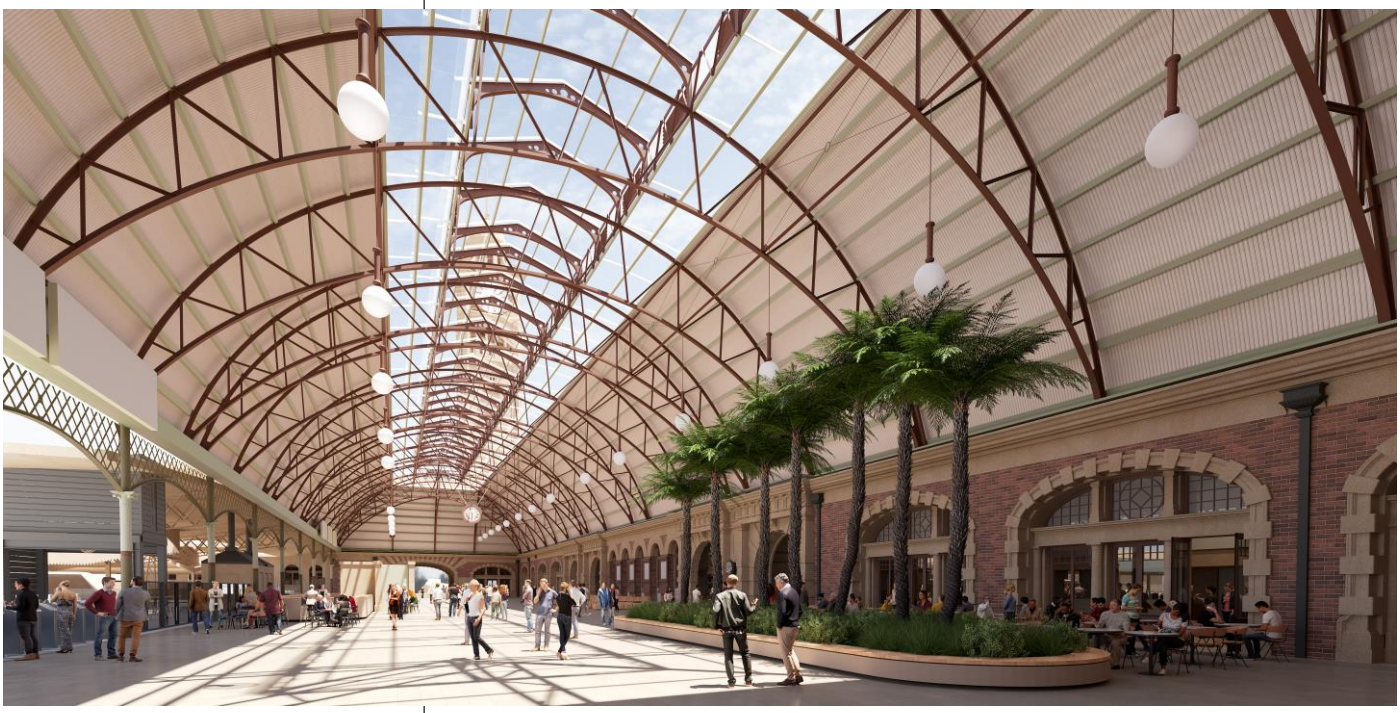
Transport for NSW

Sydney Terminal Building Revitalisation

Non-Aboriginal (historical) archaeological assessment and research design

February 2023



NSW GOVERNMENT

transport.nsw.gov.au

Acknowledgement of Country

We respectfully acknowledge the Traditional Custodians of the land of Central Precinct and the Sydney Terminal Building, the Gadigal. From time immemorial, this Country has been a place where people come to connect and reconnect. We pay our respects to all Aboriginal people who have journeyed and will journey through this place and acknowledge their ongoing connection to Country and culture. We pay our respects to members of the Stolen Generations and their descendants for whom the Sydney Terminal Building will always hold significance. We acknowledge that Platform One played a key role in Aboriginal children being removed from their families and communities.

Non-technical summary

Tfffhe Central Station Precinct is a site of State and Local heritage significance. The station has functioned as the main transportation hub in Sydney and continues to provide new transportation access to the city of Sydney through the introduction of the Light Rail and Metro Services. The Sydney Terminal Building is an iconic landmark located in the Sydney Local Government Area. This prominent building is aesthetically significant for its Neo-Classical architectural style, and technically significant for its complex design, innovative construction techniques and technology. It is important to note that the project investigation area is located on Gadigal Country, home to the people of the Eora Nation, in Haymarket, in the City of Sydney LGA. What is more, the STB is heritage listed within the 'Sydney Terminal and Central Railway Stations Group' (SHR #01255) – an important site for transport operations throughout the past 150 years.

Transport for NSW (TfNSW) are proposing construction works to restore and revitalise the STB of Central Station and its public domain interfaces: Eddy Avenue Colonnade, Eddy Avenue Plaza, Western Forecourt, and the Grand Concourse. The proposed works include, but are not limited to, excavations under extant floors and walls as part of enabling works for the project.

Artefact Heritage Services has been engaged by Aurecon/Grimshaw to prepare a Historical Archaeological Impact Assessment and Research Design (HAIARD) for the Central Precinct Renewal Project. The purpose of this HAIARD is to assess the historical archaeological potential of the study area to minimise the likelihood of unexpected archaeological finds within the assessment area and outline the archaeological impacts of the proposed works. In cases where impacts are identified, mitigation and management measures will be provided to limit heritage impact. On balance, the HAIARD aims to:

- Outline historical significance of the study area;
- Advise historical archaeological potential within study area;
- Identify areas of archaeological sensitivity and significance;
- Identify impacts to heritage and recommends mitigation measures;
- Provide archaeological methodology to guide the management of archaeological remains during onsite works; and
- Support and assist the day-to-day revitalisation work.

Table of Contents

Abbreviations

Abbreviation	Definition
ACHAR	Aboriginal Cultural Heritage Assessment Report
AMS	Archaeological Method Statement
ASP	Archaeological Site Plan
CHL	Commonwealth Heritage List
CMP	Conservation Management Plan
CPR	Central Precinct Renewal
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
GCCS	Grand Concourse Central Station
HAIARD	Historical Archaeological Impact Assessment and Research Design
LEP	Local Environmental Plan
LGA	Local Government Area
NHL	National Heritage List
RNE	Register of the National Estate
RL	Reduced Level (any spot height that has been compared with another or datum using a level line)
SEARS	Secretary's Environmental Assessment Requirements
SHI	State Heritage Inventory
SHR	State Heritage Register
SoHI	Statement of Heritage Impact
STB	Sydney Terminal Building
STBR	Sydney Terminal Building Revitalisation
TfNSW	Transport for NSW

Definitions

Term	Definition
Artefact	An object created by a human, typically one of cultural or historical interest
Heritage Curtilage	'…the area of land surrounding an item or area of heritage significance… which is essential for retaining and interpreting its heritage significance.' The area delineated as the 'curtilage' should contain all elements contributing to the heritage significance of an item or place and is the area required to retain and interpret the heritage significance of the place.[1]
Historical significance	An item is important in the course or pattern of the local area's cultural or natural history
'Local heritage significance'	In relation to a place, building, work, relic, movable object or precinct, means significance to an area in relation to the historical, scientific, cultural social, archaeological, architectural, natural or aesthetic value of the item.
'State heritage significance'	In relation to a place, building, work, relic, movable object or precinct, means significance to an area in relation to the historical, scientific, cultural, social, archaeological, architectural natural or aesthetic value of the item.

[1] NSW Heritage Office, 1996, *Heritage Curtilages*

1. Introduction

1.1 Purpose of this report

This report documents the non-Aboriginal (historic) archaeological impact assessment and research This report documents the non-Aboriginal (historic) archaeological impact assessment and research design (HAIARD) carried out to support the Sydney Terminal Building Revitalisation (the project). The assessment was completed to support the Environmental Impact Statement (EIS) and address the relevant Secretary's Environmental Assessment Requirements (SEARs) as they relate to landscape and visual impacts.

1.2 Project overview

The project comprises the revitalisation of the Sydney Terminal Building and its public domain interfaces, Eddy Avenue Colonnade, Eddy Avenue Plaza, and the Western Forecourt at Central Station. The project would provide:

- Improved pedestrian connections and integration with the adjacent public domain areas
- Improved lighting, wayfinding, safety, and accessibility
- Improved customer amenity, public art, and interpretation
- Improved activation of spaces, including high quality retail and community uses that are complementary to the function of the transport interchange
- Heritage conservation and enhancement.

These would be undertaken as priority works as part of the wider and longer-term Central Precinct Renewal Program. The project is located on Gadigal Country, the traditional home of people of the Eora Nation, in Haymarket, in the City of Sydney local government area (LGA).

The detailed project description in this chapter is based on the project's concept design and has been developed with consideration of:

- Findings from design, heritage, and Aboriginal engagement activities
- Place making and urban design principles and objectives
- Stakeholder and community feedback
- Avoiding and minimising environmental, heritage, and social impacts.

More detail on the construction method and proposal are provided in Chapter 5 of the EIS.

1.3 Construction footprint

The HAIARD construction footprint is located at the south-east edge of Central Sydney (see Figure 1-1). This area is surrounded by several suburbs including Haymarket to the north, Chippendale to the south-west, and Surry Hills to the south-east. It is located within the boundaries of the City of Sydney LGA. It covers an area of about 25 500m^2 of Government-owned land. The study area comprises land bounded by Eddy Avenue to the north, Elizabeth Street and Chalmers Street to the east, Pitt Street to the west, and Central Station platforms to the south. It is divided into five areas (see Table 1 and Figure 1-2):

- Sydney Terminal Building and Grand Concourse
- Western Forecourt
- Eddy Avenue
- Eddy Avenue Plaza
- Central Electric Building

The entire HAIARD construction footprint is in the Central Station State heritage register (SHR) curtilage (see Figure 2-1).

While there is a marked construction footprint to the south of the main project area (see Figure 1-1), this has not been assessed as there would be no ground disturbance taking place in its boundary.

Table 1: Construction footprint descriptions

Area	Description
Sydney Terminal Building and Grand Concourse	This is at the centre of the construction footprint and contains the terminus building and the adjacent concourse level. It is enclosed by the Western Forecourt on its west, Eddy Avenue Plaza on its east, and Eddy Avenue on its north.
Western Forecourt	The Western Forecourt runs along the western boundary of the terminal building and contains the Western Forecourt Garden enclosed by a modern loop road.
Eddy Avenue	Eddy Avenue runs along the northern boundary of the terminal building and contains the Eddy Avenue Colonnade.
Eddy Avenue Plaza	Eddy Avenue Plaza runs partly along the eastern boundary of the terminal building and currently contains food shops and a public plaza.
Central Electric Building	The Central Electric Building is at the southern-most end of the Eddy Avenue Plaza and adjacent to the eastern boundary of the terminal building.

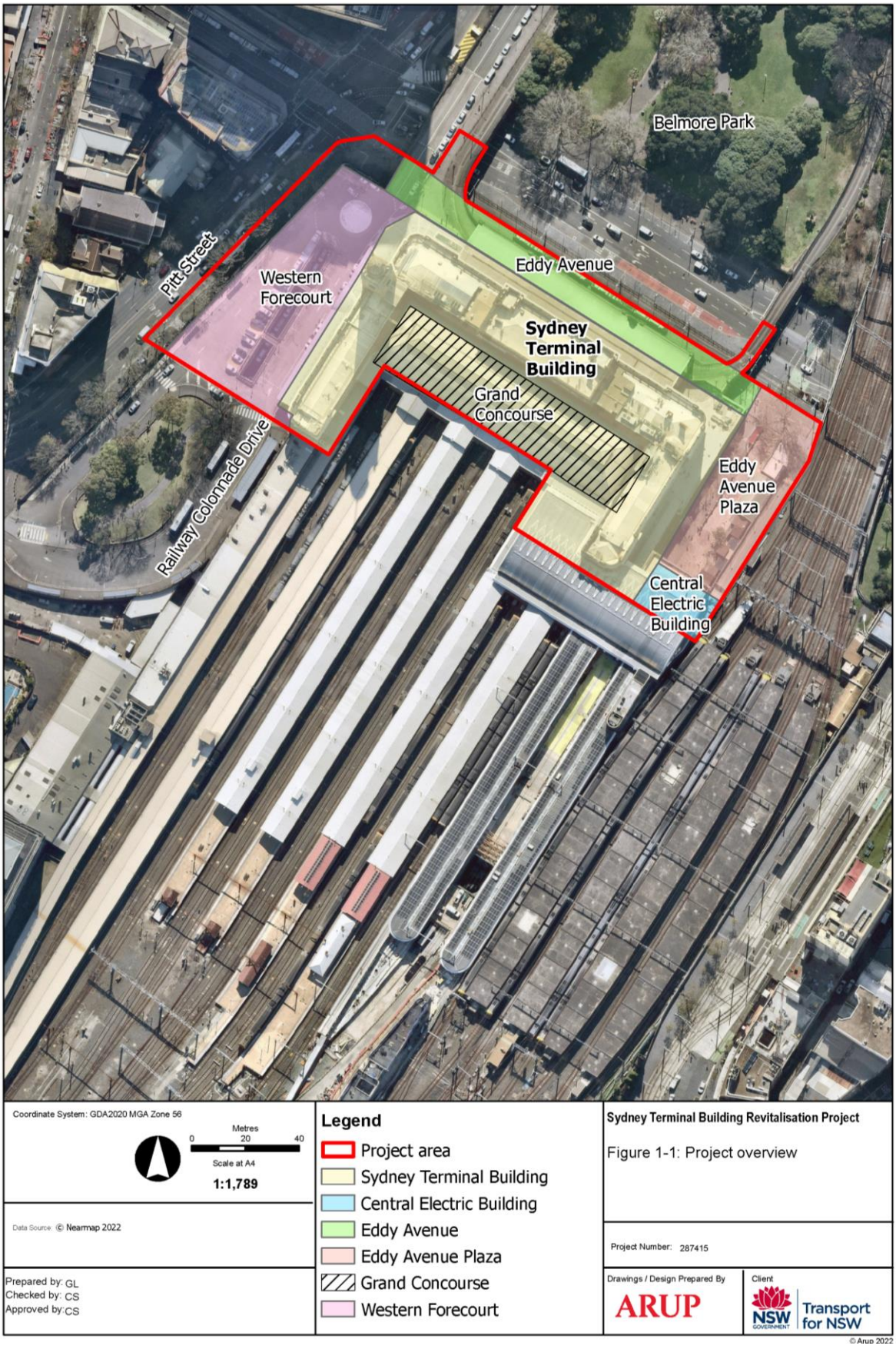


Figure 1-1. Project overview

Figure 1-2: Construction footprint. Source: Transport for NSW

1.4 Secretary's environmental assessment requirements

SEARs were issued by the NSW Department of Planning and Environment on 17 October 2022 (SSI-45421960).

The Key Issue and Desired Performance Outcome of the SEARs for 3. Heritage includes:

> *The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.*
>
> *The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.*

Table 1-2 outlines the SEARs relevant to Aboriginal heritage and where they have been addressed in this report.

Table 1-2 SEARs relevant to historical archaeology

SEARs relevant to this technical report	Where addressed
1. The direct and/or indirect impacts to the heritage significance of: (c) environmental heritage, as defined under the *Heritage Act 1977*	Section 6.0
2. Where impacts to State or locally significant heritage items are identified, the assessment must: (a) include a significance assessment, a statement of heritage impact for all heritage items and a historical archaeological assessment	Section 6.0
(b) assess the consistency of the project against conservation policies of any relevant conservation management plan	Section 6.0
(c) consider relevant heritage studies prepared for the Central SSP	Section 6.0
(d) consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment, drainage infrastructure, contamination remediation and site compounds (as relevant)	Section 6.0
(e) outline measures to avoid and minimise those impacts during construction and operation in accordance with the current guidelines	Section 6.0/8.0
(f) be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria).	Section 1.6

1.5 Report limitations

This report assesses non-Aboriginal (historical) archaeological values only. The potential for the project to impact on Aboriginal cultural heritage values archaeological resources has been addressed in the Aboriginal Cultural Heritage Assessment Report.[2]

The assessment in this report is based upon historical research, mapping, reviews of previous relevant archaeological work, and a field inspection. These resources will not always be precise and are subject to method inaccuracies, therefore, the assessment of archaeological potential may not be accurate in its entirety, and there is potential for the discovery of unexpected archaeological remains. Moreover, additional historical research or the emergence of new historical sources may support different interpretations of the evidence provided in this report.

The mapping supplied for this report mainly derives from primary and secondary historical sources. Notably, there is an extremely limited number of maps and plans available that show the locations of buildings and structures prior to c1900. In contrast, many such plans exist for the time postdating 1901. This limitation is particularly true of structures that may have been within the construction footprint prior to the start of construction for the current Central Railway Station in 1901, a site in which the Sydney Terminal Building is located.

Georeferencing and overlaying historical plans is subject to several inherent errors relating to the condition of the original maps, the nature of surveying at the time the maps were produced, the availability of ground control points and the nature of the algorithms used to geo-reference the plans. As a result, the mapped location of historical structures is accurate in the order of one or two meters. This factor has been accounted for in the plans prepared to address archaeological potential.

1.6 Authorship and acknowledgements

This report has been prepared by Jonathon Love (Heritage Consultant) and Mike Douglas (GIS Officer) who contributed to the mapping processes. Jenny Winnett (Principal Archaeologist/Excavation Director) provided input and reviewed the report for technical adequacy. Anita Yousif (Technical Director/ Excavation Director) undertook quality assurance.

[2] For information on Aboriginal archaeological potential see the Aboriginal Cultural Heritage Assessment Report (ACHAR), Artefact Heritage 2022.

2. Policy and planning context

2.1 Overview

This section provides an overview of the State and Commonwealth legislation that is relevant to the construction footprint.

A search of the relevant State and Commonwealth statutory heritage registers identified items located within and directly adjacent to the construction footprint. The significance of the items listed on these registers have been previously assessed against the NSW Heritage Assessment guidelines.

Note that the following is a summary of heritage listings only, as the focus of this report is on historical archaeological potential.

2.1.1 Policy

The following policies, guidelines and plans have been considered when undertaking the non-Aboriginal heritage impact assessment:

- NSW Heritage Manual (Heritage Office and Department of Urban Affairs and Planning, 1994)
- Archaeological Assessments (Heritage Office and Department of Urban Affairs and Planning, 1996)
- NSW Skeletal Remains: Guidelines for Management of Human Remains (Heritage Office, 1998)
- Assessing Heritage Significance (NSW Heritage Office, 2001)
- Assessing Significance for Historical Archaeological Sites and 'Relics' (Heritage Branch, Department of Planning, 2009)
- The Australia ICOMOS Burra Charter (2013)
- Criteria for assessing Excavation Directors (NSW Heritage Council, 2019)
- Grand Concourse Central Station – Historical Archaeological Assessment and Research Design (Artefact Heritage, 2021)
- Central Precinct Renewal – Archaeological Site Plan (Artefact Heritage, 2022)
- Central Precinct Renewal – Conservation Management Plan (Artefact Heritage, 2022).

2.1.2 Heritage registers

The following heritage registers identified items located within and directly adjacent to the construction footprint:

- Commonwealth Heritage List (CHL)
- National Heritage List (NHL)
- State Heritage Register (SHR)
- Section 170 Heritage and Conservation Registers

- NSW State Heritage Inventory database
- City of Sydney Local Environmental Plan (LEP) 2012
- Register of the National Estate (RNE)
- National Trust of Australia (NSW) register.

The statements of heritage significance provided in this assessment are based on the NSW Heritage Assessment guidelines as they appear in relevant heritage inventory sheets and documents.

2.2 NSW Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) provides protection for items of 'environmental heritage' in NSW. 'Environmental heritage' includes places, buildings, works, relics, movable objects, or precincts considered significant based on historical, scientific, cultural, social, archaeological, architectural, natural, or aesthetic values. Items considered to be significant to the State are listed on the SHR and cannot be demolished, altered, moved, or damaged, or their significance altered without approval from the Heritage Council of NSW.

2.2.1 State Heritage Register

Established under Section 22 of the Heritage Act, the SHR is a list of places and objects of particular importance to the people of NSW, including archaeological sites. The SHR is administered by Heritage NSW, DPC and includes a diverse range of over 1,500 items in private and public ownership. To be listed, an item must be deemed to be of heritage significance for the whole of NSW.

To carry out activities within the curtilage of an SHR-listed item, consent must be gained from the Heritage Council through a Section 60 approval. In some circumstances, under Section 57(2) of the Heritage Act, a Section 60 approval may not be required if works are undertaken in accordance with the NSW Heritage branch document *Standard Exemptions for Works Requiring Heritage Council Approval* or in accordance with agency specific exemptions. This includes works that are minor in nature and will have minimal impact on the heritage significance of the SHR-listed item.

There is one item listed on the SHR within the construction footprint:

Sydney Terminal and Central Railway Stations Group (SHR 01255).

2.2.2 Section 170 Register

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

A single heritage item is listed on the s170 register:

Central Station (Central Railway Station and Sydney Terminal Group, s170 Item No: 4801296).

2.3 Environmental Planning and Assessment Act 1979

2.3.1 Sydney LEP 2012

An aim of the City of Sydney LEP in is to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings, views, and archaeological sites. The LEP lists items of heritage significance with clause 5.10 specifying relevant conservation aims and objectives.

One item is listed on the Sydney LEP 2012 within the construction footprint:

Central Station (Central Railway Station group including buildings, station yard, viaducts and building interiors, SLEP Item No. I824)

Of note, no heritage items listed as archaeological sites are within the construction footprint.

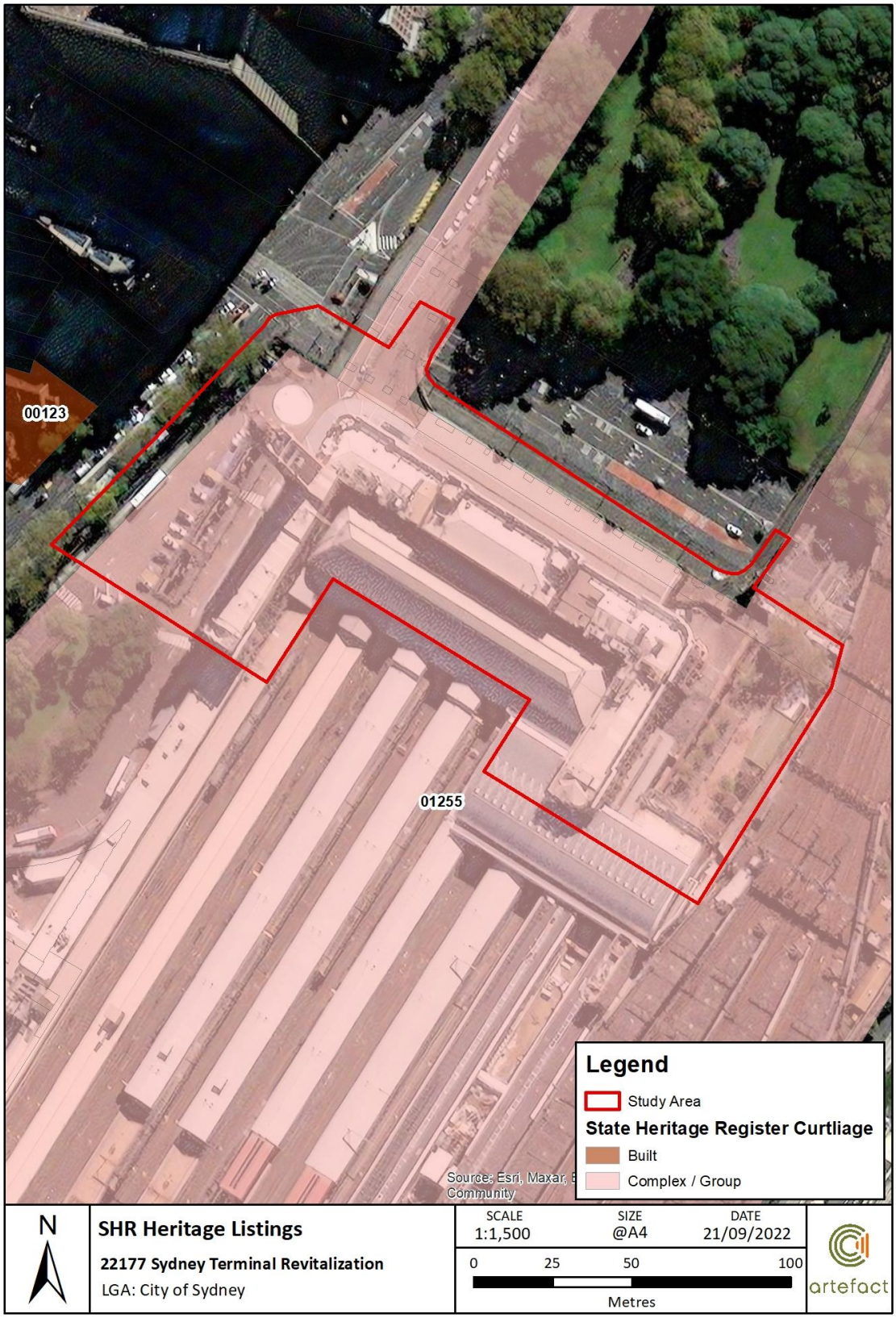


Figure 2-1: Heritage Curtilage

3. Methodology

3.1 Archaeological assessment

The heritage assessment considers the potential (likelihood) of encountering archaeology based on the site's history and its value (significance).

3.1.1 Likelihood

Archaeological potential is defined by the NSW Heritage Office Archaeological Assessment Guidelines as 'the degree of physical evidence present on an archaeological site'.[3] This section draws on the above analysis to consider archaeological potential of the construction footprint.

Archaeological potential can be subdivided into the following categories, based on the likely occurrence of archaeological material:

High potential	Areas with known archaeological remains
Moderate potential	Areas that may have archaeological remains based on other lines of evidence such as maps or documents
Low potential	Areas that are likely to have minimal archaeological remains based on analysis of known or likely disturbance
Nil potential	Areas where it is known that archaeological remains will not occur.

3.1.2 Significance

To guide the management of heritage and archaeological items located within the construction footprint, it is necessary to assess their significance.

Archaeological significance assessment has generally drawn on the Assessing Heritage Significance guidelines published by the (then) NSW Heritage Office in 2001. These guidelines acknowledge that "Different components of a place may make a different relative contribution to its heritage value, reflecting the rarity, condition, intactness, and overall significance of an item".[4] While these guidelines are crucial for assessing significance of heritage items they ''do not translate easily to assessing archaeological resources''.[5] This limitation is because the extent and nature of archaeological features are often unknown, and judgement is based on expected or potential attributes of the remains. This therefore requires that the archaeological resources be assessed independently of aboveground heritage elements such as extant structure, landscaping elements, and works.

The **seven** NSW Heritage Criteria for assessing heritage significance are as follows:

- **A |** an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area)

[3] NSW Heritage Council, 'Archaeological Assessment Guidelines', in NSW Heritage Manual (New South Wales: Heritage Office, 1996).
[4] NSW Heritage Office, Assessing Heritage Significance: NSW Heritage Manual Update (Parramatta: NSW Heritage Office, 2001), 11.
[5] NSW Heritage Branch, Assessing Significance for Historical Archaeological Sites and 'Relics' (Heritage Branch, Department of Planning,2009), p4.

- **B |** an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area)
- **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)
- **D |** an item has strong or special association with a particular community or cultural group in NSW for social, cultural, or spiritual reasons (or the local area)
- **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)
- **F |** an item possesses uncommon, rare, or endangered aspects of NSW's cultural or natural history (or the local area)
- **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).

While all these heritage assessment criteria are relevant to archaeological remains, the Assessing Significance for Historical Archaeological Sites and 'Relics' Manual (Heritage Branch, Department of Planning, 2009) emphasises the research potential of the remains. Research potential is the ability of the archaeological material to provide additional or important information about various aspects of national, State, and local history. To enable assessment of the archaeological research or scientific potential, the NSW Heritage Criteria are therefore grouped in the following manner:

- Archaeological Research Potential (current Criterion E).
- Associations with individuals, events, or groups of historical importance (Criteria A, B & D).
- Aesthetic or technical significance (Criterion C).
- Ability to demonstrate the past through archaeological remains (Criteria A, C, F & G).

