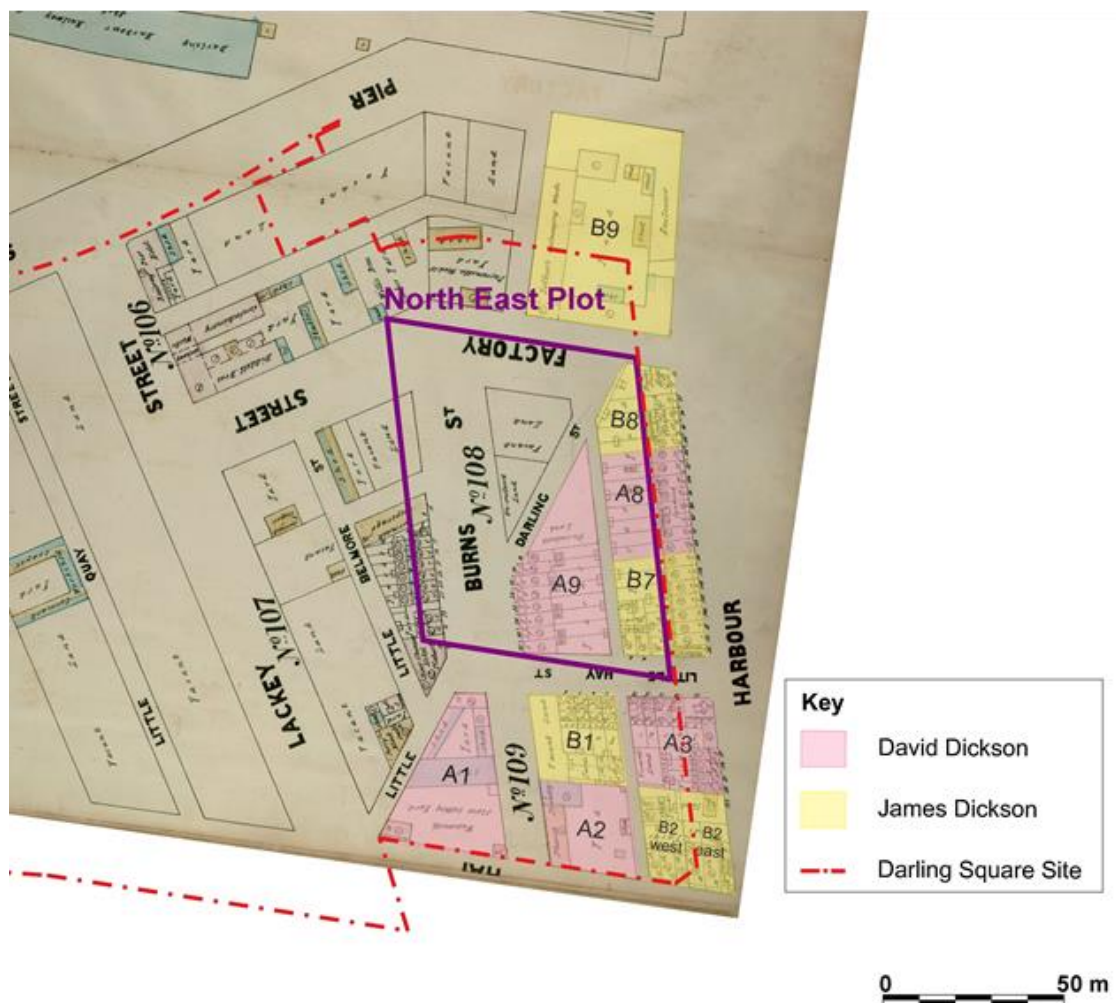


Archaeological Impact Statement

North East Plot, Darling Square SSDA 7



Report to
Lend Lease

October 2014

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EXECUTIVE SUMMARY

The study area is the North East Plot within Darling Square (previously known as The Haymarket), within the SICEEP site. The Sydney Entertainment Centre currently occupies the site of the North East Plot.

RESULTS

The historical research and archaeological analysis undertaken for this report indicates that the study area was involved in the very beginnings of steam technology in Australia with the introduction of Dickson's 1815 steam mill and the construction of a dam wall for his mill pond. Reclamation and subdivision of Dickson's Mill Estate, to the east of the dam wall, between 1855 and 1857 saw the initial residential and commercial development of the study area. Around 1865 the area to the west of the dam wall was reclaimed and by 1880 there was considerable occupation of the study area. Early development prior to 1880 was focused to the east of Burns Street.

The Archaeological Impact Statement has identified one archaeological item with significance at a state level and several archaeological items with significance at a local level. These are:

State Significance

- Dickson's c1815 dam wall

Mitigation strategies have been identified to minimise impacts on State-significant archaeology. In relation to Dickson's c1815 dam wall it is proposed:

- To use a combination of transfer beams and piles to minimise impact on the dam wall.
- To use existing service trenches for new services where possible.

Local Significance

- Residential housing throughout the eastern half of the study area: remains of 10 houses and yards established prior to 1880, including later Chinese residents; and the rear yards and cesspits of 19 houses which are beneath Harbour Street.
- 1870s/1880s manufactories
 - Eastern part of the Cormack cooperage, later Centennial Cooperage
 - Rowlands Aerated and Mineral Water works
- 1850 and 1860s reclamation of the millpond and Darling Harbour.

Aboriginal Archaeology

The study area is fully within reclaimed land within what was once Darling Harbour and therefore has no potential for Aboriginal archaeology. All testing and salvage for Aboriginal archaeology within Darling Square has been completed.

RECOMMENDATIONS

1. The findings of this Archaeological Impact Statement should be revised once the existing impacts caused by the construction of the SEC are known. These should be incorporated into the Research Design required to guide any archaeological fieldwork, after appropriate consultation with the SHFA and Heritage Division archaeologists.
2. Archaeological remains of State significance within subject area should be retained *in situ*. Strategies to mitigate development impacts to include:
 - Use of a combination of transfer beams and piles to minimise impact to the dam wall.

- A reduction in the number of crossing points across the line of the dam wall for new infrastructure services, including the reuse of existing service trenches where possible.
 - Develop protocols to manage issues during the demolition, regrading and construction stages of redevelopment so as to minimise intended or unintended impacts.
 - Include site heritage and archaeology information during workers' inductions.
3. Where there are likely to be significant impacts to archaeological remains, either local or State, archaeological recording will need to be undertaken in accordance with Heritage Council and Heritage Division guidelines and best practice methodologies.
 4. No further Aboriginal archaeology should be undertaken within Darling Square (formerly The Haymarket). The only remnant original foreshore within the project area is within the western parts of the development. All Aboriginal archaeological testing/salvage proposed for Darling Square has been completed.
 5. Write a **Non-indigenous Archaeological Research Design and Management Strategy** to refine understanding of impacts, both current and proposed, identify appropriate archaeological strategies and methodologies, and research questions to guide the archaeological program. This is to be informed by the detailed design and the impacts from the SEC.
 6. SHFA will need to provide a repository for artefacts following the completion of the archaeological program.
 7. Public interpretation of the archaeology of State and locally significant archaeology should be undertaken within the proposed redevelopment. This may include a mixture of opportunities for:
 - Public open days for engagement of the public with the significant archaeology within the site.
 - Exposure of surviving archaeology within the redevelopment and acknowledging the environmental constraints of such projects.
 - Interpretation of artefacts through site display.
 - Interpretation of the results of the archaeology program throughout the precinct.
 8. Write an excavation report in accordance with Heritage Council guidelines and standard conditions of consent following the completion of archaeological investigations.
 9. Undertake consultation with SHFA and Heritage Division archaeologists about the site's archaeological issues, approaches to *in situ* retention of the State-significant archaeology, and the Non-Indigenous Archaeological Research Design and Management Strategy.

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Appendix 1: *SICEEP Concept Plan, The Haymarket – SSDA2, Non-Indigenous Archaeological Assessment and Impact Statement (March 2013)*

Appendix 2: *SICEEP, Aboriginal Archaeological Assessment (August 2013)*

Document Status

Name	Date	Purpose	Author	Reviewed
Draft 1	22/10/2014	Client review	Mike Hincks Mary Casey	Tony Lowe
Final	23/10/2014	Amendments	Mary Casey	Mary Casey

Archaeological Impact Statement North East Plot, Darling Square

1.0 Introduction

1.1 Introduction

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

The Application (referred to as SSDA 7) follows the approval of a staged SSD DA (SSDA 2) in December 2013. SSDA 2 sets out a Concept Proposal for a new mixed use residential neighbourhood at Haymarket referred to as “Darling Square”, previously known as “The Haymarket”. Darling Square forms part of the Sydney International Convention, Exhibition and Entertainment precinct (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”.

More specifically this subsequent DA seeks approval for mixed use development within the North East development plot of Darling Square and associated public domain works. The DA has been prepared and structured to be consistent with the Concept Proposal DA.

Casey & Lowe has been engaged by Lend Lease to provide an Archaeological Impact Statement for the DA for the NE Plot, Darling Square. To inform this report we undertook archaeological testing which has informed our assessment of impact (Addendum 1).

1.2 Overview of Proposed Development

The proposal relates to a detailed (‘Stage 2’) DA for a mixed use residential development in the North East Plot of Darling Square together with associated public domain works. The Darling Square Site is to be developed for a mix of residential and non-residential uses, including but not limited to residential buildings, commercial, retail, community and open space. The North East Plot is one of six development plots identified within the approved Concept Proposal.

