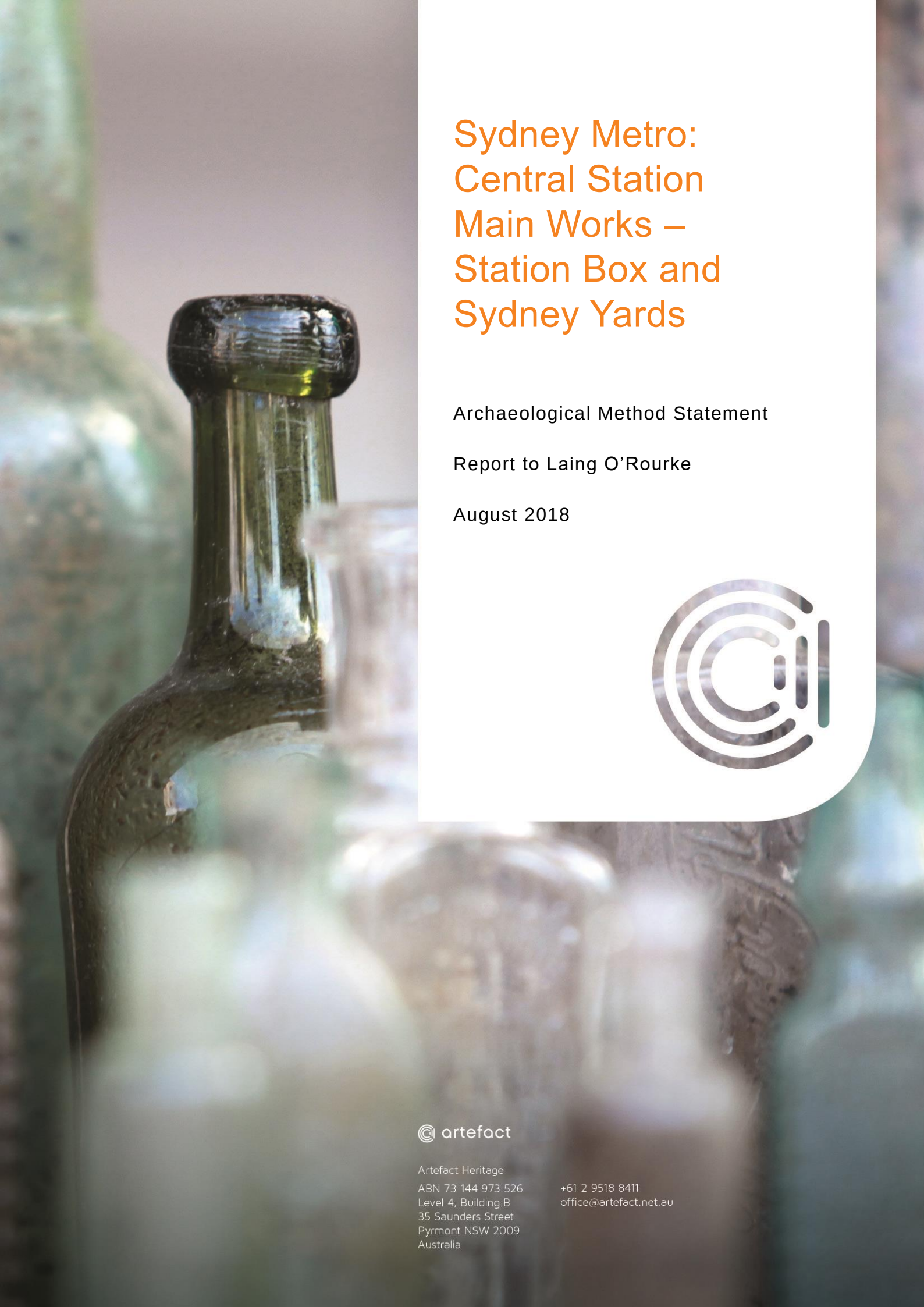

Sydney Metro: Central Station Main Works – Station Box and Sydney Yards

Archaeological Method Statement

Report to Laing O'Rourke

August 2018

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EXECUTIVE SUMMARY

This Archaeological Method Statement (AMS) outlines the archaeological methodology to manage potential construction impacts to significant non-Aboriginal archaeological remains at the Central Station Main Works site as required under the Minister's Conditions of Approval for the Sydney Metro City & Southwest Chatswood to Sydenham project Critical State Significant Infrastructure (CSSI) approval (SSI15_7400). Condition E17 of the Minister's Conditions of Approval for the CSSI states that an AMS must be prepared in consultation with the Heritage Council of NSW (or delegate) prior to the commencement of archaeological investigation. This AMS fulfils E17 and would be implemented in the construction phase, after Construction Environmental Management Plan (CEMP) approval.

The Central Station Main Works scope involves the excavation and construction of two new Metro platforms below the existing intercity platforms 13, 14 and 15 (the Metro station box). This would include the construction of two new underground concourses, one above the Metro platforms and one constructed eastwards under the suburban platforms connecting to Chalmers Street. This would give access to all suburban platforms and enable passenger interchange between train services, new platforms and Sydney Light Rail. Enabling works within the Sydney Yards are also required in order for construction the Metro station.

Archaeological resources at the Central Station Main Works site within the proposed station box and Sydney Yard areas are related to the former Devonshire Street cemetery, First and Second Railway Station expansion, Third Central Station, and the expansion of Central Station in the twentieth century and associated upgrades. The Devonshire Street Cemetery was the second formal burial ground established in the colony in 1820, and continued in use until the 1860s. The First Station was constructed in 1855 and the Second Station was built in 1874. The Third Central Station was constructed between 1906-1926 during large-scale expansion of Central Station.

The assessment of archaeological potential and significance provided in this AMS is based on the Archaeological Assessment and Research Design (AARD) prepared for the CSSI approval[1] The AARD divided the project site into Archaeological Management Zones (AMZ) which reflect the assessed significance and proposed impacts. Where necessary these assessments have been amended to account for additional information obtained during the preparation of the AMS.

The AMS also outlines archaeological management approach based on the AARD and in response to the construction methodology and program. For example, the station box would have high impacts, and a low potential for State significant archaeological remains associated with the Devonshire Street Cemetery.

The works proposed, and general archaeological management approach are outlined in the table below.

Works	Location	AMZ	Potential remains	Archaeological management
Platform removal	Station box	CS3	Former Devonshire Street cemetery	Archaeological monitoring
Services routes and other enabling works	Sydney Yard	CS4	First and second railway stations	Test/salvage Archaeological monitoring

[1] Artefact Heritage 2016a. *Sydney Metro City & Southwest - Chatswood to Sydenham Non-Aboriginal Archaeological Assessment and Research Design.* Report prepared for Jacobs / Arcadis / RPS.; and Artefact Heritage 2017. *Central Walk – Addendum Archaeological Assessment and Research Design.* Report prepared for JAR.

Works	Location	AMZ	Potential remains	Archaeological management
Perimeter piling for station box	Station box	CS3	Former Devonshire Street cemetery north of Devonshire Street tunnel First and second railway stations south of Devonshire Street tunnel	Test/salvage
Plunge columns for the station box	Station box	CS3	Former Devonshire Street cemetery north of Devonshire Street tunnel First and second railway stations south of Devonshire Street tunnel	Test/salvage Archaeological monitoring
Bulk excavation of the station box	Station box	CS3	Former Devonshire Street cemetery north of Devonshire Street tunnel First and second railway stations south of Devonshire Street tunnel	Test/salvage Archaeological monitoring

CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

1.1 Background

This Archaeological Method Statement (AMS) outlines the archaeological methodology to manage potential construction impacts to significant non-Aboriginal archaeological remains at the Central Station Main Works site as required under the Minister's Conditions of Approval for the Sydney Metro City & Southwest Chatswood to Sydenham project Critical State Significant Infrastructure (CSSI) approval (SSI15_7400). This AMS would be implemented in the construction phase, after Construction Environmental Management Plan (CEMP) approval.

An initial AMS was prepared by Artefact Heritage for pre-construction works with no impact to significant archaeology, in consultation with the Heritage Division of the Office of Environment and Heritage (OEH) as a delegate of the NSW Heritage Council[2]. Any works included in the pre-construction works AMS but not yet completed would be undertaken in accordance with this AMS.

An additional AMS for pre-construction works related to overhead wire structure preparation was submitted to the Department of Planning and Environment (DPE) to allow low impact activities, including minor impacts to significant archaeology[3].

This AMS once adopted will replace the following documents:

> *Central Station Main Works–Early Works: Archaeological Method Statement* (April 2018 updated May 2018); and
>
> *Central Station Main Works–Early Works: Archaeological Method Statement for piling and excavation* (May 2018 updated June 2018)

A separate AMS for Aboriginal archaeological management at the Central Station Main Works site has been prepared by Artefact Heritage, which refers to this AMS and is consistent with its methodology.

Where required this AMS should be updated to account for revised impacts, or in response to unexpected finds.

The AMS has been informed by, and is in accordance with, the following project assessment and management documents:

- Artefact Heritage 2016a. Sydney Metro City & Southwest - Chatswood to Sydenham Non-Aboriginal Archaeological Assessment and Research Design (AARD)
- Artefact Heritage 2016b. Sydney Metro City & Southwest - Chatswood to Sydenham Aboriginal Cultural Heritage Assessment Report (CHAR)
- Artefact Heritage 2017. Central Walk – Addendum AARD
- Artefact Heritage April 2018 updated May 2018. Central Station Main Works – Early Works: Archaeological Method Statement (AMS)
- Artefact Heritage May 2018 updated June 2018. Central Station Main Works – Early Works: Archaeological Method Statement for piling and Excavation (AMS)
- Transport for NSW 2017. Sydney Metro Unexpected Heritage Finds Procedure

[2] Artefact April 2018
[3] Artefact June 2018

- Transport for NSW 2018. Sydney Metro Exhumation Management Plan

1.2 Project background

The Sydney Metro network consists of Sydney Metro Northwest (previously known as the North West Rail Link), Sydney Metro City & Southwest and Sydney Metro West.

The Sydney Metro City & Southwest Chatswood to Sydenham project (Figure 1) involves the construction of a new metro rail line between Chatswood and Sydenham. New metro stations will be provided along the line. As part of the project, new underground platforms will be constructed at Central Station along with other modifications to upgrade sections of the station to metro standard and associated works within the Sydney Yard. This part of the project is known as Central Station Main Works and is the subject of this AMS (Figures 2 and 3).

1.3 Site location

The Central Station Main Works are occurring within Central Station, which is located within the City of Sydney Local Government Area (LGA) and in the Parish of Petersham.

Central Station Main Works site is located within Lot 118 DP1078271. The site is bound on all sides by an active rail corridor, platforms, rail buildings and rail infrastructure.

The Central Station Main Works site is located within Central Railway Station, which is listed on the State Heritage Register (SHR) (SHR Item No. 01255), Railcorp Section 170 Heritage and Conservation Register (SHI No. 4801296), and Sydney Local Environmental Plan (LEP) 2012 (LEP Item No. I824) as an item of state significance (Figure 4).

1.3.1 Archaeological Management Zones

The plan of archaeological management for the Central Station Main Works site prepared as part of the Sydney Metro City & Southwest - Chatswood to Sydenham Archaeological Assessment and Research Design (AARD) and amended in accordance with the Central Walk CSSI modification AARD has been reproduced in Figure 5.[4] The proposed works would be primarily located within Archaeological Management Zones (AMZ) CS 2, CS 3, and CS 4. This AMS is based generally on the recommendations of the AARD for archaeological management in these AMZs, with some revisions as a result of additional research and resulting refinement of assessments of archaeological potential and significance.

The following table (Table 1) defines the extent of the each AMZ and the extent of these are shown in Figure 5. If additional works are required outside these management zones during construction (outside the approved project footprint), the closest management zone will be used as a comparison, or the Excavation Director will approve the most appropriate management measures consistent with similar impacts outlined in this AMS.

[4] Artefact Heritage 2016a. *Sydney Metro City & Southwest - Chatswood to Sydenham Non-Aboriginal Archaeological Assessment and Research Design.* Report prepared for Jacobs / Arcadis / RPS.; and Artefact Heritage 2017. *Central Walk – Addendum Archaeological Assessment and Research Design.* Report prepared for JAR.

Table 1: Archaeological Management Zone and contemporary land use in the Central Station site

AMZ	Description of Area	Lot	Address
CS 2	Area coinciding with Platforms 13, 14, 15, adjacent rail corridor areas and access roads; extending from the southern edge of the Devonshire Street pedestrian tunnel to the Eddy Avenue access road. Not including area covered by CS 3 (station box excavation area)	Lot 118 DP1078271	Central Station, Haymarket, NSW
CS 3	Area coinciding with Platforms 13 and 14 and intervening rail corridor; extending from southern edge of Devonshire Street pedestrian tunnel to near northern edge of platform (station box excavation area).	Lot 118 DP1078271	Central Station, Haymarket, NSW.
CS 4	Sydney Yard siding area located between the rail corridors of the T1 line (associated with platform 16) and the country services line (associated with platform 15).	Lot 118 DP1078271	Central Station, Haymarket and Chippendale, NSW.

Figure 1: Project overview and station locations

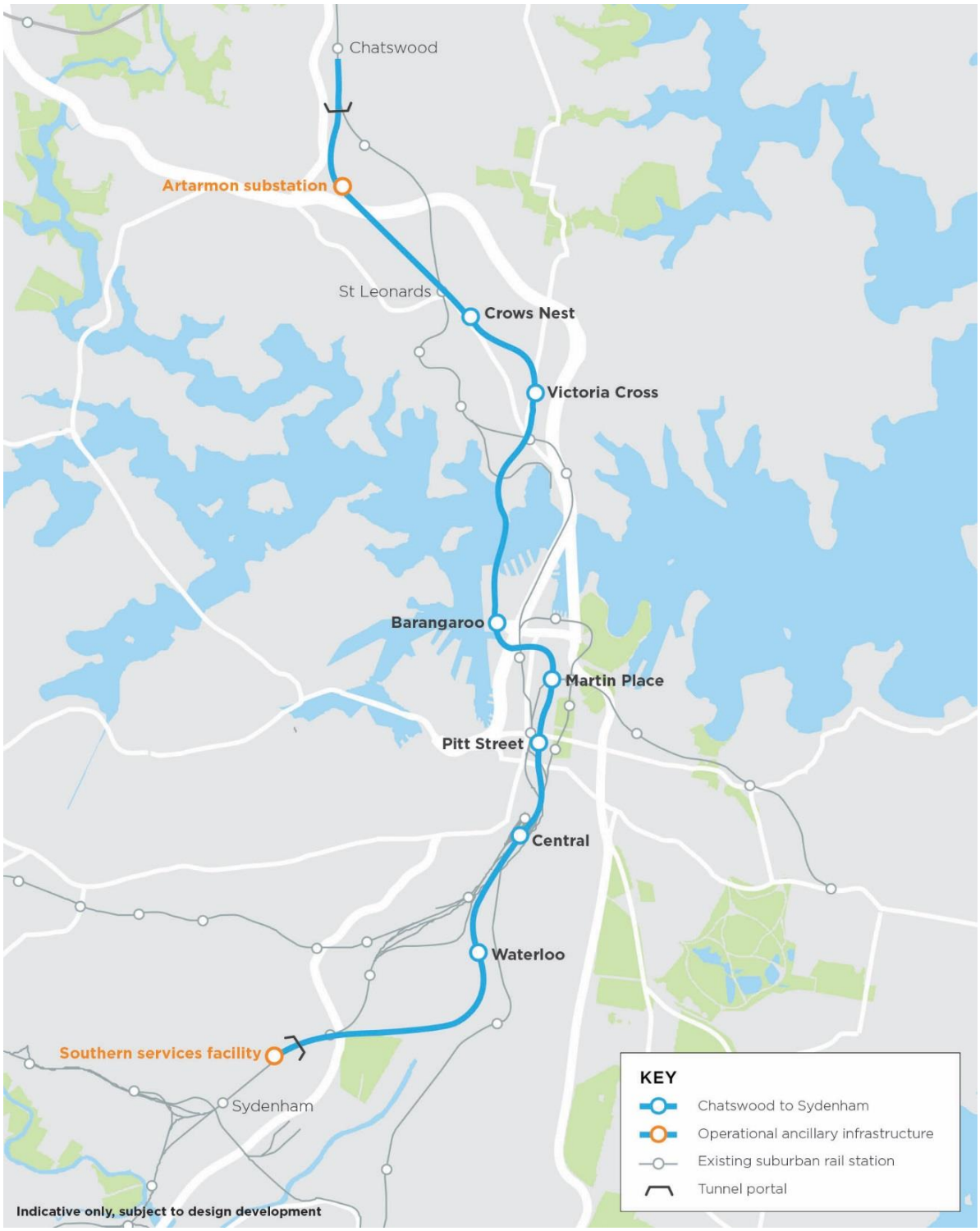
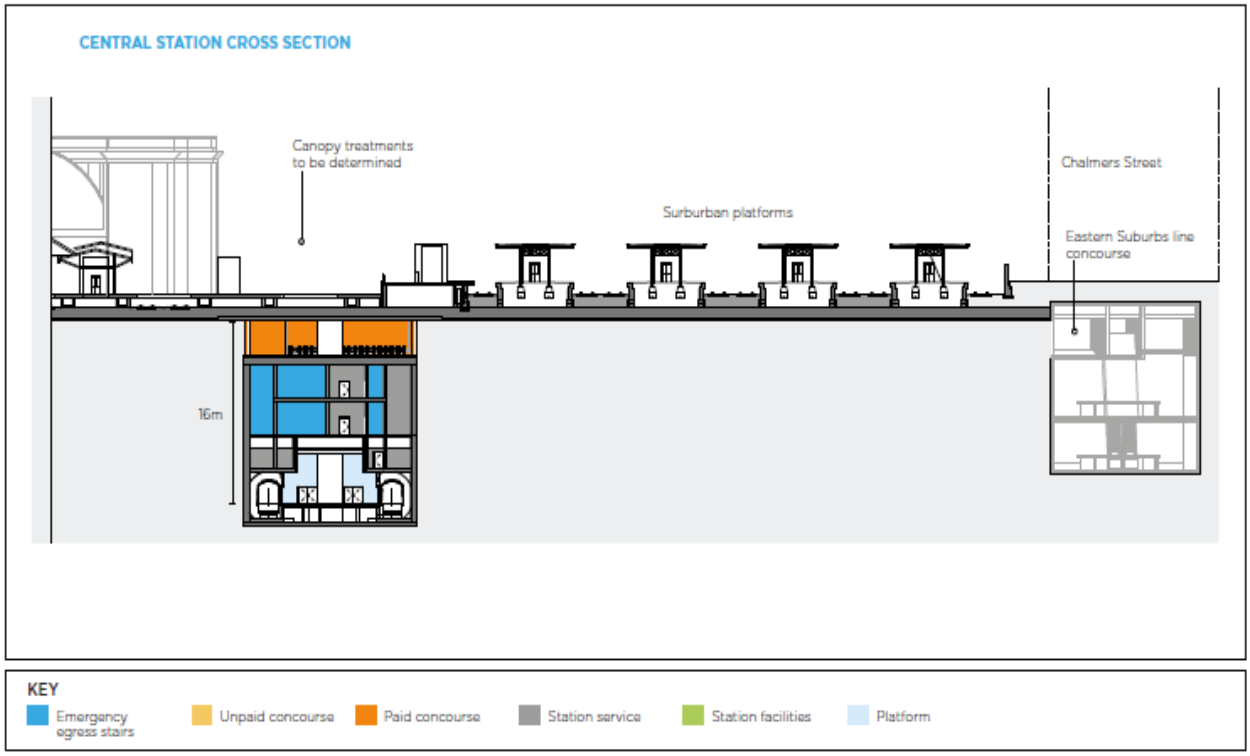
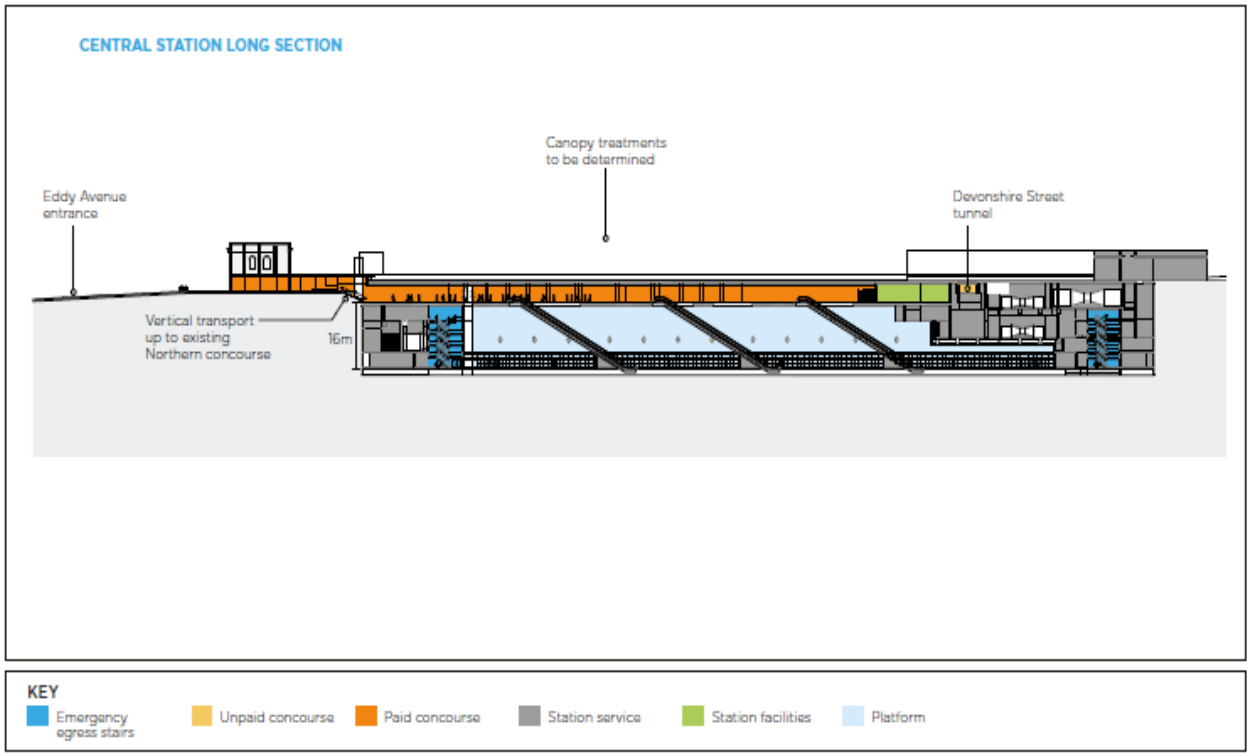


Figure 2: Indicative layout of Central Station Metro[5]

[5] Sydney Metro 2016

Figure 3: Central Station Metro [6]cross section and long section

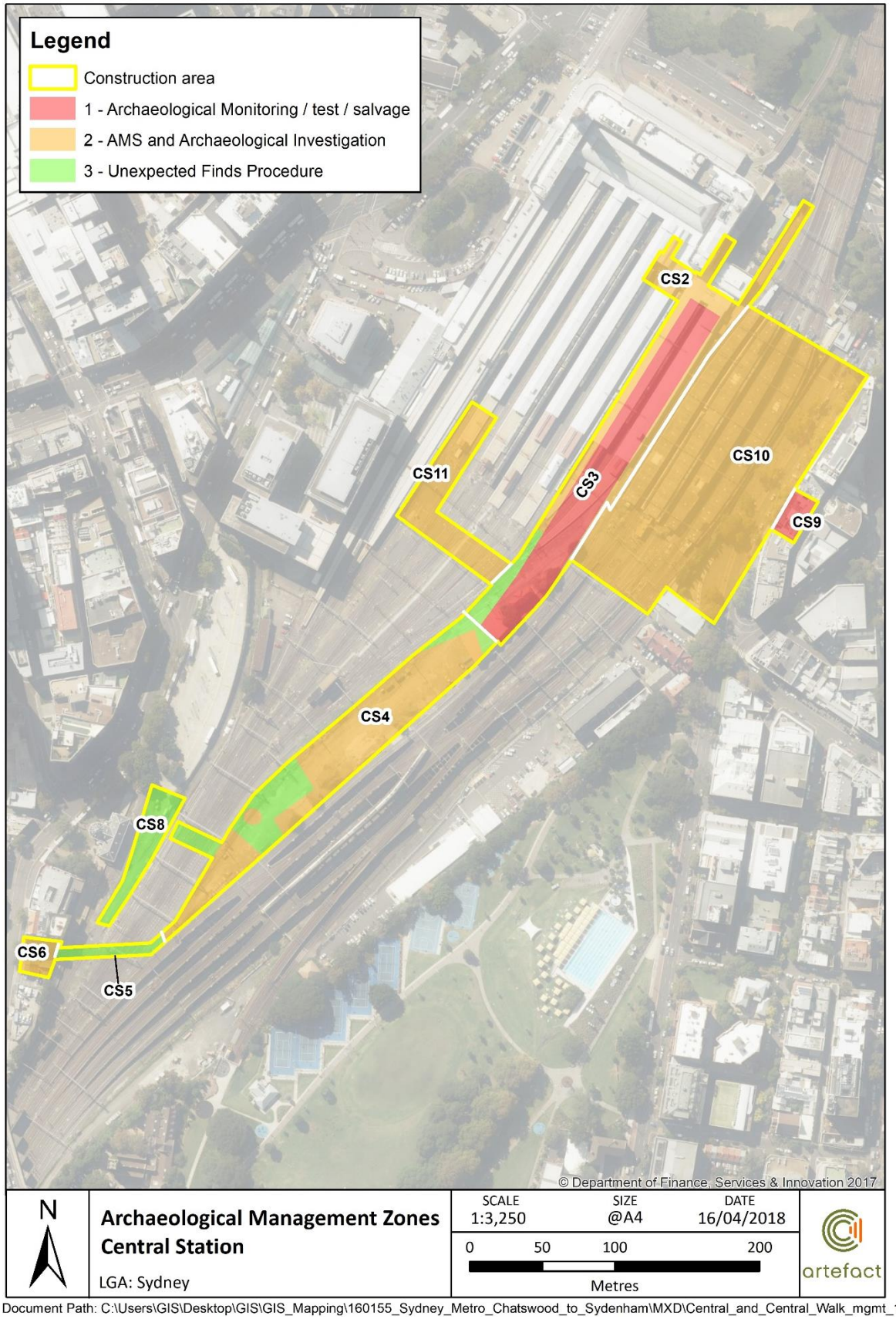




[6] Sydney Metro 2016

Figure 4: Listed heritage curtilages for Central Station

Figure 5: Archaeological management plan for Central Railway Station including Central Walk[7]



[7] Artefact 2016a:333 modified for Central Walk

1.4 Conditions of Approval

Condition E17 of the Minister's Conditions of Approval for the Sydney Metro Chatswood to Sydenham project states that an AMS must be prepared in consultation with the Heritage Council of NSW (or delegate) prior to the commencement of archaeological investigation.

Under E17 states that the final methodology must:

(a) Provide for the detailed analysis of any heritage items discovered during the investigations;
(b) Include detailed site specific archaeological management and artefact management strategies;
(c) Include cored soil samples for soil and pollen for the Pitt Street site within the Tank Stream Valley; and
(d) Provide for a sieving strategy

This AMS satisfies condition E17 and will be provided for review to the NSW Heritage Division as a delegate of the Heritage Council. Both the nominated Primary and Secondary Excavation Directors have reviewed and endorsed this AMS.

Condition E18 requires the nomination of an Excavation Director who complies with the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (July 2011). Information on the nominated Excavation Directors have been provided for comment to the Heritage Division as a delegate of the NSW Heritage Council. On 7 May 2018 Heritage Division acknowledged that both the Primary and Secondary Excavation Directors meet the Heritage Council's *Criteria for Assessment of Excavation* Directors (2011). The Primary Excavation Director would oversee the archaeological excavations and advise on archaeological issues. The Primary Excavation Director would provide clearance once archaeological management has been completed in an area, as per the methodology outlined in Section 6.3.25. This meets the requirements of Condition E18.

Condition E19 requires an Unexpected Heritage Finds Procedure to be prepared in accordance with any guidelines and standards prepared by the Heritage Council of NSW or OEH and by a suitably qualified and experienced heritage specialist. The Transport for NSW 2017 Sydney Metro Unexpected Heritage Finds Procedure has been prepared for the project and would be implemented for the Central Station Main Works site as per the archaeological methodology described in Section 6.3.20.

Condition E20 requires an Archaeological Relic Management Plan be prepared when an unexpected relic of State significance is discovered. This would be prepared as per the archaeological methodology described in Section 6.2. It is noted that under E20 an Archaeological Relic Management Plan would only be required for archaeological remains of State significance that were not identified in the AARD or this AMS.

1.5 Authors

This report has been prepared by Shona Lindsay (Site Director/ Senior Heritage Consultant), Jenny Winnett (Secondary Excavation Director – Historical Archaeology), Dr Iain Stuart (Primary Excavation Director – Historical Archaeology), and Dr Sandra Wallace (Excavation Director – Aboriginal Heritage). Jessica Horton (Graduate Heritage Consultant) assisted with writing the historical context.

2.0 PROPOSED WORKS

2.1 Project scope

The Central Station Main Works scope involves the excavation and construction of two new Metro platforms below the existing intercity platforms 13, 14 and 15 (the Metro station box). This would include the construction of two new underground concourses, one above the Metro platforms and one constructed eastwards under the suburban platforms connecting to Chalmers Street. This would give access to all suburban platforms and enable passenger interchange between train services, new platforms and Sydney Light Rail.

The existing intercity platforms 13, 14 and 15 would be demolished to allow the Metro station box to be constructed. Once the Metro station box is completed, platforms 13 and 14 would be reinstated. This would involve providing two new level-access platforms as part of the Metro station box, including tracks on track slab.

The Metro station box scope includes, but is not limited to:

- A 5-level basement structure approximately 230 m long, 29 m wide and 27 m deep constructed within excavated Sydney sandstone beneath existing platforms 13, 14 and 15
- Construction of a retaining wall at high level around the perimeter of the Metro station box to enable excavation through the soft fill and shale to the sandstone layer.
- The station box intersects the Olympic and Baggage tunnels.
- The station box crosses the Devonshire tunnel and provides permanent support following underpinning.
- The Concourse is one level below the intercity platforms and connected to platforms 13 and 14 by a series of lifts and escalators. There is a connection to the eastern walkway, the northern concourse as well as the intersected Olympic and Baggage tunnels.
- The plant rooms inside the Metro station box are located at level B1 and at the north and south ends of the station and serve the Metro station box alone.
- Levels B2 and B3 are predominately ducts carrying air and services between the plant rooms at each end of the box and upwards to ventilation structures at intercity platform level.
- The Metro platform is at the base of the structure and is connected to the Concourse by 3 triple banks of escalators, a lift and emergency egress stairs within the back of house areas at either end of the Metro station box.

2.2 Platform and canopy removal/demolition

To allow for construction of the station box, the first stages require demolition and removal of the existing rail infrastructure, platforms, canopies, track etc. prior to major excavation works. These works may impact archaeology associated with the existing platforms, and the former Devonshire Street Cemetery.

Steps include:

2.2.1 Potholing and utility identification

Prior to excavation works occurring, the contractor will identify existing services / utilities etc using Non-Destructive Digging (NDD). This will include:

- Potholing using a vacuum truck to a depth of 1500 mm
- Slit trenching using vacuum truck to a depth of 1500 mm

2.2.2 Piling for temporary platform and platform canopies

To allow for temporary retention of Platform 12, the Contractor will install piles through the existing Platform 12 to support future works. This will include:

- Saw cutting of existing platform structure to allow for piling
- Auger piling of new piles to a depth of up to 4000 mm. Piles would be 600 mm wide
- Installation of steel piles including sleeves, concrete, reinforcement etc

2.2.3 Demolition of canopies and platforms

Demolition would include the following:

- Salvaging heritage items as required
- Demolition of canopies over Platform 12, 13, 14, 15
- Demolition of a portion of Platform 12
- Entire demolition of Platforms 13, 14, 15
- Excavation of current platform foundations to ground level
- Removal of demolition materials off site

2.2.4 Removal of rail infrastructure and spoil beneath existing platforms

Spoil removal would include the following:

- Salvaging heritage items as required
- Excavation of current soil beneath platforms to ground level
- Removal / demolition of foundations supporting platforms (~1m depth)
- Removal of demolition materials off site
- Demolition of rail infrastructure including tracks, signalling and overhead wiring

2.3 Excavations in the Sydney Yard

Multiple works would be carried out within the Sydney Yard and surrounds of the station box (see Figures 6 and 7). These works may impact archaeological remains of the first and second phases of station development at Central. They are generally outside the area of the former Devonshire Street Cemetery.

2.3.1 Various excavation works

Prior to excavation works occurring, the contractor will identify existing services / utilities etc using Non-Destructive Digging (NDD) at various locations in the Sydney Yard. These works have been partly undertaken in the pre-construction phase and will continue under the construction phase. This will include:

- Potholing using a vacuum truck to a depth of 1500 mm
- Slit trenching using vacuum truck to a depth of 1500 mm

Other works within the Sydney Yard will include

- Levelling of ballast down to 500mm
- Trenching for installation of electrical infrastructure
- Sewer connection (2m x 2m) to a depth of around 3000mm to connect to existing sewer main
- Removal of footings of demolished structures
- Excavation of a 2m x 2m services pit to 2m depth, including sheet piling to around 7m
- Potholing, footprint excavation and installation of OHW structures
- NDD and trenching for ULX installation
- Potholing at platform zero
- NDD and trenching to locate buried track infrastructure (under current ballast)

2.4 Excavation for the Metro Station Box

Excavation of the Metro station box will occur in multiple stages (see Figure 6 for the location of the station box excavation). The works may impact remains associated with the former Devonshire Street Cemetery to the north of the Devonshire Street tunnel and the first and second phases of station development at Central to the south of the tunnel. The general stages are outlined below:

2.4.1 Potholing / utility identification / relocation

Prior to excavation works occurring, the Contractor will identify existing services / utilities etc using NDD. This will include:

- Potholing using a vacuum truck to a depth of 1500 mm
- Slit trenching using vacuum truck to a depth of 1500 mm

2.4.2 Piling for box perimeter

To allow for retention of the Metro station box excavation perimeter, the Contractor will install piles around the entire boundary of the Metro station box. Piles are spaced at ~2m centres and are generally 750mm diameter. Piling works will include:

- Bored piling of new piles to a depth of up to 10 metres (into rock)
- Construction of piles including sleeves, concrete, reinforcement etc
- Curing to piles (concrete)

2.4.3 Piling for plunge columns (in centre of box)

To allow for insertion of large steel “plunge columns” for future structural connections, the Contractor will two piles every 15 lineal metres up the centre of the Metro station box. Piles are generally 1200mm diameter and to a depth of 25 metres into rock. Piles will be backfilled with steel and low strength concrete. Piling works will include:

- Bored piling of new piles to a depth of up to 20 metres (into rock)
- Construction of piles including sleeves, steel inserts, concrete, etc
- Curing to piles (concrete)

2.4.4 Sheet piling for temporary retention of tunnels

To allow for pedestrian tunnel retention, the Contractor will drive large steel sheet piles vertically beside the existing tunnel. Sheet piles will extend to a depth of up to 10 metres, with some holes pre-drilled if required. Piling works will include:

- Sheet piling of new piles to a depth of up to 10 metres (into rock). The sheet piles, once connected, would be 1200mm long and 450mm wide.
- Cutting off piles once complete

2.4.5 Bulk excavation of spoil down to rock

Excavation and spoil removal would include the following:

- Salvaging heritage items as required
- Excavation of spoil with excavators (20t – 30 t size) to top of rock
- Removal / demolition of foundations as required
- Removal of spoil materials off site in trucks

2.4.6 Demolition of pedestrian tunnels

Demolition of pedestrian tunnel would be undertaken during excavation of the works, and following construction of an alternative pedestrian tunnel route. Works include:

- Salvaging heritage items as required
- Relocation of services within tunnel
- Demolition of tunnel roof with excavators (20 tonne size)
- Demolition of tunnel walls / piles with excavators (20 tonne size)
- Demolition of tunnel floor with excavators (20 tonne size)
- Demolition / excavation of tunnel foundations
- Removal of demolition materials off site

2.4.7 Detailed excavation at Devonshire Street Tunnel

Excavation at and adjacent to the Devonshire Street Tunnel will be detailed and will include:

- Removal of top layer of materials (~0.5m thick) with excavator
- Salvaging heritage items as required
- Further detailed excavation of spoil with excavators (up to 12 tonne size)
- Excavation of spoil with excavators (up to 12 tonne size) to top of rock
- Removal / demolition of foundations as required
- Removal of spoil materials off site in trucks

The location of the proposed station box and enabling works is presented in Figure 6 and Figure 7. Some works, including but not limited to, NDD and trenching would need to be completed outside the areas shown in these figures, in which case the archaeological management approach would be consistent with the methodology in the project AARD and this AMS. Locations of works shown may also be altered during construction in response to constructability issues, to avoid significant archaeology identified in testing or monitoring, or in response to project design requirements. In this case archaeological management would be confirmed by the Excavation Director and would be consistent with the methodology in this AMS.

