Macquarie Point Development Corporation

Macquarie Point Multipurpose Stadium Project of State Significance Assessment Previous Aboriginal Heritage Investigations

17 July 2024

TABLE OF CONTENTS

1 Introduction 3
2 Previous Aboriginal Heritage Investigations 3
2.1 Archaeological Test Excavations 2015 (Austral Tasmania) (Attachment A) 3
2.2 Archaeological Salvage Excavations 2021 (Austral Tasmania/Aboriginal Heritage Investigations) (Attachment B) 4
2.3 Archaeological Acquittal Report, 2021 (Aboriginal Heritage Investigations) (Attachment C) 6
2.4 Phase 3 Archaeological Salvage Excavations 2023 (AMAC Archaeological) 8
3 Remaining Areas of Archaeological Potential 9
4 Aboriginal Community Consultation Carried out for Other Related Projects .. 10
4.1 Aboriginal Cultural Values and Landscape Assessment 10
4.2 Aboriginal Culturally Informed Zone 10
4.3 Multipurpose Stadium 11
5 Conclusions 11

1 Introduction

The Macquarie Point Development Corporation (MPDC) has been tasked with the construction of a multipurpose Stadium at Macquarie Point. Guidelines prepared by the Tasmanian Planning Commission (2024), *Macquarie Point Multipurpose Stadium Guidelines*, require a report assessing the likely effects of the proposed development on the Aboriginal archaeological potential and significance at the site.

The guidelines specify that this report is to describe:

- the known and potential Aboriginal heritage within the project site and in the vicinity; and
- measures that will be undertaken so that development which may have adverse effects, including a direct impact, on Aboriginal heritage is avoided or managed in an acceptable manner.

This report summarises previous Aboriginal heritage investigations carried out at Mac Point and their relevance to the Multipurpose Stadium.

Report results are presented chronologically. It should be noted that the reports attached to this Minute contain confidential Aboriginal heritage site location details which should not be made publicly available.

2 Previous Aboriginal Heritage Investigations

2.1 Archaeological Test Excavations 2015 (Austral Tasmania) (Attachment A)

This project was carried out for the purpose of determining the presence or absence of Aboriginal heritage at Macquarie Point. A series of 33 test pits were excavated, predominantly beneath the escarpment, and an area to the south, not known to have been historically disturbed (green area below) (Figure 1).[1] Some of these testing sites are located within the footprint of the Stadium and Concourse study area.

[1] Austral Tasmania, *Macquarie Point Aboriginal Archaeological Test Excavations*, report prepared for Macquarie Point Development Corporation, AT0174, 18 August 2015



Figure 1: Austral Tasmania figure showing location of numbered test pit in relation to the embankment area (marked in orange), the area of known historical disturbance (marked in blue) and the area of no known disturbance (marked in green) (source map: Google Earth)

No worked lithics or suitable raw materials were identified during works. Shell material was only identified on two occasions, with neither occurrence believed to identify the presence of a shell midden. High levels of disturbance were recorded during works, and the report concluded that the site was not considered to contain known or potential heritage sensitivity, and that no proposed works threatened Aboriginal cultural material.[2]

Further investigative works were not recommended, and the application of Aboriginal Heritage Tasmania's Unanticipated Discovery Plan was recommended during works.[3]

2.2 Archaeological Salvage Excavations 2021 (Austral Tasmania/Aboriginal Heritage Investigations) (Attachment B)

Phase 1 salvage excavations were carried out at three historical (i.e., European) archaeological sites at Macquarie Point in early 2021. These were:

1. The Lumber Yard Trench;
2. A section of a nineteenth century road formation; and
3. The 1914 railway turntable well.

The Stadium and Concourse partially coincides with these areas of excavation.

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[2] *Ibid*, p.63
[3] *Ibid*, p. 64

During excavation of the Lumber Yard trench, two Aboriginal lithic artefacts in a secondary context were located on 19 February 2021 and works ceased. Aboriginal Heritage Tasmania was informed. A permit application was prepared allowing for the excavations to continue, and the excavation area to be expanded (Figure 2). A permit was granted under the *Aboriginal Heritage Act 1975*, and works recommenced in July 2023 (Phase 2). During Phase 2 of the excavations, 39 knapped artefacts were recovered; 31 being lithic, and eight being artefacts manufactured from European glass bottles during the early nineteenth century. All artefacts were recovered from secondary contexts. These contact artefacts were subject to usewear analysis in accordance with the permit.[4]

In addition to the artefact assemblage, the excavation collected 4,212 diagnostic shell elements from the Phase 2 excavation area, again from disturbed contexts. Analysis indicated a typical nipaluna midden site that has been heavily disturbed and received a significant amount of naturally deposited shell during its deposition.[5]

Recommendations made in the report related to ongoing care and conservation and artefacts; ongoing consultation with Aboriginal community groups; lodgement of the excavation report; and, further analysis of recovered glass items to determine if they are contact artefacts.[6]

Following the completion of works, the archaeological research potential of the excavation areas has been realised.

[4] Aboriginal Heritage Investigations, *Final Phase I and Phase II Archaeological Excavation Report Roundhouse Remediation Works Macquarie Point*, Version 1, Macquarie Point Development Corporation, 2023, p.144

[5] *Ibid*, p.157

[6] *Ibid*, pp.209-210



Figure 2: Aboriginal Heritage Investigations – Phase I and Phase II excavation areas.

2.3 Archaeological Acquittal Report, 2021 (Aboriginal Heritage Investigations) (Attachment C)

Following the completion of the Phase 1 and 2 excavations, it was evident that the sensitivity assessment for Macquarie Point was inaccurate for both Aboriginal and historical archaeology. The Corporation commissioned Aboriginal Heritage Investigations to re-examine the sensitivity, and this was documented in the Acquittal Report. It

used a standard desktop approach to assessing sensitivity of reviewing historical, site and archaeological data and spatially defining this as varying levels of sensitivity.[7]

The footprint of the Multipurpose Stadium and Concourse crosses multiple zonings of sensitivity (Figure 3). These zonings and their corresponding explanations are defined below:

1. High Sensitivity. High archaeological sensitivity is present within a single location of Macquarie Point in an area of the original ground surface with demonstrated or historically documented high levels of preservation. This area is highly sensitive both in terms of Aboriginal and early colonial archaeological potential;[8]
2. Moderate Sensitivity. Areas of moderate archaeological sensitivity include two places that are within or near to the original shoreline but may not have been heavily or moderately disturbed by twentieth century or late nineteenth century industrial development. These areas may be covered by fill or built upon by later development but there remains a reasonable probability that significant historical or Aboriginal materials are retained, although it is likely they are in a disturbed or secondary context. Any significant archaeological materials that are present may be intermittent or truncated. While twentieth century or late nineteenth century construction has left structural remnants that has not resulted in the total removal of the early soil profile;[9]
3. Area Cleared Through Excavation. The archaeological potential of these areas has been previously realised through past archaeological excavations;
4. Low Sensitivity. These areas are distinguished by disturbances associated with twenty-first, twentieth century or late nineteenth centuries' industrial development. The pre-colonisation ground surface in this area may be entirely removed or stripped back to bedrock. These locations may also be the site of significant land reclamation. The potential for isolated pockets of redeposited archaeological material remains but is considered to be very small. There is a very low likelihood for Aboriginal cultural material to be present even in secondary contexts[10];
5. Indeterminate or Nil Sensitivity. This rating of sensitivity reflects a lack of determination or a positive assessment of nil archaeological sensitivity across the broader areas of the site as documented in earlier reports and sensitivity mapping. It denominates areas for which detailed subsurface information is lacking but which have not been considered to contain any significant archaeological material. The inclusion of an area within this level of sensitivity rating is not intended as a definitive statement of its sensitivity but rather indicates that while previous sensitivity mapping may have considered the historical development of this area, there has been no assertion of archaeological potential.[11]

Note that the coincidence between the footprint of the Stadium and Concourse and these various zonings of sensitivity has changed following the completion of Phase 3 works.

