway Institute is significant and it was as the first institute of its type in Australia, demonstrating 19th century initiatives in railway workers' educational and recreational facilities. The Parcels Post Office contains fine brickwork and sandstone detailed facades and documents the association of the site with railway postal services. The significance of Central Station is widely appreciated by the broad community for its sense of place and theatre; as an extraordinary place of work for employees past and present and their families; and by many specialist transport and heritage community groups.¹

4.2.1 Central Station precincts 2 and 5

The works are within two precincts identified in the Central Station CMP, Precinct 2—Prince Alfred Sidings and Precinct 5—Central Electric (refer to Table 3.1 in Section 3.0 of this report).

Precinct 2—Prince Alfred Sidings

The CMP provides the following Statement of Significance for Precinct 2—Prince Alfred Sidings:

The Prince Alfred Sidings has historical associations with the development of the Sydney rail network and the first and second Sydney terminuses. It is the site of the original rail yards at the Sydney Terminal, commenced in 1855. It also contains the only extant workshops at the Sydney Terminal, which were contemporary with the second Devonshire Street Station. Within this precinct is the first Railway Institute in Australia.

Precinct 5—Central Electric

The CMP provides the following Statement of Significance for Precinct 5—Central Electric:

The Central Electric Precinct documents the first phase of the suburban electrification of the NSW Railway in 1926. It is associated with Dr John Job Crew Bradfield. The aesthetic presentation is Neo-classical. The Precinct has the grandest of entrances on the City Circle line using sandstone detailing. The monumental sandstone walling of the Elizabeth Street Viaduct and the tram ramps is a well-known and iconic landmark in Sydney. The precinct has high technical value in the design of the viaducts, underbridges and overbridges. Central Electric was the only station on the new electric system to use reinforced concrete slabs for the platform canopy roofs.

Prince Alfred Substation

The Prince Alfred Substation is also addressed in the CMP and contains the following significance statement:

Of historical technical significance because the building was pivotal to Bradfield's 1926 electrification of the City Circle line and the new Central Electric Station. The Prince Alfred Substation is one of three substations in Sydney designed by Bradfield. The building displays aesthetic significance in the features of the Inter War Stripped Classical architectural style it contains.

Chalmers Street Entrance

The Chalmers Street entrance is also addressed in the CMP and contains the following significance statement:

The Chalmers Street Entrance is an integral part of and documents the first phase of the new suburban electrification of the NSW Railway in 1926. It is associated with Dr John Job Crew Bradfield. The Entrance demonstrates aesthetic significance in its Neo-classical architectural features and it is the grandest of entrances on the City Circle Line. The adjacent garden provides open space and enhances the setting of the Entrance. The use of sandstone for the Entrance exemplifies the distinctive and predominant use of sandstone for important public sites in the early 20th Century.

Several significant elements within Precincts 2 and 5 are relevant to the proposed feeder route (Table 4.1 and Table 4.2). These elements relate to the Chalmers Street entrance and environs, proposed works within the small garden area and to the retaining wall, works to the existing site office in the Prince Alfred Substation, and the proposed laydown area at the southern end of the Prince Alfred Sidings precinct in proximity to the former District Engineers Office and Draughtsman's Office.

Table 4.1 Significance grading for relevant elements within Precinct 2

Element	Significance grading
Prince Alfred Substation overall	High
Views and vistas	Little
Context and setting	Little
Main substation and annexe	High
Brick facades	High
Interior elements	Little
Former District Engineer's Office	High
Former Draughtsman's Office	High

Table 4.2 Significance grading for relevant elements within Precinct 5

Element	Significance grading
Chalmers Street Entrance and Environs overall	High
Views and vistas	High
Context and setting	Moderate
Chalmers Street classical sandstone entrance	High
Chalmers Street entrance garden and landscape elements	High
Brick wall murals	Moderate

4.3 Belmore Park, Grounds, Landscaping and Bandstand

The proposed feeder route to the east of the viaduct and along Elizabeth Street is within the Sydney LEP listing for Belmore Park (Item I825).

The Sydney LEP provides the following statement of significance:

The park is a vital portion of parkland in the southern portion of central Sydney. It provides evidence of key characteristics of park design in the early part of the 20th century, many of these as espoused by JH Maiden, former director of the Royal Botanic Gardens. It has close association with the design and construction and subsequent expansion of Central Station and the city railway system. It contributes to the aesthetic qualities of Central Station by providing a landscaped forecourt to the prominent sandstone terminus. The site also has archaeological potential associated with the Pitt Street Presbyterian manse and school, Carters' Barracks and the air raid shelters.²

4.4 Conservation areas

4.4.1 Reservoir Street and Fosterville Heritage Conservation Area

The proposed feeder route in Commonwealth Street and Ann Street is within the Reservoir Street and Fosterville Heritage Conservation Area (Reservoir Street HCA).

The NSW State Heritage Inventory (SHI) citation provides the following Statement of Significance for the Reservoir Street HCA:

The area dates from one of the key periods of layers for the development of Surry Hills as a direct result of the subdivision of the Riley Estate. It is dominated by the Crown Street Reservoir and contains good examples of mid to late Victorian terraces and Federation commercial buildings which make a positive contribution to the streetscape.³

4.4.2 Albion Estate Heritage Conservation Area

The proposed feeder route in Albion Street is between the Reservoir Street HCA and the Albion Estate Heritage Conservation Area (Albion Estate HCA).

The NSW SHI citation provides the following Statement of Significance for the Albion Estate HCA:

The area represents several key historical period layers for the development of Surry Hills as a direct result of the subdivision of the Albion Estate. The conservation area covers most of Albion Estate. It contains good examples of late Victorian terraces, twentieth century commercial buildings and hotels which make a positive contribution to the streetscape.⁴

4.5 Adjacent heritage items

The proposed feeder route is adjacent to a number of locally listed heritage items on Chalmers and Albion streets, identified in Table 4.3.

Table 4.3 Heritage items adjacent to the proposed works

Name	Address and summary statements of significance	Listing
<p>Former 'Railways Institute' Building</p>	<p>101 Chalmers Street, Surry Hills</p> <p><i>The Railways Institute Building has aesthetic significance as a fine example of the Federation Anglo-Dutch style being richly detailed with moulded bricks to form the sills, string courses and parapets. It is significant as it contains important evidence about New South Wales building technology at the turn of the century. It has historic significance as a design of Henry Robinson and WL Vernon, and is a significant visual element of the streetscape and of the Prince Alfred Park and Central Station precinct. It has association with a variety of historically important persons. It has social significance as the first Railways Institute building built in Australia, founded for the education and entertainment of railway employees, and has continued in use by railway staff for over 100 years. There are few examples of Institutes of this period that provided such a high level of facilities for the benefit of employees. It remains an important symbol of solidarity for the workers in the</i></p>	<p>Sydney LEP (11472)</p>

Name	Address and summary statements of significance	Listing
	<i>railway industry. It is significant as a fine and largely intact example of the style as used in an institutional building.⁵</i>	
7 London Plane trees—<i>Platanus x acerifolia</i>	Elizabeth Street <i>This single row plantation of London Planes (<i>Platanus x acerifolia</i>) consist of seven mature trees (c.1940) and three younger replacements (c.late 1970s). The group makes a significant contribution to the visual and aesthetic quality of the streetscape and is considered to have local group significance in terms of its outstanding visual and historic values.</i>	City of Sydney Significant Tree Register
Former Children's Court Building, Including Interior	66–78 Albion Street, Surry Hills <i>The building is socially significant for its impact on girls and boys affected by the juvenile justice system between 1991 and 1983, including the 'stolen generations' of Aboriginal people. Its importance in Sydney social life is illustrated by its mention in the novel 'Come In Spinner.' "The Boys' Shelter is a powerful symbol of institutional discipline under the Child Welfare Act 1939. The Children's Court reminds us of the laws which used to govern relations between husbands and wives, parents and children, when private processes broke down. It symbolises the government's control over children's lives, even when exercised with the best of intentions..." (For Their Own Good, Christa Ludlow). The building also dates from one of the key periods of the development of Surry Hills as a direct result of the subdivision of the Riley Estate. It is aesthetically significant as a good example of a Federation Courthouse complex by prominent government architect Walter Liberty Vernon on a prominent corner site which makes a positive contribution to the streetscape.⁶</i>	Sydney LEP (I1409)
Former 'William Booth Institute' Including Interior	56–58 Albion Street, Surry Hills <i>The building dates from one of the key period of layers for the development of Surry Hills as a direct result of the subdivision of the Riley Estate. It is a good example of an Inter-war institutional building which makes a positive contribution to the streetscape on a prominent corner site.⁷</i>	Sydney LEP (I1408)

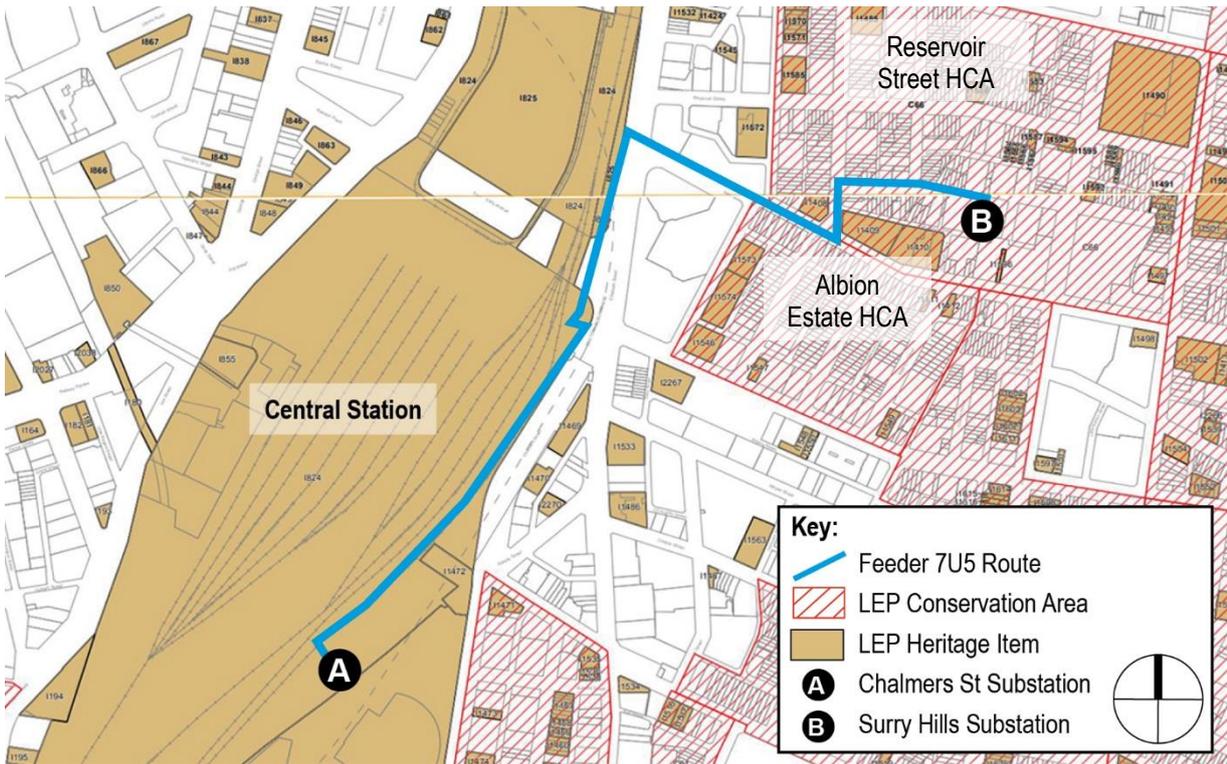


Figure 4.1 Extract from Sydney LEP Heritage Maps 14 and 15, indicating the approximate overall route of the proposed works. (Source: Sydney LEP with GML overlay)

4.6 Endnotes

- 1 Rappoport Pty Ltd & NSW Government Architects' Office, 'Central Station – Conservation Management Plan', Transport for NSW, 2013.
- 2 State Heritage Inventory, 'Belmore Park Grounds, Landscaping and Bandstand', NSW Office of Environment and Heritage, viewed 26 January 2018 <<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2424668>>.
- 3 State Heritage Inventory, 'Reservoir Street and Fosterville Heritage Conservation Area', NSW Office of Environment and Heritage, viewed 26 November 2018 <<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2421498>>.
- 4 State Heritage Inventory, 'Albion Estate Heritage Conservation Area', NSW Office of Environment and Heritage, viewed 28 November 2018 <<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2435712>>.
- 5 State Heritage Inventory, 'Former "Railways Institute" Building Including Interior', NSW Office of Environment and Heritage, viewed 26 November 2018 <<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2424327>>.
- 6 State Heritage Inventory, 'Former Children's Court Building, Including Interior', NSW Office of Environment and Heritage, viewed 26 November 2018 <<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2420422>>.
- 7 State Heritage Inventory, 'Former "William Booth Institute" Building, Including Interior', NSW Office of Environment and Heritage, viewed 26 November 2018 <<https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2420421>>.

5.0 Historical archaeological assessment

5.1 Introduction

The study area has been divided into three zones reflecting different historical development within the proposed feeder route (Figure 5.1). Historical development, previous disturbance, archaeological potential and significance is considered for each zone in this section.

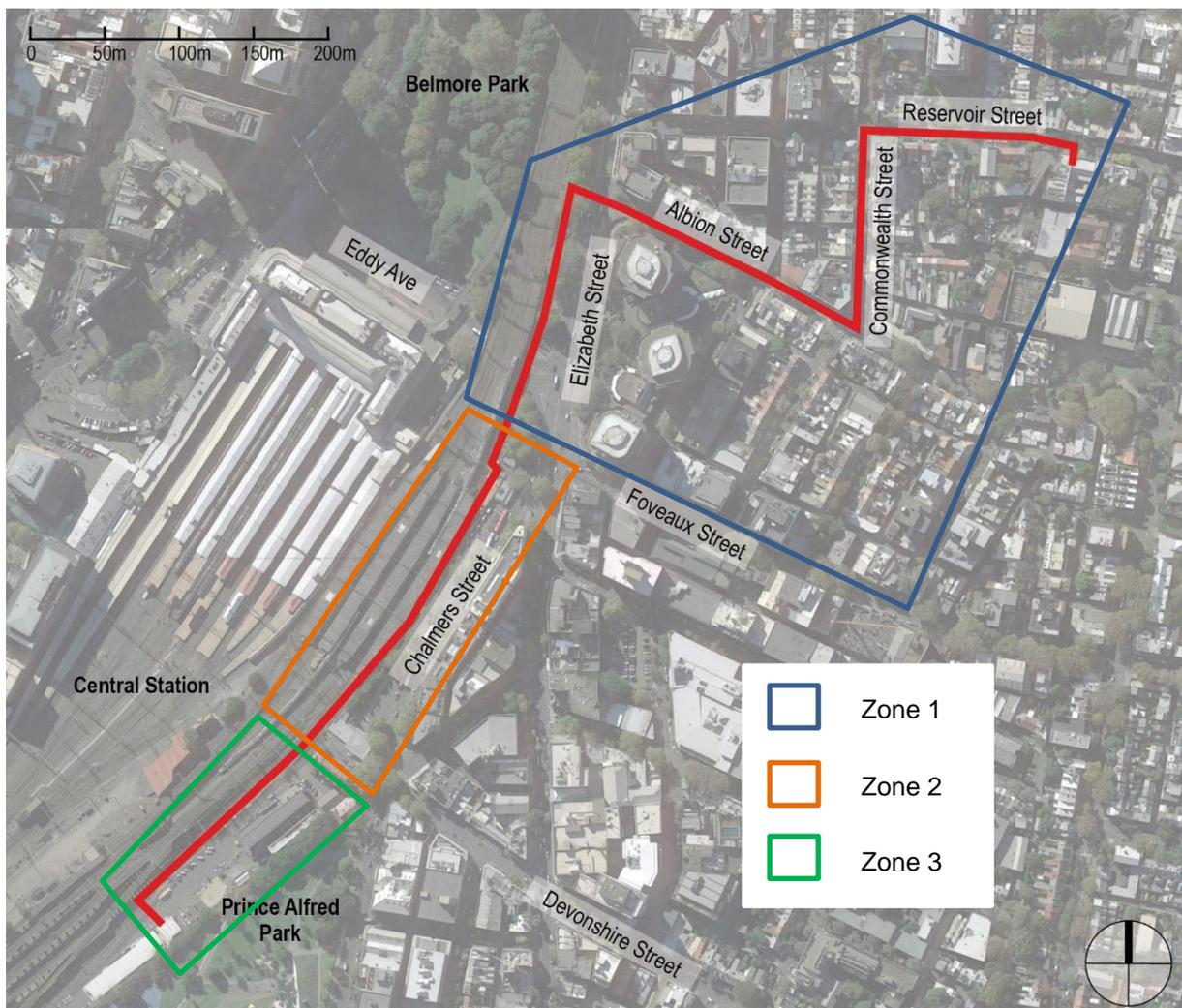


Figure 5.1 Three distinct zones of historical development within the study area delineated with proposed feeder route marked in red. (Source: Google Maps with GML overlay 2018)

5.2 Terminology

5.2.1 Archaeological potential

The term 'archaeological potential' is the likelihood that a site may contain physical evidence related to an earlier phase of occupation, activity or development. Archaeological potential is usually described as low, moderate or high, and defined as follows:

- Low—it is unlikely that archaeological evidence associated with this historical phase or feature survives.