Figure 6: Plan of proposed station box works

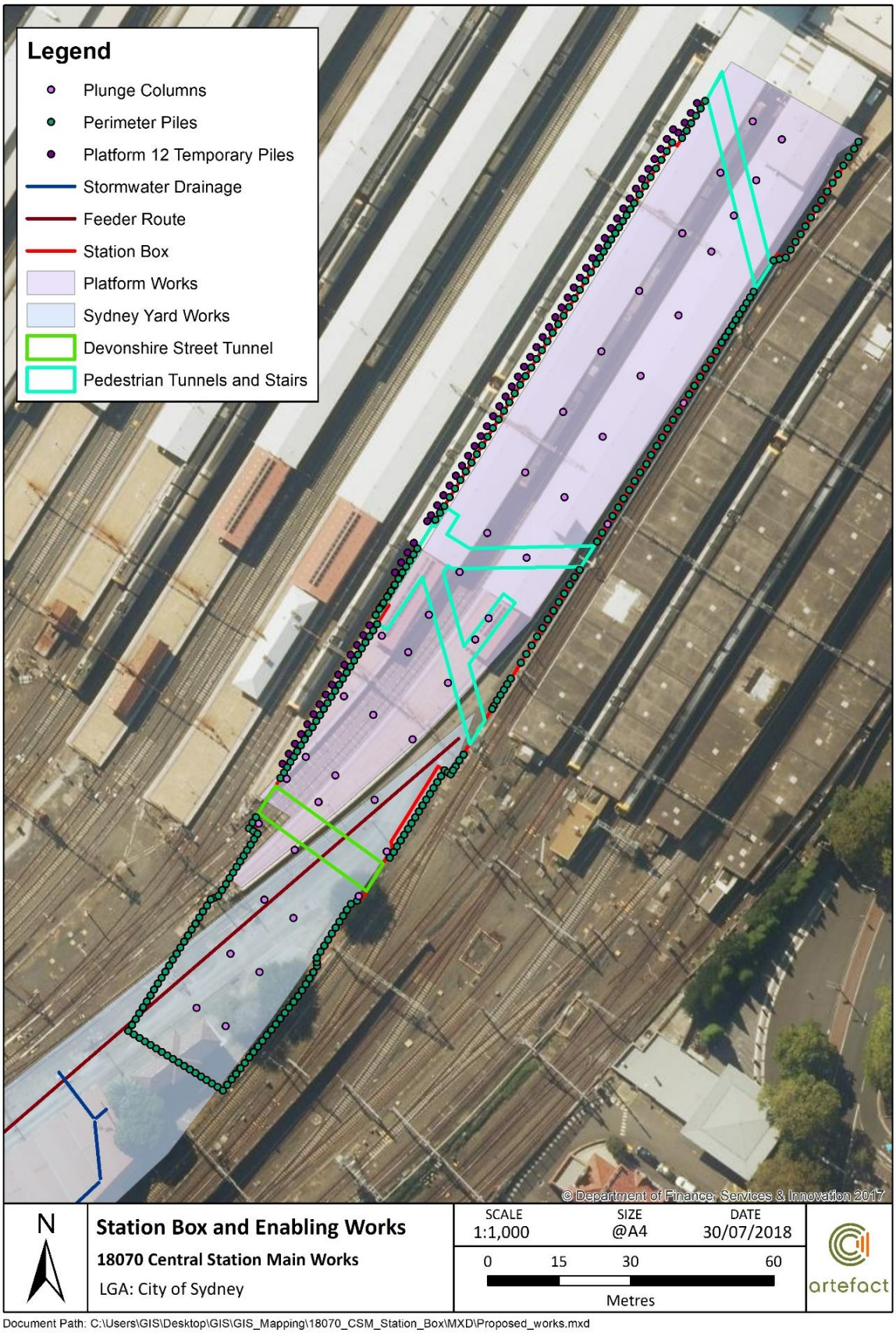
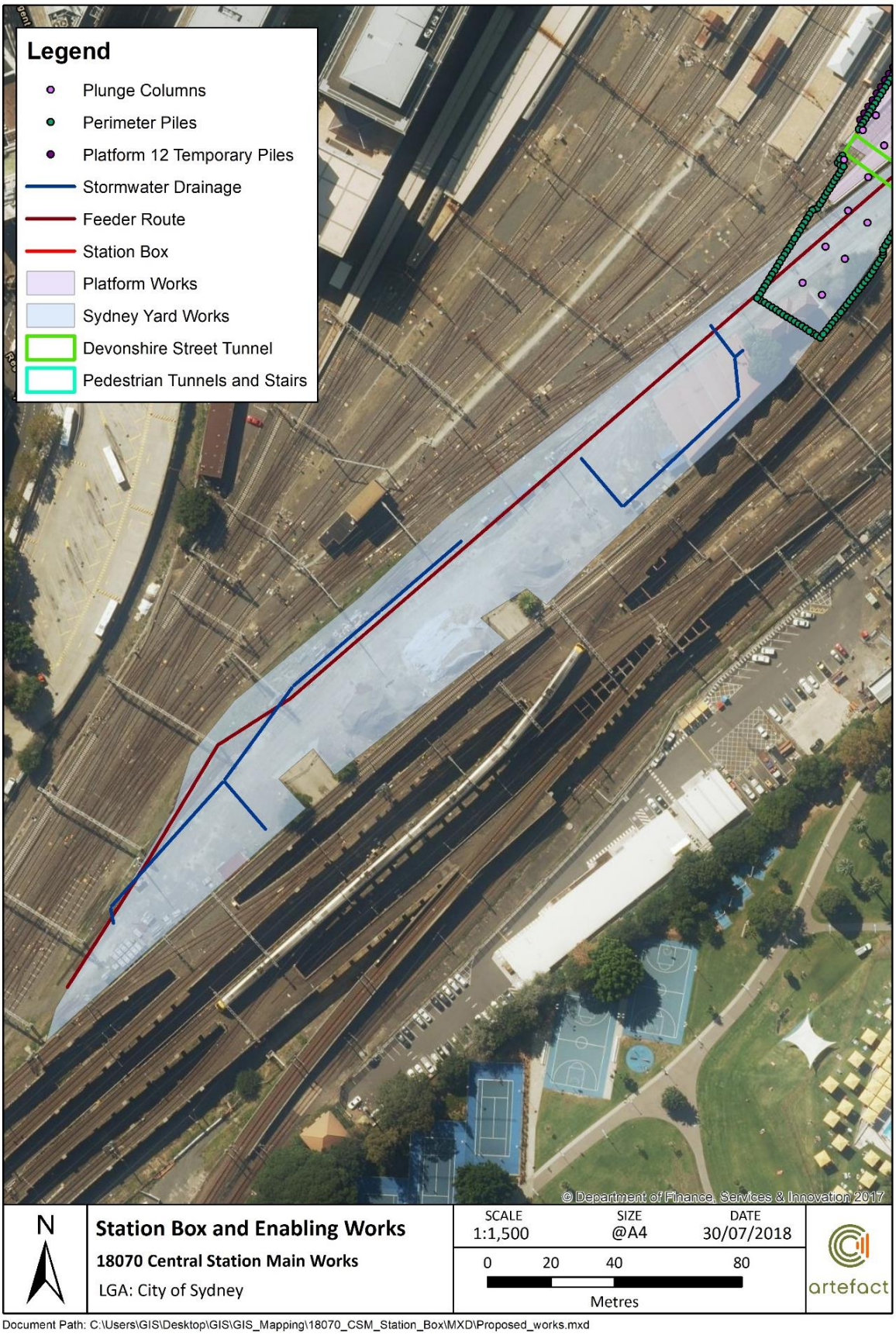


Figure 7: Plan of proposed station box and enabling works



3.0 HISTORICAL CONTEXT

The following section provides an historical context for the Central Station site and has been adapted from the AARD with additional new information and figures added as relevant.[8]

3.1 Environmental Context

The study area is located within the Sydney Basin. The basin spans from Batemans Bay, to the south, Newcastle to the north and Lithgow to the west. The geology within the study area consists of Hawkesbury Sandstone, Ashfield Shale and Quaternary sediments.[9]

The site is located on the northern edge of the ridge dividing the Sydney Harbour catchment with that of Botany Bay. The line of Cleveland Street partially runs along this divide rising to the main ridge line.

Prior to European settlement the study area consisted of a sand dune network, covered in heath, low scrub, creeks and freshwater wetlands. It would have been a habitat for various fauna including birds, fish and eels and the hunting ground and home to Aboriginal people.

Early plans show a stream running east-west across the Cleveland Paddocks rising in the Strawberry Hills area and then running down into Blackwattle Bay. The stream was utilised by the Kent Brewery and various roads had to bridge the stream. When the railway was constructed the stream was contained in a substantial brick drain.

Another stream running along Devonshire Street is shown in plans from the 1850s. The creek rose in the Strawberry Hills area and discharged into Darling Harbour. The course of the stream is shown as running parallel and adjacent to Devonshire Street and it is presumed that the creek was in a channel at that time.

3.2 Aboriginal History

The study area is located within the traditional lands of the Gadigal clan. There are around 30 Aboriginal clans within the Sydney metropolitan area which are collectively known as the Eora Nation. The name ‘Eora’ was given to the coastal dwelling Aboriginal peoples within Sydney. Eora means ‘here’ or ‘from this place’. The Gadigal clan are of the Eora Nation.[10] The territory of the Gadigal stretched from South Head, through to Sydney Cove, Cockle Bay and Darling Harbour to Blackwattle Creek, taking in the suburbs known today as Redfern, Erskineville, Surry Hills and Paddington, down to the Alexandra Canal and Cook’s River.[11]

The British settlers first encountered the Gadigal people in and around the coves and bays of Port Jackson (Figure 8). The settlers included the name Gadigal, or its alternative spellings of Cadigal and Cadi, in some of the earliest records of European settlement in Sydney, for describing the Aboriginal people they had encountered.[12] Following the smallpox epidemic in 1789, up to 70 per cent of

[8] Artefact Heritage 2016a
[9] Artefact Heritage 2016b. *Sydney Metro City and Southwest Chatswood to Sydenham: Aboriginal Cultural Assessment.* Report prepared for Report to Jacobs / Arcadis / RPS. pp. 14.
[10] City of Sydney, 2018. *Aboriginal History: The First Sydneysiders*, http://www.cityofsydney.nsw.gov.au/learn/sydneys-history/aboriginal-history, viewed 2 May 2018.
[11] Redfern Oral History, 2018. */gadigal Clan of Coastal Darug*. http://redfernoralhistory.org/Timeline/GadigalclanofcoastalDarug/tabid/240/Default.aspx, viewed 2 May 2018.
[12] Artefact Heritage 2016b:14

Aboriginal people within Sydney were killed by the disease.[13] Only three members of the 60-strong Gadigal clan survived the epidemic.

As Sydney grew, Aboriginal people from outer NSW gravitated towards the city and joined the remaining Gadigal in forming an urban Aboriginal community. Residing in outer city suburbs such as Emu Plains, Campbelltown, Manly and La Perouse, along with harbour side suburbs including Elizabeth Bay, Potts Point and Woolloomooloo throughout the mid-1800s, and into areas surrounding the study area such as Pyrmont, Balmain, Rozelle, Glebe and Redfern by the early 1900s.[14] Aboriginal people are known to have camped within the study area around the Cleveland Paddocks before the construction of the railway station.

Figure 8: View of Port Jackson, NSW, c.1790[15]

3.3 Early European Settlement and the Devonshire Street Cemetery (1788 – 1855)

Early European settlement in the colony of Sydney was predominantly focussed on the foreshores of Port Jackson and, until the 1820s, the southern edge of the settlement of the town was near where Bathurst Street is today.[16] For the first twenty years of the colony, the area where Central Station is now located was not developed, consisting primarily of scrub-covered shifting sand dunes, wetlands, sandstone plateau and shale cap which had created farming and drainage issues.[17] The only noticeable settlement in this area prior to the 1820s was the development of the Brickfields, an area

[13] National Museum Australia, 2018. *Defining Moments in Australian History: Smallpox Epidemic.* Viewed 2 May 2018, http://www.nma.gov.au/online_features/defining_moments/featured/smallpox-epidemic
[14] Artefact Heritage 2016b:14
[15] State Library NSW
[16] Shirley Fitzgerald, 2009. *Haymarket*, Dictionary of Sydney, http://dictionaryofsydney.org/entry/haymarket, viewed 1 Jun 2016.
[17] Sydney City Council, 2015. *Electricity Substation No. 229*, viewed at https://www.sydneyyoursay.com.au/8595/documents/22814 15 May 2018.

used for brick and pottery production, approximately 300 metres to the north-west of the study area (Figure 9). The sand dunes had been stabilised by various native trees including blackbutts, bloodwoods, angophoras and banksias. However, following land clearing, sand drifts entered the city, engulfing fences, roads and houses.[18] These sand drifts were of such a high frequency that the word 'brickfielder', became a slang word, meaning a strong wind identified by a choking dust, that was used within Sydney during the 1830s and 1840s.[19] W. H. Leigh wrote on the subject during the mid-nineteenth century: 'whirlwinds of sand come rushing upon the traveller, half blinding and choking him…the inhabitants call these miseries 'Brickfielders'.[20] A valley at today's Belmore Park and Haymarket separated the sand dunes from the brickyards at Brickfield Hill. By the 1830s this valley had been eradicated following the dumping of one million cubic metres of earth from Brickfield Hill into the depression to allow for easier horse traffic.[21]

Figure 9: Brickfield Hill and village on the High Road to Parramatta, 1797[22]

The first European development in the area consisted of convicts clearing the vegetation to the west of the study area to lay out the road to Parramatta from 1789 to 1791. By the early nineteenth century the road became a critical thoroughfare between Sydney and Parramatta for commercial movement of goods. In order to ensure funding for the maintenance of the road and its 37 bridges, a toll-gate was constructed at the junction of Pitt and George Streets by 1821. This toll gate marked the official southern boundary of the township of Sydney (Figure 10 and Figure 11).[23]

By 1820 the Old Burial Ground, located on George Street at the corner with Druitt Street (a site now occupied by Sydney Town Hall), had reached capacity, becoming abandoned, overgrown and in areas, a dumping ground, meaning a new burial ground was required. The new burial grounds, originally called the Sandhills Cemetery due to its sandy landscape and later, the Devonshire Street

[18] Benson, D and J. Howell 1995. *Taken for Granted: The Bushland of Sydney and its Suburbs*. Kangaroo Press, pp. 44.
[19] Edward Ellis Morris, Austral English: A Dictionary of Australasian Words, Phrases and Usages, (Cambridge University Press, 2011, first published 1898), p. 52.
[20] W. H. Leigh, cited in Morris 2011, p. 53.
[21] Maclehose, J. 1977. *Picture of Sydney and Strangers Guide to NSW for 1839* (John Ferguson), pp. 69.
[22] National Library of Australia
[23] Terri McCormack, Benevolent Society and Asylum, Dictionary of Sydney, 2008, http://dictionaryofsydney.org/entry/benevolent_society_and_asylum, viewed 1 June 2016

Cemetery following the formation of Devonshire Street, were consecrated in 1820 (Figure 12 and Figure 13).[24] The new site had been reserved by Governor Macquarie in 1818 and was chosen due to the remote location of the cemetery at the edge of town, beyond the cattle and hay markets, today known as Haymarket. Located at the farthest outer limit of the town past the Brickfields, the cemetery was situated at a suitable distance to avoid inconveniencing the gentrifying township and was significant in that there were allotments for various religious denominations. By 1836, there were seven burial grounds (each denomination had a separate area) within the site, covering eleven acres, with the whole burial ground encompassed by a high sandstone and brick wall (Figure 14).[25]

Figure 10: Toll Gate and Benevolent Asylum, George Street South, Sydney, 1836[26]

[24] *The Sydney Gazette and New South Wales Advertiser*, 5 February1820.
[25] Keith A Johnson & Malcolm R Sainty, *Sydney burial Ground 1819-1901: Elizabeth and Devonshire Streets and History of Sydney's Earliest Cemeteries from 1788,* Library of Australian History, Sydney, 2001. p, 205.
[26] National Library of Australia

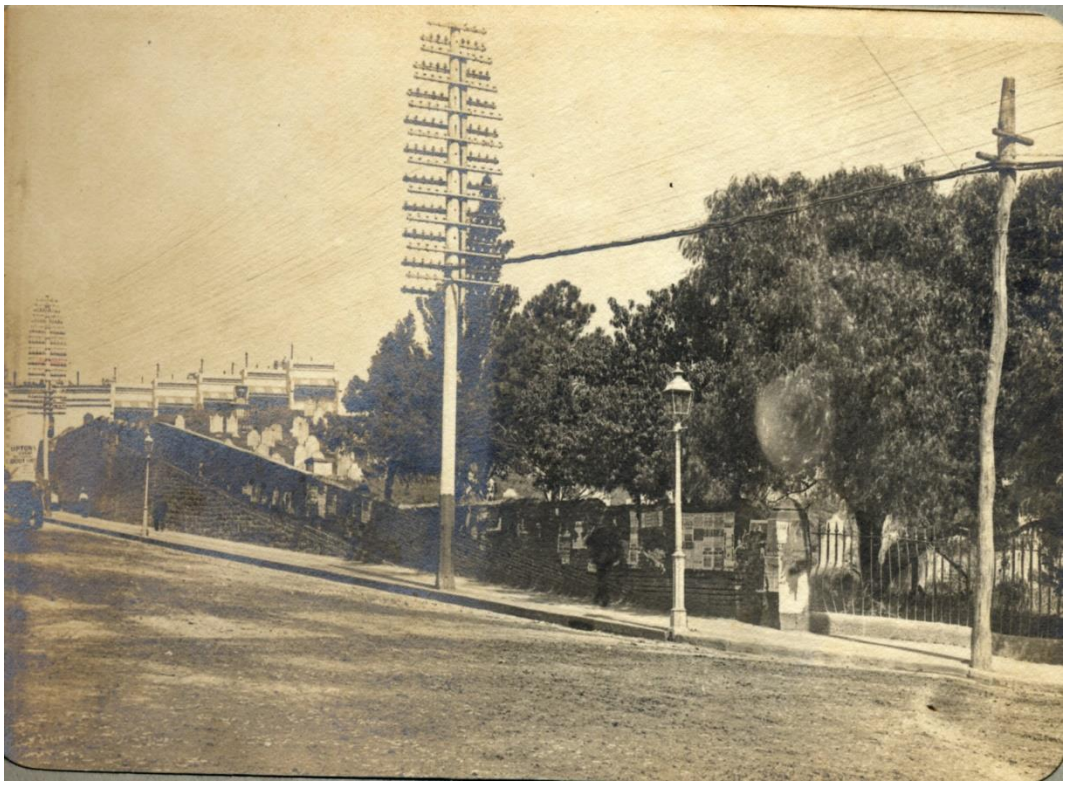
Figure 11: Sketch of toll gate with adjacent Benevolent Asylum (Poor House) in 1821 by Edward Mason, facing south[27]. The site of the future Central Station is located on the left of the image, behind the Benevolent Asylum

Figure 12: Devonshire Street Cemetery looking south with the junction of Burial Ground road and Elizabeth Street in the foreground, date unknown[28]

[27] Mason, Edward, 1821 – 1823 [1892] *Views of Sydney and Surrounding District*, State Library of New South Wales Collection, http://acms.sl.nsw.gov.au/album/ItemViewer.aspx?itemid=886747&suppress=N&imgindex=17, viewed 1 June 2016.
[28] Old Family Images

Figure 13: Devonshire Street Cemetery (probably taken from the railway yards and looking NW), 1890[29]

Figure 14: View of the eastern boundary wall of Devonshire Street cemetery in 1901[30]



[29] City of Sydney Archive
[30] RAHS

Also situated at the outer limit of the township, on George Street, backing onto the Devonshire Street Cemetery, was the Benevolent Asylum, a poor house officially opened in 1821 by Governor Macquarie and run by the Benevolent Society of New South Wales (Figure 15). The Benevolent Society was a charity that had been established by journalist Edward Smith Hall, the asylum operated on private donations for much of its operation. Within a year it was housing over fifty people and, with additional wings being added to the building by 1840, over 1,000 people were living at the asylum which was providing shelter, food and medical assistance. By 1850, the main purpose of the asylum was in assisting married women, particularly pregnant women, older men and families. Following the government resumption of the Liverpool Hospital in 1862, men ceased being processed at the Sydney Benevolent Asylum, being sent directly to Liverpool. Following this, the focus of the asylum shifted to helping pregnant women, both married and single.[31]

Figure 15: Benevolent Asylum, Sydney, 1971[32]

Adjacent to the Benevolent Asylum along Pitt Street was the Carters Barracks. The Carters Barracks comprising several buildings, was built to house convict gangs working as carters on the brick fields and a boys' barracks and from 1835 to 1843 as a debtors' prison. It was later used as a training facility for women by Sisters of the Good Shepherd.

A barracks for convict boys was also built at the Brickfields establishment separated by a high party-wall with mess rooms, kitchens and workshops. In 1823 a treadwheel was introduced to assist in the boys training. Essentially it powered a mill for grinding flour and was removed from the site in 1840 to Darlinghurst Gaol. The Carters' Barracks, Boys Dormitory closed around 1835 when convict boys were assigned directly on their arrival in Australia,

The debtors prison at Carters Barracks was established circa December 1835 and it would appear part of the Barracks was converted for the purpose. Complaints were made by debtors occupying the

[31] Sydney Benevolent Asylum, Sydney Benevolent Asylum: Index to Admissions and Discharges 1857-1900, 2016, http://www.sydneybenevolentasylum.com/, viewed 2 May 2018.
[32] State Library, NSW

ground floor of the prison of their health being affected by the damp conditions. By 1842, financial distress had become so common in the colony due to widespread drought and economic downturn that it became necessary to suspend imprisonment for debt to prevent overcrowding and in the following year imprisonment for debt was legally abolished.

The Institute of the Sisters of the Good Samaritan of the Order of St Benedict was founded by Archbishop Polding at Pitt Street, Sydney on 2 February 1857. It was the first institute of religious women founded in Australia. Until 1866 the sisters were called Good Shepherd Sisters but the title was changed to avoid confusion with an older order of the same name.

The people most in need in Sydney, in 1857, in the eyes of Archbishop Polding, were the destitute women of Sydney. With the aim of relieving their suffering he gathered together five women and formed a new religious congregation which he named the Sisters of the Good Samaritan of the Order of St Benedict. Their specific ministries were the care of needy women and the education of children, although Polding also wanted them to engage in general works of charity.

The Sisters began working in a women's refuge in Carters' Barracks, an old building once used as a prison in Pitt Street, Sydney. They visited the sick and the poor and looked after orphans, initially at Parramatta, then at Manly and finally at Narellan from 1910. The work begun at the refuge in Pitt Street was continued at St Magdalene's Retreat, Tempe, in Sydney. In 1901 the site was reclaimed by the Government for Central Railway Station and residents were transferred to St Magdalen's Retreat at Tempe. The buildings were demolished around that time.

The New South Wales Mounted Police Unit was formed by Governor Brisbane on the 7 September 1825. The more settled part of the colony was divided into divisions. The main detachment was stationed in Sydney; this incorporated the Governor's Guard. The city division was located at Belmore Barracks which was located between the Carters Barracks and the Devonshire Street Cemetery. Belmore Barracks is outside the Central Station Main Works area but information is included here for context.

The history of the Belmore Barracks is not known in detail. It is not clear where the Mounted Police were housed – there are plans held in the Public Records Office in the United Kingdom whose catalogue details refer to converting the Carters Barracks for use by the Mounted Police. There is no evidence of buildings on the land between the Carters Barracks and the Burial Grounds until after 1851 and before 1857.

A report in the *Australian Town and Country Journal*[33] notes “These barracks were opened in June, 1856, when they served as headquarters for the mounted police force”. Certainly a building is shown on the site in 1857 and the site developed thereafter as a barracks, headquarters and training facility.

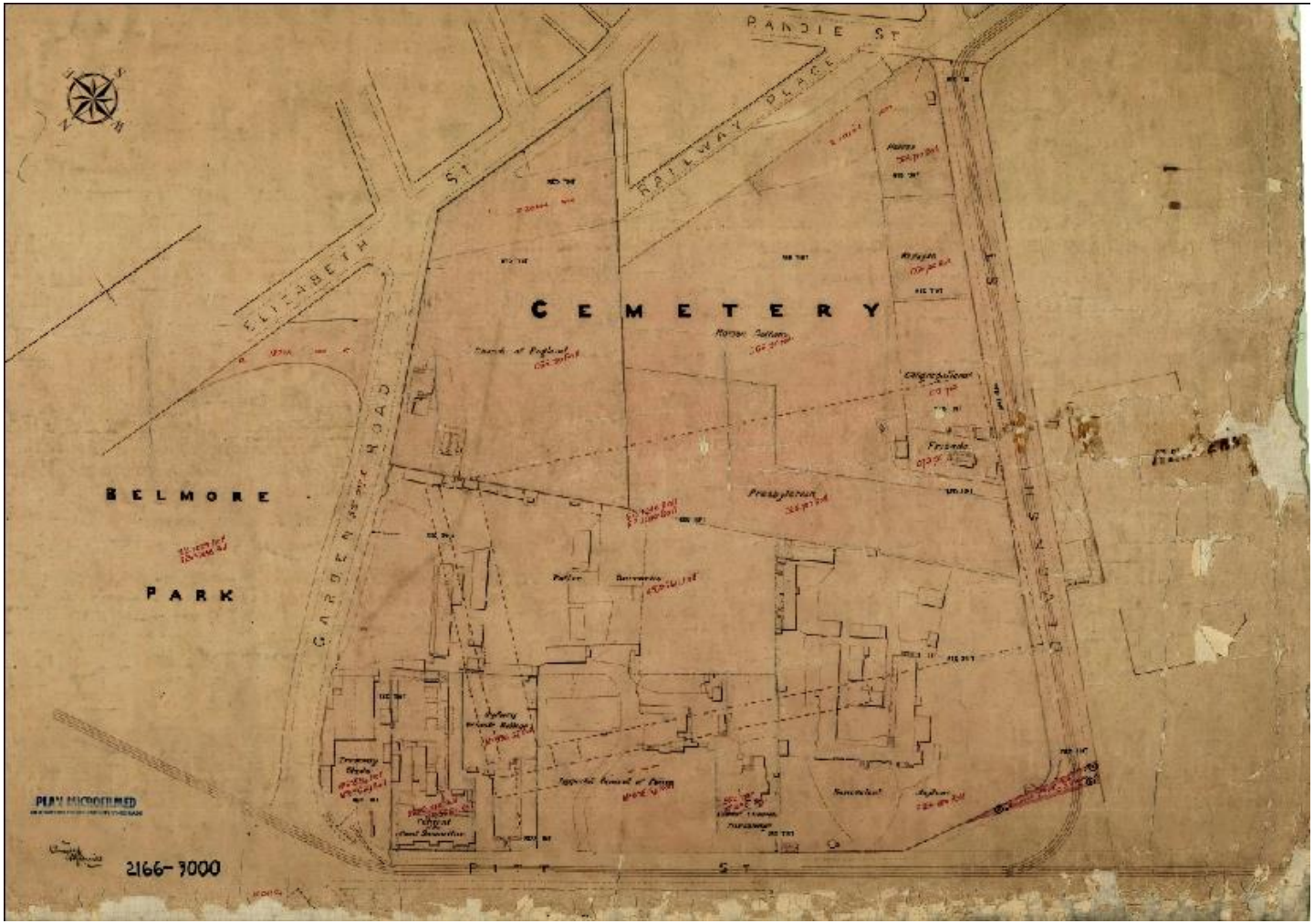
The same report continues “The ground on which the Belmore Police Barracks stands contains about four or five acres, having a slope toward Garden-road. The barracks are built of stone, and contain twenty stalls on the ground floor, while the upper storey is divided into bedrooms and a sitting-room and library for the men.

“Behind this is a wooden building in which there are five other stalls, a dining-room, kitchen, and storeroom. On one side is the armory, where sufficient guns, swords, bayonets, &c., are filed to arm 200 men and on the other side, near the fence of the cemetery, are eight more stalls, and some sheds where the "Black Marias," and the horses which draw them, are kept.”[34]

[33] Saturday 24 September 1887, page 27
[34] Australian Town and Country Journal, Saturday 24 September 1887, page 27

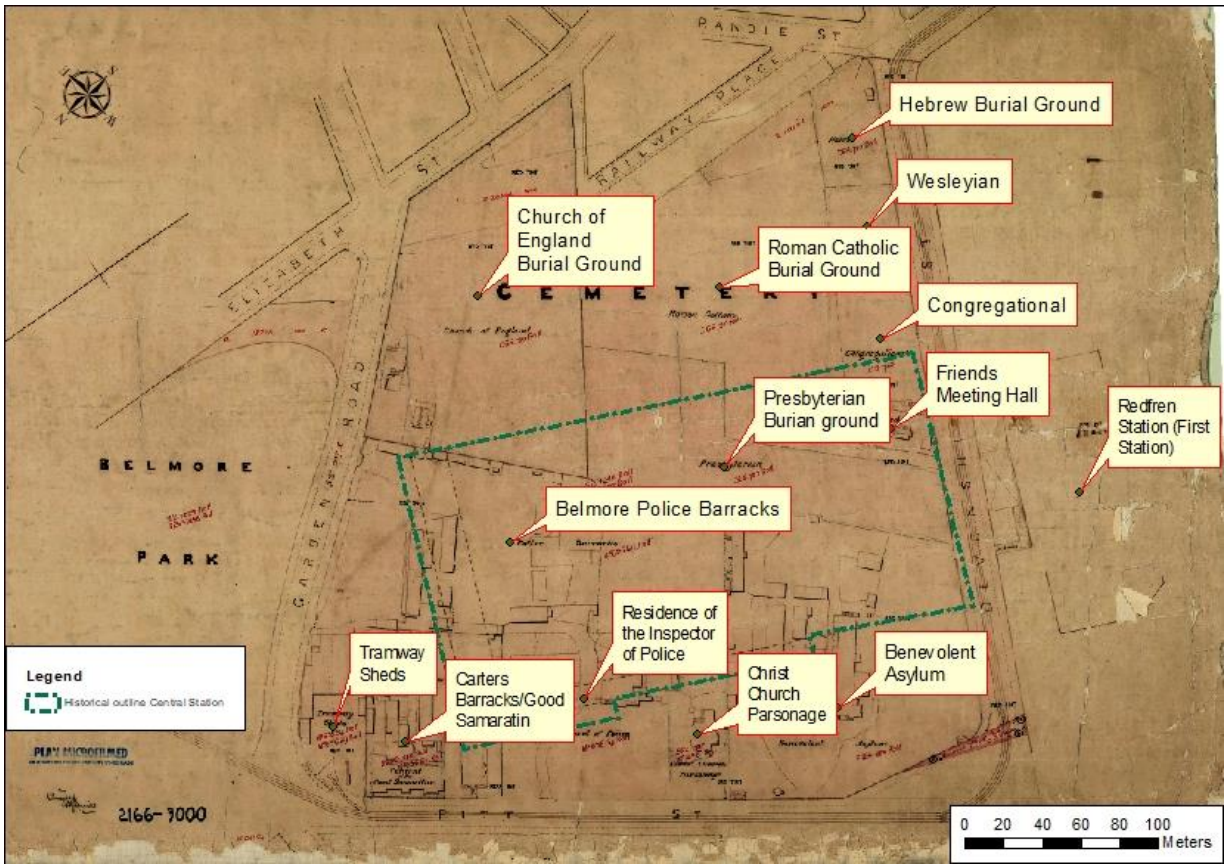
With the resumption of the site in 1901 (Figure 16 and Figure 17) the depot was moved to Moore Park by 1902 and then to Redfern in 1907 where it remains. The buildings at Belmore were demolished.

Figure 16: Plan of Resumptions 1901, NSW Rys Central Station Sydney, Parish of St Lawrence, Country of Cumberland Plan, Ms 2166- 3000. The plan has been georeferenced and rotated to enable the text to be read.[35]



[35] Department of Lands

Figure 17: Plan of Resumptions 1901, NSW Rys Central Station Sydney, Parish of St Lawrence, Country of Cumberland Plan, Ms 2166- 3000. The plan has been georeferenced and annotates to show the locations of features discussed in the text.[36]



While the northern part of the Central Station site was occupied by the Devonshire Street cemetery and the buildings constructed along Pitt Street (from 1818 onwards), most of the study area was not developed during this time. The southern part of the station site was an area of public pasturage, called the Cleveland (named after the Cleveland estate to the east) or Government Paddocks, the remaining green space is today known as Prince Alfred Park (Figure 18 and Figure 19).[37] The site was reportedly the location of an Aboriginal camp until the mid-nineteenth century.[38] These paddocks were owned by the government and used ostensibly for public recreation and pasturage. Their location at the outer edge of the town, and the perceived insalubriousness of the area around the Benevolent Asylum, led to complaints of robbery and theft in the paddock by the 1840s.[39] Sketches from this time show that the paddock was undulating sand dunes with thin grass where on dark nights the "ditches and holes serve effectually to conceal any footpads" (Figure 20)[40].

[36] Department of Lands
[37] Rappoport Pty Ltd & NSW Government Architects Office. 2013. *Central Station Conservation Management Plan*. pp. 32 – 35.
[38] City of Sydney, Prince Alfred Park (Cleveland Paddocks), 2013, http://www.sydneybarani.com.au/sites/prince-alfred-park-cleveland-paddocks/, viewed 2 May 2018.
[39] *The Australian Magazine* 15 May 1847
[40] *Ibid.*

Figure 18: Extract from the 1845 Shield's plan of Sydney showing the burial ground and Government Paddocks

Figure 19: Sydney St Lawrence - Sydney Railway, Sketch of proposed Terminus in the Cleveland Paddock 01 Jan 1853[41]

[41] [Sketch book 6 folio 87] State Records, NRS 13886

Figure 20: View of Sydney looking north from the Government Paddocks, 1844[42]

3.4 First and Second Railway Stations (1855 – 1900)

The development of railway technology in England in the early 1830s coincided with the opening up of agricultural and pastoral settlement of the interior of New South Wales. The need to ship wool and other produce from the interior to the coastal ports for export drove the economic demand for the growth of railways[43]. By 1846, a railway line was proposed to operate between the two main settlements at Sydney and Parramatta, with the Parramatta station to be constructed near Mort Street in what is now the suburb of Granville. Various proposals were put to the Colonial Government and following correspondence, approval was received by the Secretary of State for Colonies to sell Crown Land for the purposes constructing railways[44].

In 1849, the Sydney Railway Company was incorporated via an enabling act passed in the Legislative Council. The company officials began planning for a location of its city terminus. Initially, it was proposed that the site be located within the Cleveland Paddocks between Devonshire and Cleveland Streets. There was a series of contradictory proposals to either move the terminus to Sydney Cove or to run a tram line to the Cove, which would serve the wharves there, however the main difficulty was the cost of acquiring the land for the route as none had been reserved.

It was suggested that, as it was Crown land, the Cleveland Paddocks site would be cheaper. Francis H. Shields, company engineer, proposed that the site be located nearer the city, as it would prove more convenient, suggesting the Government Paddocks, bounded by Hay and Elizabeth Streets

[42] Prout, J.S. 1844. The City of Sydney NSW from the Government Paddock. National Library of Australia, http://nla.gov.au/nla.obj-135613619/view, viewed 1 June 2016.
[43] Rappoport Pty Ltd & NSW Government Architects Office. 2013. p. 31
[44] Hagarty, D 2005, *The building of the Sydney Railway: the known story of the work of six men - a naval surveyor, four engineers, and the contractor who, with many others, built the first railway from Sydney to Parramatta 1848-1857*, Australian Railway Historical Society, New South Wales Division, Redfern, N.S.W. pp 23-39.

along with the Burial Ground Road (roughly the Belmore Park area).[45] The Surveyor General, counter-proposed that the new station should be located further from the city within Grose Farm (today the University of Sydney), as it would be less costly. After much debate, the Sydney Railway Company applied for land grants from the Government for the construction of a Sydney Railway Terminal. The land was granted between Devonshire and Cleveland Streets. It was in fact, the only sizable parcel of public land available close to the Cove and to Darling Harbour.

The Cleveland Paddocks site was also used as a showground for the Agricultural Society in Sydney, as well as an Aboriginal camp site.[46] An official 'turning of the turf ceremony' was held on the 3 July 1850, marking the commencement of construction works. Singleton describes this as an attempt to raise finance for the company.[47] Construction commenced March 1851 with the first works being located in the area of Croydon. After the workers decamped to the gold diggings a second contract was commenced August 1852 this time works were located in the Cleveland Paddocks.[48] Hagarty reproduces an account of the construction works from December 1852, which describes two channels of 'considerable depth' being excavated and lined with brick to take Blackwattle creek.[49] The main drain, which is clearly marked on the Trigonometrical Survey, runs across the railway yards, and then to the rear of the Kent Brewery and down into Blackwattle Bay.

By 1853 the location of the terminus and associated infrastructure had settled on the Government Paddocks with a goods line running to serve Darling Harbour[50]. The exact site of the first Sydney railway terminus was fixed in December 1853. It was to be a passenger terminal with goods facilities located elsewhere.

What is not often appreciated is that the original station was for passengers only. There were no goods facilities at the station and there were no intermediate goods facilities between Parramatta and Sydney. The goods facilities were constructed at Darling Harbour where they were close to shipping and the Sydney Railway Company purchased 55 goods wagons and six brake vans to handle the traffic[51]. The result was that initially all the facilities at the Sydney Terminus were initially related to the operation of passenger trains and goods ran down the branch line to Darling Harbour.

With the regular change in engineers, alterations in the scope of works, diminishing funds and various other delays the colonial government passed legislation in 1854, authorising the purchase and operation of the Sydney Railway Company by the NSW Government.[52] The formal acquisition and transfer of assets occurred in late 1855 with the first meeting of the Railway Commissioners occurring in January 1855.[53]

The first Sydney railway terminus was officially opened in 1855, with the first train departing on the 26 September.[54] The first Sydney train station was originally called Redfern Station, with the current Redfern Station originally named Eveleigh Station. The station was not a grand affair due to the Sydney Railway Company's dire financial situation resulting in the decision to construct a temporary

[45] Singleton, C.C. 1941 History of Sydney Railway Station: Part 1 First Station, 1855-1873, *Australian Railway and Locomotive Historical Society Bulletin*, Vol. 8, No. 49, p. 55.
[46] City of Sydney (2018). Barani: Sydney's Aboriginal History, Prince Alfred Park (Cleveland Paddocks). Viewed at: http://www.sydneybarani.com.au/sites/prince-alfred-park-cleveland-paddocks/ (22/05/2018).
[47] Singleton, C.C. 1955 The centenary of the Sydney-Parramatta Railway, *Australian Railway Historical Society Bulletin*, Vol. 7, No. 215, p. 110.
[48] Singleton 1955, p111.
[49] Hagarty 2005 p. 222.
[50] Singleton 1955, p111-112.
[51] Preston, RG 2002, Day of the Goods Train, Eveleigh Press Sydney, N.S.W, p11-12.
[52] Railways Act, 1854, 18 (Vic) 40.
[53] The Commissioners also took over the Hunter River Railway.
[54] R. McKillop, D Ellsmore and J Oakes, 2008. A Century of Central: Sydney's Central Railway Station 1906 to 2006, (Australian Railway Historical Society), p. 7.

station rather than a 'grand terminus'.[55] The original station consisted of a galvanised corrugated iron shed of about 100 feet by 30 feet, covering a raised wooden platform and single rail track.