In addition, the following Bickford and Sullivan's[6] questions are used as a guide for assessing the research potential of an archaeological site within a relative framework:

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge that no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

The heritage significance of the Grand Concourse overall is assessed as being exceptional significance within the curtilage of the SHR listing for Central Railway Station and Sydney Terminal Group.[7]

[6] Bickford, A and Sullivan S 1984, 'Assessing the Research Significance of Historic Sites', in Sullivan s and Bowdler s (eds), *Site Survey and Significance Assessment in Australian Archaeology* (Proceedings of the 1981 Springwood conference on Australian Prehistory), Department of Prehistory, research School of Pacific Studies, Th Australian National University, pp 23-24.

3.1.2 Statement of significance - archaeological resources

The construction footprint includes locations of archaeological potential (see Section 6.0 below). Their archaeological research potential has been assessed (see Section 6.0 below) as it relates to the survival of sub-surface archaeological features.

The areas mapped as high and moderate archaeological potential and having high archaeological research potential would be graded as being of **high** significance within the curtilage of the SHR listing for 'Central Railway Station and Sydney Terminal Group'.

3.1.3 Impact assessment

This report has been prepared using the document Statement of Heritage Impact 2002, contained within the NSW Heritage Manual, as a guideline. Impacts on archaeological heritage are identified as either:

- **Direct** | resulting in the demolition or alteration of fabric of heritage significance
- **Potential direct** | resulting in impacts from vibration and demolition of adjoining structures
- **Cumulative** | arising from the interaction of construction and operation activities of the project and other approved or proposed projects in the area.

Specific and consistent terminology and corresponding definitions produced by ICOMOS have been used to identify rate the impacts (see Table 3[8]).

Note | the assessment only considered construction impacts as there is no potential ground disturbance proposed once the project is operational.

Table 3: Terminology for assessing the magnitude of heritage impact

Magnitude	Definition
Major	Actions that would have a long-term and substantial impact on the significance of a heritage item. Actions that would remove key historic building elements, key historic landscape features, or significant archaeological materials, thereby resulting in a change of historic character, or altering of a historical resource. These actions cannot be fully mitigated
Moderate	This would include actions involving the modification of a heritage, including altering the setting of a heritage item or landscape, partially removing archaeological resources, or the alteration of significant elements of fabric from historic structures. The impacts arising from such actions may be able to be partially mitigated
Minor	Actions that would results in the slight alteration of heritage buildings, archaeological resources, or the setting of an historical item. The impacts arising from such actions can usually be mitigated
Negligible	Actions that would results in very minor changes to heritage items
Neutral	Actions that would have no heritage impact

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

3.2 Archaeological management guidelines

The guidelines in Table 4 have been adopted from the Central Precinct Renewal ASP.[9] They have been used in this document to guide appropriate management of potential archaeological resources.

Table 4. Recommendations for management of physical archaeological features within the construction footprint.

Management Guidelines	Guideline
A | avoidance of impact and preservation in situ	Whenever possible, locate proposed developments in areas of low to nil archaeological potential and no significance. The strategy of avoidance would consider reuse of existing service trenches, placement of elements and structures on above-ground supports or construction in the areas of previous disturbance. Preservation in situ is the preferred option where works can avoid known or potential archaeological features, or where subsurface excavation is shallow. Items to be preserved in situ should be fully recorded including GIS location, then covered in geofabric prior to reburial. This process should occur under the supervision of an Excavation Director approved for management of State significant sites and items.
B | archaeological recording prior to salvage	When impact is unavoidable and archaeological remains are deemed for removal, thorough archaeological recording must be undertaken. The recording would include detailed note taking, sediment sampling (where appropriate), GIS and RL recording, photography, site/feature planning and/or photogrammetry, section drawing and/or 3D scanning. Archaeological records would form part of the construction footprint's archives.
C | salvage or removal	If impact is unavoidable and archaeological remains are deemed for removal, this action should be carried out in a controlled manner and after completion of detail archaeological recording. This process should occur under the supervision of a qualified archaeologist.
D | general recording	Given the heritage and archaeological significance of the construction footprint, notes of all archaeological intervention should be made for future reference.
E | no action required	The item may be removed or impacted without archaeological supervision or reporting.

[9] Artefact Heritage, August 2022

4. Existing environment

4.1 Site inspection

A site inspection of the construction footprint was undertaken on 9 September 2022 by Jonathon Love (Heritage Consultant). The aim of the inspection was to identify and assess potential impacts of the proposed works to heritage items including impacts to potential historical archaeological remains. The site inspection informed the archaeological assessment through identifying alterations to the original topography that may have impacted on archaeological remains. This inspection was undertaken on foot and a photographic record was made.

4.1.1 Overview of site inspection

A survey inspection was made of the northern construction footprint. The southern construction footprint was not surveyed because there would be no ground impacts in this area.

No natural soil was observed within in the northern construction footprint. The area has been developed. It comprising the station buildings, car parking, light rail, vehicle and pedestrian access, and retail spaces with above ground landscaping (see Figure 4-1 to Figure 4-8).

As can be seen in Figure 4-1, Figure 4-2 and Figure 4-3 the entrance to the station from the Western Forecourt is elevated, and the areas below having been excavated to allow vehicle access and parking, located at current street level.

At Eddy Avenue (see Figure 4-4) additional access to the station is provided by escalators connecting the street level to the concourse. This was achieved through deep excavation below the original natural ground surface along Pitt Street and Eddy Avenue (see Figure 4-8). The open area features a paved floor which slopes north to south

The Western Forecourt comprises a large open space that contains a garden, roundabout, and carpark. Moreover, it contains a large sandstone archway which acts one of the main entry points to the Grand Concourse. It is important to note that prior to the construction of the third Sydney Terminus, the Western Forecourt area was occupied by several institutional buildings, however, no visible evidence of subsurface remains or existing historical structures is present.

Figure 4-1 View downwards to vehicle access space along Pitt Street side of the Western Forecourt.

Figure 4-2 View of the entrance to the station from the above ground.

Figure 4-3 View into the vehicle access space from Pitt Street.

Figure 4-4 Eddy Avenue, looking to escalators from Pitt Street.

Figure 4-5 Eddy Avenue, street view with tram and vehicle access.

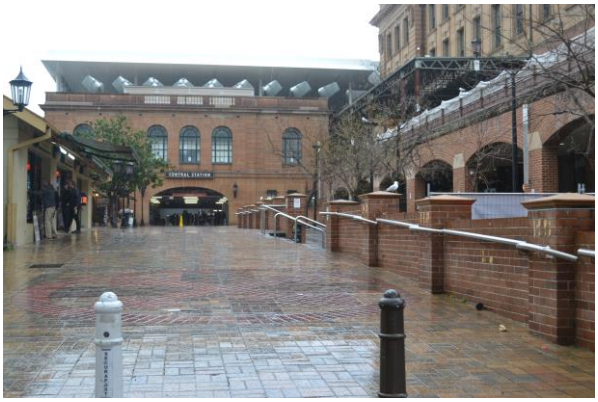


Figure 4-6 View to retail area at Eddy Avenue Plaza.

Figure 4-7 Ramp at eastern side of the Sydney Terminal Building.

Figure 4-8 Depth of wall constructed on Pitt Street indicating the depth of excavation undertaken to build the ramp up to the Western Forecourt.

5. Nature of archaeological resources and significance

5.1 Historical context

This section briefly outlines the history of the construction footprint, with a focus on the Sydney Terminal Building. It, encompasses several major historical developments since the commencement of colonisation in 1788. Each of these has contributed to the current features and archaeological potential of the Sydney Terminal Building and its immediate surroundings.[10]

5.1.1 Aboriginal histories

Prior to European settlement and development, the land that is currently occupied by the Sydney Terminal Building and the construction footprint comprised a sand dune network, covered in heath, low scrub, trees, and freshwater wetlands. This land would have been a habitat for fauna including birds, fish and eels, and provided a hunting ground and home to Aboriginal people. The Gadigal people – the traditional owners of this land – used such natural resources for food, medicine, and tools.[11]

The local Gadigal people were increasingly displaced from country following European occupation (c1788 onward). Moreover, as the colony expanded, access to natural resources was restricted, and the Aboriginal population were devastated by new diseases including, but certainly not limited to, smallpox. Historical sources report that only three members of the 60-strong Gadigal clan survived the smallpox epidemic, with others perishing due to malnutrition or from violent clashes with settlers[12]. Despite this, the Gadigal people attempted to continue their traditional way of life, with the site of today's Belmore Park and Central Station (which includes the construction footprint) an important cultural ground for ceremonial practice.[13]

5.1.2 Early European Settlement

Early European settlement in the colony of Sydney was predominantly focused on the foreshores of Port Jackson. Consequently, the construction footprint remained an undeveloped urban fringe until the land was first developed with institutional buildings in the Macquarie Period (1810-1821) and for the Devonshire Street Cemetery in 1820.[14]

5.1.2.1 Devonshire Street Cemetery

The eastern section of the construction footprint was occupied, in part, by the Devonshire Street Cemetery, also known as Sandhills Cemetery or Brickfield Hill Cemetery. Eddy Avenue Plaza, Central Electric Building, and part of the eastern section of the Sydney Terminal Building are located within the northwest corner of the Devonshire Street Cemetery.

In 1818, Governor Lachlan Macquarie decreed that a new burial ground would be erected within the current construction footprint. While this new cemetery was consecrated in 1820, the historical record

[10] It is important to note that while there are many historical developments worth discussing for this region, the current historical report solely focuses on either in the study area or within the study area's immediate surroundings.
[11] Artefact Heritage, 2019. Sydney Metro Central Station –Central Walk Aboriginal Archaeological Method Statement. Report prepared for Laing O'Rourke. 11.
[12] Cox Inall Ridgeway 2021
[13] AHMS, 2015, Central to Eveleigh Corridor: Aboriginal and Historical Heritage Review. Report to UrbanGrowth.
[14] DPIE. Former warehouse group including interiors. 2016. Retrieved 20/09/22 from: https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5062502

indicates the first known burial was in 1819. It was the second major cemetery of Sydney, following George Street Burial Ground, also known as Old Sydney Burial Ground, which was located north of St Andrew's Cathedral, and in the area now occupied by Sydney Town Hall.[15]

The Devonshire Street Cemetery was originally 4 acres (1.6 hectares) of land which was set aside for the Church of England burials after the closure of the George Street Burial Ground. By 1836 the cemetery was approximately 11 acres (4.5 hectares) in size and was divided into seven differing denominational sections upon application to the Colonial Government. Each denominational burial ground was fenced and had its own exclusive entrance.[16]

Figure 5-1. 1836 plan of the Devonshire Street Cemetery denominational layout[17]

[15] "Government and General Orders," Sydney Gazette and New South Wales Advertiser (NSW : 1803-1842), February 5, 1820.

[16] Lisa Murray. Devonshire Street Cemetery, Dictionary of Sydney, 2019.Retrieved 18/04/21 from: http://dictionaryofsydney.org/entry/devonshire_street_cemetery.

[17] Crown Plan C65-730 (1836)

Time passed, and by the 1840s the cemetery was becoming increasingly overcrowded. By 1867 it was formally closed, after *The Sydney Burial Grounds Act 1866* prohibited burials 'within the City of Sydney from 1 January 1867'. From consecration to the time interments effectively ceased in 1867, nearly 40,000 individuals had been buried or placed in vaults within its boundaries, although accurate records were not kept. By the late 1870s, the Devonshire Street Cemetery was poorly maintained and calls for its complete closure and removal were discussed, particularly in light of parliamentary proposals to resume the Cemetery for railway purposes. By 1899, the cemetery had fallen into complete disrepair, with lantana bushes growing across and through graves.[18]

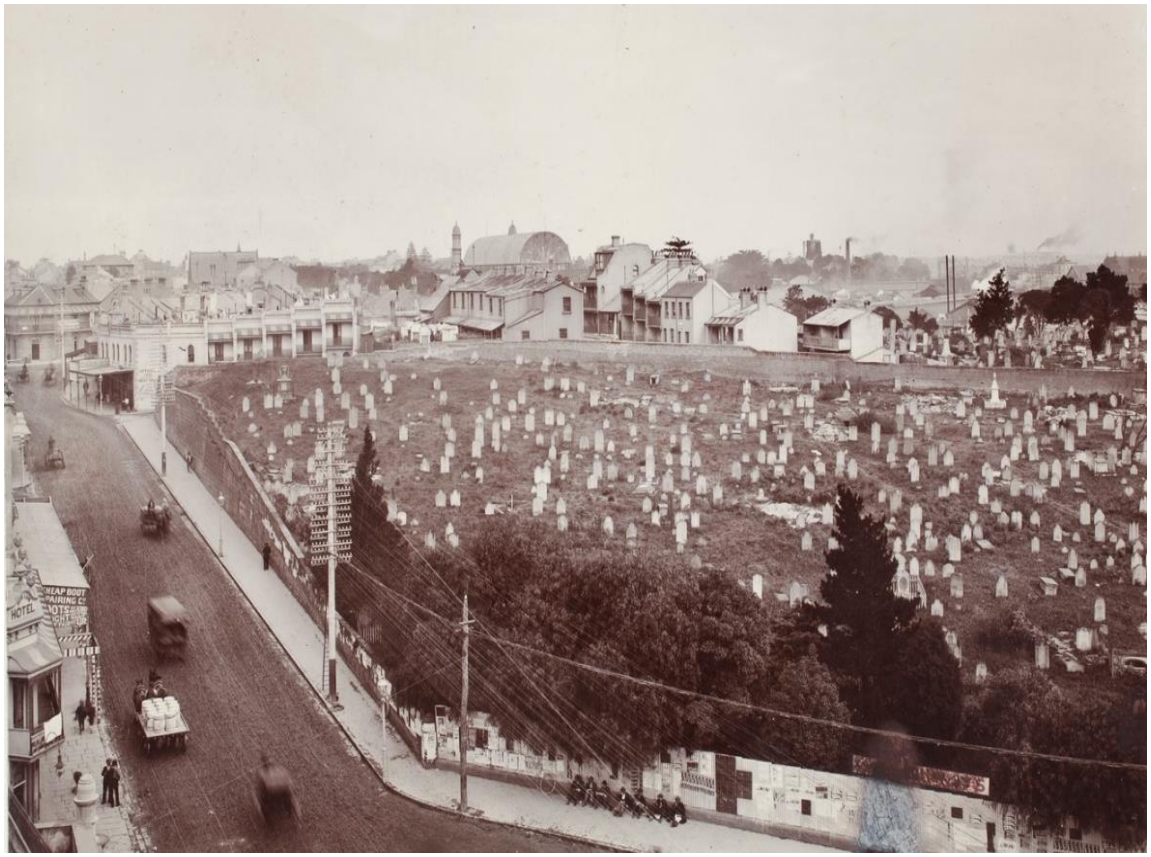


Figure 5-2. 1890s photo of the Church of England area of the Devonshire Street Cemetery, facing south from north-eastern corner

Exhumation of the remains at Devonshire Street cemetery started in 1901. Relatives of the deceased interred at the cemetery were invited to apply for the exhumation and relocation of their relatives at the expense of the NSW Government. Documentary evidence from the time indicated that all the remaining burial sites were completely exhumed, and that no archaeological evidence relating to the Cemetery remained.[19] This being said, in the 2010s as work for the CBD and South East Light Rail (CSELR) and Sydney Metro at Central Station commenced, a number of sealed burial vaults and other burial sites and remains were discovered during excavation works. It is now understood that burials do remain within the former Devonshire Street Cemetery site.

[18] The Devonshire-Street Cemetery." Evening News (Sydney, NSW), 09 August 1899 1899, 2. http://nla.gov.au/nla.news-article113265142.
[19] "Devonshire Street Cemetery," Sydney Morning Herald (NSW : 1842 -1954), January 25, 1901.

5.1.2.2 Institutional Buildings

For the western part of the construction footprint, the institutional buildings included the Benevolent Asylum (established in 1820), and the Police Superintendent's / Magistrate's residence, which was located in the garden belonging to the Carter's Barracks (constructed in 1820s and later modified, also referred to as the Government Cottage). The Carter's Barracks (1818) later used as the Sydney Female Refuge and Convent of the Good Samaritan, was located in the vicinity of the current intersection of Pitt Street and Eddy Avenue. Additions to the site constructed in the 1850s included a parsonage for the incumbent of Christ Church St Laurence and a barracks for the police Mounted Patrol. All these buildings were resumed and demolished in the early 20th century to construct the third Sydney Terminal Precinct.

Figure 5-3. Map showing the location of institutional buildings within the construction footprint, 1854[20]

[20] City of Sydney, 1864: single sheet

Figure 5-4. Plan of institutional buildings within the construction footprint, 1855[21]

5.1.2.3 The Benevolent Asylum

Established by journalist Edward Smith Hall, the Benevolent Society was a charity that funded the construction of the Benevolent Asylum in 1821. The inhabitants of the asylum were not insane; rather the building provided shelter, food, and medical assistance for the poor and needy.[22]

Within the first year the asylum housed over fifty people; an early sign of the growing need for institutional establishments within the developing colony.[23] Time passed, and by the 1840s additional wings were added to help house over 1,000 inhabitants. By the 1860s, men were being processed in the newly acquired Liverpool hospital site, resulting in a shift in focus of the Sydney asylum towards helping women and children.[24]

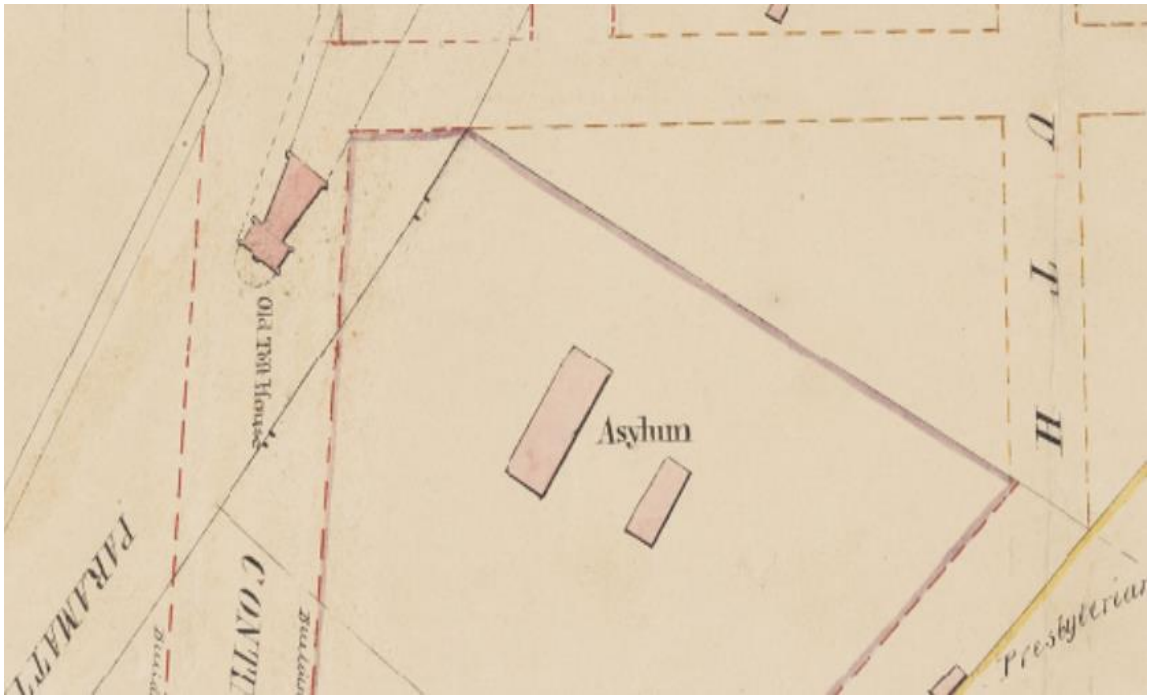


Figure 5-5. Footprint of the Benevolent Asylum, c1846[25]

[21] City of Sydney Trigonometrical Survey, 1855-1865

[22] Ron Rathbone, A Very Present Help: Caring for Australians since 1813. The History of the Benevolent Society of New South Wales(Sydney, Australia: State Library of New South Wales Press, 1994).

[23] ibid

[24] ibid

[25] SLNSW. Sketch shewing projected streets near the Carter's Barracks. Sketch shewing projected streets near the Carter's Barracks [Album view]. IE3483897 (1846)

Figure 5-6. Benevolent Asylum, c1890s[26]

5.1.2.4 Carter's Barracks, Convent of the Good Samaritan, and Sydney Female Refuge Society

Located north of the Benevolent Asylum, Carter's Barracks was built in the early 1800s under the supervision of Chief Engineer, Major George Druitt.[27] The group of buildings originally served two functions; part of the establishment housed gangs of convicts working in the brick fields and a boys' dormitory. The buildings were later used as a debtor's prison from the 1830s until 1843.[28] The site was later taken over by The Sisters of the Good Samaritan of the Order of St. Benedict in the 1850s. The Sisters established a convent and refuge within the allotments, although part of the building campus was reserved for the Police Barracks of the mounted police force.[29]

The Sydney Female Refuge Society was established by Sydney Mechanics Institute member Philip Chapman in 1848.[30] Originally opened in the old 'house of correction' building (formally the treadmill building of the barracks), entry into the refuge was voluntary or came under the recommendation of a magistrate or minister.[31] A new building for the society was constructed in 1871 by Architect Mr

[26] SLNSW.13. Benevolent Asylum, Sydney. Photographs of Sydney and New South Wales, ca.1892-1900 / N.S.W. Government Printer. Mitchell Library, State Library of New South Wales. FL3327292

[27] M. Austin, "Druitt, George (1775–1842)," in Australian Dictionary of Biography(Canberra: National Centre of Biography, Australian National University), accessed April26, 2021, https://adb.anu.edu.au/biography/druitt-george-1994.

[28] "From the Government Gazette," Australian (Sydney, NSW : 1824 -1848), December 30, 1843., 3.

[29] Vaughan Evans, Halcyon Evans, and Religious Society of Friends (Quakers) in Australia, Sydney Friends: A Short History of the Religious Society of Friends (Quakers) in Sydney, 1834-1982(Chatswood, N.S.W.: Religious Society of Friends, 1982).

[30] "Female House of Refuge," Sentinel (Sydney, NSW : 1845 -1848), August 24, 1848.

[31] Geoff Baker, "Sydney Female Refuge Society, 1848-1925," Text, State Library of NSW, February 11, 2019, https://www.sl.nsw.gov.au/stories/sydney-female-refuge-society-1848-1925.

Mansfield.[32] Although the structure was demolished in 1901 to make way for the new station, the refuge would relocate and provide support in St Peters until the mid-1920s, when it was voluntarily wound up.[33]

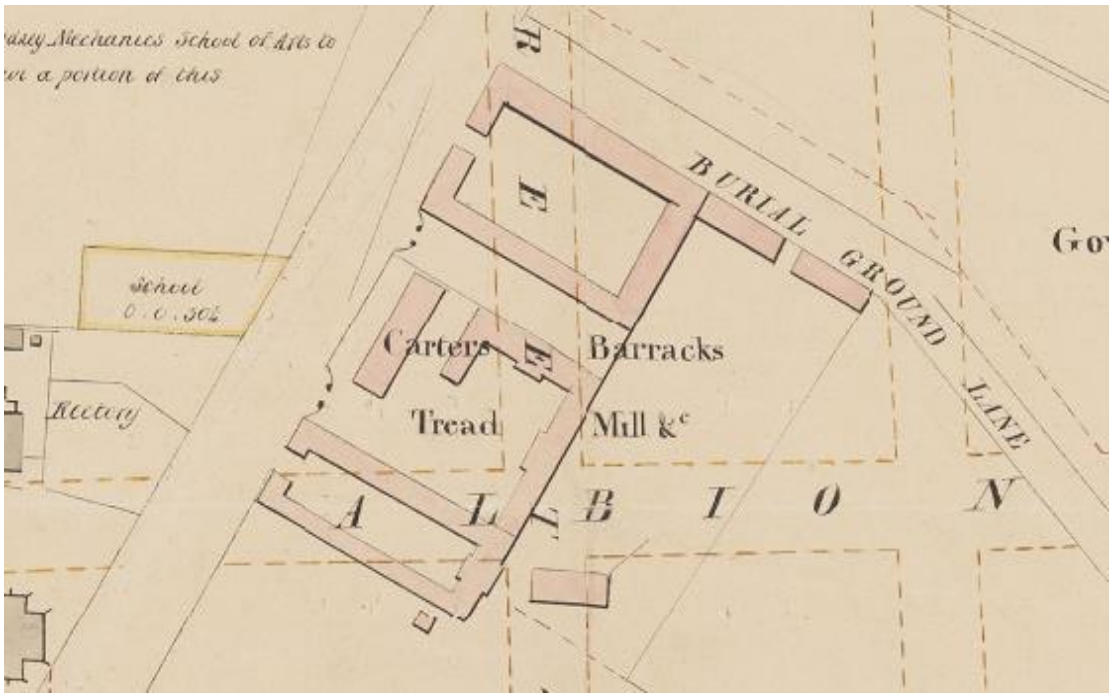


Figure 5-7. Footprint of Carter's Barracks, c.1846[34]

Figure 5-8. Early drawing of the Barracks building, possibly from Pitt Street, c1840[35]

[32] "The Sydney Female Refuge," Empire (Sydney, NSW : 1850 -1875), August 2, 1871.
[33] "Female Refuge Society," Sydney Morning Herald (NSW : 1842 -1954), April 1, 1925.
[34] SLNSW. Sketch shewing projected streets near the Carter's Barracks. Sketch shewing projected streets near the Carter's Barracks [Album view]. IE3483897
[35]

5.1.2.5 The Belmore Police Barracks

Historical records and maps from 1888 show the site of the Police Barracks located to the rear of the police magistrates building.[36] A report in 1880s noted "…These barracks were opened in June 1856, when they served as headquarters for the mounted police force".[37]

The exact date of the establishment of the Police Barracks is unclear. An 1871 report from the *Maitland Mercury and Hunter River General Advertiser* stated that 'the old Carter's Barracks in South Pitt-street, Sydney, have been recently converted into a complete commodious and Central Police Station, under the title of the Belmore Police Barracks'.[38] A report in 1880s disagrees, noting '…These barracks were opened in June 1856, when they served as headquarters for the mounted police force'.[39] The barracks were demolished in 1901.

Figure 5-9. Footprint of Police Barracks, c1888[40]

[36] Sydney & Suburban Map Publishing Co., "[Street Map of Part of the Haymarket Bounded by Pitt Street in the West, Which Is Now Railway Lines and Concourses to Central Station, c.1888]," Trove, 1888, https://nla.gov.au/nla.obj-231089552.
[37] "New South Wales Police," Australian Town and Country Journal (Sydney, NSW : 1870 -1919), September 24, 1887.
[38] "Yesterday's Sydney News." *The Maitland Mercury and Hunter River General Advertiser (NSW : 1843 - 1893)* 31 October 1871: 3.
[39] "New South Wales Police," *Australian Town and Country Journal (Sydney, NSW : 1870 - 1919)*, September 24, 1887.
[40] Sydney & Suburban Map Publishing Co. [Street map of part of the Haymarket bounded by Pitt Street in the west, which is now railway lines and concourses to Central Station, c.1888]. MAP RaA 31 Plate 43.

Figure 5-10. Belmore Police Barracks prior to demolition, c1901

5.1.2.6 Police Superintendent's / Magistrate's residence

The Police Superintendent's residence was constructed in the 1820s in a garden associated with the Carter's Barracks further north. A structure in the location of the residence is first illustrated on Harper's 1823 plan of Sydney,[41] although by the early 1830s the building had been replaced or substantially altered.

The cottage was certainly occupied by early police commanders until the resumptions of the land for the third Central Station.42 Images of the structure show a similar footprint to the 1823 Harpers map, with a protruding bay to the centre of the façade However, it is evident from images that the building underwent various stages of alterations while records show the building underwent repairs as early as the 1850s.43

[41] 'Harper's Map of Sydney,' c1823, drawn by G. C. Stewart, c1823, SZ 434 (No 1 of 3), SRNSW
[42] ibid
[43] "To Builders and Others -Repairs to Residence of the Superintendent of Police," New South Wales Government Gazette (Sydney, NSW : 1832 -1900), May 17, 1853.