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- Moderate—it is possible that some archaeological evidence associated with this historical phase or feature survives. If archaeological remains survive they may have been subject to some disturbance.
- High—it is likely that archaeological evidence associated with this historical phase or feature survives intact.

5.2.2 Archaeological significance

Archaeological significance refers to the heritage significance of known or potential archaeological remains. In NSW, archaeological remains are managed in accordance with their assessed levels of significance in line with *Assessing Significance for Historical Archaeological Sites and 'Relics'*, published by the NSW Heritage Branch (now Heritage Division, OEH) in 2009.

Given the variable archaeological resource anticipated across the study area, the assessment of significance has been considered separately across each zone.

5.3 Relevant archaeological studies

5.3.1 Central Station CMP

The archaeological potential of Central Station is included in the CMP. Recommendations for archaeological management included areas within the proposed feeder route (Figure 5.2).¹

The proposed feeder route is within two precincts at Central Station—Precinct 2 (Prince Alfred Siding) and Precinct 5 (Central Electric). Precinct 2 has the potential for archaeological remains associated with use of the site as a rail yard for the first Sydney Terminal from c1855, including produce and goods storage sheds. The most substantial anticipated historical archaeological evidence in the precinct is structural evidence of the c1860 sandstone Goods Shed, as well as the first carriage sheds and workshops.² Archaeological management in Precinct 2 includes monitoring in some areas and establishing an unexpected heritage finds protocol for works in others.

Precinct 5 (Central Electric) is located at the site of the Devonshire Street cemetery north of the Devonshire Tunnel (Figure 5.3), with the site of the former Sydney Terminal Rail Yards situated to the south of it. Precinct 5 was assessed as having no historical archaeological potential, as all evidence of earlier use was likely destroyed or removed during the construction of underground and sunken railway lines as part of the Central Electric in the 1920s.³ The CMP recommended no further archaeological management for Precinct 5.

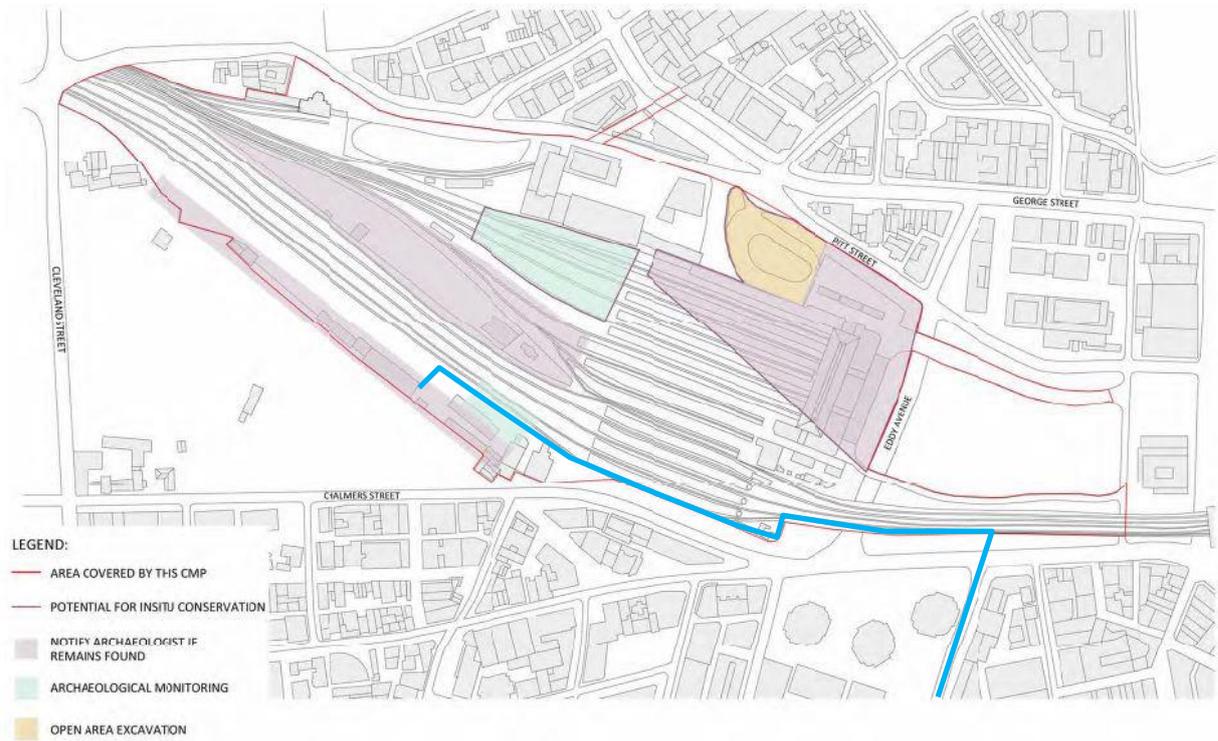


Figure 5.2 Recommended management of archaeological resources from the Central Station CMP, with the proposed feeder route marked in blue. (Source: CMP 2013 with GML overlay 2018)

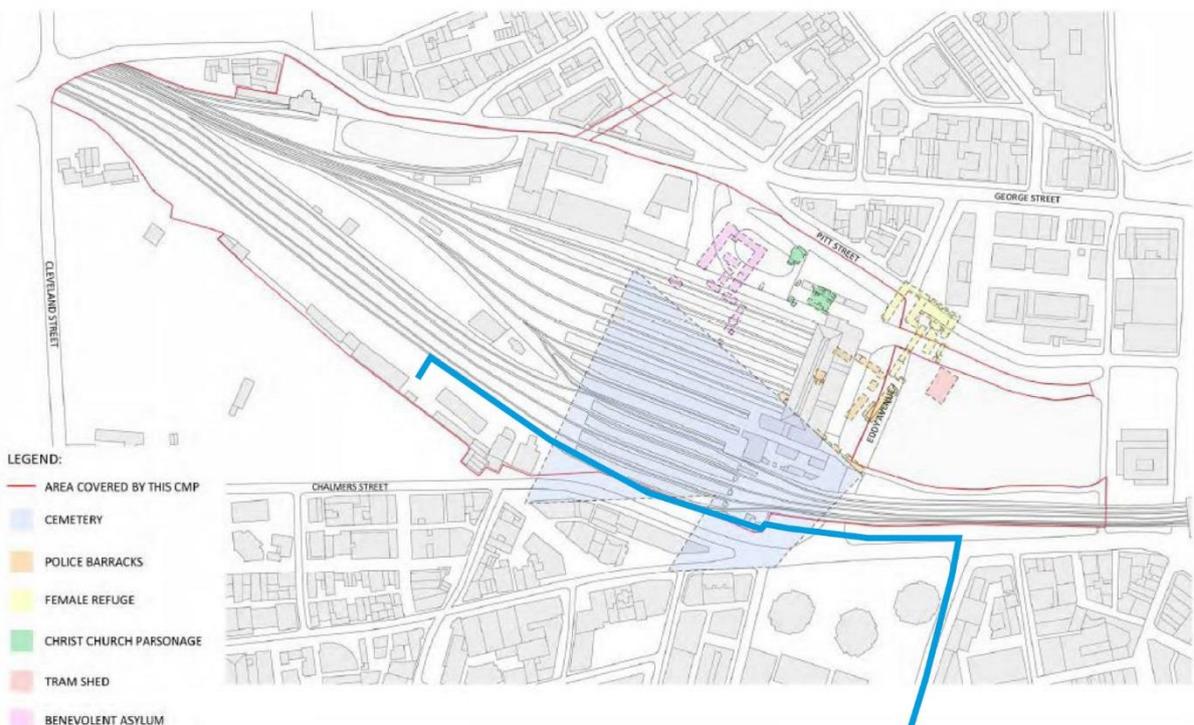


Figure 5.3 Location of Devonshire Cemetery in relation to Central Station, with the proposed feeder route marked in blue. (Source: CMP 2013 with GML overlay 2018)

5.3.2 Sydney Light Rail—assessment and monitoring

The route of the CBD and South East Light Rail (Sydney Light Rail) extended within some of the areas included in the proposed feeder route. The areas within Zone 1 on Elizabeth Street were assessed as having low–moderate potential for historical archaeological remains of local significance, including early alignments of Elizabeth Street, kerbs, drains, services and evidence of a tram line that previously extended through the area.

Much of Zone 2 was assessed as having no archaeological potential. Some parts of Zone 2 on Chalmers Street were assessed as having low potential for outlying burials associated with Devonshire Street Cemetery that were not exhumed or destroyed during construction of Central Station. The road was also assessed as having low–moderate potential for archaeological remains of local significance, including early alignments of Chalmers Street, services and evidence of a tram line that previously extended through the area.

During works for the Sydney Light Rail, human remains have been encountered twice within areas assessed as having low potential for archaeological remains of the former cemetery. A skull was excavated at the corner of Randall and Chalmers Street at a depth of 1.277m below the street level. Additional human bones were removed during excavation of a pit at the corner of Elizabeth and Chalmers streets. The total depth of the pit extended 1.78m below the current street level; the bones may have been located at a higher level though.⁴

5.3.3 Sydney Metro—assessment and monitoring

The Sydney Metro City and Southwest historical archaeological assessment was prepared by Artefact in 2016. This included Platforms 13 and 14 of Central Station. The archaeological assessment identified that the proposed station box was located within the former Devonshire Street Cemetery and retained the potential for deeper subsurface features, including whole or fragmentary grave cuts or burials. Monitoring was proposed for works within the former cemetery location.⁵

A coffin located within a vault was uncovered beneath Platform 13 at Central Station as part of recent Sydney Metro excavation works.⁶ Information and results from the archaeological program are not currently publicly available.

5.4 Zone 1—Surry Hills roadways

5.4.1 Historical development summary

The proposed feeder route in this zone is mostly located within roads established by the 1840s which have continued on roughly consistent alignments through to the present. The following phases of historical development were identified for the Zone 1 roadways:

- Phase 1: Outskirts of Sydney (c1800–c1840)
- Phase 2: Roadways (c1840–1878)
- Phase 3: Tram Line (1878–1960)
- Phase 4: Modern Roads (1961–Present).

5.4.2 Previous disturbance

Installation of services, upgrades and resurfacing of the road pavement and footpaths since the 1840s would have resulted in a moderate level of ground impacts. Archaeological evidence associated with historic road surfaces, drains and tram tracks, if present, are likely to be truncated and to have been subject to previous impacts.

5.4.3 Archaeological potential

Table 5.1 below summarises the study area's potential for historical archaeological features and deposits.

Table 5.1 Assessed levels of archaeological potential within the Zone 1 area of the proposed feeder route

Phase	Possible archaeological remains	Potential
Phase 1 (c1800–c1840)	No development was identified within Zone 1 roadways during this phase. Potential evidence associated with ephemeral use on the outskirts of the Sydney settlement, such as: <ul style="list-style-type: none"> isolated artefacts resulting from loss or discard small, single-use rubbish pits. 	Low
Phase 2 (c1840–1878)	Features and surfaces associated with Elizabeth Street, Albion Street, Commonwealth Street and Reservoir Street, including: <ul style="list-style-type: none"> former kerbing drains (brick, stone, ceramic) early road surfaces and bases (macadam, Telford and/or woodblock surfaces) structural remains indicating the alignment of the street. 	Low–moderate
Phase 3 (1878–1960)	Later features and surfaces associated with Elizabeth Street, Albion Street, Commonwealth Street and Reservoir Street, including: <ul style="list-style-type: none"> former kerbing drains and services (brick, ceramic, metal, plastic) road surfaces (concrete, asphalt) metal tracks and wooden sleepers associated with the tram line that formerly extended along Elizabeth Street.⁷ 	High

5.4.4 Assessment of significance

Table 5.2 below presents the assessment of the significance of potential archaeological remains in Zone 1 against the NSW heritage criteria.

Table 5.2 Significance assessment of the potential archaeological remains against the NSW heritage criteria

Criterion	Discussion
<i>a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area)</i>	Potential archaeological remains of roads and tram tracks within Zone 1 are important in the pattern of developing infrastructure in response to increased urban and commercial development along the former outskirts of the Sydney CBD. Evidence of road surfaces and features, as well as tram lines, in Zone 1 would be of local significance under this criterion.

Criterion	Discussion
<i>(b) an item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area)</i>	No significant associations were identified in relation to the anticipated historical archaeological resource in Zone 1. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)</i>	The anticipated historical archaeological resource is unlikely to demonstrate aesthetic characteristics or a high degree of technical or creative achievement. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(d) an item has strong or special association with a particular community or cultural group in NSW for social, spiritual or cultural reasons (or the local area)</i>	No significant associations with particular communities or cultural groups were identified in relation to the anticipated historical archaeological resource in Zone 1. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area)</i>	Evidence of road surfaces and associated features, including kerbing, drains, and evidence of repair, can provide new insight into the allocation and use of road bases and services through the nineteenth century within Sydney for roads at varying scales of use. Archaeological evidence associated with Phase 2 road surfaces and services in Zone 1 would be of local significance under this criterion. Archaeological evidence of tram lines extending across Elizabeth Avenue from 1878 would have low research potential as they are well documented elsewhere in Sydney, remain intact below asphalt elsewhere and feature a generally consistent means of construction. Additionally, road construction through the late nineteenth and early twentieth centuries became increasingly standardised. Archaeological evidence from Phase 3 would not meet the threshold for local significance under this criterion.
<i>(f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area)</i>	The anticipated historical archaeological resource would not be considered rare or uncommon within Sydney or NSW. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area)</i>	Given the scope of services likely to exist within the study area, truncating evidence of road surfaces and bases, it is unlikely that archaeological evidence associated with roads from Phases 2 and 3 would be intact at such a level that they would be considered representative examples in the area or NSW. Similarly, tram tracks were widespread across Sydney and better representative examples likely exist in the parks they formerly extended through (eg Moore Park, Belmore Park). Archaeological evidence would not meet the threshold for local significance under this criterion.