The site also contained a small number of semi-permanent iron buildings with lean-to roofs for carriages, offices and public rooms, [56] Almost immediately, the single main line tracks were duplicated.[57] The passenger platform, enclosed by the iron train shed was soon discovered to be too short for operations. Therefore, a 100 feet wooden extension was added in 1856.[58]

Associated with the station was a series of workshop buildings (located on the eastern side of the site). Figure 21 which dates to 1857 shows the station building, a second platform, sweeping entrances off Devonshire Street, carriage sheds, a turntable servicing a small engine shed and offices. The source of Blackwattle Creek and a creek running along Devonshire Street are also depicted.[59]

Public interest in the new station was considerable, with large crowds assembling to watch the construction of the station as well as large crowds assembling for the first locomotive journey in the colony which occurred in October 1855 (Figure 22).

[55] Hargerty 2005:197
[56] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 8.
[57] Singleton, CC. November 1941. History of Sydney Railway Station Part 1 First Station, *Australian Railways Historical Society Bulletin*, Vol. 8, No. 49, p. 56.
[58] Singleton, CC. November 1941. History of Sydney Railway Station Part 1 First Station, *Australian Railways Historical Society Bulletin*, Vol. 8, No. 49, p. 56.
[59] Plan A Chippendale Sheet signed by Edward J. Burrows February 1857, Historical Atlas of Sydney, http://atlas.cityofsydney.nsw.gov.au/

Figure 21: City of Sydney – Detail Plans: Plan A Chippendale February 1857

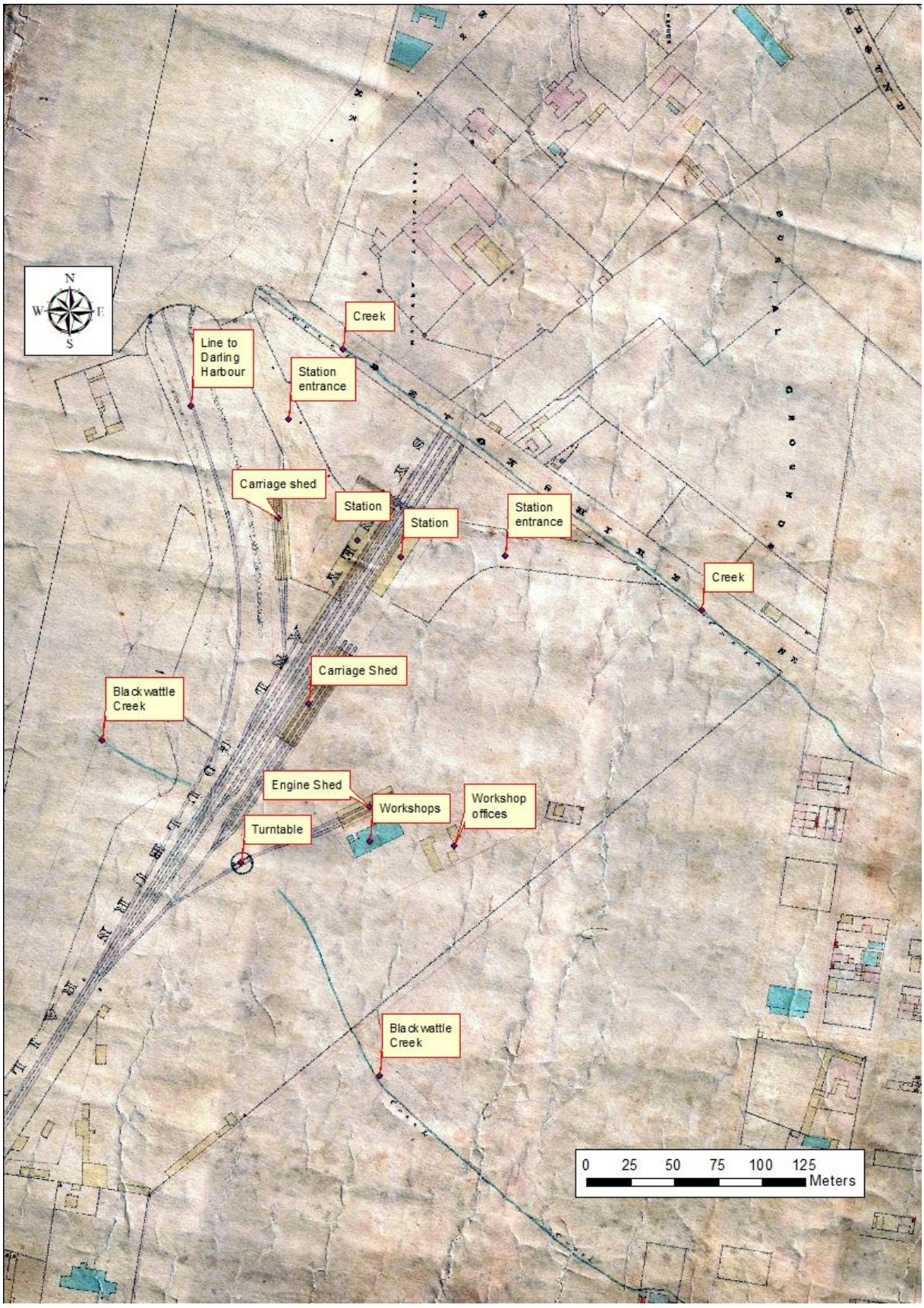


Figure 22: 1850 painting of the turning of the first sod of ground for the construction of the first railway station[60]

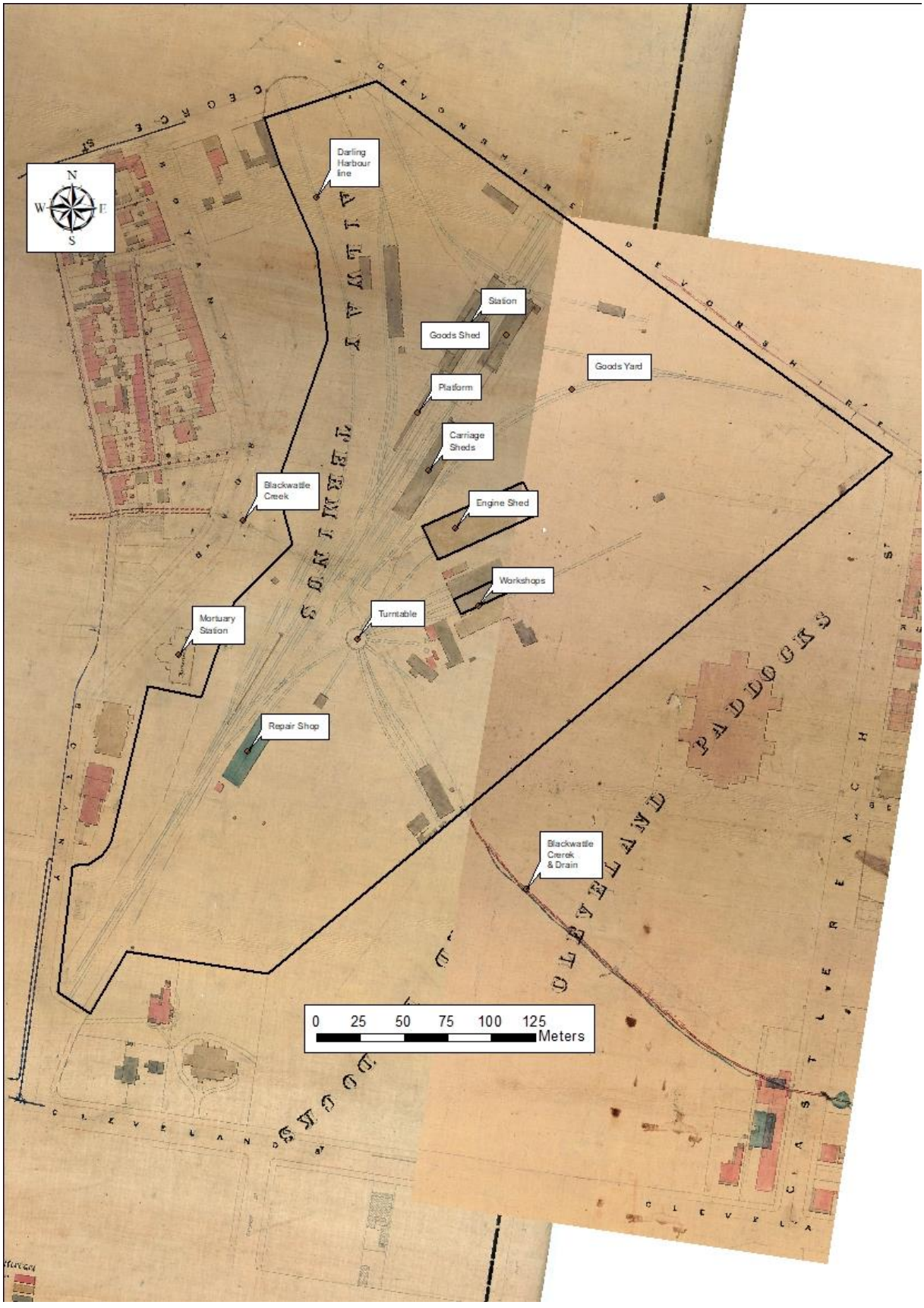
The later, 1865, Trigonometric survey of Sydney Sheets covered the station site (Sheets S1 and S2 1865).[61] The plans show the development of the site since 1857. A number of additional carriage sheds constructed at the station by 1865, with a train turntable installed to allow steam locomotive engines to be turned around before entering the workshops of carriage sheds (Figure 23).[62] This railway turntable continued to be used until it disappeared from station plans in the 1890s, shortly before the early twentieth century enlargement of the station commenced.[63]

Due to the location of the station, at the periphery of Sydney City, the need for public inner-city connections became apparent. In 1861, a horse-drawn tramway was constructed from the new station to Circular Quay, via Pitt Street. The tram ran in accordance with the train schedule, however due to public opposition following road damage and traffic congestion, the tram was closed in 1866, being replaced by a horse-drawn omnibus network.[64]

Excavation works were carried out within the Cleveland Paddocks in 1864 for the filling on the shores of Darling Harbour. These excavation works worked favourably at Old Redfern Station as an extension of the yard was achieved. By this time, the locomotive stock had risen to 13, with further trains on order. A new stone engine shed with capacity for 16 engines to accommodate the new engines and a goods yard were constructed in 1866.[65]

[60] Rae, J. 1850. "Turning the first turf of the first railway in the Australasian colonies at Redfern, Sydney, NSW 3rd July 1850". Mitchell Library Collection, http://acmssearch.sl.nsw.gov.au/search/itemDetailPaged.cgi?itemID=404690 viewed 1 June 2016.
[61] This survey was commenced in the 1850s but only finalised in the mid-1860s. Some of the plans have proposed or later buildings added in, for example Mortuary Station on S2 see Archives / Search the State Archives collection / Series Trigonometrical Survey of the City of Sydney, 1865 https://www.records.nsw.gov.au/series/9929
[62] Australian Railway Historic Society Collection.
[63] Trigonometric Survey of Sydney, 1855 – 1865. Historical Atlas of Sydney, http://www.photosau.com.au/CoSMaps/scripts/home.asp viewed 1 June 2016.
[64] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 9.
[65] Singleton C.C. November 1941. History of Sydney Railway Station Part 1 First Station, *Australian Railways Historical Society Bulletin*, Vol. 8, No. 49, p. 56.

Figure 23: Trigonometric Survey of Sydney Sheets S1 and S2 (1865). Sheets overlain and annotated



There was a sense of optimism within the colony as infrastructure grew and a recognition that railways would be crucial in developing the cultural and economic landscape within the settlement.[66] 1873 saw the extension of the rail network to Goulburn, the Blue Mountains, Raglan, Blacktown and Richmond with proposals to extend to Albury, the Darling River and Glen Innes.[67]

As the terminus station the facilities for servicing the increased passengers, goods and facilities for maintaining the railways such as locomotive servicing facilities, repair facilities of locomotives and rolling stock along with workshops for maintaining the permanent way were all crammed into an increasingly crowded site (Figure 24).

As the first semi-permanent railway station did not possess sufficient facilities to handle the passenger demand. Designs for the second Sydney Station were completed in 1871 by Engineer-in-Chief, John Whitton with the permanent structure facing Devonshire Street, completed in a Neo-Classical style in 1874. The building consisted mainly of red brick with lighter facings and a galvanised iron roof. The main feature was a train shed, which spanned 236 feet by 43 feet covering the main lines and both the arrival and departure platforms. 1878 saw the passenger traffic grow to an extent that trains were departed at five-minute intervals during the morning rush hour.[68] To help deal with this traffic, a new platform, called the George Street Platform was brought into use. In April 1878, a footbridge opened, connecting Terminus Street to the George Street Platform.

The Mortuary Station had been constructed in 1869 to handle the movement of bodies to the new cemetery at Rookwood once the burial grounds in Sydney were declared full (Figure 25). The station was constructed in the Gothic Revival style by colonial architect James Barnet. While the deceased were treated to a grand station, the living were made to use a 'tin shed' as a terminus.[69]

By the 1880s the development of workshops, siding yards and carriage works had expanded to such a degree that a new site was chosen in Eveleigh to house further expansion and gradually the workshop facilities were moved to that location.[70] During this period, various improvements were made including the development of signalling procedures, there was the construction of the retaining wall on the southern side of Devonshire Street, a new eastern platform, a new western platform and two dead-end lines (Figure 26). In addition, a new two-storey building to house the booking office, telegraph office and rooms for the district superintendent and staff was constructed. Electric lighting was installed for the first time and oil gas was replaced with coal gas within the station premises.[71] On the eastern side of the station a three horse and carriage dock was completed allowing for an extension of the Mortuary platform by 200 feet.[72]

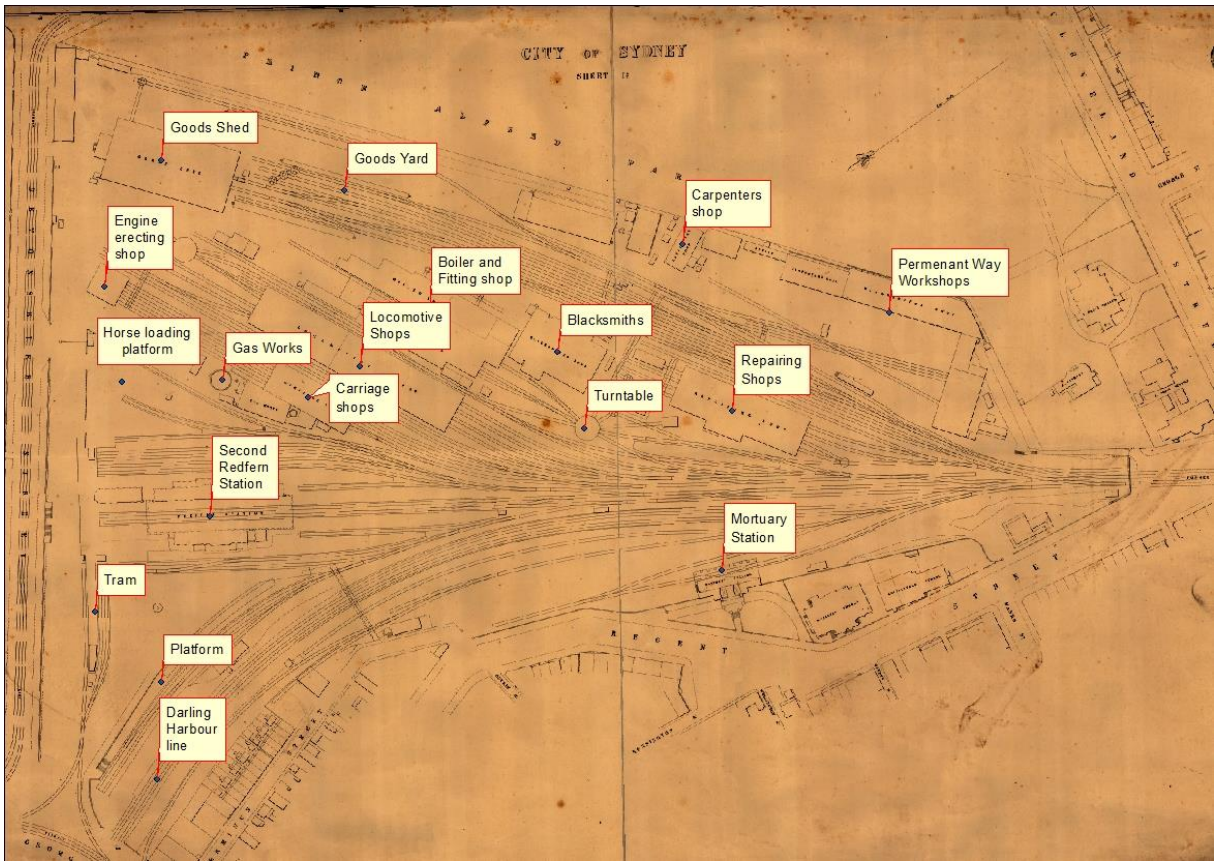
[66] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 9.
[67] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 9.
[68] Singleton, CC December 1941. History of Sydney Railway Station: Part 2 Second Station, 1874-1885, *Australian Railways Historical Society Bulletin*, Vol. 8, No. 50, p. 73.
[69] R. McKillop, D Ellsmore and J Oakes, 2008. A Century of Central: Sydney's Central Railway Station 1906 to 2006, (Australian Railway Historical Society), p. 9.
[70] *Rappoport Pty Ltd & NSW Government Architects Office. 2013*. pp. 38 – 39.
[71] Singleton, CC December 1941. History of Sydney Railway Station: Part 2 Second Station, 1874-1885, *Australian Railways Historical Society Bulletin*, Vol. 8, No. 50, p. 75.
[72] Singleton, CC December 1941. History of Sydney Railway Station: Part 2 Second Station, 1874-1885, *Australian Railways Historical Society Bulletin*, Vol. 8, No. 50, p. 75.

Figure 24: 1871 Photo of First Sydney Railway station carriage buildings[73]

Figure 25: Mortuary Station with Sydney Yard to the right, date unknown[74]

[73] State Records of NSW. http://gallery.records.nsw.gov.au/index.php/galleries/through-the-lens-central-railway-station/ viewed 1 June 2016.
[74] Mortuary Station with Sydney Yard to the right, date unknown, Australian Railway Historic Society Collection.

Figure 26: City of Sydney Detail Series J2 (1884)



With rapid growth of suburban travel, particularly along the Illawarra and Belmore lines, the station became overwhelmed during peak hours. In addition to this, many of the platforms were too short for the trains they served. The safety of the train movements became dependent on personal attention and the skills of the signalmen.[75] The second railway station at Central expanded the buildings, sidings and facilities in the same location as the first station. By 1896 the number of passenger platforms had increased to two single-platforms and two double-platforms, with a profusion of sidings, the Prince Alfred goods yards, station buildings, workshops and carriage sheds, as well as the Mortuary Station facilities and Darling Harbour goods line, filling up the remainder of the site (Figure 27 to Figure 31).

During this period, the Devonshire Street cemetery had been declared at capacity, and took no more burials from 1865 onwards. By 1900, the grounds had become neglected with a Citizen's Vigilance Committee member stating: 'a thick, disorderly, and in some places almost impenetrable scrub covers most of the ground; and tombstones lie scattered in careless confusion all over the place (Figure 32 and Figure 33). Where standing, they present grotesque attitudes like a party of a drunken men crossing a field'.[76] Like the Old Sydney Burial Ground before it, the Devonshire Street Cemetery was no longer situated at a polite distance from the centre of the city of Sydney; rather the city had grown up and around it instead. In addition, the *Sydney Burial Grounds Act 1866 (NSW)* stated that burials were prohibited 'within the city of Sydney from 1 January 1867'. Images from the 1890s, shortly before the cemetery was resumed for the expansion of the station, show that the original brick walls for the burial ground were still intact. The roads surrounding the cemetery are at a substantially reduced level at the eastern side, showing that the original undulating sand dunes that lay at the

[75] Singleton, CC January 1942, History of Sydney Railway Station: Part 3 Second Station, 1886-1906, *Australian Railways Historical Society Bulletin*, Vol. unknown, No. 51, p. 7.
[76] Joseph Waugh, 'The Sydney Burial Ground'*, The Deacon's Treasure No. 25,* December 1998, p. 27, citing the Citizen's Vigilance Committee.

eastern base of the ridge line that rises to Surry Hills had been extensively modified by this time. The ground level of the cemetery descends to the west, preserving much of the original ground level of the

Figure 27: 1896 plan of Second Central Station[77]

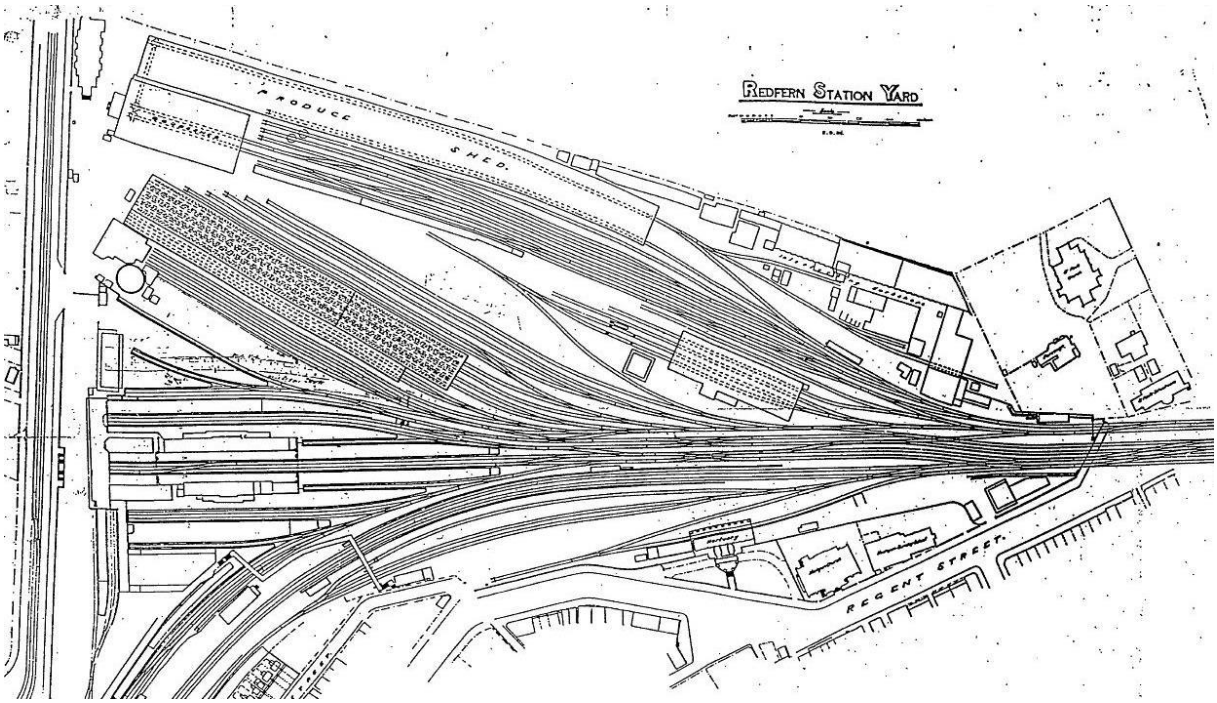
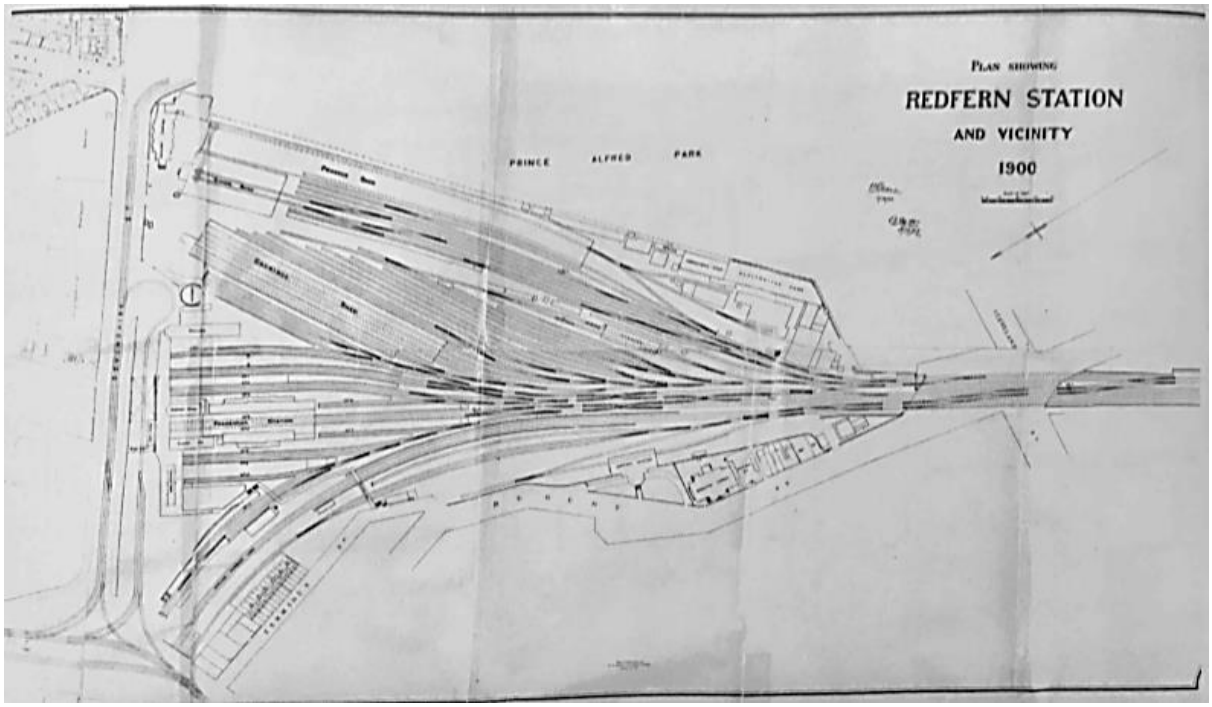


Figure 28: Plan showing Redfern Station and vicinity, 1900[78]



[77] State Library ML M4 811.1746/1896/1
[78] Plan showing Redfern Station and vicinity, Australian Railway Historic Society Collection.

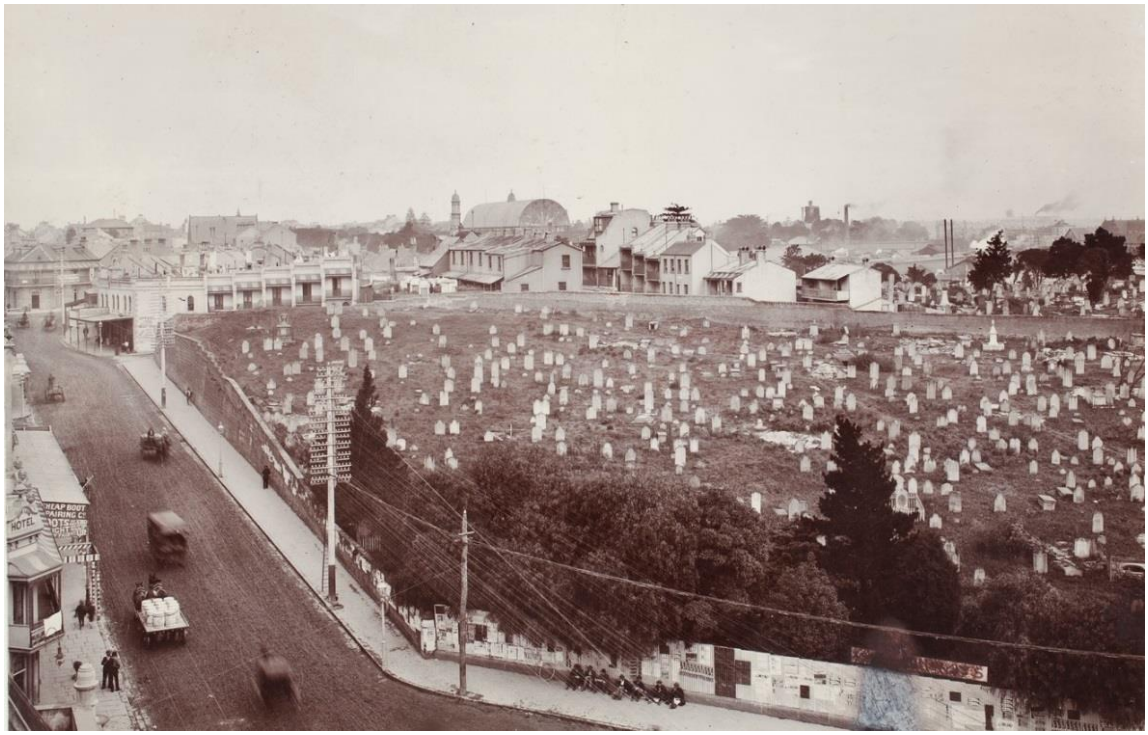
Figure 29: 1885 photograph of Second Central Station[79]

Figure 30: 1895 photo of the second railway station, facing south-east from Pitt Street[80]

[79] State Library Victoria H26429
[80] Kerry & Co. 1895. "Original Redfern Railway Station, Sydney". National Library of Australia, http://nla.gov.au/nla.obj-148351252/view viewed 1 June 2016.

Figure 31: The railway station, Redfern", Arthur Streeton 1893[81]

Figure 32: 1890s photo of the Church of England area of the Devonshire Street Cemetery, facing south from north-eastern corner[82]



[81] Art Gallery of NSW
[82] Photograph Collection of Redfern Railway Station and Central Railway Station, Sydney, 1871 – 1920. State Library of New South Wales, http://acms.sl.nsw.gov.au/album/ItemViewer.aspx?itemid=1017387&suppress=N&imgindex=6 viewed 1 June 2016.

Figure 33: 1901 photo of the Devonshire Street Cemetery with the second railway station at Central Station in the background[83]

3.5 Twentieth Century Land Resumptions and Station Expansion (1901 – 1930)

The existing nineteenth century railway station terminated the suburban railway lines at Devonshire Street, after which trams were the only other public transport into the centre of the city of Sydney. Proposals to bring the suburban railway network into the city, as well as over the harbour by bridge, had been raised in the 1880s and 1890s. The construction of a larger station facility which could accommodate the increased number of railway lines that terminated at Central was required. Economic depression in the 1890s prevented these plans from being developed or realised. In the late 1890s and early 1900s the design for the current Main Concourse was developed, which involved a 'head house' design to link the terminating railway lines with intersecting tram and vehicle traffic.[84]

On 11 December 1900, an Act of Parliament passed enabling the construction of Central Railway Station. Two proposals for this station were presented – the first at Hyde Park and the second over the Devonshire Street cemetery. The latter proposal was adopted and the clearing of the Devonshire Street Cemetery, along with the demolition of the Benevolent Asylum, Carters Barracks and the Police Barracks and other buildings commenced in 1901.[85]

On the 17 January 1901, the government issued a notice declaring that representatives of any deceased in the Devonshire Street Cemetery must remove their relatives remains and monuments within two months[86]. The exhumations were conducted under the supervision of the Department of

[83] RAHS photographic collection: no. 22566017
[84] Rappoport Pty Ltd & NSW Government Architects Office. 2013. pp. 46 – 48
[85] Sydney Benevolent Asylum, Sydney Benevolent Asylum: Index to Admissions and Discharges 1857-1900, 2016, http://www.sydneybenevolentasylum.com/index.php?page=what-was-the-sydney-benevolent-asylum viewed 2 May 2018.
[86] *The Sydney Morning Herald*, 25 January 1901.

Public Works with detailed records kept by the State Records.[87] It became apparent that due to the large number of graves identified under paths and various other objects, trenching was required over the entire area at a depth of several feet to retrieve the remains.[88] By 1902, the majority of the remains had been exhumed. Relatives of the deceased had collected approximately 8500 remains, whilst the approximate remaining 30,000 remains and 2800 monuments were transported to the new Bunnerong Cemetery at Botany, today known as the Pioneer Memorial Park within the Eastern Suburbs Memorial Park.[89]

In a 1901 newspaper article on the subject of exhumations from *Truth* titled 'Devonshire Street Cemetery: A General Clearance', it was reported that; 'the ground in each section has been trenched to a considerable depth, and…when Mr. O'Sullivan withdraws his men, not a bone or human relic will be within the compass of the acres that have held thousands of bodies for the last 80 years'.[90] In addition to this, a July 1901 article by the *Telegraph* titled 'Buried Alive' reported: many of the graves in the cemetery contain the remains of several bodies. These are shovelled into a sieve, shaken, and the bones emptied into a box preparatory to removal to Botany.[91] The high brick walls of the cemetery were taken down and then the sand hills of the cemetery were excavated by labourers, with much of the spoil being used to build new embankments in Belmore Park (Figure 34 and Figure 35).[92] The sand hills 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.[93] In addition to the land resumptions of the Devonshire Street Cemetery and the Benevolent Asylum, the Central Railway Station project required the resumption of the steam tram depot at the corner of Pitt Street and Garden Road, the Convent of the Good Samaritan on Pitt Street, the Sydney Female Refuge, the Police Superintendent's Residence on Pitt Street, the Christ Church parsonage on Pitt Street, the Police Barracks on Garden Street, along with various residential properties along Railway Parade (Figure 16 and Figure 17).[94] This significantly altered the landscape of the surrounding area, greatly improving the appearance of the station, which by this point, had become a conglomeration of various building additions made during various periods.[95]

[87] K.A. Johnson and M. R. Sainty, *Sydney Burial Ground 1819-1901 (Elizabeth and Devonshire Streets) and History of Sydney's Early Cemeteries from 1788,* Library of Australian History, Sydney, 2001.
[88] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 29.
[89] R. McKillop, D Ellsmore and J Oakes, 2008. A Century of Central: Sydney's Central Railway Station 1906 to 2006, (Australian Railway Historical Society), p. 28.
[90] "Truth (1901, September 22), 'Devonshire Street Cemetery: A General Clearance', (Sydney, NSW 1894-1954), viewed 16 May 2018, https://trove.nla.gov.au/newspaper/article/168002641?searchTerm=devonshire+street+cemetery+a+general+clearance#
[91] The Telegraph (1901, 29 July), 'Buried Alive'. (Broken Hill, NSW: 1888-1954), viewed16 May 2018, https://trove.nla.gov.au/newspaper/article/44293844?searchTerm=Buried%20Alive%20devonshire%20%20%20%20%20%20%20%20%20%20%20%20&searchLimits=dateFrom=1901-01-01|||dateTo=1901-12-01#
[92] *The Sydney Morning Herald*, 3 January 1902
[93] Thorpe, W. 1999. p. 11.
[94] R. McKillop, D Ellsmore and J Oakes, 2008. A Century of Central: Sydney's Central Railway Station 1906 to 2006, (Australian Railway Historical Society), p. 28.
[95] Singleton, CC April 1942. History of Sydney Railway Station: Part 4 Third Station, 1906, *Australian Railways Historical Society Bulletin*, Vo. 8, No. 52, p. 53.

Figure 34: 1901 photo of interments being exhumed in the Devonshire Street Cemetery[96]

Figure 35: Removing headstones from the Devonshire Street Cemetery by steam tram in 1902[97]

Following the resumption of the Devonshire Street Cemetery, excavations commenced in preparation for the building foundations and associated roadwork of the new station (Figure 36 to Figure 39). Garden Road was reorientated and widened to a 165 feet wide thoroughfare and renamed 'Eddy Avenue' in honour of the late Railway Commissioner who died in 1897, necessary tramline diversions were made, and a new tram line was established along Eddy Avenue which opened in November 1902. Later that year, the stone piers for the viaduct on the concourse level were constructed, allowing for a new tramline which travelled from Hay Street to Belmore Park (Figure 40).[98] In addition to this, upper Castlereagh Street was extended north to meet Elizabeth Street, slightly south of the recently formed Eddy Avenue. At this time, the street was named Chalmers Street. Twenty-seven terraced houses that had fronted Railway Place and backed onto the Devonshire Street Cemetery were demolished along with the removal of Railway Place. The extension of Castlereagh continued

[96] Photograph Collection of Redfern Railway Station and Central Railway Station, 1871-1920. State Library of NSW http://acms.sl.nsw.gov.au/album/ItemViewer.aspx?itemid=1017387&suppress=N&imgindex=16 viewed 15 May 2018.
[97] Mrs a G Forster, E Downs Collection, ARHS Rail Resource Centre.
[98] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 31.

across the Church of England section of the Devonshire Street Cemetery, joining up with Elizabeth Street. Today, Chalmers Street, from Devonshire Street to Elizabeth Street, is therefore built over the former terraced houses and a portion of the Devonshire Street Cemetery.[99]

Figure 36: 1902 photo of the cleared Devonshire Street Cemetery area for the construction of the Main Concourse, view from Pitt Street facing south[100]

[99] Transport for NSW, 2013. Sydney Light Rail: CBD and South East Light Rail Project: Environmental Impact Statement, p. 45.
[100] Photograph Collection of Redfern Railway Station and Central Railway Station, Sydney, 1871 – 1920. State Library of New South Wales, http://acms.sl.nsw.gov.au/album/ItemViewer.aspx?itemid=1017387&suppress=N&imgindex=16 viewed 1 June 2016.

Figure 37: Photograph of the cleared Devonshire Street Cemetery with the Second Central Station in right background [101]

Figure 38: Workers during the construction of Central Station in 1903[102]

[101] Photograph Collection of Redfern Railway Station and Central Railway Station, Sydney, 1871 – 1920. State Library of New South Wales. FL1130706
[102] NLA No. 142829227

Figure 39: 1905 photo of construction of Central Station at the Devonshire Street end[103]

Figure 40: 1903 view of the new Central Station under construction, view from Pitt Street facing south. Compare with Figure 30 [104]

[103] State Records 17420_a014_a014000265
[104] 1903 view of the new Central Station under construction, view from Pitt Street, facing south, State Archives of NSW.

The new station was designed by the Government Architect Walter Liberty Vernon, with the foundation stone laid on 30 April 1902 by Edward O'Sullivan, Minister for Public Works. By 1903, 127,000 cubic feet of stone had been laid and much of the first-floor level of the station had taken shape. The interior of the basement, sewerage and drainage elements along with interior walls up to joist level had been constructed. In addition, the platform walls were constructed to 4265 feet, the northern baggage tunnel had been excavated and concreted and the western baggage subway had been completed. The Devonshire Street Pedestrian subway had commenced work and the foundation stone for the Clock Tower was laid.[105] By this time, severe drought had significantly affected railway finances and designs were changed to cut costs. For example, umbrella roofs were proposed on the platforms to replace the original planned train shed.[106] There was a complete remodelling of the eastern side of the station yard during 1905, to provide for the construction of two additional Illawarra lines. During this time, a new engine shed with two roads accommodating for yard shunting was brought into use.[107] The new railway terminus and main concourse level were completed in 1906, with the official opening on 4 August 1906, and the final cost reaching an estimated £718,000 (Figure 41).[108]

There were various architectural and construction incompletions on opening day, however, the date had been set in anticipation of the summer passenger traffic.[109] The official opening revealed discord amongst the attendees who were divided over the location of the newly built station. Many locals held the position that the railway should have extended into the city centre. New tram lines were constructed and connected to the Eddy Avenue and upper concourse interchange, which was built level with the railway platforms to the south. Underneath the concourses and platforms, subways and service rooms were constructed including coal stores, kitchens, bathrooms and loading docks[110]. The Devonshire Street tunnel was largely completed at this time, allowing pedestrian movement along the alignment of the former Devonshire Street road once it was covered over by the enlarged station. The buildings associated with the old Redfern Station were demolished by November 1906 and Eveleigh Station was renamed Redfern Station as it remains today. Central Station had the capacity to cater for 40,000 passengers during this time and was twice the size of the original Redfern Station.