The Corporation has adopted these sensitivity ratings in the management of archaeology at Macquarie Point. Aboriginal Heritage Tasmania has advised that works within the 'low' and 'indeterminate or nil' sensitivity zones may proceed under the guidance of the Unanticipated Discovery Plan, without the need for individual Aboriginal heritage desktop review applications.[12]

The City of Hobart has accepted that works within the 'low' and 'indeterminate or nil' sensitivity zones satisfies the requirements of Clause 22.6.3 of the Sullivans Cove Planning Scheme 1997, that the site has been surveyed previously and found not to be of archaeological significance and the nature of the 'building or works' will not result in destruction of any aspects or items of archaeological significance.[13]

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[7] Aboriginal Heritage Investigations, *Archaeological Acquittal Report Roundhouse Remediation Works, Macquarie Point*, Version 2, 11 October 2021

[8] *Ibid*, p.20

[9] *Ibid*, p.19

[10] *Ibid*, pp.18-19

[11] *Ibid*, pp.21

[12] DOC/21/6549: Email, Kate Moody, AHT to James Puustinen, MPDC, 10 November 2021

[13] See for example: PLN-23-406, 6 Evans Street, Hobart & 10 Evans Street, Demolition and Site Remediation, 4 September 2023; PLN-23-723, 6 Evans Street, Hobart & 10 Evans Street, Fencing and Gates, 16 May 2024

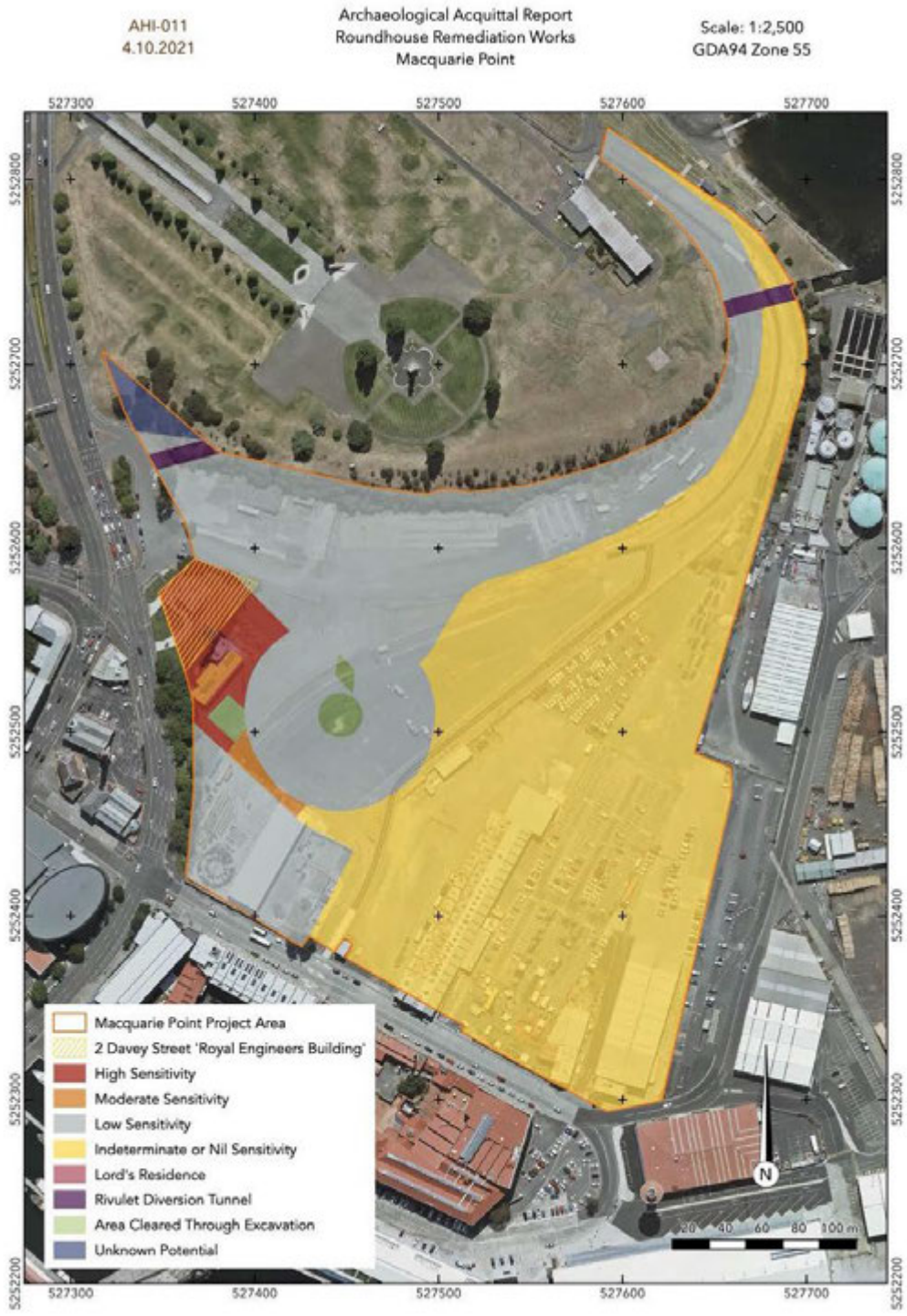


Figure 3: Aboriginal Heritage Investigations - Overview of the archaeological sensitivity present across the Macquarie Point Project Area. This sensitivity mapping is the synthesis of earlier archaeological assessments updated with the results of the recently completed excavation (LIST Map © State of Tasmania).

2.4 Phase 3 Archaeological Salvage Excavations 2023 (AMAC Archaeological)

AMAC carried out a combined Aboriginal and historical archaeological salvage excavation in 2023. These Phase 3 works, occurred in two trenches covering a combined area of 733m^2, and were located in areas zoned as having high and moderate archaeological sensitivity (Figure 4). The purposes of the excavations was to salvage archaeological evidence and information prior to future development envisaged in the then Master Plan. The Multipurpose Stadium and Concourse coincide with these excavation areas.

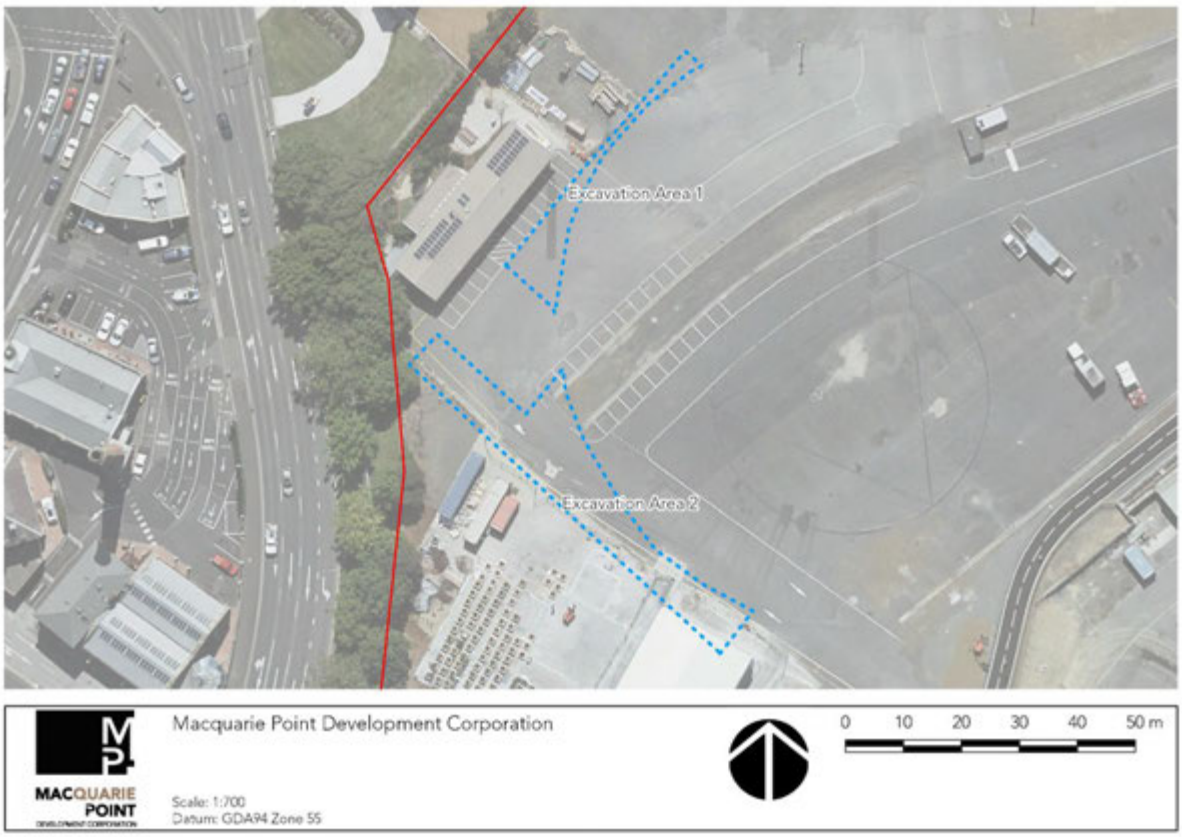


Figure 4: Phase 3 Excavation Areas 1 and 2 demarked by dotted lines (LIST Map © State of Tasmania).

At the time of preparing this report, the excavation report is under preparation and the below results should be considered drafts. The draft excavation report is not attached to this summary document.

AMAC and the Aboriginal Heritage Officer identified 82 modified lithics relating to the occupation of the nipaluna region. All items were in a secondary, disturbed context. A further three glass fragments were identified as possibly being modified by Aboriginal people, but subject to further expert examination.[14]

With regard to shell material, the report noted that no shell was found to have been worked by Aboriginal people, and only modified shell was for European functions. The fragmented nature and differing sources of this material has made it impossible to treat the shell assemblage as an indigenous food waste evidence resource, as all materials show clear evidence of having been removed from the original context and into a European context.[15]

Although the report is titled 'Final', it remains in a draft stage, and is awaiting a statement of socio-cultural significance to be provided by the Aboriginal Heritage Officer who worked on the project.[16]

Following the completion of works, the archaeological research potential of the excavation areas has been realised.