Statement of significance

Archaeological evidence associated with early road alignments in Phase 2, including surfaces and bases as well as associated features such as kerbs and drains, have the potential to be of local significance for their historical and research values. Structural remains of tram tracks along Elizabeth Street would be of local significance for their historical values. As historical infrastructure, they would not be considered 'relics' but would satisfy the definition of a 'work' under the Heritage Act.

5.5 Zone 1— Belmore Park

5.5.1 Historical development summary

The proposed feeder route Zone 1 is located within the eastern boundary of Belmore Park (east of the viaduct). The following phases of historical development were identified in the Belmore Park portion of Zone 1:

- Phase 1: Crown Land and Police Paddocks (c1800–c1850)
- Phase 2: Produce Markets (c1851–1867)
- Phase 3: Public Park (1868–1900)
- Phase 4: Construction Central Railway Station (1901–1906)
- Phase 5: City of Sydney Care (1907–Present).

5.5.2 Previous disturbance

Originally a creek line ran on an east west alignment through the park. This was formalised in the 1860s into an open stormwater drain between Surry Hills and the Haymarket. The construction of Central Railway Station between 1901 and 1906 saw the importation of 80,000 cubic metres of fill in parts of the park, likely to the south of the study area. The remainder of the park was used as a laydown area for construction materials related to the ongoing construction of Central Railway Station.

Council regained control of the park in 1907 and undertook a substantial landscaping and planting program, which included formalising the original dirt paths firstly with gravel and then with bitumen. A steam tram track ran diagonally through the park from the north east, which was realigned before 1925 closer to the eastern boundary of the site. Originally a pedestrian bridge over the tram tracks facilitated access to the north eastern entrance of the park, it is unknown when this was demolished.

The construction of the rail viaduct along the eastern boundary of the park to accommodate the City Circle Line in 1923 permanently separated the portion of the park along Elizabeth Street.

5.5.3 Archaeological potential

Table 5.1 below summarises the study area's potential for historical archaeological features and deposits.

Table 5.3 Assessed levels of archaeological potential within the Zone 1 area of the proposed feeder route

Phase	Possible archaeological remains	Potential
Phase 1 (c1800–c1850)	<p>No development was identified within Zone 1 during this phase.</p> <p>Potential evidence associated with ephemeral use of the Police Paddocks, such as:</p> <ul style="list-style-type: none"> • isolated artefacts resulting from loss or discard • small, single-use rubbish pits. 	Low

Phase	Possible archaeological remains	Potential
Phase 2 (c1851–1867)	<p>Potential evidence associated with ephemeral use of the open space as a produce market:</p> <ul style="list-style-type: none"> informal fence lines open stormwater and other drains (brick, stone) early path surfaces and bases (macadam, gravel, sandstone) isolated artefacts resulting from loss or discard small, single-use rubbish pits. 	Low
Phase 3 (1868–1900)	<p>Later features and surfaces associated with the public park including:</p> <ul style="list-style-type: none"> evidence of original layout and landscaping of original park (iron railings, fence lines, kerbing, paths) stormwater and other drains (brick, stone, ceramic) metal tracks and wooden sleepers associated with the tram line that formerly extended along Elizabeth Street.⁸ 	Moderate
Phase 4 (1901–1906)	<p>Evidence of use of the park during the construction of Central Railway Station including:</p> <ul style="list-style-type: none"> imported fill deposits isolated items of rail infrastructure. 	Moderate
Phase 5 (1907–Present)	<p>Evidence of layout, landscaping and use of park including:</p> <ul style="list-style-type: none"> evidence of former layout and landscaping of original park (iron railings, fence lines, kerbing, paths) stormwater and other drains (brick, stone, ceramic) metal tracks and wooden sleepers associated with second alignment of the tram line that formerly extended along Elizabeth Street.⁹ 	Moderate

5.5.4 Assessment of significance

Table 5.2 below presents the assessment of the significance of potential archaeological remains in Zone 1 Belmore Park area against the NSW heritage criteria.

Table 5.4 Significance assessment of the potential archaeological remains against the NSW heritage criteria

Criterion	Discussion
<p><i>a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area)</i></p>	<p>Potential archaeological remains of the mid-nineteenth century produce market which occupied Belmore Park are important in the pattern of the developing commercial markets and the food economy in Sydney.</p> <p>Evidence of produce markets in Zone 1 would be of local significance under this criterion.</p> <p>Evidence of the open stormwater which utilised a former creek running through the park is important in the evolution of the municipal involvement in the sanitation of Sydney suburbs.</p> <p>Evidence of the drain in Zone 1 would be of local significance under this criterion</p> <p>Early park layout and tram tracks from Phase 3 within Zone 1 are important in the pattern of developing infrastructure in response to increased urban and commercial development along the former outskirts of the Sydney CBD.</p> <p>Evidence of road surfaces and features, as well as tram lines, in Zone 1 would be of local significance under this criterion.</p>

Criterion	Discussion
<i>(b) an item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area)</i>	No significant associations were identified in relation to the anticipated historical archaeological resource in Zone 1. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)</i>	Belmore Park was one of only six parks to be officially gazetted in Sydney by 1868. The development of the open space into a structured park included several elements of landscaping to recognise the importance of a green space in an urban area. Archaeological evidence of the original landscape and park design would be of local significance under this criterion.
<i>(d) an item has strong or special association with a particular community or cultural group in NSW for social, spiritual or cultural reasons (or the local area)</i>	No significant associations with particular communities or cultural groups were identified in relation to the anticipated historical archaeological resource in Zone 1. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area)</i>	Archaeological evidence of tram lines extending across Elizabeth Avenue from 1878 would have low research potential as they are well documented elsewhere in Sydney, remain intact below asphalt elsewhere and feature a generally consistent means of construction. Additionally, road construction through the late nineteenth and early twentieth centuries became increasingly standardised. Historical archaeological evidence from Phase 3 would not meet the threshold for local significance under this criterion. Twentieth century park layout and landscaping is well documented in the historical record and is unlikely to yield new information on the design and layout of the park. Archaeological evidence from all phases would not meet the threshold for local significance under this criterion.
<i>(f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area)</i>	The anticipated historical archaeological resource would not be considered rare or uncommon within Sydney or NSW. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area)</i>	Belmore Park was dedicated in 1868 and was only the sixth site to be gazetted as a park in Sydney, which is a recognition of its importance as a green space in an urban area. Given the scope of services likely to exist within the study area, and the construction of the rail viaduct truncating evidence of original park surfaces, paths and fence lines it is unlikely that the form and layout of the park will be well represented in the study area. Archaeological evidence would not meet the threshold for local significance under this criterion.

Statement of significance

The portion of Belmore Park on the eastern side of the viaduct has low potential to contain archaeological remains associated with the Police Paddocks and produce markets prior to the 1860s. These remains would have local significance for their historical and research values. The site also has moderate potential for archaeological remains of the open stormwater constructed before 1868, remnants of the original iron railing fence bounding the park along Elizabeth Street, steam tramline infrastructure and early footpaths along Elizabeth Street. These remains would be of local significance for their historical value. Historical infrastructure such as tram tracks, road, paths and drains are not considered 'relics'

under the Heritage Act but would satisfy the definition of a ‘work’. Archaeological evidence of the original layout and landscaping of Belmore Park would reflect a new municipal effort to maintain green spaces in urban settings. This evidence would have local historical and aesthetic significance

5.6 Zone 2—Devonshire Cemetery (Sand Hills Cemetery)

5.6.1 Historical development summary

The proposed feeder route is within the historical boundary of the former Devonshire Street Cemetery (Sand Hills Cemetery). The following phases of historical development were identified in Zone 2:

- Phase 1: Devonshire Street Cemetery (1820–1901)
- Phase 2: Establishment of Central Railway Station (1901–1920)
- Phase 3: Central Electric (1920–Present).

5.6.2 Previous disturbance

The Central Electric development within Zone 2 would have resulted in removal or destruction of historical archaeological evidence within its footprint. Introduction of services and amenities within Central Station and Chalmers Avenue, including construction of the Chalmers Avenue entrance and recent light rail construction, would have resulted in localised impacts to archaeological features and deposits.

5.6.3 Archaeological potential

Table 5.3 below summarises the Zone 2 potential for historical archaeological features and deposits. Note that areas within the footprint of the Central Electric development have no remnant archaeological potential as a result of excavation to accommodate underground rail lines and submerged tracks. Table 5.3 presents the assessed levels of potential for the remainder of Zone 2.

Table 5.5 Assessed levels of archaeological potential within the Zone 2 area of the proposed feeder route

Phase	Possible archaeological remains	Potential
Phase 1 (1820–1901)	Deep subsurface evidence associated with use of the Devonshire Street Cemetery for burial, including: <ul style="list-style-type: none"> • grave cuts • human skeletal remains • grave goods and personal items • caskets and coffin furniture • headstones and grave edging • vaults and other memorial structures. 	Low–moderate
Phase 2 (1901–1920)	Landscaping features and surfaces associated with Central Station and the establishment of Chalmers Avenue and Randle Street, including: <ul style="list-style-type: none"> • sandstone, trachyte or concrete kerbs • drains and services (brick, ceramic, metal, plastic) • road or path surfaces and bases. 	Low

5.6.4 Assessment of significance

Table 5.4 below presents the assessment of the significance of potential archaeological remains in Zone 2 against the NSW heritage criteria.

Table 5.6 Significance assessment of the potential archaeological remains against the NSW heritage criteria

Criterion	Discussion
<i>a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area)</i>	The remains of human burials from the Devonshire Street Cemetery demonstrate Sydney's and NSW's changing burial practices and memorialisation of the deceased as part of its cultural history. Archaeological evidence of burial activities from Phase 1 would be of state significance under this criterion.
<i>(b) an item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area)</i>	No significant associations have been identified among the unclaimed or unrecorded burials at Devonshire Street Cemetery. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)</i>	Evidence of burials within the study area have likely been disturbed and truncated, with limited potential for expression of the artistic aspects of mortuary practice (eg intact elaborate vaults, headstones, caskets). The anticipated archaeological resource is unlikely to demonstrate creative or technical achievement. Archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(d) an item has strong or special association with a particular community or cultural group in NSW for social, spiritual or cultural reasons (or the local area)</i>	Human burials are generally culturally sensitive and unexpected finds of human remains generate strong responses from the local community. Archaeological evidence associated with use of the Devonshire Street Cemetery in Phase 1 would be of local significance under this criterion.
<i>(e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area)</i>	Archaeological evidence associated with human burials has the potential to provide some insight into the genetic diversity of early Sydney, burial practices, and the success of large-scale exhumations completed during infrastructure projects. The location and relative intactness of remains found within the study area would also assist in informing the likelihood that they might be recovered elsewhere within the footprint of the former Devonshire Street Cemetery. Evidence associated with use of the Devonshire Street Cemetery in Phase 1 would be of state significance under this criterion.
<i>(f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area)</i>	There is a long-standing tradition of human burial in Sydney which continues today. A significant portion of the Devonshire Street Cemetery burials and associated grave goods were relocated in the early twentieth century and likely remain intact elsewhere. The archaeological resource associated with the use of the Devonshire Street Cemetery in Phase 1 would not meet the threshold for local significance under this criterion.
<i>(g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area)</i>	Better and more intact examples of contemporaneous cemeteries remain in the Sydney region and NSW more broadly. Anticipated archaeological evidence would not meet the threshold for local significance under this criterion.

Statement of significance

Archaeological evidence associated with burials at the Devonshire Street Cemetery, including human remains, grave cuts, grave furniture and monuments, would be of state significance for their historical, and research values, and local significance for their social values.

5.7 Zone 3—Government Paddocks and Rail Yards

5.7.1 Historical development summary

The proposed feeder route is within an area formerly part of the Government Paddocks and then the first Sydney Terminal rail yard by c1855. The following phases of historical development were identified in Zone 3:

- Phase 1: Government Paddocks (1820–1850)
- Phase 2: First Sydney Terminus Rail Yards (1850–1870)
- Phase 3: Second Sydney Terminus (1870–1901)
- Phase 4: Central Station (1901–Present).

5.7.2 Previous disturbance

The Central Electric development would have removed or destroyed historical archaeological evidence within its footprint in Zone 3. The remainder of Zone 3 would have been subjected to areas impacts resulting from introduction of access points, services and rail infrastructure.

5.7.3 Archaeological potential

Table 5.5 below summarises the Zone 3 potential for historical archaeological features and deposits. Note that areas within Precinct 5 (Central Electric) have no remnant archaeological potential as a result of excavation to accommodate underground rail lines and submerged tracks. The table presents the assessed levels of potential for the remainder of Zone 3.

- Phase 1: Government Paddocks (1820–1850)
- Phase 2: First Sydney Terminus Rail Yards (1850–1870)
- Phase 3: Second Sydney Terminus (1870–1901).

Table 5.7 Assessed levels of archaeological potential within the Zone 3 area of the proposed feeder route

Phase	Possible archaeological remains	Potential
Phase 1 (1820–c1850)	Potential evidence associated with ephemeral use of the site as part of the Government Paddocks, including: <ul style="list-style-type: none"> • post holes delineating fence lines and paddocks • garden beds and edging • isolated artefacts resulting from loss or discard • small single-use rubbish pits. 	Low

Phase	Possible archaeological remains	Potential
Phase 2 (1850–1870)	Features and surfaces associated with the rail yard of the first Sydney Terminus, including: <ul style="list-style-type: none"> • footings of the c1860s sandstone Goods Store • structural remains of produce and goods sheds (timber, stone or brick) • drains and services (brick, metal, ceramic) • rail infrastructure. 	Low–moderate
Phase 3 (1870–1901)	Rail infrastructure and services associated with the second Sydney Terminus, including: <ul style="list-style-type: none"> • structural remains of outbuildings • rail infrastructure • drains and services (brick, metal, ceramic). 	Low–moderate

5.7.4 Assessment of significance

Table 5.6 below presents the assessment of the significance of potential archaeological remains in Zone 3 against the NSW heritage criteria.

Table 5.8 Significance assessment of the potential archaeological remains against the NSW heritage criteria

Criterion	Discussion
<i>a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area)</i>	Archaeological evidence associated with establishment and use of the first Sydney Terminus c1850 (Phase 1) and second Sydney Terminus (Phase 2) would demonstrate changing transport practices and activities in the Sydney region, as well as NSW more broadly. The rail yard at the first Sydney Terminus enabled the transport and storage of goods and produce across NSW to support the ongoing success of the colony more broadly. Evidence associated with the first and second Sydney Terminus would be of local significance under this criterion.
<i>(b) an item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area)</i>	James Wallace, an English railway engineer, and his brother-in-law William Randall, railway contractor, developed the plans and managed the labour for construction of the first Sydney Terminus for the Sydney Railway Company. As mostly ancillary structures and yard spaces the anticipated historical archaeological resource within the study area is unlikely, however, to demonstrate these associations. Historical archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)</i>	The anticipated historical archaeological resource is unlikely to demonstrate creative or technical achievement. Historical archaeological evidence would not meet the threshold for local significance under this criterion.
<i>(d) an item has strong or special association with a particular community or cultural group in NSW for social, spiritual or cultural reasons (or the local area)</i>	No community or cultural groups were identified during the assessment of the potential archaeological resource, though a formal social values assessment has not been completed. Historical archaeological evidence would not meet the threshold for local significance under this criterion.