A second phase of construction at Central began during the First World War period. As such, wartime shortages resulted in slow construction progress. In 1913, the Illawarra Line was extended through Sydney Yard, dividing into four new terminal platforms. This lead to the demolition of the first East Carriage Shed in 1914. During this period, the east and west wings were constructed, with design changes made to use reinforced concrete rather than steel, due to the wartime shortage. To ease the tram and vehicle congestion in the city of Sydney, electrified subway rail lines and stations were proposed in 1909 and work commenced in 1917. A double underground railway was constructed that linked with the new rail services to cross the Sydney Harbour Bridge when it was completed in 1932. The upper level of the station and the clock tower were not completed until 1921. In the Government Architect's Annual Report on 30 June 1921, it was reported that Sydney's world-class railway station was completed.[111]

[105] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 33.
[106] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 33.
[107] Singleton, CC April 1941. History of Sydney Railway Station, *Australian Railways Historical Society Bulletin*, Vol. unknown, No. 54, p. 55.
[108] McKillop, Ellsmore and Oakes, 2008. A Century of Central, p. 33.
[109] Singleton, CC April 1941. History of Sydney Railway Station, *Australian Railways Historical Society Bulletin*, Vol. unknown, No. 54, p. 55.
[110] Rappoport Pty Ltd & NSW Government Architects Office. 2013. pp. 47 – 48
[111] R. McKillop, D Ellsmore and J Oakes, 2008. A Century of Central: Sydney's Central Railway Station 1906 to 2006, (Australian Railway Historical Society), p. 45.

Figure 41: First train leaving Central Station, 1906[112]

3.5.1 The City Railway

Despite the new station the problem of access to the City remained. Bradfield noted that for 1925 “Two hundred and fifty thousand passengers per day travel between the station and the city by street cars, by motor 'buses or walk. During the peak hour of the homeward evening traffic, over 40,000 people arrive at Central station to be taken to their destination by rail[113]. This does not count those who used the ferry system to connect with the North Shore line at Milsons Point.

Bradfield among others, saw the question of the crossing of the Harbour and rail access to the City of Sydney as linked. In 1909 the Royal Commission on the Harbour Bridge recommended a subway scheme for crossing the Harbour but Bradfield proposed a high level crossing and this was adopted by the Parliamentary Standing Committee on Public Works in 1913. Subsequently Bradfield was sent on a study tour to visit the Underground Railways throughout the World, and report on Sydney's transit problems. Bradfield’s report submitted a comprehensive report recommending a high level Electric railway crossing the Harbour Bridge as well as looping around Circular Quay.

The City Rail project commenced in 1922 with electric trains operation commencing along the Illawarra Line in June 1926 (Figure 42 to Figure 47). The city underground system opened, connecting St James and Museum Stations to the network, later that year. The project included the advanced design feature of the ‘flying junctions’ or flyovers, which allowed trains to change tracks on approach to Central Station. In order to cater for the additional railway lines, Central Station had four additional double platforms constructed on its eastern side by 1926 (today’s platforms 16 – 23). The construction of these new platforms resulted in the demolition of the existing three eastern platforms, rail sidings and goods sheds.114

[112] First train leaving Central Station, 1906. State Archives and Records.
[113] Bradfield, JJC 1926, 'Electrification of Sydney and suburban railways: V. - the city railway', Transactions of the Institution of Engineers, Australia, vol. 7:495
[114] *Ibid.* pp. 53 – 54.

In addition, electrification required construction of the catenary to support the overhead wiring, cabling to supply power and the construction of sub-stations to distribute the power at the correct wattage and amperage.

At the Prince Alfred Goods Yard the goods facilities were replaced by a sub-station and the yards was truncated. The construction of the flyovers required deep excavation for the lower level lines. Photographic evidence also shows extensive excavation and site preparation work adjacent to Eddy Avenue to allow for the construction of the abutments for the bridge across Eddy Avenue and the viaduct across Belmore Park.

Figure 42: Excavation for viaduct adjacent to Elizabeth Street, 1922[115]

[115] Excavation for viaduct adjacent to Elizabeth Street, 1922. Australian Railway Historic Society.

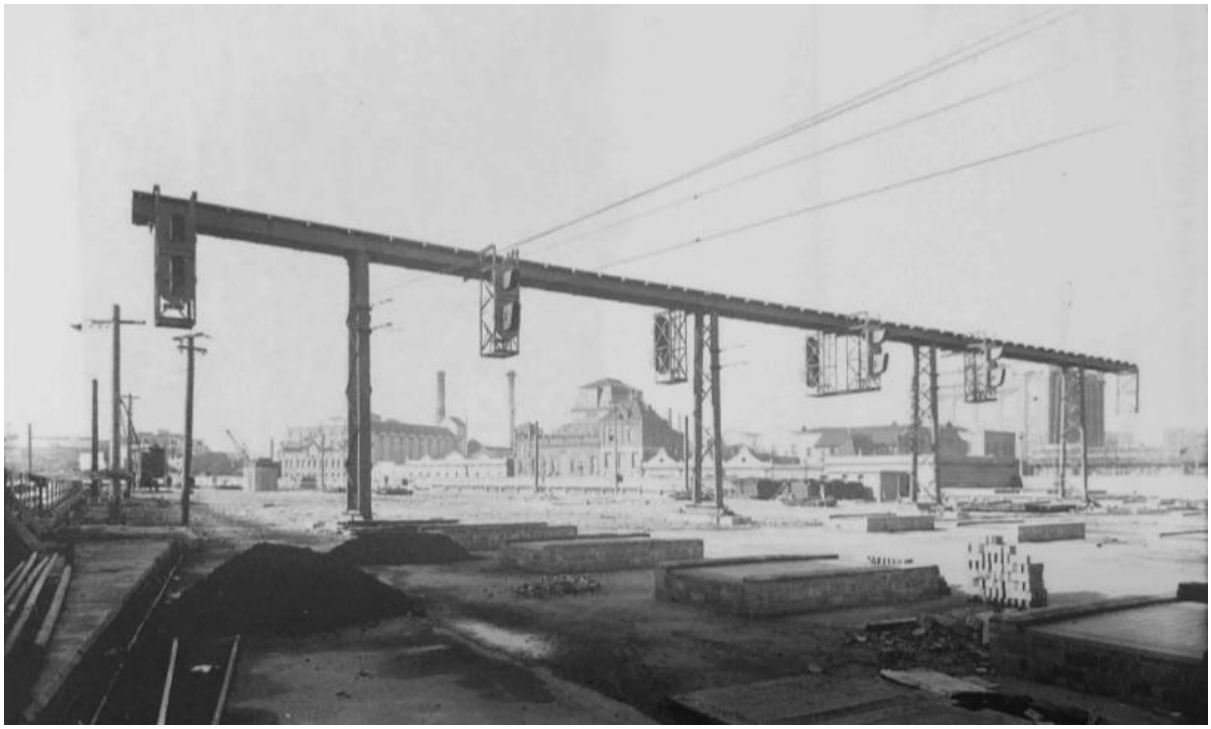
Figure 43: Construction of Eddy Avenue Underbridge, 1923[116]

Figure 44: Central Station at Eddy Avenue, date unknown[117]

[116] Construction of Eddy Avenue underbridge, 1923. Australian Railway Historic Society.
[117] Central Station at Eddy Avenue, date unknown. Australian Railway Historic Society.

Figure 45: Construction of City Railway between Central and Goulburn Street, 1923[118]

Figure 46: Central Station approach before laying of track, c. 1926[119]



[118] Construction of City Railway between Central and Goulburn Street, 1923. Australian Railway Historic Society.
[119] Central Station approach before laying of track, 1926. Australian Railway Historic Society.

Figure 47: 1923 photo taken during the construction of the city railway[120]

3.6 Mid- to Late-Twentieth Century Station Modifications (1930 – Present)

A number of renovations were made to Central Station after the completion of its primary facilities in 1926. Following it's official opening, Central Station consisted of 13 platforms. Platform 1 was the main arrival and departure platform, particularly for specialised trains and express routes. With the introduction of new and extended trains, the need for an extended platform grew. There were platform extensions to Platform 1 in 1937, 1949 (Figure 49) and finally in 1960, when it was extended to 370 metres. Platforms 2 and 3 were extended to 324 metres the following year. With increasing passenger traffic, the former 'horse' platforms were converted to platforms 14 and 15 as seen today and serviced the Bankstown Line.

In the 1950s and 1960s, infrastructure located within the Sydney Yard area was progressively removed or upgraded as steam locomotives were replaced with diesel engines (Figure 49 and Figure 50). This resulted in the removal of coal storage sheds and water tanks in the Sydney Yard.

With the rapid expansion of Sydney city, it became apparent that new ways of incorporating Central into this growing metropolis were required. The largest renovations were the incorporation of new platforms 24 and 25 for the Eastern Suburbs Railway in 1979, after more than thirty years of delays in their construction. The Eastern Suburbs Railway involved the excavation of new tunnels north of the station with two double-platforms constructed underneath what is now the footpath on Chalmers Street. The platforms were constructed on top of each other, however the lower platforms were never used and have no railway lines attached to them[121].

The 1980s brought about extensive technological change within Central Station. The Wran Government allocated $1 Million to the restoration and upgrade of the platforms at Central which had

[120] RAHS photographic collection: no. 21804063
[121] Rappoport Pty Ltd & NSW Government Architects Office 2013. pp. 56 – 57.

recently been allocated heritage listing by the National Trust of Australia. Stage 1 of the refurbishment began in 1980 with the original 1906 train indicator board being dismantled and replaced with a computer-based system. The original board was donated to the Museum of Applied Arts and Sciences in 1982; it can be seen today at the Powerhouse Museum. Stage 2 of the upgrades centred around the restoration of the Central Station Clock Tower which was carried out between 1984 and 1985 at a cost of $592,000 (Figure 52). In 1986, $500,000 was allocated to the upgrade of the Devonshire Street Tunnel which received brighter lighting, new tiles and murals. The east carriage shed located in the Sydney Yard, was removed after 1987, and the majority of the Sydney Yard consists now of sealed bitumen and open ground[122].

Modernisation continued into the 1990s with the Labour Government's commitment to public transport improvements in the lead up to the 2000 Sydney Olympic Games. The new electric rail line servicing the Olympic Stadium and other facilities within Homebush officially opened in 1998 with a passenger capacity of 50,000.

Today, Central Railway Station is the busiest train station in NSW, averaging around 40,000 passenger station exits between 6:00am and 9:00am on an average work day.[123]

[122] Rappoport Pty Ltd & NSW Government Architects Office 2013. pp. 59 – 60.
[123] Transport for NSW, 2014. Train Statistics: Everything you need to know about Sydney Trains and NSW TrainLink.

Figure 48: 1943 Aerial photo with Central Station site shown in blue[124]

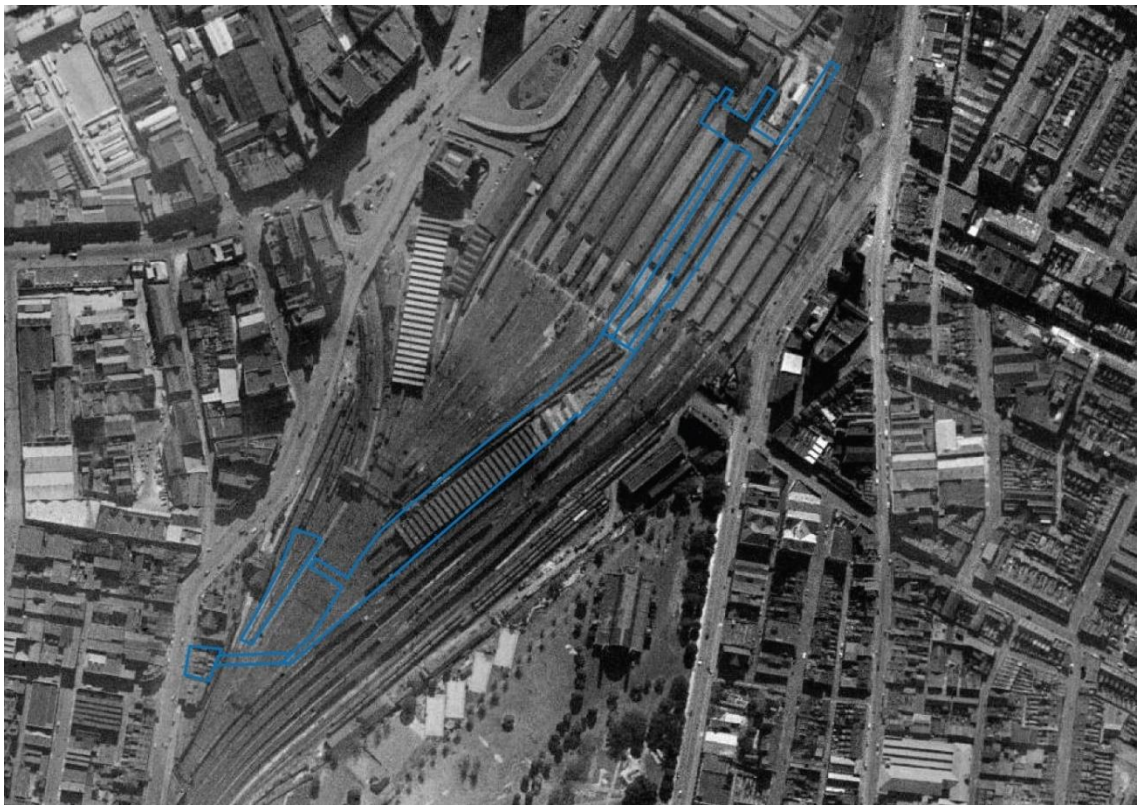
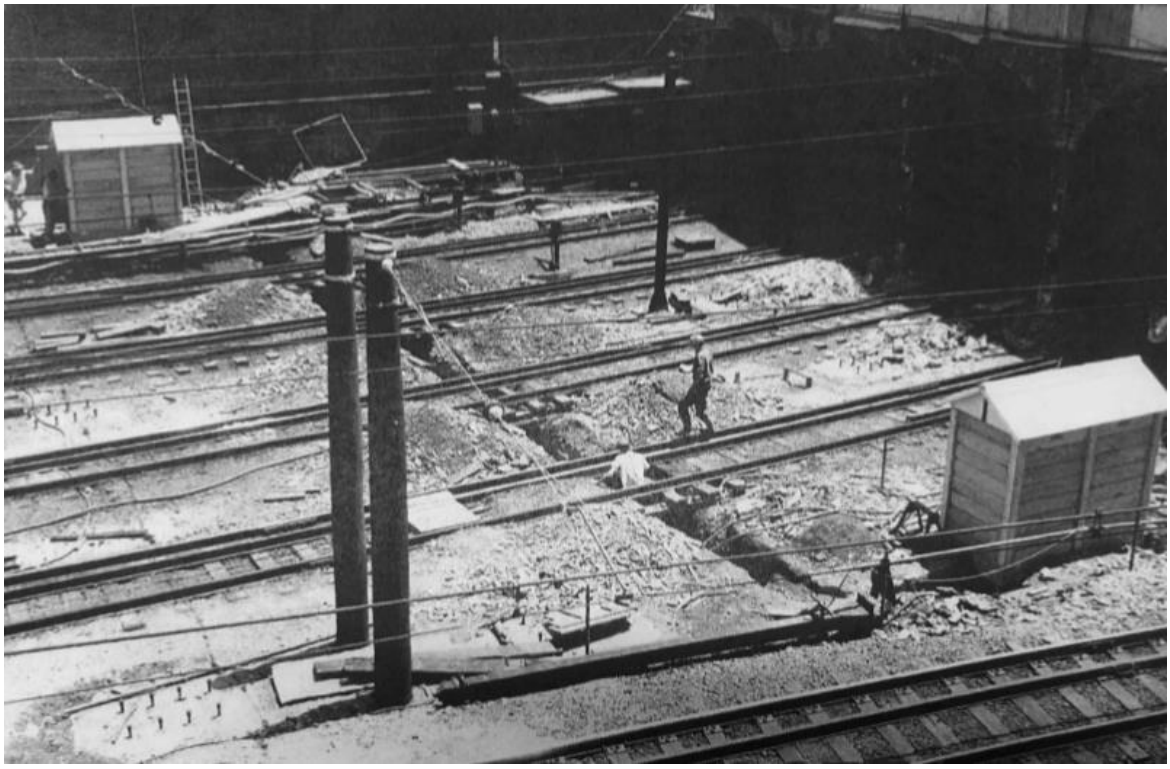


Figure 49: Looking towards the Goulburn Street portals of the underground during construction of parking station over the tracks, 1961[125]



[124] Land and Property Information SIX Maps
[125] Australian Railway Historic Society

Figure 50: Entrance to the City Underground at Goulburn Street showing the tunnel portals and early parking station works, 1961[126]

Figure 51: Central Station arched bridge over Eddy Avenue, view down Castlereagh Street, c. 1978[127]

[126] Entrance to the City Underground at Goulburn Street showing the tunnel portals and early parking station works, 1961. Australian Railway Historic Society
[127] Central Station arched bridge over Eddy Avenue, view down Castlereagh Street, 1978. Australian Railway Historic Society

Figure 52: Sydney Central Clock Tower with scaffolding, date unknown[128]

3.7 Summary of history of study area

European occupation of the Central Station study area has been divided into four distinct phases of historical activity, which are:

- Phase 1 (1788 – 1855) early European settlement and the Devonshire Street Cemetery. Early land use associated with the construction of early brick and sandstone buildings, road building, wall construction, pasturage and the development of the Devonshire Street cemetery.
- Phase 2 (1855 – 1900) first and second railway stations. Land use predominantly associated with the development of Sydney's first railway station and the expansion of the railway station. Earthworks and industrial rail infrastructure developed on the site at this time. Road building and grading in the area as nearby subdivisions are laid out and built on. Construction of early water and sewerage infrastructure.
- Phase 3 (1900 – 1930) twentieth century land resumptions and station expansion. Land use predominantly associated with the enlargement of Central station north of Devonshire Street and the large-scale earthworks required for this expansion. Exhumation of burials. Excavation of large areas of tunnels, basements and below station services. Renovation of existing station sidings and facilities in southern part of the station.
- Phase 4 (1930 – present) mid- to late-twentieth century station modifications. Further excavation of below-ground service tunnels and new underground platforms. Redevelopment of carriage sheds and rail sidings areas.

[128] Sydney Central Clock Tower with scaffolding, date unknown. Australian Railway Historic Society.

4.0 ARCHAEOLOGICAL POTENTIAL

4.1 Recent comparable archaeological investigations

4.1.1 Sydney Yard Access Bridge (SYAB) – Artefact Heritage

Artefact Heritage were engaged by Laing O'Rourke to archaeologically manage construction activities for the SYAB, which is part of the Sydney Metro City & Southwest – Chatswood to Sydenham project. The construction of SYAB involved excavations within Sydney Yard in AMZ CS 4. Monitoring works in November 2017 uncovered brick remains of a former structure, likely associated with the 'Railway Shop' which was part of the 'second station' development phase of Central Railway Station. The remains were recorded with only a minor portion removed (one course of bricks) and assessed as being of local significance. Access pits to drains and footings of stanchions associated with the third phase of construction of Central Station in the twentieth century were investigated, recorded, and removed. These were assessed as not meeting the threshold for local significance.[129] An excavation report is currently in preparation for these works.

4.1.2 CBD and South East Light Rail (CSELR) – Artefact Heritage and GML

Artefact Heritage were engaged by Acciona to archaeologically manage investigation and construction activities for the CBD and South East Light Rail (CSELR) project. The utility and civil works involved excavations within the Former Radio Workshop of Central Station, and within the road corridors of the surrounding streets.

Archaeological test excavations at the intersection of Eddy Avenue and Pitt Street undertaken by Artefact Heritage in May 2017 encountered the remains of a brick barrel drain. The feature was interpreted as being the remains of a brick drain depicted in Map 36 of the 1865 Trigonometrical Survey of the City of Sydney. Metal tracks and timber sleepers associated with the former tramways were also exposed within the intersection. The remains of the drain and the tramway were assessed as being of local significance.

Preliminary investigative works monitored by GML in February 2014 identified a possible bottle dump and sandstone block at the corner of Chalmers Street and Eddy Avenue. In July 2017 the bottle dump was encountered during NDD works monitored by Artefact Heritage. The area was shown to be heavily disturbed by existing services and the bottle dump had likely been previously excavated and then redeposited. No evidence of the sandstone block identified by GML was uncovered.

In March 2018 a brick and concrete structure was identified during NDD investigative works within Prince Alfred Park. The structure was identified as likely being associated with twentieth century utilities. The remains were assessed as unlikely to reach the threshold of local significance.

In March 2018 a sandstone structure was identified on the west side of Elizabeth Street during trenching for the installation of a conduit alignment. The feature was identified as likely representing the remains of the boundary wall of the former Devonshire Street Cemetery. The remains were assessed as potentially being State significant and a s146 notification will be provided to the NSW Heritage Division.

During utility service investigation works at the Former Radio Workshop within Central Station in October 2017, archaeological remains were identified in the form of trachyte and brick surfaces beneath the modern concrete floor. These archaeological remains were initially interpreted as being the remains of former floor surfaces of the Former Radio Workshop. A program of archaeological

[129] Artefact Heritage December 2017. *Memo – Archaeological monitoring summary report.*

salvage excavation was undertaken between 26 May and 8 June 2018. The investigation revealed the remains were of a trachyte cobblestone floor surface potentially dating to 1920s, former toilets, and the remains of a cistern. The archaeological remains were assessed as having local significance.

Additional archaeological test excavations and monitoring undertaken by Artefact Heritage between 2016 and 2018 also encountered numerous services along Eddy Avenue, Elizabeth Street, and Chalmers Street. These included terracotta and metal pipes, and brick service pits. These were assessed as unlikely to reach the threshold of local significance. No evidence of human burials or remains were identified within the former boundaries of the Devonshire Street Cemetery. No evidence associated with Carter's Barracks or the Benevolent Asylum have been identified along Eddy Avenue or Pitt Street.

It is noted that the excavation works and analysis of the remains for this project are still underway.

4.1.3 Central Station Conservation Management Plan – Rappoport

The Central Station Conservation Management Plan (CMP) 2013 included a general assessment of archaeological potential and significance in their guidelines.[130] In their assessment they show areas of archaeological potential associated with the Devonshire Street cemetery, the location of former nineteenth century buildings and laydown areas of former rail sidings and infrastructure. The archaeological potential mapping does not include potential for former rail infrastructure in the south-west, though there is likely to be such buried remains. It is noted that the CMP has not been endorsed by Heritage Council of NSW.

Recent archaeological work in the former eastern and western yards (see below) has located archaeological remains and the results of this work is likely to require revision on the management recommendations for archaeology.

4.1.4 Northern Concourse at Central Station – Thorpe

Thorp conducted an archaeological assessment of the northern concourse at Central Station in 1999.[131] Her assessment concluded that because of the earthworks involved in the construction of the third station buildings and platforms, the area below the northern concourse of Central Station exhibited no potential to recover remains associated with the Devonshire Street cemetery. She assessed that some areas within Central Station have been extensively disturbed, in particular where subway rail tunnels and below-ground concourses have been constructed.

However, test excavations in the Western Forecourt of the station in 2009 revealed building demolition deposits associated with the former nineteenth century Benevolent Asylum.[132] These deposits were located less than a metre below the forecourt, in an area that Thorp had characterised as built up to make the site level.[133] The lack of archaeological excavations, and only limited shallow geotechnical investigation, within the boundary of the Central Station precinct has meant that it is difficult to ascertain the uniformity of ground disturbance across the site.

[130] *Rappoport Pty Ltd & NSW Government Architects Office. 2013*. p. 111.
[131] Thorpe, W. 1999.
[132] *Op cit.* pp. 64 – 65.
[133] *Op cit.* p. 11.

4.1.5 Sydney Town Hall – Casey & Lowe

Excavations conducted below Sydney Town Hall in 1974, 1991[134] and 2007/2008[135] investigated the Old Sydney Burial Ground which is located below the Town Hall. The site of the first planned cemetery in the colony, the Old Burial Ground was established in 1792 and closed in 1820 when it was determined to be at capacity and the new burial ground at the Sandhills (Devonshire Street) was established. Following several decades of neglect, the site of the burial ground was chosen as the location of St Andrews Church and the Sydney Town Hall, which were both constructed on the site between 1842 and 1869. Prior to the construction of these buildings, the graves were ostensibly exhumed and relocated to Rookwood Cemetery. Archaeological investigations revealed that while most of the interments had been removed, a number had been overlooked during exhumation. In addition, partial interments, damaged tombs and tombstones still remained. Even in those graves that had been exhumed in the nineteenth century, grave locations and grave cuts were clearly identifiable.

4.1.6 Eveleigh Rail Yards – Thorpe

Archaeological remains associated with nineteenth and early twentieth century rail yards were examined during excavation works at the Eveleigh Rail Yards near Redfern Station in 2000. Excavations below former workshops revealed remains from former furnaces and flues. Industrial waste such as ash, brick and metal slag was located in the base of former furnaces. The original construction of many of the workshops and carriage sheds involved the excavation of the local sand to basal clay in order to provide a resilient foundation for the buildings; however, in some cases ground was levelled with introduced fill to create a level surface.[136]

4.1.7 Granville Station – Higgingbotham and Artefact

Excavation at the site of original 1855 Parramatta Railway Station located the train wagon turntable.[137] This turntable was located below redeposited railway ballast as well as backfilled local clay. The remaining turntable consisted of a radial arrangement of large wooden blocks up to 34 cm in width and laid level, on which the basal ironwork for the turntable was believed to have been placed before it was removed during demolition. Several wooden wedges which would have been used to secure the iron base of the turntable were also identified.

Artefact Heritage investigated another turntable that formed part of the Granville Station group. The locomotive turntable dated to 1856. The remains consist of a circular pit with an approximate radius measuring 6.2m making a total 40ft diameter turntable. The pit was cut into natural clay, similar to the wagon turntable originally found to the west of the site in 1994. The timber sleepers surrounding the middle turning circle formed a stable surface to turn the table, especially as the area is prone to flooding and the natural soil is clay. A stone block that was uncovered was most likely part of the masonry course of the turntable. The pit was later backfilled with grey ballast and timber sleepers were placed on top. The remains were covered in geofabric and remained in situ. The remains were assessed as being State significant.

[134] Lowe, A. & Mackay, R. 1992. “Old Sydney Burial Ground”, *Australasian Historical Archaeology* vol 10.
[135] Casey & Lowe, 2008. *Peace Hall, Sydney Town Hall, Results of Archaeological Program (Interim Report).*
[136] Thorp, W. 2000. Archaeological Report for the Eveleigh Yards. Report prepared on behalf of NSW Department of Public Works.
[137] Higgingbotham, E. 1995. “Report on the Stage 2 Archaeological Excavation of the Site of the 1855 Parramatta Railway Terminus, Mort Street, Granville NSW”. Report prepared for the State Rail Authority, NSW. pp. 12 – 14.

4.1.8 Chalmers Street Turntables – AMAC

During archaeological monitoring works as part of the Chalmers Street substation project, in November 2016 three turntable foundations, a sandstock brick culvert and sandstock brick footings were located[138]. The formation of these turntables had been preserved and were identified on the 1884 plan of the station and were associated with the use of the Goods Shed. Remains consisted of brick foundations, remnant iron plate, cement plinth, and concrete. The turntables had been backfilled with black gravel and loam fill prior to being uncovered during the archaeological investigations.

Unfortunately the promised final report which presumably would include a location plan relating to current building and reduced levels has not been completed but it seems likely based on the images in the report that the turntable remains are about 1m below the ground surface.

In the context of this AMS the work at Chalmers Street although outside the area impacted by the Central Station Main works demonstrates that significant remains from the Sydney Yard survive within the general area of the former station.

4.1.9 Lee Street Turntables – AMAC

From September to November 2016 archaeological monitoring was undertaken of excavation work undertaken for the Lee Street Substation site. Footings for a platform and remains of a turntable were located[139].

The key archaeological remains identified were parallel brick footings which seem to relate to an extension of the platform associated with the Second station period and the expansion of passenger facilities c1880's. The platforms are shown on the 1884 City of Sydney Detailed Series map.

Based on stratigraphic evidence the turntable dates from before the platform construction as clearly it is truncated by one footing. The turntable was certainly decommissioned before the introduction of the 1880s extensions to the Second Sydney Station. As to the date of construction it is argued that the turntable may be depicted on the 1857 Chippendale map depicts the turntable and that it was removed by 1865 as it is not shown on the Trigonometrical Survey plan.

As with the Chalmers Street report the Lee Street report is a Section 60 application not a final archaeological report and lacks reduced levels. It does appear from the photos in the report that the platform footings are a bit shallower than those at Chalmers Street.

The implications of these results are that archaeological remains from the first and second station eras can survive despite being demolished and built over by later railway infrastructure.

4.2 Geotechnical testing

4.2.1 Geotechnical interpretation in the AARD

The ARD stated that:

> *Geotechnical investigations conducted for the Sydney Metro project have shown that underneath the rail corridor between platform 15 and 16, local Quaternary sands are present at a depth between 0.6 metres and 1.7 metres. These sand deposits are up to 3.6 metres thick. The degree to which these sand deposits*

[138] AMAC Group 2016 Archaeological Assessment and s60 Permit Application Chalmers Street Substation, Report for Abergeldie on behalf of Transport for NSW.
[139] AMAC Group 2016 Archaeological Assessment and s60 Permit Application – Lee Street Substation, Report for UGL Limited on behalf of Transport for New South Wales.

represent imported or redeposited local sand as fill or back-fill, or in situ Tuggerah sands, is unknown.

Additional geotechnical works, with an extensive number of boreholes across the station box area were completed in 2018 and present an altered interpretation of the subsurface nature of the site.

4.2.2 Shale soil transition and location of the Botany sands

It was assumed based on the results of earlier geotechnical testing that the shale soil transition was close to the western edge of the station box, and potentially outside the project area. The latest geotech work identifies the Ashfield shale transition with associated residual soils in the majority of the station box, across its northern half and extending to the north of the Devonshire Street tunnel around the southern branch of the pedestrian tunnel. The shale is overlain by some residual soils, varying in depth, but in some places close to the surface and likely to be overlain only by ballast fill.

A layer of Quaternary sand is identified in the geotechnical results extending for around 40m below the Devonshire Street tunnel at around 10m depth. This is overlain by redeposited fill which may represent the infill of the former creek line as well as fill put in place during the construction of the tunnel and levelling of the cemetery.

There is no clear evidence in the geotechnical results of intact dune formations that are associated with the Botany Sands formation. It is possible that the Botany Sands proper did not extend into the study area, and that the sand hills, on which the cemetery was located were formed by the progression of mobile dunes into the study area after deforestation. This would be consistent with the historical accounts of windblown sand around the brickfields nearby.

Once the cemetery was in place the dune landscape would have become more stable with the construction of retaining walls around the cemetery, cemetery infrastructure and vegetation (grass and the occasional larger trees as evidenced in historical photos).

4.2.3 Location and nature of fill and re-deposited soils

The geotechnical testing has confirmed that fill is located across the site. The testing data does not clearly differentiate between fill that may be of archaeological value and that which is modern ballast fill or imparted fill with no archaeological potential.

The nature of topsoil movement and fill introduction especially to the north of the Devonshire Street Tunnel at the site of the former cemetery is unknown. Historical photos suggest that large amounts of sand were moved to the south as the cemetery was cleared and in some photos clay is obviously present (testified to be the deep wagon ruts). This is consistent with the geotechnical testing results which show residual soils (silty clay with high plasticity) below the ballast, or layers of sand/gravel fill. Archaeological testing would be required to confirm the nature of this fill. Redeposited local fill could still retain archaeological deposits, although they would not be in situ.

Figure 53: Geotechnical cross section for Central Station Main Works station box site

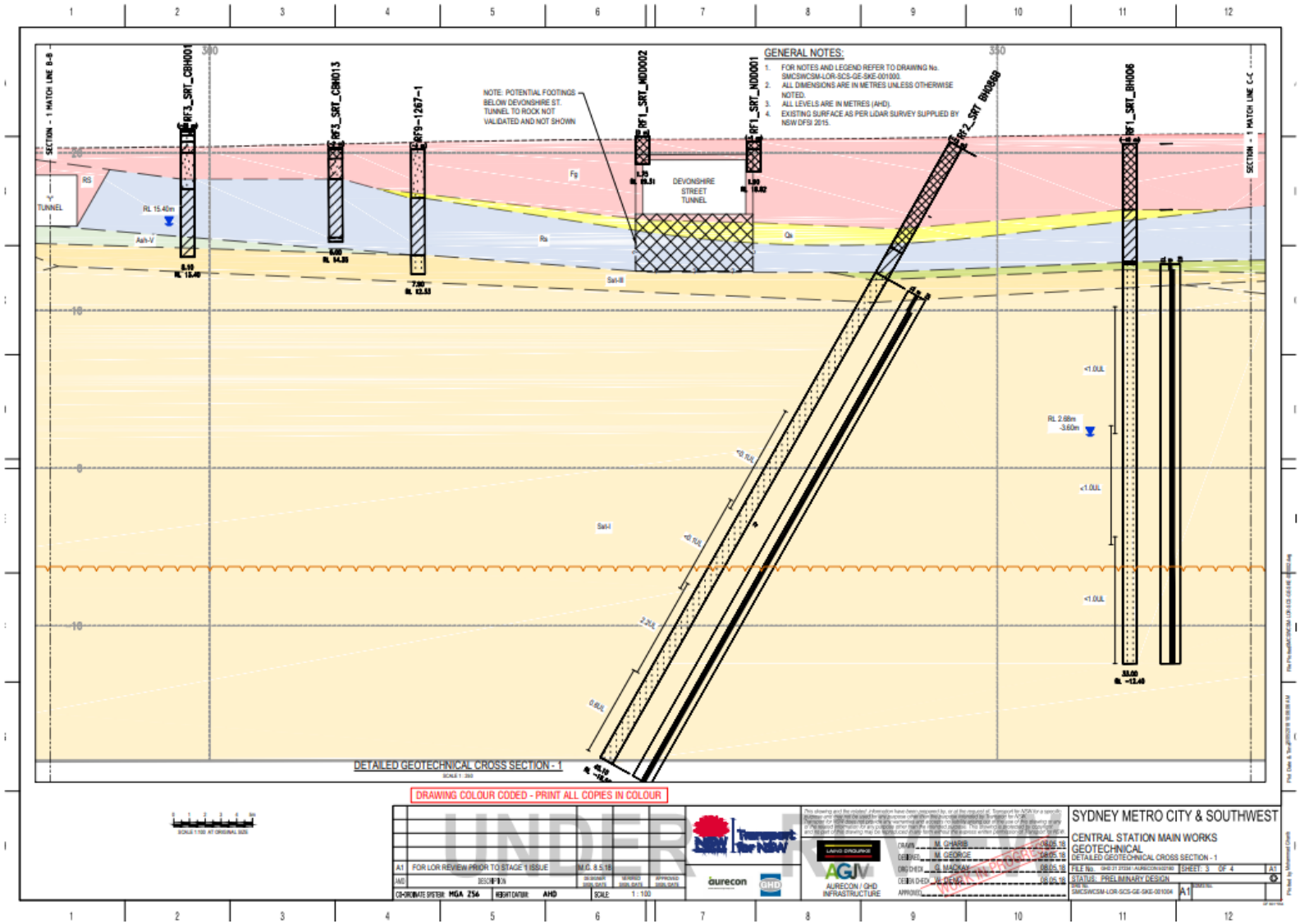
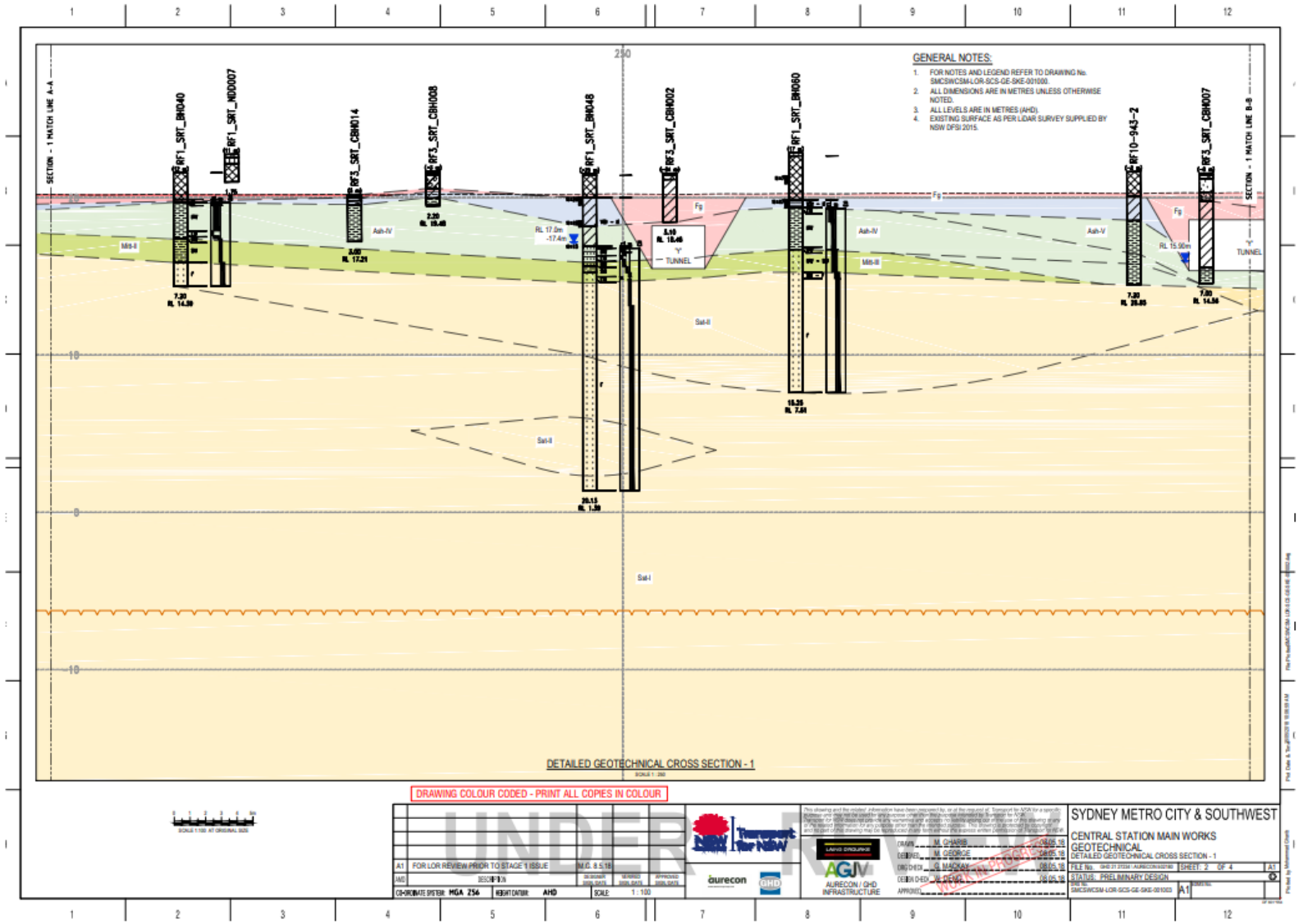


Figure 54: Geotechnical cross section for Central Station Main Works station box site



4.3 Previous impacts

This original landscape of the Central Station Main Works site has been significantly modified since European settlement, predominantly from work associated with the construction of Central Station in its three phases of development. However, this ground disturbance has not been uniform across the site and is not easily discernible or predictable from historical sources or geotechnical information.