3 Remaining Areas of Archaeological Potential

Following the completion of the Phase 3 excavations, an area of high archaeological sensitivity remains at the far western end of the site and covers approximately 3,436m^2 (Figure 5). The Corporation recognises that there is less evidence of disturbance in this area, making it particularly sensitive and a high priority to protect from disturbance and development.[17] The Stadium and Concourse is outside of this high sensitivity area.

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[14] AMAC Archaeological, *Final Archaeological Report. Phase III Archaeological Investigation Macquarie Point Hobart, Volume 1 Main Report*, for Macquarie Point Development Corporation, May 2024, p.308

[15] *Ibid*

[16] *Ibid*, p.366

[17] MPDC, *Mac Point Precinct Plan*, July 2024, p.20



Figure 5: COX Architecture – Detail from Precinct Plan showing High Sensitivity Area (red hatching). Note also the Aboriginal Culturally Informed Zone. The footprint of the Stadium and Concourse is shown.

4 Aboriginal Community Consultation Carried out for Other Related Projects

The Corporation has engaged a number of separate, but related heritage assessments or consultation exercises with the Aboriginal community which are summarised below.

4.1 Aboriginal Cultural Values and Landscape Assessment

The Tasmanian Planning Commission's Guidelines for the Multipurpose Stadium include in section 5.1 the preparation of an Aboriginal Cultural Values and Landscape Assessment. Aboriginal Heritage Officers and community members are working with Southern Archaeology on the preparation of this document.

4.2 Aboriginal Culturally Informed Zone

Under the Mac Point Precinct Plan, an area of approximately 9,000m^2 has been identified as a space, nominally titled the Aboriginal Culturally Informed Zone at the western end of the site. This is shown in Figure 5 above. A team of Aboriginal Heritage Officers and an archaeologist are undertaking statewide consultation to understand what the community would like to see in this area; how it should be used; and, what it should be called. This consultation is currently underway.

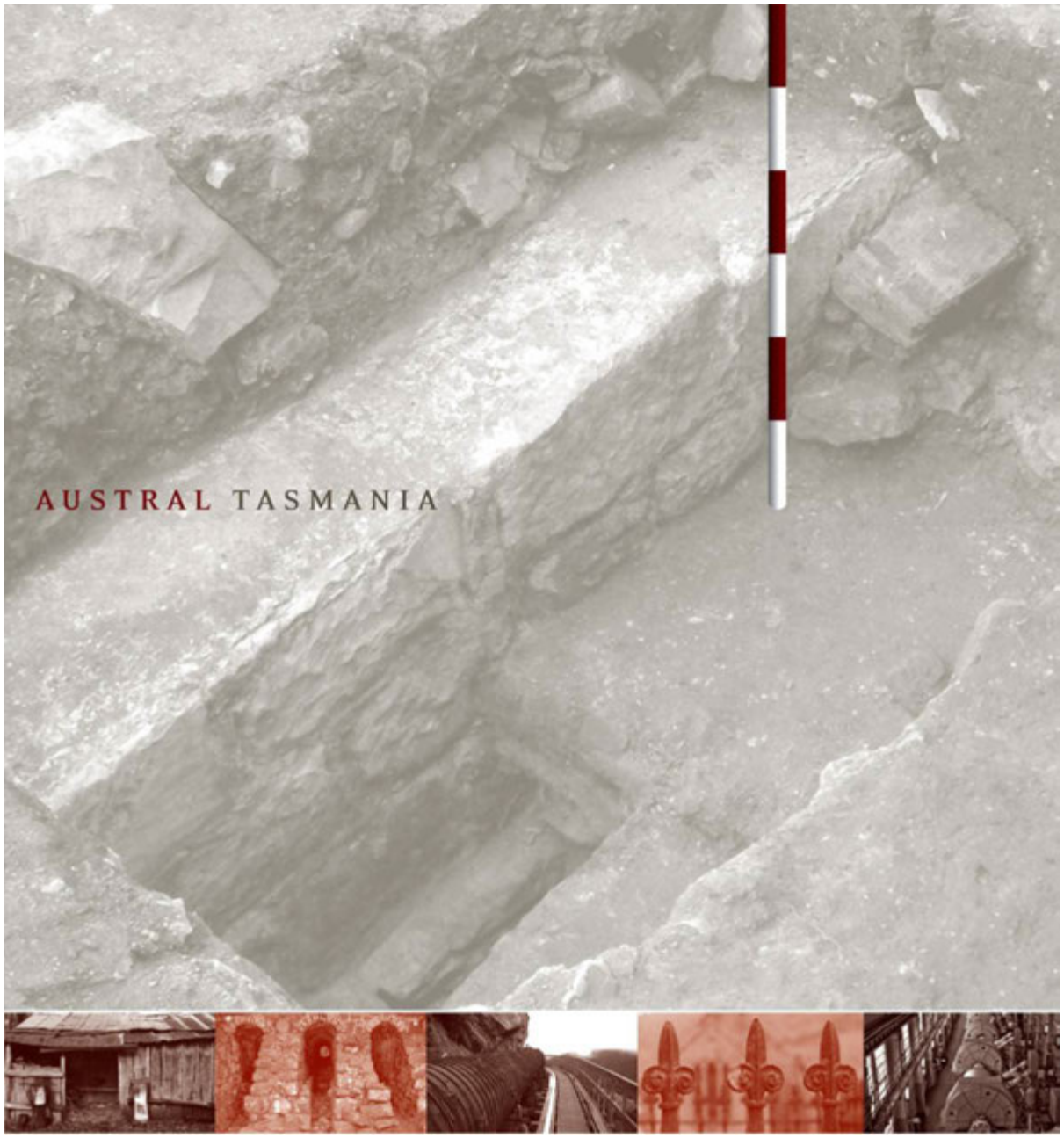
4.3 Multipurpose Stadium

The same team of Heritage Officers and archaeologist consulting regarding the Culturally Informed Zone, are also seeking community feedback on the Stadium. Specifically, feedback is sought on opportunities for the design and spaces in and around the facility to reflect the site as it was, its history and share stories, opportunities for Aboriginal people to inform artworks or design elements, and any other opportunities it might present for community, and importantly, how it could integrate with the Aboriginal Culturally Informed Zone. This consultation is currently underway.

5 Conclusions

Multiple Aboriginal heritage assessments and three phases of archaeological salvage excavations have been carried out at Mac Point. The archaeological potential of these excavated areas has been realised, namely, they no longer contain areas of archaeological sensitivity.

The footprint of the Stadium and Concourse is outside of the remaining area of high archaeological sensitivity at the far western end of the site, and the Corporation has made it a high priority to protect this area from disturbance and development.



Macquarie Point Aboriginal Archaeological Test Excavations

Final Report Prepared for the Macquarie Point Development Corporation

Report Authored by David Marcus (Austral Tasmania Pty Ltd)

AT0174

18 August 2015

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TABLE OF CONTENTS

TABLE OF CONTENTS ..... **II**
FIGURES ..... **III**
TABLES ..... **V**
PLATES ..... **V**
EXECUTIVE SUMMARY ..... **VI**
1.0 INTRODUCTION **1**
1.1 CLIENT AND PROJECT DETAILS 1
1.2 AUTHORSHIP 3
1.3 PROJECT STAGING 3
1.3.1 Desktop Assessment *3*
1.3.2 Briefing of Aboriginal Heritage Tasmania *4*
1.3.3 Submission of Assessment and Permit Application *4*
1.4 CONSULTATION 4
1.5 LIMITATIONS AND CONSTRAINTS 4
1.6 DATA RESTRICTIONS 4
1.7 ACKNOWLEDGEMENTS 5
2.0 BACKGROUND INFORMATION **6**
2.1 ENVIRONMENT 6
2.1.1 Geological Context and Soil Landscapes *6*
2.1.2 Topography and Landform *7*
2.1.3 Hydrology *11*
2.1.4 Climate *12*
2.1.5 Flora and Fauna *12*
2.1.6 Past Land Use Practices *14*
2.1.7 Potential Land Use Impacts on the Archaeological Resource *25*
2.2 CULTURAL 26
2.2.1 The Derwent Estuary Archaeological Context *26*
2.2.2 Population and Contact History *26*
2.2.3 Material Culture *30*
2.2.4 Food *32*
2.2.5 Early Archaeological Models *35*
2.2.6 Later Work *37*
2.2.7 Heritage Database Search Results *38*
2.2.8 Previous Archaeological Investigations in the Vicinity of the Subject Land *41*
2.2.9 Archaeological Investigations in the Local Region *41*