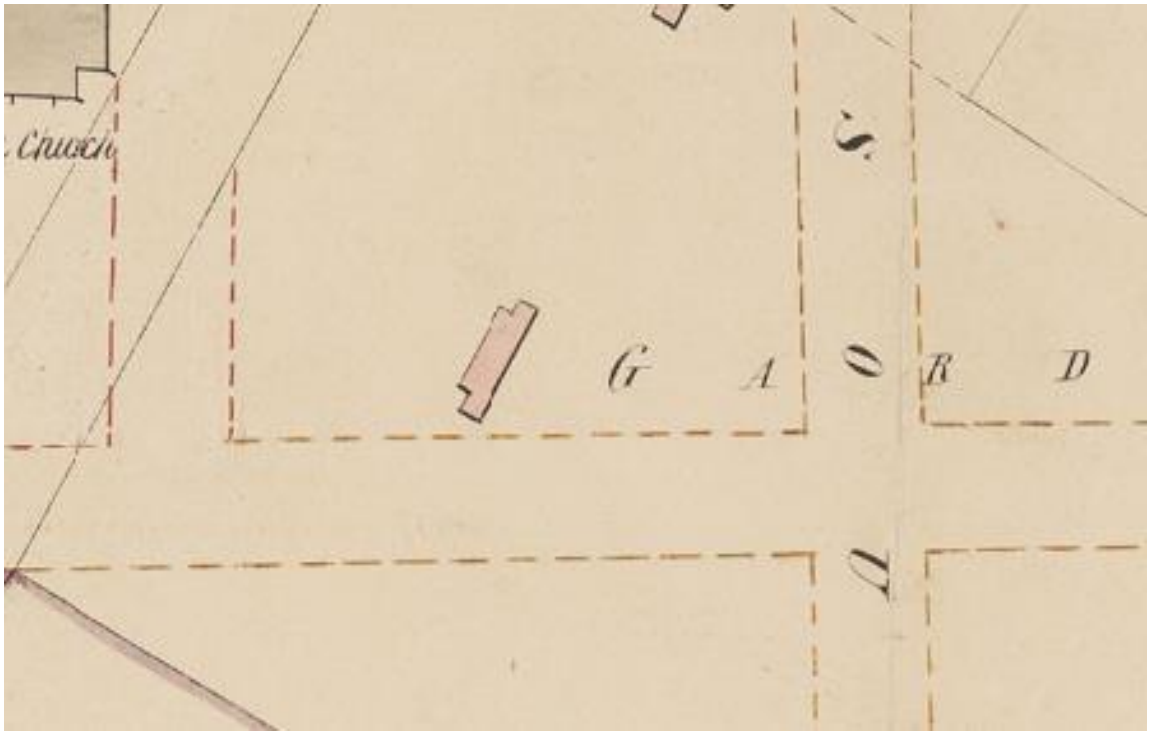


Figure 5-11. The footprint of the 1830s building[44]

Figure 5-12. The cottage, c1900[45]

[44] SLNSW. Sketch shewing projected streets near the Carter's Barracks. Sketch shewing projected streets near the Carter's Barracks [Album view]. IE3483897

[45] SLNSW. [Fosbery residence: `The Cottage', Pitt Street, Sydney]. State Library of New South Wales. FL1230184

Figure 5-13. Aerial view of the cottage prior to demolition c1901[46]

5.1.2.7 Christ Church, St Laurence parsonage

Christ Church St Laurence was constructed on Pitt Street opposite the construction footprint and consecrated in 1845.[47]

A new parsonage was built on the site of Carters' Barracks Garden and was located immediately south of the Superintendent's cottage near the Benevolent Asylum. The building was in use as a parsonage until the resumption of land in the early 1900s and was demolished in 1906 (Figure 5-14 and Figure 5-15).[48]

Figure 5-14. The footprint of the 1855 parsonage

[46] SLNSW. [Redfern Railway Station and Central Railway Station, Sydney, 1871-1920]. Dixson Library, State Library of New South Wales.IE1130647

[47] John Spooner, *The Archbishops of Railway Square: A History of Christ Church, St Laurence Sydney* (Rushcutters Bay, N.S.W: Halstead Press, 2002).

[48] "An Old Landmark Gone," *Evening News (Sydney, NSW : 1869 - 1931)*, January 27, 1906.

Figure 5-15. Image of the Parsonage from Pitt Street prior to the demolition, c1905

5.1.2.8 The Third Station

By the 1880s, discussions had begun about the need for a grand railway terminus at Sydney, that would provide better facilities for passengers and aim to equal or surpass the grand terminal station in Melbourne. This proposal had to weather the 1890s Depression and various commissions into the proposal and the general administration of the New South Wales Government Railways.[49]

Two proposals for a station had been considered by the Public Works Committee of Parliament in 1899 – the first at Hyde Park and the second over the Devonshire Street Cemetery. The second proposal was recommended, and the Government quickly moved to enact legislation authorising the project through the *City Railway Extension (Devonshire-street) Act* which was brought to the NSW Parliament by the Secretary of Works, Edward Sullivan MLA, on 3 December 1900.

The approved design would also make it necessary to demolish Devonshire Street Cemetery, the Benevolent Asylum, Carters Barracks, the Police Barracks, and other buildings on the block. Despite demolition of the buildings, archaeological excavations have uncovered demolition layers and features associated with the Benevolent Asylum and other contemporary buildings.[50]

There were two phases of excavation across the station site. The first was for the removal of the Cemetery and associated burials, the second phase of excavation in the cemetery was bulk excavation to remove the underlying sandhill. The sandhills were noted as significantly higher than the level of the existing station line on the eastern side, with infill required to create a level platform on the western side. Considerable excavation was required to lower the sandhills and the underlying shale to create a level grade for the

[49] The detailed discussions of the station proposal can be found in McKillop, R. F., Donald Ellsmore, and John Oakes. *A Century of Central: Sydney's Central Railway Station 1906 to 2006*. Redfern, N.S.W.: Australian Railway Historical Society/NSW Division., 2008 pp14-20. In contrast the building of the station takes second place to broader political issues of railway management in Gunn, John. *Along Parallel Lines: A History of the Railways of New South Wales, 1850-1986*. Carlton, Vic: Melbourne University Press, 1989.

[50] Casey & Lowe 2009

railway tracks to run on into the new station. The station itself required basements for services and offices. Thus, a considerable amount of the sandhills were required to be removed.

The new station was designed by the Government Architect Walter Liberty Vernon. The first foundation stones were laid in April 1902 and in 1903 excavation works on the Devonshire Street Pedestrian subway had commenced. The new railway terminus and main concourse were completed in 1906, with the official opening on 4th August 1906. By this time, the buildings of the old Redfern Station were demolished, and Eveleigh Station was renamed Redfern Station.

The sandstone Federation Free Classical terminal building and station created a multi-level interchange for passengers, vehicles, trains and trams. The design ensured that each type of transport entered and left the station from different levels, minimising the danger of collisions or accidents.[51] A parcel dock was also built, with four platforms connected to the interior of the station for deliveries.[52]

The interior of the terminal building was richly decorated, with decorative steel and sandstone colonnades, marble and terrazzo stairs, ornamental balustrades and stained-glass panels.[53] Passengers could enjoy a meal in the Dining and Refreshment Rooms or check on their tickets at the Booking Hall. Due to its elevation, the building was clearly visible from a considerable distance; its ornamental design, swiftly enhanced by gardens and the leafy Belmore and Prince Alfred Parks, meant that it became an instant landmark.

The main construction material for the complex was Pyrmont sandstone, with initial costs for the terminal building estimated at £230 000.[54] In 1902, an extra floor and a tower were added to the design, almost doubling the initial cost estimate to £400 000. The updated designs for the terminal building included twelve platforms, a tramway, an underground pedestrian walkway, taxi ranks, underground subways for goods, luggage and mail, and offices. The station was projected to manage 40 000 passengers per day.[55]

The second stage of construction at Sydney Station took place between 1916 and 1921, with the parcels office and eastern and western wings completed by 1919. The final addition was the imposing clocktower, which was finished in March 1921. The 64.3 metre high clock dominated the skyline of Sydney, with local employees nicknaming it 'the worker's watch'.[56]

Throughout the twentieth century, the station was continuously improved, added to and renovated. Under the 1915 *City and Suburban Electric Railways Act,* construction began on an underground railway, four electric island platforms to the east of the existing station building and the conversion of existing platforms to electricity. These works stalled in 1917 and recommenced in 1922 under Chief Engineer John Bradfield.[57] The electric platforms were connected to the city with innovative 'flying junctions' made from reinforced concrete.[58] A new entrance for the electric platforms, facing Elizabeth Street, was constructed from sandstone to match the terminal building. In 1925, an electrical substation was built on the northern end of the 'flying junctions' to serve the electrified suburban lines.[59] The first electric train and the first underground train service both ran in 1926.

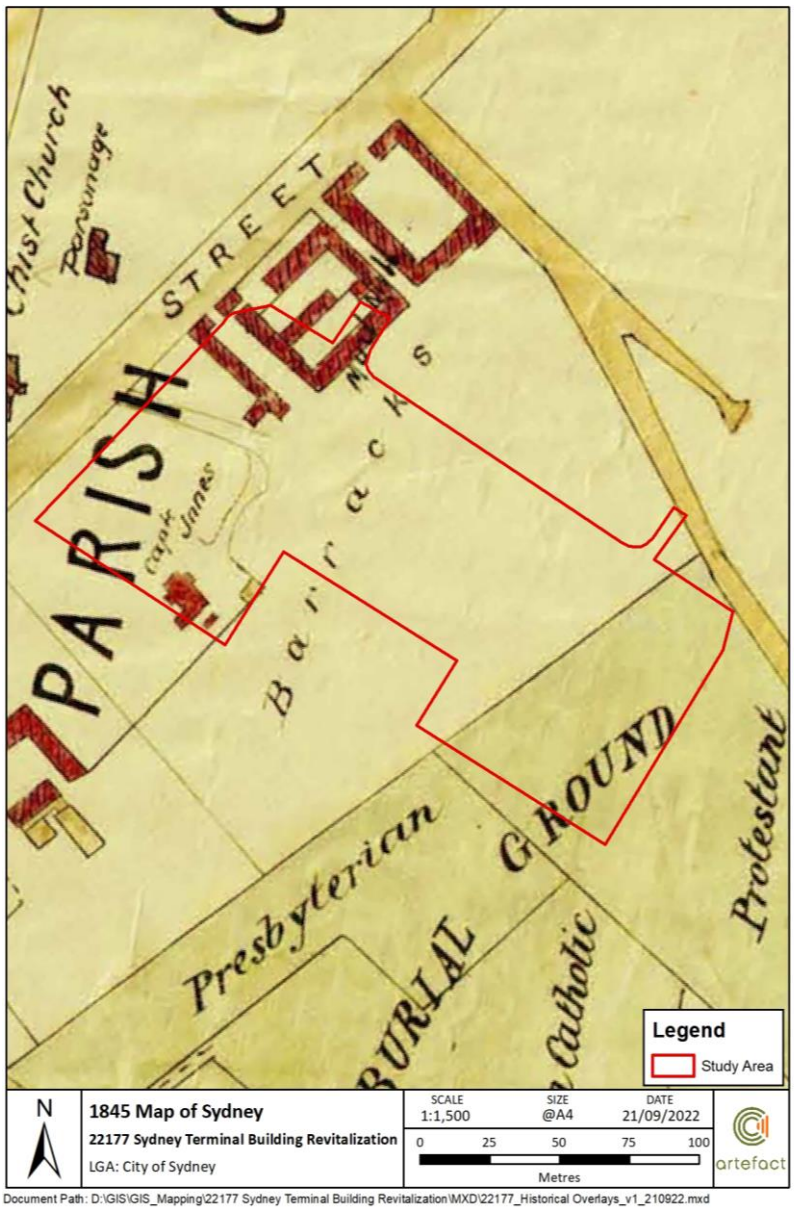
---

51 McKillop, Ellsmore, and Oakes, *A Century of Central*.
52 Ibid.
53 Ibid.
54 Dunn, 2008.
55 Ibid.
56 ibid
57 McKillop, Ellsmore, and Oakes, *A Century of Central*.
58 Ibid.
59 DPIE, 2009. *Central Railway Station and Sydney Terminal Group*. State Heritage Register. Retrieved 23/09/2022 from:https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801296

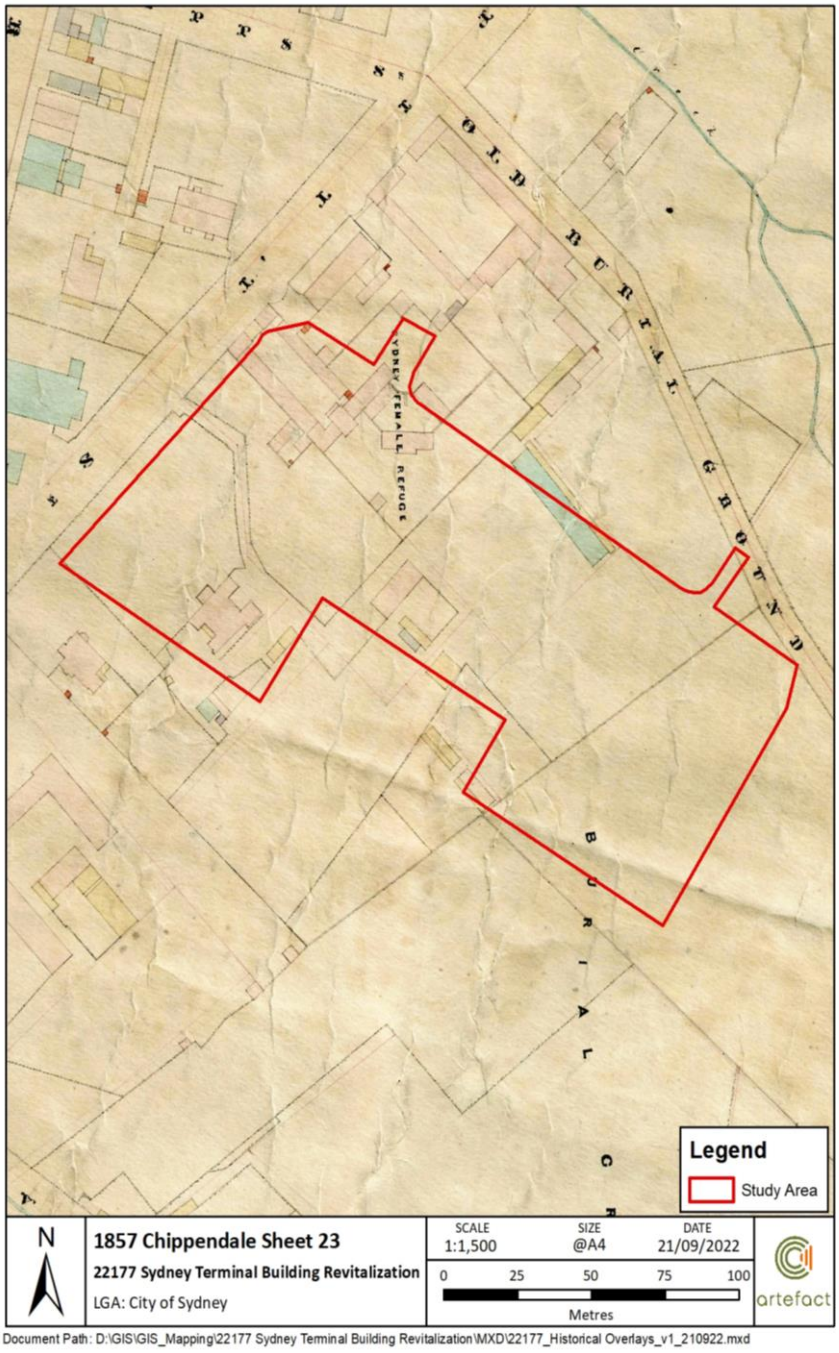
5.2 Land-use overview

This section offers a summary of the historical use of the construction footprint. For a detailed site history, see Section 3.

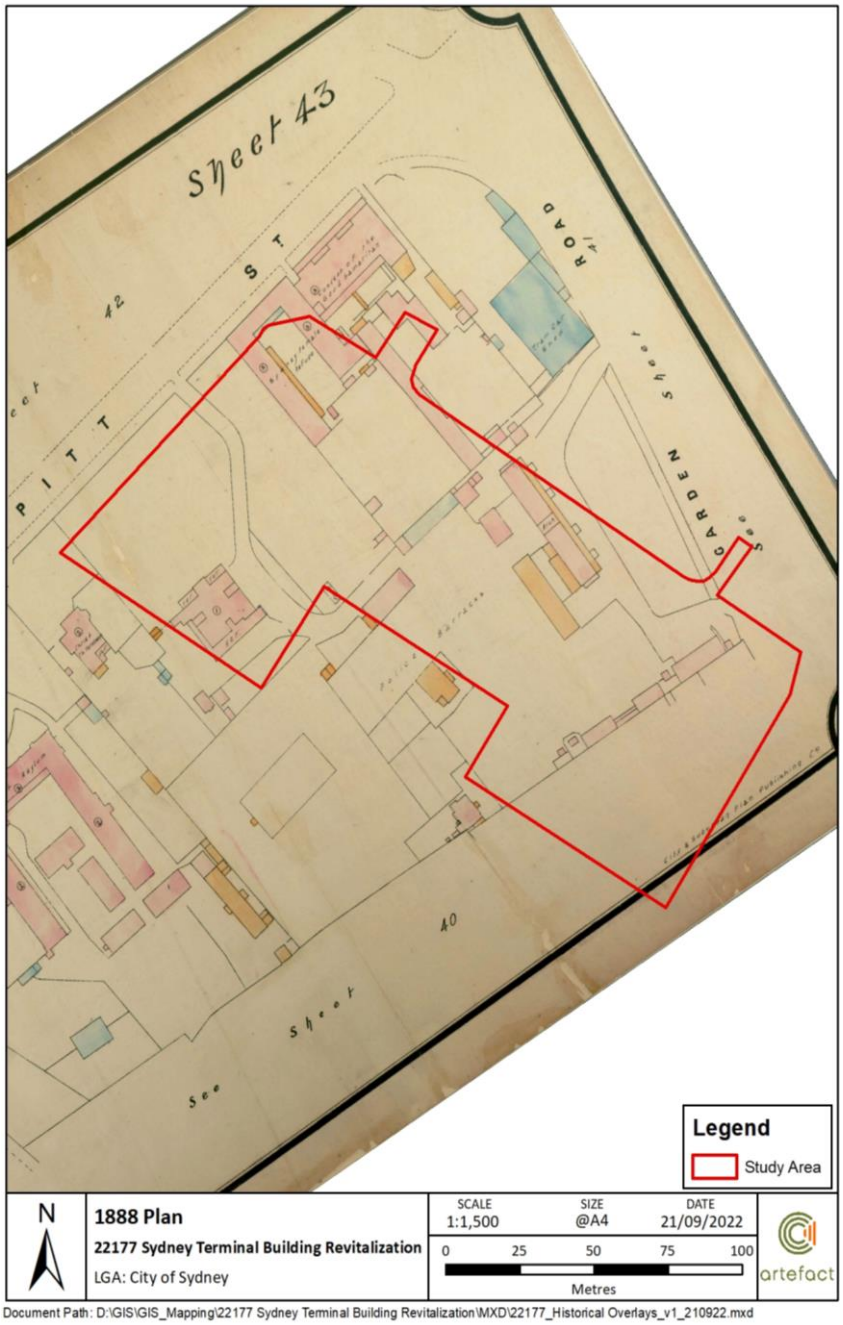
Table 5. Land use summary

Date	Use	Evidence
Pre-1854	• Carters Barracks • Mounted Police Inspector • Benevolent Asylum • Church of England Cemetery	1844 Francis Webb Shield's Plan of Sydney[60] 

[60] 1844 Francis Webb Shield's Plan of Sydney. Source: City of Sydney Archives.

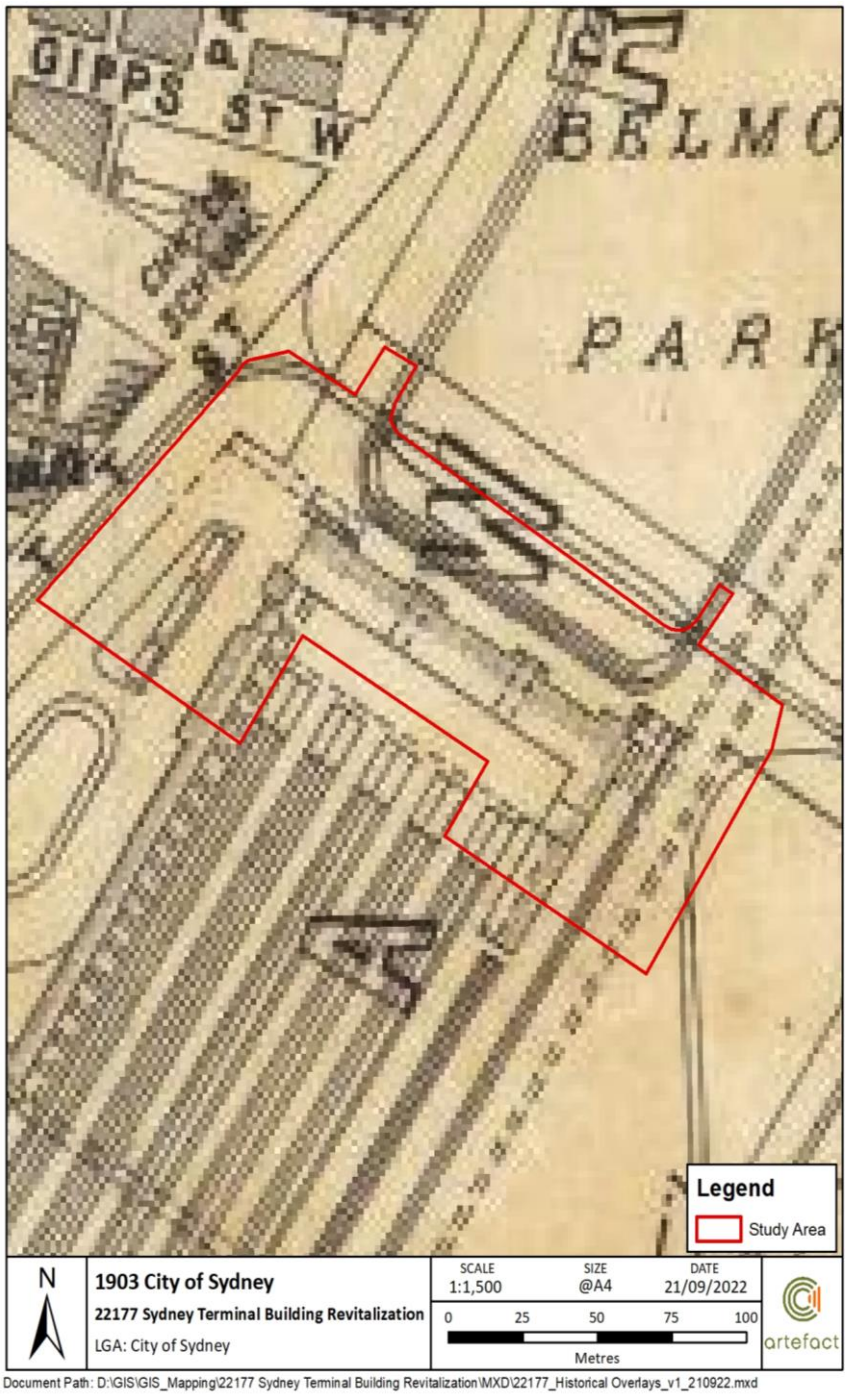
Date	Use	Evidence
c.1857	• Carters Barracks • Mounted Police Inspector • Christ Church • Benevolent Asylum • Church of England Cemetery	1857 detail plan – Chippendale Sheet 23[61] 

[61] 1857 City of Sydney Detail Plans: Sheet 23 Chippendale. Source: City of Sydney archives via the Historical Atlas of Sydney.

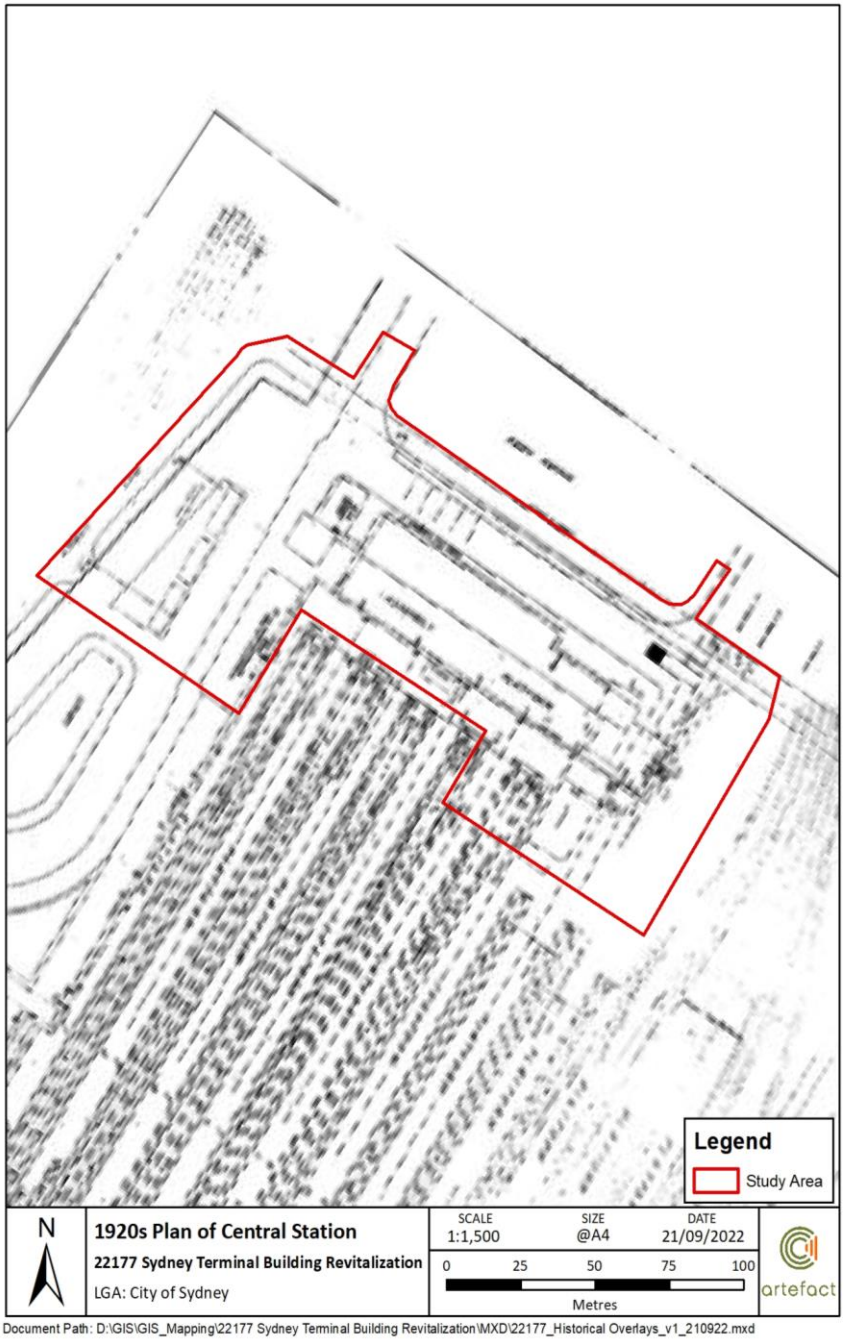
Date	Use	Evidence
1888	• Carters Barracks • Mounted Police Inspector • Christ Church • Benevolent Asylum • Church of England Cemetery	1888 Sydney Metropolitan Detail Series: Sheet I2[62]  Document Path: D:\GIS\GIS_Mapping\22177 Sydney Terminal Building Revitalization\MXD\22177_Historical Overlays_v1_210922.mxd

[62] 1884 Sydney Metropolitan Detail Series: Sheet I2. Source: NSW State Library.

Date	Use	Evidence
1903	Central Station	1903 Central as built.



