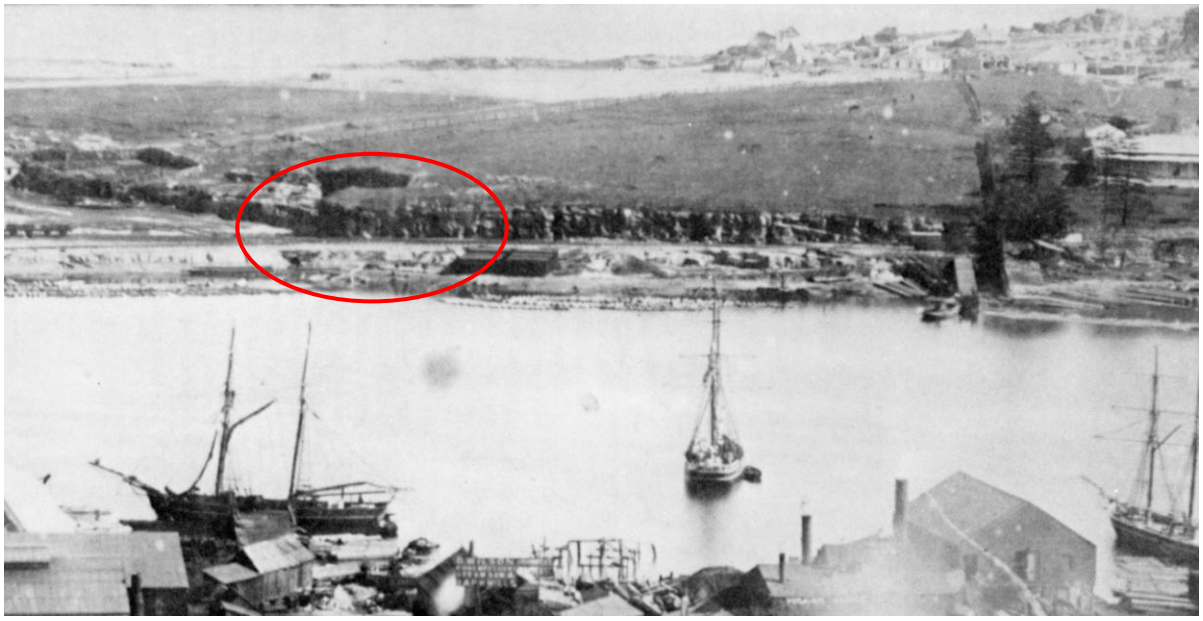
Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP)

Non-Indigenous Archaeological Assessment and Impact Statement for SSDA6 - ICC Hotel



Detail of a panorama looking west at the study area, taken from the Sydney Town Hall tower, 1870s

Report to

Darling Harbour Live

August 2013

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CASEY & LOWE
ARCHAEOLOGY & HERITAGE

EXECUTIVE SUMMARY

RESULTS

1. The study area contains potential archaeological remains and heritage of State and local significance.
2. The proposed design of the new hotel complex within the subject area includes a basement which will impact on identified potential archaeology of local significance.
3. The proposed piling is typically intermittent and will have some but limited impact on the potential archaeological resource within the subject areas. Most of the piling is within the area of quarried bedrock and some is within the foreshore zone.
4. The sub-surface impacts of the hotel have been designed to avoid the Power House saltwater intake conduits. The engineering report believes that the hotel and new services can be designed to avoid any impacts on the heritage-listed conduits but subject to recommendations and further works.

RECOMMENDATIONS

1. The current hotel design proposal potentially impacts on archaeology of local significance. In order to mitigate this impact, archaeological recording/sampling is recommended.
2. Write a Research Design and Management Strategy, including a Piling Mitigation Strategy which draws on the detailed design, works program and identifies detailed archaeological investigation and recording strategies in accordance with best practice archaeological methodologies for the basement footprint. The archaeological program would focus on:
    - Recording land forming evidence, sampling sections through reclamation fills and natural.
    - Recording the evidence for the c1859 goods line and culvert.
    - Record evidence for the 1880s seawall and embankment.
    - Investigate possible evidence for use of foreshore zone.
3. Avoid/reduce impacts where possible on the 1880s seawall or embankment.
4. A public interpretation plan needs to be prepared outlining key themes for interpretation of Darling Harbour and surrounds as part of this redevelopment.
5. SHFA, as the owner of the SICEEP area, will need to provide storage in perpetuity for artefacts recovered from the site. SHFA has an artefact repository.
6. Any archaeological program needs to be reported on in accordance with Heritage Council guidelines. This is to include:
    - catalogue of artefacts and reporting.
    - conservation of important artefacts.
    - detailed trench or area reports.
    - overall excavation report, including a response to research questions.
    - photo archive.
7. Implement the recommendations of the engineers for the management of impacts on the Power House saltwater conduits. Details of these are set out below.

Engineers' recommendations regarding 1920s Saltwater Inlet Conduits

The engineering assessment of impacts on the 1920s saltwater inlet conduits by Pells Sullivan Meynink made the following key recommendations regarding the stormwater diversion:

> To control physical impacts from the closest pile on the tunnel, a set-back distance is proposed. A restriction on the pile toe level is also proposed to avoid potential pile toe instability from the adjacent tunnel excavation.
>
> Where piles are proposed to be installed near the proposed set-back distance, the drilling of a small diameter cored pilot hole is recommended to check the location of the tunnel prior to the commencement of pile hole excavation. Additional checks in regards to pile construction tolerances are also proposed.
>
> An assessment of vibration from pile excavation was undertaken, and it was concluded that monitoring be undertaken to check vibration impacts prior to excavating piles close to the tunnel. This may lead to restrictions on the type of piling plant employed and construction methods.
>
> An assessment of the structural capacity of the intake pipes has been performed. This was based on the available historical data, and from consideration of the manufacturing method and estimated design loads. The current condition of the pipes is not known, and hence an arbitrary 50% reduction in capacity has been adopted to account for possible deterioration of the 85 year old pipes. This analysis suggests that cracking of the lining would occur when the compressive stresses exceed 5 MPa, or the tensile stresses exceed 2 MPa. Numerical analysis of the proposed hotel development and the tunnels indicates that the pipe stresses are not significantly affected by the hotel loads, and that the induced stresses are acceptable in comparison to the adopted limits.
>
> The hotel development will also require diversion of an existing 900 mm diameter stormwater pipe. The relocated pipe will pass over the top of the existing tunnels, and is expected to require about 2 m of excavation in sandstone bedrock. To ensure that the trench excavation does not intersect the tunnel, probe drilling is proposed to check the thickness of rock above the crown of the existing tunnels.
>
> Vibration from plant used to excavate the stormwater trench could potentially damage the intake tunnels. Monitoring is recommended to be undertaken to check vibration impacts prior to the trench excavation approaching the tunnel. This may lead to restrictions to the type of excavation plant employed and construction methods.
>
> In summary, subject to the constraints and recommendations presented in this report, PSM is satisfied that the proposed hotel building can be developed adjacent to the existing saltwater intake tunnel without causing adverse structural impacts.[1]

[1] Pells Sullivan Meynink 2013c: 15

Contents

APPENDICES

Document Status

Name	Date	Purpose	Author	Approved
Draft 1	26/7/2013	Draft review	Nick Pitt, Mary Casey	Mary Casey Tony Lowe
Draft 2	5/8/2013	2nd draft for review	Nick Pitt, Mary Casey	Mary Casey
Draft 3	12/8/2013	Updated study area plans	Nick Pitt	Mary Casey
Final	15/08/13	Final	Mary Casey	Mary Casey
Final	27/8/2013	Amend study area	Mary Casey	Mary Casey

Non-Indigenous Archaeological Assessment & Impact Statement
ICC Hotel, Darling Harbour, Sydney

1.0 Introduction

1.1 Introduction

This report supports a State Significant Development Application (SSDA) submitted to the Minister for Planning and Infrastructure pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Application (referred to as SSDA6) seeks approval for construction of the International Convention Centre (ICC) Hotel component of the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) at Darling Harbour.

This SSDA follows SSDA1, which seeks approval for the core convention, exhibition and entertainment facilities of the SICEEP Project; SSDA2, a staged application that sets out a Concept Proposal for a new mixed use neighbourhood at Darling Harbour known as 'The Haymarket'; and a number of detailed proposals (SSDA3, SSDA4, and SSDA5) for use of development plots within The Haymarket. SSDAs 1 and 2 were submitted to the Department of Planning and Infrastructure (DoPI) in March 2013, and the SSDAs 3-5 were submitted in May 2013.

The ICC Hotel forms part of the SICEEP Project, which will deliver Australia's global city with new world class convention, exhibition and entertainment facilities and support the NSW Government's goal to "make NSW number one again".

1.2 Overview of proposed Development

The proposal relates to a SSDA for the ICC Hotel component of the SICEEP Project. The hotel is located at the northern end of the precinct and comprises a single building with up to 655 keys. The hotel is being developed by Lend Lease and is consistent with Darling Harbour Live's Preferred Precinct Plan.

More specifically, this SSDA seeks approval for the following components of the development:

- Demolition of existing site improvements.
- Associated tree removal and replanting.
- Construction and use of a single hotel tower providing for up to 656 keys and including guest facilities, restaurant and ballroom.
- Public domain improvements including integration with existing / proposed works.
- Extension, realignment and augmentation of physical infrastructure / utilities as required.

1.3 Background

The NSW Government considers that a precinct-wide renewal and expansion of the existing convention, exhibition and entertainment centre facilities at Darling Harbour is required, and is committed to Sydney reclaiming its position on centre stage for hosting world-class events with the creation of the Sydney International Convention, Exhibition and Entertainment Precinct.

Following an extensive and rigorous Expressions of Interest and Request for Proposals process, a consortium comprising AEG Ogden, Lend Lease, Capella Capital and Spotless was announced by the

NSW Government in December 2012 as the preferred proponent to transform Darling Harbour and create SICEEP.

Key features of the Preferred Precinct Plan include:

- Delivering world-class convention, exhibition and entertainment facilities, including:
  - Up to 40,000m^2 exhibition space;
  - Over 8,000m^2 of meeting rooms space, across 40 rooms;
  - Overall convention space capacity for more than 12,000 people;
  - A ballroom capable of accommodating 2,000 people; and
  - A premium, red-carpet entertainment facility with a capacity of 8,000 persons.
- Providing a hotel complex at the northern end of the precinct, immediately adjacent to the new International Convention Centre.
- A vibrant and authentic new neighbourhood at the southern end of the precinct, called 'The Haymarket', including apartments, student accommodation, community facilities, shops, cafes and restaurants.
- Renewed and upgraded public domain that has been increased by a hectare, including an outdoor event space for up to 27,000 people at an expanded Tumbalong Park.
- Improved pedestrian connections linking to the proposed Goods Line (formerly Ultimo Pedestrian Network) drawing people between Central, Chinatown and Cockle Bay Wharf as well as east-west between Ultimo/Pyrmont and the City.

1.4 Site Description

The SICEEP Site is located within Darling Harbour. Darling Harbour is a 60 hectare waterfront precinct on the south-western edge of the Sydney Central Business District that provides a mix of functions including recreational, tourist, entertainment and business.

With an area of approximately 20 hectares, the SICEEP Site is generally bound by the Light Rail Line to the west, Harbourside shopping centre and Cockle Bay to the north, Darling Quarter, the Chinese Garden and Harbour Street to the east, and Hay Street to the south. The SICEEP Site has been divided into three redevelopment areas – Bayside, Darling Central and The Haymarket.

The ICC Hotel Site is (Figure 1.1):

- Located within the northern end of the Bayside precinct.
- Bound by Harbourside Shopping Centre to the north and east, the International Convention Centre to the south and Darling Drive to the west.
- Occupies an area of approximately 3,730m^2.

Figure 1.1: The current study area is highlighted in pink.

1.5 Planning Approvals Strategy

The SICEEP Project will result in the lodgement of numerous SSDAs for the various components of the redevelopment project. SSDAs have already been lodged for the PPP component of the SICEEP Project (comprising the convention centre, exhibition centre, entertainment facility and ancillary commercial premises and associated public domain upgrades), the Stage 1 Concept Proposal for The Haymarket, and the Stage 2 detailed proposals for three of the development plots within The Haymarket. Future applications will be lodged for the remaining development plots within The Haymarket Site.

This Application relates to a SSDA6 for the ICC Hotel component of the SICEEP Project and is consistent with Darling Harbour Live's Preferred Precinct Plan.