2.2.10 Archaeological Investigations within the study area *44*
2.3 PREDICTIVE MODELLING 44
2.3.1 Aboriginal Material Traces Within the Local Region *44*
2.3.2 Predictive Statement *44*
3.0 RESEARCH DESIGN AND FIELD METHODS 46
3.1 PROPOSED TEST EXCAVATION METHODOLOGY 46
3.1.1 Phase 1 Investigation *47*
3.1.2 Phase 2 Investigation *48*
3.1.3 Artefact Collection and Storage *49*
3.2 TIMING AND PERSONNEL 49
3.3 SUMMARY OF ALTERATIONS TO EXCAVATION METHODOLOGY AND LIMITATIONS 49
4.0 RESULTS 50
4.1 INTRODUCTION 50
4.2 TEST PIT EXCAVATION DATA 51
4.3 SOIL PROFILE DESCRIPTIONS 54
4.4 THE SOIL PROFILE 54
4.5 EVIDENCE OF DISTURBANCE 57
4.6 ABORIGINAL CULTURAL MATERIAL 62
5.0 INTERPRETATION AND DISCUSSION 63
6.0 ABORIGINAL COMMUNITY CONSULTATION INCLUDING THE AHC 64
7.0 STATEMENT OF SIGNIFICANCE 65
8.0 CONCLUSIONS & RECOMMENDATIONS 66
9.0 BIBLIOGRAPHY 67
9.1 PUBLISHED SOURCES 67
9.2 UNPUBLISHED SOURCES 68
9.3 WEBSITES 69

FIGURES

Figure 1: Approximate location of the study area (marked in red) in relation to Tasmania. 2

Figure 2: Macquarie Point Site (shaded red) (LIST Map, © State of Tasmania) 3

Figure 3: The study area (outlined in red) in relation to the Jurassic igneous rocks (Jd) to the north and the Holocene deposits of Quaternary sediments (Qhmm) to the south (Mineral Resources Tasmania, © State of Tasmania) 7

Figure 4: Detail from 1819 view of Hobart, showing the mouth of the rivulet with the study area on the left (Dixson Galleries, State Library of NSW, DG V6-1, South-west view of Hobart Town, 1918, GW Evans) 8

Figure 5: Detail from 1828 plan showing the study area to the right of the rivulet, and demonstrating the extent of land exposed at low tide (CPO, Chart of Sullivans Cove and Part of Hobart Town, Van Diemans Land Shewing the Intended Improvements, Hobart Plan 9, 1828, © State of Tasmania) 9

Figure 6: Detail from painting taken from Macquarie Point showing a rocky foreshore area at low tide (Dixson Galleries, State Library of NSW, DG XV6A / 1, Hobart Town, Vandiemen's [sic] Land, GW Evans) 10

Figure 7: Contour mapping of the study area (outlined in red) and immediate vicinity. Note the south-eastern slope of the headland down to the original shoreline (marked with blue arrows), and the embankment for a railway line (marked with a green arrow) (supplied by Client, background map from Google) 11

Figure 8: Plan of the probable original foreshore with the likely course of the Domain or Park Street Rivulet (marked with a blue arrow) in relation to the Macquarie Point rail yard (Austral Archaeology 2002) 13

Figure 9: Overlay showing development in the study area from 1804- 1828 (Basemap provided by the Corporation) 14

Figure 10: Overlay showing development in the study area from 1836-1872 (Basemap provided by the Corporation) 16

Figure 11: Overlay showing development in the study area from 1872-1891 (Basemap provided by the Corporation) 18

Figure 12: Overlay showing development in the study area from 1891-1946 (Basemap provided by the Corporation) 19

Figure 13: Overlay showing development in the study area from 1946-1965 (Basemap provided by the Corporation) 21

Figure 14: Overlay showing development in the study area from 1965-2014 (Basemap provided by the Corporation) 23

Figure 15: West to east cross-section based on 3D contour modeling of the study area showing the original hill slope (marked in red), areas of either cutting or fill (marked in green) and artificially flattened areas (marked in orange) (mapping supplied by Client) 24

Figure 16: Schematic drawing showing the study area (marked in purple) probable extent of cutting (marked in red), leveling (marked in yellow) and banking (marked in green), with the probable location of the original shoreline (marked with a black line) and subsequent areas of reclamation (marked in blue) (background map from Google) 24

Figure 17: Diagram illustrating the potential destruction and preservation of the original ground surface with regards to the cut and deposit of material. If the material cut out of the slope (marked in red) was deposited further downslope (marked in green), it was considered that the original ground surface may have survived underneath (marked in brown) 25

Figure 18: Proposed tribal boundaries in Tasmania. Note the approximate location of the study area (marked in red) (after Ryan 1996:15) 28

Figure 19: Example of Tasmanian Aboriginal canoe (Péron 1811:xiv) 31

Figure 20: List of known food sources (Stokes et al 1994:8) 33

Figure 21: Shell species identified in middens on the River Derwent (source: Officer 1980, fig. A.5) .. 34

Figure 22: Foraging Model (Foley 1981) 36

Figure 23: Distribution of previously recorded Aboriginal archaeological sites in the general area surrounding the study area (marked in green) 39

Figure 24: Detail of previously recorded Aboriginal archaeological sites in the area immediately surrounding the study area (marked in green) 40

Figure 25: Areas of Aboriginal archaeological potential within the Queens Domain (Austral Archaeology 2002:5, based on Stanton 1999) 43

Figure 26: Proposed zones for test pit locations – the embankment area (marked in orange), the area of known historical disturbance (marked in blue) and the area of no known disturbance (marked in green) (source map: Google Earth) 47

Figure 27: Location of numbered test pit in relation to the embankment area (marked in orange), the area of known historical disturbance (marked in blue) and the area of no known disturbance (marked in green) (source map: Google Earth) 50

Figure 28: Location and number of hand excavated test pits (source map: Google Earth)..... 51

Figure 29: Depth and soil profile at completion of test pits (orange indicating clay, grey indicating bedrock and yellow indicating base not reached). Note that abandoned test pits are not shown (source map: Google Earth) 54

Figure 30: Evidence of European disturbance in test pits (red indicating rubbish dump, orange indicating hydrocarbon contamination, grey indicating concrete and purple indicating a service pipe). Note that completed test pits are not shown (source map: Google Earth) 61

TABLES

Table 1: Phase 1 Development..... 15

Table 2: Phase 2 Development..... 17

Table 3: Phase 3 Development..... 18

Table 4: Phase 4 Development..... 20

Table 5: Phase 5 Development..... 22

Table 6: Phase 6 Development..... 23

Table 7: Summary of past land uses within the study area, and the potential impacts on archaeological resources. 26

Table 8: Site-types of registered AHR site-types in the vicinity of the study area..... 39

Table 9: A summary of archaeological consultant reports from the region 42

Table 10: A summary of relevant archaeological AHR site records from the region..... 42

Table 11: Summary of test pits which contained direct evidence of modern disturbances. 60

PLATES

Plate 1 North-west facing view of test pit 3 at limit of excavation. Note various dumps of soil visible in south-facing section..... 55

Plate 2 West facing post-excavation view of test pit 11 at a depth of 1.6 metres. Note the railway sleeper contained within the deposit of FCR (marked with a red arrow). 56

Plate 3 North facing, post-excavation view of hand-excavated sondage in the base of test pit 19.. 56

Plate 4 North facing, post-excavation view of hand-excavated test pit 24. 57

Plate 5 North facing, post-excavation view of test pit 1, showing undulating bedrock..... 58

Plate 6 North facing, post-excavation view of test pit 28, showing undulating bedrock. 58

Plate 7 East facing, post-excavation view of test pit 16, showing leveled bedrock. 59

Plate 8 West facing, post-excavation view of test pit 18, showing pit excavated into bedrock..... 59

Plate 9 East facing, post-excavation view of test pit 7..... 60

Plate 10 East facing, post-excavation view of test pit 27 showing concrete feature..... 61

EXECUTIVE SUMMARY

Project Summary

This project has been funded and commissioned by the Macquarie Point Development Corporation (the Corporation).

The objectives of the Corporation are to plan, facilitate and manage the remediation and redevelopment of the former Hobart Railyards at 10 Evans Street, Hobart. Heritage management has been identified as one of the key factors in meeting these objectives. An overarching heritage management plan (HMP) will be prepared to address the challenges and opportunities presented by potential Aboriginal and historic heritage values at the former railyards site. The HMP will be supported by a number of detailed and prescriptive site-specific heritage management plans (MPDC 2014:3-4, 15).

Project Location

The Corporation proposes to undertake heritage investigations at the Macquarie Point site, 10 Evans Street, Hobart (the study area) as part of site planning processes for its redevelopment. The site covers some 8.6 hectares of land, and topographically, forms the eastern end of the broader Queens Domain. It is bordered by Macquarie wharf to the east, the Cenotaph and Regatta Grounds to the north, Evans Street on the south and the Tasman Highway on the west (Figure 2). Until June 2014, the site was used as Hobart's railyards.

The site has been subject to a number of research based investigations and one previous phase of archaeological test excavations. To assist in providing direction for the preparation of the HMP, a heritage review was prepared in 2013 to provide guidance on identifying those phases of development or features having the highest levels of significance at the site (Austral Tasmania 2013b). In terms of historic heritage, the site of Edward Lord's c.1815 house and its later public uses was identified for its high level of significance and a priority for further work. Discussion with Aboriginal Heritage Tasmania (AHT) also highlighted that Aboriginal midden material may be present in the parts of the study area which contains the original shoreline, prior to the various stages of reclamation work. If present, any midden material would have significance to the Aboriginal community (Dix, S 2013, pers. comm. 27 May).