Date	Use	Evidence
1920	• Central Station	1920 Central Station



5.3 Previous Archaeological Excavations relevant to the construction footprint

Numerous archaeological investigations have been undertaken within Central Station. Although the majority of these investigations were not undertaken within the construction footprint itself, the results do provide insight into the potential survival of archaeological remains throughout the station, and provide context for the assessment of archaeological potential and significance provided in Section 6.3. Those investigations undertaken within Central Station, and their proximity to the construction footprint, have been included on Figure 5-16.

5.3.1 Western Forecourt Archaeological Testing, 2009

As part of early works for the Sydney Metro Stage 1, Casey & Lowe undertook archaeological testing in the Western Forecourt of Central Station. Historical overlays identified several institutional buildings from the 19 Century, including the Benevolent Asylum and the Christ Church Parsonage (se Section 5.1 above). The location of the buildings was confirmed during the excavation of two test trenches (T1 and T2) in the Western Forecourt Garden. For the Benevolent Asylum, remains comprised demolition layers, including pieces of sandstock brick, mortar and demolition material, up to a depth of 1m, but the foundations were found to have been robbed out. The structural remains of the footings of the Christ Church Parsonage were found to have been preserved *in situ*.

Excavations of T1 revealed natural soil (sand) under the demolition layers associated with the asylum, and in one instance, a portion of a rectilinear feature was cutting the natural sands. The uncovering of natural sands fits the 19th Century description of the area as the "Sandhills."

For T2, 1.8 metres of fill was encountered under the topsoil. As with T1, this fill included layers of various soils (sandy loam) mixed with demolition material onto a layer of predominately demolition material, with natural sand encountered at the base of the trench.

5.3.2 CBD and South-East Light Rail Excavations, 2017

As part of the CBD and South East Light Rail (CSELR) project, Artefact undertook archaeological investigations at the intersection of Eddy Avenue and Pitt Street .[3] The area was assessed as having the potential to contain locally significant archaeological remains of 19th Century buildings such as the Convent of the Good Samaritan, the Sydney Female Refuge and/or the tram depot building, as well as State significant remains of the Carters' Barracks and Devonshire Street Cemetery burials. During test excavation between Eddy Avenue and Pitt Street, the remains of a north-south orientated brick drain were found approximately 1250mm below the current road surface. The drain was tentatively dated as pre-1865 and assessed as locally significant. The remains of the drain were recorded and salvaged.

5.3.3 CBD and South-East Light Rail Human Remains, 2018 – 2019

As part of the CSELR project, Artefact attended several discoveries of suspected human remains during 2018–2019.[5] On 29 October 2018, workers undertaking non-destructive digging (NDD) at the corner of Elizabeth and Chalmers Street discovered human remains, which were assessed by forensic anthropologist Dr Denise Donlan as the upper leg bones of a male. Further bone fragments in this area were discovered during NDD and wet sieving. These remains were interpreted as belonging to more than one individual and associated with the Devonshire Street Cemetery.

On 22 November 2018, workers undertaking NDD at the junction of Chalmers Street and Randle Street discovered a portion of a cranium. Further bones and several loose teeth were found during salvage in this area. These remains were interpreted as likely belonging to a single individual, possibly a female of

Caucasoid/European origin. Historical documentation revealed that the remains were discovered within the footprint of the Jewish (Hebrew) section of the Devonshire Street Cemetery.

On 15 May 2019, a sandstone feature and loose human tooth were discovered during stormwater trench works near the junction of Elizabeth Street and Chalmers Street. The sandstone feature was interpreted as associated with the Anglican section of the Devonshire Street Cemetery, though the limited amount of exposure meant that its function could not be confirmed. The human remains were assessed as being of State significance as part of the Devonshire Street Cemetery which operated from 1819 to 1867.

5.3.4 Central Station Main Works Excavations, 2019

The Sydney Metro City & Southwest Chatswood to Sydenham project involved the construction of a new metro rail line between Chatswood and Sydenham. As part of the CSMW program, Artefact undertook extensive non-Aboriginal archaeological investigations at Central Station.[6] Archaeological testing within the Sydney Yards identified significant archaeological remains including remains of the rail yard entrance, gas holder, c.1866 locomotive workshop, goods shed and sandstone foundations of the former repairing shop associated with the Second Sydney Station, part of the turntable associated with the First Sydney Station, remains of the Western Carriage Shed associated with Central Station, multiple brick, concrete and sandstone features and brick service pits. Burial vaults, grave cuts and fragmented human remains associated with the Devonshire Street Cemetery were also found within the new Metro 'Station Box.' The graves were overlain by a grey sandy soil which also contained human remains. The final reporting for the archaeological work is currently being undertaken written.

5.3.5 Archaeological Monitoring of Works at Eddy Avenue Forecourt Sydney Metro, 2020

The Sydney Metro City & Southwest Chatswood to Sydenham project involved the construction of a new metro rail line between Chatswood and Sydenham. As part of the project, a new fire booster assembly was installed in the Eddy Avenue Forecourt (Plaza). This booster assembly was installed as part of the enabling works for the fire protection system required at Central Station.

The archaeological monitoring of the work confirmed the assessment of the impact of the works as being unlikely to contain remains from the pre-1901 occupation and use of the land as a cemetery and Morgue. The monitoring revealed fill and remains from the construction of Central Station and subsequent modifications to the Eddy Avenue forecourt.

5.3.6 More Trains More Services, 2020 – 2021

As part of the More Trains, More Services (MTMS) Sydney Terminal Area Reconfiguration (STAR) project, Mountains Heritage has undertaken archaeological monitoring and excavation at the Sydney Yard within Central Station.

Initial assessment that only disturbed remains of local and State heritage significance were likely to be present were reconsidered when substantially intact relics associated with the first and second Sydney Stations were identified during monitoring between July 2020 and February 2021. An additional s60 approval was obtained for testing and salvage of these relics in April 2021, with test excavations taking place at Sydney Yard from September 2021.

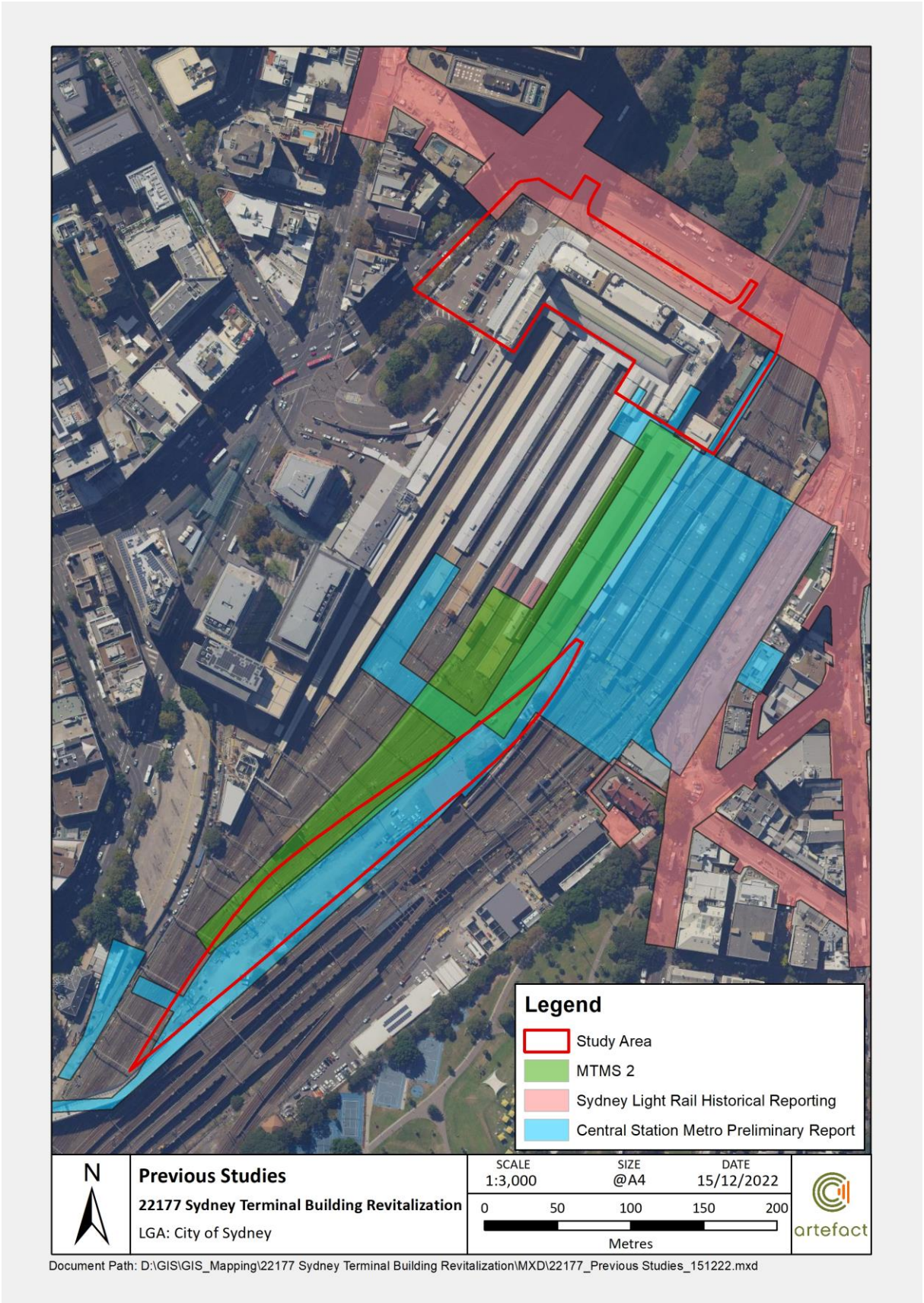


Figure 5-16: Location of previous investigations

5.4 Previous disturbance

Previous archaeological work along Eddy Avenue and in the Eddy Avenue concourse failed to locate remains of the buildings and Cemetery historically known to be in that location (see Section 5.3.5). They all report locating fill deposits associated with Central Stations construction and use. This evidence points to the removal of archaeological evidence in the vicinity of Eddy Avenue at that level (between RL 11.400 and RL 10.5).

The results of the Casey & Lowe Benevolent Asylum testing are that archaeological evidence of the earlier buildings is located at RL 17.04 and RL 17.22. This is about 2.5 metres above the level of the lower concourse of the Central Station Building. Thus, the lower level of Central Station is 2.5 metres below the archaeological remains in the Western forecourt gardens. This conclusion is also evidenced by historical images of the Station showing substantial excavation required to create a level platform for the station building.

Regarding the archaeological work relating to the former Devonshire Street Cemetery, it is likely that the portion of the Cemetery in the construction footprint was removed as part of the excavation of the top of the sand ridge to create a level grade for the railway tracks and platforms. As the cemetery was on a sand ridge that sloped in all directions extensive excavation was required to create a level area for Central Station.

The archaeological work from the northern end of the Station Box demonstrated how close the Ashfield Shale which underly the sand hills, is to the surface. It lies immediately under the former railway tracks in Platform 13 to 15 at roughly RL 19.25m. This is 1.8m below the RL for the concourse which in this area is 21.3m.

5.4.1 Impacts during construction of Sydney Terminal

Historical photographs dating to the construction of Sydney Terminal show what appears to be significantly cut natural contexts within the building footprint (see Figure 5-17). Landscape modification for construction of Sydney Terminal and later construction of the City Railway are likely to have resulted significant modification to the northern construction footprint.

Figure 5-17: Screenshot of a portion of historical photograph taken from Belmore Park area looking south-east, showing stepped excavation for Sydney Terminal building footprint. [picture]. (nla.gov.au)

Eddy Avenue Plaza, situated immediately adjacent to Sydney Terminal, may not have been cut down to the same extent during the original construction phase of Sydney Terminal. Figure 5-18 shows a zoom in of a photograph taken during construction of Sydney Terminal, and an area adjacent to the heavily modified building footprint that may be the current location of Eddy Avenue Plaza. It is difficult to determine the intactness of the ground surface in that area based on the photograph but it does appear that there are mounds of spoil overgrown with vegetation and a small cutting facing Eddy Avenue.

Figure 5-19 shows a photo taken in c.1903(?) looking south within the cutting for Sydney Terminal. The photo possible post-dates the image in Figure 5-18, as it appears to show a deeper cutting closer to the western extent of the building footprint.

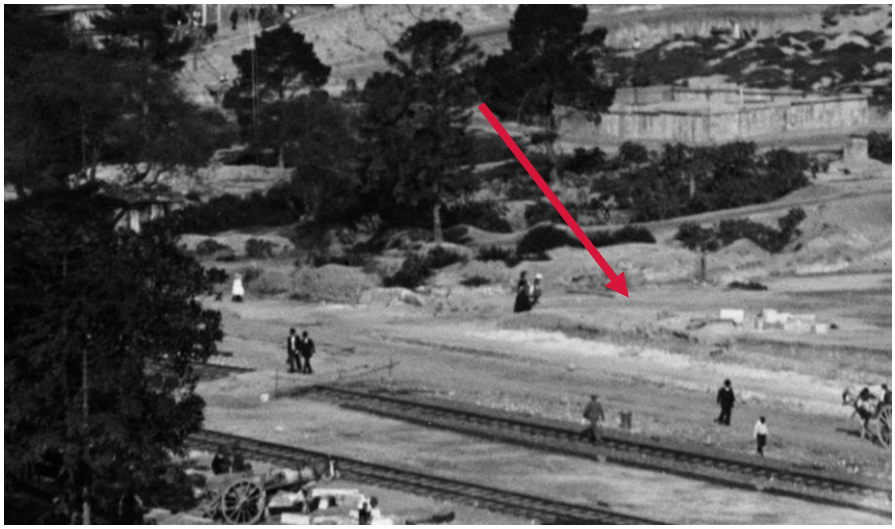


Figure 5-18: Screenshot of a portion of historical photograph taken from Belmore Park area looking southeast, showing western end of Sydney Terminal building in approximate area where Eddy Avenue Plaza is located (red arrow)

Figure 5-19: Unidentified workers cutting sandstone blocks during the construction of Central railway station, Sydney, 1903?.63

63 1903, National Library of Australia

Subsequent construction of the City Railway involved construction of the Eddy Avenue Plaza in a similar layout to its extant form. Prior to construction of the City Railway the entrance off Eddy Avenue was a ramp to the Country platform elevation. Construction of the City Railway involved excavation for the new entrance to the suburban platforms and removal of the ramp. Modification in the 1980s/1990s included further lowering the elevation of the western half of the plaza as part of changes to Sydney Terminal building.

In summary, the former topography within the Sydney Terminal building footprint is likely to have been truncated or removed. Historical photographs taken during construction of Sydney Terminal show what appears to be spoil mounds and some excavation in the approximate location of Eddy Avenue Plaza. Although Eddy Avenue Plaza may not have been truncated to the same extent, modifications to that area during construction of the City Railway and in the 1980s/1990s may have removed or disturbed any archaeological contexts in that area.

5.5 Archaeological potential and significance

The historical phasing in Table 6 provides a guide for contextualising the surviving features, relics and elements across the construction footprint. The construction footprint has the potential to contain historical archaeological resources associated with the following phases of development:

Table 6: Summary of historical land-use

Phase	Date	Development
Phase I | Aboriginal Land	Pre 1788	Use of the construction footprint by Aboriginal people.
Phase II | post-Contact – pre formal use	1788-1818	Characterised by informal use such as clearing for firewood, grazing etc. Was on the edge of town till c.1815 – 1820. Possible use for Aboriginal fringe camps.
Phase III | Government use	1818-1901	Devonshire Street Cemetery (1818-1867) and Church of England residence and morgue. Government buildings including Carters Barracks, superintendent's residence, Belmore Police Barracks
Phase IV | Third Railway Station	1901–present	Constructed 1901-1923, electrified from 1923 onwards

5.5.1 Potential archaeological remains within construction footprint

The following assessment has been based on research undertaken for the Archaeological Site Plan (ASP) for the Central Station Renewal project, prepared by Artefact Heritage in 2022.[64] Table 7 summarises the potential archaeological resources within the construction footprint. The item numbers in Table 7 have been extracted from the ASP for consistency. These items have been discussed in detail in Section 5.5.2 to Section 5.5.11 and illustrated on Figure 5-20.

[64] Artefact Heritage, August 2022

Table 7:Overview of known and potential archaeological resources within the construction footprint

Item no.	Item name
SY0025	Devonshire Street Cemetery
SY0222	Police Superintendent's Residence
SY0223	Carter's Barracks
SY0224	Belmore Police Barracks
SY0228	Old Burial Ground Road
SY0229	1850's Fencing
SY0268	Church of England – Residence and Morgue
SY0169	Central Station Platforms
SY0184	Subway Passage System
SYQ318	Bondi Ocean Outfall Sewer [BOOS]

Figure 5-20: Potential archaeological features as identified in the 2022 ASP

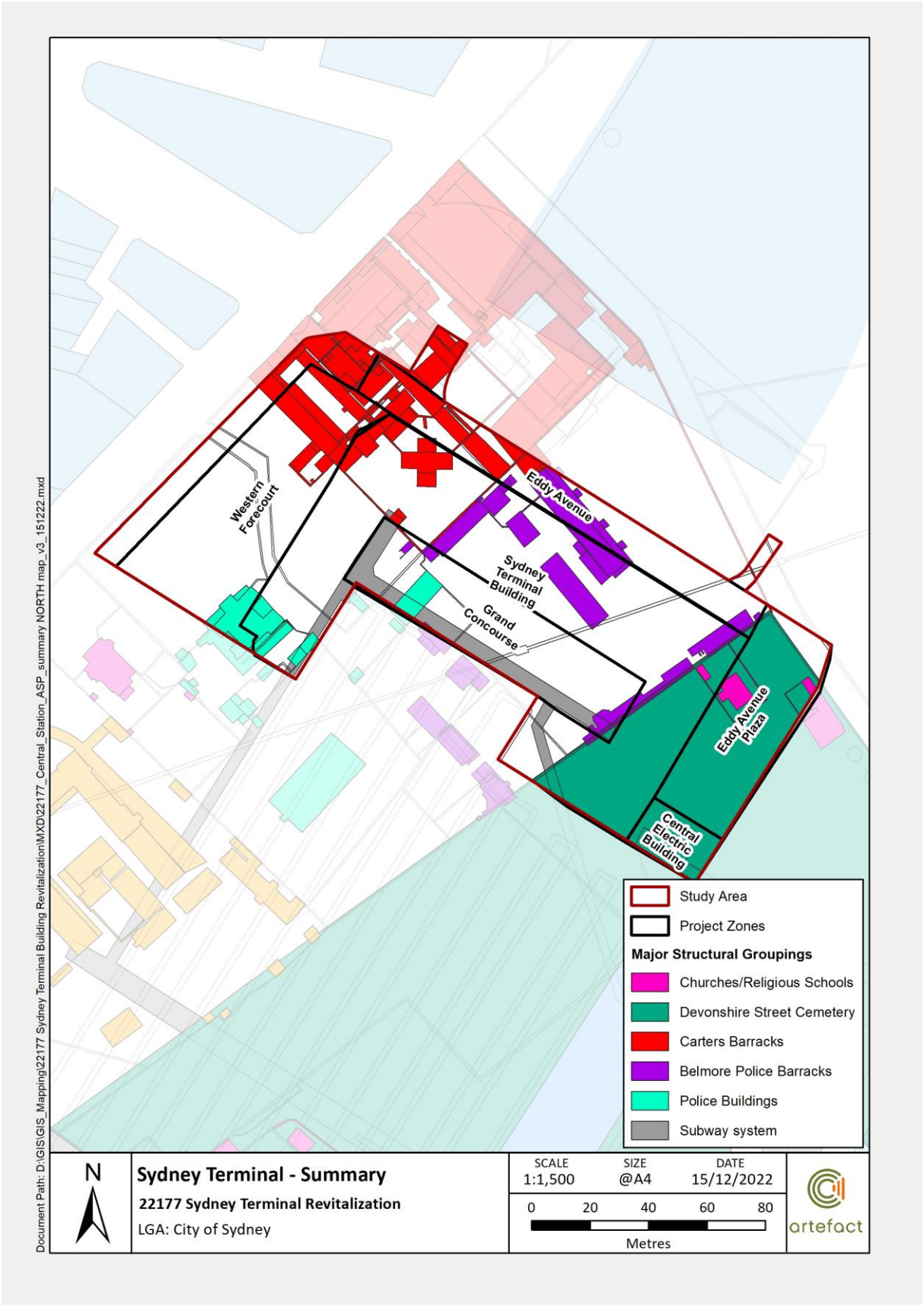


Figure 5-21: Historical overlay plan showing the location of the former structures and features within the construction footprint

5.5.2 Devonshire Street Cemetery

Archaeological potential

Following the exhumation of bodies from the burial ground, a large amount of the area of the cemetery was excavated to create a level grade. Initial exhumation works involved trenching, and likely removed the majority of archaeological evidence related to the burials, associated vaults, headstones, fencing and structures on the site. A second phase of excavation in 1901 sought to prepare the area for construction, and large sand hills were removed to expose the underlying shale deposit. This second phase of likely resulting in the excavation of higher areas, and in filling of lower areas to create a level site.

In 2019 approximately 70 graves, 6 vaults and human remains were archaeologically excavated prior to the excavation of the Sydney Metro CSM Station Box. These remains were from the Congregational Section of the Devonshire Street Cemetery and extended below Platforms 12 and 16. The remains were removed along with a deposit of grey sand representing the exhumation works which also contained disarticulated human remains.

However, all the platforms overlie the location of the Devonshire Street Cemetery. Platform structures within the CSM Station Box excavation footprint have been removed leaving Platforms 1 to 12 to overlie potential remains from the Devonshire Street Cemetery. Based on the results of the Central Station Metro archaeological excavations it is clear that the area above the top of the railway formation does not have the potential to contain remains from the Devonshire Street Cemetery. Below this area there is a much greater potential for remains to occur.

The construction footprint is located adjacent to Eddy Avenue and has been subject to moderate levels of disturbance. It is likely that the landscape modification that occurred in this location prior to the construction of the third phase of Central Station has impacted on the archaeological resource, in addition to more recent impacts associated with the construction of the plaza. The potential for this portion of the construction footprint to contain evidence of the Devonshire Street Cemetery is likely to vary throughout the plaza. For this reason, all excavation works within the footprint of the former cemetery should be subject to direct archaeological management.

The construction footprint has **moderate potential** to contain an archaeological resource associated with the Devonshire Street Cemetery.

Archaeological significance

The Devonshire Street Cemetery was the second formal burial ground established in the colony in 1820 and continued in use until the 1860s. Despite the cemetery's exhumation and levelling in 1901 and 1902, as well as the lack of evidence that human remains have been located or recovered since the cemetery was exhumed, it is possible that some remnants of human remains, coffin furniture or headstones may be present, although most likely to be fragmentary and in redeposited fill.

Archival records can supply some information on the identities of the people who were buried at the cemetery, however this record may not be complete. Pauper's graves and lacunae within the historical record may mean that some interments are incompletely documented. The division of the burials into separate congregational areas may have material distinctions between the burial evidence of the graves. Forensic, osteological and isotopic analysis of skeletal remains can yield information about the health and diet of the interred, information which is not available from other sources. Burial ornamentation such as tombstones and tomb structures provide valuable symbolic evidence of funerary practices and attitudes towards death. These types of symbolic values are understood for wealthier burials from historic records, however the large number of poor or historically unmentioned people in the early colony are not as clearly understood from archival records. Burials from the period of the early colony at around 1820, particularly during the convict period (before 1840), and up to 1865 when the cemetery closed, are rare and highly valuable archaeological resources.

Legible in situ archaeological remains associated with the Devonshire Street Cemetery would be State significant under Criteria A, D, E and F.

In response to Bickford and Sullivan's questions about research potential, the remains of the Devonshire Street Cemetery have the potential to contribute knowledge that no other resource and site can about the cemetery and the people interred, as well as answer specific questions relating to the development of the cemetery and burial practices during the 19th century in NSW.

The archaeological remains from the Devonshire Street Cemetery are of **State Significance**.

5.5.3 *Police Superintendent's Residence*

Archaeological potential

The location of the former Police Superintendent's Residence currently functions as an open garden and pathway as part of the Western Forecourt of Central Station.

The residence is shown on plans as being constructed in brick or stone masonry. Demolition structure is likely to have been constrained to reduction of standing structures to desired new ground levels. The site has not been subject to intensive built redevelopment, and the potential exists that intact archaeological remains survive.

Remains associated with the use of the Police Superintendent's Residence 'primary' archaeological evidence–that may survive at the subject site include walls, foundations, occupation layers and deep cut features such as privies, pits or wells. Remains associated with the demolition of the Police Superintendent's Residence 'secondary' archaeological evidence–that may survive at the subject site include rubble and levelling layers.

The construction footprint has **moderate potential** to contain an archaeological resource associated with the Police Superintendent's Residence.

Archaeological significance

There is evidence to suggest that the Police Superintendent's Residence was repurposed from an earlier structure completed under the administration of Lachlan Macquarie and associated with Carter's Barracks.

Based on the NSW Heritage Assessment Criteria, primary archaeological evidence of good integrity/intactness ('survival') would meet the threshold of State significance. This is because primary archaeological evidence has considerable potential to contribute to our understanding of the early construction in Sydney and the repurposing and function of this building as a police residence.

Secondary archaeological evidence would meet the threshold of local significance for most criteria at the subject site, if intact. This is because secondary remains do not contribute to our understanding of the location while it was in operation, but may produce associated evidence such as wall alignments, building fabric or material culture. Secondary evidence also has the potential to illuminate activities associated with the dismantling of the complex. The 'integrity' and 'intactness' of archaeological remains can vary, and the degree of survival can impact the ability to interpret the archaeological record. This has a bearing on the significance of the archaeological remains to yield valuable and new information for interpretation.

If primary archaeological evidence of good integrity is identified at the subject site, criteria which would meet the threshold of State significance include Historical Significance (criterion A), Rarity (criterion F) and Representativeness (criterion G), as the Police Superintendent's Residence may have been one of the

earliest buildings in this part of Sydney. Evidence of representative of Associative Significance (criterion B) may also meet the threshold of State significance in these circumstances as the remains may shed light on the expansionist agenda of Lachlan Macquarie, and the subsequent repurposing of the building after Macquarie's departure from Sydney.

Intact and legible remains of the Police Superintendent's Residence would have the potential to reach the threshold for **State significance** as evidence of the oversight of Carter's Barracks and its repurposing into residence for the police superintendent in Sydney.

The structures have research value for its potential to demonstrate their original use, construction techniques and functions. Associated deposits, particularly refuse deposits, have research value for their ability to demonstrate lifeways, diet, health and daily life of the inhabitants.

In response to Bickford and Sullivan's questions about research potential, the remains of the Police Superintendent's Residence have the potential to contribute knowledge that no other resource and site can about the oversight of Carter's Barracks and the housing of police superintendents in early Sydney, as well as answer broader questions relating to the daily life, duties, and aspirations of the overseers of Carter's Barracks and the police in early NSW. It is also noted that these items have not been subject to archaeological investigations, and the extent and integrity of the archaeological resource is not yet known.

5.5.4 Carter's Barracks

Archaeological potential

Artefact Heritage undertook archaeological testing for the Sydney Light Rail project within Eddy Avenue (area referenced as Fee Zone 13). Except for a brick-built barrel drain, no archaeological evidence of the barracks was identified within the Fee Zone 13 study area, suggesting that the construction of Eddy Avenue and associated services and tram tracks have removed all but the deepest portions of the former buildings in this location.

It is noted, however, that these were substantial buildings and required foundations for their masonry walls and chimneys and there is potential for footings to be located at depth, particularly within the western forecourt.

Based on previous historical research and the results of one archaeological trench excavated in the Western Forecourt in 2009,[65] the following archaeological remains associated with the barracks/refuge/convent may be located within the study area:

- Surviving archaeological remains of the barracks/refuge/convent may include demolished or truncated walls or foundations of the buildings, deep cut features such as wells, cisterns, rubbish pits and cesspits, occupation deposits, postholes associated with timber outbuildings, and rubble layers or robber trenches associated with demolition. It is expected that these are most likely to survive in the northern portion of Central Station, to the south-east of the intersection of Eddy Avenue and Pitt Street
- Demolition layer – material from demolition of the Benevolent Asylum may have been spread out over a wide area, including the study area. Expected remains may include bricks, mortar, and other materials

[65] Casey & Lowe, 2009. *Results of Archaeological Testing: Western Forecourt, Central Station*

The construction footprint has **high potential** to contain an archaeological resource associated with the Carter's Barracks.