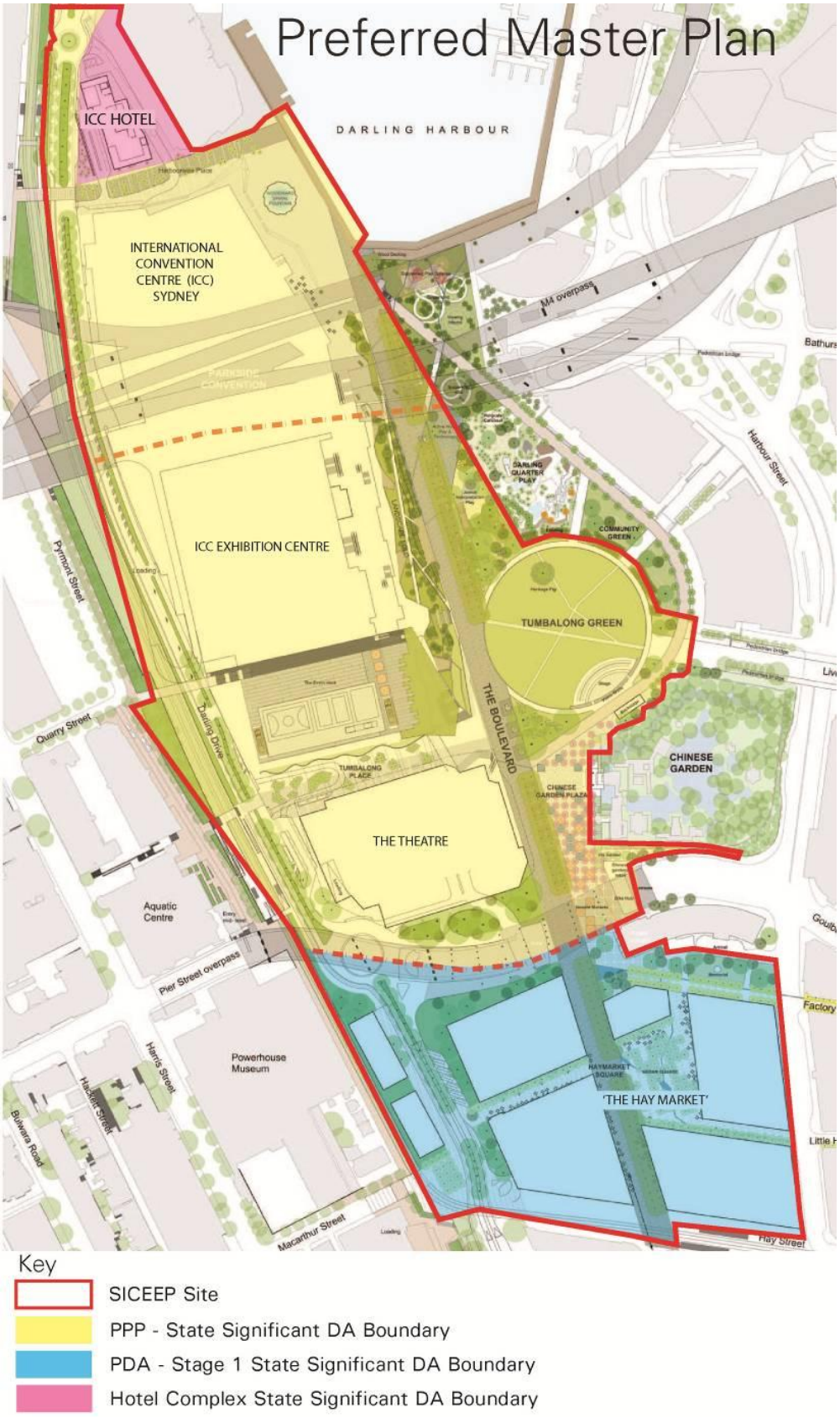

Figure 1.2: Plan of various stages of development and planning approvals.

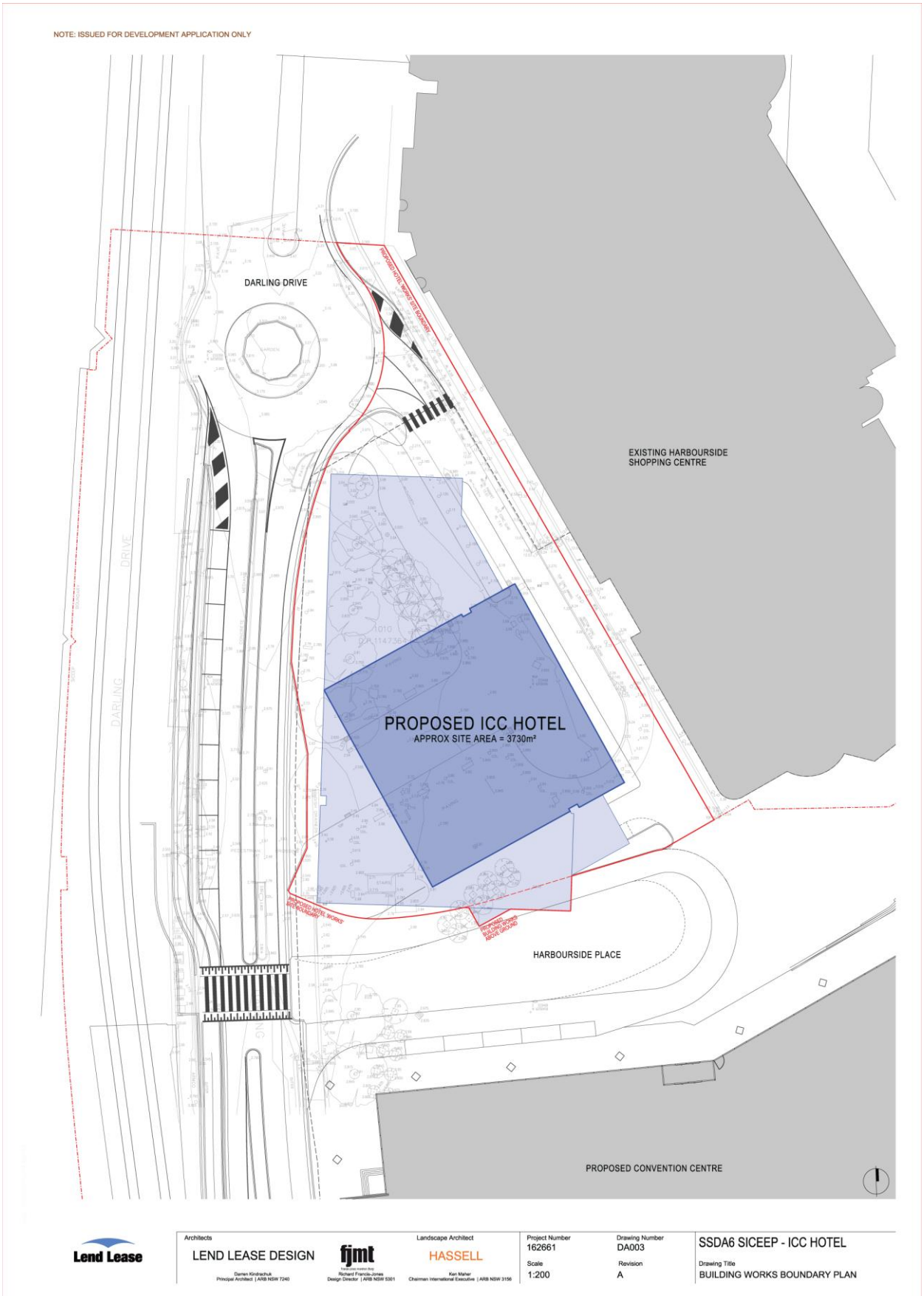

Figure 1.3: Plan of the study area showing.

1.6 Statutory Constraints

1.6.1 Legislation under Part 4, Division 4.1

Environmental Planning & Assessment Act Part 4, Division 4.1

The current project is being undertaken as a State significant development under Part 4, Division 4.1. The Director General's Requirements for this project were updated and reissued on 21 January 2013.

Director-General's Requirements

The specific issues identified in the DGR's include:

- (2) Policies and Guidelines to be addressed: *Heritage Council Guidelines Assessing the Significance of Archaeological Sites and Relics.*
- (10) Heritage
    - Address the impacts of the proposal on heritage significance of the site and adjacent area including any built and landscape heritage items including places, items or relics of significance to Aboriginal people; and
- Consultation with Office of Environment and Heritage.
- Deliverables Table:
    - Heritage Impact Assessment for SSDA2.
    - Development specific heritage/archaeological reports for SSDA2, SSDA3, SSDA4, SSDA5, SSDA6.

Casey & Lowe are writing a Non-Indigenous Archaeological Assessment and Heritage Impact Statement that fulfils the guidelines of the NSW Heritage Council and addresses *Assessing the Significance of Archaeological Sites and Relics*. Comber Consultants have already written an *Aboriginal Archaeological Assessment* (March 2013) which provides an overview of requirements for the subject site.

89J Approvals etc legislation that does not apply:

As stated in 89J:

1. The following authorisations are not required for State significant development that is authorised by a development consent granted after the commencement of this Division (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):
   (c) an approval under Part 4, or an excavation permit under section 139, of the *Heritage Act 1977*,
   (d) an Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974*.
2. Division 8 of Part 6 of the *Heritage Act 1977* does not apply to prevent or interfere with the carrying out of State significant development that is authorised by a development consent granted after the commencement of this Division.

In effect, the Department of Planning and Infrastructure provides consent to impact on relics under 89J. Therefore no approvals are required under S139 or S57 of the *Heritage Act 1977* or S90 of the *National Parks and Wildlife Act 1974*. The Department of Planning and Infrastructure will of course consult with the Office of Environment and Planning, both the Heritage Branch and the Aboriginal Heritage Section, and the proposed work needs to conform with Heritage Branch and Aboriginal Heritage Branch guidelines. This section does not exempt requirements under S170 of the Heritage Act.

1.6.2 Relics Provisions, *NSW Heritage Act*, 1977

Division 9: Section 139, 140–146 – Relics Provisions – Excavation Permit
When a site is not being assessed under the EP&A Act, Part 4.1 the main legislative constraint on archaeological remains is the relics provisions of the *Heritage Act* 1977. Provisions relating to S139 of the *Heritage Act 1977* are suspended by Part 4.1, Division 4.1, S89J.

According to Section 139:

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

(b) The Heritage Council may by order published in the Gazette create exceptions to this section, either unconditionally or subject to conditions, in respect of any of the following:

a. any relic of a specified kind or description,
b. any disturbance or excavation of a specified kind or description,
c. any disturbance or excavation of land in a specified location or having specified features or attributes,
d. any disturbance or excavation of land in respect of which an archaeological assessment approved by the Heritage Council indicates that there is little likelihood of there being any relics in the land.

A 'relic' is an item of 'environmental heritage' defined by the *Heritage Act 1977* (amended) as:

> those places, buildings, works, relics, moveable objects, and precincts of State or local heritage significance.

It was more recently further defined as:

> Relevant case law and the general principles of statutory interpretation strongly indicate that a 'relic' is properly regarded as an object or chattel. A relic can, in some circumstances, become part of the land and be regarded as a fixture (a chattel that becomes permanently affixed to land).

A relic as further defined by the Act is:

> *..any deposit, object or material evidence –*
> (b) *which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement; and*
> *(b) is of State or local heritage significance.*

1.6.3 Heritage Lists - S170 Register
We have also reviewed the SHFA S170 register and the State Heritage Inventory (SHI) (Table 1.1) for the entire SICEEP area (although only the northern and central areas will be analysed in detail in this document). It is noted that the SHFA S170 register items have point data only and have not provided a mapped curtilage for its various precincts. While general descriptions have been provided our understanding of the location of these precincts is based on our interpretation of the descriptions. The requirements of a statutory authority under S170 of the *Heritage Act* are:

(3) A government instrumentality shall establish and keep a register entitled the 'Heritage and Conservation Register'.

(4) A government instrumentality shall enter in the register details of each item of the environmental heritage which is subject to an interim heritage order or listing on the State Heritage Register; or is listed in an environmental planning instrument under the *Environmental Planning and Assessment Act 1979* as an item of environmental heritage, or could, in accordance with guidelines issued from time to time by the Heritage Council, be subject to an interim heritage order or listing on the State Heritage Register; and which in the case of a statutory body, is owned or occupied by the statutory body; or in the case of a Department head, is vested in or owned or occupied by, or subject to the control of, the appropriate minister or the Department.

The ICC Hotel study area contains a known item on SHFA's Section 170 (S170) register. A state government agency has approval over any impacts on these items but they are required to inform the Heritage Branch of any changes to significant items, and provide 14 days notice of any proposed impacts.

Table 1.1: List of S170 register items within the entire SICEEP study area. Only one of these is associated with the ICC Hotel development.[2]

Site/Structure	S170	SHR	Significance	Location	Impact
Exhibition Centre Precinct, Archaeological Remains – Iron Wharf (Directly east of the Exhibition Centre, Darling Harbour)	SHFA		State/local	Tumbalong Park Central	Yes
Cockle Bay Precinct, Archaeological Remains (East Side of Darling Harbour, West of Sussex Street, North of Pier Street, Darling Harbour, NSW)	SHFA		State/Local	Central	Yes
Darling Harbour Rail Corridor West side of Darling Harbour to Pyrmont, Darling Harbour	SHFA		State?	Western boundary of the site, North/Central	Adjacent
Chinese Garden of Friendship (includes buried archaeology) (Day Street / Pier Street, Darling Harbour)	SHFA		State?	Adjacent to Central	Adjacent
Pier Street Precinct Archaeological Remains (Bounded By Hay, Harbour, Pier Streets and Merino Boulevard (Darling Drive)	SHFA		State/local	Haymarket	No
Hydraulic Pumping Station archaeology	SHFA	yes	State	Adjacent	No
Water Cooling System and Manifold (Powerhouse to Murray Street to waters edge, Darling Harbour)	SHFA		State?	North/Hotel	No
Hay Street Stormwater Channel No.30P1[3] (Hay Street , see curtilage plan)	Sydney Water		Local	Haymarket	No

1.7 Previous Reports

There have been a number of archaeological reports written which address part or all of the SICEEP study area:

- *Baseline Archaeological Assessment of Darling Harbour South; Block bounded by Pier, Harbour and Hay Streets and former Railway Corridor*, Wayne Johnson, Sydney Harbour Foreshore Authority, April 2011.
- *Sydney International Convention Exhibition and Entertainment Precinct, Darling Harbour, Historical Archaeological Assessment*, City Plan Heritage, for Infrastructure NSW, May 2012.