Subsequently, Austral Tasmania Pty Ltd were engaged to carry out Aboriginal and historical archaeological test excavations in relevant locations on the site.

Test Excavation Results

The test excavations were undertaken by Austral Tasmania in order to determine the nature and extent of any possible cultural material contained within the study area. In particular, the testing aimed to investigate and determine the presence of either intact archaeological deposits relating to possible shell middens or the original headland, as well as assist in determining the archaeological significance of the location.

Test pit locations were chosen following on-site discussion between the Excavation Director and the Aboriginal Heritage Officer. The location of the pits helped formulate a clearer understanding of the deposition or disturbance processes at work in the surrounding area. A total of 33 test pits were excavated during the course of the testing.

The test excavations identified significant variations in the soil profile across the study area in terms of the depth, level of disturbance and nature of the underlying natural soil profile. Profile depths of excavated test pits on this site ranged from a minimum of 200 millimetres to over 3 metres, with the depth of the natural soil profile being generally shallower in the western half of the study area and deeper in the east.

A general trend which was noticed was that bedrock was present in test pits in the western part of the study area. Moving eastwards, the bedrock was replaced by clay and it was not possible to reach the natural soil profile in the south-eastern test pits. This is seen as being representative of the original shoreline, demonstrating the rocky headlands in the west, the shoreline area and the steep drop-off below the tidal area.

While it was expected that many of the test pits would show evidence of modern disturbance relating to the early land-use history of the site, the actual scale and extent of the disturbance was unanticipated. During the excavation, it became apparent that in addition to the expected deposition of levelling and reclamation fills, the natural bedrock had been worked, and it is possible that boring had taken place through the natural underlying clay.

Of note is that although evidence of post-European disturbance was noted across the site, relatively few test pits actually contained artefactual material. While every test pit contained 20th century levelling fills, only four test pits contained artefactual material including stoneware vessels, glass fragments, shoe leather and other materials, although one of these pits, test pit 29, also included fragments of asbestos sheeting.

No worked lithics or suitable raw materials were identified during the test excavations. Shell material was only identified on two occasions; a single fragment of oyster shell recovered near the interface between the historic levelling fills and the underlying bedrock, and several, small fragments of oyster shell mixed in with the historic artefactual material from the rubbish dump. Neither occurrence of shell is believed to identify the presence of a shell midden within the study area.

Recommendations

The following recommendations are derived from the results of the test excavations and the previous archaeological assessment. The recommendations have been developed after considering the relevant legislation, archaeological context, environmental information, consultation with the local Aboriginal community and the results of the test excavations. It is recommended that:

1) No further investigative work need be undertaken in regards to the Aboriginal cultural heritage within the study area. The test excavations have confirmed the disturbed nature of the study area.
2) In the event that Aboriginal archaeological material or deposits are encountered during earthworks, all work is to proceed in accordance with the Unanticipated Discovery Plan issued by Aboriginal Heritage Tasmania.
3) This report contains historic images which are subject to copyright. Should public exhibition of this document be required, it is advisable that the relevant copyright holders be contacted and permission obtained to use the images in the public domain.
4) This report contains descriptions and locational data relating to Aboriginal archaeological and cultural material and sites. Should public exhibition of this document be required, it is advisable that Austral Tasmania be contacted in order to ascertain information which should be removed prior to public release.
5) One copy of this report should be lodged with Aboriginal Heritage Tasmania for inclusion on the Aboriginal Heritage Register.

1.0 INTRODUCTION

1.1 Client and project details

This project has been funded and commissioned by the Macquarie Point Development Corporation (the Corporation).

The Corporation proposes to undertake heritage investigations at the Macquarie Point site, 10 Evans Street, Hobart (the study area) as part of site planning processes for its redevelopment. The site covers some 8.6 hectares of land, and topographically forms the eastern end of the broader Queens Domain. It is bordered by Macquarie wharf to the east, the Cenotaph and Regatta Grounds to the north, Evans Street on the south and the Tasman Highway on the west (Figure 2). Until June 2014, the site was used as Hobart's railyards.

The objectives of the Corporation are to plan, facilitate and manage the remediation and redevelopment of the site. Heritage management has been identified as one of the key factors in meeting these objectives. An overarching heritage management plan (HMP) will be prepared to address the challenges and opportunities presented by potential Aboriginal and historic heritage values at the railyards site. The HMP will be supported by a number of detailed and prescriptive site-specific heritage management plans (MPDC 2014:3-4, 15).

The site has been subject to a number of research based investigations and one previous phase of historical archaeological test excavations. To assist in providing direction for the preparation of the HMP, a heritage review was prepared in 2013 to provide guidance on identifying those phases of development or features having the highest levels of significance at the site (Austral Tasmania 2013b). In terms of historic heritage, the site of Edward Lord's c.1815 house and its later public uses was identified for its high level of significance and a priority for further work. Discussion with Aboriginal Heritage Tasmania (AHT) also highlighted that Aboriginal midden material may be present in the parts of the study area which contains the original shoreline, prior to the various stages of reclamation work. If present, any midden material would have significance to the Aboriginal community (Dix, S 2013, pers. comm., 27 May).

No Aboriginal heritage items were known to exist on the site prior to the investigations. An area of possible Aboriginal archaeological was identified within the original foreshore area.

Subsequently, Austral Tasmania Pty Ltd has been engaged to carry out Aboriginal and historical archaeological test excavations in relevant locations on the site.

Aboriginal archaeological management is regulated through the *Aboriginal Relics Act 1975* (*ARA 1975*), in conjunction with two advisory documents; *A Guide to the Aboriginal Heritage Assessment Process* (AHT 2014) [the Guide] and the *Sampling Procedure for Consultants Excavating Aboriginal Heritage Sites in Tasmania* (AHT n.d.) [the Sampling Procedures]. Both of these documents require the preparation of an Aboriginal archaeological assessment to accompany a permit for any works which may impact on Aboriginal cultural material or where work is to occur on Crown land for the purpose of searching for Aboriginal cultural material.

Austral Tasmania prepared an Aboriginal archaeological assessment in support of a permit application under the *ARA 1975* in order to undertake test excavations to determine whether Aboriginal cultural heritage existed on the site. The permit to allow for test excavations was approved on 29 October 2014, permit number 1415-05.

This report serves to document the results of the archaeological testing undertaken according to the permit, and to provide on-going management recommendations for the study area.

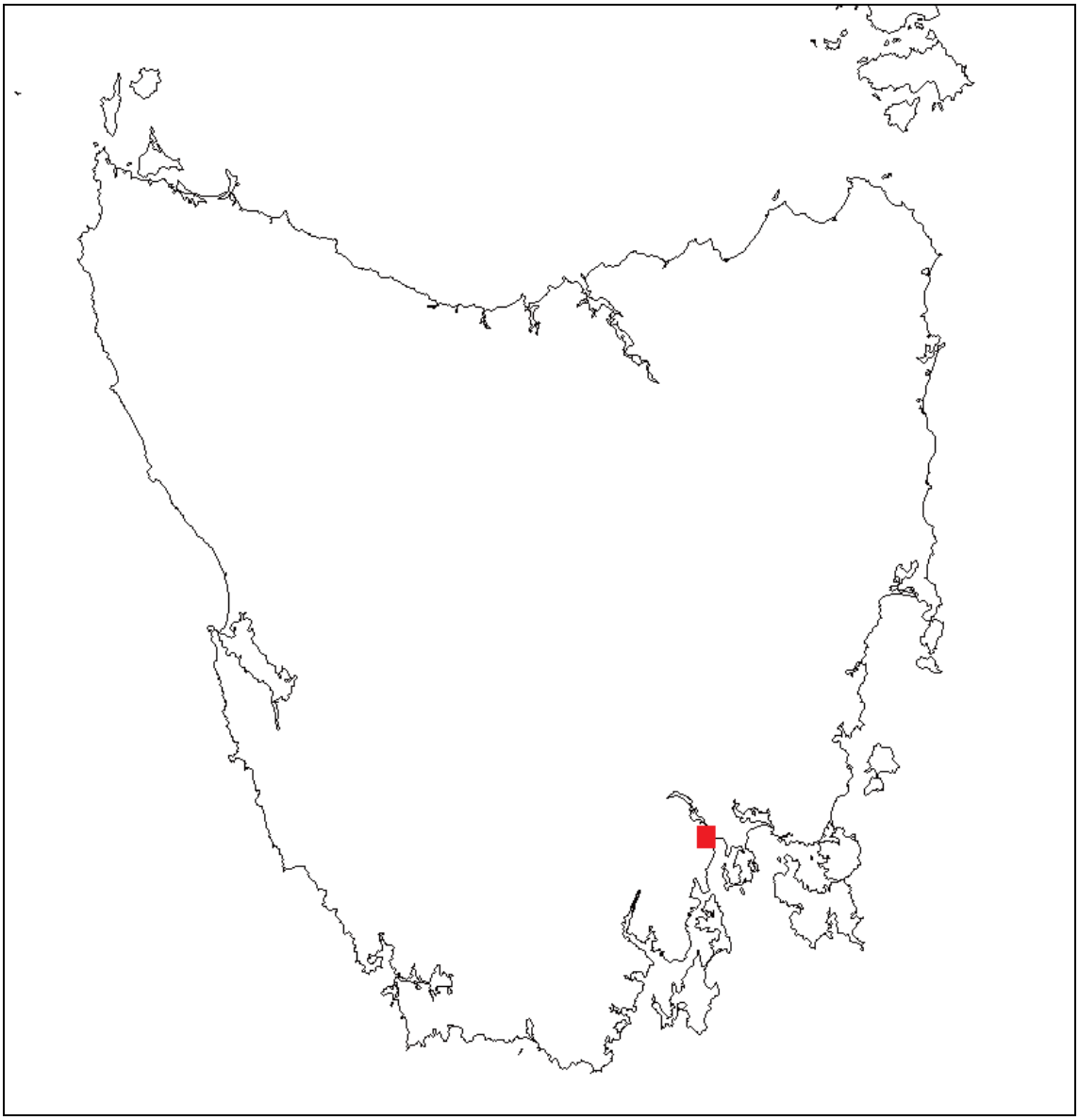


Figure 1: Approximate location of the study area (marked in red) in relation to Tasmania.