The construction of the third (current) railway station with the main concourse on Eddy Avenue involved the excavation of large amounts of pre-existing sand dune in the eastern part of the site. Areas on the sloping west-ward side were filled in to make the site level. The Devonshire Street cemetery was exhumed, excavated and graded level prior to the construction of the concourse buildings. The burial ground had a variable ground level, with a higher elevation in the east than in the west. The interments were also excavated below the previous ground level, up to potentially two metres deep. Despite the clearing and levelling of the burial ground in 1901 and 1902, the degree to which the vertical profile of the graves is disturbed throughout the entire cemetery is uncertain. While the majority of the cemetery was likely removed, these impacts may not have been uniform or complete.

Further excavation between Eddy Avenue and Devonshire Street occurred to build the below-platform tunnels and storage areas at the station. These tunnels and storage areas are not uniform across the northern part of the site however. While below-platform elements have been installed, the extent to which these excavations continue underneath the rail corridor is not certain.

South of Devonshire Street, ground disturbance has been less severe. Multiple rail corridors have been constructed, modified and rebuilt. However, the deepest grade cutting is associated with the Darling Harbour goods line, which is located outside of the Central Station Main Works site. The construction and later removal of rail lines and sidings may not necessarily have required extensive excavation. While the upper surfaces of this area are disturbed from these infrastructure installation activities, the depth of this ground disturbance is unknown.

The Sydney Yard area has seen several phases of rail line, workshop and carriage shed remodelling since the station was constructed. While the renovation of these areas is likely to have involved excavation, once again the depth of these excavations are unknown.[140]

Associated with the remoddling and phases of use of Sydney Yard there was obviously the need to establish utilities such as drains, water supply and electricity supply all of which would be cut into the underlying ground when installed thus disturbing archaeological remains deposited by previous use of the area.

4.4 Potential archaeological remains

Archaeological remains associated with the following phases may be present in the proposed Central Station Main Works site.

[140] Taken from the AARD 2016

4.4.1 Phase 1 (1788 – 1855) early European settlement and the Devonshire Street Cemetery.

During Phase 1 the early land use was associated with the construction of early brick and sandstone buildings, road building, wall construction, pasturage and the development of the Devonshire Street Cemetery.

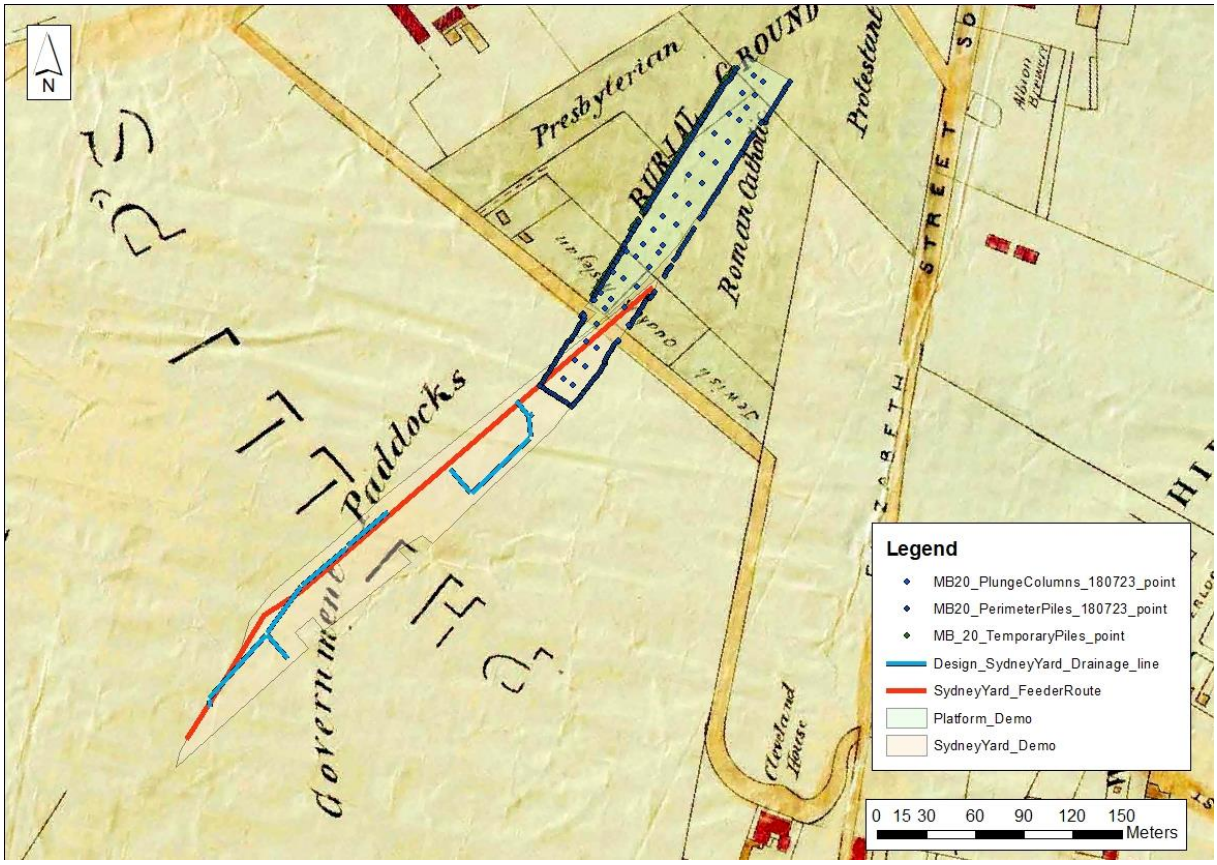
Archaeological remains in the Central Station Main Works site would be associated with the Government Paddocks and the Devonshire Street Cemetery. This is evident in the 1845 Shields plan which shows that the Central Station Main Works station box is almost entirely within the boundary of the Devonshire Street Cemetery, and the Sydney Yard enabling works within the Cleveland Paddocks site (Figure 55).

Tree and bush clearance in this area occurred within the first twenty years of settlement, partly associated with the construction of the nearby Parramatta Road. The soils in the area were aeolian deposited Quaternary sands, stabilised by native vegetation and underlain by clay soils over the Ashfield shale. Archaeological deposits associated with land clearance, timber getting and road construction are unlikely to have been preserved as a result of their ephemeral nature and subsequent disturbance.

Evidence of the use of the Cleveland Paddocks would be similarly archaeologically ephemeral. The area had no structures constructed on it from the time of European settlement to 1855, with the exception of wooden fences on the outer margins of the field. The Central Station Main Works site crosses the line of this former boundary fence at the southern alignment of Devonshire Street. Isolated artefactual deposits relating to the incidental use of the paddock for recreation or animal grazing may also be present, although evidence of these are likely to have been removed during subsequent development phases.

The Devonshire Street Cemetery was located in the northern half of the Central Station Main Works site in the area of the proposed station box. Remaining material from the cemetery could include structural remains such as former footings for the deconstructed burial ground walls, residual brick and stone tombs, and tombstones. Coffins, coffin furniture, ghosts, human skeletal remains and associated artefacts may also be preserved. Personal artefacts could be present such as jewellery, and clothing including leather, fabrics, fasteners, and buttons. Incidental rubbish deposited during the later days of the cemetery when it fell into disrepair may also be present in re-despotised soils or in lower areas that were backfilled. Fill may be dateable by artefacts associated with phases of use and decommissioning of the cemetery. Evidence of exhumation may also be present, such as trenches into the clay, debris and backfill associated with the modification and levelling of the landscape.

Figure 55: Central Station Main Works station box and enabling works overlain on the Shields plan (1845)



4.4.2 Phase 2 (1855 – 1900) first and second railway stations.

During this phase land use is predominantly associated with the development of Sydney's first railway station and the expansion of the railway station. Earthworks and industrial rail infrastructure developed on the site at this time. Road building and grading occurred in the area as nearby subdivisions were laid out and built on. Construction of early water and sewerage infrastructure also occurred.

The first and second railway stations were constructed south of Devonshire Street between 1855 and 1874. The 1857 Chippendale plan shows that the Central Station Main Works station box will be placed across the site of the approach to the first Central Station (probably a formed road), the first Central Station turntable, a carriage shop associated with the first Central Station, Devonshire Street, the external boundary fence of the Devonshire Street Cemetery and internal fences (Figure 56 and Figure 57). In the 1865 Trigonometric Survey plan the access on the eastern side of the First Station seems to have been taken over by railway facilities possibly for the tram that connected the station with the City. In this overlay tracks are shown as within the Central Station Main Works site area along with Devonshire Street and the Devonshire Street Cemetery, carriage and workshops, and a turntable (Figure 58).

Rail cuttings, railway lines, carriage workshops and sheds were constructed in what is now the Sydney Yard throughout this period, with various phases of reconstruction and re-use. Preserved evidence of these activities could include rails; sleepers and ballast; iron, wooden and concrete foundations; brick and stone footings for structures; wooden beams and potential post-holes; metal slag and ash from workshops and discarded carriage and locomotive items.

Significant expansion of the Sydney sewerage network occurred throughout the 1850s, with a brick and stone stormwater drain constructed underneath the railway lines of the first Central Station at that time. The drain runs east to west underneath the Sydney Yard. Subsequent renovations to the sewerage line (the Prince Alfred Sewer) and to Central Station has significantly impacted the integrity of the original drain. Current Sydney Water plans[141] indicate that none of the original stone and brick drains remain below Central Station. Portions of the original fabric, or undocumented branches of the sewerage line could still remain. Preserved evidence of the sewer could include sandstock brick barrel drains, sandstone culverts and arches, and isolated artefact deposits.

A train carriage/wagon turntable is identifiable on 1855 and 1895 plans of the railway station. It was no longer in operation during the third phase of Central Station after 1906. 1855 plans for the wagon turntable show that it was located at the junction of only two railway lines, but by 1865 it is connected to nine railway lines. It is possible that the wagon turntable was enlarged or renovated during the 1860s until near the end of the century as further workshops and carriage sheds were constructed on the site.

Train carriage/wagon turntables are identifiable on the 1884 plans of the railway station in the area of the enabling works. Wagon turntables were likely dismantled and the substructure then infilled, and archaeological deposits associated with these turntables would include wooden beams, joists and pegs; metal supporting elements, frames and nails; potential wooden or metal turntable pivots; and outer brick walls and footings of the circumference of the turntable.

The second station building was located on the southern edge of the former Devonshire Street alignment. The station platforms were expanded over time to encompass up to 13 platforms (including Mortuary Station) with a profusion of work and carriage sheds. The deconstruction of these buildings was required for the extension of passenger platforms from the new station building on Eddy Avenue, although the southern extent of these buildings are located partially underneath the Sydney Yard.

By 1884 with the construction of the second Central Station the Sydney Yard was reorganised. Plan I2 shows an entrance to the Sydney Yard off Devonshire Street (Figure 59 and Figure 60). This would have given access to the locomotive and carriage workshops and to the Prince Alfred Goods Yard. This area would have been paved as it would have been traversed by vehicles with heavy loads. A gas works was located to the east of the enabling works area (Figure 59).

The Central Station Main Works station box also covers the location of a rectangular building with four tracks running into it. This building is marked as the Engine Erecting Shop in the 1888 plan (Figure 60). A traverser appears to also be depicted on the plans. The building is small for an engine erecting shop. An erecting shop would have one or more travelling overhead cranes to lift large parts of engines such as frames, wheels and boilers. The building seems to be visible in a 1902 image of the clearing of the Devonshire Street Cemetery as a gable roofed building but is very indistinct (Figure 68).

The 1884 plan shows a carriage shop, locomotive shops, fitting shop, blacksmith shop, office, turntable and part of the repairing shop that was uncovered in the SYAB excavations[142] in the area of the enabling works. Archaeological remains associated with these former structures may include brick and sandstone footings, rubbish deposits, remains of former coal cellars, storage rooms and yard surfaces.

Plan S2 shows external and internal fences within the Devonshire Street Cemetery (Figure 61). Remains of these structures may be present, especially where the ground level has been filled.

[141] DBYD plan 2016
[142] Artefact Heritage December 2017. *Memo – Archaeological monitoring summary report.*

The 1896 plan (there is no equivalent covering the Devonshire Street Cemetery) shows a new series of structures in the vicinity of the southern end of the Central Station Main Works station box area (Figure 62). The rectangular building depicted in 1884 has either been replaced or altered. Carriage sheds now run up to the boundary of the building while a circular object – either a water tank or gasometer is located adjacent to the building. The turntable has been removed, the locomotive shops have expanded north, and the carriage shop, fitting shop, blacksmiths shop have also been removed. These functions were relocated to the Eveleigh workshops. The office and repairing shop still appear in the same formation as the 1884 plan.

The growth of Central Station during this time involved the progressive increase in railway lines and accompanying rail infrastructure across the site. Archaeologically recognisable items would include rail beams, sleepers and ballast; signalling equipment and rail point technology. The latter pieces of equipment, if preserved, would provide a potentially datable technological assemblage. These technological changes would assist in individuating phases of the intertwined and interconnected development of rail infrastructure at the station.

The expansion of Central Station in the early twentieth century involved the removal of prior station platforms and their replacement with the current alignment of platforms 1 – 23. Previous platform infrastructure may remain within or below the existing platforms. Archaeological remains associated with nineteenth century platforms would consist of brick and concrete footings and walls. Remains of former station signs, canopy pylons and supports could also be present.

The Devonshire Street Cemetery was closed for interments by the 1860s, however accounts from 1901 mention the accumulation of rubbish inside the burial ground walls. As such, isolated artefactual deposits of mid- to late-nineteenth century domestic rubbish (ceramics and glass in particular) may be present.

Figure 56: Central Station Main Works station box overlain on the Chippendale 1857 plan

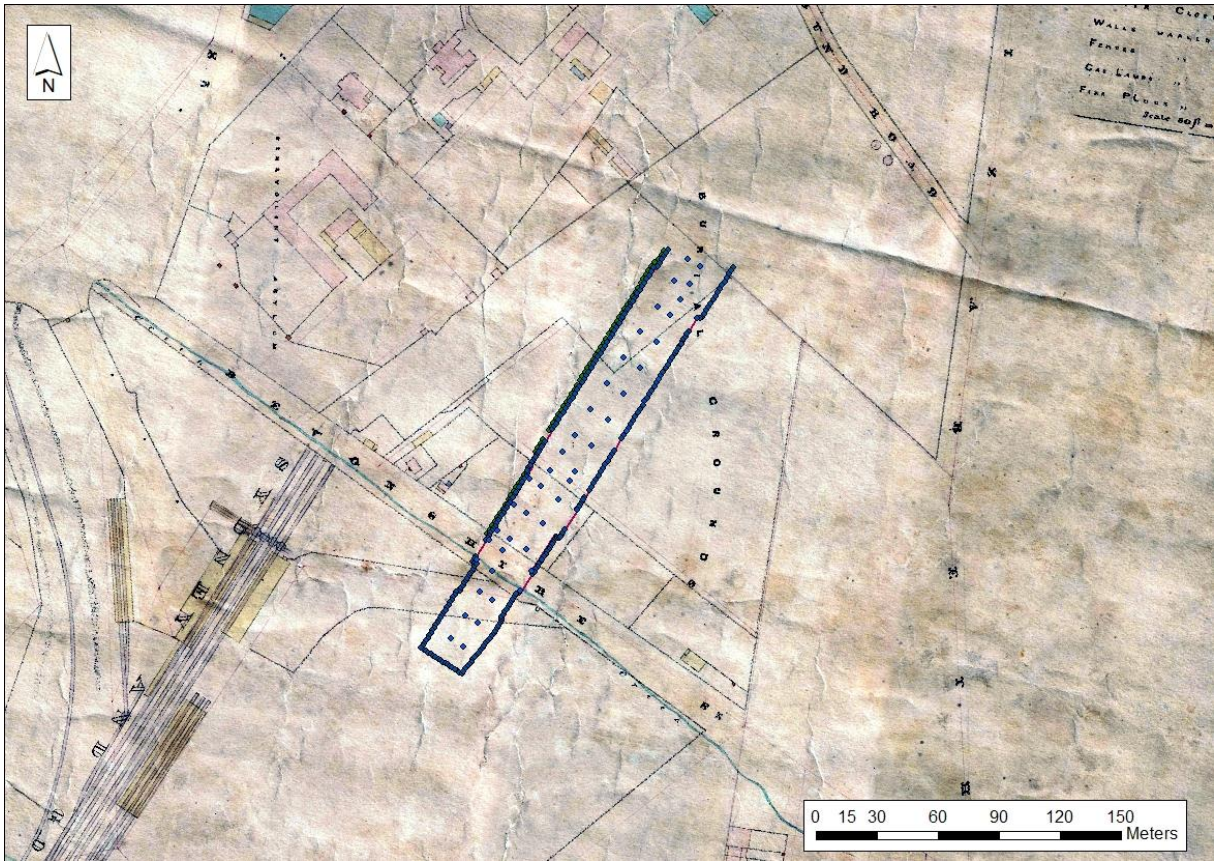


Figure 57: Central Station Main Works enabling works overlain on the Chippendale 1857 plan

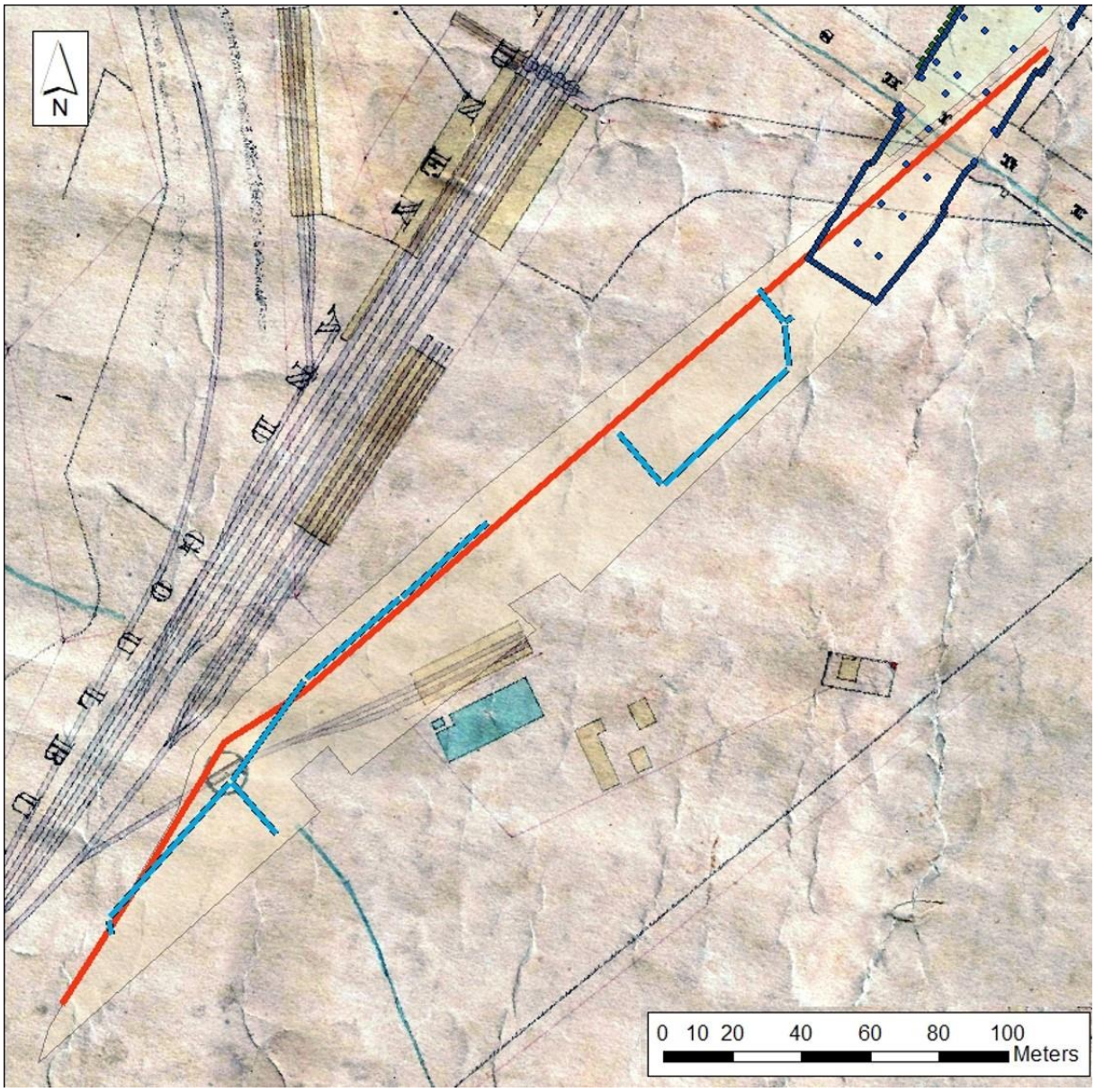


Figure 58: Central Station Main Works station box and enabling works overlain on the 1865 Trigonometric Survey

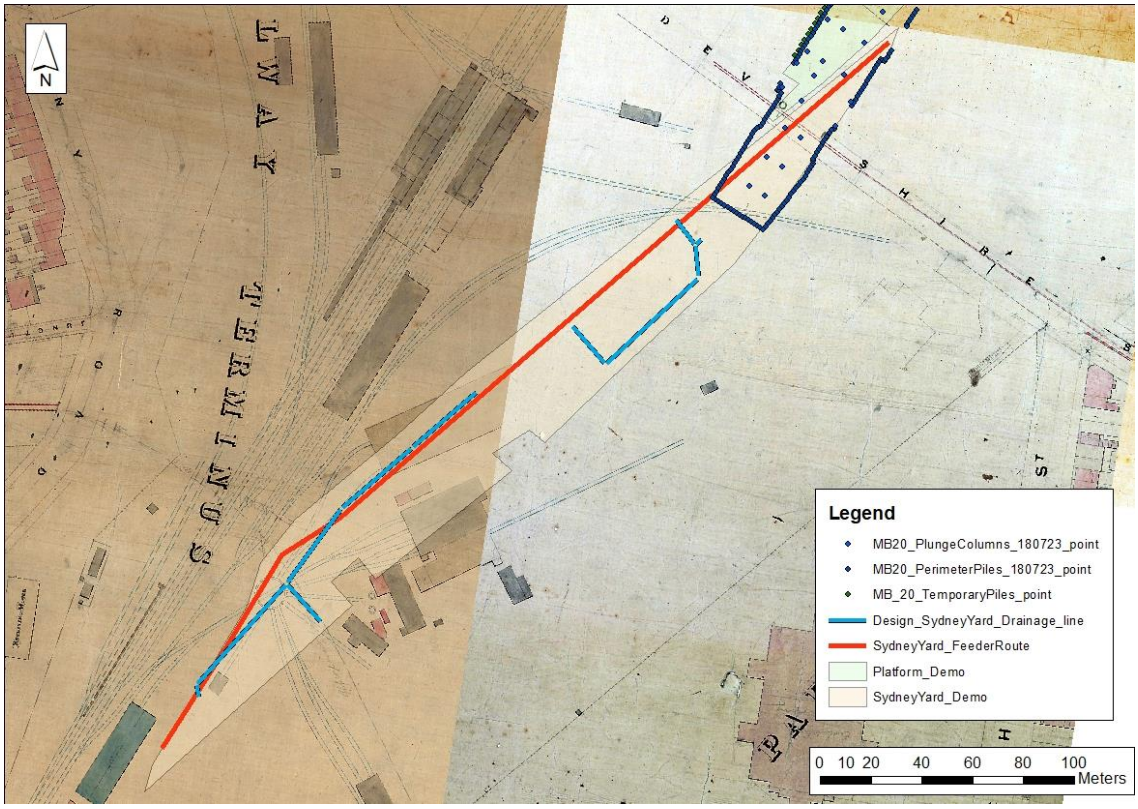


Figure 59: Central Station Main Works station box and enabling works overlain on the 1884 Waterboard Survey plan Sheet I2

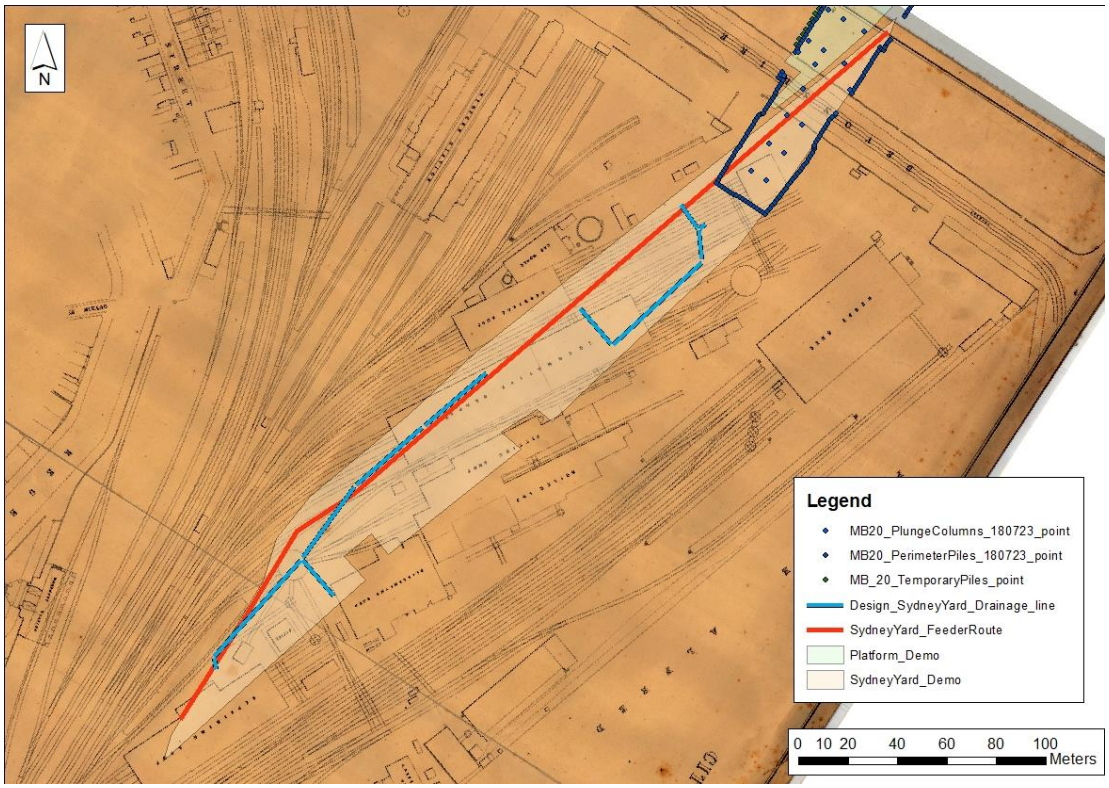
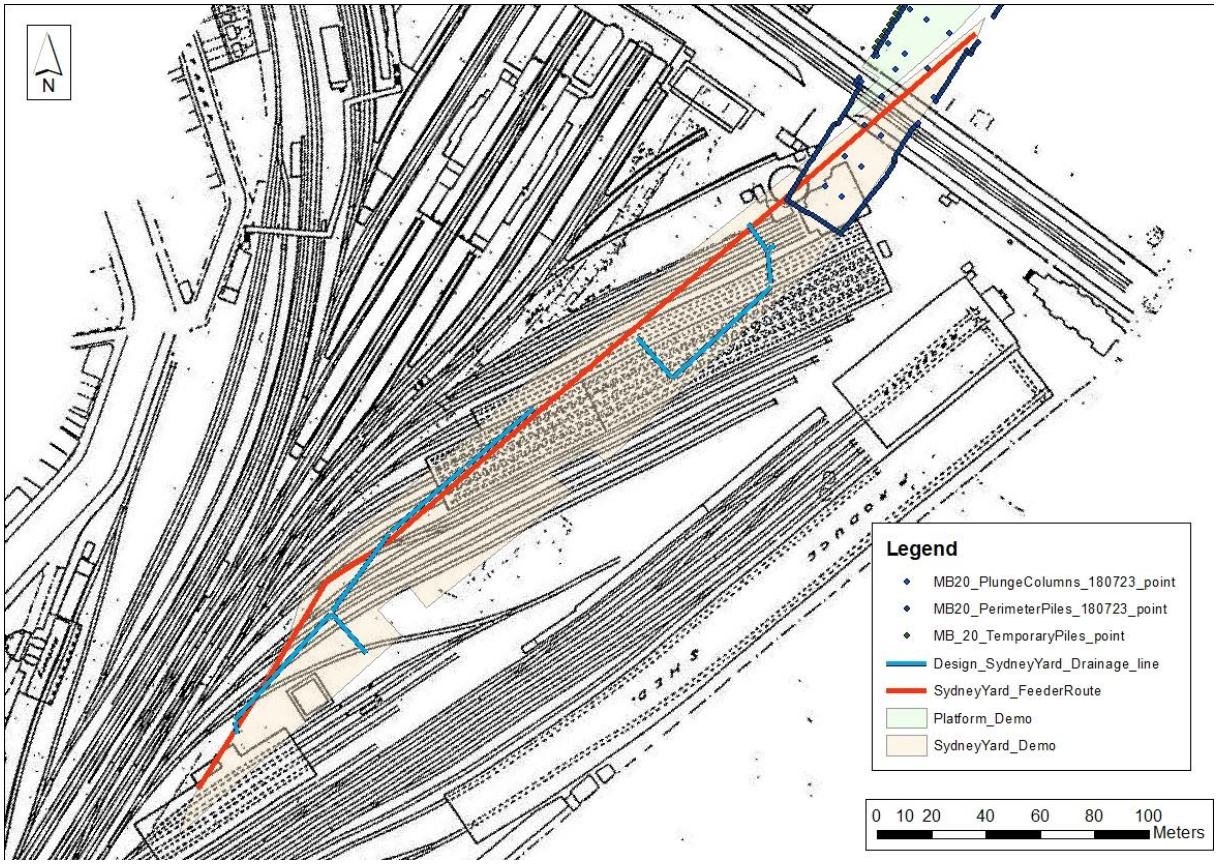


Figure 60: Central Station Main Works station box overlain on the 1884 Waterboard Survey plan Sheet I2 showing Engine Erecting Shop

Figure 61: Central Station Main Works station box overlain on the 1884 Waterboard Survey plan Sheet S2

Figure 62: Central Station Main Works station box and enabling works overlain on the 1896 plan of Sydney Station



4.4.3 Phase 3 (1900 – 1930) twentieth century land resumptions and station expansion.

Land use during this phase was predominantly associated with the enlargement of Central Station north of Devonshire Street and the large-scale earthworks required for this expansion. Exhumation of burials of the Devonshire Street Cemetery occurred. Large areas of tunnels, basements and below station services were excavated. Existing station sidings and facilities in southern part of the station were renovated.

The 1901 plan shows the Central Station Main Works station box overlain over the plan of the Devonshire Street Cemetery. This plan was drawn in 1901 to show the land to be resumed for Central Station. This plan demonstrates that the footprint of the Central Station Main Works station box would potentially impact the locations of external and internal boundary fences and grave sites of Devonshire Street Cemetery.

As discussed earlier, the construction of the third Central Station resulted in the removal of the burials of Devonshire Street Cemetery. Excavation for the third station structure is likely to have removed archaeological remains of the burials and internal fencing (which appear from photographs to have been a simple timber fence). Evidence of the footing for a boundary fence along Elizabeth Street has recently been located as part of the CSELR works, although this section of the boundary fence may have survived as the location is outside of the third Central Station construction works.[143]

The impact of construction on Sydney Yard was much less as the new station was constructed and built up to existing track levels. The original buildings in Sydney Yard were mostly demolished, after

[143] As part of the CSELR works. Artefact Heritage *in preparation.*

Central Station was completed in 1906 to allow passenger and goods services to continue. The structures observed in the 1884 and the 1896 plans were demolished.

The 1903 plan shows the new Central Station (Figure 64 and Figure 65). The Devonshire Street Cemetery has been removed and Devonshire Street has become a tunnel. The location of the structures observed in the 1884 and the 1896 plans is now used for sidings. The offices and repairing shop for locomotives and carriages have been removed, and a new 60ft turntable was constructed where the former blacksmiths shops was located. The demolition of the buildings may have left footings as the installation of new track may not have required deep earthworks.

Sydney Yard was rearranged yet again in the 1920s with the construction of the City Railway. In particular, the area of the flyovers was excavated, and this would have removed any archaeological evidence of the buildings associated with the railway workshops. At Central Station the works involved converting dead-end platforms 16 to 19 and horse loading platform 20 into island platforms. The 60ft turntable was removed (potentially as part of the excavations for the construction of the flyovers) and the carriage shed was relocated.

Figure 66 is a diagram showing the flyovers and the Eastern Carriage Sheds, Cleaners Amenities building and the short-lived Central Signal Box. The role of the Eastern Carriage Sheds was to shelter carriage sets where they could be cleaned and prepared for their next period of service. At this stage there were a large number of passenger trains leaving Central Station on a daily basis and reaching to the outer limits of the railway network. Clean carriages were an important part of that function.

The Rolling Stock Officers building was built between 1943 and 1949 as it does not appear on the 1943 aerials but does appear on the 1949 aerial images.

The eastern carriage sheds were constructed in 1927 but were demolished in the mid-1980s as the NSW Railways moved from locomotive hauled trains to essentially self-propelled trains such as the XPT. The Cleaners Amenities and the Rolling Stock Offices Buildings remain in situ.

The large-scale expansion of Central Station in 1906 – 1926 involved extensive excavation works and the construction of the present structures on the site today. Archaeological remains associated with this phase of construction may be present. Former workshops and sheds that were constructed in the early twentieth century may be difficult to distinguish from the successive phases of development of rail infrastructure that preceded it (Figure 67 and Figure 68). The development of the carriage works in nearby Eveleigh moved much of the train construction and maintenance facilities away from Central Station and fewer workshops and construction areas were developed after 1926.

The present-day above-ground railway platforms had all been originally completed by the 1920s, although they have been subsequently altered and extended since their original construction (Figure 69). Alterations include the excavation and construction of new below-platform utility services, the extension of platforms 1 and 2/3 and several phases of resurfacing and platform elevation adjustment. In particular, renovations to the station platforms during the 1990s laid several courses of brick to increase the height of the platforms.

Archaeological remains relating to the original platforms would include brick former platform surfaces, brick retaining walls and footings for former canopy supports. Subsurface platform surface and wall fabric are likely to have intruding fabric from subsequent concrete and brick platform modifications.[144] Early twentieth century services such as terracotta drain pipes which have been identified through NDD during early works as part of the Central Station Main Works could also be present.

[144] Australian Museum Consulting, 2015. *Heritage Platforms Conservation Management Strategy*, report prepared for Sydney Trains. pp. 10 – 11.

Other archaeological remains could consist of twentieth century access pits to drains, rail infrastructure, stanchion pads, loose rail and sleepers, rail bolts, and disused signalling equipment.