[2] http://www.shfa.nsw.gov.au/sydney-About_us-Our_heritage_role-Heritage_and_Conservation_Register.htm

[3] Incorrectly identified as being of State significance in May 2012 assessment. Endorsed significance on Sydney Water S170 register is local.

- *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Baseline Heritage Impact Assessment*, City Plan for Infrastructure NSW, May 2012.
- *Archaeology Heritage Impact Statement, Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP),* Casey & Lowe for Lend Lease August, 2012.
- *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Concept Plan, Non-Indigenous Archaeological Assessment & Impact Statement for SSDA1,* Casey & Lowe for Lend Lease, March 2013.
- *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Concept Plan, The Haymarket – SSDA2, Non-Indigenous Archaeological Assessment & Impact Statement,* Casey & Lowe for Lend Lease, March 2013.

In addition we have drawn on the archaeological work, reports and draft reports written by Casey & Lowe for Lend Lease for Darling Quarter (Darling Walk) and for Barangaroo South which we finished excavating in August 2012:

- *Non-Indigenous Archaeological Assessment, Barangaroo Stage 1 (Barangaroo South),* for Lend Lease (Millers Point) Pty Ltd, July 2010, Casey & Lowe.
- *Archaeological Research Design & Management Strategy, Barangaroo Stage 1,* for Lend Lease (Millers Point) Pty Ltd, May 2010, Casey & Lowe.
- *Archaeological Management Strategy & Research Design, Darling Walk, Darling Harbour, Sydney*, for Lend Lease Development, August 2008
- *Non-Indigenous Archaeological Assessment, Darling Walk, Darling Harbour, for Lend Lease Development,* Casey & Lowe June 2008.
- *Darling Walk, Archaeological Excavation 2008/2009, Preliminary Results, for Lend Lease Development*, Casey & Lowe, June 2009.
- *Draft Archaeological Investigation Report, Darling Quarter (Darling Walk),* for Lend Lease, Casey & Lowe August 2013.
- *SICEEP, Archaeology, Heritage Impact Statement*, for Lend lease, August 2012.

In addition, other nearby projects includes Paddy's Markets which was excavated in 1990 and more recent work at the UTS Dr Chau Chak site, Ultimo Road and Mary Ann Street.

- *Archaeological Assessment & Research Design, Dr Chau Chak Wing Building, 14-28 Ultimo Road, Ultimo*, for University of Technology, Casey & Lowe, February 2011.

1.7.1 Recommendations from City Plan reports

The City Plan Archaeological Assessment (May 2012) identified the following recommendations:

Heritage Items/Archaeological Sites or relics to be retained *in situ*:

- Archaeology of Dickson's Mill - should include wharf but not identified in report
- Dickson's mill dam wall.
- Hay Street Stormwater.
- Remains of the Iron Wharf (Tumbalong Park).

Their report did not cover the current site of the ICC Hotel.

1.7.2 Recommendations from Casey & Lowe, August 2012

Other archaeological remains (relics) identified in Casey & Lowe (August 2012) which should be conserved *in situ*:

- Barker's Jetty (1820s)
- Hydraulic Pumping station archaeology outside the SHR site, mostly outside the Haymarket study area.

All other archaeological remains were not required to be retained *in situ* but need to be subject to archaeological testing, excavation and recording prior to removal. This current report and the

recommended research design will provide the basis for managing the archaeological resource in light of the proposed development.

1.8 Report methodology

This report methodology conforms to the Heritage Branch, Office of Environment & Heritage guidelines for Archaeological Assessments. It addresses the impacts of the proposed design on the potential archaeology resource within the ICC Hotel site (SSDA6). The specific details of the design will be addressed.

1.9 Authorship

This report was based upon the assessment of SICEEP SSDA1, written by Dr Mary Casey and Jenny Winnett, Casey & Lowe. It was adapted and revised for the ICC Hotel site (SSDA6) by Nick Pitt. The history chapter was written by Caroline Plim. Nick Pitt wrote Chapters 3, 4, 5, 6 and 7 as well as producing the overlays of historic plans and modern buildings. The report was reviewed and edited by Dr Mary Casey and Tony Lowe, Directors, Casey & Lowe.

1.10 Acknowledgements

Madeleine Macdessi, Project Management & Construction, Lend Lease
Michelle Mason, Development, Lend Lease

1.11 Limitations

Overlay maps are a standard tool for archaeologists but we are always dependent on the accuracy of the original maps. The overlays for the ICC Hotel site were in the first instance based on the overlays for the entire SICEEP area. As the entire SICEEP area was very large, the error involved in some of these overlays could be as large as 10m. Furthermore, there were particular difficulties in fitting maps against both the eastern and western sides of Darling Harbour. This particularly is an issue for maps dating before the 1860s, when there were fewer streets in Ultimo and Pyrmont to help align and scale the overlays. However the smaller size of the ICC Hotel site allowed the overlays to be refined, by a process of working backwards from current cadastral boundaries. Through this process, the error in many overlays was reduced when compared with those for the entire SICEEP area. Nevertheless, there still is an uncertainty of at least 1 to 2m when relating features to the ground. This is typical of our experience with overlays of historic plans.

Other than the above, there were no particular constraints to producing this report. There was sufficient time and funding to complete the report to a quality standard. Casey & Lowe have undertaken considerable archaeological research and fieldwork on nearby sites and this has provided considerable additional information on which to base our assumptions, analysis and recommendations.

1.12 Glossary

Historical Archaeology (Non-Indigenous/European)

Historical Archaeology (in NSW) is the study of the physical remains of the past, in association with historical documents, since the British occupation of NSW in 1788. As well as identifying these remains the study of this material can help elucidate the processes, historical and otherwise, which have created our present surroundings. Historical archaeology includes an examination of how the late 18th and 19th-century arrivals lived and coped with a new and alien environment, what they ate,

where and how they lived, the consumer items they used and their trade relations, and how gender and cultural groups interacted. The material remains studied include:

- Archaeological Sites:
  below ground: these contains relics which include building foundations, occupation deposits, rubbish pits, cesspits, wells, other features, and artefacts.
  above ground: buildings, works, industrial structures and relics that are intact or ruined.
- cultural landscapes: major foreshore reclamation
- structures associated with maritime activities.

Archaeological Potential
Archaeological potential is here used and defined as a site's potential to contain archaeological relics which fall under the provisions of the *Heritage Act* 1977 (amended). This potential is identified through historical research and by judging whether current building or other activities have removed all evidence of known previous land use.

Archaeological Site
A place that contains evidence of past human activity. Below ground sites include building foundations, occupation deposits, features and artefacts. Above ground archaeological sites include buildings, works, industrial structures and relics that are intact or ruined.

Archaeological Investigation or Excavation
The manual excavation of an archaeological site. This type of excavation on historic sites usually involves the stratigraphic excavation of open areas.

Archaeological Monitoring
Archaeological monitoring is recommended for those areas where the impact of the works is not considered to mean the destruction of significant archaeological fabric. Nevertheless the disturbance of features both suspected and unsuspected is possible. In order to provide for the proper assessment and recording of these features an archaeologist should inspect the works site at intervals they consider to be adequate and to be 'at call' in case the contractor uncovers remains that should be assessed by the archaeologist.

Monitoring is a regular archaeological practice used on many building and development sites.

Research Design
A set of questions which can be investigated using archaeological evidence and a methodology for addressing them. A research design is intended to ensure that archaeological investigations focus on genuine research needs. It is an important tool that ensures that when archaeological resources are destroyed by excavation, their information content can be preserved and can contribute to current and relevant knowledge.

Research Potential
The ability of archaeological evidence, through analysis and interpretation, to provide information about a site that could not be derived from any other source and which contributes to the archaeological significance of that site and its 'relics'.[4]

Relic
Means any deposit, artefact, object or material evidence that:

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

[4] NSW Heritage Branch 2009: 11

> (b) is of State or local heritage significance.
> (NSW *Heritage Act 1977*, Definitions, Part 1.4)

It was more recently further defined as:

> Relevant case law and the general principles of statutory interpretation strongly indicate that a 'relic' is properly regarded as an object or chattel. A relic can, in some circumstances, become part of the land and be regarded as a fixture (a chattel that becomes permanently affixed to land).[5]

1.13 Abbreviations

ADH	Australian Height Datum
AO	Archives Office (now part of State Records NSW)
EIS	Environmental Impact Statement
HRNSW	Historic Records of NSW
ML	Mitchell Library (in the State Library of NSW)
NLA	National Library of Australia
RL	Relative Level (all RLs in this report are relative to the ADH (Australian Height Datum)
SHFA	Sydney Harbour Foreshore Authority
SHI	State Heritage Inventory
SHR	State Heritage Register
SICEEP	Sydney International Convention, Exhibition and Entertainment Precinct
SLNSW	State Library of New South Wales
SMH	Sydney Morning Herald
SRNSW	State Records, New South Wales

[5] NSW Heritage Branch 2009: 7

2.0 Historical Background

2.1 Background

A number of heritage reports have been written addressing the history of Darling Harbour, including part or all of the study area. This chapter provides a background for the Archaeological Assessment of the ICC Hotel development area. It is largely based on the historical background undertaken for the North and Central area, included in Casey & Lowe's report *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) – Non-Indigenous Archaeological Assessment and Impact Statement for SSDA1* (March 2013). Its main focus is on items of significance identified in Casey & Lowe's *Sydney International Convention, exhibition and Entertainment Precinct (SICEEP) Archaeology: Heritage Impact Statement* (August 2012).

2.2 Early British Settlement (1788-1837) including main grants associated with the study area, City, Haymarket, Ultimo and Pyrmont

Darling Harbour appears in colonial government records as early as 1788 under the name of 'Long Cove'.[6] Later the bay to the west of Sydney Cove was known as Cockle Bay until its official naming as Darling Harbour in 1826. At this time the rocky shores were covered in scrub and the wetlands at the head of the tidal inlet were fed by a number of small streams. An 1802 plan by Charles Leseur illustrates the general nature of the landscape at this time. The watercourses and wetlands at the head of the inlet influenced the development and management of the study area from the earliest days of settlement (Figure 2.1). Prior to settlement the environment provided a rich source of food and other natural resources for Aboriginal communities and it did later, for a short while, for colonists. Characteristics of the environment are detailed in James Broadbent's *Transformations: Ecology of the Pyrmont Peninsula 1788-2008*.[7]

Land bordering on the west and southern parts of the Darling Harbour foreshore was granted from 1794. Twenty-four acres (9.71 ha) on the Pyrmont peninsula covering the northern part of the study area was granted to John Malone (no. 1), while eighteen acres (7.28 ha) in the southern part of the study area (no. 2) was granted to William Mitchell. Both grants occurred on 10 December 1794.[8] Surgeon John Harris's (1754-1838) Ultimo Farm lay to the south of the Hotel study area. It was comprised several portions of land on the western and southern shore of Darling Harbour - 34 acres (13.76 ha) granted on 31 December 1803, 135 acres (54.63 ha) granted on 1 January 1806 and 12 ¾ acres (5.16 ha) granted on 8 May 1818.[9] By 1818, Malone's grant had become part of the Harris Estate.[10] One and a half acres of Malone's former grant was sold cheaply to Captain George Bunn by John Harris in 1828, following Bunn's marriage to Anna Maria Murray.[11] Bunn's land was north of the ICC Hotel site (Figure 2.2). Reclamation took place in the 19th and 20th centuries along the western shores of Darling Harbour adjacent to Malone, Mitchell and Harris' grants.

In 1804 Harris built a house on his 'rural retreat' at Ultimo. By this time 18 houses were recorded at Cockle Bay, with most likely to have been on the eastern shore opposite Ultimo Farm.[12] The sites of Harris' Ultimo House and Ultimo Cottage are outside the study area. An 1837 plan of Ultimo Estate shows the location of Ultimo Farm buildings, the wetland and creek at the head of the bay, as well as land use in and adjacent to the study area (Figure 2.3). Harris sold (or leased) portions of land on the western shore of Darling Harbour to William Shepherd and Mr Thompson; both sites are

[6] PWD [1984]: 2.
[7] Broadbent 2010.
[8] Fitzgerald & Golder 2007: 16.
[9] Casey & Lowe 2011a.
[10] Godden Mackay 1993: 12.
[11] Fitzgerald & Golder 2006: 23.
[12] 'Return of Houses', *Sydney Gazette* 15 Apr 1804.

labelled as 'gardens'.[13] These allotments are to the south of the ICC Hotel study area and the accuracy of the maps does not allow for accurate overlays.