Archaeological significance

Intact and legible remains of Carter's Barracks would have the potential to reach the threshold for **State significance** as evidence of convict barracks, mounted police barracks, Sydney Female Refuge Society, and the Convent of the Good Samaritan in Sydney.

The structures have research value for its potential to demonstrate their original use, construction techniques and functions, as well as their structural, aesthetic and functional changes over time. Associated deposits, particularly refuse deposits, have research value for their ability to demonstrate lifeways, diet, health and daily life of the inhabitants.

In response to Bickford and Sullivan's questions about research potential,[66] the remains of Carter's Barracks have the potential to contribute knowledge that no other resource and site can about the succession of convicts, mounted police, Sydney Female Refuge Society ,and the Convent of the Good Samaritan in early Sydney. The remains can answer broader questions relating to the daily life, duties and aspirations of a subsection of the population over time in early NSW.

5.5.5 Belmore Police Barracks

Archaeological potential

The Belmore Police Barracks was purpose-built in the 1850s primarily comprising sandstone and brick. Most of the Belmore Police Barracks is now beneath the Main Station Building of Central Station and has likely been subject to significant impacts through construction. Throughout the footprint of the previous Belmore Police Barracks, a demolition layer may remain intact below the ground surface, likely spread out over a wide area. Expected remains may include bricks, mortar, sandstone, slate, glass, metal and timber, as well as intact masonry foundations. That said, previous construction works in the study area have severely impacted the likelihood of recovering archaeological remains associated with the Belmore Police Barracks.

The construction footprint has **low potential** to contain archaeological evidence associated with the Belmore Police Barracks.

Archaeological significance

Intact and legible remains of Belmore Police Barracks would have the potential to reach the threshold for **State significance** as evidence of the early construction in Sydney, the repurposing and function of this building as a police residence, and the early police barracks in Sydney.

The structures have research value for their potential to demonstrate their original use, construction techniques and functions, as well as their structural aesthetic and functional changes over time. Associated deposits, particularly refuse deposits, have research value for their ability to demonstrate lifeways, diet, health and daily life of the inhabitants. Remains associated with the use of the Belmore Police Barracks

[66] Bickford, A and S Sullivan, 1984. 'Assessing the Research Significance of Historic Sites', in Sullivan S and S Bowdler (eds), Site Surveys and Significance Assessment in Australian Archaeology (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24; Heritage Branch Department of Planning NSW, 2009. *Assessing Significance For Historical Archaeological Sites and 'Relics'*. Report endorsed by the Heritage Council of NSW, December 2009.

'primary' archaeological evidence – that may survive at the subject site include walls, foundations, occupation layers and deep cut features such as privies, pits or wells.

Secondary archaeological evidence would meet the threshold of local significance for most criteria at the subject site, if intact. This is because secondary remains do not contribute to our understanding of the Belmore Police Barracks while it was in operation, but may produce associated evidence such as wall alignments, building fabric or material culture. Secondary evidence also has the potential to illuminate activities associated with the dismantling of the complex. The 'integrity' and 'intactness' of archaeological remains can vary, and the degree of survival can impact the ability to interpret the archaeological record. This has a bearing on the significance of the archaeological remains to yield valuable and new information for interpretation. Remains associated with the demolition of the Belmore Police Barracks 'secondary' archaeological evidence – that may survive at the subject site include rubble and levelling layers.

In response to Bickford and Sullivan's questions about research potential,[67] the remains of Belmore Police Barracks have the potential to contribute knowledge that no other resource and site can about the organisation of the police in early Sydney. The remains can answer broader questions relating to the daily life, duties, and aspirations of police officers in early NSW.

5.5.6 Old Burial Ground Road

Archaeological potential

No information has been located regarding the material and construction of the Old Burial Ground Road. From the quotation from the Inspector of Nuisances provided above, until the 1850s at least, it was likely an unsealed surface. It is highly unlikely that an unsealed historical road surface would have survived the resumption and wide scale demolition and reconstruction associated with the building of Central Railway Station in 1901-1906.

However, with the increase in population of Sydney and the likely attractive nature of the Old Burial Ground Road as a route between the east and west parts of the city, it is possible that the road was sealed over time. Prevalent road construction methods at the time included cobbles, macadam construction and Telford road construction. Macadam construction entails the deposit of several layers of gravel, trending progressively finer in gauge, up to a wearing surface of fine gravel which may be sealed with tarmac. Telford road construction consists of the placement of tightly packed large blocks of sandstone, topped by smaller blocks and then a fine wearing surface.[68] Neither Cobbles, Macadam nor Telford road construction are generally of a depth greater than approximately 400 millimeters. Recent archaeological excavations at Central Railway Station have identified intact remnant sections of the cobbled surface of Devonshire Street. It is therefore possible that intact elements of paving of Old Burial Ground Road may be present in the study area.

The construction footprint has **low potential** to contain archaeological evidence associated with the Old Burial Ground Road.

[67] Bickford, A and S Sullivan, 1984. 'Assessing the Research Significance of Historic Sites', in Sullivan S and S Bowdler (eds), Site Surveys and Significance Assessment in Australian Archaeology (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24; Heritage Branch Department of Planning NSW, 2009. *Assessing Significance For Historical Archaeological Sites and 'Relics'.* Report endorsed by the Heritage Council of NSW, December 2009.

[68] Department of Main Roads NSW (1976). The Roadmakers: A history of main roads in New South Wales. Department of Main Roads NSW

Archaeological significance

Intact and legible remains of the Old Burial Ground Road would have the potential to reach the threshold for **State significance** as evidence of the early road and drainage infrastructure in Sydney.

Remains may include 'primary' archaeological evidence such as in situ roadway, kerbing and associated drainage and other infrastructure. Remains associated with the demolition of these items 'secondary' archaeological evidence that may survive at the subject site may include rubble and levelling layers.

The road and associated infrastructure have research value for their potential to demonstrate their construction techniques and alignments, as well as aesthetic and functional changes over time. Associated deposits, particularly refuse deposits associated with drainage, have research value for their ability to demonstrate health and daily life of the inhabitants of early Sydney.

In response to Bickford and Sullivan's questions about research potential,[69] the remains of Old Burial Ground Road have the potential to contribute some knowledge that no other resource and site can about the roadways and infrastructure in early Sydney. The remains can answer broader questions relating to road infrastructure in early NSW.

5.5.7 1850's Fencing

Archaeological potential

The fencing of the Devonshire Street Cemetery was robust in nature including at lightest footings for low sandstone walls, and at heaviest, footings for substantial sandstone retaining walls. These extended into areas currently occupied by substantial built infrastructure of Central Railway Station, and also extended through areas including rail and platform locations, where less substantial development has taken place. The potential exists for remains of these footings to survive intact within the study area, particularly in locations that have been subject to lower degrees of subsequent development. Intact remains of these items may include cut and fill, trenching, and footing blocks. During recent archaeological works in Central Railway Station remains of the Devonshire Street Cemetery fencing were identified.

Early iterations of fencing around the rail infrastructure to the south of the Devonshire Street Cemetery, including parts of Central Railway Station, appear to have consisted largely of timber palisade and timber and horizontal beam construction. Intact remains of these items would comprise posts, post holes and evidence of cut and fill.

The construction footprint has **low potential** (timber fence) and **moderate potential** (sandstone footings) potential to contain archaeological evidence associated with the 1850s Fencing.

Archaeological significance

Intact and legible remains of sandstone footings associated with the 1850's fencing would have the potential to reach the threshold for **State significance** as evidence of the boundaries of the Devonshire Street Cemetery, Central Station, and Mortuary Station.

This is because primary archaeological evidence has considerable potential to contribute to our understanding of the early construction in Sydney of this feature. The fencing is significant for its ability to demonstrate the location of the boundary and access points at Devonshire Street Cemetery, Central Station, and Mortuary Station. Remains associated with early fencing of the site may include 'primary' archaeological evidence. This would include walls, foundations and deep cut features. Remains associated

[69] Bickford, A and S Sullivan, 1984. 'Assessing the Research Significance of Historic Sites', in Sullivan S and S Bowdler (eds), Site Surveys and Significance Assessment in Australian Archaeology (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24; Heritage Branch Department of Planning NSW, 2009. *Assessing Significance For Historical Archaeological Sites and 'Relics'.* Report endorsed by the Heritage Council of NSW, December 2009.

with the demolition of these items – 'secondary' archaeological evidence – that may survive at the subject site may include rubble and levelling layers.

In response to Bickford and Sullivan's questions about research potential, the remains of the fencing have the potential to contribute knowledge that no other resource and site can about the boundaries of formalised Devonshire Street Cemetery, Central Station, and Mortuary Station.

5.5.8 Church of England – Residence and Morgue

Archaeological potential

The structures in the Church of England section were substantial brick structures, possibly with sandstone footings. The building north-west of these, the Morgue, was situated largely beneath what is now an open plaza - the Sydney Central Station Mini Mart, with the remainder beneath the main building of Sydney Central Railway Station. The structure to south-east – the residence shown in the 1888 map, was situated partly beneath the current rail bridge over Eddy Avenue, and partially within the footprint of the Northern Concourse underground accessway.

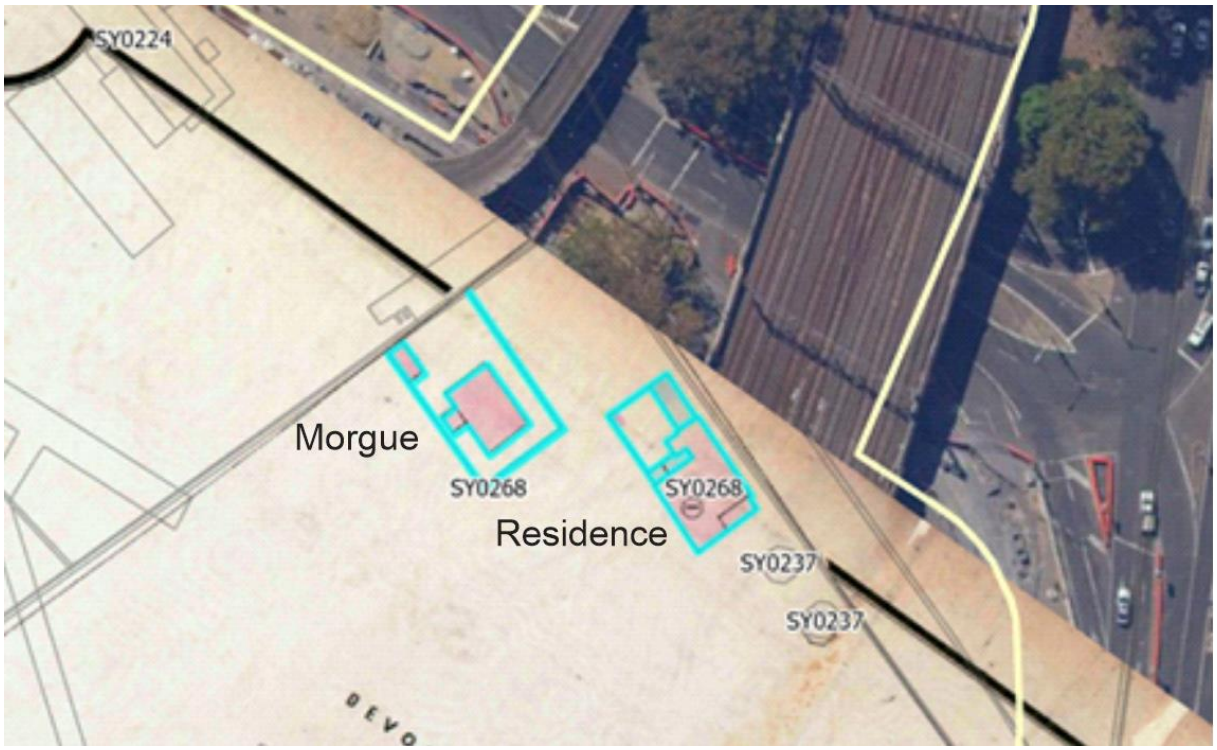


Figure 5-22: City of Sydney Rygate & West Plans of Sydney, 1888: Sheet 40[70]

Recent archaeological excavations at Central Railway Station have identified the potential for footings and lower courses of structures to remain partially intact beneath current rail, ballast and platforms.

Demolition of the structures in the Church of England section is likely to have been constrained to reduction of standing structures to desired new ground levels. The site has only been partially visibly subject to intensive built redevelopment, such as for construction of the viaduct on Chalmers Street in the 1920s, while other areas such as the open plaza of the Sydney Central Station Mini Mart, and locations beneath and around the Eddy Avenue rail bridge may have been subject to far lower degree of impacts. The potential exists that intact archaeological remains survive in such locations. Additionally, a

[70] Source: City of Sydney Archives & History Resources, A-00880455.

demolition layer may remain intact below the ground surface, likely spread out over a wide area. Expected remains may include bricks, mortar, sandstone, slate, glass, metal and timber, as well as intact masonry foundations.

In addition to the potential archaeological items noted above, it is possible that an assemblage of domestic archaeological remains may be present. These may include cesspit deposits, incorporating artefact discard events and personal waste such as faunal dietary evidence.

The construction footprint has **moderate potential** to contain archaeological evidence associated with the Church of England – Residence and Morgue.

Archaeological significance

Intact and legible remains of the Church of England – Residence and Morgue would have the potential to reach the threshold for **State significance** as evidence of Church of England funeral practices in 19th Century Sydney.

The structures have research value for their potential to demonstrate their original use, construction techniques and functions, as well as their structural, aesthetic and functional changes over time. Associated deposits, particularly refuse deposits, may have research value for their ability to demonstrate lifeways, diet and daily life of the inhabitants and users of the site. Remains associated with the structures in the Church of England section may incorporate 'primary' archaeological evidence that may survive at the subject site. This could include walls, foundations, occupation layers and deep cut features such as privies, pits or wells.

Remains associated with the demolition of these items –'secondary' archaeological evidence – may survive at the subject site could include rubble and levelling layers. Secondary archaeological evidence would meet the threshold of local significance for most criteria at the subject site, if intact.

In response to Bickford and Sullivan's questions about research potential,4 the remains of the Church of England Residence and Morgue have the potential to contribute knowledge that no other resource and site can about Church of England funerary practices in early 19th Century Sydney. The remains can answer broader questions relating to funerary practices in early NSW.

5.5.9 Central Station Platforms

Archaeological potential

The archaeology of the railway platforms – particularly the removal of Platforms 13, 14 and 15 – demonstrated that the interiors of the platforms were fill and there were no hidden structures inside. There was some evidence of change such as lengthening and alterations to accommodate changes to the baggage tunnels. This evidence was not particularly important and duplicated historical documentation of the changes.

However, all the platforms overlie the location of the Devonshire Street Cemetery. Platform structures within the CSM Station Box excavation footprint have been removed leaving Platforms 1 to 12 to overlie potential remains from the Devonshire Street Cemetery. Based on the results of the Central Station Metro archaeological excavations it is clear that the area above the top of the railway formation does not have the potential to contain remains from the Devonshire Street Cemetery. Below this area there is a much greater potential for remains to occur.

The construction footprint has **low potential** (in areas above the top of the railway formation) and **high potential** (in areas below this depth) to contain archaeological evidence associated Central Station Platforms.

Archaeological significance

Intact and legible remains of the Central Station Platforms would have the potential to reach the threshold for **local significance** as evidence of functional and utilitarian structures associated with the Third Central Station.

The overall layout of these platforms conforms to their c 1906 design and some of the original fabric of these platforms remains in situ. The evidence of subsequent changes is not intrusive and is legible. Such changes demonstrate the evolution of the railways since the establishment of the c 1906 third Sydney Station, which is a key element of the overall significance of Central Station.

In response to Bickford and Sullivan's questions about research potential,[71] the remains of the platforms have the potential to contribute knowledge that no other resource and site can about the third phase of Sydney Station, as well as answer broader questions relating to the development of transport infrastructure in NSW.

5.5.10 Subway Passage System

Archaeological potential

Still extant and operational. Likely to be associated with evidence of cut and fill construction.

The construction footprint has **high potential** to contain archaeological evidence associated with the Subway Passage System.

Archaeological significance

Intact and legible subsurface remains have the potential to reach the threshold for **State significance** as evidence of an important and innovative structure associated with the extant fabric of the historic Central Station.

This structure has the potential to provide ongoing evidence of the evolution of the third Sydney Station over time and its continued use, as well as information on the construction and history of the structure. The subway passages have research value for their potential to demonstrate construction techniques, functions and changes to the system over time.

In response to Bickford and Sullivan's questions about research potential,[72] the remains of the subway system have the potential to contribute knowledge that no other resource and site can about Sydney Station. The subway system would answer broader questions relating to the development of transport infrastructure in NSW.

5.5.11 Bondi Ocean Outfall Sewer

Sydney's early sewerage system was developed throughout what is the current Sydney CBD by the late 1850s. However, this sewerage system discharged effluent into Sydney Harbour and by the 1870s the harbour was seriously polluted. Schemes to develop a new sewer with an ocean outfall were investigated throughout the 1870.

[71] Bickford, A and S Sullivan, 1984. 'Assessing the Research Significance of Historic Sites', in Sullivan S and S Bowdler (eds), Site Surveys and Significance Assessment in Australian Archaeology (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24; Heritage Branch Department of Planning NSW, 2009. *Assessing Significance For Historical Archaeological Sites and 'Relics'.* Report endorsed by the Heritage Council of NSW, December 2009.

[72] Bickford, A and S Sullivan, 1984. 'Assessing the Research Significance of Historic Sites', in Sullivan S and S Bowdler (eds), Site Surveys and Significance Assessment in Australian Archaeology (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24; Heritage Branch Department of Planning NSW, 2009. Assessing Significance For Historical Archaeological Sites and 'Relics'. Report endorsed by the Heritage Council of NSW, December 2009.

The Bondi Ocean Outfall Sewer (BOOS) was constructed from 1880 to 1889 and was built as a horizontal brick lined oviform tunnel through sandstone bedrock. The sewer connected the new ocean outfall in North Bondi roughly due west to the centre of Sydney. One branch of the sewer was constructed north-east to south-west through sandstone bedrock through what was then the Devonshire Street Cemetery and the grounds of the former Benevolent Asylum.

The location of the BOOS in relation to the construction footprint is illustrated on Figure 5-20. The extent of the potential archaeological resource has been mapped as item SY0318.

Archaeological potential

The brick lined oviform sewer was constructed partly as a horizontally bored tunnel through sandstone bedrock and partly as cut-and-cover excavation where the tunnel was laid through looser subgrades and materials.

Sewer is still in use. Depth is unknown.

Archaeological significance

The statement of significance for BOOS from the Sydney Water s170 listing:[73]

> *BOOS was the first ocean outfall sewer of its type to be designed and built in the country. It is one of the most significant engineering structures in Australia. It was a marvel of surveying accuracy for its time. The surveying allowed for the lining of the sewer before the tunnelling was completed. The BOOS reduced the volume of polluted waters entering the Harbour and improved the health of the city's residents by moving polluted waters off shore. The construction of the BOOS saw other advances in technology related to the removal of sewerage from the sewers, houses and watercourses within the city. These included the improving design and construction of pumping stations to move the sewerage from low lying areas, construction and research into the safe removal of noxious gases from the sewers, better ways of treating raw effluent, advances in engineering methods and construction for tunnelling across waterways and many more.*

Intact and legible subsurface remains have the potential to reach the threshold for **State significance** as evidence of early engineering structures associated with the sewerage system. The structure has research value for its potential to demonstrate its original uses, construction techniques and functions, as well as any changes over time.

In response to Bickford and Sullivan's questions about research potential,[74] the remains of the BOOS have some potential to contribute knowledge that no other resource and site can about early sewerage infrastructure, as well as answer broader questions relating to the development of sewerage infrastructure in NSW.

[73] Heritage search (Sydneywater.com.au)
[74] Bickford, A and S Sullivan, 1984. 'Assessing the Research Significance of Historic Sites', in Sullivan S and S Bowdler (eds), Site Surveys and Significance Assessment in Australian Archaeology (Proceedings of the 1981 Springwood Conference on Australian Prehistory), Department of Prehistory, Research School of Pacific Studies, The Australian National University, Canberra pp 23–24; Heritage Branch Department of Planning NSW, 2009. *Assessing Significance For Historical Archaeological Sites and 'Relics'.* Report endorsed by the Heritage Council of NSW, December 2009.

5.5.12 Summary

A summary of the archaeological potential and significance of the construction footprint to survive is included in Table 8 below, and in Figure 5-23.

Table 8: Summary of archaeological potential

Item no.	Item Name	Phase	Potential	Significance
SY0025	Devonshire Street Cemetery	II	Moderate	State
SY0222	Police Superintendent's Residence	III	Moderate	State
SY0223	Carter's Barracks	III	High	State
SY0224	Belmore Police Barracks	III	Low	State
SY0228	Old Burial Ground Road	III	Low	State
SY0229	1850's Fencing	III	Moderate	State
SY0268	Church of England – Residence and Morgue	III	Moderate	State
SY0169	Central Station Platforms	IV	High	Local
SY0184	Subway Passage System	IV	High	State
SYQ318	Bondi Ocean Outfall Sewer [BOOS]	IV	High	State