Criterion	Discussion
<i>(e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area)</i>	<p>The anticipated historical archaeological resource has the potential to provide insight into the operations of the first and second Sydney Terminus, particularly with regard to the storage and management of goods and produce. This may be evident in the construction materials and layout of the structures and yards, as well as sealed artefact deposits associated with rail staff. Working surfaces and rail infrastructure within the site may provide an understanding of how goods were moved through the area.</p> <p>Archaeological evidence associated with the first and second Sydney Terminus would be of local significance under this criterion.</p>
<i>(f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area)</i>	<p>Archaeological evidence associated with the first Sydney Terminus in Phase 2 would be considered rare in the Sydney region as an early example of ancillary rail infrastructure in NSW. Evidence associated with the first Sydney Terminus would be of local significance under this criterion.</p>
<i>(g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area)</i>	<p>Extant examples of late nineteenth-century rail infrastructure and workshops exist in the Sydney region, including at Redfern Station, the Eveleigh Rail Yards and Prince Alfred Sidings.</p> <p>The anticipated historical archaeological resource from the second Sydney Terminus in Phase 3 is unlikely to meet the threshold for local significance under this criterion.</p>

Statement of significance

Historical archaeological evidence associated with the first Sydney Terminus in Phase 2, particularly remains of the c1860 Goods Store, would be of local significance for their historical and research values, as well as their rarity. Evidence associated with the expansion of the goods and produce yard and the second Sydney Terminus in Phase 3 would be of local significance for its historical and research values.

5.8 Potential archaeology summary

Table 5.9 Summary of possible archaeological remains by zones, potential and significance

Zone	Possible archaeological remains	Potential	Significance
Zone 1 Surry Hills Roadways	Phase 1 (c1800–c1840) <ul style="list-style-type: none"> isolated artefacts resulting from loss or discard small single-use rubbish pits. 	Low	Local
	Phase 2 (c1840–1878) <ul style="list-style-type: none"> former kerbing drains (brick, stone, ceramic) early road surfaces and bases (macadam, Telford and/or woodblock surfaces). 	Low–moderate	Local (Not Relics)
	Phase 3 (1878–1960) <ul style="list-style-type: none"> former kerbing drains and services (brick, ceramic, metal, plastic) road surfaces (concrete, asphalt) metal tracks and wooden sleepers associated with the tram line that formerly extended along Elizabeth Street.¹⁰ 	High	Local (Not Relics)
Zone 1 Belmore Park	Phase 1 (c1800–c1850) <ul style="list-style-type: none"> isolated artefacts rubbish pits 	Low	Local

Zone	Possible archaeological remains	Potential	Significance
	Phase 2 (c1850-1867) <ul style="list-style-type: none"> informal fence lines open stormwater and other drains early path surfaces and bases isolated artefacts resulting from loss or discard small, single-use rubbish pits. 	Low	Local
	Phase 3 (1868-1900) <ul style="list-style-type: none"> evidence of original layout and landscaping of original park stormwater and other drains tram tracks and sleepers. 	Low-moderate	Local (not relics)
	Phase 4 (1901-1906) <ul style="list-style-type: none"> imported fill deposits isolated items of rail infrastructure. 	Moderate	Local (not relics)
	Phase 5 (1907-present) <ul style="list-style-type: none"> evidence of former layout and landscaping of original park stormwater and other drains tram tracks and sleepers. 	Moderate	Local (not relics)
Zone 2 Devonshire Street Cemetery	Phase 1 (1820–1901) <ul style="list-style-type: none"> grave cuts human skeletal remains grave goods and personal items caskets and coffin furniture headstones and grave edging vaults and other memorial structures. 	Low–moderate	State
	Phase 2 (1901–1920) <ul style="list-style-type: none"> sandstone, trachyte or concrete kerbs drains and services (brick, ceramic, metal, plastic) road and path surfaces and bases. 	Low	None
Zone 3 Rail Yards	Phase 1 (1820–c1855) <ul style="list-style-type: none"> post holes delineating fence lines and paddocks garden beds and edging isolated artefacts resulting from loss or discard small single-use rubbish pits. 	Low	Local
	Phase 2 (1850–1870) <ul style="list-style-type: none"> the c1860 sandstone Goods Store structural remains of produce and goods sheds (timber, stone or brick) drains and services (brick, metal, ceramic) rail infrastructure. 	Low–moderate	Local
	Phase 3 (1870–1901) <ul style="list-style-type: none"> structural remains of outbuildings rail infrastructure drains and services (brick, metal, ceramic). 	Low–moderate	Local

5.9 Endnotes

- ¹ Rappaport Pty Ltd and NSW Government Architects, Central Station Conservation Management Plan, report prepared for NSW Transcorp Rail Corporation, June 2013, p 114.
- ² Rappaport Pty Ltd and NSW Government Architects, Central Station Conservation Management Plan, Appendix 2.0—Precinct 2 Prince Alfred Siding, report prepared for NSW Transcorp Rail Corporation, June 2013, p 3.
- ³ Rappaport Pty Ltd and NSW Government Architects, Central Station Conservation Management Plan, Appendix 5.0—Precinct 5 Central Electric, report prepared for NSW Transcorp Rail Corporation, June 2013, p 4.
- ⁴ Pers comm, 'Feeder 755x – Heritage', Jade Roughan (Environment and Planning Manager, Transport for NSW), to Abi Cryerhall (Principal, GML), on 6 December 2018.
- ⁵ Artefact Heritage, Sydney Metro City and Southwest—Chatswood to Sydenham—Non-Aboriginal Heritage Impact Assessment, report prepared for Jacobs/Arcadis/RPS, May 2016, p 220.
- ⁶ Pers comm, 'Feeder 755x – Heritage', Jade Roughan (Environment and Planning Manager, Transport for NSW), to Abi Cryerhall (Principal, GML), on 6 December 2018.
- ⁷ Godden Mackay Logan, CBD and South East Light Rail Environmental Impact Statement—Heritage Impact Assessment, report prepared for Parsons Brinckerhoff on behalf of Transport for NSW, November 2013, p 206.
- ⁸ Godden Mackay Logan, CBD and South East Light Rail Environmental Impact Statement—Heritage Impact Assessment, report prepared for Parsons Brinckerhoff on behalf of Transport for NSW, November 2013, p 206.
- ⁹ Godden Mackay Logan, CBD and South East Light Rail Environmental Impact Statement—Heritage Impact Assessment, report prepared for Parsons Brinckerhoff on behalf of Transport for NSW, November 2013, p 206.
- ¹⁰ Godden Mackay Logan, CBD and South East Light Rail Environmental Impact Statement—Heritage Impact Assessment, report prepared for Parsons Brinckerhoff on behalf of Transport for NSW, November 2013, p 206.

6.0 Proposed works

6.1 Description of works

The new feeder route would be constructed between the Chalmers Street and Surry Hills substations. It would involve a combination of trenching, underboring, construction of civil pits and installation of new galvanised steel trough (GST).

Cabling would be housed in GST within Central Station. The GST would be both supported on free-standing posts and attached to the inside of the station boundary wall. Two new civil pits would be constructed either side of the Chalmers Street entrance retaining wall. The feeder would exit the rail corridor through a shaft below the Chalmers Street retaining wall. The cable route would continue underground for the rest of the route. It would include underboring to cross below Eddy Avenue and Elizabeth Street.

The following description of works was provided by Transport for NSW on 20 December 2018 (Feeder 7U5 – Full Works Methodology Rev 5.0). Amendments to the works methodology were received on 27 February 2019 and have been incorporated into the below description.



Figure 6.1 Map showing the above and below ground components of the proposed feeder. (Source: Google Maps with GML overlay)

6.1.1 Main works

The main stage of works involves site set-up, construction of the GST and trenching for CSR, construction of the new civil pits either side of the Chalmers Street entrance retaining wall, underboring below the Chalmers Street entrance retaining wall and Eddy Avenue, and trenching of the remainder of the route to the Surry Hills substation.

Table 6.1 Description of main works

Description of works
<ul style="list-style-type: none"> Site compound to be established adjacent to the Prince Alfred Substation. Vehicle access to the site would be via existing access points on Chalmers Street. Additional site compound to be established adjacent to the Chalmers Street Substation. Vehicle access would be via a gate south of the Prince Alfred Sidings carpark area. Laydown area to be established south of the Prince Alfred substation at the Prince Alfred siding carpark (adjacent to the Prince Alfred Park basketball courts), within the Central Station SHR boundary, with necessary machines, temporary fencing, materials and services for staff. Potential modifications to the existing site office within the Prince Alfred Substation (if no other site area is available), involving fixing whiteboards, breathalyser and sign-on machines to an internal wall, addition of shelving, installation of a sink unit with amendments to plumbing, and installation of a projector unit and screen. These modifications would involve screws and plugs into the existing brickwork. A 50mm hole through the wall would enable internet and power cables as needed. Works site to be established in Chalmers Street entrance park on corner of Elizabeth Street and Eddy Avenue within Central Station SHR curtilage with necessary equipment, fencing, materials and services for staff. Works site to be established on Elizabeth Street adjacent to the Elizabeth Street viaduct with necessary machines, temporary fencing, materials and services for staff. Tree trimming may be required at the corner of Elizabeth Street and Eddy Avenue to enable access for equipment. Possible removal of trees to be determined pending review of site conditions and access requirements. Tree trimming may be required at the Chalmers Street entrance to Central Station due to the location of the proposed route and pit.
<ul style="list-style-type: none"> Installation of CSR opposite Prince Alfred substation within rail corridor. Installation of GST along the southern boundary of the rail corridor. The GST is to be attached using a combination of brackets to existing structures, amending existing GST brackets and new GST posts. Brackets and posts would be installed at a spacing of between 1 and 2 metres. Where posts are used, these would be installed at a maximum depth of 1.5 metres into an excavated hole of maximum 0.3 x 0.3 metres. Refer Figure 6.3 and 6.5. Installation of civil pit at the Chalmers Street entrance sandstone retaining wall on the rail corridor side and relocation of communication cables.
<ul style="list-style-type: none"> Construction of the civil pit at the Chalmers Street entrance sandstone retaining wall on the rail corridor side (refer Figure. 6.7). Service searching would be completed using GPR radar, followed by NDD potholing to identify service locations. Services would be relocated to a location outside of the proposed excavation. A maximum 4 metre x 4 metre temporary trench box would be used for excavation. The concrete shaft units would be lowered into the pit. Following this, the area around the pit would be backfilled and the temporary trench box removed. This would be followed by the excavation of a pit on the outside of the sandstone retaining wall to allow a bore machine access to the wall footing. Service searching would be completed using GPR radar, followed by NDD potholing to identify service locations. Services would be redirected to a location outside of the core holes. Maximum pit dimensions would be 5 metres wide x 5 metres long x 4 metres deep. The bore machine would bore between the excavated pit and the caisson shaft. Boring would occur through the sandstone retaining wall foundations at a minimum 0.5 metre depth. There would be six bores through the wall in total, ranging up to 0.2 metres in diameter. A steel core drill unit would be used to core through the wall. The steel core drill casing would be left within the bore holes to support the wall below ground. Possible removal of existing European Olive trees, Oriental Plane tree and Silver Date Palm within the Chalmers Street entrance park to allow machine access. This is subject to the final CSR route and pit design in response to site conditions and existing services. Possible removal of heritage trees at the north side of Eddy Avenue, to be determined during works.

Description of works

- Potholing works along roads within the study area outside the rail corridor to search for known and unknown services, and to prove that the route is viable. Approximate maximum dimensions of the potholes are 0.2 metres wide x 2-3 metres long x 3 metres deep. Potholing would involve saw cutting and/or breaking, NDD, then reinstatement. In congested locations with multiple services, larger potholing openings will be required. Potholing is within the proposed feeder route.

- Installation of local CSR to the pits at the Chalmers Street entrance sandstone retaining wall. Access for associated machinery including excavator, crane, sucker truck/hydruma would be required.
- Installation of cables along a second section of rail corridor towards the Chalmers Street substation. This section is proposed to be constructed using a combination of CSR and GST, fitted using either new free-standing posts or brackets. Trenches for posts would be 0.3 metres x 0.2 metres by 1.5 metres deep if required.

- CSR installation from Chalmers Street entrance garden to Elizabeth Street/Albion Street intersection where one of three options would be undertaken:
 - Option 1 – Underbore from civil pits just under Eddy Avenue and then trenching along the footpath to the Jointing Pit (3m deep). Greater depth may be required dependent on detailed design and clashes with existing services.
 - Option 2 – Start and continue underboring from civil pits to Elizabeth Street/Albion Street (3 metres deep).
 - Option 3 – Underbore not feasible and traditional trenching required. Typical trench is up to 1.2 metres wide and up to 3 metres deep.
- Trenching to occur from the Chalmers Street entrance sandstone retaining wall to the corner of Elizabeth and Albion streets. This would include some interface with the ongoing light rail construction and would depend on services and tunnels.
- Between the concrete pit in the Chalmers Street entrance garden and the southern corner of Eddy Avenue and Elizabeth Street, an excavator would slot trench, and install conduits.
- Up to 2 geotechnical boreholes would be required on each side of Eddy Ave to confirm ground conditions. These bores would be up to 9 metres deep x 0.3 metres wide.
- To underbore Eddy Avenue, a pit would be excavated to accommodate the underbore machine to underbore the conduit route beneath the tracks on Eddy Avenue, install conduits and pick them up in a receiving pit on the northern corner of Eddy Avenue and Elizabeth Street. The launch and receive pits would be maximum 6 metres x 5 metres x 5 metres. The underbore below Eddy Avenue would be maximum 0.75 metres in diameter. Once completed, the cabling would be linked to traditional CSR trenches on either side of Eddy Avenue.
- An excavator will be used to trench and connect the conduits into the pit across the road from the park.
- Reinstatement of the ground surrounding the pits.
- Trenching is to be typically 0.7 metres wide at a depth of up to 1.5 metres. NB: potential for trench to be increased in width to accommodate further spare capacity for TfNSW critical projects.

- Installation of GST along rail corridor from caisson shaft within Central Station, southwest towards substation. Some sections will utilise existing structures to support the GST and some sections will require additional footings with dimensions 0.3 metres x 0.3 metres by 1.5 metres deep. Chemical anchors are proposed to be used where fixing directly to the masonry is required.

- Remainder of CSR to be installed from Elizabeth Street to the Surry Hills substation.
- Trenching is to be typically 0.7 metres wide at a depth of 1.5 metres. Machinery required includes excavator, sucker truck, bogie, crew truck, rollers and profiler.

- Feeder cables to be pulled through the GST within the rail corridor from the Chalmers Street substation and from the civil pits through the CSR along Elizabeth Street.
- Machinery required includes winch truck, cable drum truck, rollers and potentially a crane. Some road closures would be necessary.

- Feeder cables to be pulled through the CSR route from Albion Street to Surry Hills substation.
- Machinery required includes winch truck, cable drum truck, rollers and potentially a crane. Some road closures would be necessary.

- Feeder to be commissioned.