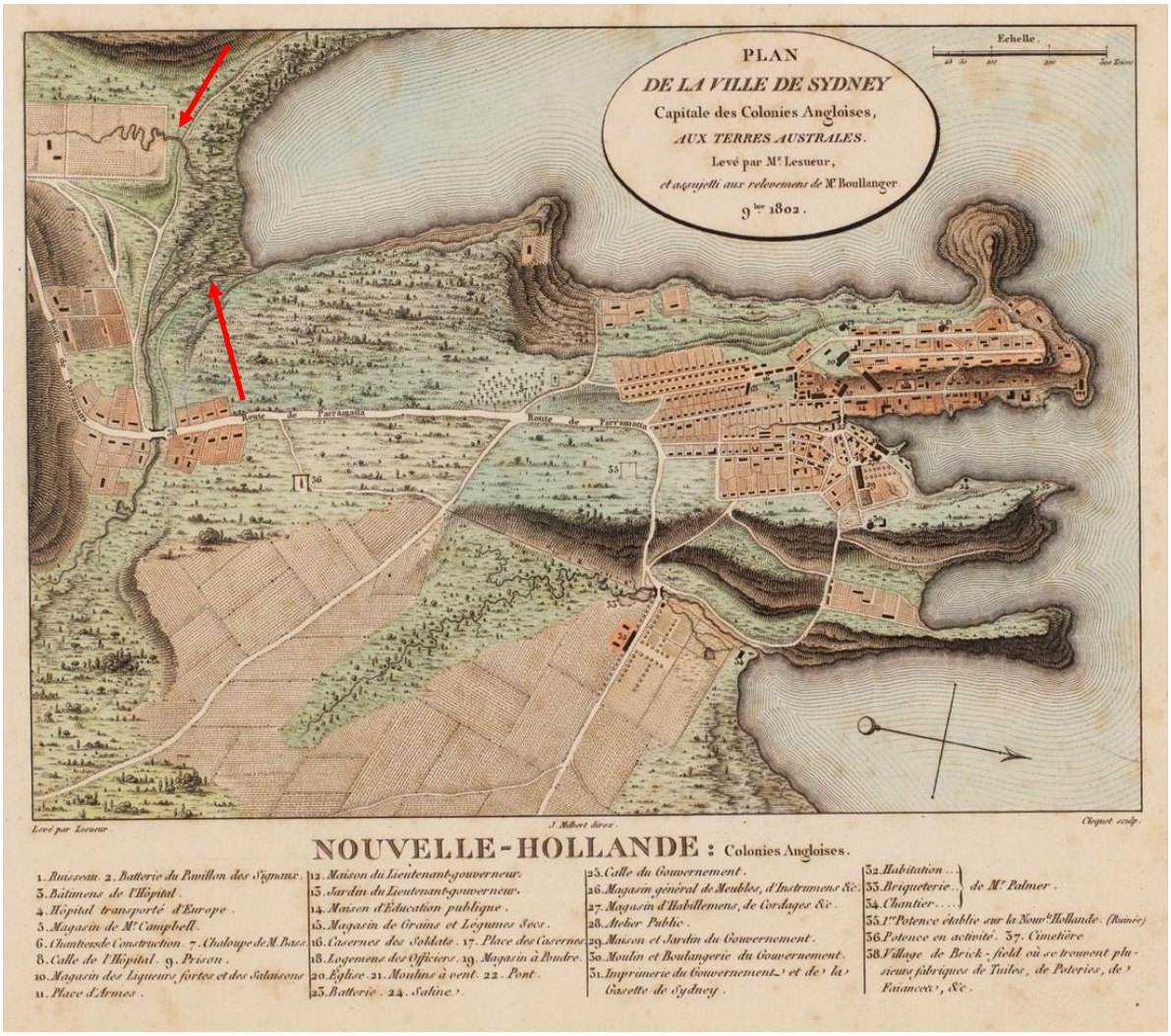

Figure 2.1: *Plan de la Ville de Sydney*, Charles Leseur, dated 1802, showing creeks and other watercourses (red arrows) feeding into wetlands and then into Darling Harbour. The Hotel study area is just to the west of the area shown in this map. Note that this is not an accurate plan. SLNSW Z/Ce 82/2, digital order no. a4204001.

[13] Harris Family Papers, MSS 4897, Mitchell Library, MSS 4897.

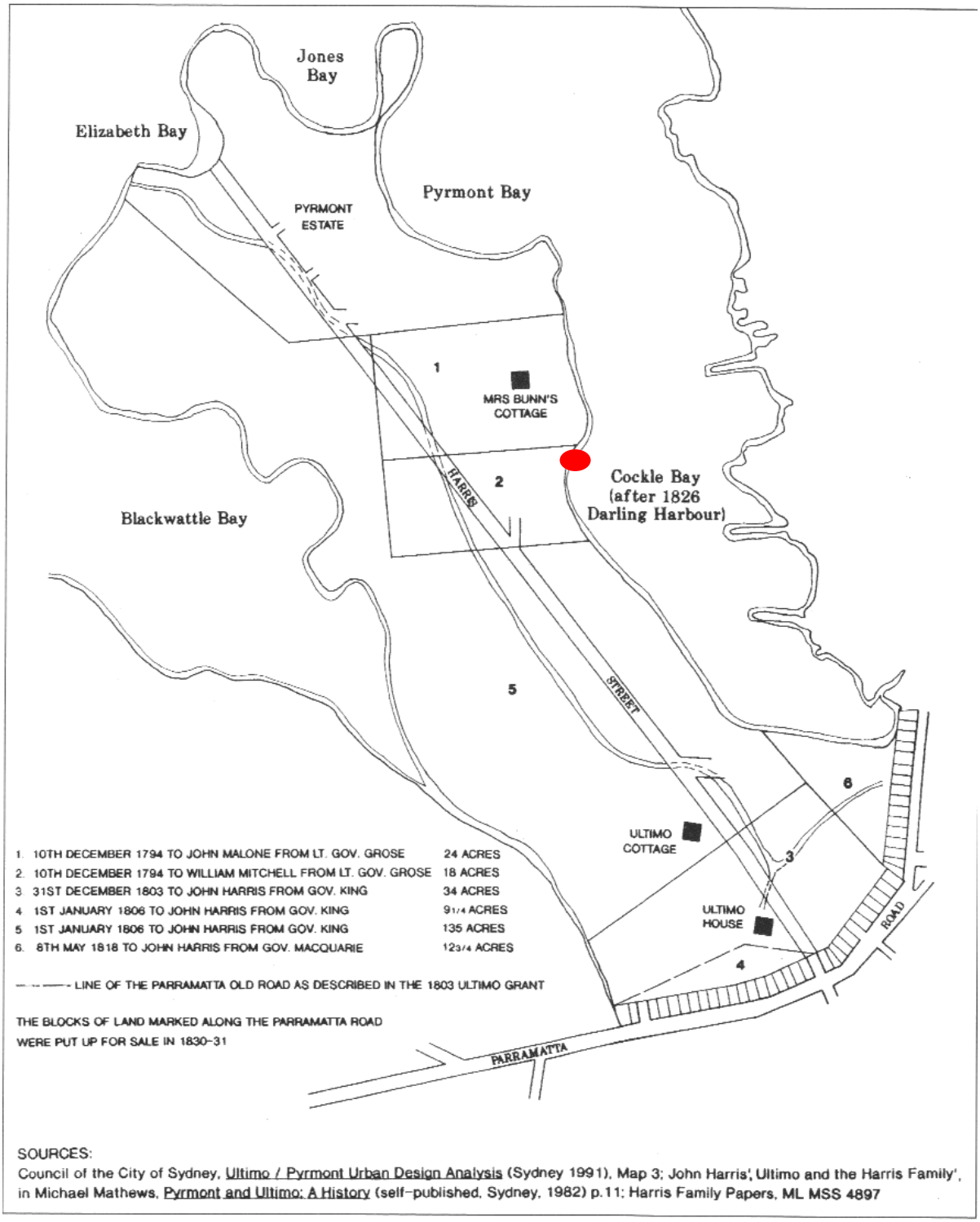

Figure 2.2: Plan showing 18th and 19th-century grants in Ultimo and Pyrmont linked to the study area. The approximate location of the study area is marked by a red dot. Fitzgerald & Golder 2007: 16.

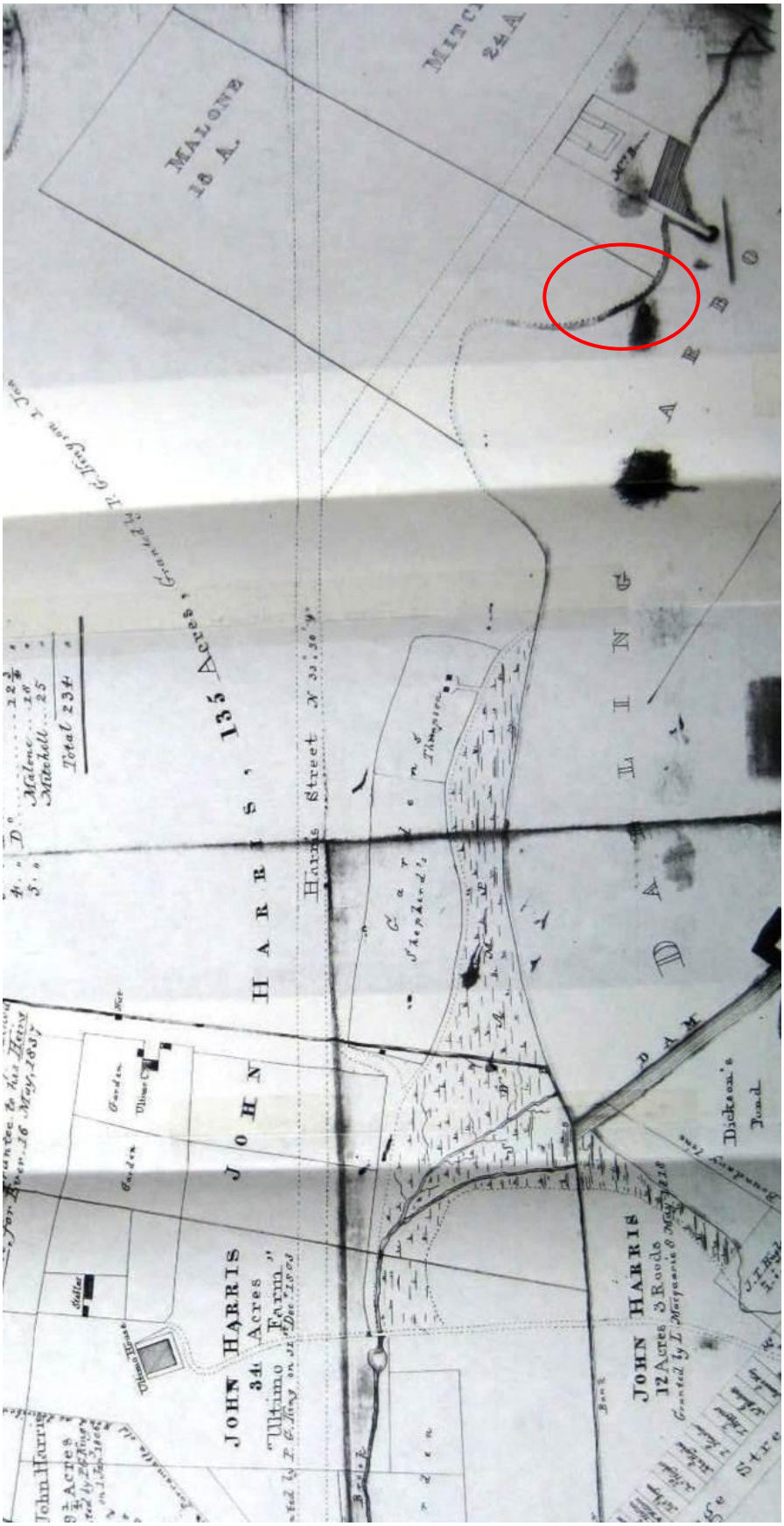

Figure 2.3: Copy of a plan of Harris' Ultimo Estate prepared in 1837 showing Shepherd's and Thompson's allotments to the north. The plan is diagrammatic, and incorrectly shows Malone as the owner of Mitchell's grant to the north; the study area is only shown approximately by the red ellipse. Harris Family, Papers concerning John Harris. SLNSW ML MSS 4897.

2.3 Industrial Development and Key Industrialists at Darling Harbour in the first half of the 19th century, 1807-60s

By 1807 the Sydney colony's trade had increased and it was a regular port for shipping from Europe, China and India, as well as a refitting port for American and British whalers. Cockle Bay was used to accommodate the overflow of shipping from Sydney Cove.[14] At this time the tidal mudflats extended almost to George Street and Ultimo Road (Figure 2.3).