Figure 2: Macquarie Point Site (shaded red) (LIST Map, © State of Tasmania)

1.2 Authorship

This report was written by David Marcus (Austral Tasmania Pty Ltd). James Puustinen (Austral Tasmania Pty Ltd), Justin McCarthy (Austral Tasmania Pty Ltd) and Caleb Pedder (Aboriginal Heritage Officer) reviewed the draft report.

1.3 Project Staging

Although no Aboriginal heritage items were known to exist on the site, because the former railyards are Crown land, a permit under the *ARA 1975* was required to undertake the test pitting. Therefore, the stages of work followed for this project are different to those normally followed under the Guide.

1.3.1 Desktop Assessment

A desktop assessment request was lodged by the Corporation prior to the commissioning of Austral Tasmania as the Aboriginal archaeological consultant. A response was received from AHT on 27 May 2013 (Dix, S 2013, pers. comm.) along with a map specifying an area which AHT believed has potential for the preservation of subsurface Aboriginal heritage.

1.3.2 Briefing of Aboriginal Heritage Tasmania

Representatives of the Corporation, Austral Tasmania and Caleb Pedder, in his role as an Aboriginal Heritage Officer, formally briefed AHT on 7 August 2014. The rationale behind the test excavation programme was presented and AHT's feedback and thoughts on the proposed methodology were sought. The test excavation methodology as presented in this document reflects the changes discussed in the briefing.

1.3.3 Submission of Assessment and Permit Application

Austral Tasmania submitted an assessment as the basis of a permit application under the *ARA 1975* to enable archaeological test excavations to be undertaken on Crown land for the purpose of identifying the nature and extent of any subsurface Aboriginal cultural material present within the study area.

The permit was granted on 29 October 2014, permit number 1415-05.

1.4 Consultation

Each stage of the project has involved both formal and informal consultation and input from various individuals within AHT, including Karen McFadden, Sam Dix and Emily Smith. Caleb Pedder is the appointed Aboriginal Heritage Officer on this project and has overseen consultation with the wider Aboriginal community.

1.5 Limitations and Constraints

This assessment is limited to consideration of Aboriginal heritage values within a scope defined by the *ARA 1975*, the Guide and the Sampling Procedures. Separate investigations were undertaken with regards to understanding the potential of the site to contain historic cultural heritage material. These investigations were subject to the requirements of the *Sullivans Cove Planning Scheme 1997* and are documented in a separate report. As necessary, this report includes excerpts from the methodology for undertaking the identification, assessment and management of potential historical cultural heritage material which may be encountered alongside Aboriginal cultural heritage during the archaeological testing works.

Information contained in this report has been sourced from previous investigations of the site (Austral Archaeology 2000a, 2000b, 2007; Austral Tasmania 2007; AMAC 2008), supplemented by additional research as necessary to inform archaeological judgments.

The results and judgements contained in this report are constrained by the limitations inherent in overview type assessments, namely accessibility of historical information within a timely manner. Whilst every effort has been made to gain insight to the profile of the subject study area, Austral Tasmania Pty Ltd cannot be held accountable for errors or omissions arising from such constraining factors.

The statement of archaeological potential only applies to subsurface features or deposits associated with the Aboriginal occupation of the site and not to any historic archaeology or built heritage items currently on the site.

All maps are oriented with north at the top of the page unless otherwise assigned.

1.6 Data Restrictions

This report contains descriptions and locational data relating to Aboriginal archaeological and cultural material and sites and may also contain the names of deceased Aboriginal people. This information is considered sensitive and of great importance to the Aboriginal community. As a result, public exhibition of this report in its present form would not be appropriate.

Should public exhibition of this document be required, it is advisable that Austral Tasmania be contacted in order to ascertain information which should be removed prior to public release.

1.7 Acknowledgements

The assistance of the following people and organisations is gratefully acknowledged:

- Ms Kim Perkins, the Corporation;
- Mr Samuel Dix, Aboriginal Heritage Tasmania
- Staff of the Tasmanian Archives and Heritage Office.

2.0 BACKGROUND INFORMATION

2.1 Environment

The natural environment of an area influences not only the availability of local resources, such as animals, plants and raw materials for artefacts, but also determines the likely presence and/or absence of various archaeological site types which may be encountered during a field investigation.

Resource distribution and availability is strongly influenced by the environment. The location of different site-types (such as rock-shelters, middens, open camp-sites, engravings etc) are strongly influenced by the nature of soils, the composition of vegetation cover and the climatic characteristics of any given region, along with a range of other associated characteristics which are specific to different land systems and bedrock geology. In turn this affects resource availability of e.g. fresh drinking water, plant and animal foods, raw materials for stone tools, wood and vegetable fibre used for tool production and maintenance.

Therefore examining the environmental context of a study area is essential in accurately assessing potential past Aboriginal land-use practices and/or predicting site types and distribution patterns within any given landscape, cultural or not. The information that is outlined below is applicable for the assessment of site potential of the current study area.

2.1.1 Geological Context and Soil Landscapes

The study area lies at the boundary of two geological landscapes; a raised Jurassic formation of dolerite rock in the north, and a low-lying, man-made deposit of undifferentiated Quaternary sediments at the base of the hill, used as reclamation fills during the 20th century (MRT n.d.). The dolerite rock currently rises sharply from the River Derwent to form a headland containing the Hobart Cenotaph, and which then continues north-west as the spine of the Queen's Domain and Royal Tasmanian Botanical Gardens. The land to the east of the headland would have originally formed the western shoreline of the River Derwent. However, the surrounding land has undergone significant reclamation and modification, and the river is now between 150 and 500 metres from the original shoreline.