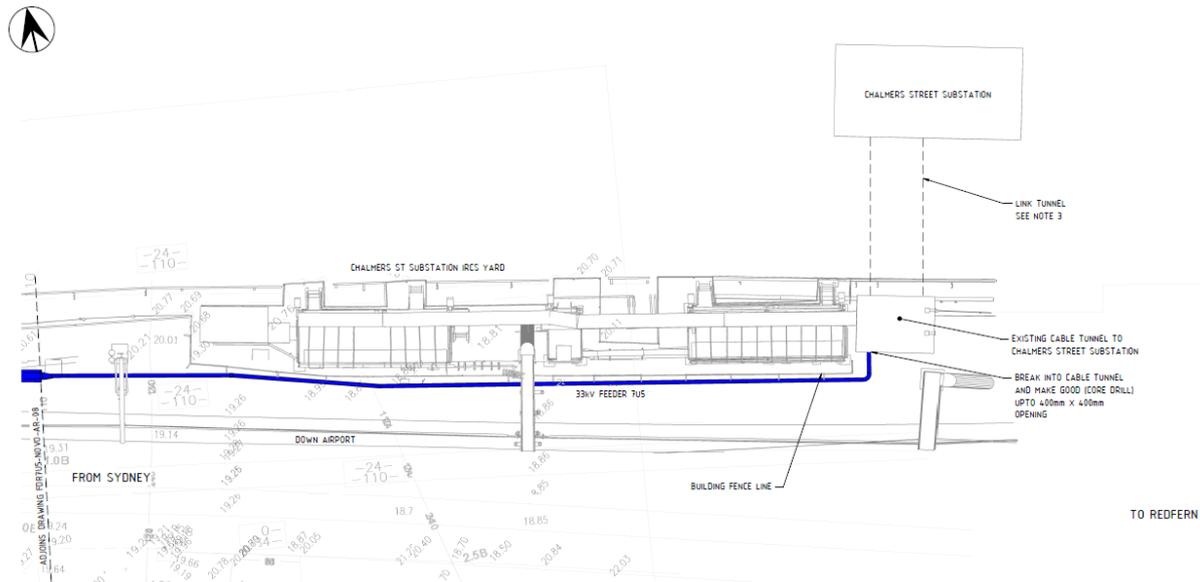


Figure 6.2 Proposed GST installation (blue) at the southern end of the study area. The cabling will be fed from the Chalmers Street Substation through an existing cable tunnel then connected to the GST. The GST will be fixed using a combination of free-standing posts and brackets attached to existing structures/existing GST. (Source: Novo Rail, 2019)

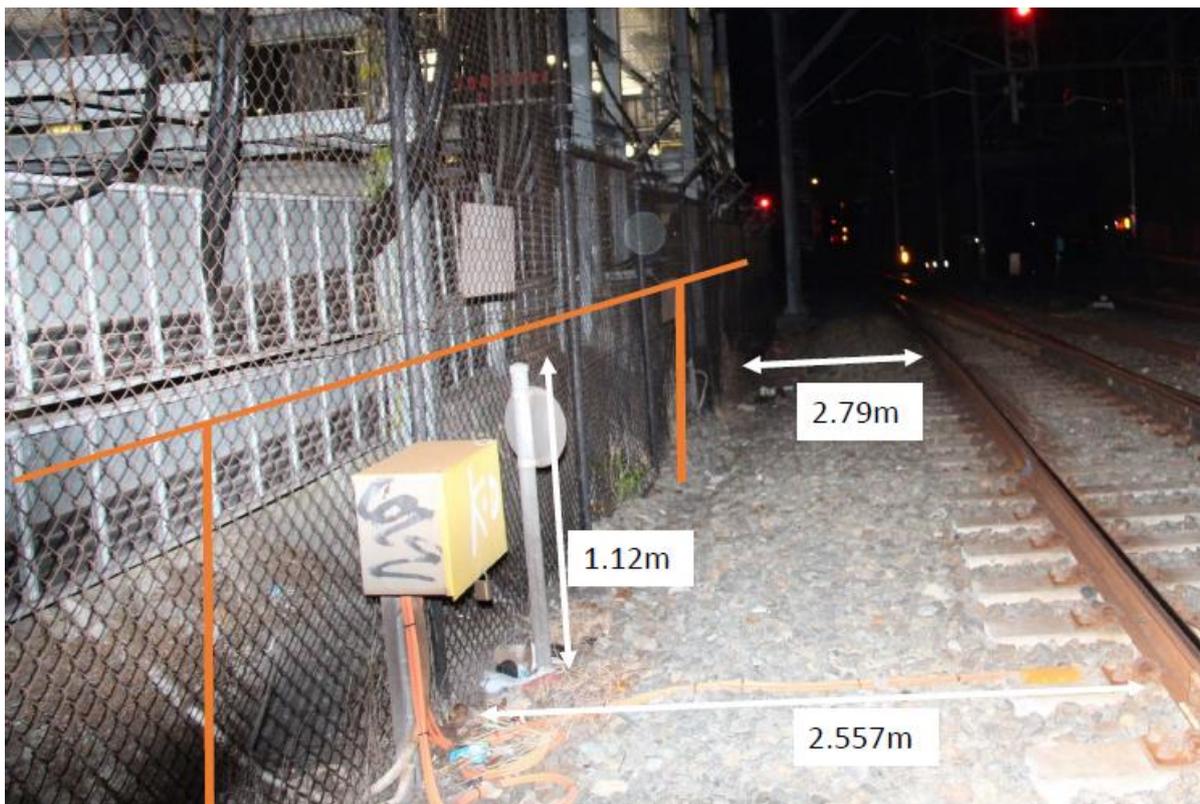


Figure 6.3 Mark-up indicating the GST location detailed in Figure 6.3. GST would be attached using a combination of posts and brackets. (Source: Transport for NSW)

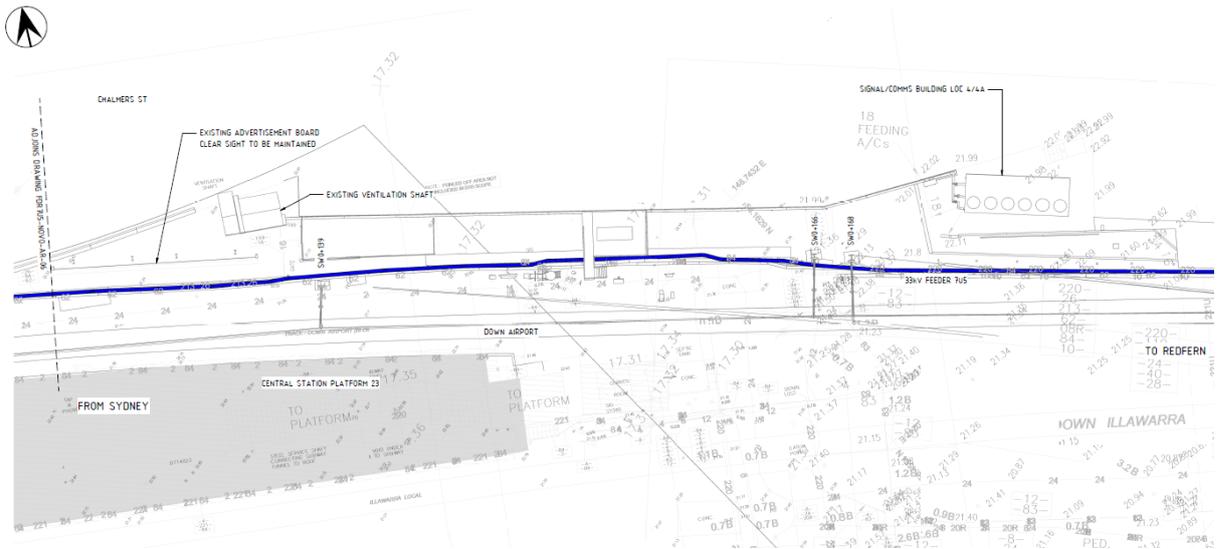


Figure 6.4 Proposed GST installation (blue) at the southern end of the study area opposite Platform 23. The GST will be fixed using a combination of free-standing posts and brackets attached to existing structures/existing GST. (Source: Novo Rail, 2019)



GST to be either a new/extended bracket above/side of existing
 Note GST to go under signal access platform/stairs

Figure 6.5 Mark-up indicating the GST location detailed in Figure 6.5. The new GST would be installed above existing GST structures. GST would be attached using a combination of posts and brackets. (Source: Transport for NSW)

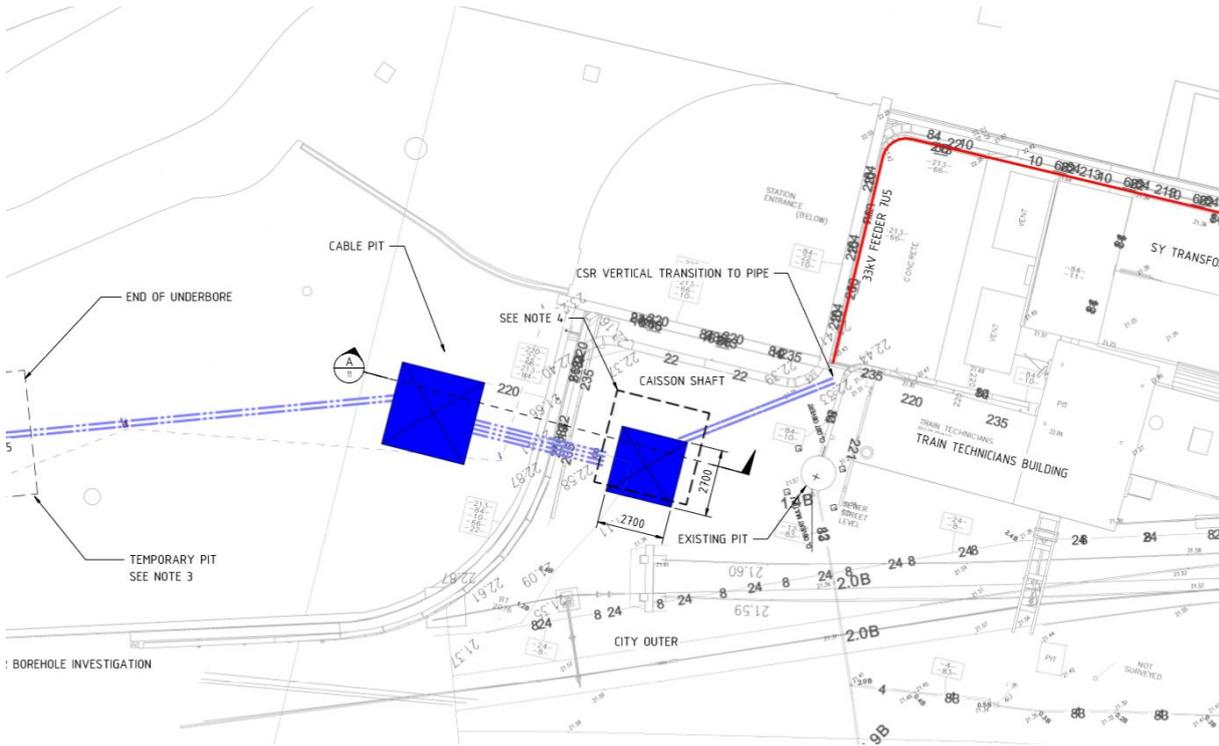


Figure 6.6 Proposed civil pit location and GST installation at the heritage sandstone retaining wall at Chalmers Street. The route in this area will be a combination of GST and CSR. The GST will be fixed using a combination of free-standing posts and brackets attached to existing structures/existing GST. (Source: Novo Rail, 2019)



Figure 6.7 Mark-up indicating GST location opposite platform 23, showing where it would be fixed to the inside of the sandstone retaining wall and brick boundary wall along Chalmers Street. (Source: Transport for NSW)

7.0 Impact assessment

7.1 Introduction

The proposed feeder upgrade works are located within and adjacent to several heritage listed items and areas of historical archaeological potential. Proposed works are within the Central Station SHR curtilage, the Belmore Park Sydney LEP listing and transect two locally listed HCAs. There are a group of significant trees and several locally listed buildings adjacent to the proposed feeder route.

The following section presents the heritage impact assessment analysis. It considers the proposal against the Central Station CMP policies, assesses the visual, fabric and archaeological impact of the early and main works activities, and provides a summary of heritage impacts for each affected item.

Proposed works within the Central Station SHR curtilage impact elements within the Chalmers Street entrance and garden. Human remains may also be present within the works area. Works within the SHR curtilage would require mitigation and approval under the Heritage Act. Works adjacent to the railway viaduct and within the Belmore Park local listing would have potential impacts on the locally significant trees lining Elizabeth Street. Works within the listed heritage conservation areas would have minor temporary impacts on the streetscape.

7.2 Central Station CMP policies

The following table considers the proposed works against the relevant recommendations in the Central Station CMP for ongoing change within the property.

Table 7.1 Assessment of the proposed works against relevant policies in the Central Station CMP

Policy	Compliance of the proposal
Policy 2—Ongoing use as a major transport complex	<p>The proposal ensures the continued and improved operation of Central Station as a major transport hub. The upgrade of the 33kv Feeder 7U5 would facilitate capacity for the New Intercity Fleet, Sydney Growth Train fleet, and the future Sydney Metro integration.</p> <p>The integration of the new high voltage cables contributes to the ongoing use of the station which is an essential part of its heritage value.</p>
Policy 3—Managing change	<p>The proposal complies with the strategies recommended for managing change to the station. The proposal is accompanied by this SoHI and has been assessed in terms of its impact on the heritage values of the property in accordance with the Central Station CMP and the Burra Charter.</p>

Policy	Compliance of the proposal
Policy 5—Setting, views and landscape	<p>The proposal respects the significance of the urban setting of Central Station and would not impact on its character.</p> <p>The proposal does not interfere with significant views or vistas to or from Central Station. The majority of the proposed works would be confined to below ground level. Areas of GST above ground would be within the boundary wall/fence. It would not be visible from outside the SHR boundary and would not affect views of the property. The proposed GST would be visible from Platform 23 looking southeast towards the Chalmers Street boundary. However, it would be installed beside existing rail and electrical infrastructure and would result in no noticeable visual impact (Figure 4.2 and 4.3).</p> <p>The proposal does not affect relationships between significant landscape elements of Central Station. Works to the Chalmers Street entrance retaining wall are to the footing and would not be visible. Some of the trees proposed for trimming and potentially removal (3 European Olive trees and 1 Oriental Plane tree) are recent plantings and are not part of the original planting scheme. However, they contribute to the landscape and should be retained if possible.</p> <p>It is possible that one of the Silver Date Palms in this area would need to be removed to allow excavation of the underbore receiving pit. These palms are early plantings and appear on aerial photographs as early as 1943. Impacts to this tree should be avoided where possible.</p> <p>Adverse impacts could be mitigated by reinstatement and restoration of the landscape on completion of works.</p>
Policy 6—Archaeological management	<p>The proposal satisfies this policy by seeking archaeological advice relating to the proposed excavation work. Refer to Section 5.0 of this report for the historical archaeological assessment and Section 8.0 for recommended archaeological mitigation measures.</p>
Policy 7—Heritage conservation and major works	<p>The above-ground GST installation would be located along the inside of the Chalmers Street boundary on posts and attached to the inside of the brick boundary wall. This is an area that passes alongside the easternmost above-ground platform (high significance) and the Chalmers Street entrance and environs (moderate significance). The brick wall murals facing Chalmers Street are identified as being of significance; the GST would be attached to the other side of the wall and would not affect the murals. There is already a significant amount of GST throughout all areas of the route within the rail corridor.</p> <p>The office fitout within the Prince Alfred Substation is considered to be acceptable and enables continued use of the building for railways-related purposes.</p> <p>The Chalmers Street entrance and garden (high significance) are part of the original 1920s design scheme. The methodology includes boring through the retaining wall footings. Due to the localised below ground nature of the works, there will be minor fabric impact and a neutral visual impact and this is considered to be an acceptable approach.</p> <p>Adverse impacts to above-ground landscape elements (trees, grass) of the Chalmers Street entrance and garden could be mitigated by careful removal and restoration following works.</p>

7.3 Assessment of Heritage Impacts

Table 7.2 provide a discussion of potential impacts of the proposed works to the heritage items and potential archaeology. It also provides mitigation measures to avoid or reduce those impacts and inform detailed design. The heritage impact ratings are summarised in the final column of the tables.