Under the Concept Proposal, the North East Plot is planned to accommodate a mixed use podium and three residential buildings (NE1, NE2, and NE3) above and within the podium structure. More specifically, this SSD DA seeks approval for the following components of the development:

- Demolition of the Sydney Entertainment Centre;
- Associated tree removal and planting;
- Construction and use of a predominantly 6 storey mixed use podium, including:
 - retail floor space and residential lobbies on Ground Level;
 - above ground parking;
 - residential apartments; and
 - communal facilities.
- Construction and use of three residential buildings above podium;
- Public domain improvements surrounding the site, including interim works;
- Provision of vehicle access to the development from Harbour Street;
- Landscaping works to the podium roof level; and
- Extension 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 SICEEP.

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 Master Plan include:

- Delivering world-class convention, exhibition and entertainment facilities, including:
 - Up to 40,000m² exhibition space.
 - Over 8,000m² 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.
 - A premium, red-carpet entertainment facility with a capacity of 8,000 persons.
- Providing a hotel complex at the northern end of the precinct.
- A vibrant and authentic new neighbourhood at the southern end of the precinct, now called 'Darling Square', including apartments, student accommodation, 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; and
- Improved pedestrian connections linking to the proposed Ultimo Pedestrian Network drawing people between Central, Chinatown and Cockle Bay Wharf as well as east-west between Ultimo/Pymont and the City.

On 21 March 2013 a critical step in realising the NSW Government's vision for the SICEEP Project was made, with the lodgement of the first two SSD DAs with the (now) Department of Planning and Environment. The key components of these proposals are outlined below.

1.3.1 Public Private Partnership SSD DA (SSD 12_5752)

The Public-Private Partnership (PPP) SSD DA (SSDA 1) includes the core facilities of the SICEEP Project, comprising the new, integrated and world-class convention, exhibition and entertainment facilities along with ancillary commercial premises and public domain upgrades. SSDA1 was approved on 22 August 2013.

1.3.2 Concept Proposal (SSD 13_5878)

The Concept Proposal SSD DA (SSDA 2) establishes the vision and planning and development framework which will be the basis for the consent authority to assess detailed development proposals within the Darling Square Site. SSDA2 was approved on 5 December 2013. The Stage 1 Concept Proposal approved the following key components and development parameters:

- Indicative staging of demolition and development of future development plots;
- Land uses across the site including residential and non-residential uses;
- Street and laneway layouts and pedestrian routes;
- Open spaces and through-site links;
- Six separate development plots, development plot sizes and separation, building envelopes, building separation, building depths, building alignments, and benchmarks for natural ventilation and solar access provisions;
- A maximum total gross floor area of 197,236m² (excluding ancillary above ground parking), comprised of:

- A maximum of 49,545m² non-residential GFA; and
- A maximum of 147,691m² residential GFA
- Above ground car parking including public car parking;
- Residential car parking rates;
- Design Guidelines to guide future development and the public domain; and
- A remediation strategy.

In addition to the approval of SSDA1 and SSDA2, the following approvals have been granted for various stages of Darling Square site:

- Darling Drive (part) development plot (SSDA3) for the construction and use of a residential building (student accommodation) and the provision of associated public domain works approved on 7 May 2014.
- North West development plot (SSDA4) for the construction and use of a mixed use commercial development and public car park building and associated public domain works approved on 7 May 2014.
- South West development plot (SSDA5) – construction and use of a mixed use residential development and associated public domain works approved on 21 May 2014.

Approval was also granted on 15 June 2014 for SSDA6 which includes the construction and use of the International Convention Centre (ICC) Hotel and provision of public domain works.

This report has been prepared to support a detailed Stage 2 SSD DA for mixed use development and associated public domain works within Darling Square (SSDA 7), consistent with the approved Concept Proposal (SSDA 2).

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 (Figure 1.1). The Darling Square Site is:

- located in the south of the SICEEP Site, within the northern portion of the suburb of Haymarket;
- bounded by the Powerhouse Museum to the west, the Pier Street overpass and Little Pier Street to the north, Harbour Street to the east, and Hay Street to the south; and
- irregular in shape and occupies an area of approximately 43,807m².



Figure 1.1: Aerial photograph of the SICEEP Site.

The Concept Proposal DA provides for six (6) separate development plots across the Darling Square Site (refer to Figure 1.2):

1. North Plot
2. North East Plot
3. South East Plot
4. South West Plot
5. North West Plot
6. Western Plot (Darling Drive).

The Application Site area relates to the North East Plot and surrounds as detailed within the architectural and landscape plans submitted in support of the DA.



Figure 1.2: Concept proposal development plots. The current study area is the North East Plot (2).

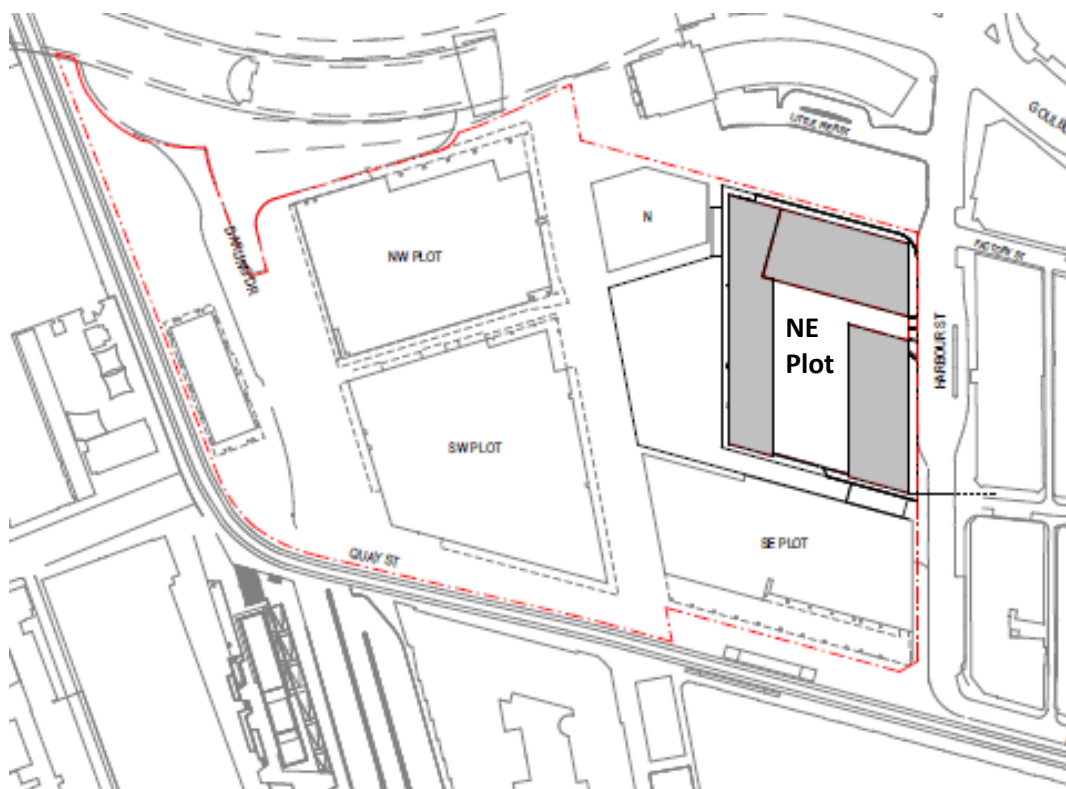


Figure 1.3: Location of NE Plot, Darling Square.

1.5 Planning Approvals Strategy

The SICEEP Project has resulted in the lodgement of numerous SSD DAs for the various components of the redevelopment project. Future applications will continue to be lodged in accordance with the Concept Proposal SSD DA for the remaining development plots of Darling Square Site.

1.6 Previous reports

The following archaeological reports have been written for this site:

Non-Aboriginal Archaeology

- *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Concept Plan, The Haymarket - SSDA2, Non-Indigenous Archaeological Assessment & Impact Statement, for Lend Lease Development Pty Ltd* (March 2013).
- *Darling Harbour Live – The Haymarket East & Boulevard, Non-Indigenous Archaeology, Research Design for testing, S139(4) Exception Application* (June 2014).

Aboriginal Archaeology

A report on the Aboriginal Archaeology for the SICEEP project was updated in August 2013.

- *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Aboriginal Archaeological Assessment* (August 2013, version 1.2013).

Testing for Aboriginal archaeology was undertaken in the Student Housing and South West Plots in the vicinity of the foreshore. No significant Aboriginal archaeology was found in this location:

- *Student Housing, Darling Harbour Live, Darling Harbour SSD 6010, Aboriginal Archaeological Excavation Report* (July 2014).
- *South West Plot, Darling Harbour Live, Darling Harbour SSD 6011, Aboriginal Archaeological Excavation Report* (September 2014).

No further Aboriginal archaeology is proposed to be undertaken within Darling Square (former Haymarket) as the only remnant original foreshore within the project area is within the western parts of the development. All Aboriginal archaeological testing/salvage proposed for Darling Square has been completed.

1.7 Statutory Context and Constraints

1.7.1 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 of the *Environmental Planning & Assessment Act, 1979*.

1.7.1.1 Stage 1 Concept Proposal Approval for The Haymarket (now Darling Square) (SSD 5878)

The relevant conditions of consent for the Stage 1 Concept Proposal Approval are:

- B23** Future development applications shall include baseline Aboriginal and non-Aboriginal archaeological assessment identifying the areas of the site which may contain significant archaeology and how impacts will be mitigated. Any recommendation of the assessment shall be adopted as part of future Development Applications.

1.7.1.2 Secretary General's Environment's Assessment Requirements (SEARs) for the subject DA Application

The SEARs identified the following key issue:

Key Issue 10: Heritage

The EIS shall:

- Provide an archaeological assessment which includes consideration of Aboriginal and non-Aboriginal and maritime heritage and shall include appropriate mitigation strategies;
- Provide an Heritage Impact Statement which address the impacts of the proposal on:
 - heritage significance of the site and adjacent area including any built and landscape heritage items;
 - places, items or relics of significance to Aboriginal people; and
- Include an outline of a heritage interpretation plan which addresses opportunities/avenues for appropriate and innovative public understanding and appreciation of heritage as part of the completed development.