The industrial use of Cockle Bay had begun by 1811 when the ships, the *Hawkesbury Packet* and the *Governor Macquarie*, were launched there. The Market Wharf, further north on the eastern side of the harbour, was established in 1811 and is thought to be the stimulus for the expansion of Cockle Bay. A pottery and glassworks were established by 1812 or 1813 at unknown locations in the bay and operated for less than a year. A slaughterhouse, again at an unrecorded location, operated between 1814 and 1820.[15] The nature of the landscape c1821 is depicted in a somewhat idealised manner in Figure 2.4.

Figure 2.4: View of Sydney looking south from Flagstaff Hill, ca. 1821 by James Taylor illustrating the nature of the landscape on the southern and western shore of Darling Harbour, visible on the right hand side of the image. SLNSW ML 69, digital order no. a2850001.

John Dickson's mill and wharf and Thomas Barker's mill and wharf at Darling Harbour were two early and sizable industrial complexes associated with the larger SICEEP area. Parts of Dickson's and Barker's earliest wharves have been identified as likely to extend into the Darling Central and Haymarket precincts.[16] More detailed histories of both Dickson's and Barker's enterprises have been included in the non-indigenous archaeological assessments for these precincts.[17]

[14] PWD [1984]: 2
[15] Godden Mackay 1992: 19.
[16] Casey & Lowe 2012.
[17] Casey & Lowe 2013b; Casey & Lowe 2013c

The western shoreline of Darling Harbour remained much less developed than its eastern shore up to the construction of the goods line in the 1850s.

Figure 2.5: An 1828 plan showing the development of Dixon's mill at Darling Harbour. Features include the pier extending into navigable water, and the wall retaining freshwater in the millpond and separating it from the harbour's salt water. The approximate study area location is marked by a red dot. SRNSW Item SZ467.

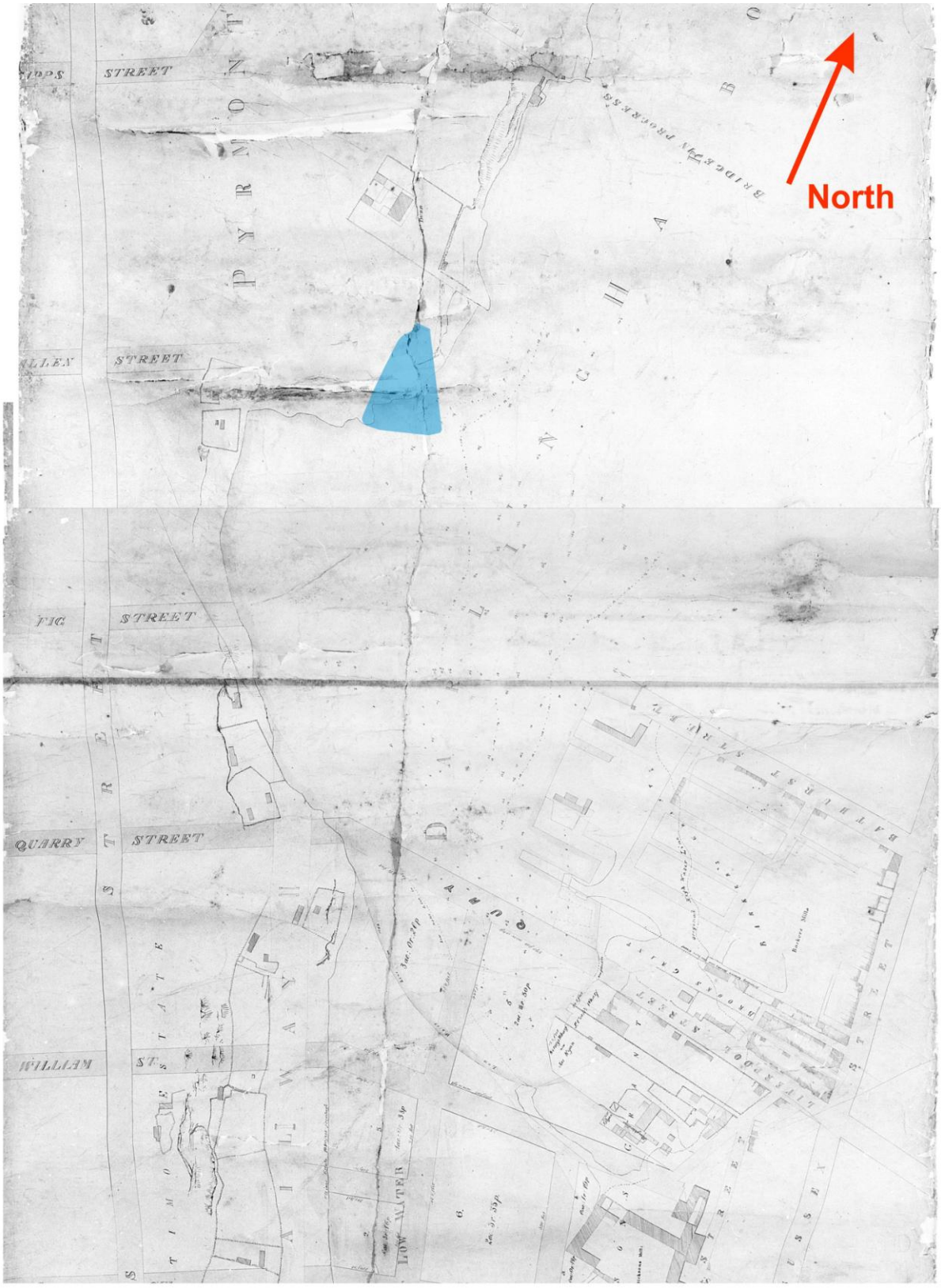

Figure 2.6: Part of a plan titled 'Head of Darling Harbour Port Jackson' submitted in 1855 and altered in 1857. The study area is highlighted in blue, north at the top. AO X1053, Part 2 of 3, SRNSW.

2.4 Land Reclamation at Darling Harbour (1815 to early 1900s)

The history of reclamation of the Darling Harbour landscape is long and complex. It involves private and government reclamation of the bay and is documented in maps and plans, land titles, and the records of government authorities and trusts. An understanding of reclamation in Darling Harbour generally provides a context for reclamation of land within the study areas.

Private reclamations occurred in a frequently piecemeal manner and are difficult to document. The granting of reclaimed land often occurred a long time after it had taken place. As discussed above, by 1815 John Dickson had formed a millpond at the head of the harbour to dam the fresh water for use in his steam engine. Over the subsequent decades business owners like Dickson and Thomas Barker carried out land reclamation along the shores of their holdings. Work was undertaken in conjunction with construction of wharves and milling and warehousing infrastructure linked to their businesses. At times due to economic imperatives, and at other times with profit in mind, portions of their grants were subdivided and sold and new owners along the shoreline also reclaimed land on which to expand their interests. Owners later formally acquired the title as new government grants.

The availability of reticulated water in the city from 1844 and the expansion of the water supply system between 1854 and 1858 led to the redundancy of Dickson and Barker's millponds and they were infilled.[18] The reclamation of Dickson's millpond between 1855 and 1857 allowed for the release of land for development (Figure 2.6).[19] Henry Lloyd's painting from 1853 illustrates the eastern and western foreshore at this time (Figure 2.7). From 1857 the Sydney City Council treated the discussion of reclamation as an urgent public matter due to the health and safety issues surrounding pollution, sewerage and drainage problems being experienced around the foreshore.[20] Reclamation at the head of Darling Harbour was proposed in the findings of the 1857 *Report of the City of Sydney Council's Special Committee for the Reclamation of Land in Darling Harbour and Woolloomooloo*. The proposals sought to form new streets and wharves and provide the opportunity to install an effective sewerage system to deal with the escalating pollution problem. The report was presented to the Legislative Assembly but the government did not take any action.[21]

In February 1864 a Select Committee of the Legislative Council was appointed to investigate and report on the reclamation and improvement of Darling Harbour and Blackwattle Bay. The Chief for Harbours and Rivers, Edward Orpen Moriarty, and the City Council's Engineer, Edward Bell, gave evidence. Two reclamation proposals were presented, with one extending to Bathurst Street and the other to Liverpool Street. Proposals for landuse by businesses and the general public were presented. The problems identified at Darling Harbour included changes in the channel due to successive reclamation, diminished tidal flow and ongoing silting. Increasing problems were experienced with sewage, drainage and pollution at the head of the bay. Outflow from the Hay Street sewer was identified as the cause of health problems in the community. Among a number of advantages it was thought that reclamation would contribute to the city's and the state's economy. The increased wharfage was seen as advantageous with the potential for better coordination of ships and railway for the transportation of goods and produce.[22]

[18] Aird 1961: 5-6.
[19] Plan AO X1053 SRNSW.
[20] *SMH*, 22 Dec 1857: 4; *SMH* 16 Mar 1858: 4.
[21] *SMH* 22 Dec 1857: 4; *SMH* 16 Mar 1858: 4; *SMH* 30 Apr 1858: 3.
[22] 'Progress Report from the Select Committee on Darling Harbour & Blackwattle Bay: Minutes of Evidence, 1863-4,' NSW V & PLA, Sydney, 1864: 1089-1099.

Figure 2.7: View looking northwest from the western edge of Darling Harbour, south of the Darling Harbour goods line railway. This appears to be taken from higher ground and the harbour in this area has not been reclaimed. The construction of the railway causeway has started but it is not completed. Henry Grant Lloyd 1853 'Darling Harbour Sydney, from Ultimo, 11 Dec. 1853', Sketches of N. S. [New South] Wales, 1857-1888, SLNSW DL PX 42, digital order no. a5894019.

Reclamation at the head of Darling Harbour was set to proceed in August 1864 with plans to reclaim about 18 acres (7.28 ha) with the boundary line to curve round from the foot of Liverpool Street to a point near the end of the Darling Harbour Branch Line (Section 2.6). A contract was let to Martin Gibbens to transport spoil excavated from the railway terminus yard down the branch line and tipped into the harbour. Two shillings and two pence was paid per cubic yard for the laborious work and the engine driver's wages came out of the contractor's fee.[23] A thousand yards of soil and debris were deposited a day in the reclamation process. By February 1865 the stone dyke, built by 'Mr Mayes' (Robert Maze) to contain the fill, was completed at a cost of £1526. The retaining wall was 750 feet (228.6 m) long and averaged 9 feet (2.74 m) in height, 3 ½ feet (1.07 m) above the high water mark.[24] Reducing the quantity of fill to be transported, it is likely that old wharf and pier structures in the reclamation area were incorporated in the fill. An 1865 City of Sydney Trig Survey indicating the reclamation at the head of the harbour in the vicinity of Dickson's land is reproduced in Figure 2.9.

Reclamation also took place on the western shore of Darling Harbour and by 1865 an embankment was formed east of Pyrmont Street, extending between Allen Street and a point just south of Fig Street. It is not known when the remaining 'pond' was filled (Figure 2.8). The Darling Harbour Railway goods line is shown running along the embankment and an unnamed wharf, associated with the goods line, extends into the harbour opposite Fig Street.[25]

[23] *SMH* 20 Aug 1864: 8; NRS 16348 Item 1864/39 SRNSW.
[24] *SMH* 18 Feb 1865: 8; *SMH* 21 Mar 1865: 10; NRS 12419 No 2/896A (part), SRNSW; NSW Statistical Register 1865 cited in PWD [1984]: 65.
[25] Trigonometrical Survey, Section W, 1865, Historic Atlas of Sydney, City of Sydney Archives.