Table 7.2 Discussion of potential impacts of the main works design and methodology

Proposed task	Discussion of potential impacts	Heritage impact
Office establishment at Prince Alfred Substation	<p>Built heritage</p> <ul style="list-style-type: none"> Installation of these services will involve screws and plugs into the internal walls of the existing site office within the substation. Access for the cabling will involve a 50-millimetre core hole through an external wall. 	<p>Neutral</p> <p>Minor adverse if coring through an external brick façade</p>

Proposed task	Discussion of potential impacts	Heritage impact
	<ul style="list-style-type: none"> • The interior elements of the substation are graded as having little significance in the Central Station CMP. The upper level office spaces have been heavily modified and use of the building for staff facilities is suggested in the CMP as a suitable use. The physical impact of installing these services is considered to be acceptable, as it enables continued use of the building for railway-related purposes and staff facilities. The proposed internal changes are reversible and do not negatively impact the significance of the substation building. • Overall, the modification of the existing site office to include these services and amenities is considered to have an acceptable impact. <p>Mitigation:</p> <ul style="list-style-type: none"> • The CMP advises that new services are to be installed in a manner that causes the least damage to building fabric and should be reversible if possible. It is recommended to seek an alternative method for installing the required cabling, for example connecting the cables through an existing access point, through a door frame or through an internal wall. 	
<p>Compound establishment adjacent to the Prince Alfred substation</p> <p>Compound establishment at the Prince Alfred siding carpark</p>	<p>Built heritage</p> <ul style="list-style-type: none"> • Use of the space between the Prince Alfred Substation and the adjacent building to the south is considered to have an acceptable impact. • Use of the space at the southern end of Prince Alfred siding carpark including installation of portaloos, and creation and use as an access point, equipment and materials laydown area, is not anticipated to have any heritage impact on the adjacent former Engineers and Draughtsman offices or on Central Station. <p>Mitigation</p> <ul style="list-style-type: none"> • Remediation of the areas following completion of the works would mitigate any temporary visual impacts. 	Neutral
<p>Site establishment adjacent to the Chalmers Substation</p>	<p>Built heritage</p> <ul style="list-style-type: none"> • Use of the space adjacent to the Chalmers Substation as a temporary laydown area is not anticipated to have any heritage impact on Central Station. • Use of the road and carpark area south of the Chalmers Substation for vehicle access is not anticipated to have any heritage impact on the remnant workshops at the southern end of the Prince Alfred Sidings Precinct. 	Neutral
<p>Site establishment at Elizabeth Street within Belmore Park listing boundary</p>	<p>Built heritage</p> <ul style="list-style-type: none"> • The laydown area at Elizabeth Street adjacent to the viaduct would involve temporary fencing, machinery, equipment, storage and provision of services for staff. This would have a temporary visual impact. However, it is important to note that the Elizabeth Street viaduct separates the works area from the park itself. <p>Mitigation</p> <ul style="list-style-type: none"> • The temporary visual impacts on Belmore Park as an item would be mitigated with reinstatement of the landscape following completion of the works. Belmore Park itself would be unaffected. • The garden and landscape elements should be restored following completion of works. 	Neutral

Proposed task	Discussion of potential impacts	Heritage impact
<p>Site establishment at the Chalmers Street entrance within garden</p>	<p>Built heritage</p> <ul style="list-style-type: none"> • Trimming or tree removal would impact landscape elements within the Chalmers Street entrance—an element of high significance within Central Station. This would have an adverse impact on the setting of the Chalmers Street entrance. <ul style="list-style-type: none"> - The European Olive trees and Oriental Plane tree potentially requiring trimming or removal are not original plantings and are not identified as significant plantings in the CMP. However, they do contribute to the landscape character of the garden which should be reinstated following completion of work. - The Silver Date Palm potentially requiring removal is not identified as a significant planting in the CMP, but dates from at least the early 1940s and was likely part of an early landscaping scheme for the garden. Removal of the palm tree would be an adverse impact. • Machinery movement within the park could impact the grassed area and other plantings which contribute to the park’s significance. Avoiding or reducing these impacts is recommended. <p>Mitigation:</p> <ul style="list-style-type: none"> • Physical barriers must be used to protect the dwarf wall from potential damage as machinery is brought into and moves around the site during works. • Advice from an arborist should be sought and any trimming should be minimised. Removal should be avoided. • Machinery movement within the grassed area should be minimised. Track mats and other protective measures should be used. • The garden and landscape elements should be restored following completion of works. • If removal of the Silver Date Palm is unavoidable, a replacement should be replanted following completion of the works and remediation of the garden. • Sydney Trains should be consulted regarding the reinstatement of the Chalmers Street entrance park on completion of works. The reinstatement should be undertaken in accordance with their requirements and conditions of the Section 60 approval. 	<p>Moderate adverse</p>
<p>Installation of CSR opposite Prince Alfred Substation within rail corridor</p>	<p>Archaeology</p> <ul style="list-style-type: none"> • The proposed CSR trenching location is within a wider area of archaeological potential associated with the c1870s Goods Shed. • However, the trenching is within a localised area likely to have been previously impacted to construct the access road and install other services. <p>Mitigation:</p> <ul style="list-style-type: none"> • In accordance with the CMP policy for this area, excavation in this location should be monitored by an archaeologist to confirm the assessment. • Archaeological remains, if present, should be investigated and recorded in accordance with the archaeological work method statement (section 8) and conditions of the Section 60 approval prior to removal. 	<p>Potential minor adverse</p>

Proposed task	Discussion of potential impacts	Heritage impact
Installation of GST along corridor	<p>Built heritage</p> <ul style="list-style-type: none"> • The installation of GST within the rail corridor would not have a notable visual impact. The GST would be in locations with existing rail infrastructure, including pre-existing GST routes. • The GST would be the inside of the Chalmers Street brick boundary wall. The murals on the external side of this wall are noted as having moderate significance. The location of the GST inside the boundary would have no impact on the murals; however, care should be taken not to damage the masonry when fixing the GST in place. • A section of cabling would run along the inside of the rail corridor towards the shaft within the Central Station SHR boundary adjacent to the Chalmers Street entrance. This would be either GST attached to the Chalmers Street boundary wall, GST fixed to existing buildings or new free-standing posts, or CSR. Another small section of cabling would be attached to the rear of the Chalmers Street sandstone entrance, which is identified as being of high significance. • Attaching the brackets via existing mortar joints was investigated, however the GST and bracket was found to be too heavy to be supported in this way. In addition, a 500-millimetre clearance must be maintained from the existing GST attached to the wall, which is not HV cabling. Transport for NSW is required to ensure that the new GST does not protrude above the top of the wall for visual and safety reasons. The space available for the new GST, accounting for the 500-millimetre clearance and the top of the wall, does not align with the existing mortar joints. This means that the brackets would need to be drilled into the brick and/or sandstone itself if the option of using brackets is chosen. • If the option of using brackets is chosen, these would be fixed into the masonry using chemical anchors. It is noted that this would be a more permanent impact, however the penetrations would be small and similar to existing penetrations in the sandstone retaining wall and the rail corridor boundary wall. Use of chemical anchors where necessary is considered to be an acceptable localised impact. <p>Mitigation:</p> <ul style="list-style-type: none"> • Care should be taken not to inadvertently damage the mural on the east side of the boundary wall. • Attach brackets to existing non-heritage structures along the rail corridor where possible. • The CMP recommends that all new service installations should be easily identifiable as new work, and where possible should be reversible and dated. The proposed GST installation within the rail corridor should follow this recommendation. 	Minor adverse
Installation of caisson shaft south of the Chalmers Street entrance retaining wall (within rail corridor)	<p>Built heritage</p> <ul style="list-style-type: none"> • No direct impact on heritage fabric is anticipated. Some disturbance of the setting of the Chalmers Street entrance is expected but would be remediated following completion of the project works. <p>Mitigation</p> <ul style="list-style-type: none"> • Use smaller capacity rock breakers during excavation to minimise potential for indirect impact to the heritage wall from vibration. • Vibration monitoring should be undertaken during the works. This should be set to appropriate allowances for sandstone heritage structures. 	Neutral

Proposed task	Discussion of potential impacts	Heritage impact
	<p>Archaeology</p> <ul style="list-style-type: none"> This area has been subject to extensive filling. Excavation for the shaft would be up to 6 metres in depth to match the depth of the pit on the north side of the retaining wall. Though the wider area has been subject to extensive impacts from the construction of underground rail lines, it is unclear if this area was also impacted by the cut prior to tunnelling. There is some potential for archaeological remains of the cemetery and human skeletal remains at depth. It is noted that the locations for potential cemetery archaeological/human remains is hard to predict given the extensive disturbances and ground impacts during the twentieth century. NDD is required for service searches and ensure excavation for the civil pit is safe. The pit will be mechanically excavated to the required depth using a trench box. It is noted that the excavation and installation of this civil pit is constrained as it is within the rail corridor, adjacent to the heritage retaining wall and several other infrastructure items. The installation of this civil pit has potential to impact archaeological remains associated with the cemetery and human skeletal remains. This would be a localised moderate adverse impact. This impact could be mitigated with detailed archaeological investigation and appropriate management in accordance with an Exhumation Policy. <p>Mitigation:</p> <ul style="list-style-type: none"> NDD is required to locate services. However, this should be undertaken with caution and in a controlled manner. Excavation should be undertaken carefully using a small excavator with a flat bucket. The NDD and excavation work should be monitored by an archaeologist with experience identifying human remains. If archaeological remains are suspected or identified, works must cease in the affected area to allow for assessment and appropriate mitigation in accordance with the method statement in Section 8 and the Section 60 approval. If human remains are identified, the NSW Police and the Heritage Division must be notified. Redesign to avoid impact should be considered. Impacts, such as removal, can only be undertaken in accordance with an endorsed Exhumation Policy and any further heritage approvals required. 	<p>Potential localised moderate adverse</p> <p>(Notification to NSW Coroner, NSW Police and Heritage Division is required in the event of finding human skeletal remains.</p> <p>Approvals and Exhumation Policy required to remove human skeletal remains.)</p>
<p>Installation of cable pit north of Chalmers Street entrance retaining wall and within garden</p>	<p>Built heritage</p> <ul style="list-style-type: none"> No direct impact on heritage fabric is anticipated. <p>Mitigation</p> <ul style="list-style-type: none"> Use smaller capacity rock breakers during excavation to minimise potential for indirect impact to the heritage wall from vibration. Vibration monitoring should be undertaken during the works. This should be set to appropriate allowances for sandstone heritage structures. 	<p>Neutral</p>

Proposed task	Discussion of potential impacts	Heritage impact
	<p>Archaeology</p> <ul style="list-style-type: none"> The Chalmers Street entrance garden has potential for archaeological remains associated with the Devonshire Cemetery. Potential archaeology would be located from roughly 1.2 metres below current ground level. NDD would be used to locate services within the civil pit location. This is required to allow for safe mechanical excavation. Excavation for the civil pit would be approximately 5 metres by 5 metres and 4 metres in depth. This would be undertaken with a small excavator. There is some potential to encounter archaeological remains of the former cemetery and human skeletal remains during this work. It is noted that the locations for potential cemetery archaeology/human remains is hard to predict given the extensive disturbances and ground impacts within the wider area during the twentieth century. The installation of this civil pit has potential to impact archaeological remains associated with the cemetery and human skeletal remains. This would be a localised moderate adverse impact. This impact could be mitigated with detailed archaeological investigation and appropriate management in accordance with an Exhumation Policy. <p>Mitigation:</p> <ul style="list-style-type: none"> NDD work should be undertaken with caution. A combination of NDD and hand excavation should be used to locate services prior to the main pit excavation. Hand excavation should be used where possible for depths below 1 metre and where it is unclear if the investigation area is within fill. Excavation should be undertaken carefully using a small excavator with a flat bucket. The NDD and excavation work should be monitored by an archaeologist with experience identifying human remains. If archaeological remains are suspected or identified, works must cease in the affected area to allow for assessment and appropriate mitigation in accordance with the method statement in Section 8 and the Section 60 approval. If human remains are identified, the NSW Police and the Heritage Division must be notified. Redesign to avoid impact should be considered. Impacts, such as removal, can only be undertaken in accordance with an endorsed Exhumation Policy and any further heritage approvals required. 	<p>Potential localised moderate adverse</p> <p>(Notification to NSW Coroner, NSW Police and Heritage Division is required in the event of finding human skeletal remains.</p> <p>Approvals and Exhumation Policy required to remove human remains.)</p>
<p>Boring through Chalmers Street entrance retaining wall (heritage wall)</p>	<ul style="list-style-type: none"> Boring through the footings of the sandstone retaining wall at the Chalmers Street entrance is an adverse impact. However, this cannot be avoided as the preliminary investigations found that the footings of the wall were too deep to run the cable below. The original methodology proposed boring a single hole through the foundations to house all cabling. The revised methodology is to bore 6 smaller holes through the footing at a shallower depth. This would result in a localised moderate adverse impact to heritage fabric. The penetrations would not be visible as they are through the footing. The impact of the feeder on the wall elements would not be able to be perceived due to its location below the ground. The overall significance of Central Station would not be impacted. <p>Mitigation:</p> <ul style="list-style-type: none"> Undertake structural checks plus potential additional monitoring, and temporary protection of the heritage wall so that no unintentional damage is caused. Vibration monitoring should be undertaken during the works. This should be set to appropriate allowances for sandstone heritage structures. Reinstate the original landscape of the park to visually cover the impact to the wall. 	<p>Localised moderate adverse</p>

Proposed task	Discussion of potential impacts	Heritage impact
<p>CSR, conduits and underboring from cable pit across the entrance garden, Eddy Avenue, along Elizabeth Street to Albion Street junction</p>	<p>Built heritage</p> <ul style="list-style-type: none"> • It is not anticipated that boring, trenching and excavation in this section would impact any significant heritage items. • The excavation would not affect the Elizabeth Street viaduct. • The excavation would take place within the listing boundary of Belmore Park, and would result in a temporary visual disturbance during the works. This would be a neutral impact on the park itself due to the separation of the works location by Elizabeth Street viaduct. • Significant trees along Elizabeth Street may be impacted and require trimming/removal to facilitate trenching or underbore junction pits. This is yet to be determined and will be informed by site conditions. Impacts such as removal of significant trees would be a major adverse impact and should be avoided. <p>Mitigation:</p> <ul style="list-style-type: none"> • The proposed path of trenching would take the route that would have the least impact on the significant trees. Removal of trees would be avoided where possible. • Advice from an arborist regarding acceptable impacts to root systems and canopies should be sought. NDD may be preferable for excavation around root systems. • Consultation with the City of Sydney should be undertaken if impacts to the significant trees are proposed. • The temporary visual impacts on Belmore Park as an item would be mitigated with reinstatement of the landscape following completion of the works. Belmore Park itself would be unaffected. • Remediation of the landscape would resolve any minor impact on views around Eddy Avenue/Elizabeth Street. 	<p>Neutral</p> <p>Major adverse if removing significant trees</p>