Casey & Lowe's March 2013 *Non-Indigenous Archaeological Assessment and Impact Statement* for the project fulfils the guidelines of the NSW Heritage Council and addresses *Assessing the Significance of Archaeological Sites and Relics* guidelines (2009). Comber Consultants' separate report addresses the significance of the place to Aboriginal people. This current report is a site specific assessment of impacts within the NE Plot on the potential Aboriginal and non-indigenous archaeological remains and addresses the SEARs outlined above.

1.7.1.3 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 Environment 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 Environment will of course consult with the Office of Environment and Heritage, both the Heritage Division and the Aboriginal Heritage Section, and the proposed work needs to conform to Heritage Division and Aboriginal Heritage Branch guidelines. This section does not exempt requirements under S170 of the Heritage Act.

1.7.2 Relics Provisions, NSW Heritage Act, 1977

1.7.2.1 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 are 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.
- (3) This section does not apply to a relic that is subject to an interim heritage order made by the Minister or a listing on the State Heritage Register.
- (4) 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).¹

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.*

1.7.3 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. 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 best guess. 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

¹ *Assessing Significance for Archaeological Sites and 'Relics'*, Heritage Branch, Department of Planning, 2009:7.

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.

Table 1.1: List of S170 register items within North East Plot study area and potential impacts.

Site/Structure	S170	SHR	Significance	Location
Pier Street Precinct Archaeological Remains (Bounded By Hay, Harbour, Pier Streets and Merino Boulevard (Darling Drive))	SHFA		State	The Haymarket/Darling Square

1.7.4 Statutory and Non-statutory Guidelines

The management of heritage sites in New South Wales should conform to the requirements of the *Burra Charter* of Australia ICOMOS. Many of the following guidelines provide for best practice conservation approaches and can be used to inform all the management of the archaeological remains. There are a range of archaeological guidelines which inform the management of the place:

- *Archaeological Assessment Guidelines*, NSW Heritage Office, Department of Urban Affairs & Planning, 1996. A new draft of this has been prepared but not yet published.
- *Assessing Significance for Archaeological Sites and 'Relics'*, Heritage Branch, Department of Planning, 2009.
- *NSW Heritage Manual*, NSW Heritage Office, Department of Urban Affairs & Planning, 1996.
- *Historical Archaeological Investigations: A Code of Practice*, NSW Department of Planning, 2006.
- *Historical Archaeological Sites, Investigation and Conservation Guidelines*, Department of Planning and NSW Heritage Council, 1993.
- *Excavation Director's Assessment Criteria*, NSW Heritage Office.
- *ICHAM Charter, The ICOMOS Charter for the Protection and Management of Archaeological Heritage*, ICOMOS International, 1990.
- *Practice Note – The Burra Charter and Archaeological Practice*, Australia ICOMOS 2013.
- *Recommendation on International Principles Applicable to Archaeological Excavations*, UNESCO, 1956.
- *Heritage Interpretation Policy and Guidelines*, Heritage Information Series, NSW Heritage Office, August 2005.
- *Photographic Recording of Heritage Items*, Heritage Information Series, NSW Heritage Office, 2006.

1.8 Authorship

This report was prepared by Mike Hincks, Senior Archaeologist, Casey & Lowe, and Dr Mary Casey, Director, Casey & Lowe with reference to previous assessments by Casey & Lowe. The report was reviewed by Tony Lowe, Director, Casey & Lowe Pty Ltd.

1.9 Acknowledgements

Greg Smith, Lend Lease
Paul Jerogin, Lend Lease
Ben Newport, Lend Lease
Michelle Mason, Lend Lease

1.10 Limitations

Sufficient time and funding was available to adequately identify the potential archaeological resource within the study area and its significance.

1.11 Glossary

The following terms are used in this report:

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 New South Wales 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 eighteenth and nineteenth-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
- maritime sites: infrastructure and shipbuilding
- shipwrecks
- 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 which 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'.²

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
- (b) is of State or local heritage significance.

(NSW *Heritage Act 1977*, Definitions, Part 1.4)

1.12 Abbreviations

AA&IS (March 2013) Archaeological Assessment & Impact Statement (March 2013)

AHD	Australian Height Datum
NSW BDM	NSW (Registry of) Births, Deaths & Marriages
c.	circa
DA	Development Application
DP	Deposited Plan
Ha	Hectare
HRA	<i>Historical Records of Australia</i>
LEP	Local Environment Plan
LPI	Land and Property Information (NSW)
ML	Mitchell Library (in the State Library of NSW)
n.d.	not dated
NLA	National Library of NSW
NSCA	City of Sydney Archives
RL	Reduced level (in metres according to Australian Height Datum)
SLNSW	State Library of NSW
SHR	State Heritage Register
SRNSW	State Records of NSW

² NSW Heritage Branch 2009:11.

2.0 Aboriginal Archaeology

2.1 Archaeological Assessment

A report on the Aboriginal Archaeology for the SICEEP project was updated in August 2013.

- *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Aboriginal Archaeological Assessment* (August 2013, version 1.2013).

A copy of this report is included as an appendix to this report.

2.2 Prediction of Aboriginal Archaeology

The Aboriginal Archaeological Assessment (2013:27) identified the following in The Haymarket (now Darling Square):

Impact for The Haymarket

The current design includes demolition of existing buildings, ground slab, capping beams and inground services with retention of existing piles. New buildings will be constructed on new piles. It is possible that these piling on the western side of The Haymarket could impact on Aboriginal archaeological deposits within the original foreshore area.

Mitigation for The Haymarket

Archaeological testing, recording and salvage should occur in areas where piling or any other ground disturbance that will penetrate the fill is to be undertaken, within the western side within or near the area of the original foreshore.

The area of mitigation on the western foreshore is illustrated in Figure 2.1 (green colour) and is outside the NE Plot study area. There are no requirements for Aboriginal Archaeology within the NE Plot.

2.3 Status of the Aboriginal Archaeological program

Testing for Aboriginal archaeology was undertaken in the Student Housing and South West Plots in the vicinity of the original foreshore. No significant Aboriginal archaeology was found in this location:

- *Student Housing, Darling Harbour Live, Darling Harbour SSD 6010, Aboriginal Archaeological Excavation Report* (July 2014).
- *South West Plot, Darling Harbour Live, Darling Harbour SSD 6011, Aboriginal Archaeological Excavation Report* (September 2014).

No further Aboriginal archaeology is proposed to be undertaken within Darling Square (former Haymarket) as the only remnant original foreshore within the project area is within the western parts of the development. All Aboriginal archaeological testing/salvage proposed for Darling Square has been completed.

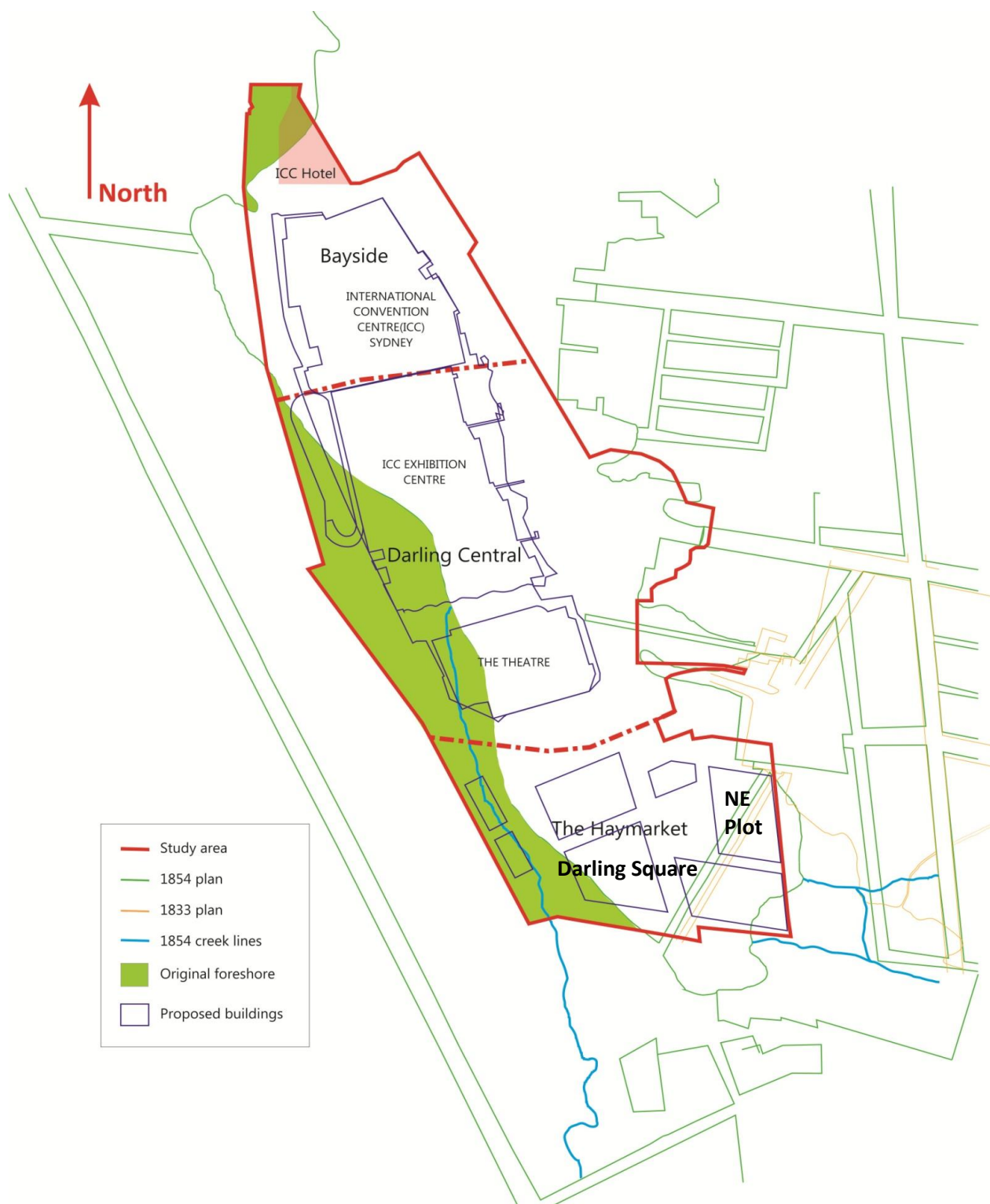


Figure 2.1: Plan showing the predicted areas of original foreshore and the areas of testing for Aboriginal Archaeology.