Figure 63: Central Station Main Works station box overlain on the 1901 plan of resumptions

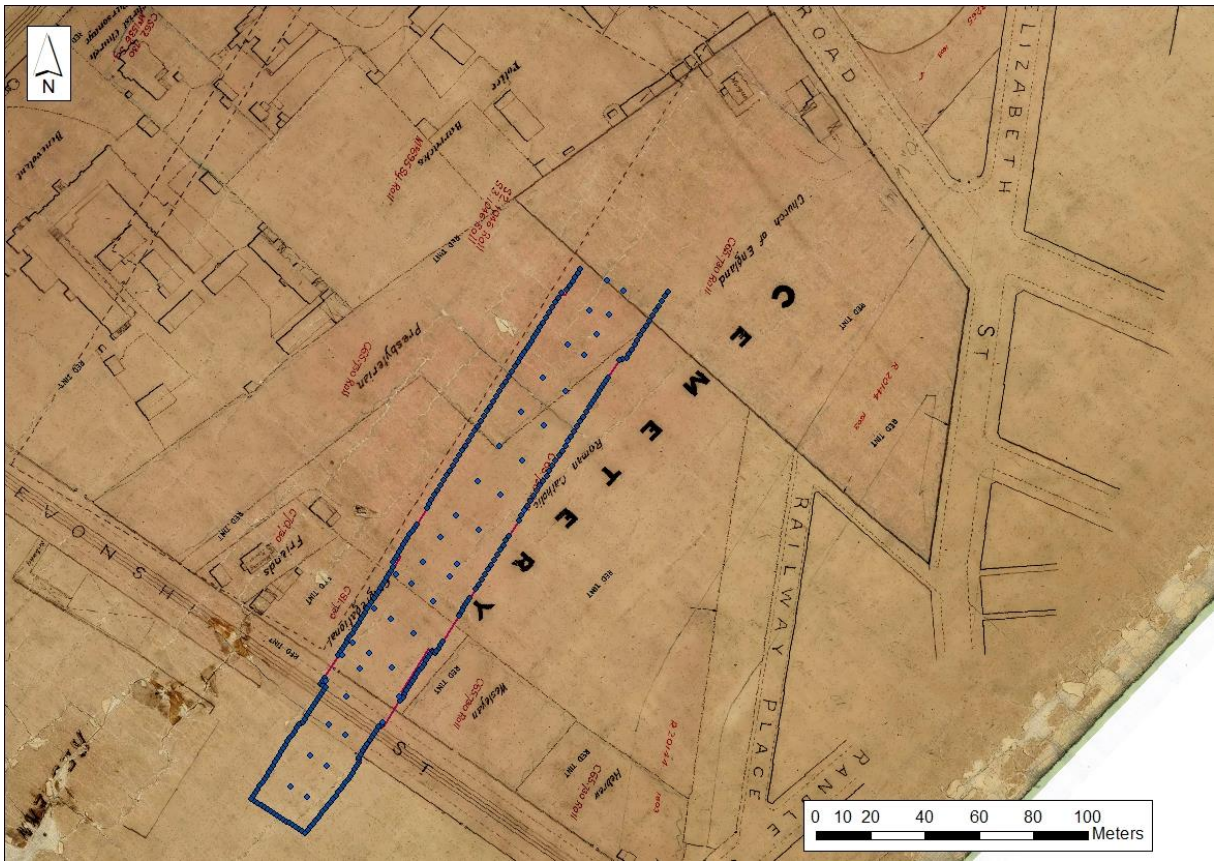


Figure 64: Central Station Main Works station box overlain on the 1903 plan of Central Station

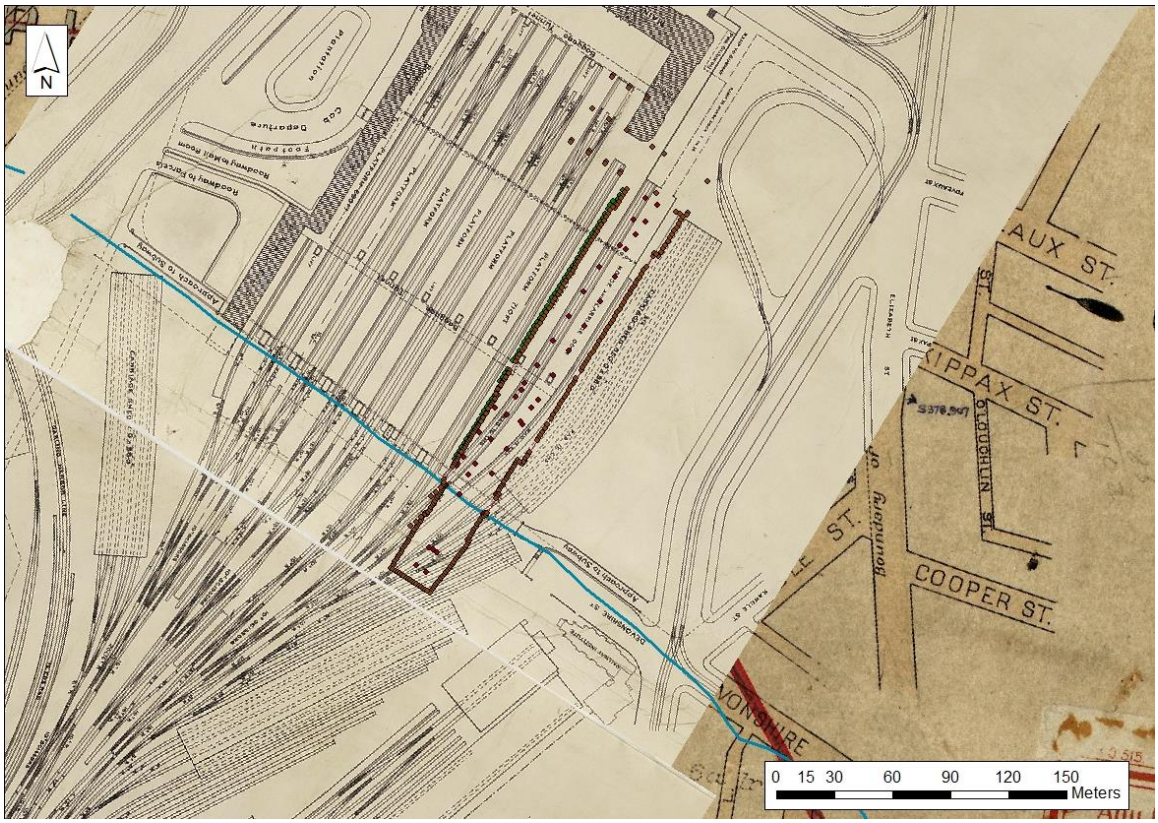


Figure 65: Central Station Main Works station box and enabling works overlain on the 1903 plan of Central Station

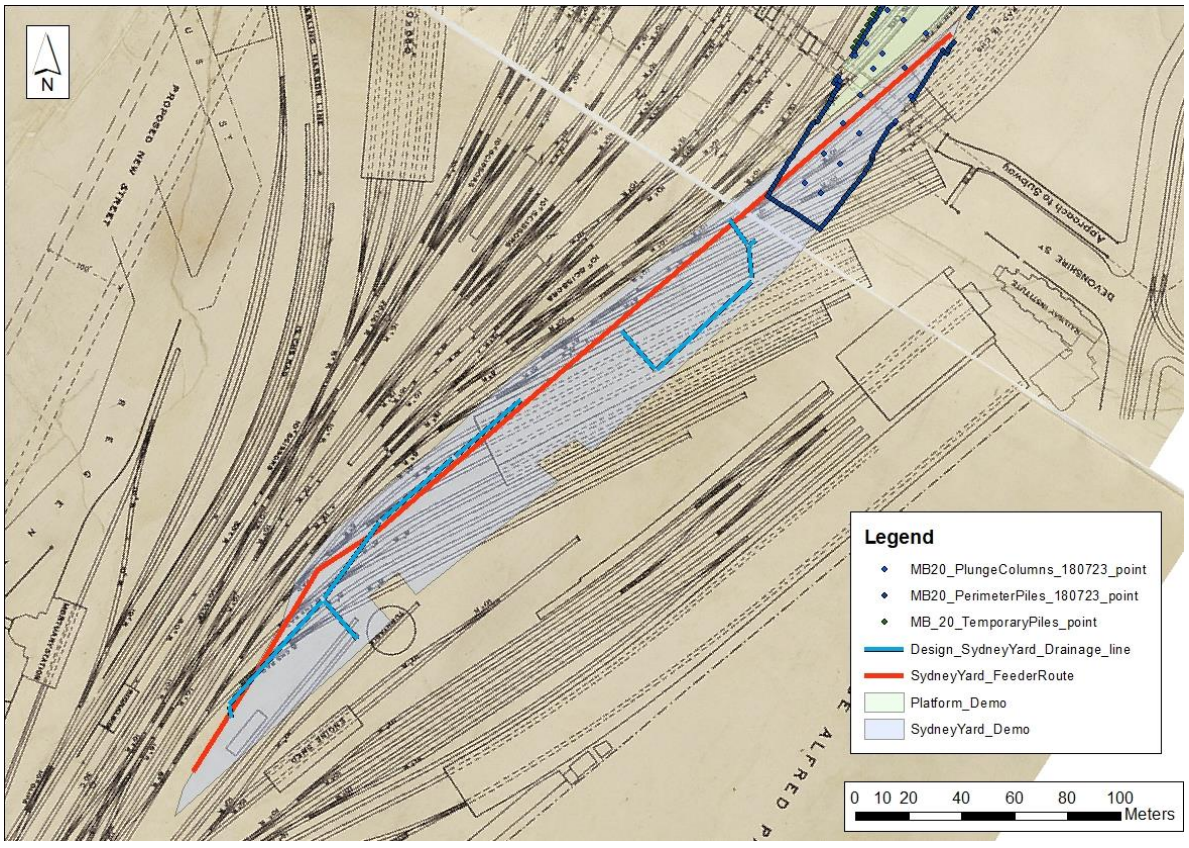


Figure 66: Central Station – signal diagram showing the flyovers, Eastern carriage shed and Signal box (not to scale)

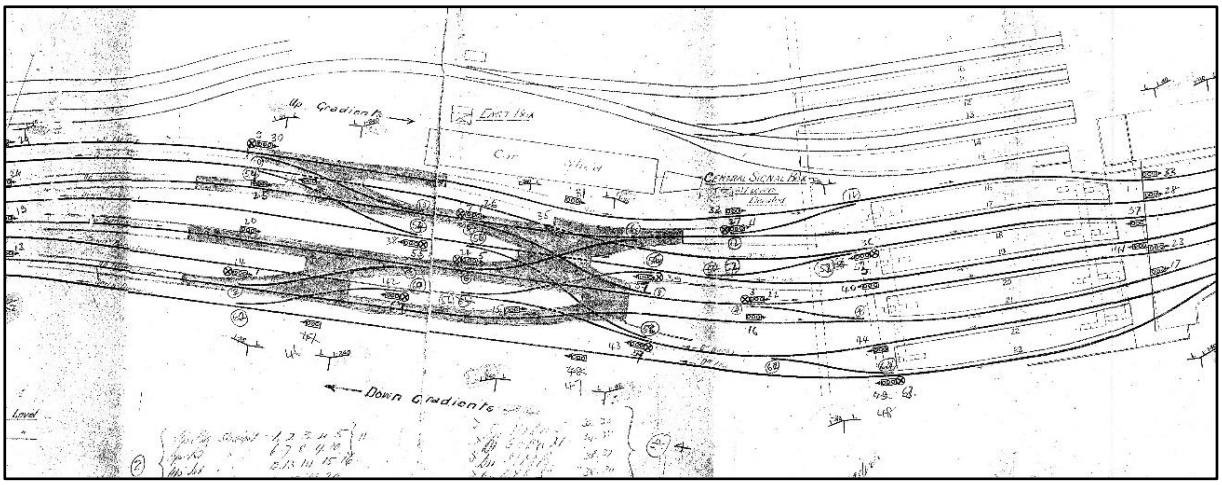
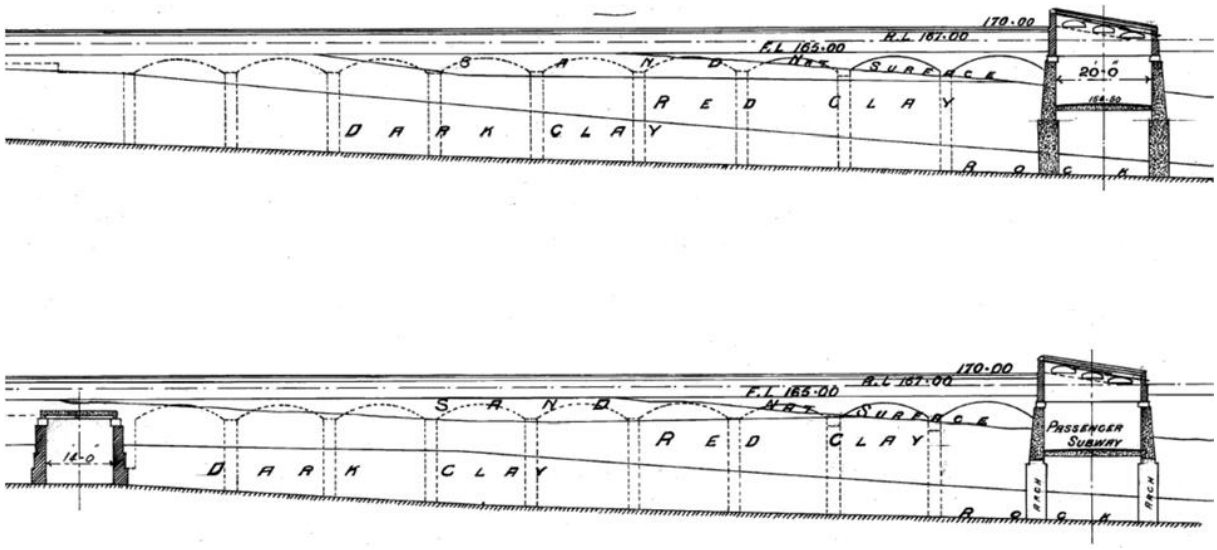


Figure 67: Photograph of the cleared Devonshire Street Cemetery in 1902[145]

[145] State Library of NSW FL1130715

Figure 68: Zoomed in photograph showing some of the buildings extant within the station box area in 1902[146]

Figure 69: Extract of design drawings for Platform 12 and 13 (above) and Platforms 10 and 11 (below) from 1902[147]



4.4.4 Phase 4 (1930 – present) mid- to late-twentieth century station modifications.

During this phase further excavation of below-ground service tunnels was conducted and new underground platforms were constructed. The carriage sheds and rail sidings areas were also redeveloped.

The 1949 aerial shows the platforms of Central Station as well as the carriage sidings (with carriages) and the buildings that are now currently on the site (Figure 70 and Figure 71).

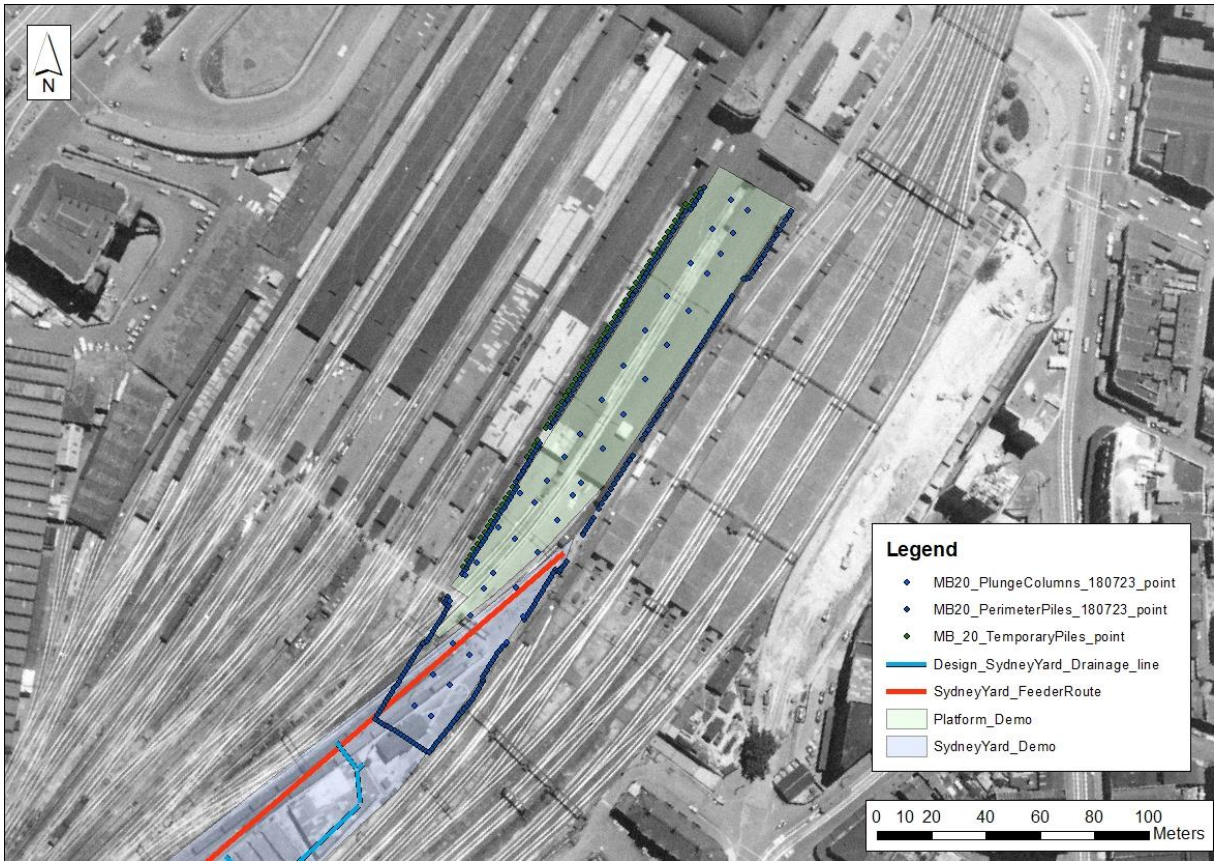
The east carriage shed, formerly located in the Sydney Yard area, was a series of approximately 20 edge-on carriage sheds that ran for much of the length of the siding. These were removed after 1987. Archaeological deposits associated with the carriage sheds would involve brick and concrete footings;

[146] State Library of NSW FL1130715
[147] Taken from AGJV 2018. *Geotechnical report*

rail infrastructure such as rail lines and sleepers; and evidence related to the diesel and electric carriages and engines.

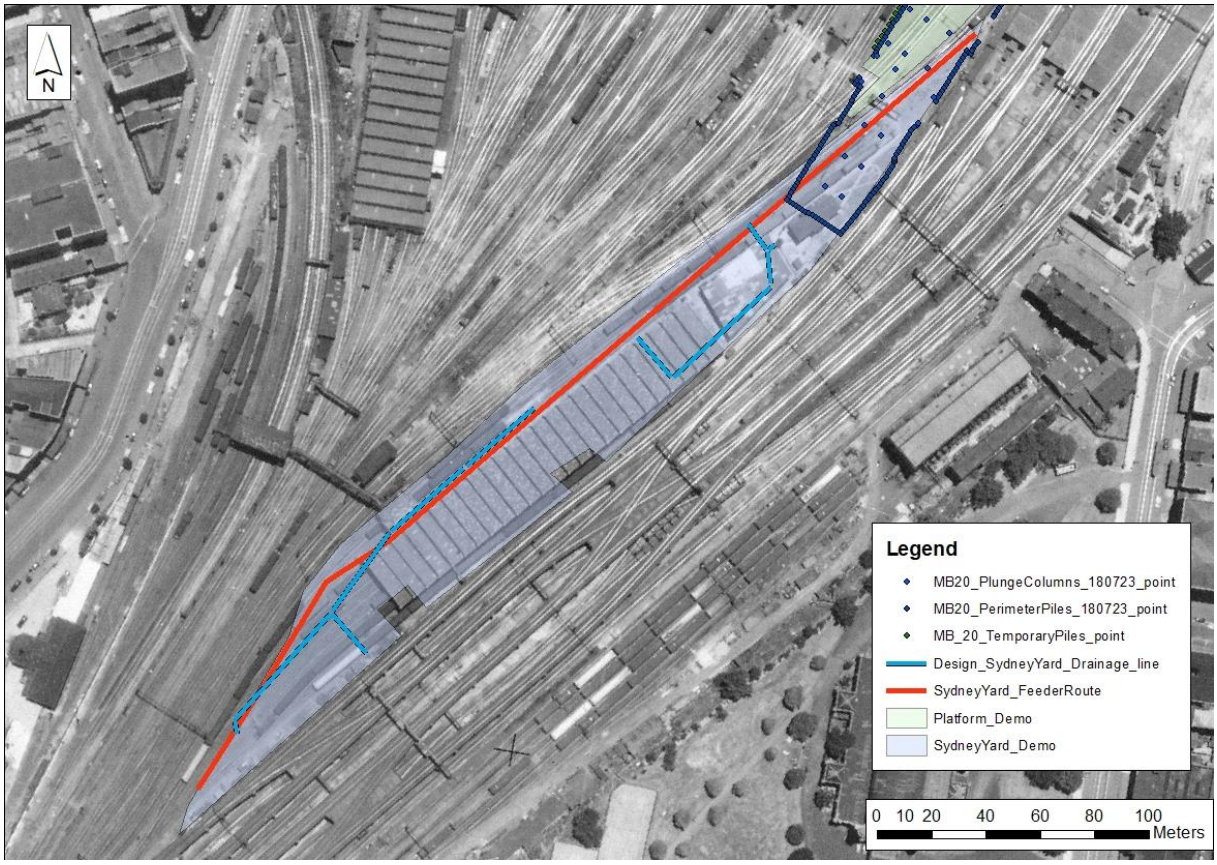
Archaeological remains dating to this period would consist of modern drainage pits, drains, modern utilities, modern rail infrastructure, and stanchion bases. This has been conclusively identified during the SYAB excavations.

Figure 70: Central Station Main Works station box overlain on the 1949 Aerial image of Central Station[148]



[148] 15 December 1949, Historical Atlas of Sydney

Figure 71: Central Station Main Works station box and enabling works overlain on the 1949 Aerial image of Central Station[149]



4.4.5 Summary of potential archaeological remains

Archaeological potential is defined by the NSW Heritage Office Archaeological Assessment Guidelines[150] as 'the degree of physical evidence present on an archaeological site'. This section draws on the above historical analysis to consider archaeological potential of the study area.

Archaeological potential can be subdivided into the following categories, based on the likely occurrence of archaeological material and level of historical land disturbance:

- 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.

Based on historical information, land use data and evidence of sub-surface impacts, a summary of the potential archaeological remains in the Central Station Main Works site is provided in Table 2 below. A summary of the historical overlays is presented in Figure 72 and Figure 73.

[149] 15 December 1949, Historical Atlas of Sydney
[150] Heritage Office 2009

Table 2: Summary of potential archaeological remains at the Central Station Main Works station box site

Site Code	Phase	Likely archaeological remains	Potential
CS 2	**1 (1788 – 1855)**	Devonshire Street Cemetery located in this area. No documented structures located within this area. Area contained graves, tombstones and grave cuts. The area was located in the Church of England, Presbyterian, Wesleyan and Roman Catholic burial grounds. Potential archaeological remains such as skeletal material, coffin furniture, personal items such as jewellery and clothing, coffin timber, disarticulated human skeletal material and artefacts. The outer perimeter of the cemetery had a 4-foot 6-inch brick outer fence in the southern part of this area.	Low
	2 (1855 – 1900)	Devonshire Street Cemetery located in this area, no burials continued after the 1860s. Isolated artefacts from deposited nineteenth century rubbish.	Low
	3 (1900 – 1930)	Third Central Station original railway platforms located in this area. Potential archaeological remains would include brick former platform surfaces and retaining walls, and former footings for original canopy supports. Other archaeological remains could consist of twentieth century access pits to drains, terracotta pipes, rail infrastructure, stanchion pads, loose rail and sleepers, rail bolts, and disused signalling equipment.	Moderate
	4 (1930 – Present)	Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure. Archaeological remains dating to this period would consist of modern drainage pits, drains, modern utilities, modern rail infrastructure, and stanchion bases.	Moderate-High
CS 3	**1 (1788 – 1855)**	Devonshire Street Cemetery located in this area. No documented structures located within this area. Area contained graves, tombstones and grave cuts. The area was located in the Church of England, Presbyterian, Wesleyan and Roman Catholic burial grounds. Potential archaeological remains such as skeletal remains, coffin furniture, personal items such as jewellery and clothing, coffin timber, disarticulated human skeletal material and artefacts. The outer perimeter of the cemetery had a 4-foot 6-inch brick outer fence in the southern part of this area.	Low
	2 (1855 – 1900)	Devonshire Street Cemetery located in this area, no burials continued after the 1860s. Isolated artefacts from deposited nineteenth century rubbish.	Low
	3 (1900 – 1930)	Third Central Station original railway platforms located in this area. Potential archaeological remains would include brick former platform surfaces and retaining walls, and former footings for original canopy supports. Other archaeological remains could consist of twentieth century access pits to drains, terracotta pipes, rail infrastructure, stanchion pads, loose rail and sleepers, rail bolts, and disused signalling equipment.	Moderate
	4 (1930 – Present)	Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure. Archaeological remains dating to this period would consist of modern drainage pits, drains, modern utilities, modern rail infrastructure, and stanchion bases.	Moderate-High
CS 4	**1 (1788 – 1855)**	Area located within Cleveland Paddocks, no evidence of built structures in this area. Potential for evidence of former wooden boundary fences, postholes, field drains, isolated artefact scatters.	Nil - Low

Site Code	Phase	Likely archaeological remains	Potential
		First and second railway station expansion (1855 and 1874) located in this area. This area was predominantly the location of the main rail sidings and train storage areas, including the locomotive shops, carriage shop, fitting shop, blacksmiths shop, and repairing shop. Buildings consisted of stone, wood and brick train sheds and workshops, of which former footings and discarded industrial objects are likely to be present. Rail siding lines also present, likely partially remaining below modern ground surface. Rail infrastructure from this period could include former signalling equipment and rail points as well as rail beams, sleepers and ballast.	
	2 (1855 – 1900)	A train turntable was located in this area from 1855 until 1895. The turntable was likely infilled during the third phase of Central Station's expansion in 1901. A smaller turntable also appears in the 1884 plan. Remains associated with the turntables would include the outer brick-lining of the turntable; a metal circular rail around the lower base of the turntable supported by wooden sleepers and footings; the possible remains of a steel rail bridge used to support the locomotives; and mechanical remains of the central pivot to the rail bridge. Remnants of the original fabric of the Prince Alfred Sewer may be located in this area. Remains associated with the sewer could include sandstone culverts, sandstock brick barrel drains and isolated artefact deposits.	Moderate - High
	3 (1900 – 1930)	East carriage shed was constructed during this period, demolished in 1987. Potential remains include postholes, footings, surfaces and artefacts. The 1903 turntable was constructed but is likely impacted and was not seen in later plans	Moderate - High
	4 (1930 – Present)	Area is predominately open ground with sealed road and side yards, with three existing structures on the site (two sheds, one brick building).	Nil

Figure 72: Historical overlay for station box

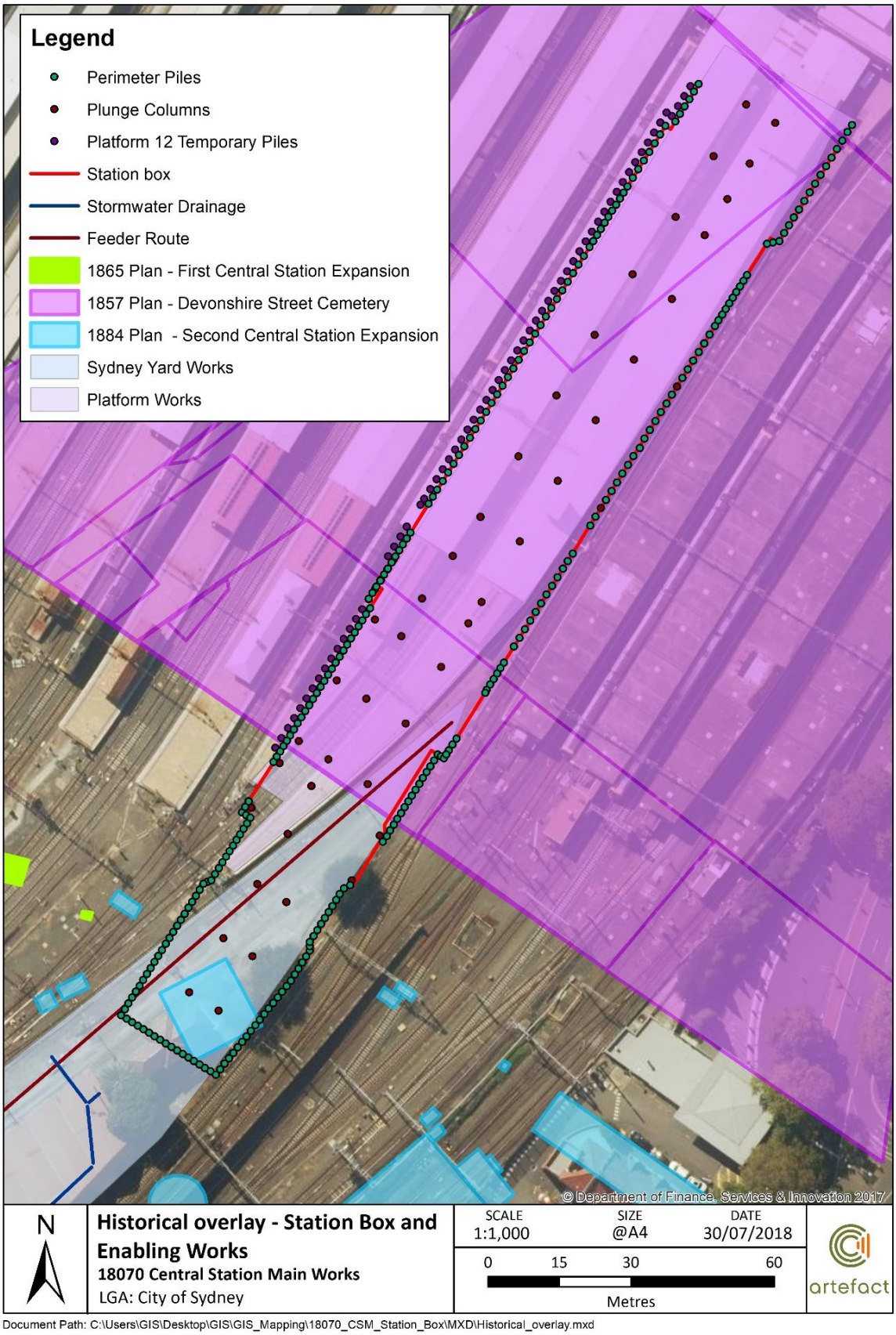


Figure 73: Historical overlay for station box and enabling works area

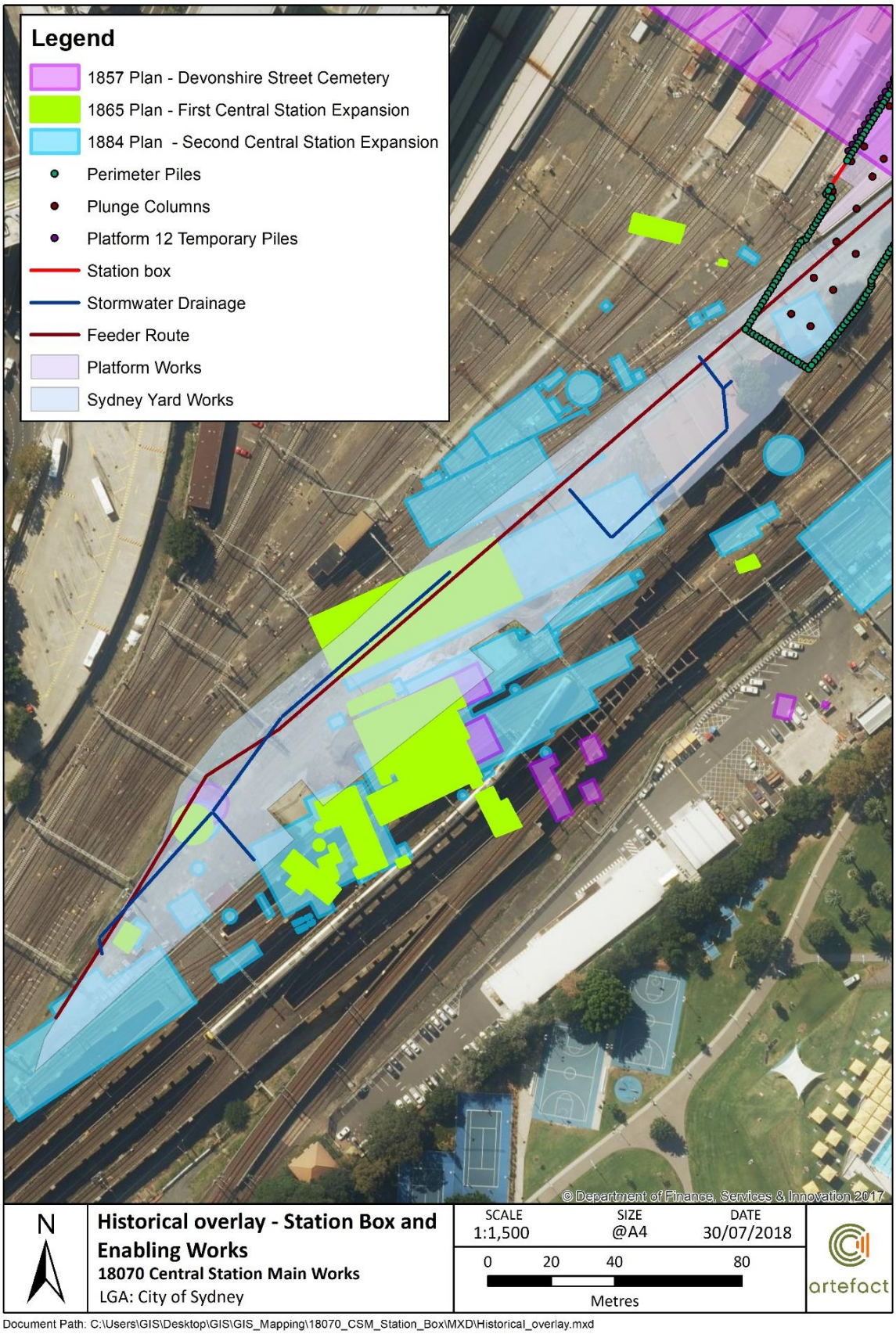
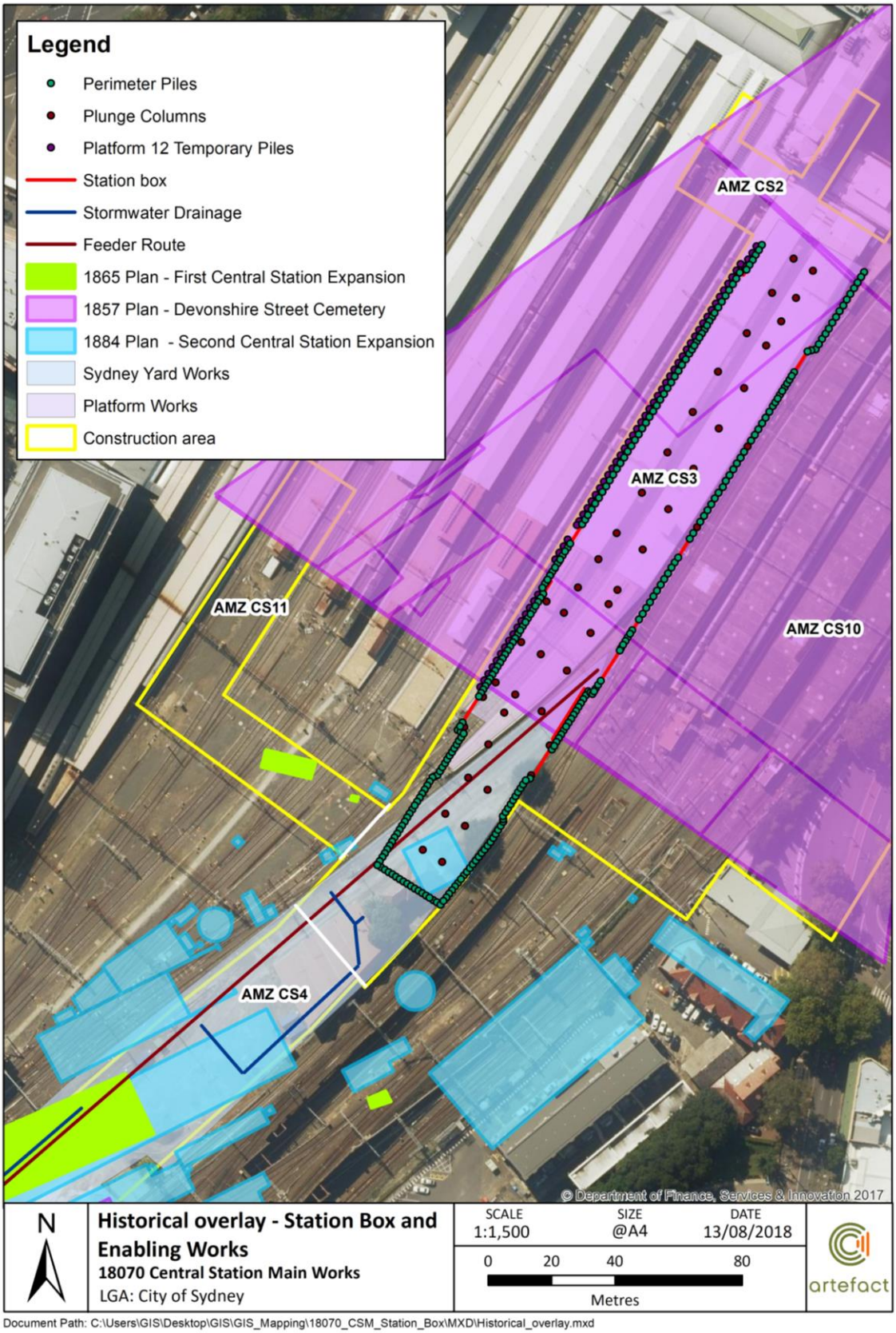
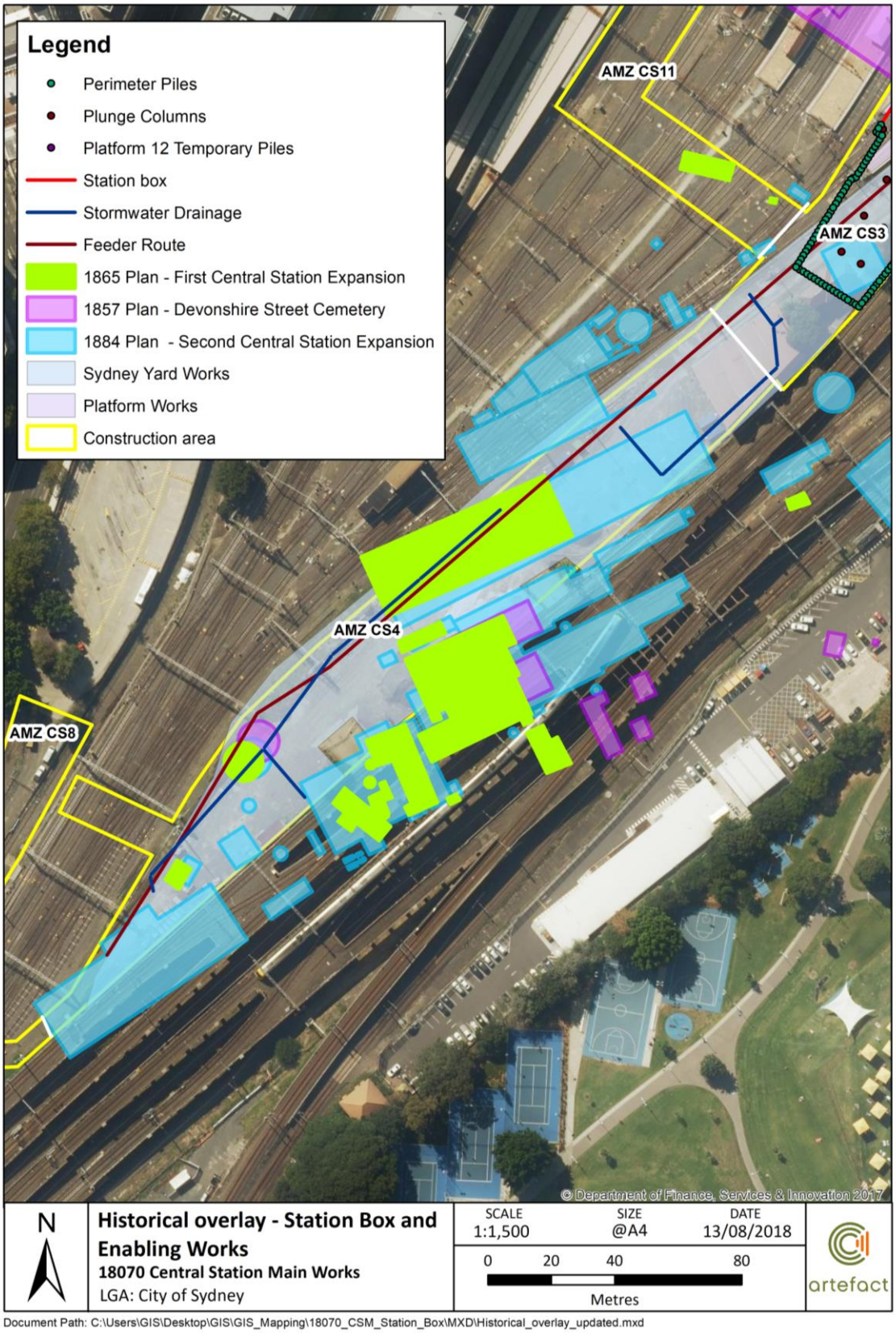


Figure 74: Historical overlay for station box showing AMZs



Document Path: C:\Users\GIS\Desktop\GIS\GIS_Mapping\18070_CSM_Station_Box\MXD\Historical_overlay.mxd

Figure 75: Historical overlay for station box and enabling works area showing AMZs



5.0 ARCHAEOLOGICAL SIGNIFICANCE

5.1 Methodology

The following assessments of archaeological significance have been adapted from the AARD. The results from the SYAB project, and the results from the early works monitoring for Central Station Main Works have also informed the assessment of the level of significance of potential archaeological remains within the study area. A reassessment of significance would be provided in the Excavation Report once the nature of finds are known and the research question have been addressed.