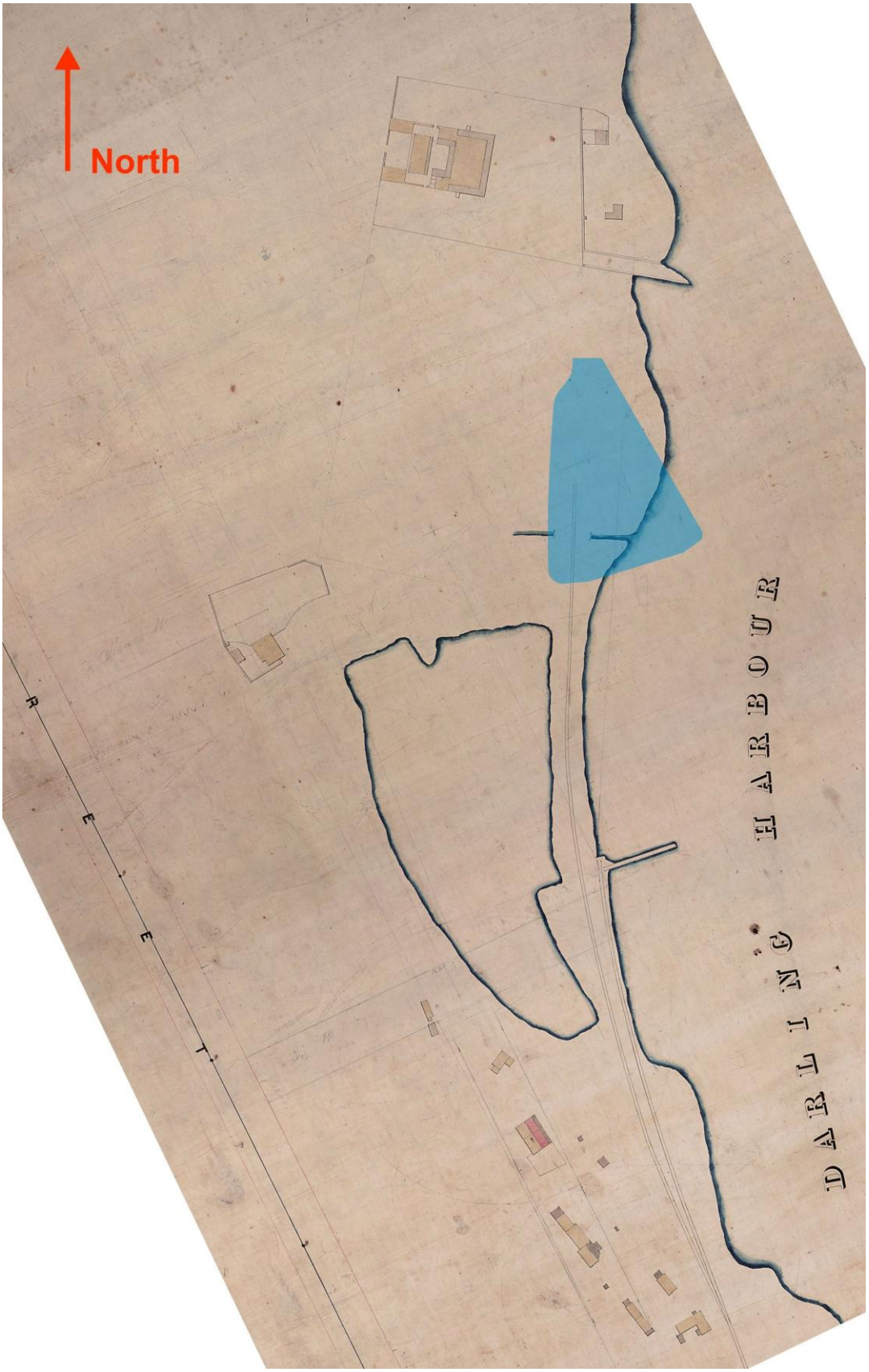

Figure 2.8: Trigonometrical survey showing Pyrmont in 1865. The planned alignments of Pyrmont Street, Fig Street and Allen Street are shown pencilled. The area was sparsely settled around the shores. The study area is highlighted in blue. Trig Survey, Section W1, 1865, Historical Atlas of Sydney, City of Sydney Archives.

Figure 2.9: This figure shows all of the SICEEP Bayside and Darling Central study area on four joined trignometrical survey sheets (1865). The joins are somewhat problematic and therefore this overlay is approximate only. The study area is highlighted in blue. Trig Survey, Sections (clockwise from top right) E2, T1, V1, and W1, 1865, Historical Atlas of Sydney, City of Sydney Archives.

A plan of Darling Harbour prepared for the Harbour Commissioners in 1866 records the extent of the reclamation ultimately carried out at his time, and the position of the stone wall in relation to landmarks such as Dickson's dam wall and pier and Barker's wharf (Figure 2.10). Using data from as early as 1825, the low water lines at various times, as well as contemporary depth soundings, were recorded. The area with diagonal hatching represents 'encroachment' on the area of water by 'reclamation or otherwise'.[26]

A report by the Harbour Commissioners in April 1866 concluded that rapid and serious shoaling or silting was still taking place. It was agreed that it was largely due to silt and rubbish washed down from the streets, either directly or from the sewers. The City Council was criticised for using the harbour as an easy and cheap method of rubbish disposal at the expense of the community and environment.[27] As pointed out in John Broadbent's *Ecology of Pyrmont 1788-2008*, a watercolour of Darling Harbour attributed to Samuel Elyard dating to the mid to late 1860s depicts the altered harbour landscape (Figure 2.11).[28] Looking north, a building thought to be Dickson's mill building is

[26] 'Plan of Darling Harbour made by order of the Harbour Commissioners', Surveyor General's Office, Sydney, June 1866, ML Q912.9441/11.
[27] Broadbent 2010: 506.
[28] Broadbent 2010: 507.

visible on the right hand side opposite the rocky outcrops of Pyrmont which are almost clear of native vegetation. The timber Pyrmont Bridge completed in 1857 connects the two shores and the reclaimed land at the head of the harbour is depicted in the foreground.

Figure 2.10: Portion of the Sydney Harbour Commissioner's plan of Darling Harbour dated 1866. The study area is highlighted in blue but is approximate only. Surveyor General, Sydney, June 1866, SLNSW Q912.9441/11.

Figure 2.11: Watercolour of Darling Harbour attributed to Samuel Elyard (1860s), looking north. The reclaimed sections of Darling Harbour are in the foreground with Pyrmont Bridge in the background. Compare with Figure 2.7. ML DG XV*/ Sp Coll/Elyard/3.

JW Deering's 'Plan of Blackwattle Swamp and Surrounding Grants' prepared in 1871 provides a record of Darling Harbour at this time and location of the area proposed for new wharf and the almost completed reclamation (Figure 2.12). The plan includes post-1871 notations (up to 1914) as well as documenting some aspects of the historical development of Darling Harbour.

A small amount of reclamation in Darling Harbour is associated with the construction of the Iron Wharf from 1874-76, a substantial iron structure on the western shore (Section 2.7). The wharf extended approximately from Liverpool Street, extending northwest towards the Pyrmont Bridge. Abutting the wharf was a new stone retaining wall with fill packed behind. The wall is visible at the northern end of the wharf shown in Figure 2.13.

Silting remained a problem and it was reported that between 1874 and 1876, 7000-8000 tons of silt had been dredged from Darling Harbour. In early 1876 two large dredges were used to deepen the harbour near the wharves.[29] A plan of Darling Harbour dated 1878 records Darling Harbour's western shoreline, goods line and the Iron Wharf in the vicinity of the study area (Figure 2.14).

[29] *SMH* 5 Jul 1876: 6.

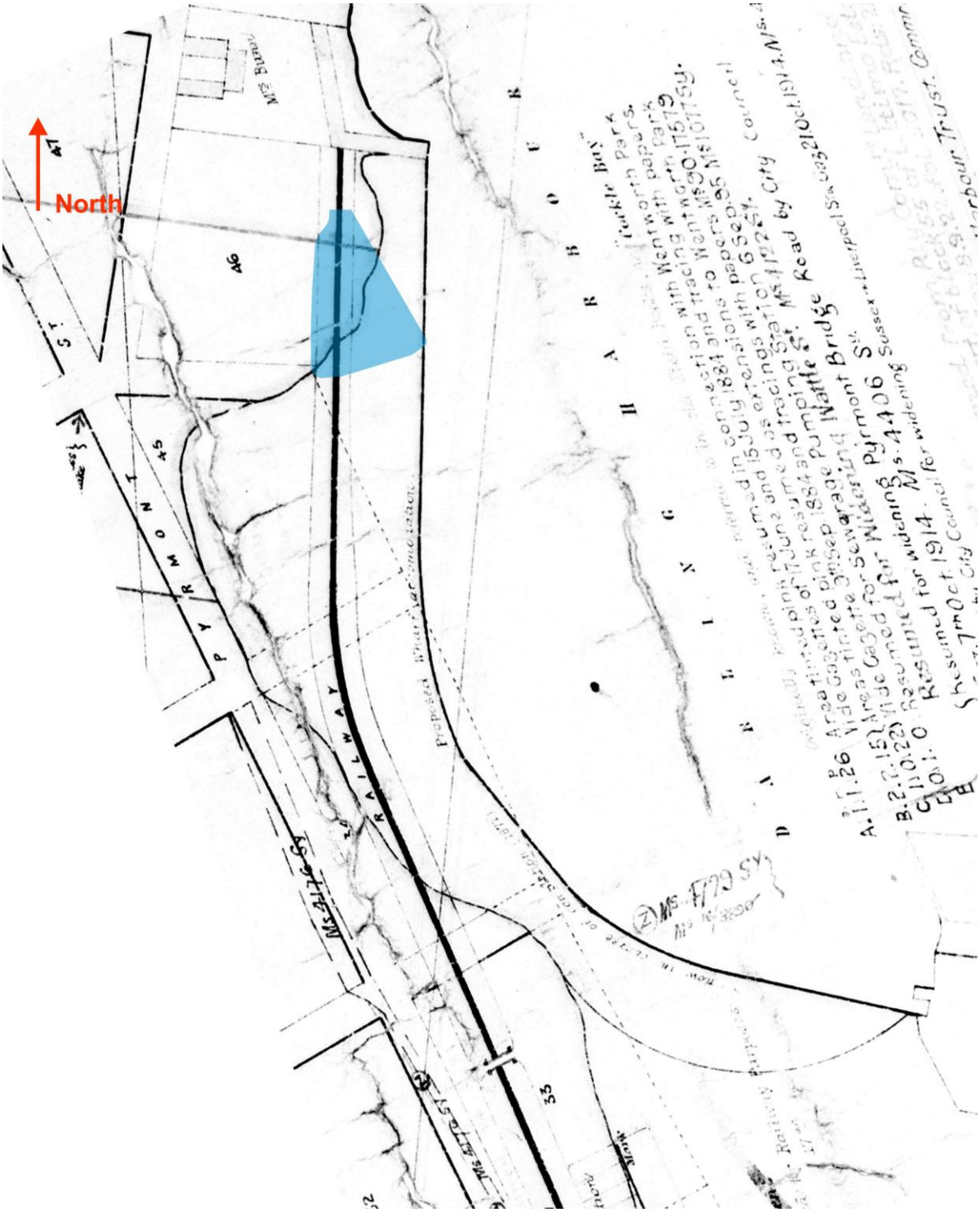

Figure 2.12: Part of JW Deering's 1871 plan showing the development of Darling Harbour by this date and the extent of reclamation adjacent to the proposed new wharf accommodation. The study area is highlighted in blue. AO No 1624, part 3 of 3, SRNSW.

Figure 2.13: Undated photograph of the Iron Wharf, looking southeast. The stone seawall is visible behind the wharf and the fill almost complete suggesting a date of c1876. SLNSW SPF 844, digital order no. a089844.

By 1900 the condition of Darling Harbour again came under the scrutiny of the Government and the city council. A plague scare and the proliferation of obsolete industrial structures signalled plans for resumption and redevelopment. Members of a Royal Commission for the Improvement of the City of Sydney and its Suburbs were appointed on 14 May 1908. Investigations were made into transport, slum removal and housing, future city growth (including the expansion of wharves, improvement of transportation hubs for economic development), and beautification. The commissioners accepted the Department of Public Works scheme for Darling Harbour, similar to one submitted to the Parliamentary Standing Committee in 1894. It provided for the reclamation of 14.5 acres exclusive of wharfage from the end of Bathurst Street to a point on the Pyrmont side near the meat market. It also included the construction of an overbridge to connect Bathurst Street to Pyrmont and connection of the current goods line to the deep sea wharves at Pyrmont.[30]

The recommendations of the 1909 Royal Commission included the reclamation of Darling Harbour up to Bathurst Street to Pyrmont as presented in a Public Works Department scheme. Fourteen and a half acres (5.87 ha) exclusive of wharfage was to be reclaimed. The total cost of the scheme including reclamation, construction of stormwater sewers, timber wharf, stone dyke and overbridge excluding land resumptions was estimated at £178,000.[31]

The reclamation did not extend to Bathurst Street at this time, with work terminating just south of Liverpool Street (Figure 2.15). The expense of further reclamation as well as EO Moriarty's warnings about its impact on scouring of the tide at the entrance to Port Jackson might have influenced the decision to limit the work done.[32]

[30] Royal Commission for the Improvement of the City of Sydney, Final Report and Plan No 37, 1909, Historical Atlas of Sydney, City of Sydney Archives.
[31] Royal Commission for the Improvement of the City of Sydney and its Suburbs: Final Report, 1909: xxiv, xii, City of Sydney Archives.
[32] PWD [1984]: 66.

With an increasing volume of trade and larger vessels, in 1913 the Sydney Harbour Trust Commissioners pursued new schemes to meet the pressing need for wharf space and modern cargo facilities. The government began resuming properties in Pyrmont and Ultimo in preparation for work on the west side of Darling Harbour. Despite material shortages experienced during the First World War the project continued at various sites, including Darling Harbour.[33] In April 1917 the construction of a new goods shed, and other alterations and additions, were underway. Reclamation extending to Bathurst Street using surplus material from the city railway was also in progress and one span of the Iron Wharf had been removed and tipping of spoil commenced.[34] Work continued slowly. Photographs of Darling Harbour at this time document the reclamation process (Figure 2.16, Figure 2.17, Figure 2.18, Figure 2.19).

[33] Fitzgerald & Golder 2007: 87.
[34] *SMH* 25 Apr 1917: 12.