3.0 Historical Background & Archaeological Potential³

3.1 Historical Background

For a detailed history for the SICEEP project see *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP), Concept Plan, The Haymarket - SSDA2, Non-Indigenous Archaeological Assessment & Impact Statement*, for Lend Lease Development Pty Ltd (AA&IS March 2013).

Below is summary table relevant to the North East Plot which is taken from the March 2013 Assessment Table 3.2 (Figure 3.1, Figure 3.2):

Table 3.1: Summary table of Non-Aboriginal archaeological remains within the NE Plot

Archaeological Phases	Darling Square North East Plot
Phase 1: 1788-1813	Eastern area underwater, no known uses.
1813-1850s	
Phase 2: Dickson's mill and mill pond, 1813-1850s	- Dickson's dam wall and mill pond (1815-1850s) - Some remains (1830s) associated with Dickson's mill in the small park to north of Entertainment Centre.
1850s-1880s	
Resumptions, 1850s-1880s Housing subdivision Sewers Industrial	- Infilling of Dickson's mill pond (c. 1845-1854). - Reclamation of southern part of Darling Harbour (1850s-c1863) and construction of stone sea wall (1864). - Housing established in the area by 1865. - Hay Street – 3 houses, 4 around the corner in laneway. - Little Hay Street – 8 houses and Australian Inn hotel. - Additional housing and small-scale industries by 1880. - Trades Union Hotel (c1880) - Phoenix Foundry (A1)(c1880) - Little Hay Street – 8 houses - Burns Street – 17 houses - Cormack cooperage, 2+ locations
1880s-1920s	
	- Demolition of houses on Sections B1, B2W, north B7 A8, B8 and B9. - Continued occupation and expansion of the above buildings and houses. - Construction of Rowlands Aerated Water works and stables (A9).
1930s-1980s	
	- Council establishes markets in the eastern half of this area (1937) and widens Harbour Street. Demolishes all housing and other surviving buildings to south of Little Pier Street. - The streetscape was removed at this time.
1980s – Darling Harbour Redevelopment	
	- Entertainment Centre built, 1982. - Stormwater culverts crisscrossing the area. - Other large services laid throughout the site.

³ This historical background draws from the historic research of Dr Rosemary Annable first presented in the 2010 Archaeological Assessment of Barangaroo Stage 1, Casey & Lowe 2010:17-66. It also draws on further research undertaken by various staff of Casey & Lowe since that time.

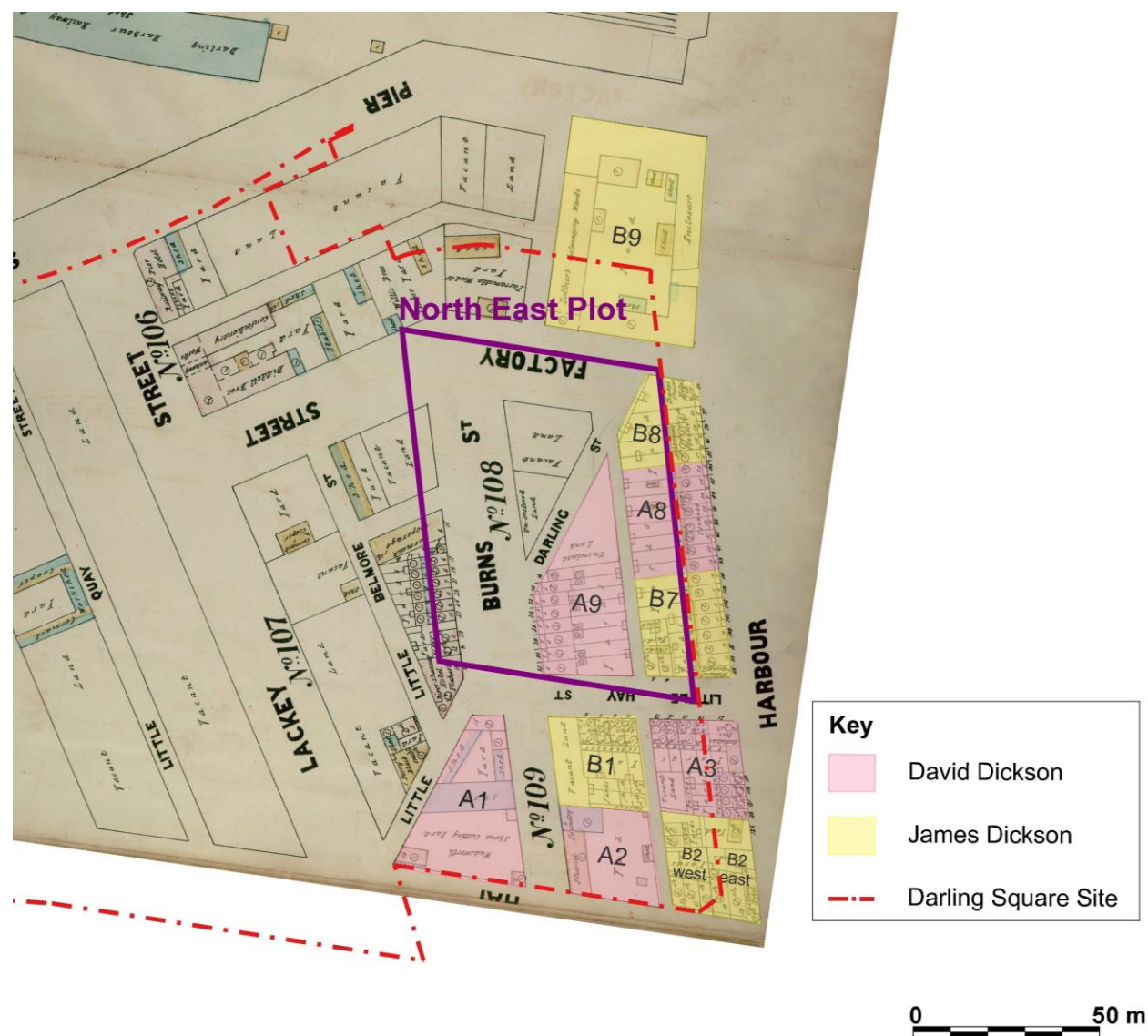


Figure 3.1: There was some development to the west of Dickson's Mill estate, west of Little Darling Street, by 1880. The NE Plot includes historic properties A9 and the rear yards of B8, A8, B7 and vacant land to the west of Little Darling Street which was later occupied by warehouse buildings and part of the slightly later cooperage. North at top. Dove, 1880 plan, Historical Atlas of Sydney, City of Sydney Archives.