5.2 NSW heritage assessment guidelines

Determining the significance of heritage items or a potential archaeological resource is undertaken by utilising a system of assessment centred on the *Burra Charter* of Australia ICOMOS. The principles of the charter are relevant to the assessment, conservation and management of sites and relics. The assessment of heritage significance is outlined through legislation in the Heritage Act and implemented through the *NSW Heritage Manual* and the *Archaeological Assessment Guidelines*.[151]

If an item meets one of the seven heritage criteria, and retains the integrity of its key attributes, it can be considered to have heritage significance. The significance of an item or potential archaeological site can then be assessed as being of local or state significance. If a potential archaeological resource does not reach the local or state significance threshold, then it is not classified as a relic under the Heritage Act.

'State heritage significance', in relation to a place, building, work, relic, moveable object or precinct, means significance to the State in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.

'Local heritage significance', in relation to a place, building, work, relic, moveable 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.[152]

The overall aim of assessing archaeological significance is to identify whether an archaeological resource, deposit, site or feature is of cultural value. The assessment will result in a succinct statement of heritage significance that summarises the values of the place, site, resource, deposit or feature. The heritage significance assessment criteria are as follows:

Table 3: NSW heritage assessment criteria

Criteria	Description
A – Historical Significance	An item is important in the course or pattern of the local area's cultural or natural history.
B – Associative Significance	An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.

[151] NSW Heritage Office 1996; 25-27
[152] This section is an extract based on the Heritage Office Assessing Significance for Historical Archaeological Sites and Relics 2009:6.

Criteria	Description
C – Aesthetic Significance	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.
D – Social Significance	An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.
E – Research Potential	An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.
F – Rarity	An item possesses uncommon, rare or endangered aspects of the local area's cultural or natural history.
G - Representativeness	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places of cultural or natural environments (or the cultural or natural history of the local area).

5.3 Research potential

In 1984, Bickford and Sullivan examined the concept and assessment of archaeological research potential; that is, the extent to which archaeological resources can address research questions. They developed three questions which can be used to assess the research potential of an archaeological site:

- 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?
    - Other substantive questions relating to Australian history?
    - Other major research questions?

In the 2009 guidelines *Assessing Significance for Historical Archaeological Sites and 'Relics'*, the NSW Heritage Division has since provided a broader approach to assessing the archaeological significance of sites, which includes consideration of a site's intactness, rarity, representativeness, and whether many similar sites have already been recorded, as well as other factors. This document acknowledges the difficulty of assessing the significance of potential subsurface remains, because the assessment must rely on predicted rather than known attributes.[153]

An archaeological site can have high potential for archaeological remains, and yet still be of low research potential if those remains are unlikely to provide significant or useful information. A site with low archaeological research potential may be of heritage significance under the other heritage criterion.

5.4 Assessment of significance

The assessment of significance has been arranged to address each phase and refers to the NSW heritage assessment criteria in the context of research potential (Table 2). This assessment has not

[153] NSW Heritage Branch 2009

been updated form the AARD as no new information has been provided that would result in substantially changes.

5.4.1 Devonshire Street Cemetery

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 re-deposited 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 1860 when the cemetery closed, are rare and highly valuable archaeological resources.

However, the heritage significance of these remains is constrained by the degree of intactness of any potential deposits. It is likely that the majority of the graves were exhumed and that the original landscape that they were buried in has been nearly entirely disturbed. The possibility of deeper deposits remaining below the level of Central Station cannot be discounted. Even if burials in these were removed, the location and alignment of grave cuts associated with these interments would provide important archaeological information. Evidence of the exhumation may also be present, for example trenches within the residual clay soils that are likely to have been present beneath the aeolian sands of the cemetery.

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

5.4.2 First and Second Railway Station Expansion

The first railway station at Central (then Redfern Station) represents the terminus of the second railway in Australia and the first railway in New South Wales. The construction of this railway, station, and associated buildings was considered a significant event in the colony at the time, as demonstrated by the crowds that turned up for both the beginning of construction of the station and for the first train trip at the station. The technology to construct locomotives and railway infrastructure in the 1850s is relatively rare compared to the majority of rail infrastructure apparent today, which is predominantly of a later period of manufacturing. Material evidence of the buildings associated with the first railway station, such as the turntable and carriage shops, would be State heritage significant because of their potential research and technical value, and historical connections with the development of infrastructure in NSW.

Archaeological remains associated with the second railway station, including material evidence of the locomotive shops, carriage shop, fitting shop, blacksmiths shop, and repairing shop, would also have historical associations. The second railway station was the central terminus of the expanding railway network in the 1870s. By the 1870s when the second station was constructed, railway networks had

been established in rural areas in order to transport goods, particularly wool, to Sydney ports for export. As the terminus point and one of the principal maintenance stations for the goods rail network, archaeological remains associated with the second railway station could have historic, associative, technical values and research potential.

Due to the continual upgrading of the station facilities, in particular with the construction of Central railway station in 1901-06, material remains associated with the first and second railway stations are not likely to be substantially intact. In the study area, there is a possibility for remnant platform structures to be located within or below present station platforms south of the Devonshire Street pedestrian tunnel, however they are not likely to be substantially intact.

A number of carriage sheds and workshops may be located in the study area, dating from the first station (1850's) and second station. Footings related to stone and brick buildings in this area may exist below the present Sydney Yard ground surface. Intact remnants of some of these buildings may represent some of the earliest material evidence of railway infrastructure in Australia. Residual rail infrastructure such as signalling equipment and railway point switches could provide evidence of continuation of use of the station, as well as evidence of technological change over time. Archaeological remains would have historical and associative significance and, if relatively intact, could provide information about railway functions and engineering at the advent of the rail industry in NSW.

The Prince Alfred Sewer was originally constructed in the study area in the 1850s, as part of the expansion of the metropolitan Sydney sewerage system. It was later linked to further sewerage expansion in the Newtown and Camperdown areas in the 1870s. Original fabric of this sewerage system is an example of the growth of municipal institutions in Sydney in the 1850s, improving attitudes towards public health in the nineteenth century and would show material techniques of infrastructure development from that time.

A 40ft diameter locomotive/wagon turntable was constructed in the first station in 1855 for the turning of rolling stock, and continued in use until 1895. It was no longer present after the construction of the third station in 1906 – 1926. The original turntable would have been constructed as the companion turntable to the one excavated in 1995 at the first Parramatta railway station. While the turntable may not be completely intact it is likely that a substantial portion of the object may remain in the Sydney Yard. Despite several historical plans of the first and railway stations the turntable is depicted in, there is little other archival evidence of its construction and use. A smaller turntable appears in the 1884 plan which would have historical and potentially technical significance for demonstrating the development of Central Station and rail technology, depending on the extent and intactness of the remains.

While the significance of Central Station as a built heritage item is at a State level, the potential archaeological remains associated with previous phases of its development may not reach this level of heritage significance. Though of historical importance, the potential remains are not expected to be intact, and therefore their other values such as technical or research potential lessen. The potential archaeological remains associated with the first and second railway station are of local heritage significance (Criteria A, B and C). Should intact and extensive remains be present, these would be of State significance (Criteria A, E and F).

5.4.3 Original Platforms from Third Central Station Expansion

The original Central Station platforms were constructed as brick masonry walls with a vertical profile. In accordance with the Heritage Platforms Conservation Management Strategy[154], this type of platform design is not recognised as an uncommon or unique material design. Design plans of the

[154] Australian Museum Consulting May 2015. *Heritage Platforms Conservation Management Strategy.*

original platform configuration for the third Central station are accessible. However, the sequence of platform modifications since their construction is likely to provide information on the alteration over time of the operation of Central station. It is likely that portions of these former platform surfaces and walls are significantly intact.

Intact structures of the original platform surfaces for the third Central station would meet the threshold of local significance (Criteria A and C).

5.4.4 Other archaeological remains within the Central Station study area

Archaeological remains associated with buried infrastructural elements of the third railway station, are examples of the frequent upgrading of the technology and the continual alteration of the railway station. Former rail lines and building footings associated with post-1906 construction would unlikely meet the threshold of local heritage significance.

5.5 Statement of archaeological significance

It is unlikely that intact archaeological remains of the Devonshire Street Cemetery are located within the Central Station Main Works site. However, there is limited potential for truncated or ex situ remains. Legible archaeological evidence of the former cemetery is a rare resource and would be of high research potential. Investigation of such remains could provide knowledge of the nature of life and death in the early to mid-nineteenth century. Such remains would be of State significance.

Potential archaeological remains associated with the first and second railways would provide material evidence of the station's early development and changes in railway engineering and technology. There is moderate to high potential for truncated and disturbed remains in the Central Station Main Works site. These remains would be of local significance and of State significance if intact and extensive.

Intact structures of the original platform surfaces for the third Central station would meet the threshold of local significance. Other remains dating from the early to mid-twentieth century are unlikely to have research potential and are unlikely to reach the threshold for local significance.

5.6 Summary of significance potential archaeological remains

The following section outlines the potential archaeological remains for each site code within the study area and archaeological significance and has been divided by phase. It has been adapted from the AARD[155] and further refined through detailed historical research. It is illustrated in Figure 76 and Figure 78.

[155] Artefact 2016a

Table 4: Summary of significance of potential archaeological remains at the Central Station Main Works site

Site Code	Phase	Likely archaeological remains	Potential	Significance
CS 2	**1 (1788 – 1855)**	Devonshire Street Cemetery located in this area. No documented structures located within this area. Area contained graves, tombstones and grave cuts. The area was located in the Church of England, Presbyterian, Wesleyan and Roman Catholic burial grounds. Potential archaeological remains such as skeletal material, coffin furniture, personal items such as jewellery and clothing, coffin timber, disarticulated human skeletal material and artefacts. The outer perimeter of the cemetery had a 4-foot 6-inch brick outer fence in the southern part of this area.	Low	State
	2 (1855 – 1900)	Devonshire Street Cemetery located in this area, no burials continued after the 1860s. Isolated artefacts from deposited nineteenth century rubbish.	Low	State
	3 (1900 – 1930)	Third Central Station original railway platforms located in this area. Potential archaeological remains would include brick former platform surfaces and retaining walls, and former footings for original canopy supports. Other archaeological remains could consist of twentieth century access pits to drains, terracotta pipes, rail infrastructure, stanchion pads, loose rail and sleepers, rail bolts, and disused signalling equipment.	Moderate	Local
	4 (1930 – Present)	Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure. Archaeological remains dating to this period would consist of modern drainage pits, drains, modern utilities, modern rail infrastructure, and stanchion bases.	Moderate-High	N/A
CS 3	**1 (1788 – 1855)**	Devonshire Street Cemetery located in this area. No documented structures located within this area. Area contained graves, tombstones and grave cuts. The area was located in the Church of England, Presbyterian, Wesleyan and Roman Catholic burial grounds. Potential archaeological remains such as skeletal remains, coffin furniture, personal items such as jewellery and clothing, coffin timber, disarticulated human skeletal material and artefacts. The outer perimeter of the cemetery had a 4-foot 6-inch brick outer fence in the southern part of this area.	Low	State
	2 (1855 – 1900)	Devonshire Street Cemetery located in this area, no burials continued after the 1860s. Isolated artefacts from deposited nineteenth century rubbish.	Low	State
	3 (1900 – 1930)	Third Central Station original railway platforms located in this area. Potential archaeological remains would include brick former platform surfaces and retaining walls, and former footings for original canopy supports. Other archaeological remains could consist of twentieth century access pits to drains, terracotta pipes, rail infrastructure, stanchion pads, loose rail and sleepers, rail bolts, and disused signalling equipment.	Moderate	Local

Site Code	Phase	Likely archaeological remains	Potential	Significance
	4 (1930 – Present)	Expansion of Central Station, existing built heritage and sub-surface deposits relating to post-1901 station infrastructure. Archaeological remains dating to this period would consist of modern drainage pits, drains, modern utilities, modern rail infrastructure, and stanchion bases.	Moderate-High	N/A
CS 4	**1 (1788 – 1855)**	Area located within Government Paddocks, no evidence of built structures in this area. Potential for evidence of former wooden boundary fences, postholes, field drains, isolated artefact scatters.	Nil - Low	N/A
	2 (1855 – 1900)	First and second railway station expansion (1855 and 1874) located in this area. This area was predominantly the location of the main rail sidings and train storage areas, including the locomotive shops, carriage shop, fitting shop, blacksmiths shop, and repairing shop. Buildings consisted of stone, wood and brick train sheds and workshops, of which former footings and discarded industrial objects are likely to be present. Rail siding lines also present, likely partially remaining below modern ground surface. Rail infrastructure from this period could include former signalling equipment and rail points as well as rail beams, sleepers and ballast. A train turntable was located in this area from 1855 until 1895. The turntable was likely infilled during the third phase of Central Station's expansion in 1901. A smaller turntable also appears in the 1884 plan. Remains associated with the turntables would include the outer brick-lining of the turntable; a metal circular rail around the lower base of the turntable supported by wooden sleepers and footings; the possible remains of a steel rail bridge used to support the locomotives; and mechanical remains of the central pivot to the rail bridge. Remnants of the original fabric of the Prince Alfred Sewer may be located in this area. Remains associated with the sewer could include sandstone culverts, sandstock brick barrel drains and isolated artefact deposits.	Moderate - High	Local – State
	3 (1900 – 1930)	East carriage shed was constructed during this period, demolished in 1987. Potential remains include postholes, footings, surfaces and artefacts.	Moderate - High	Local
	4 (1930 – Present)	Area is predominately open ground with sealed road and side yards, with three existing structures on the site (two sheds, one brick building).	Nil	N/A

Figure 76: Areas of potential significant archaeology within station box area

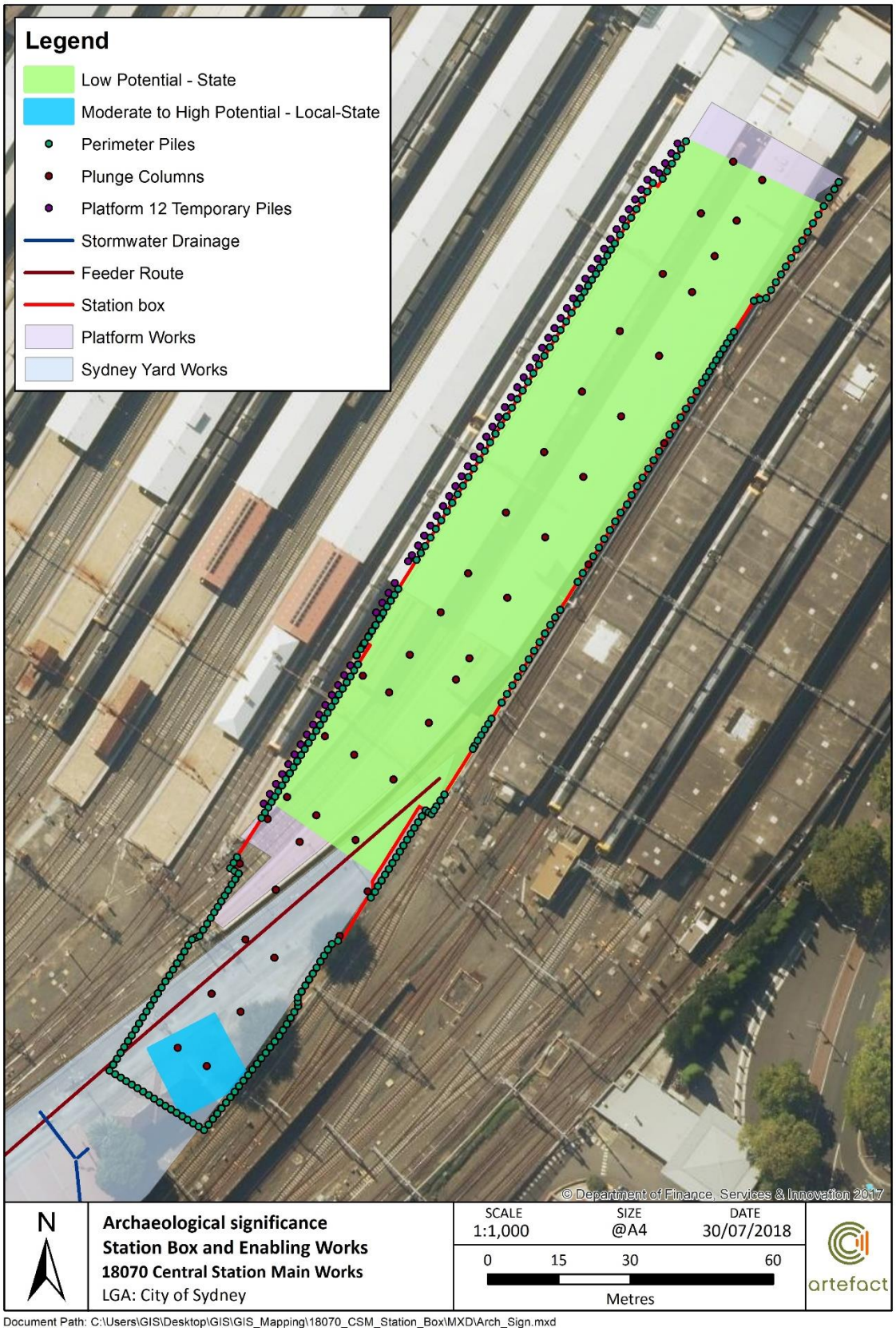
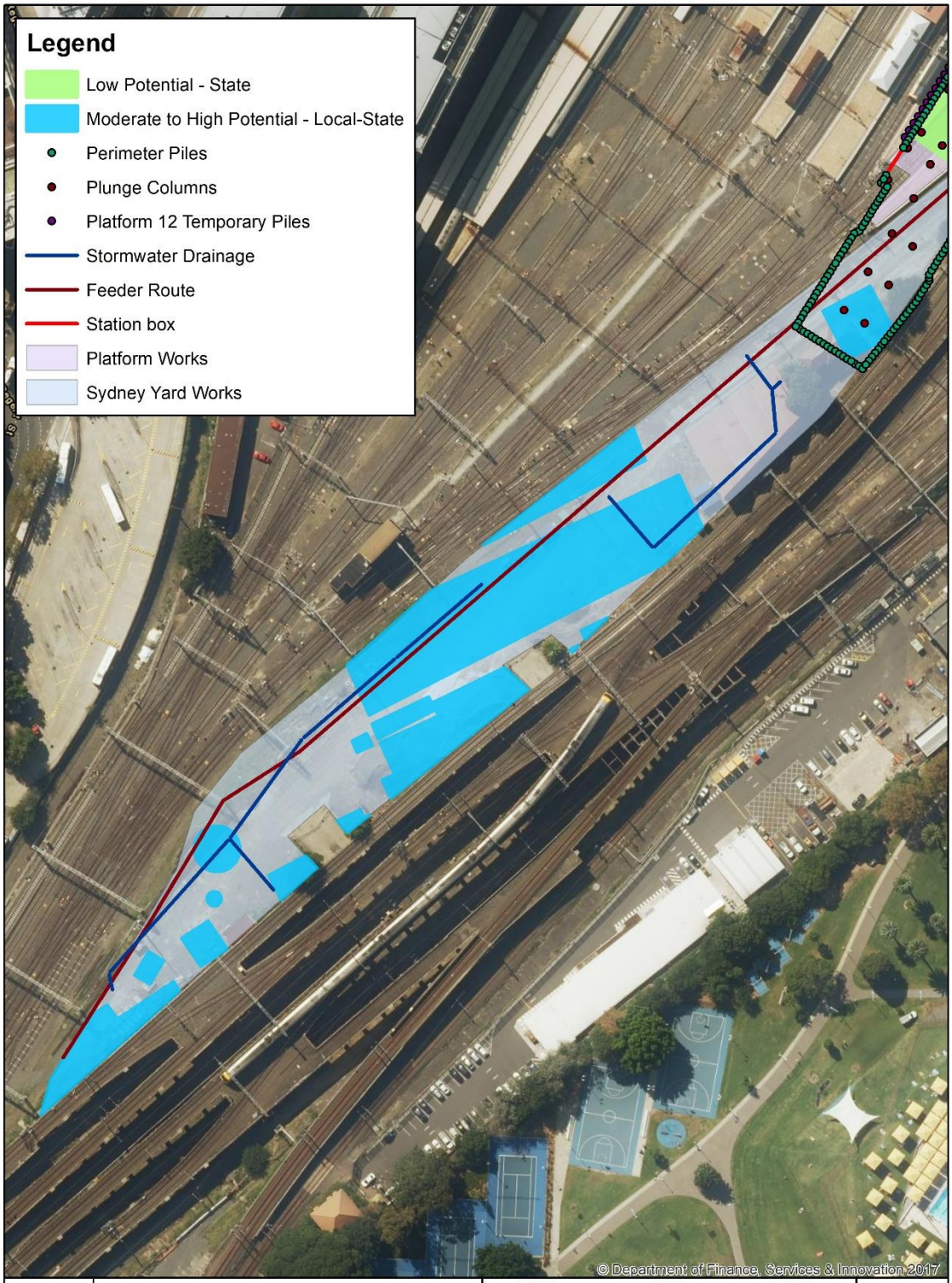


Figure 77: Areas of potential significant archaeology within station box and enabling works area



6.0 WORK STAGE SPECIFIC ARCHAEOLOGICAL METHODOLOGY

6.1 Introduction

The Archaeological Method section of the AARD in relation to Central Station notes that ground disturbance and excavation works would be required.

> *Excavation work within the former Devonshire Cemetery site (Sites CS 2 and CS 3) would require archaeological management. As potential for human skeletal and burial-related remains cannot be ruled out entirely at this stage, archaeological monitoring and testing should be undertaken.*
>
> *Ground disturbance and excavation work in Sites CS 4 with potential to impact significant archaeological remains (rail-related 1850s-1900s) would require archaeological mitigation. This would be monitoring or test/salvage depending on extent of work and level of potential impact, for example, archaeological test/salvage in the northern part of Site CS 4 subject to bulk excavation for the station utilities structure.*[156]

The archaeological mitigation for CS 2, CS 3, and CS 4 would include preparation of an AMS (this document), and archaeological monitoring, testing, recording, surveying, and salvage, as required. A detailed archaeological methodology is provided in Section 6.2.

6.2 Research questions

The Statement of Significance for the potential archaeological resource and the NSW Historical Themes[157] have provided the basis for the following research questions.

Archaeological resources within the study area have the potential to answer several research questions. Additional research questions may be added if the archaeological resource allows for further, or more in-depth, investigation.

The archaeology within the study area has the potential to contribute to research areas such as:

- Social history and burial practices
- Environmental factors and scientific analysis
- Industrial archaeology
- Landscape archaeology

The following research questions would guide archaeological investigations at the Central Station Main Works station box site.

6.2.1 AARD research questions

The AARD presented as number of research questions of the Central Station Main Works site. All AARD research questions are included below, with a number of additional questions arranged by

[156] Artefact Heritage 2016a
[157] Heritage Council 2001

theme. Additional questions have been added in response to information provided by additional research, excavation for the SYAB project and pre-constriction works for Central Station Main Works.

6.2.2 Devonshire Street Cemetery

The area to the north of Devonshire Street tunnel was occupied by the Devonshire Street Cemetery between 1820-1865. There is low potential that archaeological remains associated with the cemetery are located within the study area. Evidence of the cemetery may consist of human bones, grave cuts, tombs, coffins, personal artefacts such as jewellery, clothing including leather, fabrics, buttons, depending on conditions of sands, 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.

Remains of this type have the potential to provide information about the individuals that were buried at the Devonshire Street Cemetery and its original configuration.

Material culture studies is a research area that is utilised by archaeologists to better understand the ways that gender, class, ethnicity, and religion are expressed through artefactual remains. Our knowledge of the day-to-day life of lower and working-class individuals is typically lacking in the historic written record. Archaeological investigation has the ability to identify the 'lifeways' of these individuals in a meaningful way. Archaeological evidence relating to identity could include personal artefacts such jewellery and clothing.

Evidence of the Devonshire Street Cemetery would relate to the NSW Historic Theme of 'Birth and Death'.

The overarching aim of the proposed archaeological program is to be able to interpret the archaeological results in terms of broader research themes. The intention is to compare the results of the program, wherever possible, to results from other relevant sites, projects and current research agendas, and therefore into broader research framework.

Some aspects of the archaeological investigation of the Old Sydney Burial Ground (OSBG) at Sydney Town Hall[158] would provide a relevant comparison. The 2008 excavations identified that the original ground level had been substantially reduced during construction works in the 1880s. This was found to be the equivalent of 1.4 to 2.4 metres of top and subsoil associated with the OSBG phase. The surviving graves were quite shallow, often only 2-300mm below basement level. Burials ranged from those containing highly decayed, yet complete skeletons, to graves only identified from severely truncated grave cuts. Remnant bone and teeth were collected from 30 graves. The OSBG excavations contributed to our knowledge late eighteenth and early nineteenth century burial practises in Sydney, including the impact and nature of the 1880s exhumations, spatial arrangement and orientations of the graves relative to each other, and evidence for timber coffins and metal hardware. Evidence for the 1880s disinterment suggests that the exhumation program had mixed success.

Post excavation analysis was undertaken on the archaeological evidence covering, coffin furniture, orientation of burials and spatial arrangement of burials. In addition analysis was undertaken on

[158] Lowe, A., & Mackay, R. 1992. Old Sydney Burial Ground. *Australasian Historical Archaeology*, 10, 15-23, Pitt, N, Casey, M, Lowe, A & Stocks, R 2017, 'The Old Sydney Burial Ground: the 2008 archaeological investigations', *Australasian Historical Archaeology*, vol. 35, pp. 3-23.

skeletal remains to look at the geographical origins of individuals[159], to look at early colonial diet[160] and using teeth to examine questions about health and diet in early colonial Sydney[161]. Although it seems that the exhumation program at the Devonshire Street cemetery was more thorough than at the Old Sydney Burial ground it is possible that similar a analytical approach would be applicable to any burials recovered during this project.

6.2.2.1 Social history and burial practices

Research questions relating to the social history and burial practices include the following:

- Does the location of the burial/burial cutting correspond with historic plans/descriptions of the Devonshire Street Cemetery? Are these historic sources a reliable source of information for the cemetery?
- If evidence of the exhumation program is 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,[162] 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)?

[159] Owen, T & Casey, M 2017, 'The Old Sydney Burial Ground: using isotopic analysis to infer the origin of individual skeletons', Australasian Historical Archaeology, vol. 35, pp. 24-33.
[160] Owen, T, Casey, M & Pitt, N 2017, 'The Old Sydney Burial Ground: an inference of early colonial diet in Sydney and Britain', Australasian Historical Archaeology, vol. 35, pp. 34-42.
[161] Donlon, D, Griffin, R & Casey, M 2017, ' The Old Sydney Burial Ground: clues from the dentition about the ancestry, health and diet of the first British settlers of Australia', Australasian Historical Archaeology, vol. 35, pp. 43-53.
[162] Hewitt, G. & Wright, R., 2004. Identification and Historical Truth: The Russell Street Police Garage Burials. Australasian Historical Archaeology, Vol. 22.

- 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?
- Remnants of the outer wall of Devonshire Street Cemetery were located during excavations for the CSELR project.[163] Are remnants of the outer and denominational walls still extant within the study area and how do they compare to the ones located for the CSELR project?

6.2.2.2 Environmental factors and scientific analysis

- What is the condition of the burials? How does their condition compare to known or nearby burials of the same date?
- Can the health, nutrition, sex, race, stature or age be identified through the skeletal remains? Is there evidence of trauma on the bones? Is there evidence of pathology on the bones (e.g. syphilis, tuberculosis, tumours)?
- If archaeobotanical analysis is carried out, what can it tell us about the surrounding environment and nearby plant species? Can pre/post-European landscapes be determined within the archaeobotanical record?
- Can stable isotope analysis address any questions regarding diet, country of origin and nutrition?
- Can DNA testing address any questions not answerable by the skeletal remains themselves, such as sex, familial relationships (if buried with another individual/s) or race?
- Is there potential for DNA to be tested against any individuals who may come forward as a descendant of the deceased?

6.2.2.3 Remains of Devonshire Street

The precise history of Devonshire Street is unclear – a street in the same alignment seems to be established by 1844 and certainly is shown on the Shields map of 1845. It seems likely that the street was named Devonshire Street as an extension of the Devonshire Street in the adjacent Strawberry Hills subdivision (1830s). It is unknown how wide the street was or how it was constructed.

A small stream is shown on the later 1857 Chippendale sheet. The creek rose in the Strawberry Hills area and discharged into Darling Harbour. The course of the stream is shown as running parallel and adjacent to Devonshire Street and it is presumed that the creek was in a channel at that time and it is not clear whether Devonshire Street runs along the stream or whether the stream was diverted into Devonshire Street.

It is assumed that street was widened between the 1860's and 1880's by which time it also was used for a tram and there appear to be retaining walls – at least on the southern side with an open fence on the Cemetery side.

When Central was constructed, Devonshire Street was altered – certainly narrowed and possibly lowered however remains may be located relating to Devonshire Street.

The major archaeological research question relating to Devonshire Street are

- What remains from the original Devonshire Street are there and what is there nature?

[163] Artefact Heritage 2017

- Can a sequence of construction of the street be established?

If the archaeological remains are present, then additional questions could be asked around how the street changed to service Redfern Station and to make comparisons with other archaeological remans of streets in Sydney.

6.2.3 Infrastructure associated with the First and Second Railway Station

The area to the south of the Devonshire Street tunnel was originally occupied by the first and second railway stations and the infrastructure which supported the station function is located within the study area. Archaeological remains of these structures could provide information related to the development of the rail industry. Evidence could include building footings, refuse pits relating to industry, postholes from timber structures, and flooring surfaces. Evidence of the development of the rail industry within the study area would relate to the NSW Historic Theme of 'Industry', 'Technology', 'Transport', and 'Utilities'.

6.2.3.1 Industrial archaeology

Drainage systems

Propper drainage was a critical function in maintaining the track infrastructure at the Redfern Station and the Sydney Yard. Apart from general drainage of rain there was also a lot of water used on the site mostly in engine boilers. Locomotive tenders had to be refilled and boilers had to be washed out all of which required a water supply and a drainage system to take it away. It is likely that the drainage system altered as the station platforms altered and functional areas on the site changed.

The archaeological research question relating to site drainage are as follows:

- Are there remains of early culverts and drains, and what do they tell us about the evolution of utility services in the area?
- Are there remains of the original fabric of the Prince Alfred Sewer? To what extent has the 1850s-era drain been replaced with new infrastructure?
- Are there remains of the original course of the Creek mapped as running down Devonshire Street?
- Can the network of drains tell us about how areas of the station and yard were used?

Engine Erecting Shop

The Engine Erecting Shop is a poorly documented structure that appears to have changed functions in the period from the 1880's to the 1890's, possibly being rebuilt as the gas works in the 1890s. It is not clear what if anything remains from the building.

If archaeological remains are identified in the vicinity of the Engine Erecting Shop, the following research questions would be applied:

- Can the function of the former building be determined from these remains?
- How has the building changed?
- How was the building constructed and does this construction reflect the function of the building?
- Are there remains indicating the building may be the site of the Gas works

Original Turntable

The original turntable is poorly documented and any analysis of any physical evidence would provide valuable information. At 40ft the turntable is quite small and would have been less useful as the size of locomotives and carriages grew over the years.

- How was the turntable constructed, and is it still intact? How was it removed from use?
- Does the turntable show evidence of alteration in use from its initial installation in 1855 to its eventual use in 1895?
- How is the turntable different from the wagon turntables recently excavated at Central?
- Is the turntable similar to the one excavated at the first Parramatta station, or those still extant elsewhere in New South Wales?

Locomotive workshops

The locomotive workshops associated with the second phase of station development terminus were essentially unplanned as their functions varied over time due to increasing numbers of locomotives, their size and their nature. The workshops were originally for repair but then they also were used for manufacture of locomotives. It is likely that the plan evidence does not fully reflect the nature of construction of the workshops and how they were altered and changed over time. What images are available show a number of sandstone buildings interspersed with timber frame buildings clad in galvanised iron and open work and storage spaces.

The workshops also are crowded in amongst the goods traffic to and from Sydney Yard.

The archaeological remains of a demolished railway workshops are clearly going to have less potential to answer research questions than the intact workshops at Eveleigh (NSW), Newport (Vic) and Ipswich (Qld) for example. However, the remains could be used to establish information about the buildings and their layout.

If archaeological remains are identified in the vicinity of the Locomotive Workshops (including the various buildings, spaces and track locations), the following research questions would be applied:

- Can the function of the former buildings be determined from these remains?
- How has the building changed? Can a sequence of construction/alteration be documented and if so what is it?
- Can interior work spaces be identified and if so can their function be identified?
- Can the location of machinery be identified?
- How was the building constructed and does this construction reflect the function of the building?
- Can workers spaces such as crib rooms, toilets and washing facilities be identified.

Comparisons of the results can be drawn between this site and that at Honeysuckle Point in Newcastle which is of a similar age.

Miscellaneous finds

It is possible that miscellaneous finds of railway infrastructure could be recovered most of this will be of little archaeological research potential, however if pre-1915 items of rail are recovered these may have some archaeological research potential for technological information regarding the evolution of rail design and the nature of rail imported into Australia prior to the establishment of BHP as an Australian based rail supplier.

6.2.4 Third Station expansion

The study area currently occupies the third Central Station and has undergone continuous expansion and upgrades since it was constructed in 1906. Archaeological remains relating to the third station expansion may provide evidence of the rapid technological development of the rail industry in the early twentieth century. Evidence may include earlier platforms surfaces and structures, drains and culverts and footings and structural remains associated with earlier workshops, rail sheds and offices.

Evidence of the development of the rail industry within the study area would relate to the NSW Historic Theme of 'Industry', 'Technology', 'Transport', and 'Utilities'.

6.2.4.1 Industrial archaeology

- Platforms 13, 14, and 15 were extended southwards in the 1990s. What evidence is there of the original southern edges of the platforms?
- Is there any evidence of earlier platform surfaces, or earlier platform configurations (i.e. the base of former canopy supports or footings) located below or within the present-day station platforms?
- What does the evidence indicate about the development of rail infrastructure and technology?

6.2.5 Transformation of the landscape of the Cleveland Paddocks

At the end of the project, enough archaeological evidence should have been collected to document the transformation of the pre-colonial landscape which was known as the Cleveland Paddocks into Central Station and the Sydney Yard. The archaeological research aim would be to document this transformation utilising information collected in the course of the project to answer questions about the transformation of this landscape. Evidence of the transformation of the landscape of the Cleveland paddocks would relate to the NSW Historic Theme of 'Environment – cultural landscapes'.

6.2.5.1 Landscape archaeology

- Was the original landscape sandhills, and how far did they extend? Can the original lvels of the landscape be established
- What was the original drainage and how were the creeks transformed?
- What evidence of excavation and transformation (such as levelling) is there?
- Is there any evidence of the original vegetation on the site?

6.3 Archaeological management of specific work stages

It is proposed that management of the potential archaeological resource include the following processes. These have been illustrated in Figure 78 and Figure 79, and discussed further below.

- Archaeological management according to the schedule of proposed works:
  - Archaeological monitoring of platform works, works within Sydney Yard (including but not limited to NDD and slit trenching) with the provision to move to unexpected finds at the discretion of the Excavation Director
  - Targeted historical archaeological test/salvage excavation in the location of the potential 1855 turntable and carriage shop (First Station Expansion) for enabling works in Sydney Yard
  - Targeted historical archaeological test/salvage excavation in the location of the potential second Station turntable and locomotive shop (Second Station Expansion) for enabling works in Sydney Yard
  - Targeted historical archaeological test/salvage excavation for the Engine Erecting Shop within the station box (south of Devonshire Street tunnel)
  - Archaeological test excavation of piling for box perimeter and plunge columns (south of Devonshire Street tunnel) to identify and salvage remains associated with the first and second stations. The number of test pits would be confirmed during the construction program, the locations shown on Figure 76 are indicative.
  - Archaeological test excavation of plunge columns within the station box to the north of the Devonshire Street tunnel where possible in order to identify soil profiles and refine assessment of potential for remains associated with the cemetery. If timing (possession) and constructability issues do not allow for testing of the plunge column locations, test pits would be placed nearby. The number of test pits would be confirmed during the construction program, the locations shown on Figure 76 are indicative.
  - Targeted archaeological testing within insitu and redeposited sand as identified in the geotech reports (to the north and south of the Devonshire Street tunnel) for the station box
  - Archaeological monitoring of the station box bulk excavation where possible with the provision to move to unexpected finds at the discretion of the Excavation Director.