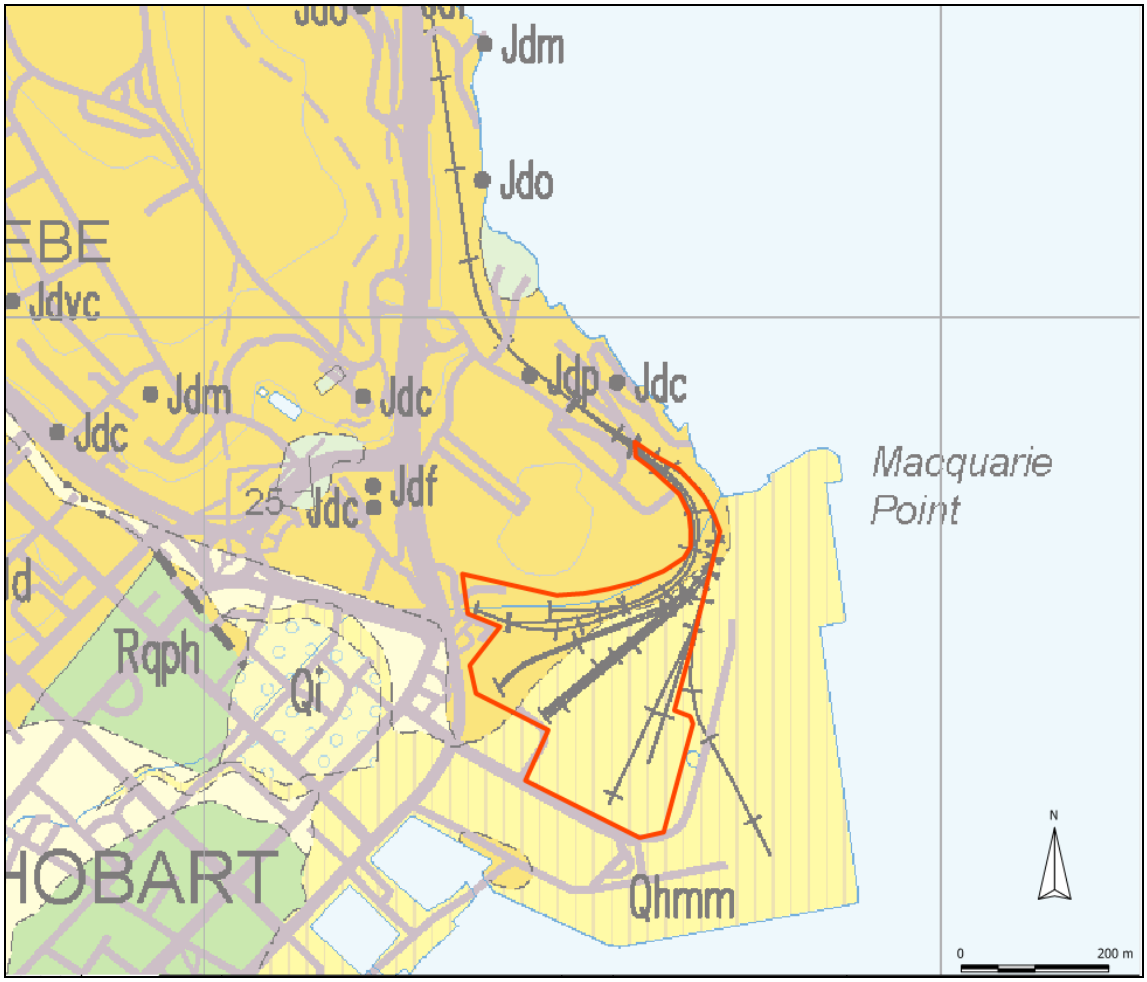


Figure 3: The study area (outlined in red) in relation to the Jurassic igneous rocks (Jd) to the north and the Holocene deposits of Quaternary sediments (Qhmm) to the south (Mineral Resources Tasmania, © State of Tasmania)

The underlying soil landscape for the entirety of the study area is classified as "Black Soils on Dolerite 1" (Bld1), a moderately well drained soil which develops over dolerite and colluviums on low, undulating (3% to 10%) land (Spanswick & Kidd 2000). The soil is considered to be a Dermosol, which features the lack of a strong contrast between the A and B-Horizon (TPC 2010).

2.1.2 Topography and Landform

Due to the early modifications made to the shoreline in the study area, relatively little is known about the pre-20th century topography of the study area. However, several early descriptions and drawings depict the original shoreline as being a slope leading to the foreshore, with large swathes of sand or bedrock exposed at low tide.

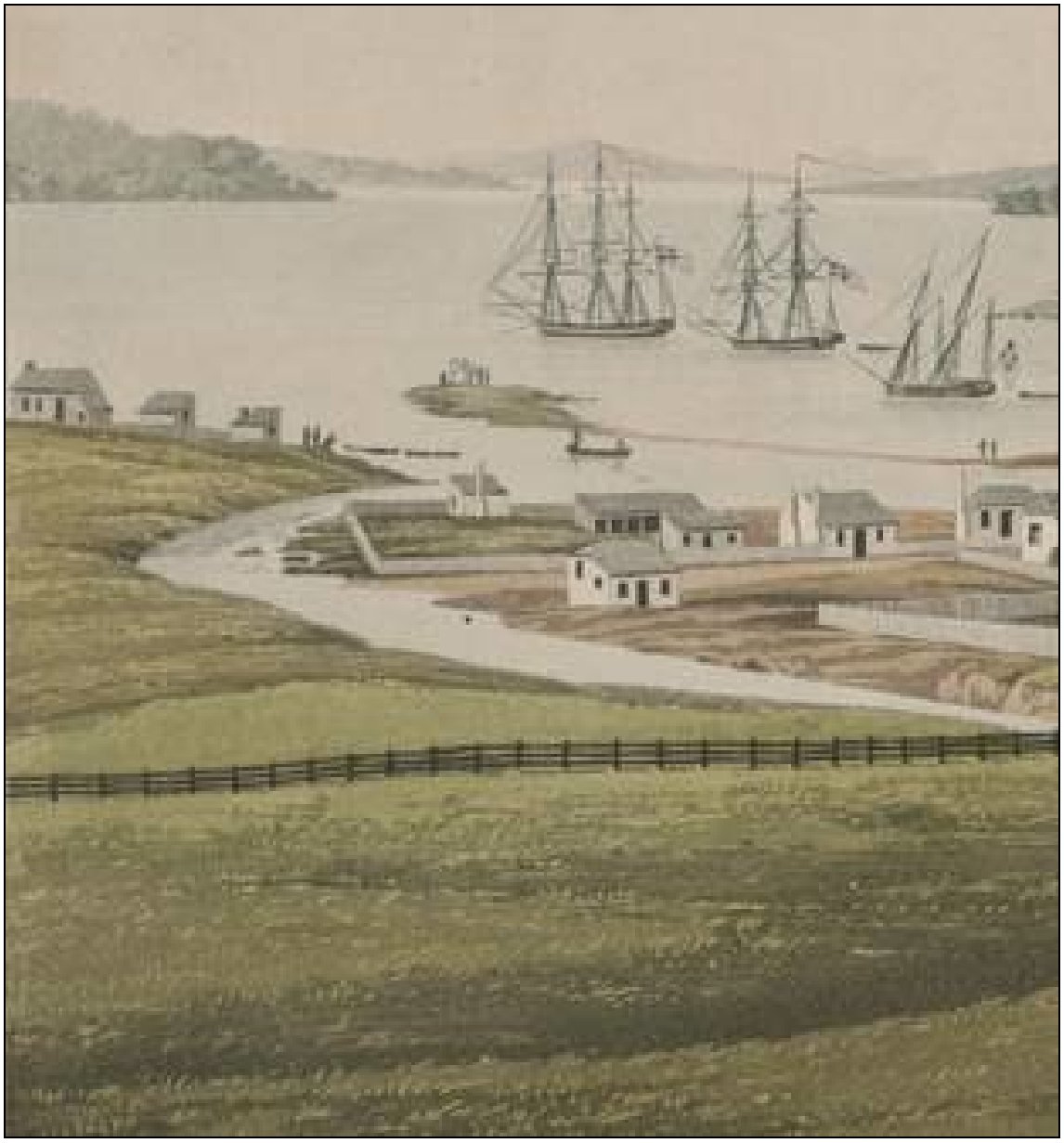


Figure 4: Detail from 1819 view of Hobart, showing the mouth of the rivulet with the study area on the left
(Dixson Galleries, State Library of NSW, DG V6-1, South-west view of Hobart Town, 1918, GW Evans)