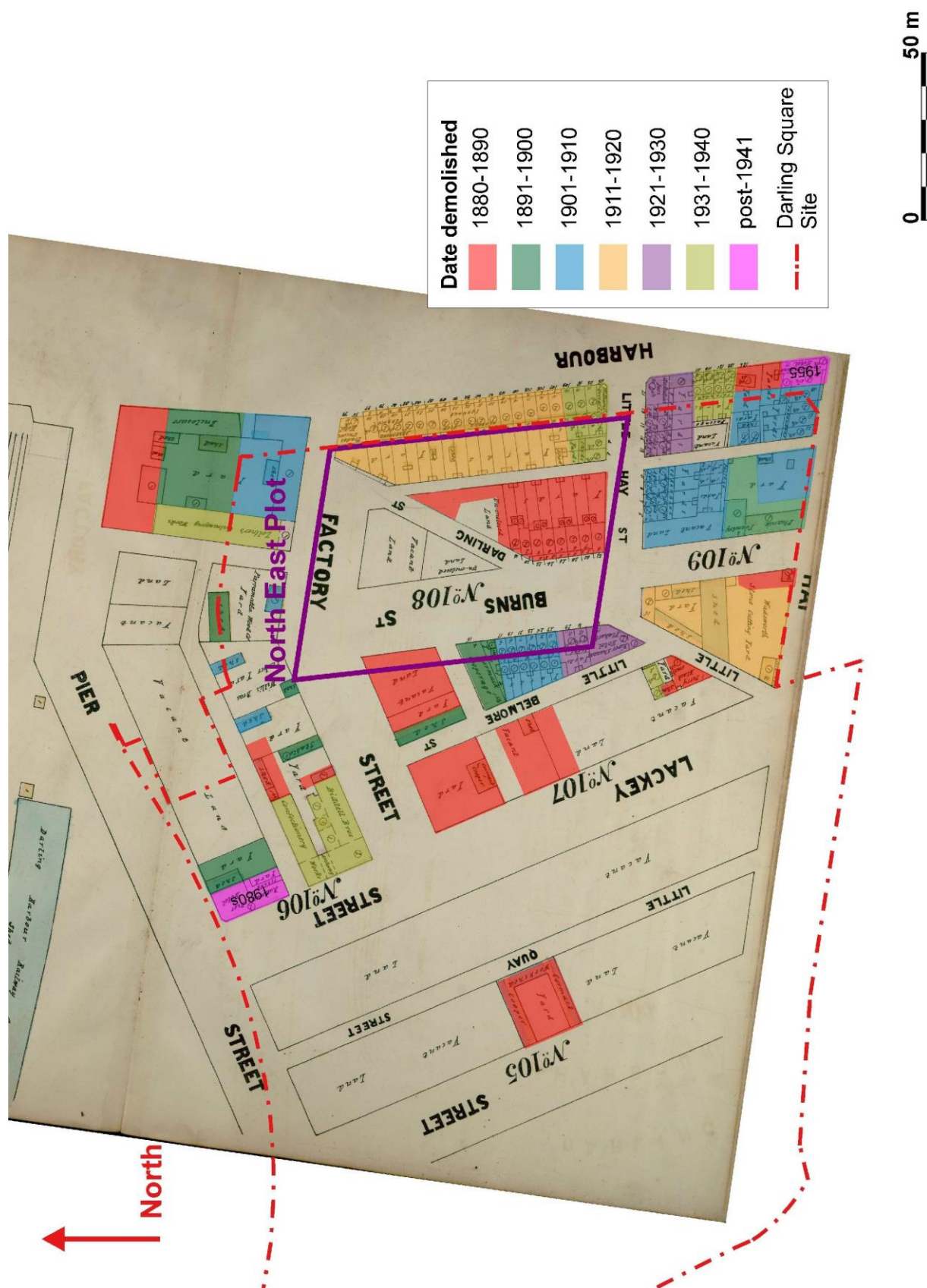


Figure 3.2: Dove's 1880 plan illustrating the extent of housing and commercial enterprises erected between 1857 and 1880. The various colours indicate the decade in which structures were demolished. The red line is the Darling Square study area.

4.0 Heritage Significance

4.1 Heritage Significance

A detailed discussion and assessment of significance was undertaken within the March 2013 AA&IS. The following Statement of Significance for the whole of the Darling Square (The Haymarket) is taken from that report. An updated Statement of Significance will be provided in the Research Design for the NE Plot.

4.2 Statement of Heritage Significance for The Haymarket (Darling Square)

The Haymarket study area has the ability to contain potential archaeological remains which demonstrate the development, reclamation and expansion of Darling Harbour throughout the 19th century, when it was a centre for steam industry manufacturing at the intersection of maritime and railway trade in NSW. Remains from the study area have the ability to represent the changing nature of Darling Harbour's occupation and activities throughout the 19th century. Among the important potential buried remains within The Haymarket (Darling Square) are:

- Edge of western foreshore.
- Dickson's c1815 dam wall and 1830s mill.
- 1855-1857 reclamation of Dickson's mill pond and subdivision as the head of Darling Harbour silted up and became unnavigable.
- Remains of 15 houses and a pub built and occupied prior to 1865.
- Development of early manufactories and industries in the between 1865 and 1880:
 - Biddell Bros Confectionery factory
 - Phoenix Foundry
 - Blacksmith
 - Cormack cooperage, at three locations
- Further subdivision and construction of new housing between 1865 and 1880, the yards and cesspits of 19 houses along Harbour Street and 17 houses on other streets.
- Occupation of houses and shops by Chinese people from the 1880s into the 1920s. This would have been a residential part of Chinatown prior to its demolition in the 1930s.

These potential remains are associated with significant persons such as John Dickson who introduced the first steam mill to Australia and built the c1815 dam to create a millpond to collect fresh water. Darling Harbour was a focal hub for maritime and railway infrastructure and trade since the 1810s and the layers of industrial and maritime remains across the study area represent this social and economic significance. These layers of significance are valued by various members of the community. These layers of archaeological remains have the ability to yield new information about this industrial and residential past, and possibly that of the development of Sydney's Chinatown. Some of the remains are considered to be rare, as they are early examples of their kind, while other elements are considered to be representative of other remains which may survive in other buried and reclaimed landscapes.

Archaeological remains considered to be of State significance.

- Dickson's c1815 dam wall
- Dickson's 1830 mill buildings

Archaeological remains considered to be of local significance:

- Residential housing throughout the eastern half of the study area: remains of 27 houses and yards established prior to 1880, including later Chinese residents; also includes 15 houses and Australian Inn hotel built by 1865, and the rear yards and cesspits of 19 houses which are beneath Harbour Street.

- 1870s/1880s manufactories
 - Cormack cooperage, later Centennial Cooperage
 - Biddell Bros confectionery factory
 - Rowlands Aerated and Mineral Water works
- Four pub sites.
- Some small shops operated where the tenant lived as well as worked, including Chinese shops and store keepers and warehouses.
- Workshop associated with the Sydney Hydraulic Pumping Station.
- 1850 and 1860s reclamation of the millpond and Darling Harbour.
- Possible remains of 1860s ditch running near the alignment of Lackey Street and illustrated on the 1865 plan.

Archaeological remains which may cross the local significance threshold if they contained artefact deposits:

- Chinese store on the corner northwest corner of Hay and Lackey Street.

Archaeological remains which are considered not to reach the local significance threshold:

- Majority of the study area to the west of Lackey Street, except for the Cormack Cooperage and one of the Chinese stores.
- The western strip of buildings is quite damaged by the 1980s culverts and is considered to have no research potential.
- The stores and warehouses between Lackey Street and Hay Street West are also considered to have no research potential.

4.3 Significant Archaeology within the NE Plot

Significant archaeology within the NE Plot includes:

State Significance

- Dickson's c1815 dam wall

Local Significance

- Rear yards of 15 houses along Harbour Street.
- Eight houses and yards along Burns Street.
- Two houses and yards along Little Hay Street.
- 1880s/90s manufactories:
 - Cormack cooperage, later Centennial Cooperage which is vacant land on Dove's 1880 plan. It should be noted that excavation of the cooperage in the SW plot had substantial archaeological results and supported the assessment of this site as reaching the local significance threshold.
 - Rowlands Aerated Waterworks.

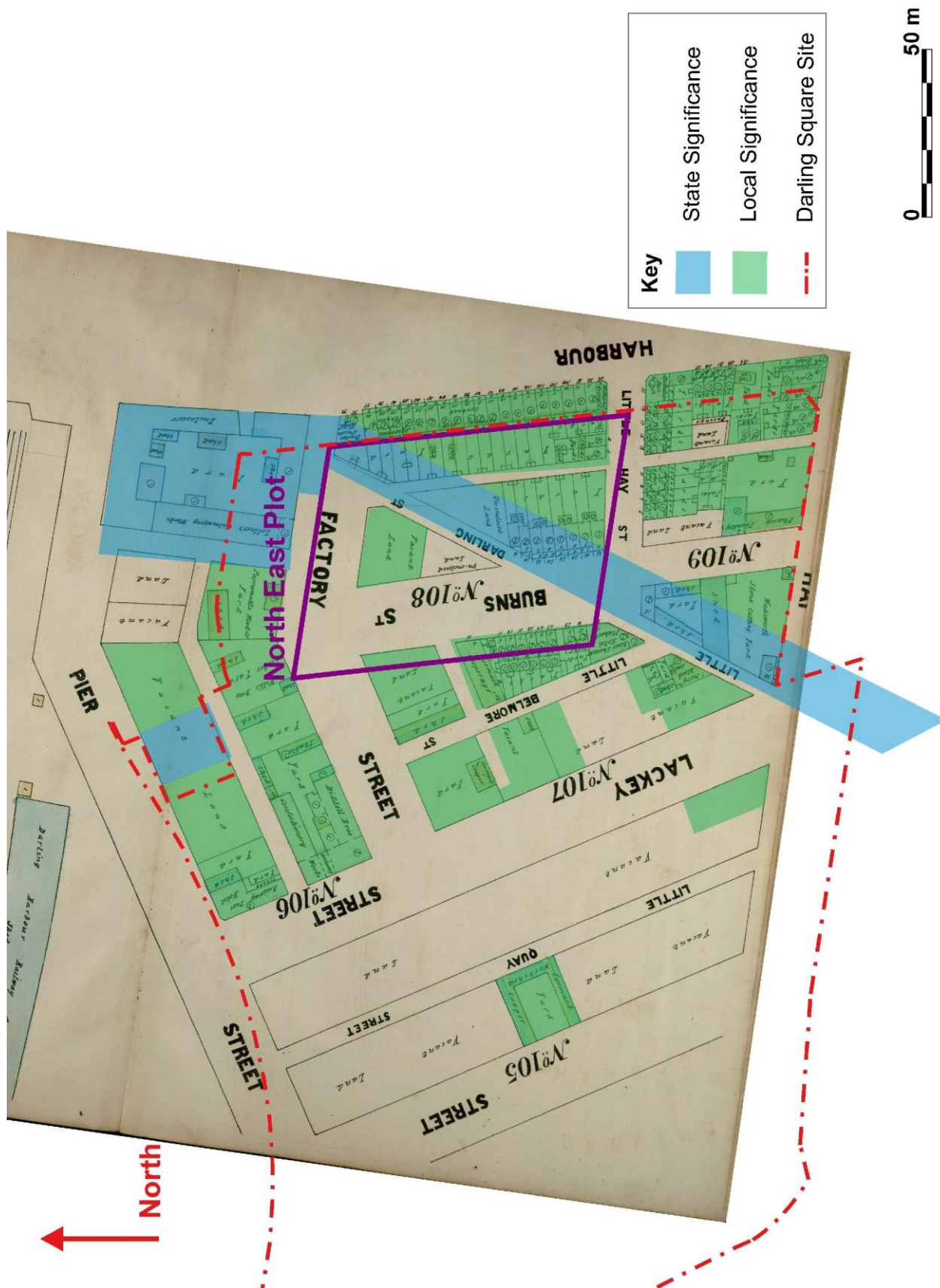


Figure 4.1: Plan showing areas with State and local heritage significance.