Each stage would assist in the identification of archaeological potential for later stages. Test excavation would inform design and inform the need for salvage excavation (dependant on proposed impacts). Test and salvage excavation would be in response to impacts.

6.3.1 Historical archaeological monitoring of platform works and works within Sydney Yard

Due to the potential for significant archaeological remains relating to Devonshire Street cemetery, the first and second Central Station expansion, and the Third Station expansion to be located within the project area, platform works, NDD, slit trenching, and works within Sydney Yard involving excavation below the ballast or track formation layers would be archaeologically monitored. This methodology is outlined in Section 6.3.13. The requirements for management under archaeological monitoring may be downgraded to the management under the Sydney Metro Unexpected Heritage Finds Procedure at the discretion of the Excavation Director.

6.3.2 Targeted historical archaeological test/salvage excavation in the location of the potential 1855 turntable and carriage shop within the Sydney Yard

The areas identified as having potential for remains of the 1855 turntable and carriage shop would be archaeologically tested to mitigate potential impacts from the stormwater drainage and feeder route excavations and enabling works within Sydney Yard. A trench measuring around 2m by 15m would be excavated in the location of the potential turntable. A trench measuring around 2m by 10m would be excavated in the location of the potential carriage shop. The methodology to conduct the test excavations is detailed in Section 6.3.14.

If significant archaeological remains of these items were identified, the test excavation would move to a program of salvage excavation within areas to be impacted by the proposed works. Where possible, significant archaeological remains identified by test excavation would be avoided by design changes and conserved.

6.3.3 Targeted historical archaeological test/salvage excavation in the location of the potential second Station turntable and locomotive shop within the Sydney Yard

The areas identified as having potential to contain remains of the second Station turntable and locomotive shop would be archaeologically tested to mitigate potential impacts from the stormwater drainage and feeder route excavations and enabling works within Sydney Yard. A trench measuring around 2m by 15m would be excavated in the location of the potential turntable. Two test trenches would be excavated in the location of the potential locomotive shop: one measuring around 2m by 20m and another in a L shape measuring around 2m by 15m by 15m. The methodology to conduct the test excavations is detailed in Section 6.3.14. If remains of these items were identified test excavation would move to salvage excavation within areas to be impacted by the proposed works. Where possible, significant archaeological remains would be avoided by design changes in response to test excavation results and conserved. Where the locations are avoided entirely by design changes test excavation may not be required.

6.3.4 Targeted historical archaeological salvage excavation for the Engine Erecting Shop within the station box

The area of the potential Engine Erecting Shop would be managed by conducting an open area excavation measuring around 15m by 15m. The item is within the station box therefore any remains would be impacted by bulk excavation. The methodology to conduct the excavations is detailed in Section 6.3.14. Note if this site was used as a gas works there may be contamination issues that would prevent this excavation being undertaken.

6.3.5 Historical archaeological test excavation for piling for box perimeter and plunge columns (south of Devonshire Street tunnel) within the station box

The piling for the box perimeter and plunge column piles south of Devonshire Street tunnel would be located within areas of potential for the first and second Central Station expansion, and third Central Station expansion. Due to the potential for impacts to significant archaeological remains and to address the cumulative impact of the project, it is proposed that the pile locations would be archaeologically tested. The perimeter piles would be approximately 750 mm in diameter. It is proposed that 1m by 1m test trenches are excavated in each location to a depth of 1.5m (or safe depth) or to natural surface where possible. The methodology to conduct the test excavations is detailed in Section 6.3.14.. The plunge column piles would be approximately 1200 mm in diameter. It is proposed that 3 m by 3 m test trenches are excavated in each location. The methodology to conduct the test excavations is detailed in Section 6.3.14.

It is understood that no excavation below the ballast layer would be required for piling rig placement, therefore subsurface excavation would be limited to the pile locations.

Where NDD is located within areas for the future piling program results of the archaeological monitoring of the NDD would feed into the archaeological potential and testing areas for the piling areas.

It Is not intended to undertake archaeological testing for the perimeter piles to the north of Devonshire Street tunnel, although the locations have a nil-low potential to contain significant archaeological remains associated with the Devonshire Street cemetery. Overall the piling locations will impact a small percentage of the station box excavation area, and a representative sample of deposit is being tested at the location of the piles for plunge columns, and in the identified sands adjacent to the Devonshire Street tunnel.

6.3.6 Archaeological test excavation of plunge columns within the station box to the north of the Devonshire Street tunnel

The piling for the plunge columns to the north of Devonshire Street tunnel would be located within areas of potential for the Devonshire Street cemetery. Due to the potential for impacts to significant archaeological remains and to inform a methodology for management of the bulk excavation of the station box these areas would be archaeological tested where possible. If timing (possession) and constructability issues do not allow for testing of the plunge column locations, test pits would be placed nearby. The number of test pits would be confirmed during the construction program, the locations shown on Figure 76 are indicative. The location and number of test pits associated with the plunge columns would be informed by the results of the perimeter pile testing.

The testing results would initially ground truth the extent of disturbance in this area and ascertain the potential for archaeological remains to occur. The piles would be approximately 1200 mm in diameter. It is proposed that 3 m by 3 m test trenches are excavated in each location, or in close proximity where possible. The methodology to conduct the test excavations is detailed in Section 6.3.14. Aboriginal archaeological potential would also be tested in these locations in accordance with the Aboriginal archaeological excavation methodology in Section 6.3.23.

It is understood that no excavation below the ballast layer and track formation layer would be required for piling rig placement, therefore subsurface excavation would be limited to the lunge column locations.

6.3.7 Targeted archaeological testing within insitu and redeposited sand as identified in the geotech reports (to the north and south of the Devonshire Street tunnel) for the station box

The area to the north and south of Devonshire Street tunnel is likely to contain re-deposited sands as suggested by geotechnical analysis. It is proposed to undertake test excavation and salvage of these area in two stages. The first stage would be to the eastern section to allow for the western railway lines to continue to operate, and would measure 20m by 10m. Once this section is cleared of historical archaeological potential and the Aboriginal archaeological Excavation Director has cleared the area for archaeological potential, the second stage would commence to the west and would measure 20m by 10m.

These excavations would work concurrently with the Aboriginal heritage team to ensure the sands are dealt with appropriately for both historical and Aboriginal heritage as outlined in Section 6.3.23. The rest of the bulk excavation area for the station box would be archaeologically monitored as outlined in Section 6.3.13.

6.3.8 Additional archaeological works within the station box to the north of the Devonshire Street tunnel within the station box

If archaeological remains associated with the cemetery or Aboriginal occupation of the area are located during any of the archaeological management phases described above within the station box, additional archaeological excavation may be required across the station box. For example if human remains are located during testing, a full testing and salvage program may be required to ensure that human remains are retrieved and recorded across the bulk excavation area. In this circumstance salvage of human remains would be undertaken in accordance with the Exhumation Management Plan and the archaeological salvage methodology outlined in Section 5.1.4.

The aim of the archaeological testing program within the station box is to gather information on the impacts to the original landform, and cemetery ground surface and to refine the assessment of potential for archaeological remains to be located across the station box as well as to identify how potential may vary across the area as a result of disturbance and site formation processes. This approach was taken as it was not practicable to initially test or salvage the entire station box. It should be noted that the AARD assessed the station box as having only a nil-low potential to contain archaeological remains associated with the cemetery, so this archaeological management approach is considered appropriate.

If the planned testing within the station box does not provide enough information to inform a refined assessment of archaeological potential for the remainder of the station box, additional testing may be required prior to bulk excavation commencing. This would be confirmed by the Excavation Director once the results of the testing program are known. The additional number of test pits would be capped at 30. If these pits do not provide enough information to sufficiently characterise stratigraphy across the station box, archaeological monitoring would be an acceptable management measure for portions of the station box that require it.

If Aboriginal objects are located, further testing focussed on Aboriginal archaeology would be required which would also require input from historical archaeologists to manage excavation of post-contact archaeological layers. The historical archaeological management would continue in accordance with this AMS.

6.3.9 Archaeological monitoring of the station box bulk excavation with the provision to move to unexpected finds at the discretion of the Excavation Director

If the results of testing suggest that there is still a potential for archaeological remains associated with the cemetery to be present, archaeological monitoring of the station box may be required. This would be confirmed by the Excavation Director once the results of the testing program are known.

6.3.10 Sydney Metro Unexpected Heritage Finds Procedure

As the auguring for piles for Platform 12 cannot be archaeologically managed through monitoring this would be undertaken under the Sydney Metro Unexpected Heritage Finds Procedure. The removal of current rail ballast, capping, and formation material within the station box area would proceed under the Sydney Metro Unexpected Heritage Finds Procedure. The proposed sheet piling would proceed under the Unexpected Heritage Finds Procedure provided in Section 6.3.20.

The demolition of the pedestrian tunnels and detailed excavation at Devonshire Street tunnel would be conducted under the Sydney Metro Unexpected Heritage Finds Procedure as the previous stages would have investigated these areas and cleared them for archaeological potential.

Monitoring or testing works would revert to Sydney Metro Unexpected Heritage Finds Procedure at the discretion of the Excavation Director where it was found that significant archaeological remains were not likely to be impacted.

Figure 78: Archaeological management for Central Station Main Works station box

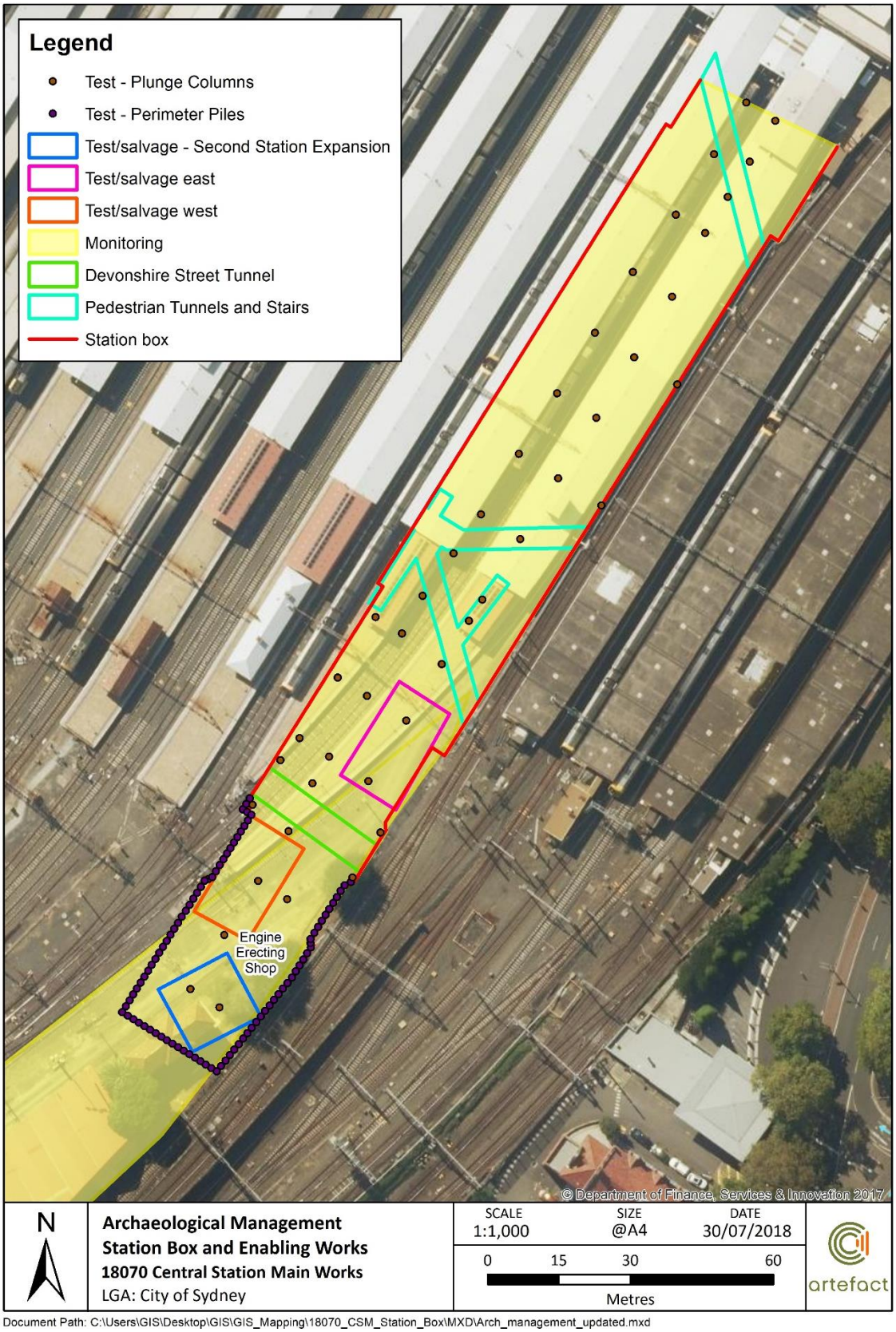


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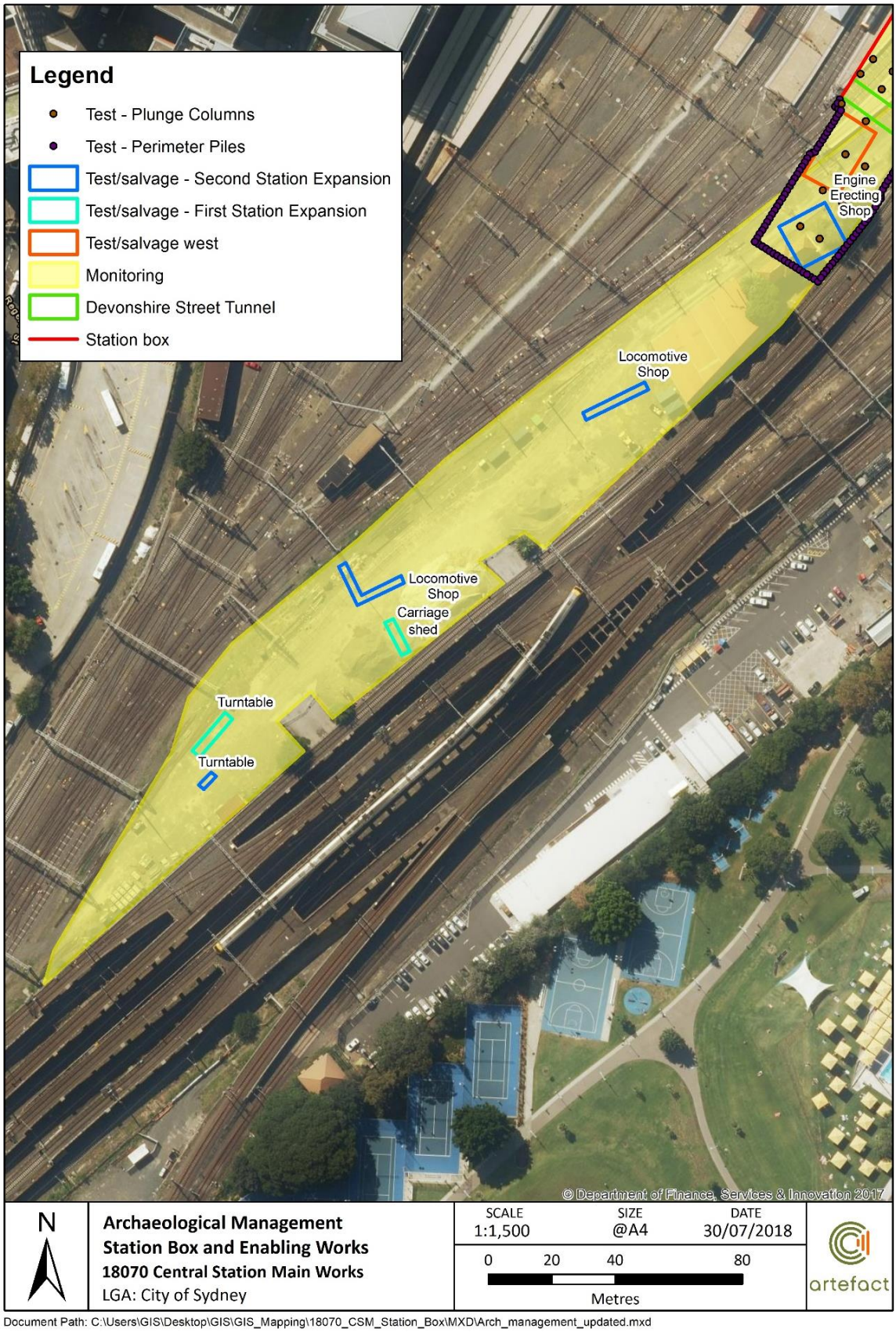
Figure 79: Archaeological management for Central Station Main Works station box and enabling works



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6.3.11 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
- Demolish existing buildings on the site and remove rubble and spoil material from site
- 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.

6.3.12 Heritage induction

Archaeological heritage will be included in the general project induction for all personnel in consultation with the Excavation Director. At a minimum, this would include an overview of the projects and employee obligations, archaeological management and the role of the archaeological team. Toolbox meetings will also be undertaken as and when required; covering specific environmental issues and heritage control measures as identified in the CHMP. •Personnel directly involved in implementing heritage control measures on site will be given specific training in the various measures to be implemented. Records of all training are to be filed in accordance with the project filing system.

6.3.13 Historical archaeological monitoring methodology

Archaeological monitoring would occur within the areas marked in Figure 78. Archaeological monitoring is where an archaeologist is in attendance and supervising construction excavation work with 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.

If archaeological remains are identified during archaeological monitoring, they would be recorded by a qualified archaeologist, protected, and assessed to determine their heritage significance. If significant archaeological remains are identified, the area would be expanded to ensure the full extent of the archaeological remains are recorded. Localised stoppages in the construction work would be required to facilitate this process. Works would not recommence until the monitoring archaeologist has completed the recording and is satisfied that further investigation is not required. The excavation recording methodology would be as per Section 6.3.15.

Works may proceed under on call provisions if approved to do so by the Excavation Director. This would be determined once an area has been deemed to not contain archaeological potential, for example, when an area has been truncated, natural clays and bedrock have been reached, or the works are known to not to be excavating in an area of archaeological potential.

Should hazardous materials or contaminants be identified during archaeological monitoring, ground excavation would cease until appropriate controls or remediation is conducted by Laing O'Rourke.

6.3.14 Historical archaeological testing and salvage methodology

Archaeological testing generally refers to archaeological excavation under the control of the Excavation Director within specific areas of archaeological potential. Archaeological testing is proposed for the areas of the site shown in Figure 78 following demolition of current buildings and structures, and prior to excavations for the stormwater drainage and feeder route in Sydney Yard, and prior to piling and bulk excavation for the station box. Archaeological testing is a method of archaeological investigation in which defined areas of a site are investigated and cleared, whilst preserving the stratigraphic record. This technique is proposed for areas of potential for sands and archaeological remains relating to the First and Second Station expansion as it will allow for the recognition of the slightest archaeological traces, and the identification of subtle relationships between features and deposits that may otherwise go unrecognised.

The primary aim of the archaeological testing would be to identify the extent and intactness of potential archaeological remains within the station box area, the potential for remains of the 1855 turntable and carriage shed, and the potential remains of the second Station turntable, Engine Erecting Shed, and locomotive shop. The station box testing would be in conjunction with Aboriginal testing of the area. The process of archaeological testing will involve the manual excavation of defined areas once overburden has been removed by machine. Manual excavation would be undertaken using hand tools, by a qualified archaeological team. The archaeological remains would be cleaned by hand, investigated (excavated) and recorded in detail by the archaeological team. In urban archaeological sites careful machine excavation may also be employed to assist the detailed archaeological excavation process. The excavation recording methodology would be as per Section 6.3.15.

Construction works would not proceed until the salvage excavation is completed and the Excavation Director has provided clearance.

Should hazardous materials or contaminants be identified during archaeological excavation, ground excavation would cease until appropriate controls or remediation is conducted by Laing O'Rourke.

6.3.14.1 Initial site clearance

Following the demolition of current buildings and structures, overburden will be removed by excavator, under the instruction of the Excavation Director, down to the highest definable stratigraphic unit, at which point archaeological testing will commence. It is proposed that any material deemed to be modern fill at the site be removed with a seven tonne excavator using a batter bucket.

6.3.14.2 Manual excavation

Upon encountering archaeological material, mechanical excavation would cease and test excavation using hand tools would be undertaken by archaeologists trained in on-site historical excavation methods, under the guidance of the Excavation Director.

Should any intact and deep structural features be encountered it may be necessary to remove any demolition or fill material within by mechanical excavation under the supervision of an archaeologist. Any material removed by excavator would be examined for artefacts by the archaeologists.

6.3.15 Excavation recording methodology

A record of archaeological investigation would be made in accordance with the methodology outlined in the AARD.[164] The recording methodology includes the following:

- A site datum would be established

[164] Artefact 2016a

- Levels would be reduced to AHD
- 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.

6.3.16 Sieving strategy

Sands and residual clay spoils (intact and re-deposited) within the study area have the potential to contain human remains, historical archaeological remains and Aboriginal artefacts. The sieving strategy incorporates methodologies for both non-Aboriginal heritage and Aboriginal artefacts.

Soil and sand deposits retrieved from the excavation area would be hand sieved through a 3 mm mesh, by either wet or dry sieving. The Excavation Directors would determine whether to proceed with wet or dry sieving, or a combination of both throughout the excavation. All bone remains would be dealt with under the Sydney Metro Exhumation Management Plan. [165]

All recovered stone artefacts would be cleaned, dried and bagged with a brief analysis conducted in the field. This analysis would include logging artefact type, raw material, and dimensions. These items would then be taken off site to be analysed in detail by relevant specialists in consultation with Aboriginal stakeholder groups.

6.3.17 Artefact collection and recording methodology

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.

[165] Transport for NSW 2018. *Sydney Metro Exhumation Management Plan*

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.

6.3.17.1 Modern deposits

Artefacts from modern (post-1960) deposits would be sample collected to demonstrate the nature and context of the remains.

6.3.17.2 Historic fills and secondary deposits

Similarly, artefacts collected from historic fills and other bulk deposits that lack stratigraphic integrity will be recorded and a representative sample collected.

6.3.17.3 Primary deposits

All artefacts from primary deposits would be collected by context and bagged. Diagnostic or unique/fragile artefacts would be bagged separately under their corresponding context.

6.3.17.4 Building materials

Building and structural materials would be collected by type and sampled. For example, one full brick and one partial brick of the same type, two samples of mortar, stone, timber and plaster (bagged by context). All collected samples would be noted on their corresponding context sheet and recorded in a building material sample register.

6.3.17.5 Organic or fragile materials

Metal and fabric or organic materials such as timber, leather, bone or shell would be stored in paper bags for conservation purposes under their corresponding context. If significant and diagnostic fabric or leather items are found, these would be submitted to a conservation specialist with two months of collection.

6.3.17.6 Hazardous materials

Artefacts manufactured from hazardous material such as asbestos or found within a contaminated deposit would not be collected, although their presence within the context would be recorded in their corresponding context sheet. Such artefacts be disposed of in an appropriate manner according to guidelines for dealing with hazardous waste

6.3.18 Artefact analysis methodology

Where possible artefact cleaning and preliminary cataloguing would occur on site, otherwise artefacts would be catalogued and stored off site at the Sydney Metro facility at Rosebery. A discard policy will be prepared in consultation with the Heritage Division as a delegate to the NSW Heritage Council and added as an addendum to the AMS. Retained artefacts would be cleaned processed, catalogued and analysed by an archaeologist experienced in historical artefact assemblages. Artefact analysis would include production of a database in accordance with best practice archaeological data recording. The resulting information would be included in the final excavation report.

6.3.19 Environmental sampling methodology

A geomorphologist would be engaged to assist in identification and interpretation of the nature of soil deposits. On identification of intact sands, soil samples would be collected for analysis. A geomorphologist will be engaged to attend site during excavation, take soil and sediment samples where required, and provide detailed reporting for the excavation report. Sam Player can provide geomorphology reporting and Optically Stimulated Luminescence dating for archaeological excavations.

If natural soils are encountered, bulk samples of those deposits would be sent to a qualified specialist for analysis. Artefact will engage a specialist if the collection of such samples is found to be warranted.

In order to prevent cross-contamination, the following sample collection and excavation process should be followed:

- The location, quantity and material of samples will be determined by the Excavation Director prior to its collection
- Samples would be stored in a safe, secure and climate controlled location while excavations are in progress. This would be chosen by the Excavation Director
- Each collected sample would be given a unique catalogue number and a sample register would be recorded throughout the excavation
- 'Clean excavation' procedures would be followed during the sample collection process. This would include:
  - Latex gloves would be worn by individuals excavating soil samples. Gloves would be changed for each sample to prevent cross-contamination
  - Excavation tools/brushes would be cleaned prior to and after the collection of each sample to prevent cross-contamination
  - All bags containing samples for analysis would be bagged and labelled appropriately to prevent cross contamination and ensure they are handled and stored correctly.

6.3.20 Unexpected Finds Procedure

Unexpected archaeological finds would be managed under the Sydney Metro Unexpected Heritage Finds Procedure.[166] Unexpected finds would also apply to the identification of intact sand deposits during excavation works.

6.3.21 Archaeological Relic Management Plan

An Archaeological Relic Management Plan as require under E20 would be prepared if archaeological remains of State significance were located that were not in the AARD or AMS. The Plan would be prepared in consultation with the NSW Heritage Council (or delegate). Works would not re-commence in the location until the requirements of the Plan have been implemented.

6.3.22 Exhumation Management Plan

Discovery of suspected human remains would be managed under the Sydney Metro Unexpected Heritage Finds Procedure and the Sydney Metro Exhumation Management Plan.[167] All suspected bone must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated. Gloves would be used when handling all bone material.

[166] Transport for NSW 2017. *Sydney Metro Unexpected Heritage Finds Procedure*
[167] Transport for NSW 2017; Transport for NSW 2018

If potential human skeletal remains are found during the project, works would cease immediately in that area and the remains would be managed under the Sydney Metro Exhumation Management Plan produced as per the Conditions of Approval (Condition E26 and E27) for the approved project.[168]

The discoverer will immediately notify machinery operators so that no further disturbance of the remains will occur, as well as notify the foreman/site supervisor, principal contractor, project archaeologist and Sydney Metro Environmental Representative. This requirement will form part of the site induction. The Sydney Metro Exhumation Management Plan will be enacted. Preliminary notification to the NSW Police will be undertaken by the Environmental Representative.

Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment. Refer to the Sydney Metro Exhumation Management Plan.

No works to recommence until clearance is provided by OEH and/or the NSW Police as per the Sydney Metro Exhumation Management Plan.

Dr Denise Donlon is the nominated forensic anthropologist for the Project. She would be consulted in the event of a discovery of suspected human remains.

Note that where human remains are discovered, the approach to archaeological management will be prepared based on the finds and their archaeological context. The archaeological program should be prepared based on the advice of Dr Denise Donlon, the Excavation Director and in conjunction with Heritage Division as delegate of the NSW Heritage Council.

6.3.23 Aboriginal archaeological methodology

The Central Station Main Works site is within Method Area 2 as outlined in the Aboriginal Cultural Heritage Assessment Report (CHAR).[169] In accordance with the provisions for MA2 Aboriginal archaeological test/salvage excavation would be undertaken where intact natural soil profiles with the potential to contain significant deposits, or Aboriginal objects, are located during historical archaeological excavations. It should be noted that the CHAR states that identification of intact natural soil deposits would only be a trigger at Central Station if it was within the station box area.

In the section of the station box to the north of the Devonshire Street tunnel, within the boundaries of the cemetery, any insitu or re-deposited sands would have the potential to contain both Aboriginal objects and remains associated with the cemetery. All tested and salvaged material in this area would be sieved to identify both Aboriginal objects and remains associated with the cemetery. RAPs would participate in this exercise, as further discussed in the Aboriginal archaeological AMS. Archaeologists with expertise in historical archaeology would also be present. If suspected human remains were identified the Exhumation Management Plan would be implemented.

Soil profiles in the majority of the Sydney Yard are thought to be within the shale soil transition and intact sand contexts with the potential for deep Aboriginal archaeological deposits are unlikely to be present. The trigger for test or salvage excavation for Aboriginal archaeology would therefore be the identification of an Aboriginal objects for areas outside the station box.

If suspected Aboriginal objects were identified in other sections of the Central Station Main Works site, the Aboriginal archaeological team would be notified by the Excavation Director and a qualified archaeologist experienced in Aboriginal archaeology would assess the find. If Aboriginal objects were

[168] Transport for NSW 2018. *Sydney Metro Exhumation Management Plan*
[169] Artefact Heritage 2016b

identified the Registered Aboriginal Parties (RAPs) would be notified and would participate in test and salvage excavation as required under the CHAR.

6.3.24 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 hand excavation on site.

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).

6.3.25 Clearance

A written clearance confirmation would be provided by the Primary Excavation Director to Laing O'Rourke once archaeological management has been completed in an area. This would be signed off by Sydney Metro before works commenced. Construction would continue under the Sydney Metro Unexpected Heritage Finds Procedure. [170]

6.3.26 Reporting

A preliminary findings report would be prepared following completion of the works outlined in this AMS in accordance with the AARD.[171] This report would outline the main archaeological findings, post-excavation and analysis requirements, and identify if further archaeological work would be required, how results may be appropriate to incorporate into an interpretation strategy or plan.

An archaeological excavation report would be prepared within two years following the completion of the program of archaeological works for the entire Central Station Main Works, as required under Condition E18 of the Minister's Conditions of Approval for the project. This report would comprehensively describe and interpret the findings of the excavation program within the context of the research design. This would include artefact analysis, environmental and building material sample analysis, stratigraphic reporting and production of Harris Matrices, production of illustrations and detailed site plans interpretation of site plans and illustrations final excavation report detailing the archaeological program and results would be prepared. It would include photographs and plans, catalogue and analysis of artefacts, and also respond to the research questions. The report would also include a reassessment of archaeological significance based on the investigation results. The report would be prepared in accordance with the standard conditions of archaeological permits issued under the Heritage Act:

a. An executive summary of the archaeological programme;

b. Due credit to the client paying for the excavation, on the title page;

c. An accurate site location and site plan (with scale and north arrow);

[170] Transport for NSW 2017. *Sydney Metro Unexpected Heritage Finds Procedure*
[171] Artefact 2016a:314

d. Historical research, references and bibliography;

e. Detailed information on the excavation, including the aim, the context for the excavation, procedures, treatment of artefacts (cleaning, conserving, sorting, cataloguing, labelling, scale photographs and/or drawings, location of repository) and analysis of the information retrieved;

f. Nominated repository for the items;

g. Detailed response to research questions (at minimum those stated in the approved Research Design);

h. Conclusions from the archaeological programme. The information must include a reassessment of the site's heritage significance, statement(s) on how archaeological investigations at this site have contributed to the community's understanding of the site and other comparable archaeological sites in the local area and any relevant recommendations for the future management of the site information and artefacts;

i. Details of how this information about this excavation has been publicly disseminated (for example provide details about Public Open Days and include copies of press releases, public brochures and/or information signs produced to explain the archaeological significance of the site).

6.3.27 Curation of archaeological material

Storage and curation strategies have been adapted from the Salvage and Storage Strategy of the Sydney Metro Integrated Management System.[172]

Collection of artefacts would be in the context of the AARD, which state that "retrieval of artefacts would focus on those whose analysis would contribute to research agendas, or would be representative of the site".[173]

Following excavation, all collected artefactual material would be stored by Artefact Heritage in order to conduct post-excavation material analysis. Once post-excavation analysis and salvage excavation reporting has been completed, ongoing curation and long-term care of the collection would be at the discretion of Transport for NSW. Archaeological materials may be incorporated into interpretative or public display depending on the nature of recovered finds.

Large archaeological items, or items that require special care (i.e. material that is in danger of deterioration post-excavation), would be stored in appropriate facilities co-ordinated with and managed by Transport for NSW under the projects salvage strategy.

6.3.28 Public Engagement

There is potential for significant archaeological remains within the study area, in particular the Devonshire Street Cemetery. There is opportunity to interpret the archaeology and engage the public with the significance and stories of Central Station's past.

Significant findings from the archaeological investigation program would be included in heritage interpretation for the project. Preliminary results reporting and final reporting would identify significant findings which should be considered as part of heritage interpretation.

[172] Transport for NSW 2016a: 5 – 6
[173] Artefact 2016a:315

There may also be opportunity for public engagement such as open days or media releases during archaeological investigations. This could include hoarding signage, pamphlets, media releases, information on the project website, social media and blog content during the excavation process.

If substantial archaeological remains are uncovered there would be an opportunity to publish the results.

6.3.29 SHR listing update

Prior to completion of the Project, an updated Central Station listing nomination form must be prepared in consultation with all relevant stakeholders including the Heritage Division as delegate of the Heritage Council of NSW. Archaeology would be included in the listing update.

6.4 Team and timing

6.4.1 Archaeological team

The archaeological team would comprise:

- Primary Excavation Director – Dr Iain Stuart (Principal, Artefact Heritage)
- Secondary Excavation Director – Jenny Winnett (Principal, Artefact Heritage)
- Site Director – Shona Lindsay (Senior Heritage Consultant, Artefact Heritage)
- Excavation Director (Aboriginal) – Dr Sandra Wallace (Director, Artefact Heritage)
- Forensic Anthropologist – Dr Denise Donlon (Senior Lecturer in Anatomy and Curator, Shellshear Museum, University of Sydney)
- Archaeologists – Jessica Horton, Duncan Jones, HollyMae Steane Price, Ryan Taddeucci, Jayden van Beek, Adele Zubrzycka, and others as needed.
- Archaeological Surveyors - Guy Hazell and Gala Hazell (ArcSurv)
- Environmental sampling – Sam Player and Dr Mike McPhail
- Artefact specialists - Jeanne Harris (Urban Analysts), Jenny Winnett, Shona Lindsay, Michael Lever, and others as needed

The Excavation Directors meet the requirements of the AARD, CHAR and Condition E18.

The Primary Excavation Director would oversee the archaeological excavations and advise on archaeological issues. The Primary Excavation Director would provide clearance once archaeological management has been completed in an area, as per the methodology outlined in Section 6.3.25. The Secondary Excavation Director would support the Primary Excavation Director where needed. The Aboriginal archaeological excavation director would manage Aboriginal archaeological test and salvage in accordance with the CHAR including co-ordinating appropriate consultation with the RAPs. The Forensic Anthropologist would respond to finds of potential human remains in accordance with the Sydney Metro Exhumation Management Plan. This would be in accordance with the CHMP and relevant conditions of approval (E18).

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Dobrolot, Lucas

From: Felicity Barry <Felicity.Barry@environment.nsw.gov.au>
Sent: Monday, 3 September 2018 6:18 PM
To: McCallum, Chris; OEH HD Heritage Mailbox
Cc: Annabelle Reyes; 'Turner, Ron'; Hendy, Andrew; Sandra Wallace
Subject: RE: Final CSMW Archaeological Method Statement - Sydney Metro Box

Dear Chris,

I have reviewed the recently referred document – Central Station Main Works Station Box and Sydney Yards Archaeological Method Statement, prepared by Artefact Heritage Services and updated on 31 August 2018.
I can confirm this document has satisfactorily addressed the previous changes identified by the Heritage Division.

Regards
Felicity

NSW GOVERNMENT Office of Environment & Heritage

Felicity Barry
Acting Senior Team Leader
Specialist Services
Heritage Operations

Level 6, 10 Valentine Ave, Parramatta
Locked Bag 5020, Parramatta 2124
T 02 9995 6914

I acknowledge and respect the traditional custodians and ancestors of the lands I work across.

Take a look at Portraits of New South Wales, a celebration of heritage in NSW and 40 years of the *Heritage Act 1977.*

From: McCallum, Chris <CMcCallum@laingorourke.com.au>
Sent: Monday, 3 September 2018 4:09 PM
To: Felicity Barry <Felicity.Barry@environment.nsw.gov.au>; OEH HD Heritage Mailbox <HERITAGEMailbox@environment.nsw.gov.au>
Cc: Annabelle Reyes <annabelle.reyes@hbi.com.au>; 'Turner, Ron' <Ron.Turner2@transport.nsw.gov.au>; Hendy, Andrew <Andrew.Hendy@transport.nsw.gov.au>; Sandra Wallace <Sandra.Wallace@artefact.net.au>
Subject: Final CSMW Archaeological Method Statement - Sydney Metro Box

Dear Felicity,

Please find attached the revised CSMW Archaeological Method Statement - Sydney Metro Box that incorporates responses to your comments. I will send a track change version separately. Let me know if you require any further information

Thanks

Chris

Chris McCallum
Environmental Manager
LAING O'ROURKE

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Stuart Hodgson
Director
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Sydney Metro
Transport for NSW
PO Box K659
HAYMARKET NSW 1240

4 September 2018

Ref: CSMW-AMS-Station Box and Sydney Yard

Dear Stuart

RE: Endorsement of Laing O' Rourke - Central Station Main Works Station Box and Sydney Yards- Archaeological Method Statement

Thank you for providing the following document for Environmental Representative (ER) review and endorsement as required by the Condition of Approval (CoA) A24(d) of the Sydney Metro City & Southwest project (SSI – 15_7400 January 9 2017).

- Central Station Main Works Station Box and Sydney Yards- Archaeological Method Statement Revision 4, 31 August 2018

This Archaeological Method Statement (AMS) outlines the archaeological methodology to manage potential construction impacts to significant non-Aboriginal archaeological remains at the Central Station Main Works site as required under the Minister's Conditions of Approval for the Sydney Metro City & Southwest Chatswood to Sydenham project Critical State Significant Infrastructure (CSSI) approval SSI15_7400. This AMS satisfies condition of approval E17 and was provided for review to the NSW Heritage Division as a delegate of the Heritage Council. This AMS was also reviewed and endorsed by the nominated Primary and Secondary Excavation Directors.

As an approved ER for the Sydney Metro City & Southwest project, I have reviewed this AMS with the consultation records from NSW Heritage Division and the endorsement of excavation directors and is now consider appropriate for implementation.

Yours sincerely,

Annabelle Tungol Reyes
Environmental Representative - Sydney Metro City & Southwest