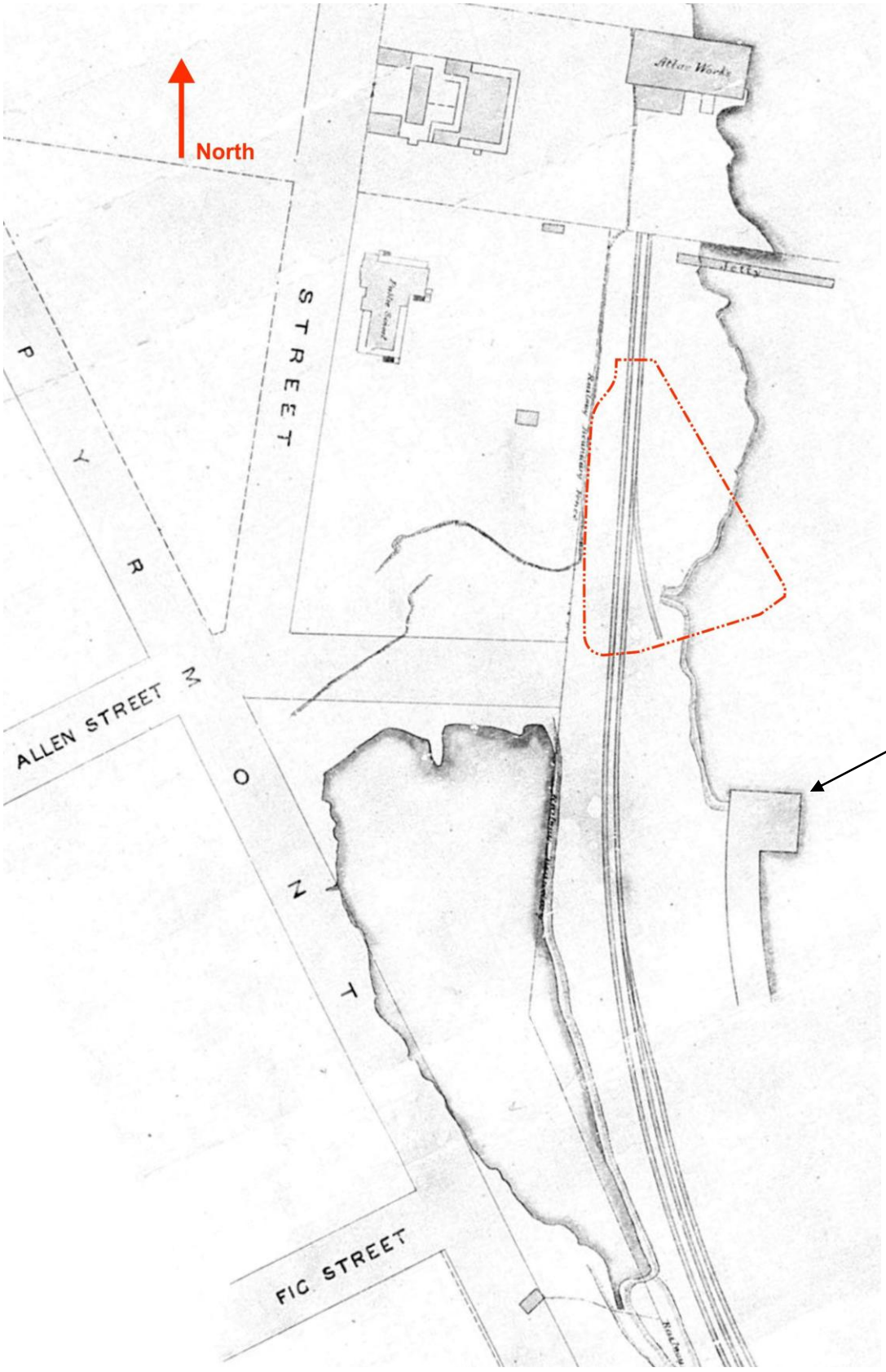

Figure 2.14: Part of a plan of the head of Darling Harbour showing development in the study area in 1878. The goods line and Iron Wharf are shown as a still unreclaimed area to the west near Pyrmont Street at the northern end of the study area. The study area is highlighted in blue. AO Map No 464 part 1 of 2, SRNSW.

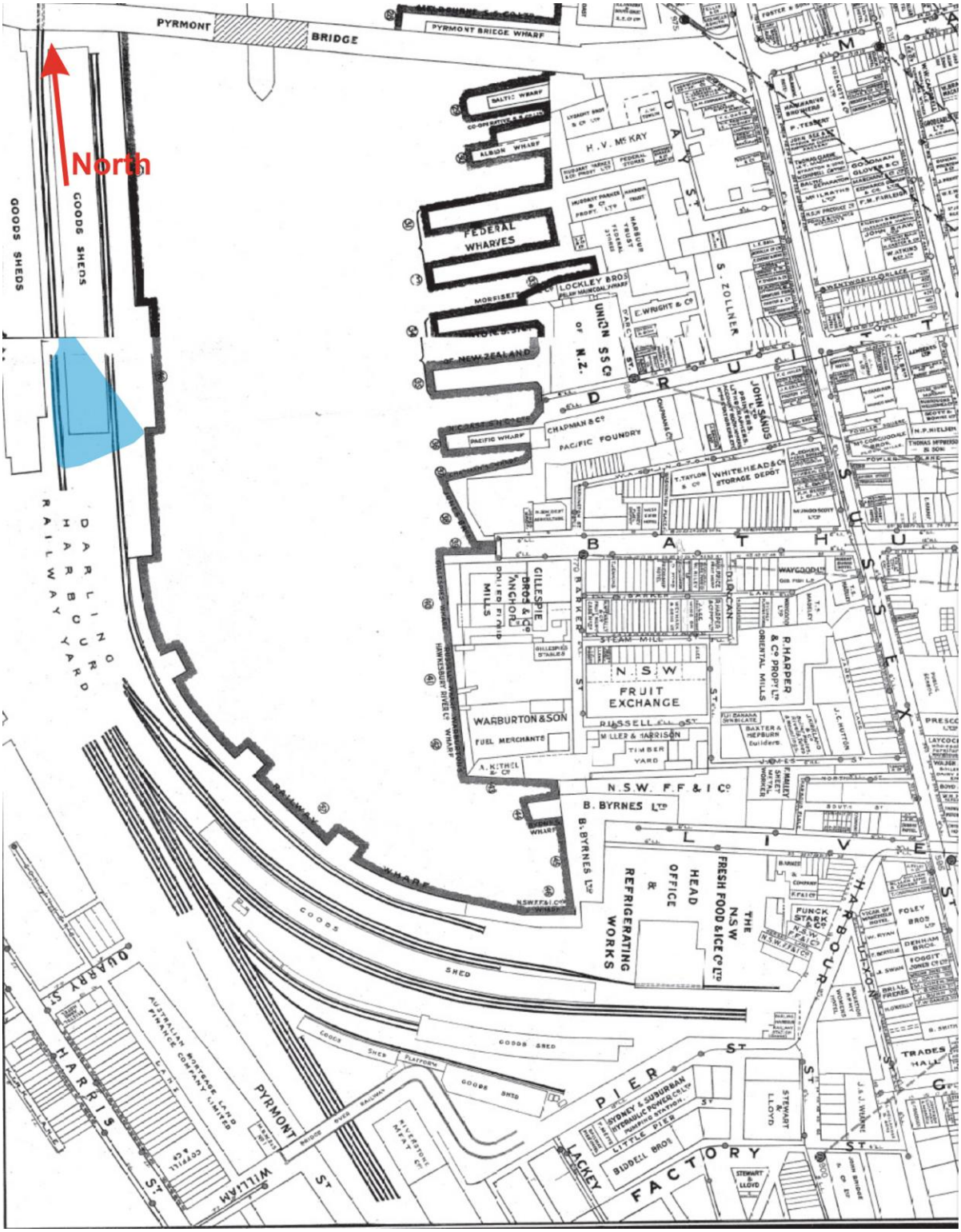

Figure 2.15: Detail of a plan of the City of Sydney dated 1910, showing the head of Darling Harbour. D S Cameron for Roberts & Moffat, City of Sydney Archives.

Figure 2.16: Fill from the Sydney railway construction dumped on the east shore of Darling harbour. NRS 17420 Item 848/15 SRNSW.

Figure 2.17: Fill extending along the east and southern shore of Darling Harbour and a wall of timber shoring built to temporarily retain the fill. NRS 17420 Item 848/16 SRNSW.

Figure 2.18: View looking northwest toward Pyrmont showing what appear to be remnants of the wharf. NRS 17420 Item 848/18 SRNSW.

Figure 2.19 View of Darling Harbour showing the reclamation nearing completion mid-1920s. NRS 17420 Item 848/20 SRNSW.

In 1923 four acres (1.62 ha) of land had been filled, with a revised estimate of 23 acres (9.31 ha) in total to be reclaimed. The government saw the increased reclamation of land for the wharves and goods yard as a cheaper option than the resumption of properties.[35] Delays were experienced due to the need to coordinate it with the construction of new conduits for the Ultimo Power House's water cooling system, as well as the extension of the city's stormwater and sewer; both required access to the harbour for their pipelines (Section 2.8). Newspaper reports suggested in 1927 that in the early stages of reclamation, second-hand building materials had been used as fill, including stone from demolitions on the Sydney Harbour Bridge construction site. The practice was discontinued due to the authority's preference for stone from the city railway site.[36]

In January 1928 a number of jetties were complete but Wharf No 39 was delayed due to continuing work on the Ultimo Power House's water intake conduits. Progress was being made, however, on the construction of the seawall behind Wharf Nos 37 and 39.[37] Work was completed by 1929 and the new facilities at Darling Harbour are shown in the map and aerial photograph in Figure 2.20, Figure 2.21.

[35] *SMH* 20 Mar 1923: 8.
[36] *SMH* 26 Jan 1927: 8.
[37] *SMH* 4 Jan 1928: 9.

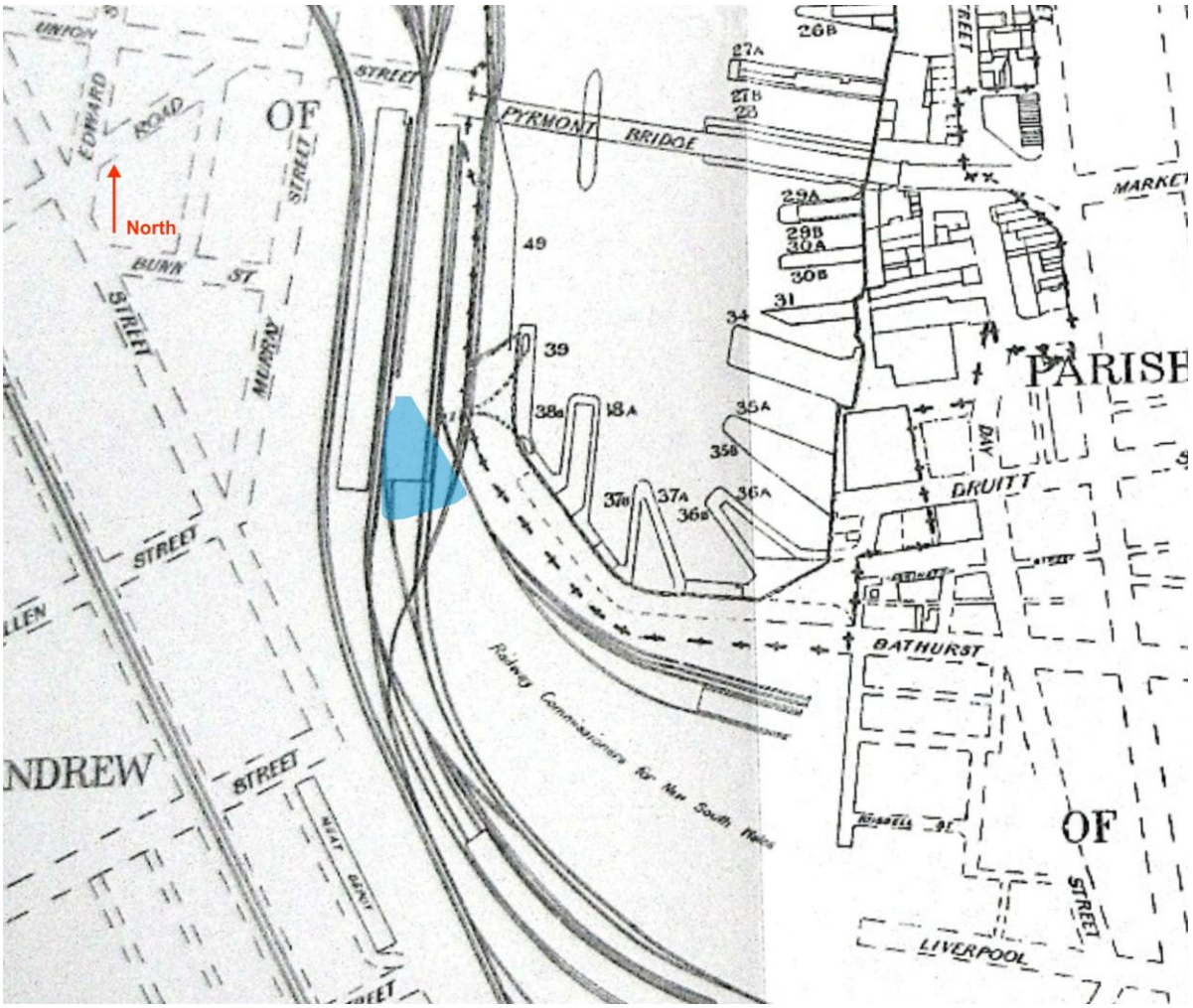

Figure 2.20: Map showing Darling Harbour wharfage facilities in 1929. The study area is highlighted in blue *Sydney Harbour Trust Commissioners Report*, year ending 30 Jun 1929.