5.0 Issues identified in the Archaeological Assessment for the NE Plot

5.1 Archaeological Testing

A separate report presenting the results of the archaeological testing has been completed to draft stage: *Non-Indigenous Archaeological Testing, Darling Square East & Boulevard* (October 2014). The purpose of this testing was to inform the approach to managing the remains of Dickson's Dam Wall and to understand the RLs on the 19th-century archaeology across Darling Square East and the Boulevard.

While we have been able to use the results of the testing we still need to write an Archaeological Research Design (ARD) outlining the full impacts of the current proposal of the NE Plot. This needs to be based on detailed design.

5.1.1 Results of Archaeological Testing

The results of the archaeological testing for the RLs of any 19th-century archaeological remains of local significance in Areas 2, 6 and 7 are (Figure 5.1):

- The excavation of two trenches in the southeast corner of Hay and Harbour Streets indicates that archaeological remains of the Phoenix Foundry and vacant land to the east are present below RL 2.65m (T2A) and RL 2.56m (T2B).
- The excavation of one trench to the west of the current SEC indicates the RL for the former Lackey Street surface is at RL 2.10 (T6B). This gives a general indication of the level at which remains associated with the Cormack Cooperage to the northeast may survive, dependent on impacts from the current SEC structure.
- The excavation of one trench within the Biddell Bros Confectionery Factory (T7B) indicates that remains associated with the structure may be present below RL 1.86m (sandstone blocks) and are definitely present at RL 1.15m (brick paving).
- The excavation of one trench within the Railway Pier Hotel yard suggests that the latest surface of the yard (probably dating to the 1930s occupation of the hotel) was at RL 1.76m and an earlier surface was uncovered at approximately RL 1.60m. It is likely that any archaeological remains associated with the 19th-century use of the hotel would be found below RL 1.76m.
- The excavation of one trench within the yard to the west of the Willis Bros Timber Yard (T7C) indicates that archaeological remains including surfaces and timber-rich material (possibly waste material from the timber yard) is present below RL 1.92m - RL 1.87m.

In general, the slab of the 1930s Market building has protected the earlier 19th-century archaeological remains, except in areas where the Market building's own footings have impacted upon the remains. The top of the archaeology is considered to be RL 2.65m in the southeast of the study area, sloping down to RL 1.76m in the northwest (Figure 5.1). This is consistent with the expected fall of the reclaimed land down towards the water of Darling Harbour.

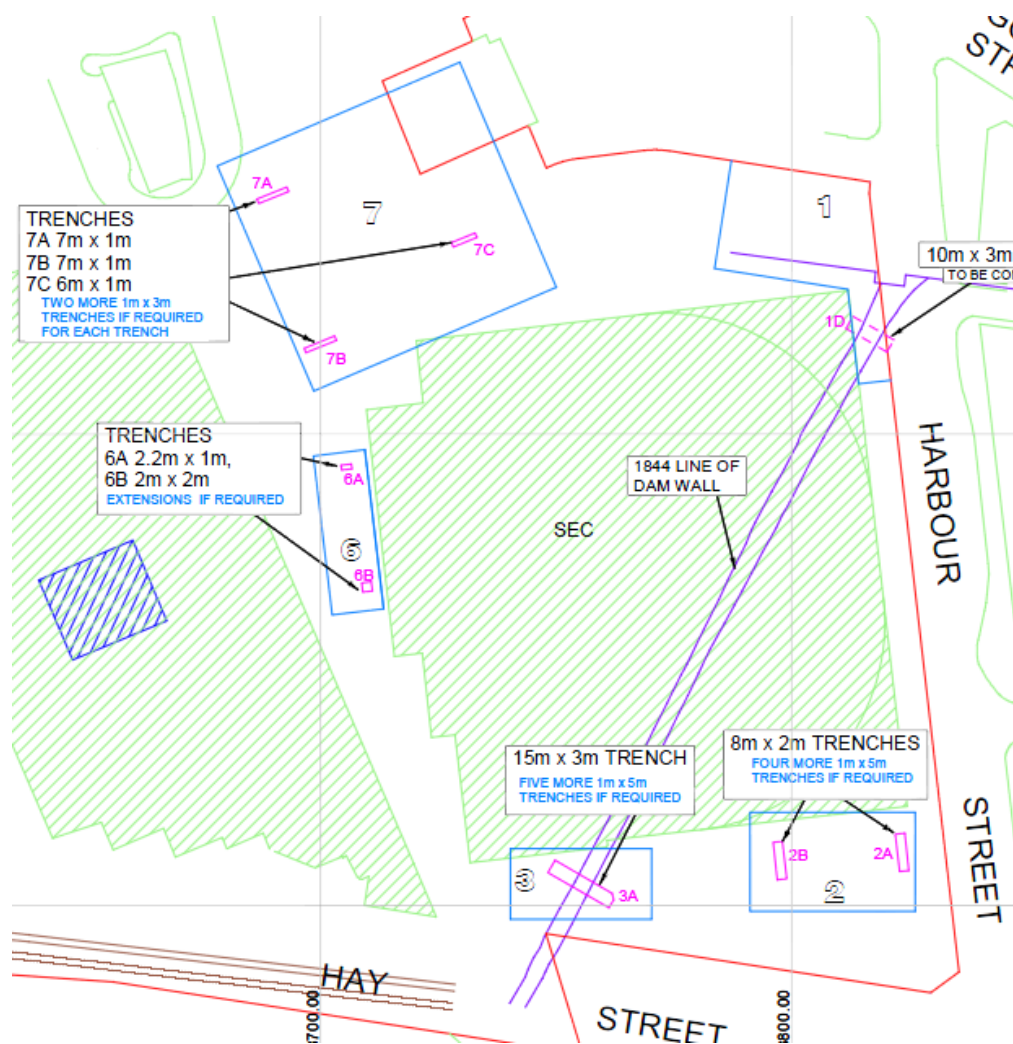


Figure 5.1: Location of test trenches around the Sydney Entertainment Centre (SEC). These test trenches are discussed below.

6.0 Proposed works and impacts

6.1 Description of proposed works

The proposed works include the demolition of the SEC and the associated plantings, surface and street furniture fronting Little Pier Street to the north and Harbour Street to the east. Redevelopment of the site will include the construction of a mixed use podium comprising a residential tower, above ground parking, retail and commercial suites.

6.2 Impacts of the proposed works

Demolition of the SEC may impact on archaeological remains in the area if the demolition process requires work outside of the existing footprint of the structure. Details of the required level of demolition were unavailable at the time of writing.

Construction of the mixed use podium will require extensive piling across the NE Plot and deep excavation for lift shafts which have the potential to impact on archaeological remains. Piles will be 600mm in diameter with a 400mm deep pile cap. The pile cap should not impact upon archaeological remains in the NE Plot, as the top of archaeology was below this depth in all of the test trenches in the area. The piles will have localised impact within the 600mm borehole. Transfer beams will be employed in some locations to minimise the impact caused by piles at depth, where State significant remains are predicted to be intact. The transfer beams will be 2.5m wide and between 1.2m and 1.5m deep. Lift pits will require deep excavation in four locations within the NE Plot and in an additional two locations in the SE Plot that are close to the remains of the 1815 dam wall. The lift pits each measure 2.4m x 2.4m and are up to 4.3m deep. However, extensive piling around the pits with piles in some cases up to 900mm diameter means that a larger area of disturbance must be expected from these items. A rainwater tank will be installed to the east of the dam wall. It is proposed to be 26m long, 3m wide and 1.5m deep.

6.3 Impacts on Heritage Significance

The *Non-Indigenous Archaeological Assessment and Impact Statement*⁴ for the site identified the following archaeological items within the footprint of the proposed works to be of State significance:

- Dickson's c1815 dam wall

Dickson's dam wall was approximately 170m long. It extended roughly from the junction of Quay Street and Hay Street to the junction of Harbour Street and Factory Street. The potential remains of the dam extend beyond the boundaries of the NE Plot. The dam also appears beneath the SE Plot which will be the subject of a separate DA. Because the SE plot is also under consideration for redevelopment, impacts to the dam wall from that area will also be discussed here.

The following archaeological items within the footprint of the proposed works were assessed as being of local significance:

- Residential housing throughout the eastern half of the study area:
 - Remains of the rear yards and cesspits of 19 houses on Harbour Street.
 - Remains of 8 houses and yards on the eastern side of Burns Street
 - Remains of 2 houses on the northern side of Little Hay Street
 - The yard of the Trades Union Hotel on Harbour Street.
- 1850 and 1860s reclamation of the millpond and Darling Harbour.
- 1880s/1890s manufactories, including:

⁴ Casey & Lowe, *Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP) Concept Plan, The Haymarket – SSDA2: Non-Indigenous Archaeological Assessment and Impact Statement*, Report to Lend Lease Development Pty Ltd, March 2013

- Eastern part of the Centennial Cooperage (east of Burns Street)
- Rowlands Aerated and Mineral Water works (corner of Little Hay Street and Little Darling Street).



Figure 6.1: Plan showing the location of piles in the NE Plot in relation to the potential archaeology shown on the 1880 plan. North is at the top.

6.3.1 Dickson's 1815 Dam Wall

Archaeological testing at the site confirmed that limited remains of Dickson's dam still survive beneath the current surface at locations on the southern forecourt of the SEC (Trench 3A) and near the junction of Factory Street and Harbour Street (Trench 1D) (Figure 5.1). The dam wall was an embankment constructed from clay, sand and industrial fills, capped with a tightly compacted surface. It was built on harbour sands that showed signs of being exposed to the tides shortly before construction. The embankment was around 1200mm tall at its highest observed point. Several services and footings for the 1930s market had impacted on the remains of the dam in both locations. The presence of live services at both locations also prevented the investigation of the western side of the embankment. Near the junction of Harbour Street and Factory Street the dam

wall was further reinforced with sandstone rubble near its base. The rubble was located near the centreline of the dam and appeared to be extending to the west. It may have been the edge of a stone revetment on the seaward side of the dam but this was not able to be established.