Proposed task	Discussion of potential impacts	Heritage impact
	<p>Archaeology</p> <ul style="list-style-type: none"> • The Chalmers Street entrance garden has potential for archaeological remains associated with the Devonshire Street cemetery. Potential archaeology would be located roughly 1.2 metres or below. • Geotechnical boreholes adjacent to the footpath are required to understand ground conditions and inform the underbore design. These would be up to 300 millimetres in diameter and would be drilled through an area with some potential for archaeological remains associated with the Devonshire Street cemetery. The locations of any remains are difficult to predict and given the small diameter it is unlikely to impact archaeology. The borehole logs would provide information regarding the soil profile and further inform the archaeological potential of the garden area. • NDD investigation is required to identify services in the underbore location, the launch/receiving pits and any service relocations needed. Excavation for the receiving pit and service relocations will be undertaken by a small mechanical excavator. This has potential to encounter and impact archaeological remains of the cemetery and human skeletal remains. • The underbore will start at approximately 1 metre in depth at the cable pit and will be up to 9 metres in depth below Eddy Avenue. The underbore may be within the archaeological potential zone within the entrance garden area. However, excavation for the cable pit and receiving pit will have already been completed prior to the underboring. This will provide an understanding of the archaeological potential at depth between the two excavation areas. Given the short distance between the two pits and the increasing depth of the underbore, it is unlikely it would impact archaeological remains. • Potholing, trenching and launch/receiving pit excavations adjacent to the viaduct, along Elizabeth Street and Albion Street has potential to encounter and impact archaeological remains of former tram tracks, road/path surfaces and drains. <p>Mitigation:</p> <ul style="list-style-type: none"> • The geotechnical boreholes should be undertaken with caution and monitored by an archaeologist. The borehole logs should be inspected for evidence of intact soil deposits (sands) and any evidence of human skeletal remains. The boring must cease if human skeletal remains are suspected. • NDD work within the entrance garden should be undertaken with caution. A combination of NDD and hand excavation should be used to locate services prior to the main pit excavation. Hand excavation should be used where possible for depths below 1 metre and where it is unclear if the investigation area is within fill. • Excavation should be undertaken carefully using a small excavator with a flat bucket. • The NDD and excavation work should be monitored by an archaeologist with experience identifying human remains. If archaeological remains are suspected or identified, works must cease in the affected area to allow for assessment and appropriate mitigation in accordance with the method statement in Section 8 and the Section 60 approval. • If human remains are identified, the NSW Police and the Heritage Division must be notified. Redesign to avoid impact should be considered. Impacts, such as removal, can only be undertaken in accordance with an endorsed Exhumation Policy and any further heritage approvals required. • Excavation adjacent to the viaduct (outsider SHR curtilage) should be monitored. If archaeological remains are suspected or identified, works must cease in the affected area to allow for assessment and appropriate mitigation in accordance with the method statement in Section 8. 	<p>Potential localised moderate adverse</p> <p>(Notification to NSW Coroner, NSW Police and Heritage Division is required in the event of finding human skeletal remains.</p> <p>Approvals and Exhumation Policy required to remove human remains.)</p>

Proposed task	Discussion of potential impacts	Heritage impact
Trenching from Elizabeth Street through Albion Street, Commonwealth Street and Anne Street	<ul style="list-style-type: none"> Proposed works would not result in permanent impact on the heritage significance of adjacent conservation areas as the works would be confined to below ground level. There would be some temporary visual impact during excavation and installation which would result in some localised minor adverse impact on the setting of the conservation area and adjacent heritage items. <p>Mitigation:</p> <ul style="list-style-type: none"> Visual impacts would be resolved with remediation of the road and footpath following conclusion of the work. 	Temporary minor adverse
Installation of CSR under the emergency gate (within SHR curtilage)	<p>Built heritage</p> <ul style="list-style-type: none"> It is not anticipated that this would have any adverse heritage impact on Central Station. 	Neutral
	<p>Archaeology</p> <ul style="list-style-type: none"> The proposed trenching location is within a wider area of archaeological potential associated with the c1870s Goods Shed. However, the trenching is within a localised area likely to have been previously impacted to construct the access road and install other services. <p>Mitigation:</p> <ul style="list-style-type: none"> In accordance with the CMP policy for this area, excavation in this location should be monitored by an archaeologist to confirm the assessment. Archaeological remains, if present, should be investigated and recorded in accordance with the method statement in Section 8 and the Section 60 approval. 	Potential minor adverse

7.4 Summary of impacts

Removal of fabric at the Chalmers Street entrance would be an adverse impact but would not be visible from the public domain as the impact would be localised below ground. Installation of GST would be parallel to existing GST within the rail corridor and would not result in an adverse impact. It is important to note that the proposed upgrades would assist in facilitating the planned New Intercity Fleet and Sydney Metro, which are in line with the Central Station CMP in promoting continued use of Central as major transport hub. Some mitigation may be required surrounding the listed significant trees on Elizabeth Street.

There is potential for the proposed works to impact significant archaeology within the Chalmers Street entrance area. This area is within the footprint of the historic Devonshire Street Cemetery. Additional approval and an Exhumation Policy would be required to remove human remains if encountered within the excavation areas. Overall, the proposed works would not adversely impact the heritage significance of Central Station or heritage items in the vicinity.

Table 7.3 Summary of heritage impacts

Heritage item	Significance/listing	Heritage impact
Central Station	State SHR 01255	Moderate adverse impact on individual significant elements of Central Station. Potential for localised moderate adverse archaeological impact if significant remains of the former goods shed and

Heritage item	Significance/listing	Heritage impact
		rail infrastructure, the cemetery or human skeletal remains are present. Overall neutral impact on the heritage significance of Central Station.
Belmore Park grounds, landscaping and bandstand	Local Sydney LEP (1825)	Neutral impact on Belmore Park. Works are localised to the western side of the Elizabeth Street viaduct and would not be seen from within the park itself. Potential for localised moderate adverse archaeological impact if locally significant remains of historic drains and other former works are present.
Elizabeth Street significant trees	Local City of Sydney Significant Tree Register	Major adverse impact if removal of a listed tree occurs.
Reservoir Street Heritage Conservation Area Albion Estate Heritage Conservation Area	Local Sydney LEP (C66 and C58)	Temporary minor visual impact during works. Neutral impact. Potential for localised moderate adverse archaeological impact if locally significant remains of historic drains and other former works are present.
Former 'Railways Institute' Building	Local Sydney LEP (11472)	Neutral impact.
Former Children's Court Building, Including Interior	Local Sydney LEP (11409)	Neutral impact.
Former 'William Booth Institute' Including Interior	Local Sydney LEP (11408)	Neutral impact.

8.0 Archaeological work method statement

8.1 Introduction

Ground disturbance and excavation is proposed within areas of low to moderate potential for significant historical archaeology. Works within the Chalmers Street entrance park have potential to encounter and impact state significant archaeological remains of the former Devonshire Street Cemetery. Works within the rail corridor have potential to impact locally significant remains of the former c1860 goods store and other rail-related archaeology. There is potential to encounter archaeological remains of former tram tracks, drains and road/path surfaces adjacent to the Elizabeth Street viaduct and within the streets of Surry Hills.

The proposed works are constrained as they are within the rail corridor and city streets, adjacent to the ongoing Sydney Light Rail construction site, and within areas congested with existing services and other infrastructure. The works will include a combination of NDD and mechanical excavation with a flat bucket. Up to two geotechnical boreholes within the Chalmers Street entrance park are also proposed.

A program of archaeological monitoring and recording is proposed to manage and mitigate potential impacts to the archaeological resources within the study area. If encountered archaeological remains of the c1860 goods store, former rail infrastructure, historical drains and tram tracks, kerbing and path or road surfaces will be investigated and recorded prior to impact. Archaeological remains of the former cemetery, including human skeletal remains, if present will be subject to further assessment, redesign considerations, consultation and additional approval.

The archaeological methodology for the feeder route works within the Central Station SHR curtilage and within Surry Hills is outlined in this section. It includes an overview of the archaeological mitigation for construction works, the monitoring and recording methodologies, an unexpected finds protocol and the procedure in the event of encountering human skeletal remains. It also includes archaeological research questions to guide the archaeological recording and analysis, though it is noted the scope of the works and potential for extensive archaeology is limited.

8.2 Archaeological mitigation

The archaeological mitigation during the construction works is outlined in the table below.

Zone	Potential archaeology	Construction works	Methodology
Zone 1 Surry Hills Roadways	<ul style="list-style-type: none"> Low potential for locally significant rubbish pits/artefacts (relics). Low-moderate potential for locally significant historical drains, former tram tracks and road surfaces (not relics). 	<ul style="list-style-type: none"> Potholing, trenching and excavation within footpath and road reserves for the new feeder cable. 	<ul style="list-style-type: none"> Unexpected finds protocol.

Zone	Potential archaeology	Construction works	Methodology
Zone 1 Belmore Park	<ul style="list-style-type: none"> • Low potential for locally significant rubbish pits/artefacts (relics). • Low-moderate potential for locally significant historical drains, former tram tracks and road surfaces (not relics). • Moderate potential for the c1860s open stormwater (not relics) 	<ul style="list-style-type: none"> • Potholing, trenching and excavation within footpath and road reserves for the new feeder cable. 	<ul style="list-style-type: none"> • Monitoring and recording.
Zone 2 Devonshire Street Cemetery	<ul style="list-style-type: none"> • Low-moderate potential for state significant archaeological remains of the former cemetery and human skeletal remains. 	<ul style="list-style-type: none"> • NDD service locations and excavation for the caisson shaft, cable pit and receiving pit. • Geotechnical boreholes. • Excavation for service relocations. • Underboring. 	<ul style="list-style-type: none"> • Monitoring and recording. • Inspect geotechnical borehole logs. • Cease work and notify relevant authorities in the event of finding human skeletal remains. • Redesign to avoid impact where possible. • Further approval and documentation required to impact human skeletal remains.
Zone 3 Rail Yards	<ul style="list-style-type: none"> • Low potential for locally significant rubbish pits/artefacts (relics). • Low-moderate potential for locally significant remains of the 1860s good store and other rail-related archaeology. 	<ul style="list-style-type: none"> • Potholing and trenching for GST fence posts and CSR. 	<ul style="list-style-type: none"> • Monitoring and recording in the location of the former goods store. • Unexpected finds protocol elsewhere.

8.3 Heritage induction for construction personnel

A heritage induction will be provided to construction personnel and contractors. The heritage induction will outline the conditions of the heritage approvals, archaeological potential and procedures. It will also include the unexpected finds protocol and the procedure in the event of encountering human skeletal remains.

8.4 Archaeological team

The archaeological program will be directed by Abi Cryerhall (GML Principal) with the assistance of Emily Bennett (GML Heritage Consultant, Archaeologist) and Susan Whitby (GML Heritage Consultant, Archaeologist).

Abi Cryerhall has over 20 years' experience in archaeology and heritage consultancy. She is also an experienced historical archaeological excavation director. She has worked on a number of historical cemetery sites and archaeological excavations of human remains. Projects in Australia include Old Sydney Burial (Town Hall) and the Parramatta Justice Precinct (identified neonate burials and undertook preliminary excavation). Projects in Ireland and Sicily include Smithfield, Tram Street and Wolfetone Park (post-medieval burials including infant/neonate), High Island (early Christian burials), Kilgobbin

(Neolithic burials) and Montenegro (Roman burial). All these projects were undertaken in collaboration with a physical anthropologist or osteoarchaeologist.

Emily Bennett is an experienced historical archaeologist who has over 8 years' experience. She has work on various archaeological sites in New South Wales, Tasmania and Western Australia. She is also experienced in artefact analysis, Aboriginal cultural heritage assessment, archival recording and heritage consultancy.

Susan Whitby is an experienced archaeologist and physical anthropologist. She has over 20 years' experience archaeological excavation experience, including urban historical archaeological sites. She has worked on repatriation of Aboriginal human remains and both the Australian Museum and the National Museum of Australia. She is a specialist in human remains and has experience in identifying and analysing faunal remains.

8.5 Monitoring

Archaeological monitoring refers to the supervision by an archaeologist of ground disturbance or excavation works undertaken by a vacuum truck, mechanical excavator or construction personnel. It is usually undertaken where there is low or low-moderate potential for archaeology or for localised excavation works within a wider archaeological site. The objective of monitoring is to ensure that archaeological layers, features and deposits are identified and not impacted prior to further archaeological excavation in accordance with the Section 60 approval conditions.

Monitoring will be undertaken in conjunction with the ground disturbance and excavation works. The proposed works include geotechnical boreholes, slot trenching and potholing using NDD, and machine excavation of trenches, pits and underboring.

- Works within the Central Station SHR curtilage—comprising those within Chalmers Street entrance park, and in locations to the south of the retaining wall and in the vicinity of the former goods store—will be monitored.
- Works adjacent to the rail viaduct and within the Belmore Park LEP listing will also be monitored.

Monitoring the ground disturbance activities, including NDD and geotechnical boreholes (and borehole log inspection) within the Chalmers Street entrance area will provide additional information regarding ground conditions. This data will inform our understanding of the previous levels of disturbance and soil profiles. We will refine our assessment and predictions regarding the survival of intact soil deposits associated with the cemetery during the monitoring program. Our methodology may need to be adapted in response to findings and the additional data during the program.

8.5.1 Methodology

The methodology for monitoring in conjunction with the proposed works is outlined below.

- The archaeologist will monitor NDD and excavation works (by a vacuum truck, mechanical excavator or construction personnel) where there is potential to encounter archaeology.
- The archaeologist will supervise geotechnical borehole drilling, NDD works and direct machine excavation work within the Chalmers Street entrance garden.
- If archaeology is identified, works will cease in the affected location to allow for further archaeological investigation, assessment and recording. If 'relics' are identified during monitoring

works adjacent to the Elizabeth Street viaduct (within the Sydney LEP Belmore Park curtilage), notification under Section 146 of the Heritage Act is required (see Section 8.9).

- If human skeletal remains are suspected or encountered, works will cease in the affected area and the procedure outlined in Section 8.6 will be followed. Human skeletal remains will not be impacted or removed until the appropriate approvals are received. Construction work in the affected area will not recommence until the endorsed mitigation strategy is complete.
- Archaeological finds will be recorded on context sheets, drawn to scale and photographed. The recording methodology is outlined in Section 8.7.
- A surveyor will survey archaeological finds and prepare georeferenced drawings.
- Locally significant archaeological remains (not human skeletal remains) will be archaeologically investigated, recorded and removed prior to construction impacts. Further approval may be required to archaeologically salvage and impact 'relics' identified outside the Central Station SHR curtilage.
- Artefacts will be collected by context and bagged for later analysis.
- Samples (soil, building material etc) may also be taken to aid later analysis and answer research questions.

8.6 Discovery of human skeletal remains

Human skeletal remains may be identified during the project. The former Devonshire Street Cemetery was exhumed in 1901 to make way for the construction of Central Station. Light Rail and Metro works have uncovered burials or displaced human bone in at least three locations, suggesting that the exhumation of the cemetery may not have been comprehensive.

There are multiple notification pathways in the event of uncovering suspected human skeletal remains during works. The general process for discovery of human skeletal remains is as follows:

- Immediately stop work in the vicinity of the find.
- Notify the NSW Coroner and NSW Police. The police may wish control of the site at this point.
- Consult a physical or forensic anthropologist to assess the remains.
- The NSW Police will take control of the site if the human remains are forensic (less than 100-years-old).
- Notify the Office of Environment and Heritage (Heritage Division) if the human remains are archaeological (more than 100-years-old) and likely to be non-Aboriginal.
- Notify the Office of Environment and Heritage (Aboriginal Heritage Section) and the Department of Environment (Cwlth) if the human remains are archaeological (more than 100-years-old) and likely to be Aboriginal.
- Additional assessment, an exhumation policy prepared in consultation with a physical anthropologist, and approval will be required. Works cannot recommence in the affected area until approvals are in place and the endorsed mitigation strategy is complete.

8.6.1 Implications for the works

Discovery of human skeletal remains during works will likely result in program delays, and certainly in the affected area. Consultation with a number of stakeholders is required, including the NSW Coroner, NSW Police, Heritage Division and district health board. Expert forensic/physical anthropologist advice and input will be required. Developing the appropriate mitigation strategy, including exhumation, will take time to develop and require multiple stakeholder inputs. Additional approvals will also be required.