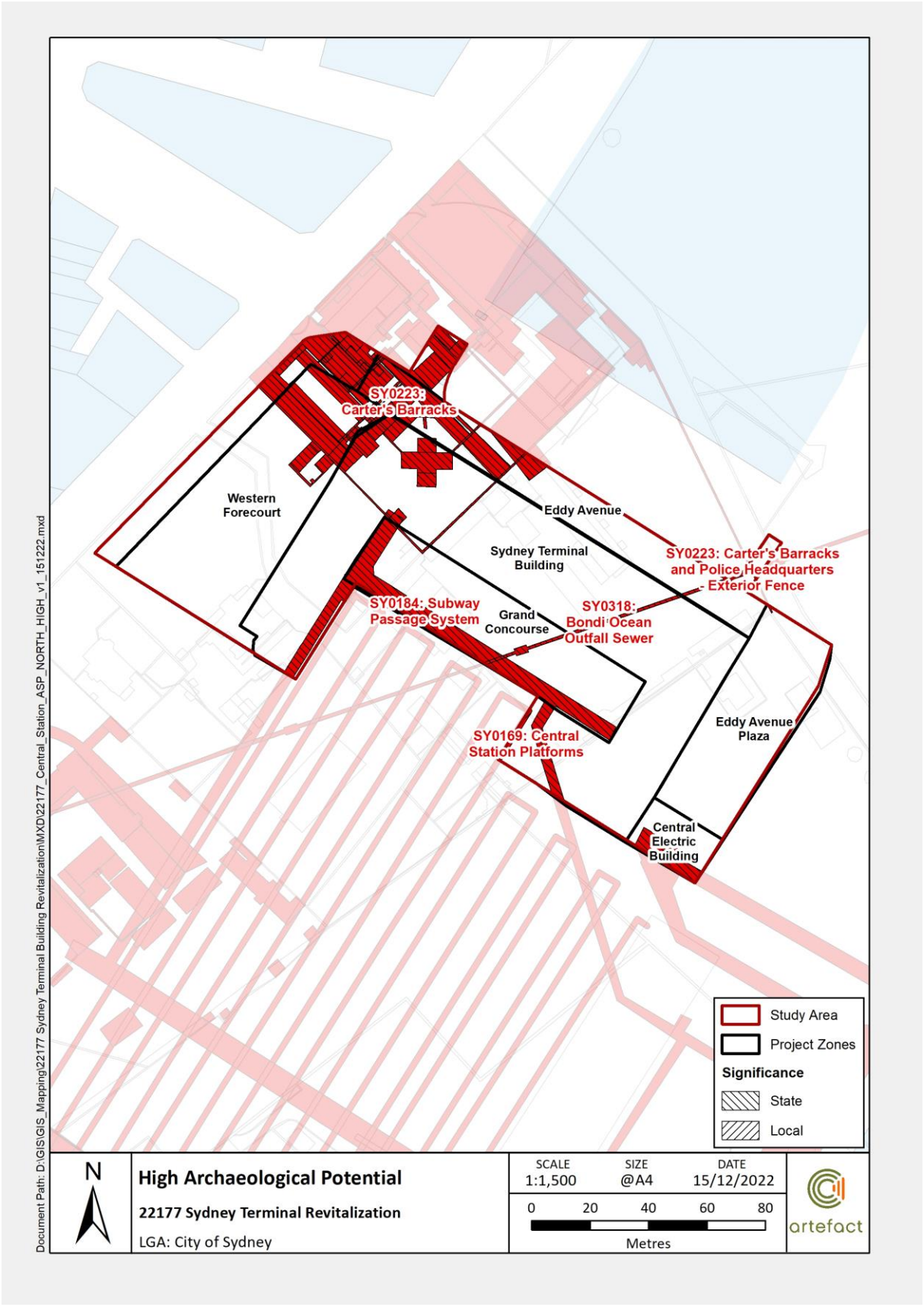


Figure 5-23: High potential for state significant archaeological remains

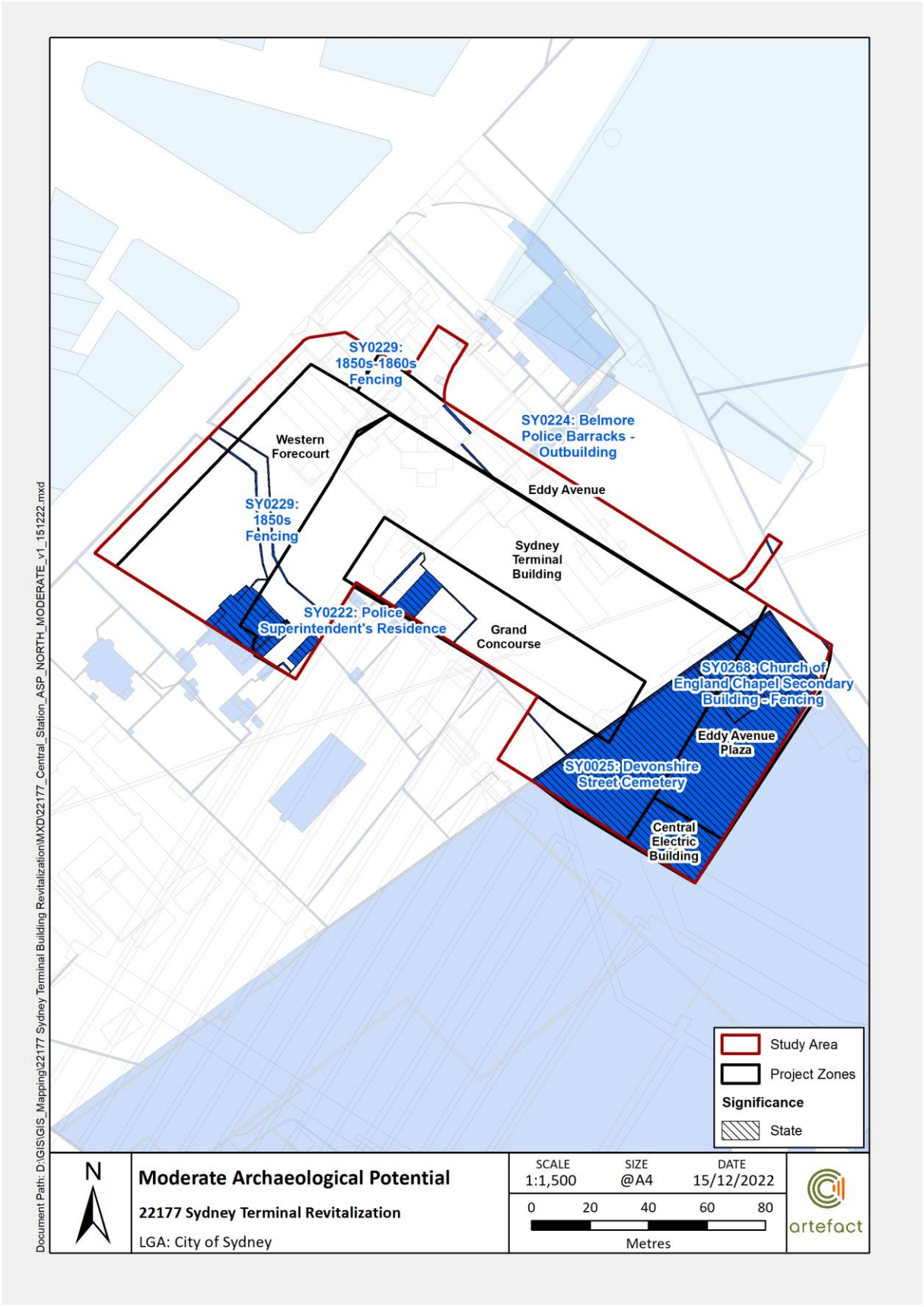


Figure 5-24: Moderate potential for state significant archaeological remains

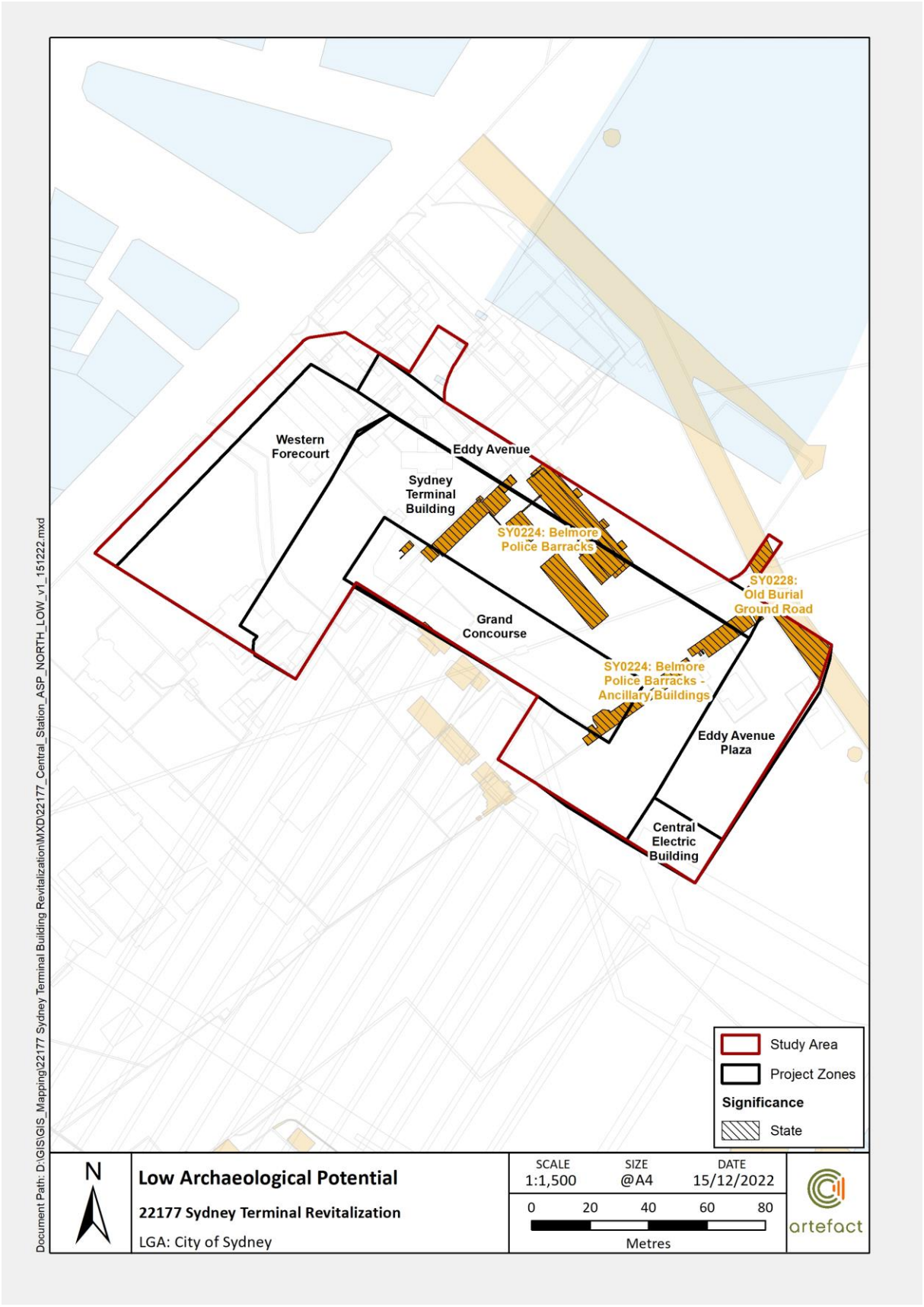


Figure 5-25: Low potential for state significant archaeological remains

6. Assessment of potential impacts

The following section addresses potential impact to historical archaeological resources. Only those works that are expected to result in in-ground impact have been discussed in detail and assessed.

6.1 Assessment of impact

Based on the concept design it is assumed that project works would result in-ground impacts throughout the study area, as illustrated on Figure 6-1. Ground disturbing works would predominantly consist of excavation for the demolition, construction and relevelling of footpaths and flooring, demolition of structural elements, the introduction of new elements (i.e., lift shafts, lighting, structural supports for openings in facades and seating), and the relocation and introduction of utilities. Chapter 5 of the EIS describes these works in detail. For the purposes of this assessment, it has been assumed that maximum depth of excavation would be 2m.

Although there will be adjustments to the design during progression of the detailed design phase, it is unlikely that these would result in considerable change to the assessed levels of archaeological impact outlined in Table 9.

Vibration arising from proposed works is unlikely to result in adverse impacts to archaeological resources. Environmental impacts through liquid spills and compaction are unlikely to result in adverse impact to archaeological resources.

Table 9: Anticipated impacts to archaeological resources from the proposed works

Item No.	Name of Item	Assessed Potential	Impact summary
SY0025	Devonshire Street Cemetery	Moderate	*Moderate impact* from demolition and construction of new elements, including re-levelling of areas of paving, landscaping, tree removal, demolition of ground slab for the installation of columns, lift, and the introduction of fencing. Moderate impact through excavation of the eastern side of Eddy Avenue Plaza to improve pedestrian access and relocation of utilities. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Moderate**
SY0222	Police Superintendent's Residence	Moderate	Possible *moderate impact* through compaction of site through operation of compound areas. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Moderate**
SY0223	Carter's Barracks	High	*Moderate impact* from demolition and construction of new elements, including re-levelling of areas of paving, landscaping, tree removal, demolition of ground slab for the installation of columns, lift, and the introduction of fencing. Moderate impact through excavation of the eastern side of Eddy Avenue Plaza to improve pedestrian access and relocation of utilities. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Moderate**
SY0224	Belmore Police Barracks	Low	Most works proposed in areas identified as having the potential to contain archaeology associated with the former barracks are assumed to be localised and shallow, primarily associated with the minor modification to existing concrete slab and demolition of areas to accommodate planters and gates. *Moderate impact* may occur because of excavation for new escalators in the north-west passage. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Moderate**
SY0228	Old Burial Ground Road	Low	*Negligible impact* from introduction of new signage, in-ground site survey and removal of paving. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Negligible**

Item No.	Name of Item	Assessed Potential	Impact summary
SY0229	1850's Fencing	Moderate	*Negligible impact* from introduction of new signage, in-ground site survey, removal of paving and construction of palisade barriers. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Negligible**
SY0268	Church of England – Residence and Morgue	Moderate	*Moderate impact* from demolition and construction of new elements, including re-levelling of areas of paving, landscaping, tree removal, demolition of ground slab for the installation of columns, lift, stairs and the introduction of fencing. Moderate impact through excavation of the eastern side of Eddy Avenue Plaza to improve pedestrian access and relocation of utilities. *Negligible impact* from vibration and environmental impacts (spills, etc). **Overall rating | Moderate**
SY0169	Central Station Platforms	High	**Overall rating | No impact**
SY0184	Subway Passage System	High	**Overall rating | No impact**
SY0318	Bondi Ocean Outfall Sewer [BOOS]	High	Although the depth of the BOOS is unknown, it remains in use. Excavation work proposed in the vicinity of the BOOS is assumed to be localised and shallow, associated with repair of existing flooring and utility works. Therefore, it is not anticipated that proposed works would extend to depths with the potential to impact on the BOOS. **Overall rating | No impact**

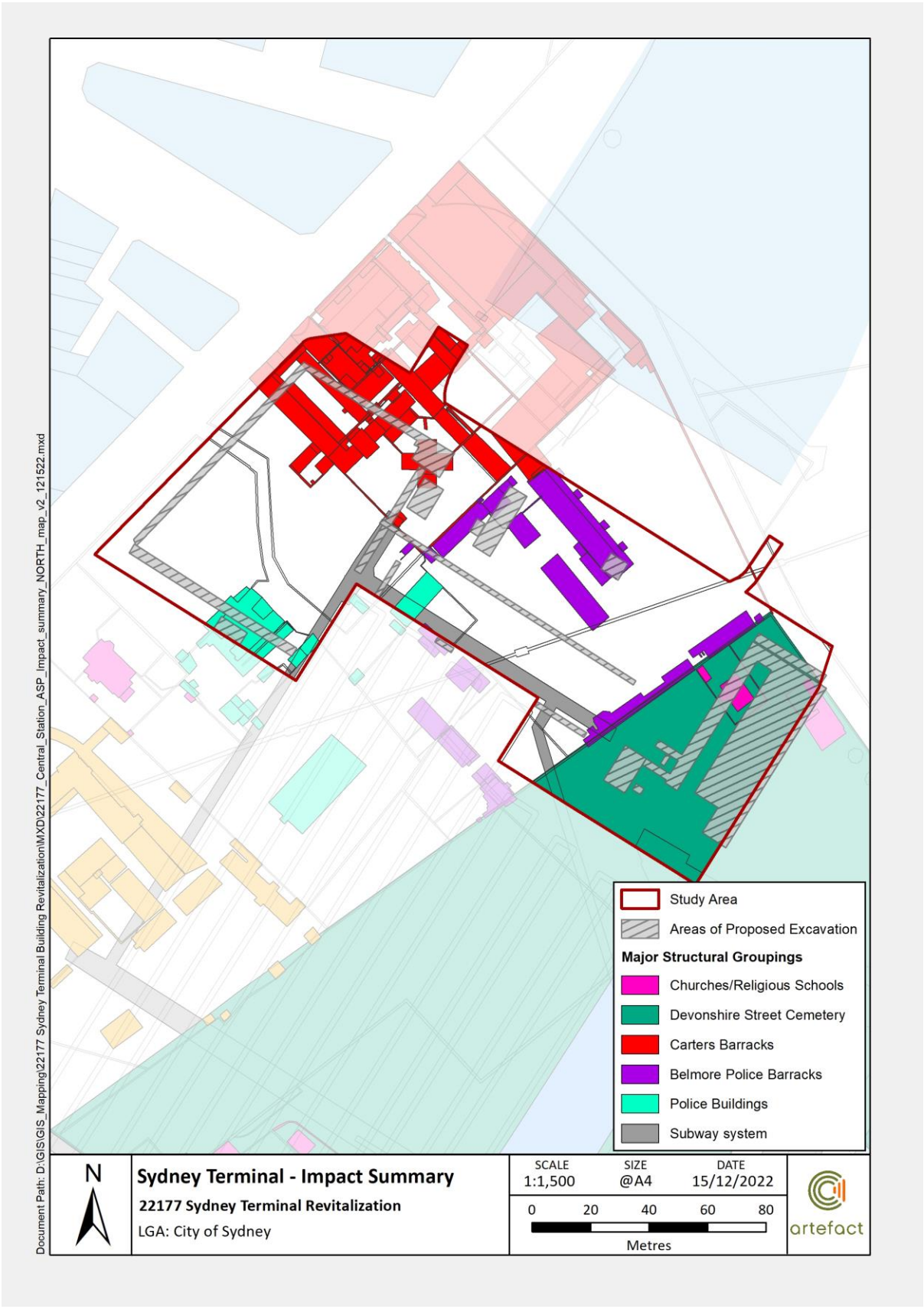


Figure 6-1: Overview of the intersection of proposed excavation works with potential archaeological resources

6.2 Statement of archaeological impact

The study area has the potential to contain **significant archaeological resources.** It is assumed that maximum depth of impact throughout the excavation footprint shown on Figure 6-1 would be 2m.

Most groundworks proposed would have a localised impact on pre-existing flooring treatments and ground slab. Localised impacts may occur through the introduction of new lift shafts, relocation of utilities, introduction of barriers and gates, strengthening of pillars and demolition of elements. These impacts are likely to result in generally minor to moderate assuming appropriate mitigation is implemented. Mitigation should be outlined in site/work zone specific WMS's prepared once design and construction methodologies have been finalised.

Works with the potential to require deeper excavation and/or a wider excavation footprint within Eddy Avenue Plaza have the potential to result in moderate impacts to State significant archaeological remains associated with the Devonshire Street Cemetery, Church of England, Residence and Morgue and Carters Barracks.

6.3 Cumulative impacts

The proposal forms part of a suite of projects that have been recently completed, are currently underway, or are otherwise planned for the Central Station Precinct. These projects seek to support and enhance the accessibility, safety and functionality of Central Station as the main rail transportation hub in Sydney, as well as its identity as an item of State heritage significance.

The context of the proposal in relation to the other projects at Central Station is important when considering the cumulative impact on the significant values of the station. The key project that has resulted in impacts to the archaeological resource within the study area comprises the Central Station Main Works (CSMW) project, which resulted in the excavation and salvage of the Devonshire Street Cemetery within the Station Box in the area of Platforms 13, 14 and 15. These works resulted in localised major archaeological impacts to the State significant remains of the Devonshire Street Cemetery, including human skeletal remains, grave cuts, tombs, coffins and personal artefacts such as jewellery and clothing including leather, fabrics, buttons. Overall, the works resulted in a moderate impact to the archaeological resource of the Devonshire Street Cemetery. The proposed excavation required for the current project would be located in an area of low to moderate potential to contain intact archaeological remains associated with the Devonshire Street Cemetery, Church of England Morgue and Gravedigger's Residence. The resultant archaeological impact of the proposed works would therefore be likely to result in minor impacts to the archaeological resource. The cumulative impact to the archaeological resource of the Devonshire Street Cemetery, Church of England Morgue and Gravedigger's Residence would likely be moderate.

Previous impacts to the archaeological resources of the Belmore Police Barracks, the southern section of Carter's Barracks and the Police Superintendent's Residence due to upgrades at Central Station have not been recorded. However, the construction of the Western Forecourt and excavation of basements and tunnels for Central Station in the early twentieth century are likely to have disturbed, but not fully removed, these remains. The current proposal would result in the excavation of, and moderate impact to, isolated sections of these archaeological resources of State significance. The works would likely result in minor cumulative impacts to these items.

The overall cumulative impact of the project on archaeological resources of State significance associated with the Church of England section of the Devonshire Street Cemetery, the Belmore Police Barracks, Carter's Barracks and the Police Superintendent's Residence is identified as minor to moderate. The works would therefore result in cumulative impacts to the heritage value of the archaeological resource, despite the positive impacts of the knowledge gained from the excavation of such remains.

7. Environmental management measures

Table 10 below provides a compilation of environmental management measures for the project. The measures described in the chapters and compiled in this table were developed to take into account the findings of all the assessments carried out for the EIS. The mitigation measures may be revised in response to submissions raised during public exhibition and/or any design changes made following exhibition. A revised list of mitigation measures will be provided in the submissions/preferred infrastructure report. If the project is approved, the conditions of approval, which would include reference to the final mitigation measures, would guide subsequent phases of the project. The project would be undertaken in accordance with the conditions of approval and the final list of mitigation measures.

Table 10: Compilation of environmental management measures for the project

Ref	Impact / Uncertainty	Environmental management measure	Timing
General			
GEN01	Impact | Risks to the environment during construction	A **Construction Environmental Management Plan** (CEMP) will be prepared prior to the commencement of construction. As a minimum, the CEMP with address the following matters: Any requirements associated with statutory approvals needed for the activity to be carried out Any requirements contained within the Central SSP and supporting technical documents where applicable Details of how the project will implement the identified environmental mitigation measures outlined in the EIS Development and implementation of issue-specific environmental management plans, and their inclusion within the CEMP Roles and responsibilities, including those of sub-contractors Communication requirements, including liaison with stakeholders and the community Induction and training requirements	Pre-construction

Ref	Impact / Uncertainty	Environmental management measure	Timing
		Procedures for monitoring and evaluation environmental performance, and for carrying out remedial actions Reporting requirements and record-keeping arrangements Procedures for emergency and incident management Procedures for audit and review.	
GEN02	Impact | Stakeholder engagement	A **Community Liaison Management Plan** (CLMP) will be prepared, to address consultation and engagement requirements. Condition-specific measures will be developed to ensure that post-approval engagement is appropriately targeted and phased, allowing any responses and recommendations to be disseminated, considered and actioned, where appropriate. The CLMP will establish the framework for stakeholder and public engagement during the project's construction phase and will demonstrate how the public will be informed of project milestones, progress and pertinent updates. A complaints register will also be produced as part of the CLMP prior to construction, monitored and maintained during the construction phase of the project.	Pre-construction / construction
Non-Aboriginal heritage			
NAH01	Impact | heritage values of the place	Detailed design of the project will be developed in consultation with a suitably qualified heritage architect nominated by Transport. This will ensure that the heritage significance of the place, and its significant fabric and components, are appropriately conserved and protected throughout the new phase of revitalisation works to the building. The heritage architect will ensure that the final design responds to the conservation management plan (Transport for NSW, 2022) and policies contained in the relevant heritage management documents. The following opportunities to improve heritage outcomes will be investigated during detailed design: Reinstatement of glazed lightwells Reinstatement of roof glazing Removal of non-original mezzanines to restore spatial qualities within the Sydney Terminal Building.	Detailed design

Ref	Impact / Uncertainty	Environmental management measure	Timing
NAH02	Impact | heritage values of the place	Consultation with relevant stakeholders will continue during detailed design. Consultation with City of Sydney Heritage division will be carried out especially as it relates to streetscape and public domain works in and around Eddy Avenue and Pitt Street.	Detailed design
NAH03	Impact | Impact on historical archaeological resources	Archaeological management will follow the zones presented in Figure 8-6. Where required, archaeological management may involve preparing **Archaeological Work Method Statements** (AWMSs) archaeological testing, recording, salvage and/or monitoring, in accordance with the Archaeological Research Design presented in Section 8 of Appendix G2 (Historic archaeological impact assessment and research design). Detailed design will investigate opportunities to reduce any excavation footprint associated with the Devonshire Street Cemetery within Eddy Avenue Plaza, and, if unavoidable, archaeological management of these areas prior to ground disturbing works within Eddy Avenue Plaza will be undertaken.	Detailed design / pre-construction
NAH04	Impact | heritage values of the place	Detailed archival recording of the Sydney Terminal Building will be carried out before starting demolition works. It will capture both the general existing conditions of the building at present, including views and vistas, and the main movement paths through the building. The recording will focus on affected elements that will be altered or removed. The archival recording must be carried out by a suitably qualified and experienced heritage practitioner and a report prepared according to the NSW Heritage Office Guideline: Photographic Recording of Heritage Items Using Film or Digital Capture (2006). A copy of the report will be circulated to Heritage NSW and to the City of Sydney Council upon completion.	Detailed design / pre-construction
NAH05	Impact | heritage fabric during construction	An inspection of all rooms on the Grand Concourse and street level of the Sydney Terminal Building will be carried out before starting work, to identify and assess any potential movable heritage items. If any items are identified, they will be photographed and recorded with a written description and added to the Transport Movable Heritage register. They must be identified/tagged and safely stored.	Detailed design / pre-construction
NAH06	Impact | heritage fabric during construction	A **Heritage Management Plan** will be prepared and implemented as part of the CEMP. This will ensure that significant built elements will be protected and monitored throughout the project to prevent any potential damage. Protection systems must ensure significant fabric is not damaged or removed.	Pre-construction

Ref	Impact / Uncertainty	Environmental management measure	Timing
		Regular inspections will be carried out during construction. If inadvertent damage occurs to the building during construction, works in that area will stop and be reported immediately to the Project Manager and heritage practitioner. Any damage will be appropriately rectified based on advice from a heritage specialist. Protective measures will include: A building condition survey will be carried out throughout the building prior to starting work Monitoring of vibration impacts in all spaces according to industry guidelines Alternate construction methods and/or design solutions will be employed at or near significant fabric if vibration levels exceed those set out in the relevant guidelines. The Heritage Management Plan will define a requirement for non-Aboriginal historical heritage awareness training for site workers prior to commencement of construction works. The awareness training will promote an understanding of heritage items that may be impacted during the works. The plan will also include any requirements contained within the Central SSP and supporting technical documents where applicable	
NAH07	Impact | Impact on historical archaeological resources	An **Exhumation Policy and Guideline** will be prepared and implemented prior to ground disturbing works. It will be developed in accordance with the Guidelines for Management of Human Skeletal Remains (NSW Heritage Office, 1998b).	Pre-construction
NAH08	Impact | Impact on historical archaeological resources	An **Unexpected Finds Procedure** for archaeological resources will be developed as part of the Heritage Management Plan, consistent with Transport for NSW's Unexpected heritage items procedure (2022) and Skeletal remains: guidelines for the management of human skeletal remains under the *Heritage Act 1977* (Heritage Office, 1998b).	Pre-construction
NAH09	Impact | heritage values of the place	Expanded interpretation of the Sydney Terminal Building will be implemented within the precinct to assist in communicating the important history and significant values of Central Station. Meaningful interpretative media will be installed within important spaces such as the Loading Dock, Electrical Engineer's Department and Eddy Avenue Plaza.	Construction

Ref	Impact / Uncertainty	Environmental management measure	Timing
		It will be guided by the Central Precinct Renewal Heritage Interpretation Strategy (Transport for NSW, 2022) and the Central Precinct Renewal Conservation Management Plan (Transport for NSW, 2022).	
NAH10	Impact | heritage fabric during construction	Where demolition is proposed, all suitable material for salvage will be recovered and stored, including sandstone and brick masonry. These materials will be used for future repairs, or reuse in a new context such as interpretation or landscaping. Careful salvage of the following should occur: Sandstone from the north-western corner of the Sydney Terminal Building to be used for future repairs Spiral stairs from the retail tenancy in the Sydney Terminal Building, which will be relocated into one of the shops currently missing its staircase Joinery and glazing from removed shopfronts. A detailed schedule of salvageable heritage fabric and a rescue plan will be prepared by a suitably qualified and experienced heritage practitioner once the detailed design is finalised.	Construction
NAH11	Impact | Signage	Detailed signage and branding guidelines will be developed to inform a cohesive and heritage sympathetic approach to new commercial and station signage and branding throughout the Sydney Terminal Building, Eddy Avenue Plaza and the Central Electric Building.	Construction
Cumulative impacts			
CL01	Impact | Cumulative construction impacts	Transport for NSW will coordinate the Central Precinct Working Group to manage potential impacts with other projects within and adjoining Central Precinct under construction at the same time as the project. Co-ordination and consultation with other relevant stakeholders will also occur when necessary (for example, DPE, Sydney Trains, NSWTL, Sydney Light Rail, State Transit Authority, City of Sydney Council, utility providers and emergency services). Coordination and consultation with these stakeholders will include: Provision of regular updates to the detailed construction program, construction sites and haul routes	Construction

Ref	Impact / Uncertainty	Environmental management measure	Timing
		Identification of key potential conflict points with other construction projects Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve: Adjustments to the construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects Coordination of traffic management arrangements between projects. Coordination of consultation activities to minimise the potential for consultation fatigue. Agree delivery and storage areas.	
CL02	Impact | Cumulative construction noise	Potential cumulative noise and vibration impacts will be reviewed as the project progresses and detailed work schedules are available. Specific management and mitigation measures designed to address potential impacts will be developed and used to minimise the impacts as far as practicable, in consultation with the affected community.	Pre-construction / construction

8. Archaeological research design

8.1 Research framework

8.1.1 Relevant historical themes

Contextual analysis is undertaken to place the history of a particular site within relevant historical contexts, in order to gauge how typical or unique the history of a particular site actually is. This is usually ascertained by gaining an understanding of the history of a site in relation to the broad historical themes characterising Australia at the time. Such themes have been established by the Australian Heritage Commission and the NSW Heritage Office and are outlined in synoptic form in New South Wales Historical Themes, issued by the NSW Heritage Office.

After considering the history of the study area, relevant historical themes were identified. These are presented in Table 11. Each theme will be discussed in turn to contextualise the site history and identify potential archaeological evidence.[75]

Table 11: Historic themes for archaeological inventory items identified within the study area.

Australian theme	NSW theme	Explanatory Notes	Comments
2. Peopling Australia	Convict	Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW (1788-1850) – does not include activities associated with the conviction of persons in NSW that are unrelated to the imperial 'convict system': use the theme of Law & Order for such activities	Carter's Barracks and the Female Refuge provide evidence of early convict incarceration in Australia and adaptation of structures as the system changed and waned over time.
3. Developing local, regional and national economies	Environment – cultural landscapes	Activities associated with the interaction between humans, human societies and the shaping of their physical surroundings	The former sand dunes were largely removed when the Devonshire Street Cemetery was exhumed. The sloping land on the western side of the study area was built up to level the site for the construction of first Sydney Station.
3. Developing local, regional and national economies	Health	Activities associated with preparing and providing medical assistance and/or	The Female Refuge provided medical care to women in need, who may not have otherwise had access to care. Archaeological remans relating to

[75] Heritage Council of NSW 2001. *New South Wales Historical Themes*. Heritage Office guidelines. Accessed online 20 September 2021: https://www.heritage.nsw.gov.au/assets/Uploads/a-z-publications/g-i/Historical-Themes.pdf

Australian theme	NSW theme	Explanatory Notes	Comments
		promoting or maintaining the well being of humans	this use of the structure would be important in demonstrating this history.
3. Developing local, regional and national economies	Technology	Activities and processes associated with the knowledge or use of mechanical arts and applied science	The location of the first and second Sydney railway stations was the terminus of the first mainline railway in New South Wales and was the focus for the introduction of railway technology (and related technologies such as gas lighting) to the NSW system. With the electrification of the NSW system (in stages) the area was the focus for the introduction of electrical infrastructure and then diesel infrastructure as the railways modernised.
3. Developing local, regional and national economies	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Archaeological remains of the first and second Sydney Stations and the Sydney yard (e.g. cobblestones) demonstrate how the movement of goods and people was realised and then the subsequent changes to the buildings and structures as a result of changing demand on the railway facilities for goods and passenger transport since 1854.
4. Building settlements, towns and cities	Accommodation	Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities	Remains of the Police Barracks, Carters' Barracks, Police Superintendents House and Female Refuge provide evidence of various styles of accommodation in the early Colony.
7. Governing	Law and order	Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes	Remains of the Police Barracks and Police Superintendent's House have the potential to provide information about the daily lives and duties of police officers in the early colony.
7. Governing	Welfare	Activities and process associated with the provision of social services by the state or philanthropic organisations	The Female Refuge provided a place of safety and community for underprivileged women in the early colony. The remains of this structure have the potential to tell us about the lives of women who benefitted from the services provided here.

Australian theme	NSW theme	Explanatory Notes	Comments
8. Developing Australia's cultural life	Domestic life	Activities associated with creating, maintaining, living in and working around houses and institutions.	Remains associated with residential structures within the construction footprint can contribute to our understanding of early colonial household management, including subsistence activities, maintenance of housing, and domestic servitude.
8. Developing Australia's cultural life	Religion	Activities associated with particular systems of faith and worship	Remains of the Parsonage, Morgue and Devonshire Street Cemetery have potential to further our understanding of how certain faiths managed death and grieving. The Parsonage also has potential to provide information about the daily life and duties of church officials who resided here.
9. Marking the phases of life	Birth and death	Activities associated with the initial stages of human life and the bearing of children, and with the final stages of human life and disposal of the dead	The Devonshire Street Cemetery was the second public cemetery in the town of Sydney, consecrated in 1821. Intact archaeological remains would be of high research potential.
9. Marking the phases of life	Persons	Activities of, and associations with, identifiable individuals, families and communal groups	Archaeological remains within the construction footprint have potential to provide information on a wide range of individuals who utilised this land from the early colony to the construction of the Third Central Railway Station.

8.1.2 Research questions

Devonshire Street Cemetery and Church of England

The area to the north of Devonshire Street Tunnel was occupied by the Devonshire Street Cemetery between 1820 – 1865. The eastern end of the study area is located within the bounds of the Church of England section of the Devonshire Street Cemetery, including the Morgue and Gravedigger's Residence, which were constructed prior to 1888.