There are up to 18 proposed piles of 600mm diameter that may potentially impact on the remains of the dam. Sixteen piles are located in an area of approximately 19m x 5m near the junction of Factory Street and Harbour Street. The piles are not evenly spread. Seven piles are located in an area of approximately 6m x 5m near the location of Trench 1D. Nine more piles are located approximately 5m to the south in an area of 8m x 5m. At the southern end of the dam, two piles will be located in the vicinity of Trench 3A, at an interval of approximately 8m. The remainder of the dam (over 98m) will not be impacted as transfer beams will be used to bridge the dam in this area (Figure 6.3). These piles are proposed in lieu of a transfer beam as the beam would need to be built outside of the site boundary and its depth would have a greater impact on the wall.

Construction of the SEC (now the Qantas Credit Union Arena) may have had a substantial impact on much of the dam that is proposed to be protected under the new works. Lend Lease are currently seeking copies of the SEC piling and footing plans. These were not available at the time of writing. Due to the lack of clarity in relation to how much of the dam wall may survive we are therefore uncertain how big an impact the piles (instead of the transfer beams) would be. It is possible that the northeastern area is the most intact and the proposal would have a major impact on the dam wall. Or it may be that much more of the wall survives and that there may be only a minor impact. The significance of these impacts cannot be properly assessed until we have further information in relation to the survival of the dam wall. Given this we intend to provide further assessment of these impacts as part of the Archaeological Research Design. In addition consultation is proposed to be undertaken with SHFA and Heritage Division archaeologists to keep them informed of this further information.

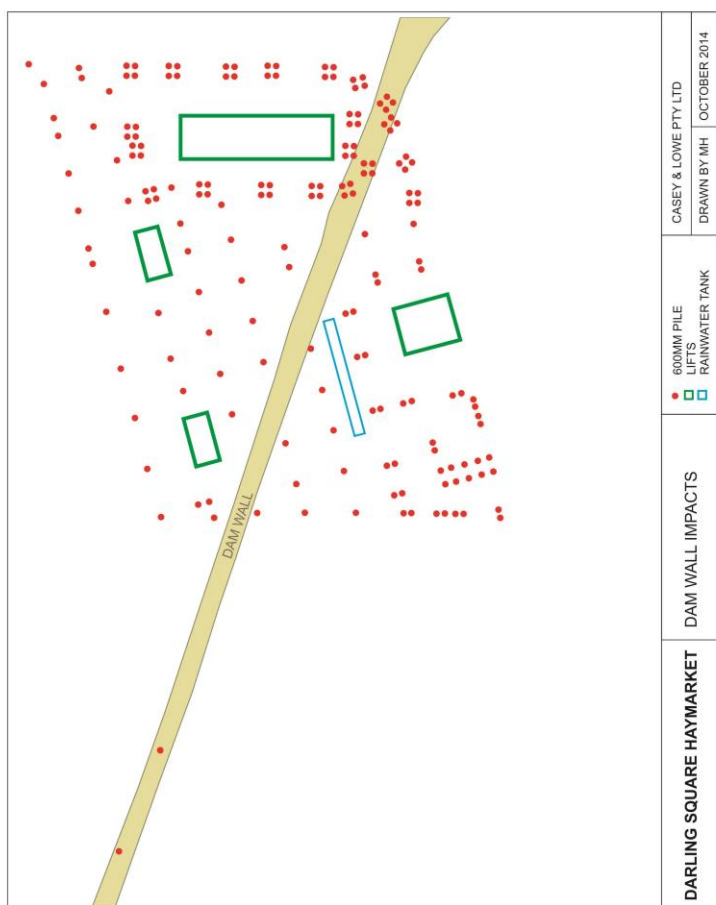


Figure 6.2: Location of the dam wall relative to proposed piles (red dots), the rainwater tank (blue rectangle) and lift shafts (green rectangles). Transfer beams have not been shown as they will not impact on the dam. Transfer beams that would impact on the wall are shown in Figure 6.3.

The heritage significance of the dam lies in its Historic, Associative, Research, and Rarity qualities. The proposed impacts to the dam would impact on its significance by further compromising the structural integrity of the item. The dam, by its very nature, should represent a continuous barrier, dividing the two parts of the harbour. Its historical and rarity significance in particular lie in its representation of the transformation of the head of the harbour through a major but simple piece of engineering. Although the impacts are minor in terms of size, they are conceptually significant in the idea of the structure as a continuous, impervious barrier.

Archaeological testing showed that the structure of the dam had already been compromised by several services and the construction of the 1930s market. The proposed impacts would not be the first but they would compound damage that has already been done to the item.

In particular, concentrated piling at the northern end of the dam may have an adverse effect on the significance of the item if it is considered to break the continuity of the structure at the point at which it once connected to the land and the steam mill. The conservation of the main body of the dam through the use of transfer beams in the centre of the NE Plot is considered to be a significant mitigation of other potential impacts (Figure 6.3).

6.3.2 Remains of the rear yards and cesspits of 19 houses beneath Harbour Street

Archaeological testing in Trench 1D encountered a truncated deposit at the anticipated level of this archaeological phase (Figure 5.1). In the location of Trench 1D it appeared that levelling of the site prior to the construction of the markets in the 1930s had destroyed the remains of this phase. However, building lots to the south along Harbour Street may still have intact cesspits and other subsurface features, or possibly yard surfaces where the original ground level was lower than the disturbance caused by the market construction.

There are a total of 44, 600mm-diameter piles that will potentially impact on yard surfaces from pre-1880 houses (Figure 6.4). The heritage significance of these residences lies in their ability to tell us about the lifeways and ethnicity of their occupants. This type of evidence is most likely to come from underfloor deposits within the houses or from cesspits at the rear of the yards. There will be no impacts to the interior of the houses under the proposed works. Two cesspits may be predicted to be encountered in locations of proposed piles, and may require further investigation prior to piling. The remaining impacts are considered to be acceptable given that there was no evidence for this phase in Trench 1D during testing, and that these impacts are unlikely to adversely affect the heritage significance of the items.

There are two lift pits that will impact on the yards of pre-1880 houses along Harbour Street (Figure 6.4). These items will impact on an area of approximately 2.4m x 2.4m each to a depth of 4.3m. Intensive piling is associated with these structures, increasing the area of impact to around 10m x 10m. These impacts may occur in the location of cesspits associated with housing along Harbour Street. These areas should be subject to archaeological salvage prior to proposed impacts.

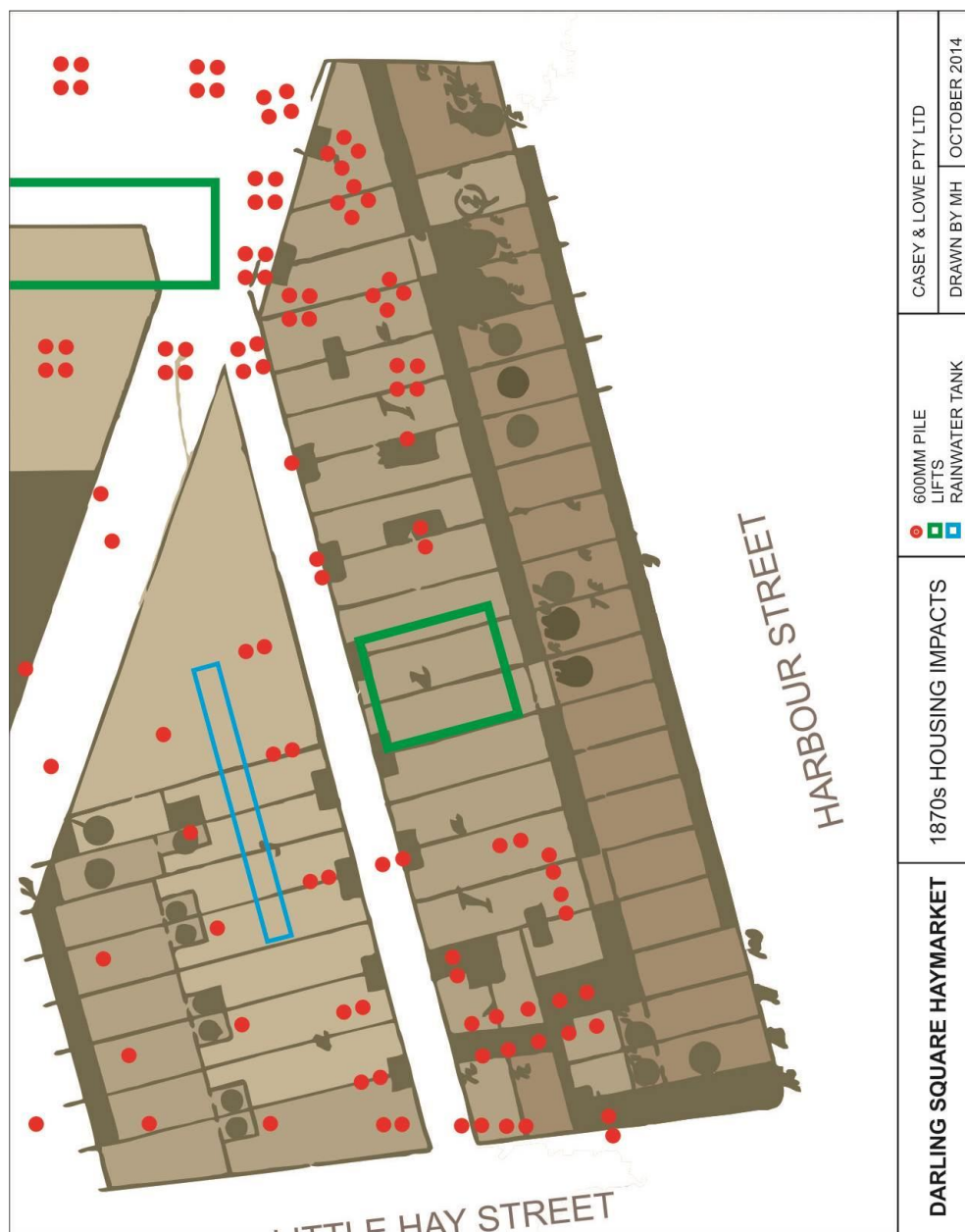


Figure 6.4: Proposed impacts to pre-1880 housing along Harbour Street. Piles are shown as red dots, lift pit areas as green rectangles. A proposed rainwater tank is shown in blue. North is at the top.