General actions and methodologies in the event of finding human bones:

- The design and construction methodology would be reviewed to identify opportunities to avoid impact.
- If human skeletal remains are found during boreholing, NDD or excavation the spoil from that area would be sieved to ensure all bone fragments are retrieved.
- In situ human skeletal remains would be secured and protected until the mitigation strategy is endorsed. This would be in accordance with requirements and advice from the various authorities and forensic/physical anthropologist.

8.7 Recording

The recording of archaeological data will be based on the single context recording system.

The following outlines the recording process:

- Monitoring locations, investigation and excavation methodology, and main findings will be archaeologically recorded and surveyed.
- If encountered, archaeological layers, structural remains, features, deposits and fills will be recorded on context sheets.
- A digital (JPEG file) photographic record of the monitoring program and archaeological findings will be made. Significant archaeological remains will be recorded using both JPEG and RAW digital captures. All photographs will include a scale.
- If local or state significant archaeological remains are encountered, measured drawings detailing the archaeological remains and stratigraphic relationships will be prepared.
- If local or state significant archaeology is encountered, a surveyor will take georeferenced survey data to prepare survey drawings and orthophotographs of the archaeological remains.

8.8 Artefacts

Large quantities of artefacts are not expected from the archaeological program. However, artefacts may be retrieved and the following outlines the collection strategy.

- All artefacts and bone from fills or disturbed contexts suspected of being associated with the Devonshire Street Cemetery will be retained for analysis and archiving.
- Artefacts from significant and in situ deposits, such as yard deposits, rubbish pits and from within former structures (potential occupation deposits) will be collected by context and retained for analysis and archiving.

- A sample of artefacts from non-significant fills, such as twentieth-century fills and demolition material, will be retained to aid interpretation and assist in answering research questions.
- Diagnostic, complete and potentially significant artefacts from non-significant layers and disturbed fills will be collected and retained for the archive. Examples of such material include:
 - whole ceramic and glass vessels
 - partial ceramic and glass vessels which include rim or base sections, makers' marks or identifiable patterns
 - identifiable ferrous items and non-ferrous nails
 - buttons, coins, clay pipe bowls and other personal items.
- Non-diagnostic, non-significant material from non-significant layers and disturbed fills will be recorded on the context sheet, and photographed as appropriate, and then discarded. Examples of such material include:
 - tiny body sherds of ceramic and glass vessels or tiny clay pipe stems
 - corroded and unidentifiable ferrous items
 - decayed and non-diagnostic animal bone, shell, leather and fabric.
- Building material (brick, mortar, timber etc) and environmental samples (soil, pollen) may be collected for further analysis, archival purposes and to inform archaeological interpretation and answer research questions.
- Artefacts and building material samples will be analysed by a historical archaeologist/artefact specialist with experience in historical archaeological assemblages from the Sydney region. A catalogue and analysis report will be prepared. Environmental samples and faunal remains would be analysed by an appropriate specialist.

8.9 Unexpected archaeological finds

Works within areas not expected to contain significant archaeology will be subject to an unexpected finds procedure.

The procedure for unexpected archaeological finds is as follows:

- Cease activity in the affected area and secure/protect the suspected archaeological find from impact.
- Contact the project archaeologist to assess the suspected archaeological find and develop a mitigation strategy.
- Historical archaeological finds will be managed in accordance with this work method statement, Section 60 approval conditions and notification requirements for relics (Section 8.10) and human skeletal remains (Section 8.6).
- If Aboriginal objects are found, cease activity in the affected area and inform the Office of Environment and Heritage (Aboriginal Heritage Section) under the provisions of the *NPWS Act*.

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- Construction work in the affected area can recommence once any additional regulatory requirements are met and archaeological impact mitigation is complete.

8.10 Section 146 notification requirements

Section 146 of the Heritage Act requires any person who believes they have discovered or located a 'relic' to notify the Heritage Council of NSW. Notification under Section 146 of the Heritage Act applies when archaeological 'relics' (local or state significant) not identified in this SoHI are unexpectedly encountered during works.

The procedure for notification under Section 146 of the Heritage Act is as follows:

- The project archaeologist will assess the archaeological find for consistency with the SoHI.
- If not previously identified, the archaeologist will prepare a short archaeological significance statement and impact mitigation strategy in consultation with the project team.
- A Section 146 Notification form with the supporting statement and mitigation strategy will be submitted to the Heritage Division (as a delegate of the Heritage Council of NSW).
- The archaeological finds will not be impacted until the requirements of the Heritage Division and under the Heritage Act are met.

8.11 Post-excavation analysis and reporting

Post-excavation analysis of the findings, artefacts and samples will be undertaken following completion of the archaeological excavation. A final report would be prepared and include the following:

- detailed description of the fieldwork program;
- detailed description and analysis of the archaeological findings, phasing and interpretation;
- photographs, scale drawings/surveys and interpretive graphics;
- results of artefact analysis, including a catalogue;
- results of building material and environmental sample analysis;
- response to the research questions; and
- reassessment of archaeological significance and identification of any remaining resource within the study area.

Additional analysis and reporting will be required if human skeletal remains are impacted by the works. The requirements will be outlined in an exhumation policy, to be prepared if required.

8.12 Archaeological research questions

The potential archaeological resources within the study area are not expected to be extensive or substantial, and the ability to answer research questions may therefore be limited. However, the archaeology within the study is part of a wider archaeological resource within the station and surrounding streets, both potential and known. The archaeology associated with the Feeder 7U5 project can

contribute to the wider archaeological research programs currently being undertaken as part of the Sydney Light Rail and Metro projects.

Archaeological remains of the former cemetery, and the burials within in it, have high research potential. The current archaeological methodology does not include excavation of burials and human remains. Therefore, limited archaeological research questions regarding the cemetery and human remains are included in this research design. Additional research questions will be required if remains of human skeletal remains are encountered and impacted by the works. The additional research questions will be outlined in an exhumation policy, to be prepared if required.

8.12.1 Central Station research questions

Central Station, yards and rail infrastructure have evolved since 1855. There may be archaeological evidence that demonstrates the station's history and evolution. The proposed works extend through Precinct 2 of the Central Station CMP which historically contained a rail yard for the first Sydney Terminal from c1855, including produce and goods storage sheds.

- Is there any evidence of the foundations for the Goods Shed and what does it tell us about the earliest phase of Central Station and its operation? How does this differ from other contemporary railway yards on the network or later phases of Central Station?
- Are there any sealed artefact deposits, such as rubbish pits, related to the Goods Shed and what do they tell us about the type of goods stored and transported on the network?
- Is there evidence of former rail infrastructure and what does it tell us about the evolution of NSW rail engineering and transport?

8.12.2 Devonshire Street Cemetery research questions

- What is the nature of archaeological evidence of the Devonshire Street Cemetery within the study area? How does this compare to recent findings on the Light Rail and Metro?
- What is the potential for further cemetery remains within areas of Central Station and Chalmers Street not affected by the recent development works?

8.12.3 Belmore Park and Surry Hills research questions

- How has the provision of municipal stormwaters and sewers evolved over time? How does this compare to other parts of the city and in other suburbs?

9.0 Conclusions and recommendations

9.1 Conclusions

9.1.1 Built heritage

- The proposed feeder route is within the Central Station SHR curtilage and the Belmore Park Sydney LEP listing curtilage. The route is adjacent to a row of significant trees listed on the City of Sydney Register of Significant Trees and three individually listed local heritage buildings. It also transects two Heritage Conservation Areas.

Central Station

- Proposed works within Central Station include investigations within the Chalmers Street entrance garden—an element of high significance. Six bores will be drilled through the footing of the Chalmers Street entrance sandstone retaining wall and two civil pits installed either side. Trees within the garden may also be removed or impacted. These works would result in a moderate adverse impact to the Chalmers Street entrance.
- Construction works within the Chalmers Street entrance and garden would have minor visual impact. However, this would be temporary and would be resolved with appropriate remediation of the landscape on completion of the works.
- Proposed works within Central Station also include installation of GST and CSR within the rail corridor. GST will be fixed to existing structures or mounted on new posts. These works would result in minor localised fabric impacts to the interior face of the sandstone retaining wall and brick boundary wall along Chalmers Street.
- Compound and laydown areas within the Prince Alfred Sidings precinct would have a temporary minor adverse visual impact that would be resolved with their removal on completion of the works.
- The proposed upgrade of the feeder would have a positive impact on the continued operation of Central Station as a major transport hub, by enabling greater capacity for increased services.
- Overall the proposed works would have a neutral impact on the State heritage significance of Central Station.

Heritage Conservation Areas

- The proposed works would result in a minor adverse visual impact to the Reservoir Street HCA and the Albion Estate HCA during construction. However, this would be temporary and would be resolved with appropriate remediation of the landscape on completion of the works.

Heritage items

- The proposed works could impact trees listed on City of Sydney's significant tree register. The London plane trees fronting the viaduct along Elizabeth Street are significant plantings and early twentieth-century landscape design elements. Removal of significant trees would be a major adverse heritage impact and is intended to be avoided where possible. An arborist assessment and monitoring during construction would be undertaken to mitigate potential impacts.

- The proposed works would not impact the significance of the following locally listed items—Belmore Park, the former Children’s Court building and former William Booth Institute on Albion Street, and the former Railway’s Institute on Chalmers Street.

9.1.2 Historical archaeology

- The proposed feeder route has three distinct zones relating to historical development and potential archaeological remains:
 - Zone 1—Surry Hills Roadways and Belmore Park—low to moderate potential for locally significant archaeological remains of former roadways, drains, services and tram tracks. These remains are considered ‘works’ and not ‘relics’. It is unlikely that relics would be found in association with these items.
 - Zone 2—Devonshire Street Cemetery—low to moderate potential for state significant archaeological remains of the cemetery and human skeletal remains. Recent archaeological evidence from the Light Rail suggest potential remains would be located from depths of 1.2 metres below current ground level.
 - Zone 3—Government Paddocks and Rail Yards—low to moderate potential for locally significant remains associated with the former c1860s goods shed and various historic rail infrastructure.
- There is low-moderate potential for significant archaeological remains of former ‘works’ to be encountered or impacted during trenching and excavation in Zone 1 Surry Hills roadways and Belmore Park.
- Evidence of burials and human skeletal remains have recently been uncovered during Sydney Light Rail and Sydney Metro works within the former Devonshire Street Cemetery areas. Construction works associated with the new civil pits, service relocations, the receiving pit and underboring in Zone 2 could encounter and impact archaeological burial remains and human skeletal remains.
 - Should human remains be identified works in the affected must cease immediately, and the NSW Coroner, NSW Police and the Heritage Division must be notified. Removal of human skeletal remains would require additional approval and an Exhumation Policy.
- There is unlikely to be potential for significant archaeological remains associated with the c1860 goods shed in the trenching location within Zone 3 as this area has been previously disturbed to construct the access point and install other services below it. There is also low potential for former rail infrastructure within the GST post excavations as these are within previously disturbed areas.

9.2 Recommendations

9.2.1 Approvals

- Section 60 approval is required for the works within the Central Station curtilage. The works are not considered minor and include impacts to significant fabric. There is also potential to impact locally significant archaeological remains associated with earlier phases of Central Station. There is also potential to encounter, and disturb or impact, state significant archaeological remains of the former Devonshire Street Cemetery, including human skeletal remains. The Section 60

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application will require supporting documentation such as detailed designs, construction methodology and this SoHI.

- Additional approvals will be required if human skeletal remains are encountered. The NSW Coroner, NSW Police and the Heritage Division must be notified. Consultation and advice from a physical anthropologist and an exhumation policy/mitigation strategy will be required prior to works recommencing in the affected area.
- An excavation permit (Section 140) or exception (Section 139(4)) under the relics provisions of the Heritage Act is not required for works outside the Central Station SHR curtilage. The potential archaeological remains in these areas are considered 'works' and do not trigger the relics provisions. A Section 140 permit will be required to impact any relics that are unexpectedly encountered during works.

9.2.2 Recommendations

General

- Further heritage advice should be sought if changes to the design or methodology are proposed. Additional heritage impact assessment of the changes would be necessary.
- All works within and adjacent to the SHR boundaries of Central Station must be undertaken in accordance with:
 - documentation and conditions of the Section 60 approval
 - relevant requirements of Sydney Trains.
- Prior to works commencing, all relevant personnel should undertake a heritage site induction which would explain the obligations under the Heritage Act, project heritage approvals, the role of the archaeologist on site and Transport for NSW's unexpected heritage finds procedure.

Built heritage

- Impacts to trees within the Chalmers Street entrance garden and the Elizabeth Street trees should be avoided during works.
 - Specialist advice should be sought from an arborist regarding excavation around the significant trees, to determine the appropriate excavation method, distance from the trees and prevent any damage to root systems.
 - Potential removal of the Silver Date Palm in the Chalmers Street entrance garden should be avoided where possible. If removal is required, this should be done in consultation with an arborist and Sydney Trains, and reinstated following completion of the works.
 - City of Sydney should be consulted if impacts and/or removal of significant trees on Elizabeth Street is required.
- Excavation around the Chalmers Street entrance sandstone retaining wall should be undertaken cautiously and not damage extant heritage fabric in the immediate area. Reference should be made to Section 5.6—Stonework of the Central Station CMP for recommendations regarding works to areas of significant Sydney sandstone.

- The Chalmers Street entrance dwarf wall should be protected with physical barriers during site access events and during works.
- Landscape elements adjacent to the Chalmers Street entrance identified in the CMP as being important to the setting of the entrance should be protected, including the palm trees on the western side of the garden, and the London plane tree at the footpath on Chalmers Street.
- The Chalmers Street entrance garden should be reinstated after the completion of works to retain an appropriate setting for the entrance. Sydney Trains should be consulted regarding their requirements for reinstatement.
- Where possible, GST should be attached via existing non-heritage structures within the rail corridor.
- GML did not observe any significant kerbing along the proposed route from Elizabeth Street to Ann Street during the site inspection, and noted only concrete kerbing. Should the route be changed, any significant elements such as stone kerbing should be retained and/or reinstated. Specialist heritage advice should be sought regarding a new route.
- Street trees were observed to be a prominent characteristic of the Reservoir Street and Albion Estate HCAs. It is recommended that the trenching route avoid existing trees. If damage to non-significant trees is anticipated, consult with an arborist for appropriate mitigation strategies.

Archaeology

- All ground disturbance and excavation within Zone 2—Chalmers Street entrance park and immediately to the south of the retaining wall—should be archaeologically monitored in accordance with the archaeological work method statement in Section 8 of this report and conditions of the Section 60 approval. Including:
 - Geotechnical boreholes should be monitored by the archaeologist during drilling and the borehole logs inspected to inform the archaeological potential.
 - NDD works and excavation should be undertaken with caution. Hand excavation to locate services should be undertaken at depths below one metre and where it cannot be determined if the works are within fill layers.
 - All mechanical excavation within archaeologically sensitive areas is to be with a flat bucket and under archaeological supervision and direction.
- Potholing and trenching within Zone 3—Central Station SHR curtilage/location of the former c1860s goods shed and Zone 1—Belmore Park should be archaeologically monitored.
 - If archaeological remains are encountered, they should be investigated and recorded in accordance with the endorsed archaeological methodology and the Section 60 conditions.
- Potholing, trenching and excavation within Zone 1—Surry Hills roadways can proceed with caution and under an unexpected heritage finds protocol.
- If human skeletal remains are encountered, work in the affected area must cease and the NSW Coroner, NSW Police and the Heritage Division notified immediately. The procedure outlined in Section 8.10 must be followed. Redesign to avoid impact should be considered.

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- If unexpected heritage/archaeological finds are encountered, work in the affected area must cease and the procedure outlined in Section 8.9 followed. Notification under Section 146 of the Heritage Act may be required, as outlined in Section 8.11.

10.0 Appendices

Appendix A

State Heritage Inventory Listing Sheets