Evidence of the cemetery may consist of human bones, grave cuts, tombs, coffins, personal artefacts such as jewellery, clothing including leather, fabrics, buttons, remains of the cemetery boundary walls including sandstone blocks. The site may contain evidence of the layout of the cemetery, such as postholes associated with former fenceposts. The site may also contain the structural remains of the Church of England Morgue and Gravedigger's Residence and associated artefactual deposits or artefact scatters. Archaeological investigation conducted during the CSM works program identified graves and grave cuts, some associated with human remains, brick and sandstone burial vaults, and one burial; that of Mr Joseph Thompson, which had not been removed during the 1901 exhumation of the graves in the cemetery. In addition, sieving of sand excavated from within the footprint of the former cemetery identified bone fragments throughout the sand deposit.

Remains of this type have the potential to provide information about the individuals that were buried at the Devonshire Street Cemetery, the cemetery's original configuration and later changes to the layout including the construction of the associated Morgue and Gravedigger's Residence.

- Are intact burials located within the study area? If they are present, who are the deceased? Why were their remains not previously exhumed?
- Are identifiable grave cuts present? Can former graves be identified with respect to former location plans of individual internments? How do grave cuts align with historical plans and sources, and do they identify any discrepancies in these sources?
- To what extent is evidence of the exhumation program present (i.e., partially removed burials, un-excavated burials, truncated and backfilled grave cuts) what can these remains tell us about the process of burial removal? Does this information contribute to our understanding of the process as documented through historical photographs and writing of the time?
- Do graves cut into older ones? What can this tell us about nineteenth century burial practices in Sydney such as the contemporary documentation of the location of burials and attitudes to earlier burials, and how does this compare to other excavated cemetery sites in the region?
- What is the configuration, orientation and distance between burials (if multiple burials uncovered)? Does this conform to known nineteenth century burial practices?
- What type of fill was used within grave cuttings? What can this tell us about the surrounding environment and burial practices at the time?
- What materials/tree species were used to produce coffins? Can coffin manufacturing techniques or fastening methods (use of mortar, screws, nails, tacks) be identified? Does this match known burial practices of the time? Can specific manufacturers be identified? If alternative methods are identified, what can this tell us about the manufacturer or economic/social landscape?
- Can the class, ethnicity or religion of individuals be identified via coffin materials, grave goods or clothing/shrouds?
- Which direction is the burial orientated? How does this correspond with the known/hypothesised location of denomination areas?
- Previous excavations of historic cemeteries have noted the use of quicklime in burials,[76] is there evidence for similar practices at the Devonshire Street Cemetery?
- If the burial is associated with additional individuals, can a familial relationship be assessed through DNA or other genetic markers identifiable within the skeletal remains (e.g., impacted third molar)?
- Can an exchange between burial practices in Britain and colonial Sydney be identified through the burial remains? Is there evidence for alternative burial practices associated with additional cultural and religious influences?

[76] Hewitt, G. & Wright, R., 2004. Identification and Historical Truth: The Russell Street Police Garage Burials. Australasian Historical Archaeology, Vol. 22.

- Are there intact remains of the Church of England Morgue and Gravedigger's Residence within the construction footprint?
- Can the structures, including the Church of England Morgue and Gravedigger's Residence, and any associated artefacts, demonstrate information about the logistics and organisation of funerary practices and cemetery maintenance specific to the Church of England?
- Can the Church of England Morgue and Gravedigger's Residence, and any associated artefactual deposits or artefact scatters, demonstrate information about the identity, lifeways and daily life of the gravediggers and those who worked in the morgue?
- Can the remains of the Church of England Morgue and Gravedigger's Residence demonstrate their original construction date, construction techniques and functions, as well as their structural, aesthetic and functional changes over time?
- Can the remains of the Church of England Morgue, and any associated artefactual deposits, demonstrate the practices performed in the morgue and demonstrate how it served the associated cemetery?
- Can the remains of the Church of England residence, and associated artefactual deposits, demonstrate the role of the residence in the use of the associated cemetery?

Carters Barracks

Carters' Barracks was built in c.1820 for the dual purpose of housing gangs of convicts working in the nearby brick fields and a boys' dormitory. Following the closure of the Boys Dormitory, the buildings were used as a debtors' prison from 1835 until 1843. The site contained a large two storeyed barracks building in which the convicts slept in hammocks. At the rear of the barracks was an open yard with cells, bedrooms and kitchens used for accommodating 150 convict boys. Adjacent to the barracks was an area which may have been for keeping carts and drays, and a stable for horses. In 1823, a treadwheel powering a mill for grinding flour was introduced to assist in the boys training, but was removed from the site in 1840.

From 1848, the southernmost part of the barracks was used by the Sydney Female Refuge Society, whilst the northernmost section was used for Convent of the Good Samaritan by the Institute of the Sisters of the Good Samaritan of the Order of St Benedict. The Mounted Police, established in 1825, may have also used part of the Carters' Barracks, presumably the facilities for stabling before the Belmore Barracks was established in 1857. The stabling for the Mounted Police and the Institute of the Sisters of the Good Samaritan of the Order of St Benedict latter are likely outside of the study area.

Archaeological remains of Carters' Barracks have the potential to provide information about the organisation of the police in early Sydney. The following research questions are presented to guide interpretation of the site:

- Are there intact primary archaeological remains of Carter's Barracks within the study area? What is the level of preservation?
- If intact archaeological remains are identified, what do these consist of? Are there structural remains, deep cut features, relics, or a combination of elements?

- Can artefact deposits or individual items be related to a particular period of use, and therefore to specific inhabitants of the barracks, including the convicts working on the brick fields, the convict boys, debtors and the female refuge?
- Is there a notable difference between archaeological remains relating to use of the building during the different phases of use? How are these differences expressed?
- How do structural remains compare to documentary descriptions of the building? Do the structural remains confirm our understanding of the building materials and layout, or do the remains provide additional detail? Are there clear changes in the built form that coincide with the change in use?
- What can the archaeological material remains tell us about the daily lives of the inhabitants of Carters' Barracks throughout its multiple uses?
- Is there evidence of women residing at barracks at any period of use? Can a differentiation be made between women employed in work at this site and women residing here?

Belmore Police Barracks

Belmore Police Barracks was constructed in the 1850s to house mounted troopers and trainee police officers. The structure included trooper accommodations directly above stables and was located within the grounds of Carter's Barracks. The Belmore Police Barracks also contained a uniform store, armoury, service magazine, drill sheds, storage for police vans and a gymnasium. Most of the Belmore Police Barracks is now beneath the Main Station Building of Central Station and has likely been subject to significant impacts through construction. The northeast wing of the Belmore Police Barracks extends across Eddy Avenue and potentially into Belmore Park. There is low potential for archaeological remains of this structure to remain in situ.

Archaeological remains of Belmore Police Barracks, if present, are likely to consist of walls, foundations, occupation layers and deep cut features, such as privies, wells and pits. Secondary archaeological remains may include demolition rubble and levelling layers.

Archaeological remains of Belmore Police Barracks have the potential to provide information about the organisation of the police in early Sydney. The following research questions are presented to guide interpretation of the site:

- Are there intact remains of the Belmore Police Barracks within the construction footprint?
- Are structural remains of the Belmore Police Barracks consistent with contemporary descriptions of the building? If discrepancies are identified, how are these expressed in the archaeological record?
- If artefact deposits are identified, can these be linked to particular periods of use? What do the artefacts tell us about the daily lives of the troopers stationed at the Barracks?
- Is there evidence of women living or working in the Barracks?
- What can the archaeological remains tell us about the diet or general health of the inhabitants of the Barracks?
- Do artefact deposits show evidence of specific activity areas? What can these divisions tell us about the organisation of the police barracks in this early period?

Police Superintendent's Residence

The former Police Superintendent's Residence is located within what is now the Western Forecourt, below an open garden and pathway. The structure, originally constructed as part of Carter's Barracks in 1821 and later repurposed as the Police Superintendent' Residence (1830s) was demolished in 1901 for the construction of the Third Central Station. 'Primary' archaeological evidence of the Police Superintendents Residence is expected to consist of walls, foundations, occupation layers, and deep cut features such as privies and wells. 'Secondary' archaeological remains may include demolition rubble and levelling fill layers.

Previous archaeological investigations in the Western Forecourt (Casey and Lowe, 2009) have shown that the construction of the Third Central Railway has had a considerable impact on archaeological remains in this area. However, as this portion of the site has not been subject to intensive redevelopment, there is moderate potential for primary remains to be identified.

Archaeological remains of the Police Superintendent's Residence have the potential to provide information about the oversight of Carter's Barracks, housing of police superintendents in the early colony, and daily life of the site users. The following research questions are presented to examine these queries:

- Are there intact primary archaeological remains of the former Police Superintendent's Residence within the study area?
- If intact archaeological remains are identified, what do these consist of? Are there structural remains, deep cut features, relics, or a combination of elements?
- Can artefact deposits or individual items be related to a particular period of use, and therefore to specific inhabitants of the cottage?
- Is there a notable difference between archaeological remains relating to use of the building during the Carter's Barracks period and the Police Superintendent's period? How are these differences expressed?
- How do structural remains compare to documentary descriptions of the building? Do the structural remains confirm our understanding of the building materials and layout, or do the remains provide additional detail? Are there clear changes in the built form that coincide with the change in use?
- What can the archaeological material remains tell us about the daily lives of the inhabitants of the cottage, including Carter's Barracks overseers and police superintendents?
- Is there evidence of women residing in the cottage at any period of use? Can a differentiation be made between women employed in work at this site and women residing here?

Earlier Phases Central Station

The following research questions have been devised to guide the archaeological testing program:

The proposed construction works have some potential to uncover earlier phases of Central Railway Station, including brick platforms and the baggage tunnel. As these features are extant, they are generally well understood. Archaeological potential relating to the railway platforms includes evidence of

lengthening and modifications, structural elements, and historical fills. The baggage tunnel is an extant brick feature, constructed in 1929 and still in use.

The following research questions have been devised to guide the archaeological testing program:

- Are the archaeological remains of early phases of Central Railway Station consistent with the documentary sources?
- Can the archaeological remains of these structures tell us anything about construction techniques or changes in technology over time?
- Are there artefacts or other features within the platform fill that can tell us about the period of construction, or the people involved in the development of the station?

8.2 Strategic Archaeological Management

The Central Precinct Renewal ASP outlined five management actions for archaeological items. [77] These have been adopted for this report and are defined in Table 12.

Table 12: Management of Archaeological remains

Management	Guidelines and remarks
A **Avoidance of impact and preservation in situ**	Whenever possible, locate proposed developments in areas of low to nil archaeological potential and no significance. The strategy of avoidance would consider reuse of existing service trenches, placement of elements and structures on above-ground supports or construction in the areas of previous disturbance. Preservation in situ is the preferred option where works can avoid known or potential archaeological features, or where subsurface excavation is shallow. Items to be preserved in situ should be fully recorded including GIS location, then covered in geofabric prior to reburial. This process should occur under the supervision of an Excavation Director approved for management of State significant sites and items.
B **Archaeological recording prior to salvage**	When impact is unavoidable and archaeological remains are deemed for removal, thorough archaeological recording must be undertaken. The recording would include detailed note taking, sediment sampling (where appropriate), GIS and RL recording, photography, site/feature planning and/or photogrammetry, section drawing and/or 3D scanning. Archaeological records would form part of the study area's archives.
C **Salvage or removal**	If impact is unavoidable and archaeological remains are deemed for removal, this action should be carried out in a controlled manner and after completion of detail archaeological recording. This process should occur under the supervision of a qualified archaeologist.
D **General recording**	Given the heritage and archaeological significance of the study area, notes of all archaeological intervention should be made for future reference.

[77] Artefact Heritage, August 2022

Management	Guidelines and remarks
E **No action required**	The item may be removed or impacted without archaeological supervision or reporting.

8.2.1 Strategic approach

It is proposed that management of the potential archaeological resource include the following processes:

- Pre-construction/detailed design:
  - Heritage induction
  - Preparation of an Archaeological Work Method Statement
  - Preparation of Exhumation Management Plan
  - Archaeological testing program to inform detailed design (see Section 8.2.1)
  - Documentation of the results of archaeological testing/salvage, including re-assessment of the significance of the archaeological resource to inform ongoing design
  - Archaeological salvage program to extent of required impact (if required)
- During construction:
  - Archaeological monitoring (if required)
  - Unexpected Finds Procedure during all remaining excavation works
- Post-construction:
  - Documentation of results of archaeological program.

A summary of recommended management is included in Table 13 and Figure 8-1.

Table 13: Summary of proposed archaeological management

Item No.	Name of Item	Impact summary	Management Policy (ASP)	Proposed archaeological management and/or mitigation
SY0025	**Devonshire Street Cemetery**	**Moderate**	B – Archivally Record and Salvage	Archaeological testing to inform design (noting limitations on testing for grave cuts as outlined in Section 8.3.1.1). Preparation of AWMS to outline results of testing and advise next steps. Recommendations may include: • Reduction of archaeological impacts during detailed design where possible • Open area salvage and/or monitoring and salvage during construction of all areas of the former cemetery that

Item No.	Name of Item	Impact summary	Management Policy (ASP)	Proposed archaeological management and/or mitigation
				would be impacted during ground disturbing project works.
SY0268	**Church of England – Residence and Morgue**	**Moderate**	C – Archivally Record and Remove	Archaeological testing to inform design. Preparation of AWMS to outline results of testing and advise next steps. Recommendations may include: • Reduction of archaeological impacts during detailed design where possible • Open area salvage and/or monitoring and salvage during construction of all areas of the former cemetery that would be impacted during ground disturbing project works.
SY0222	**Police Superintendent's Residence**	**Moderate**	A – Preserve in situ	Archaeological testing to inform design (if accessible). Preparation of an AWMS to outline results of testing (if undertaken) and outline future management. Recommendations may include: • Reduction of archaeological impacts during detailed design where possible • Where impact is unavoidable, archaeological salvage of areas of impact prior to ground disturbing project works • Areas of shallow excavation/negligible impact should be subject to archaeological monitoring and recording or Unexpected Find Procedures, as specified in site specific AWMS's.
SY0223	**Carter's Barracks**	**Moderate**	A – Preserve in situ	Archaeological testing to inform design. Preparation of an AWMS to outline results of testing and outline future management. Recommendations may include: • Reduction of archaeological impacts during detailed design where possible • Where impact is unavoidable, archaeological salvage of areas of impact prior to ground disturbing project works • Areas of shallow excavation/negligible impact should be subject to archaeological monitoring and recording or Unexpected Find Procedures, as specified in site specific AWMS's.

Item No.	Name of Item	Impact summary	Management Policy (ASP)	Proposed archaeological management and/or mitigation
SY0224	**Belmore Police Barracks**	**Moderate**	A – Preserve in situ	Archaeological testing to inform design. Preparation of an AWMS to outline results of testing and outline future management. Recommendations may include: • Reduction of archaeological impacts during detailed design where possible • Where impact is unavoidable, archaeological salvage of areas of impact prior to ground disturbing project works Areas of shallow excavation/negligible impact should be subject to archaeological monitoring and recording or Unexpected Find Procedures, as specified in site specific AWMS's.
SY0228	**Old Burial Ground Road**	**Negligible**	C – Archivally Record and Remove	Areas of shallow excavation/negligible impact should be subject to archaeological monitoring and recording or Unexpected Find Procedures, as specified in site specific WMS's.
SY0229	**1850's Fencing**	**Negligible**	C – Archivally Record and Remove	Areas of shallow excavation/negligible impact should be subject to archaeological monitoring and recording or Unexpected Find Procedures, as specified in site specific WMS's.

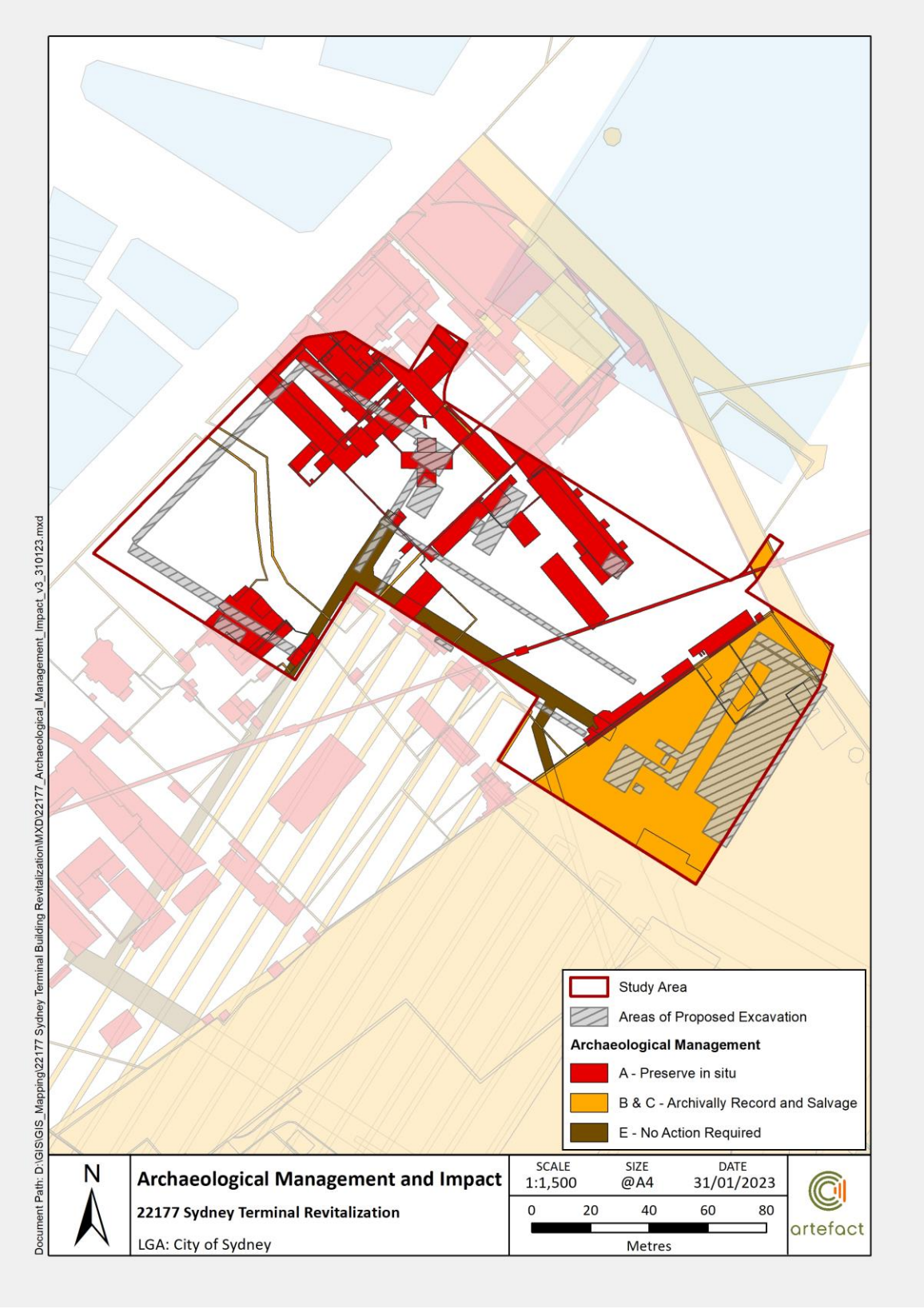


Figure 8-1: Overview of intersection of proposed project excavation areas with archaeological management zones, based on the recommendations of the ASP

8.3 Archaeological Work Method Statements

This report has been prepared on the understanding that the detailed construction methodology would not be finalised until post-project approval. Therefore, this document is unable to provide a detailed assessment of archaeological impact or provide concise recommendations regarding archaeological management.

As such, Archaeological Work Method Statement/s (AWMS) are proposed to integrate the archaeological management methodology outlined in this ARD with future detailed construction-phase methodologies once these are known. The AWMS would be a brief document focused on the practical implementation of appropriate archaeological management, based on the methodologies and mitigation provided in this HAIARD.

The preparation of the AWMS would involve the following activities:

- Review any available updated geotechnical data, existing services surveys and the results of previous archaeological investigation at Central Station as required
- Review detailed design, scope of works, construction program and methodology
- Archaeological remains would be managed in accordance with their significance
- Identify opportunity for in situ conservation of archaeological remains, such as altering construction methodology to avoid impacts, if and where possible
- Confirm appropriate archaeological investigation methodology to mitigate various impacts, based on excavation methodologies and research questions provided in this document
- Where targeted test excavation is proposed, test trench excavation areas would be spatially mapped in the AWMS based on archaeological potential maps provided in this report.

It is possible multiple AWMS's may be required, dependent on the detailed design process.

8.3.1 Skeletal remains and burial sites

The construction footprint encompasses a section known to have contained a major metropolitan burial ground – the Devonshire Street Cemetery. Recent archaeological work to the south of the current study area has uncovered both gravesites and human remains.

8.3.1.1 Former Devonshire Street Cemetery site

The easternmost section of the construction footprint overlays the site of the former Devonshire Street Cemetery. Excavation work to a maximum depth of 2m is proposed throughout this area, also known to have contained the former Church of England residence and morgue, former cemetery boundary fence and Old Burial Ground Road.

The archaeological remains of the former Devonshire Street Cemetery were located during the CSM project, in Sydney Yard and south of the northern construction footprint. Those remains included a brick burial vault, four sandstone burial vaults and some 70 graves or grave cuts. In addition to the archaeological remains, a metal-lined coffin was discovered in Grave Cut 46 which contained the remains of Mr Joseph Thompson (1779-1858). One of the identified burial vaults is thought to have contained remains from the Ham/Perry family.

The archaeological investigations undertaken for the CSM project also identified small fragmented and disarticulated human remains in redeposited sands within the area of the former Devonshire Street Cemetery. The CSM project entailed the sieving of all redeposited sands to recover human remains for later reburial. It is estimated that 1000s of bones, bone fragments were recovered from the grey sands during the excavation of the Station Box. The reposited sands were largely identified south of the Y pedestrian tunnel in Sydney Yard, with much of the area to the north and near the southern margin of the northern construction footprint being truncated to underlying clay and shale. The potential for redeposited sands across the portion of Devonshire Street Cemetery within the northern construction footprint is unknown.

Legislation controlling human remains is as follows:

- *NSW Heritage Act* (1977 as amended) – as an SSI project approval for impacts within the Devonshire Street Cemetery would fall under the EPA Act and approval by DPE

- *Coroners Act 2009* – the discovery of human remains would be considered a 'reportable death' and under legal notification obligations set out in s35 (2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. Whilst the first step will always be to notify NSW Police, further confirmation of the age (antiquity) and nature of the skeletal remains as well as the reasons for the disturbance will dictate which Act and provisions will be enacted.

- As the Coroners Act does not apply to human remains older than 100 years old, once this has been established the State Coroner cannot take further action. In practice this process usually takes about a week unless an arrangement has been made whereby the Coroner is satisfied that remains from the Devonshire Street Cemetery does not fall under their ambit. Such an arrangement was in place for excavations at CSM following the discovery of Vault 1 and human remains in the grey sands.

- *Public Health Act 2012* – The Public Health Regulation 2012 and the NSW Health Policy Statement cover the requirements for exhumation of human remains. In the case of the Central Sydney and Eastern Suburbs Light Rail a permit was obtained to exhume human remains by the Excavation Director and for the Station Box at CSM the permit was obtained and held by Sydney Metro. A permit would be required to by obtained for this project.

Overall, all work likely to impact human remains within the Station Box at CSM was covered by the Sydney Metro Exhumation Management Plan which was required under the Conditions of Approval for the project. It is anticipated that a similar approach would be in place for the STBR project.

Archaeological excavation of grave cuts / intact internments is highly time-consuming and difficult to achieve during short excavation possessions with strict deadlines for completion. This is because the nature of surviving remains is difficult to predict with any accuracy.

Appropriate methodologies must be developed with key stakeholders and authorities, which may include provision for identifying longer timeframes within the archaeological program to investigate potential graves. Archaeological investigation of sensitive contexts within the cemetery cannot be undertaken at night as subtle changes in the ground surface indicating grave cuts are often ephemeral.

In addition to archaeological monitoring and salvage conducted in the Devonshire Street Cemetery area, all sand deposits which are excavated will be sieved in their entirety to recover any fragmentary skeletal remains. This would involve all machine and manual excavated sand deposits to be stored for bulk sieving off-site. Where sand deposits are excavated manually by the archaeological team, these sand

deposits should be sieved by context wherever possible. Sieving would need to be undertaken in accordance with relevant Aboriginal heritage management measures for works and any other area identified for Aboriginal heritage management.

For these reasons there is a strong preference for a program of archaeological investigation to be implemented within the area of Devonshire Street Cemetery prior to the impacts from the proposed works in order to identify whether there are any remaining graves in that area, to treat remains respectfully and appropriately, comply with legislative requirements, prevent delays to the works, and conduct investigations with appropriate daylight. **Investigating the entire extent of proposed works within the Devonshire Street Cemetery, rather than testing select portions, may be the more appropriate approach to ensure that the potential for grave cuts is comprehensively investigated.**

It is important for any work on the former Devonshire Street Cemetery to be undertaken in a respectful manner. At CSM there was a ban on cameras and photographs that would show human remains and it is anticipated that a similar ban would be implemented on this project.

To implement this program a detailed specific AWMS will be required for works within the area of the Devonshire Creek Cemetery. This AWMS would be developed in conjunction with the project engineers and the archaeological team (including the Excavation Director).

In addition, an Exhumation Management plan will be developed to identify appropriate approvals pathways for human remains and identify management strategies for managing human remains once they are exhumed. This would include requirements for community consultation and reinterment.

Approvals from the Coroner (which is likely to be more a concurrence that the site is outside the provisions of the Coroners Act) and from the Department of Health and NSW Heritage will be needed prior to any work likely to impact on the Devonshire Street Cemetery commencing. It is likely that the approvals will take some months to be obtained.

Finally unidentified human remains will need to be reinterred the most likely location for this to occur is the Eastern Suburbs Cemetery at Buninyong as this is a requirement under the 1901 Act.

To summarise, all excavation within the area identified as having potential to contain archaeological remains associated with the former cemetery would need to be archaeologically managed. The following approach is recommended:

- Archaeological testing in accessible locations to depth of proposed impact to inform detailed design, **noting that any testing program to identify grave cuts would need to consider testing the entire portion of works within the cemetery footprint to ensure that the potential for grave cuts is explored in full and to enable appropriate management.**
- Re-design of impacts or excavation methodologies to reduce or avoid impact to significant remains where possible.
- Open area salvage and/or monitoring and salvage during construction of all areas of impact prior to ground disturbing project works.

8.4 Exhumation management plan

An exhumation management plan would be prepared for the Proposal and enacted throughout all construction works to provide TfNSW and their contractors with guidance on managing the discovery of human skeletal remains during the course of the program of works. The exhumation management plan

would provide a clear and concise process to follow in the event of the discovery of potential human remains during works. The exhumation management plan will also identify appropriate approvals pathways for human remains.