6.3.3 Remains of 10 houses and yards on the block bounded by Little Hay Street and Burns Street

This area is located beneath SEC and was unable to be tested during the archaeological testing program. Construction of the SEC in the 1980s may have already removed archaeological material from this phase. Details of the construction of the Arena were unavailable at the time of writing. It is also possible that the construction of the Rowlands Aerated and Mineral Water works in the 1880s and the market in the 1930s may have removed a considerable amount of the potential archaeology before the construction of the SEC.

A total of 15 piles of 600mm diameter are proposed to be located within the area of the eight houses fronting Burns Street. Three of the houses will be potentially impacted by a single pile in the

area of their front ground floor rooms. One property will potentially be impacted by a single pile in a small rear ground floor room. The remainder of the piles will be located within the yards of the houses, away from known structures and cesspits.

The archaeological remains of these houses are considered to be significant for the information that they may contain about the life of the occupants through underfloor accumulations within the houses and occupation deposits and rubbish pits in the yards. Recent investigations of the remains of residences at Darling Quarter demonstrated that spatial analysis and artefactual interpretation of underfloor deposits was successful even in houses where two or more ground floor rooms had been compromised by late 20th-century piling activity. Impacts to underfloor deposits in these cases caused only localised disturbance and left the remainder of the accumulation intact. The proposed impacts are therefore considered to be acceptable as four houses will not be impacted at all, and only three will be subjected to a 600mm diameter area of impact within the main body of the house.

A total of 11 piles of 600mm diameter have the potential to impact on the yards of the pre-1880 houses fronting Little Darling Street. A total of five yards will be impacted, with three spared completely. These impacts are considered to be acceptable as they are unlikely to adversely affect the heritage significance of the items.

The construction of a rainwater tank measuring 26m x 3m may impact upon the yards of four houses. As this will be away from any known structures or cesspits, it is not considered to adversely affect the heritage significance of these items. However, as excavation will allow exposure of the partial yard surfaces in plan, it is recommended that archaeological excavation of this area should be undertaken prior to works commencing in order that any unknown structures or rubbish pits are archaeologically recorded.

Detailed recommendations for archaeological investigation of this area will be made following detailed analysis of current impacts.

6.3.4 Yard of the Trades Union Hotel on Harbour Street

Archaeological testing showed that there was no evidence of the yard of the Trades Union Hotel on Harbour Street as the 19th-century ground level had been reduced during the construction of the market in the 1930s. There are a total of five piles that are likely to impact on the yard of the hotel. These impacts are considered to be acceptable but some archaeological input may be required.

6.3.5 Centennial Cooperage and Rowlands Aerated Water Works

There are a total of 20, 600mm-diameter piles that may impact upon the location of Rowlands Aerated Water Works and 10 piles that may impact on the location of the cooperage (Figure 6.1). The rainwater tank (26m x 3m) may also impact on any remains of the water works in this area.

The heritage significance of these items lies in their ability to tell us about working conditions and trade and industry specialisation and technology in the late 19th century. As these are answerable through macro investigation of working environments, localised piling impacts are considered to not adversely affect the heritage significance of these items. However, as the size of the impact caused by the rainwater tank could significantly alter the ability to interpret the spatial and environmental nature of structures, it is recommended that the area of the rainwater tank and the adjacent piling be subject to archaeological investigation prior to works commencing.

7.0 Mitigation of Impacts

7.1 Mitigation of impacts on the Dam Wall

A combination of transfer beams and piles have been used to minimise potential impacts to the dam wall. Where transfer beams would need to be at a depth that would damage the dam wall, piles have been proposed to minimise the impact. Where transfer beams will clear the height of the wall they will be used in place of piles.

At the northern and southern end of the dam wall, the use of each transfer beam would remove a section of the wall 2.5m wide to the level of its base. In these areas, piles are considered to be the least intrusive option.

The use of transfer beams in the central portion of the dam will negate the need for seven 600mm piles which would otherwise impact on the dam wall. The transfer beams in this location will clear the top of the dam wall. This will effectively preserve over 98m of the dam wall which would otherwise be affected by the proposed works.

Existing redundant services such as ceramic stormwater pipes may be utilised for new electrical conduits to avoid new trenches.

Tree plantings will be positioned so as to avoid the dam wall.

Lift pits have been located away from the dam wall. A proposed rainwater tank measuring 26m x 3m has been relocated to avoid damage to the dam wall.

7.2 Mitigation of impacts of mid to late 19th-century archaeology

The locations of piles have been largely restricted to the yard areas of late 19th-century houses. Pile caps have been kept to a minimum (400mm deep) to avoid impacts to the 19th-century archaeology.

Existing redundant services such as ceramic stormwater pipes may be utilised for new electrical conduits to avoid new trenches.

8.0 Results and recommendations

8.1 Results

The study area is the NE Plot within Darling Square area, within the SICEEP site. The historical research and archaeological analysis undertaken for this report indicates that the study area was involved in the very beginnings of steam technology in Australia with the introduction of Dickson's 1815 steam mill and the construction of a dam wall for his mill pond. Reclamation and subdivision of Dickson's Mill Estate, to the east of the dam wall, between 1855 and 1857 saw the initial residential and commercial development of the study area. Around 1865 the area to the west of the dam wall was reclaimed and by 1880 there was considerable occupation of the study area. Early development prior to 1880 was focused to the east of Burns Street.

The Archaeological Impact Statement has identified one archaeological item with significance at a state level and several archaeological items with significance at a local level. These are:

State Significance

- Dickson's c1815 dam wall

Mitigation strategies have been identified to minimise impacts on State-significant archaeology. In relation to Dickson's c1815 dam wall it is proposed:

- To use a combination of transfer beams and piles to minimise impact on the dam wall.
- To use existing service trenches for new services where possible.

Local Significance

- Residential housing throughout the eastern half of the study area: remains of 10 houses and yards established prior to 1880, including later Chinese residents; and the rear yards and cesspits of 19 houses which are beneath Harbour Street.
- 1870s/1880s manufactories
 - Eastern part of the Cormack cooperage, later Centennial Cooperage
 - Rowlands Aerated and Mineral Water works
- 1850 and 1860s reclamation of the millpond and Darling Harbour.

Aboriginal Archaeology

The study area is fully within reclaimed land within what was once Darling Harbour and therefore has no potential for Aboriginal archaeology. All testing and salvage for Aboriginal archaeology within Darling Square has been completed.

8.2 Recommendations

1. The findings of this Archaeological Impact Statement should be revised once the existing impacts caused by the construction of the SEC are known. These should be incorporated into the Research Design required to guide any archaeological fieldwork, after appropriate consultation with the SHFA and Heritage Division archaeologists.
2. Archaeological remains of State significance within The Haymarket Concept Proposal area should be retained *in situ*. Strategies to mitigate development impacts to include:
 - Use of a combination of transfer beams and piles to minimise impact to the dam wall.
 - A reduction in the number of crossing points across the line of the dam wall for new infrastructure services, including the reuse of existing service trenches where possible.
 - Develop protocols to manage issues during the demolition, regrading and construction stages of redevelopment so as to minimise intended or unintended impacts.
 - Include site heritage and archaeology information during workers' inductions.

3. Where there are potentially significant impacts to archaeological remains, either local or State, archaeological recording will need to be undertaken in accordance with Heritage Council and Heritage Division guidelines and best practice methodologies.
4. No further Aboriginal archaeology should be undertaken within Darling Square (formerly The Haymarket). The only remnant original foreshore within the project area is within the western parts of the development. All Aboriginal archaeological testing/salvage proposed for Darling Square has been completed.
5. Write a **Non-indigenous Archaeological Research Design and Management Strategy** to refine impacts, both current and proposed, identify appropriate archaeological strategies and methodologies, and research questions to guide the archaeological program. This is to be informed by the detailed design and the impacts from the SEC.
6. SHFA will need to provide a repository for artefacts following the completion of the archaeological program.
7. Public interpretation of the archaeology of State and locally significant archaeology should be undertaken within the proposed redevelopment. This may include a mixture of opportunities for:
 - Public open days for engagement of the public with the significant archaeology within the site.
 - Exposure of surviving archaeology within the redevelopment and acknowledging the environmental constraints of such projects.
 - Interpretation of artefacts through site display.
 - Interpretation of the results of the archaeology program throughout the precinct.
8. Write an excavation report in accordance with Heritage Council guidelines and standard conditions of consent following the completion of archaeological investigations. This is to include:
 - detailed trench or area reports
 - overall excavation report
 - catalogue of artefacts and artefact reports
 - conservation of important artefacts
 - response to research questions
 - photo archive.
9. Undertake consultation with SHFA and Heritage Division archaeologists about the site's archaeological issues, approaches to *in situ* retention of the State-significant archaeology, and the Non-indigenous Archaeological Research Design and Management Strategy.

9.0 Bibliography

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