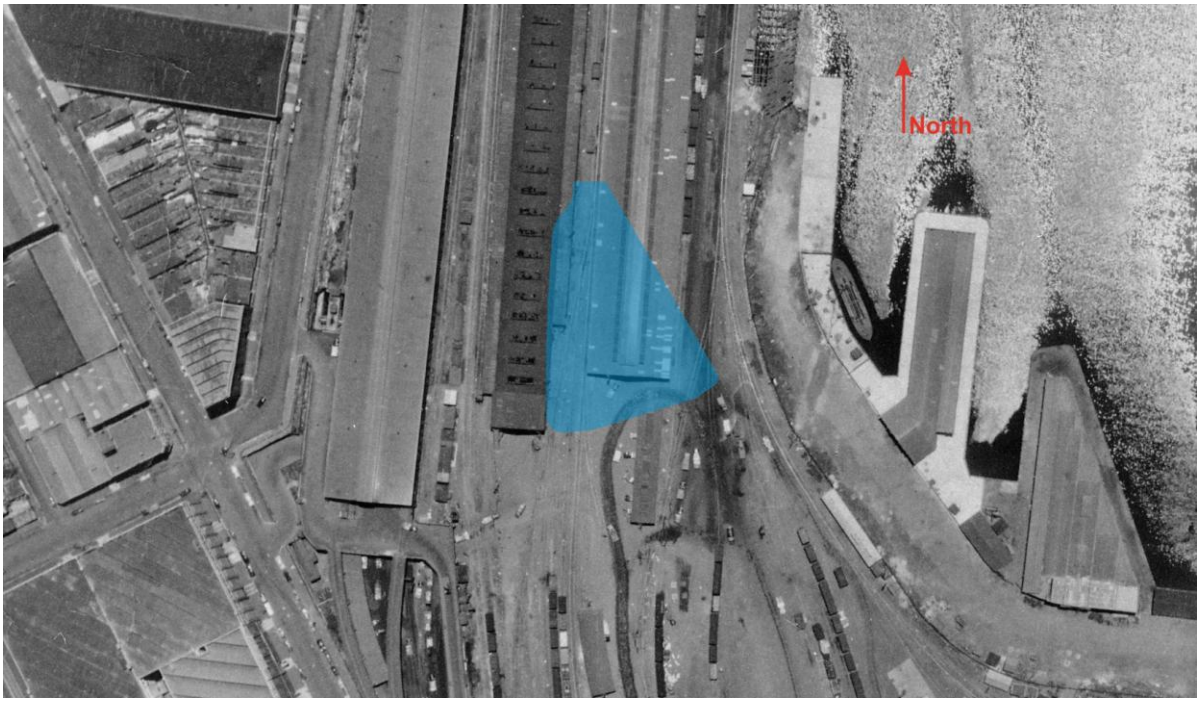

Figure 2.21: Aerial photograph of Darling Harbour showing the extent of reclamation and new wharfage, 1949. The study area is highlighted in blue. Sydney Aerial Survey, AO037, Historical Atlas of Sydney, City of Sydney Archives.

2.5 Industrial and Commercial Development of Darling Harbour, from 1850s

The Sydney Harbour Trust, later renamed the Maritime Services Board, was established by the NSW Government in 1901. The Trust resumed land for the wharf facilities, oversaw the redevelopment of the wharves and later managed them. The Railways Department managed the goods line, yards and sheds as well as the adjacent Ultimo Power House and associated infrastructure such as the water cooling system conduits and screens.

2.6 Overview of History of Darling Harbour Railway Goods Line and Goods Yards

In the first half of the 19th century, goods were transported to and from the Darling Harbour wharves on bullock carts. The construction of the railways, however, brought great changes to communications, agriculture and industry. The former railway goods line and part of the site of the goods sheds is associated with the study area.

The economic growth of the colony and development of industries outside of Sydney led to demand for better access to ports such as Darling Harbour. In 1853, with a proposal to connect Darling Harbour to the main western railway line, the Sydney Railway Company (formed in 1849) resumed a 7-acre strip of land (2.83ha) from the trustees of the Harris Estate (Figure 2.22). The strip of land connected Cleveland Paddocks, the site of the Sydney Railway Terminus (Central Station), to proposed wharves on the western shore of Darling Harbour. An additional 7½ acres (3.04 ha) was resumed for a goods terminus at Pyrmont.[38] In 1863-64 a Government investigation exposed the difficulties in formally acquiring the land in *fee simple* due to a complex inheritance arrangement entailing the land.[39]

[38] 'Darling Harbour Rail Corridor', SHFA Heritage Register, Last update: Monday 31 May 2010; 'Plan of Darling Harbour Branch of the Sydney Railway', c.1853, SRNSW, AO Map No 6381; Fitzgerald & Golder 2007: 45.
[39] 'Progress Report from the Select Committee on the Railway through the Ultimo Estate', NSW Legislative Assembly, 1863-4, Government Printer, Sydney, 1864[4]: 233.

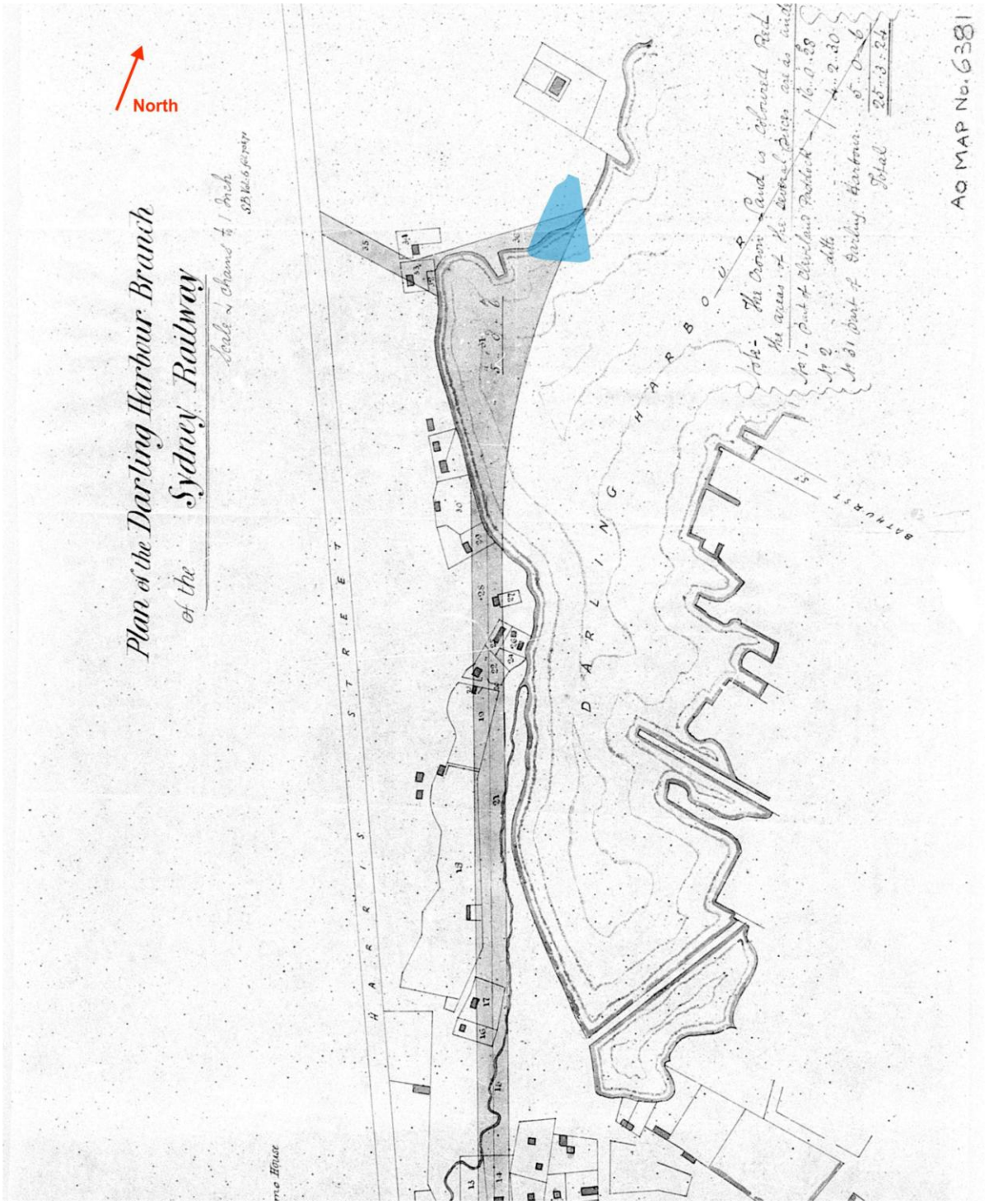

Figure 2.22: Part of the 'Plan of the Darling Harbour Branch of the Sydney Railway', dated c.1853. The study area is highlighted in blue. AO No 6381 SRNSW.

Figure 2.22 shows a portion of a c1853 plan showing the line of the proposed rail corridor in relation to the study area. By 1854 the NSW Government had taken over the financially troubled Sydney Railway Company acknowledging the potential of the railway project to stimulate development in Pyrmont and Ultimo, adding value to and businesses in the locality.[40] The Darling Harbour Branch Line opened c1859.[41]

The first phase of construction of the Darling Harbour Goods Yard spanned 1874 to c1888 and the second phase saw it expand to Darling Island wharves at Pyrmont Point in 1891. Further development took place in association with wharf expansion from the 1920s. These periods of development are expanded upon in the NSW Public Works Department's Darling Harbour Conservation Study.[42] A timeline of key events is reproduced in Appendix 1.

2.7 The Iron Wharf, 1869-1876

The rapid extension of the NSW railway network and steep increase in goods traffic influenced the government's decision to proceed with the development of Darling Harbour as a goods terminal. The Redfern railway terminus and Sydney Goods Yard were overcrowded and additional space was urgently needed, as well as a modern efficient place to load and unload shipping freight. By 1869 £35,000 was voted for the construction of the Iron Wharf.[43]

The position of the public wharf followed a gentle curve from Liverpool Street up the western side of Darling Harbour toward Pyrmont (Figure 2.23). It closely followed the Engineer in Chief of the Harbour and Rivers Branch, EO Moriarty's recommendations to the Select Committee on Darling Harbour's reclamation in 1863-64.[44] As described in the NSW State Heritage Inventory, the Iron Wharf consisted of:

> Large tubular cast iron columns, 5 feet in diameter at the top with 5 feet 6 inches lower sections were sunk into the harbour floor and then filled with concrete. They supported iron lattice work trusses, spanning 60 feet between centrelines of the piers at the front of the wharf, transverse iron girders 29 feet 6 inches, and along the back of the wharf further iron girders, 62 feet 7 inches on the curved sections. Four bays and fives jetties were built which projected 38 feet from the front of the wharf and were 60 feet wide. Each bay consisted of four spans of lattice work girder, measuring 60 feet between piers for a total length of 240 feet for each bay.[45]

The wharf deck was made of hardwood planks. The ironwork was completed in early 1874 and the stone retaining wall, to which the wharf was anchored, and infill behind were completed by 1876. The total built length of the Iron Wharf was 1,260 feet (approx. 384m).[46] The original design included six bays with projecting jetties but only four bays and five jetties were built. The jetties projected 38 feet (11.58m) from the face of the wharf and were 60 feet (18.29m) wide. Open sheds with ornate ironwork in the plans are thought not to have been constructed.[47] An illustration of the wharf published in 1874 (Figure 2.23) shows the stone retaining wall had not been built but reclamation between the 1865 seawall and the Iron Wharf seawall had commenced; compare Figure 2.13. The Iron Wharf dominated the western Darling Harbour foreshore (Figure 2.26, Figure 2.27).

[40] 'Darling Harbour Rail Corridor', SHFA Heritage Register, Last update: Monday 31 May 2010.
[41] *SMH* 27 Sep 1855: 4. 'Four-fifths' of the branch line was completed by November 1859. *SMH* 27 Sep 1859: 4. *SMH* 27 Dec 1859: 6.
[42] PWD [1984]: 80.
[43] PWD [1984]: 65.
[44] PWD [1984]: 65.
[45] Exhibition Centre Precinct - Archaeological Remains - Iron Wharf, Inventory Sheet, NSW Heritage Register, Database No 4500467.
[46] NSW Heritage Inventory, Database No 4500467.
[47] PWD [1984]: 71.