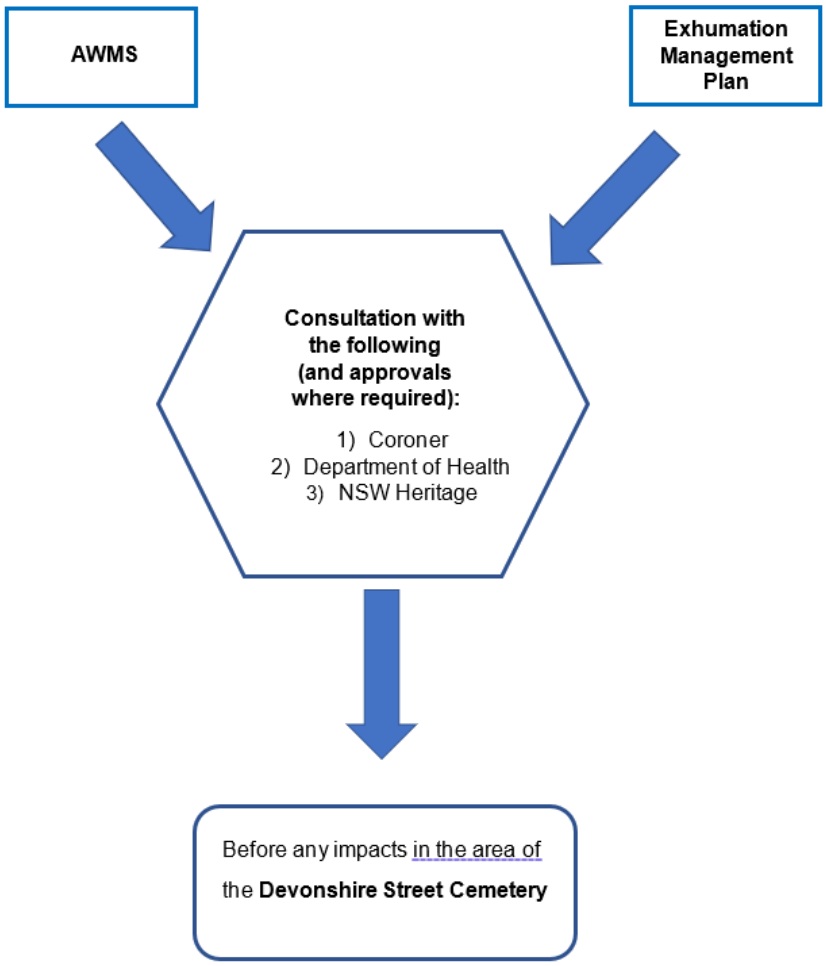


Figure 8-2: Indicative pathway for working with Devonshire Street Cemetery

8.1 Institutional buildings

The proposed excavation works have the potential to result in impact to state significant archaeological remains associated with the Police Superintendent's Residence, Carter's Barracks and Belmore Police Barracks.

It is recommended that impact to these archaeological resources be avoided where possible. *In situ* retention is considered the most appropriate management for remains of this significance.

It is recommended that management of these remains involve the following processes:

- Archaeological testing to depth of proposed impact (see Section 9.2, Figure 8-3)
- Re-design of impacts or excavation methodologies to reduce or avoid impact to significant remains where possible

- Archaeological salvage, if impact is unavoidable (see Section 8.2.2).

8.2 Archaeological methodologies

The following sections provide an outline of best-practice archaeological methodologies for test excavation, salvage and monitoring.

8.2.1 Archaeological testing to inform detailed design

It is recommended that a program of archaeological test excavation be implemented in those areas accessible during the detailed design stage. The results of this testing program would then feed back into the detailed design.

An overview of a suggested testing program based on the current understanding of in-ground impacts is illustrated in Figure 8-3. The below testing locations are indicative and would be subject to confirmation based on accessibility of each location and on the detailed design. Subject to final design, the testing program would focus on archaeological evidence associated with:

- The Carters Barracks (Area A on Figure 8-3).
- Former Church of England mortuary and Devonshire Street Cemetery boundary (Area B on Figure 8-3).
- Superintendent's residence (if accessible, for the purposes of this report it has been assumed that this location cannot be accessed pre-construction).

Indicative locations for test trenches have been illustrated on Figure 8-3. It is noted that these locations are indicative as access to the ground surface pre-construction is not yet known.

8.2.1.1 Archaeological testing methodology

Testing is an informed and contained strategy that assesses the presence/absence of the archaeological resource within a defined area through the implementation of suitable archaeological investigation methods. Archaeological evidence uncovered during a testing program is left *in situ* and, following archaeological recording, is appropriately protected as part of the trench backfilling process. The results of an archaeological testing program can inform development design and advise on potential mitigation measures for managing the archaeological resource.

Test trenches would be accurately located and demarcated by the archaeologist/s onsite prior to the removal of hardstand surfaces, in accordance with the appropriate AWMS. Bitumen, road-base and concrete subgrades in the trenches would be broken out and cleared by a small machine excavator (4-5 tonne) by the contractor, monitored at all times by an archaeologist. Modern fill below ground level will be carefully removed by machine using a mud bucket, until the top of archaeological deposits or the top level of subsurface anomalies is reached.

Any significant archaeological deposits or structural remains uncovered would be recorded in situ and suitably protected before the backfilling of the trenches. On identification of potential archaeological deposits or remains, investigation would be undertaken manually (by hand) only. Archaeological remains would be cleaned by hand to allow archaeologists to understand the nature of the potential archaeological remains within the trench. Archaeological deposits would be recorded by context. Should

buried remains be identified as non-significant, machine excavation may continue in that area once the remains have been completely recorded.

Excavation of each trench would continue until archaeological remains are encountered, or until natural subsurface culturally sterile sand layers are identified. Trenches would not be excavated beyond 1 m in depth. The trenches would remain open until investigation and recording is completed and trenches would be adequately protected overnight.

Upon completion of a trench, any archaeological remains encountered will be protected with plastic and/or geofabric prior to backfilling. The trenches will be backfilled with removed and/or clean imported spoil and the ground surfaces then reinstated.

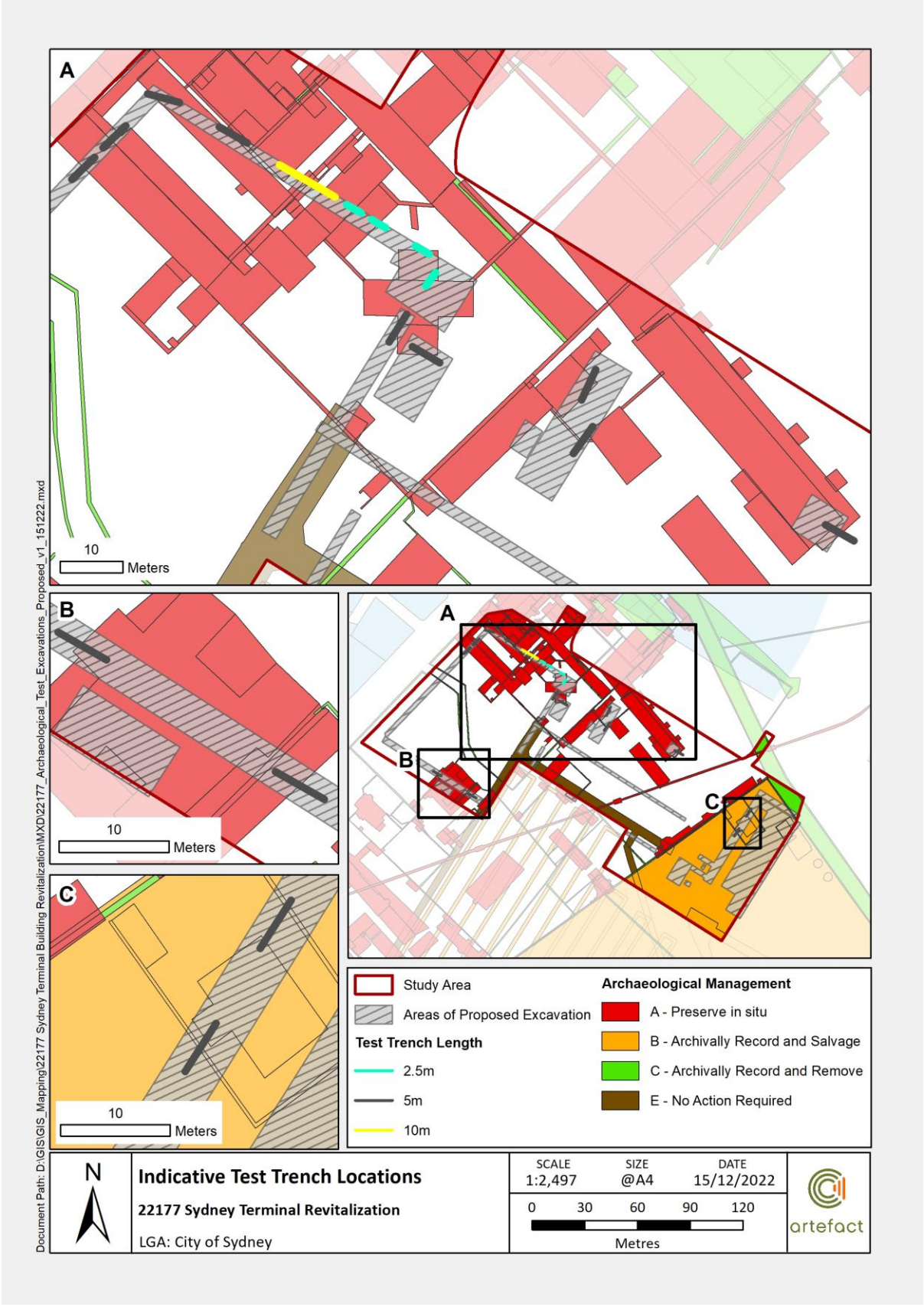


Figure 8-3: Indicative test trench locations and size

8.2.2 Archaeological salvage methodology

Archaeological salvage generally refers to open area archaeological excavation under the control of the Excavation Director. Open area salvage excavation is a method of archaeological investigation in which the full horizontal extent of an area of site is investigated and cleared, whilst preserving the stratigraphic record.

Salvage excavation would only be proposed where significant archaeological remains have been identified during archaeological test excavation. The specific methodology for archaeological salvage would be specified in the relevant AWMS.

Archaeological salvage would likely involve removal of modern fills and disturbance to the top of archaeological layers of interest by machine under archaeological supervision. On the identification of the historical context /archaeological fills specified for archaeological salvage, salvage excavation would commence. This investigation would be undertaken using hand tools, with machines used where required and as permitted in the AWMS, by a qualified archaeological team. The archaeological remains are then cleaned by hand, investigated (excavated) and recorded in detail by the archaeological team.

Construction works would not proceed until the salvage excavation is completed in the relevant location and the Excavation Director has provided clearance for the area in question. It is noted that due to the potentially deep archaeological deposits in some areas, archaeological excavation and Excavation Director clearance would not proceed deeper than the anticipated depth of works, unless otherwise specified in the relevant AWMS.

The AWMS will outline specific salvage excavation methodology, which is anticipated to specify that upon encountering archaeological material, mechanical excavation would cease and excavation using hand tools would be undertaken by archaeologists trained in on-site historical excavation methods, under the guidance of the Excavation Director. Machine excavation, under archaeologist direction, would be utilised where required. Where contaminated deposits are identified, remote recording techniques may be utilised to minimise exposure to harmful materials. Depending on the type of contamination, complete archaeological investigation of those contexts may not be possible.

All significant archaeological remains which would not be impacted by the proposed works would be backfilled following the completion of the excavation. This would involve providing a protective layer of geofabric of similar over exposed archaeological deposits and then backfilled with either previously excavated spoil or clean imported spoil.

8.2.3 Archaeological monitoring methodology

Archaeological monitoring is where an archaeologist is in attendance and supervising construction excavation work with the potential to expose or impact archaeological remains. Monitoring is generally undertaken where there is lower potential for significant archaeological remains and/or where minor excavation work is in an area of archaeological sensitivity. Archaeological monitoring would be conducted by on site archaeologists who would be coordinated by the Site Director and Excavation Director.

The on-site archaeologist would supervise excavation but would also be able to direct machine excavation contractors in consultation with contractor supervisors, to excavate areas of interest under their direction, so long as excavation does not exceed the approved impact area for the scope of work. Should construction excavation work endanger potential archaeological deposits, the machine excavation contractor must cease excavation if advised by the monitoring archaeologist.

If archaeological remains are identified during archaeological monitoring, they would be recorded and assessed to determine if further investigation is required. Localised stoppages in the excavation work may be required to facilitate this process. Works would not recommence until the monitoring archaeologist has completed the recording and the Excavation Director is satisfied that further investigation is not required.

If significant and intact archaeological remains are identified, then further investigation such as salvage would be required prior to construction impacts occurring to the item. Assessments of significance of all finds would be supervised and confirmed by the Excavation Director.

8.2.4 Unexpected Finds Procedure

The Transport for New South Wales Unexpected heritage items procedure[78] should be followed during all project excavation works.

8.2.5 Archaeological recording and documentation procedures

8.2.5.1 Overview of excavation recording methodology

Significant archaeological remains would be recorded in accordance with the following methodology:

- A site datum would be established
- Levels would be reduced to Australian Height Datum
- Survey and scaled plans of the area, trench locations and any significant archaeological features uncovered in the monitoring, test and salvage program. The plans would include elevations recorded by a surveyor where possible. Should a large amount of archaeological resources be identified during the excavation, the site would be digitally surveyed and recorded
- Scaled section drawings where appropriate
- Photogrammetry where appropriate
- Digital photography, in RAW format, using photographic scales and photo boards where appropriate. A photographic record of all phases of the work on site would be undertaken
- A standard context recording system will be employed: The locations, dimensions and characteristics of all archaeological features and deposits will be recorded on a sequentially numbered context register. This documentation will be supplemented by preparation of a Harris matrix showing the stratigraphic relationships between features and deposits
- Artefact collection by context. Large or redundant artefactual materials from individual contexts would be sample collected as supported by a discard register. Hazardous material would not be collected.
- Registers of contexts, photos, samples and drawings would be kept.

[78] Transport for NSW, July 2022

8.2.5.2 Survey Control

A survey control for the site would be established, tied to the Geocentric Datum of Australia (GDA) 2020. For preference, survey data would be recorded with a DGPS and post-processed to sub 1 centimetre accuracy. Alternatively, a Total Station would be used to establish the survey and record survey data. An automatic level could also be used to record depths and tied to known datum points.

Within an archaeological excavation area, the archaeological team would set out a grid where possible for ease of recording and, where required, and establish main and subsidiary datums based on survey information. Further datums for vertical control will be established to allow all excavation areas to be surveyed into a nearby datum. These will be tied back to Australian Height Datum and the survey grid.

Where electronic surveying equipment is not available to the archaeological team, horizontal measurements and detailed scaled plans of excavation areas and features would be prepared. Vertical relative elevations would be taken with dumpy level. These plans and levels would be tied to a previously surveyed main or subsidiary datum. Every level taken is assigned a number and is recorded on a level sheet.

Where dateable or otherwise special artefacts are located they would be recorded in three dimensions with surveying equipment if available.

8.2.5.3 Recording of Contexts

All soil deposits and significant features would be given a unique context number without duplication. Context numbers will be recorded in a register of context numbers to ensure context numbers are not duplicated. Each context is numbered sequentially.

Rubble deposits would be recorded only where it provides specific information regarding masonry and construction (i.e., wall finishes, material etc.). Fills need to be described in detail as there are varying types of fills (e.g., demolition, levelling).

Contexts would be related to each other through the use of a Harris Matrix. The relationships between each of the contexts are recorded on the context sheet and these are also recorded in Stratify, a computer program used for producing Harris Matrices.

8.2.5.4 Recording of Archaeological Features

Significant archaeological features would be recorded through the preparation of plans and sections. Structural elements, such as brick walls or timber posts, would be recorded in situ to observe phases in construction, and then removed in stratigraphic sequence.

Plans and sections will be labelled with details of what is being recorded, context numbers and details of the recorder. Each plan, map or section will be catalogued and receive a number which is put on the plan and in the catalogue. The plan, map or section will be placed flat in an artist portfolio.

Archaeological remains need to be directly surveyed during works or four control points on each plan that can then be surveyed in to georeference the plan. All records of vertical sections would include elevation data to ensure accurate measurement of stratigraphic layers at the site. Excavation open areas of significant features would include elevation levels throughout site, recorded either with a DGPS or total station, or with a dumpy level measured off surveyed datum control points for the site. The surface level and end of excavation elevation levels for all test excavation trenches, and all salvage excavation areas, would be recorded.

8.2.5.5 Photography

In photographically recording significant archaeological remains, the AWMS will specify where photography must meet the requirements for photogrammetry, which includes accurate scale bars, overlapping of images and recording with a colour card where required. Photographs would be recorded in a register identifying the shot number, direction and a description of the scene.

Photographic recording of significant archaeological remains would be informed by the standards established in the *Photographic Recording of Heritage Items Using Film or Digital Capture* (Heritage Office 2006), accepting that parts of these guidelines are technically obsolete. Artefact would use a digital SLR camera and shoot in raw format to capture the maximum amount of information from the camera sensors. Photograph numbers will be documented on a photo register, including information such as photo direction and content.

8.2.5.1 Collection of Artefacts

Artefacts are likely to be uncovered during archaeological investigations. Artefacts from secure or in situ contexts would be collected and recorded (by context). Retrieval of artefacts should focus on diagnostic pieces and other items whose analysis would contribute to the research questions for this site are retained.

Should diagnostic or significant artefacts be present within the fill layers (out-of-context), a sample would be retained as part of the archaeological record. Any discarded items will be recorded on context or discard sheets (in the case of sieving).

Artefacts would be collected by context and bagged with a label recording their registered context number, site code, date and initials of the collecting individual/s. A record and description of relevant artefacts would be included in their corresponding context sheet and photographed where necessary.

8.2.5.1 Long term management of recovered artefacts from site

Archaeological remains collected and analysed from archaeological investigation would be stored safely by Transport for NSW following the completion of analysis of remains. Opportunities for artefactual material to be incorporated into future interpretive spaces would be considered by Transport for NSW. Should recovered archaeological remains be considered unstable for long-term storage, conservation handling would be undertaken for long-term preservation of finds. This would involve engagement of a specialist conservator who has experience with the material in question, for example metals or wood. The material would be stabilised and stored securely.

8.2.5.2 Contractor responsibilities

The contractor would set up site and then operate under the direction of the archaeologists during archaeological investigation. This would include but not be limited to:

- Provide a heritage site induction to contractors in consultation with the Excavation Director
- Set out and secure the work area for the construction and archaeological team
- Provide machine plant to assist the removal of fill where required under the supervision of the archaeological team
- Provide shoring, if required

- Provide pressurised water and a sieving area, if required.

8.2.5.3 Contaminated materials

Due to the potential for contaminants across the study area, the controlled archaeological excavation would also be undertaken in accordance with the specified work health and safety protocols established for the site, prior to the commencement of works on site. Should the discovery of contaminants on site likely result in the potential harm to archaeological staff working on site, there may be a requirement to deviate from the proposed archaeological methodology, in order to ensure the health and safety of onsite staff. This may include the use of protective clothing, face masks, and specified gloves, additional washing protocols, through to the need to cease or limit the amount of archaeological excavation and/or altering excavation and recording techniques.

Should the requirement to employ mechanical excavation rather than hand excavation arise, archival recording of archaeological material would need to be taken in the form of photographic, and possibly 3D scanning, from a safe distance (as specified in the work health and safety requirements of the remediation specialists).

8.2.5.4 Site clearance

A written clearance confirmation would be provided by the Excavation Director to the contractor once archaeological management has been completed in an area. This would be signed off by Transport for NSW before works commenced. Construction would then continue under the Transport for NSW Unexpected Heritage Finds Guideline.

8.2.5.5 Post-excavation analysis and reporting

Following the completion of on-site archaeological works, post-excavation analysis of the findings would be undertaken. This includes artefact analysis, environmental and building material sample analysis, stratigraphic reporting and production of Harris Matrices, production of detailed site survey plans, illustrations and interpretative drawings, generation of catalogues, data records and site registers.

Artefacts would be catalogued and analysed in a robust database in accordance with the EAMC (Exploring the Archaeology of the Modern City) catalogue architecture and methodology to facilitate inter-site artefactual comparative analysis.[79]

A final excavation report detailing the archaeological program and results would be prepared. It would include the results of the archaeological excavation and analysis, additional historical information if needed, photographs, illustrations and plans, catalogue and analysis of artefacts, and also respond to the research questions in detail. The report would also include a reassessment of archaeological significance based on the investigation results. Opportunities for archaeological interpretation would also be included in the final report.

Final excavation reporting would be prepared within 12 months of the completion of all archaeological investigation at the construction site. This report would be a standalone report submitted to Transport for NSW.

---

[79] Crook and Murray, 2006. *Guide to the EAMC Archaeology Database*. Archaeology of the Modern City Series, Volume 10. Historic Houses Trust of New South Wales.

9. References

Australia ICOMOS, 2013. *Australia ICOMOS Charter for the Conservation of Places of Cultural Significance.*

AECOM, 2016. *Geotechnical Factual Report: Sydney Yard Overhead Wiring Modernisation.* Report to Sydney Trains.

Aplin, Graeme, 2013. 'A Strange Natural Environment: Colonists in Eighteenth-Century Sydney'. *Sydney Journal* 4, no. 1: 19–37.

Artefact Heritage, 2017. *Conversion of the Former Radio Workshop at Central Station into an Electrical Substation for the CSELR project—Heritage Advice Memo*. Prepared for Acciona.

Artefact Heritage, 2018. *DRAFT Memo Archaeological Excavation Results Central Station Substation 23082018*. 180712_JVB. Prepared for Acciona.

Artefact Heritage, 2018. *Sydney Yard Access Bridge Construction Project: Excavation Directors Report.* For Sydney Metro.

Artefact Heritage, 2019. *Sydney Metro: Central Station – Central Walk*. Sydney: Artefact Heritage.

Artefact Heritage, 2020a. *CSM Excavation Directors Report*. Report to Sydney Metro.

Artefact Heritage, 2020b. *More Trains More Services – Sydney Terminal Area Reconfiguration: Aboriginal Archaeological Survey Report*. Report to TfNSW.

Artefact Heritage, 2020c. *Preliminary Excavation Directors Report: Central Station Main Works*. Report to Laing O'Rourke.

AURECON, 2017. *MTMS 2 STAR - SP1 and SP2 Geotechnical Investigation Factual and Interpretive Report.*

Australian Royal Historical Society, 1908. 'Railway Carriage Sheds'. *New South Wales Railway Budget*.

Brassil, Tony, 2020. *National Trust Register Listing Report: Tarpaulin Factory, Enfield.* National Trust of Australia (NSW).

Burke, David, 1995. *Making the Railways*. Sydney: State Library of New South Wales Press in association with the State Rail Authority of New South Wales.

Burke, David,1988. *With Iron Rails: A Bicentennial History of the Railways in New South Wales*. Kensington: New South Wales University Press.

Centennial Parklands Trust., 2014 'History of Moore Park'. *Centennial Parklands*. https://www.centennialparklands.com.au/visit/our-parks/moore-park/history-of-moore-park.

Chapman, G.A., C. L Murphy, P. J. Tille, G Atkinson, and R.J. Morse, 2009. 'Soil Landscapes of Sydney'. 1:100000. Department of Environment, Climate Change and Water, Sydney.

State Archives & Records NSW, 2009. 'Colonial Secretary Index, 1788–1825', 18 February 2009. http://colsec.records.nsw.gov.au/default.htm.

Dornan, S.E., and R.G. Henderson, 1976. *The Electric Railways of New South Wales: A Brief History of the Electrified Railway System Operated by the New South Wales Government, 1926–1976*. Sydney: Australian

Electric Traction Association.
https://search.sl.nsw.gov.au/permalink/f/1ocrdrt/SLNSW_ALMA21114083930002626.

Douglass Partners, 2016. *GDR - SMCS Geotechnical Investigation, Central Station Upgrade.*

Douglass Partners, 2020. *Interim Data Release: Site Plan, Factual Data and Interpreted Cross-Sections, for a Proposed Commercial Development.*

Everett, Claire, 1995. *Archaeological Monitoring of Works at Central Railway Station, Sydney.* Pymble: HLA-Envirosciences.

Forsyth, J. H., 1976. 'Historical Notes on Main Suburban Line (Including Sydney, Central and Redfern)'. Sydney, 1976. F388.4/1. *State Library of New South Wales.*
https://search.sl.nsw.gov.au/permalink/f/1ocrdrt/SLNSW_ALMA21155640850002626.

GHD, 2015. L*ee Station Substation Project Geotechnical Investigation Revision 2*. Report to Transport for NSW.

Godden Mackay, 1991. *Enfield Tarpaulin Factory: History, Operations and Building Fabric* : Report. Prepared for State Rail Authority by Godden Mackay Pty Ltd, 1991.

GML Heritage, 2013. 'CBD and South East Light Rail, Environmental Impact Statement'.

GML Heritage, 2015. *CBD and South East Light Rail Central Station Substation (Chalmers Street, Surry Hills) Heritage Report.* Report prepared for Acciona.

Hagarty, D., 2005. 'Sydney Railway 1848–1857. The Building of the First Railway from Sydney to Parramatta'. Redfern: Australian Railway Historical Society New South Wales Division.

Herbert, C., 1983. 'Sydney Basin Stratigraphy Geology of the Sydney 1:100,009 Sheet 9130', 1983.

Heritage Group, 1996. State Projects, Department of Public Works. *Sydney/Central Station: Conservation Management Plan.* Sydney: Heritage Group, State Projects.

Howard Tanner and Associates, 1987. *Sydney Central Station and Sydney Yard: Conservation Plan and Management Strategy. Part One: Report*. Surry Hills: Howard Tanner and Associates.

Johnson, Keith A, and Malcolm R Sainty, 2001. *Sydney Burial Ground 1819–1901: (Elizabeth and Devonshire Streets) and History of Sydney's Early Cemeteries from 1788*. Sydney: Library of Australian History.

Lee, Robert Stuart, and New South Wales Department of Public Works, 2001. *The Greatest Public Work: The New South Wales Railways, 1848 to 1889*. Sydney: Hale & Iremonger, 1988.
https://trove.nla.gov.au/version/21948568.

Longworth, Jim, 2003. 'A Brief History of NSW Railway Gasworks'. *ARHS Bulletin* 54, no. 788: 203–13.

McKillop, Robert, 2009. *Thematic History of the NSW Railways*. Sydney: RailCorp.

N.S.W.G.R., 1940. 'Subsidiary Undertakings, N.S.W.G.R. No. 1 – Tarpaulin Factory, Enfield'. *Railway Digest*, May 1940.

NSW Heritage Council, 1996. 'Archaeological Assessment Guidelines'. In *NSW Heritage Manual*. New South Wales: Heritage Office.

NSW Heritage Office, 2001. *Assessing Heritage Significance: NSW Heritage Manual Update*. Parramatta: NSW Heritage Office.

Oakes, John., 2002. *Sydney's Central: The History of Sydney's Central Railway Station*. Redfern: Australian Railway Historical Society.

Rappoport, Paul, 2000. 'Conservation Management Plan of Mortuary Station, Regent Street, Chippendale'. Sydney: Paul Rappoport Architect. http://heritagensw.intersearch.com.au/heritagenswjspui/handle/1/6178.

Rappoport Pty Ltd and the NSW Government Architects Office, 2013. 'Central Station Conservation Management Plan'. Mascot: Rappoport. http://heritagensw.intersearch.com.au/heritagenswjspui/handle/1/6193.

Richards, Thomas, 1886*. Railways and Tramways of New South Wales. Report of the Commissioner for Railways for the Year 1885*. Sydney.

Singleton, C.C., 1941. 'History of Sydney Railway Station, Part I: First Station, 1855–1873'. *Australian Railways Historical Society Bulletin* 8, no. 49: 55–58.

Singleton, C.C., 1941. 'History of Sydney Railway Station, Part II: Second Station 1874–1885'. *Australian Railways Historical Society Bulletin* 8, no. 50: 75–76.

Singleton, C.C., 1942. 'History of Sydney Railway Station, Part III: Second Station, 1886–1906'. *Australian Railways Historical Society Bulletin* 9, no. 54: 5–9.

Stuart, Iain Malcolm, 1995. *An Archaeological Zoning Plan for Central Station and Adjacent Areas*. Pymble: HLA-Envirosciences.

Transport for NSW, 2022. *Unexpected heritage items procedure.* EMF-HE-PR-0076. Updated July 2022*.*

Taaffe, Robert T., 2019. *Signal Boxes of New South Wales Railways and Tramways*. Vol. 2. 4 vols. Gazetteer, Illawarra, Metropolitan, Tramway. Taaffee Press, Hobart, Tasmania.

Thorp, Wendy, 1990. Draft Report. *Thematic History, White Bay, Glebe Island, Central Railway to Eveleigh Heritage Study*. Godden Mackay.

Thorp, Wendy, 1999. *Archaeological Assessment: Northern Concourse Central Station, Sydney.* Cultural Resources Management, January 1999.

Tyquin, Michael, 2000. 'Going in Style: Sydney's Funeral Train System'. *Journal of the Royal Australian Historical Society* 86, no. 1 (June 2000): 65–73. http://link.gale.com/apps/doc/A62684595/AONE?u=usyd&sid=zotero&xid=6c93ecdb.

Zelinka, Su., 1991 *Tender Sympathies: A Social History of Botany Cemetery and the Eastern Suburbs Crematorium*. Sydney: Hale & Iremonger.

NSW GOVERNMENT