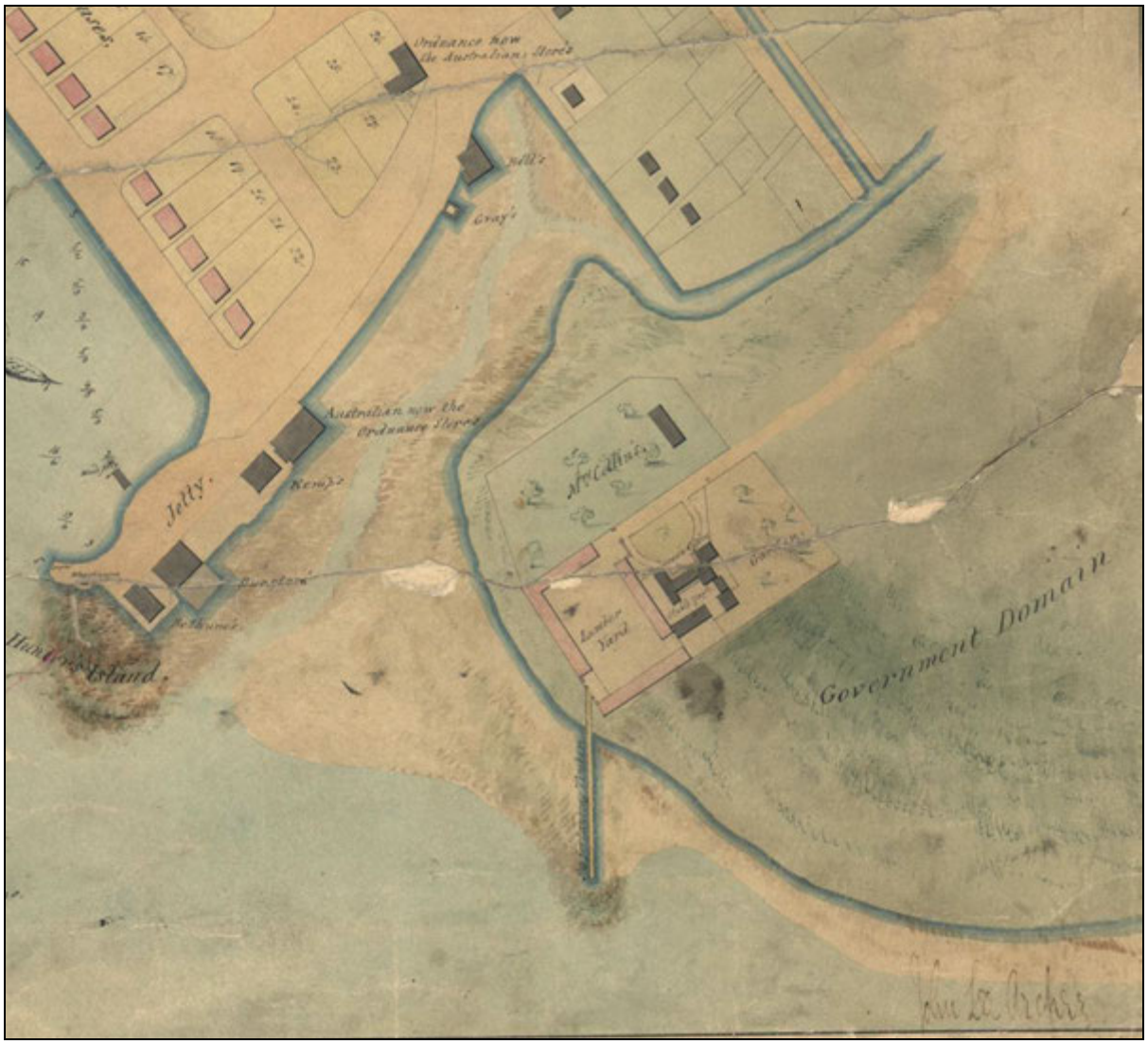


Figure 5: Detail from 1828 plan showing the study area to the right of the rivulet, and demonstrating the extent of land exposed at low tide (CPO, Chart of Sullivans Cove and Part of Hobart Town, Van Diemans Land Shewing the Intended Improvements, Hobart Plan 9, 1828, © State of Tasmania)



Figure 6: Detail from painting taken from Macquarie Point showing a rocky foreshore area at low tide (Dixson Galleries, State Library of NSW, DG XV6A / 1, Hobart Town, Vandiemen's [sic] Land, GW Evans)

However, many questions remain about the relationship of the original shoreline to the later reclamation deposits, and whether the shoreline is preserved underneath the later deposits.

As shown in Figure 7, the majority of the study area consists of relatively flat ground as a result of the various phases of reclamation during the 19th and 20th centuries. Outside of the study area to the north-west, the headland demonstrates the original topography of the area with an increasingly sharp slope down towards the former shoreline. However, the hillslope on the north-western boundary of the study area has been cut away to form an embankment for two railway tracks and associated infrastructure. The embankment is approximately 10 metres wide, before the ground again sharply drops down towards the concrete decking.

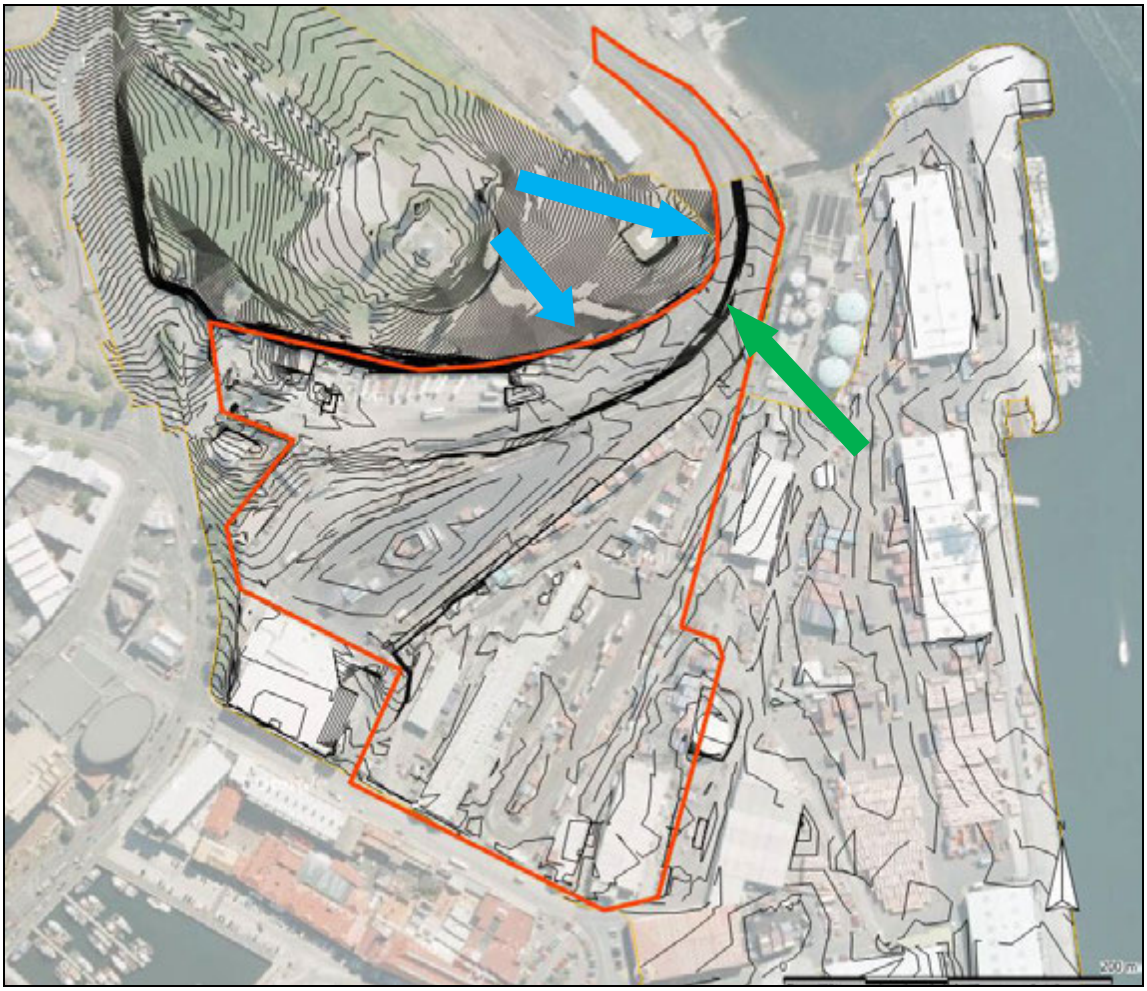


Figure 7: Contour mapping of the study area (outlined in red) and immediate vicinity. Note the south-eastern slope of the headland down to the original shoreline (marked with blue arrows), and the embankment for a railway line (marked with a green arrow) (supplied by Client, background map from Google)

While it is likely that the original ground level may be preserved in the south-western part of the study area, near to the site of Lord's house and the Engineers Yard (see the accompanying historical archaeological assessment), the ground modification in the northern part of the study area may have removed much of the evidence for the original slope of the land down to the shore.

2.1.3 Hydrology

The study area is located on the western foreshore of the River Derwent and, prior to the reclamation work, the shoreline would have run through the study area itself. The lower reaches of the River Derwent by the study area is part of the tidal, salt-water estuary formed through the drowning of a river valley following a rise in the sea level of approximately 60 metres between 6,500 to 13,000 years ago (CHMA 2014:18; Whitehead et al 2010:23).

There are currently no fresh water streams in close proximity to the study area, although the original course of the Domain or Park Street Rivulet would have run into Sullivans Cove near the western part of the study area (Figure 8). Unlike the Hobart Rivulet, which provided year round water from Mount Wellington, the Domain Rivulet was fed by smaller streams and may have been considerably more seasonal in its flow.

2.1.4 Climate

Hobart is classified as having a temperate oceanic climate and in comparison to the inland locations, it has warm summers, averaging between 11.9°c and 21.6°c in January, and relatively warm winters, averaging between 4.6°c and 11.7°c in July. Frosts can occur during winter (Bureau of Meteorology; Grose n.d.). Rainfall totals average 614.6 millimetres each year, with no strong seasonal cycle to rainfall and averages of 40 millimetres falling in February and 61.8 millimetres falling in October (Bureau of Meteorology; Grose n.d.). As with the eastern coast of Australia, variability in rainfall can also correspond with the El Niño cycle, where El Niño winters can be drier than average and La Niña winters can be wetter than average (Grose n.d.).

2.1.5 Flora and Fauna

Prior to the removal of the natural vegetation, the ecological diversity of the area would have provided a wide range of resources for Aboriginal people, who would have been able to exploit resources from inland areas and the shoreline of the River Derwent, as well those within the smaller drainage line of the Domain Rivulet.

As has been noted by previous academic reports, reconstructing the pre-European vegetation of the Hobart area is difficult with any degree of certainty due to the effects of changes instigated by a long-term change in climatic conditions coupled with the introduction of Aboriginal people with their increased use of fire in the landscape (Colhoun & Shimeld 2012:297; Stokes et al 1994:3; Terry 2003:5). However, evidence from early settlers and pollen sources in south-eastern Tasmania suggest that the dominant vegetation community along the shoreline was dry eucalypt forest and woodland (CHMA 2014:18; Colhoun & Shimeld 2012:316; Terry 1999:5-6). which is still partially extant across the Domain parklands to the north of the study area. The understorey is likely to have consisted of lowland *Themeda triandra* grassland (Kitchener & Harris 2013b:14), which is also extant in patches within the Domain parkland (CHMA 2014:18).

The dry eucalypt forest is likely to have been dominated by several species including white gum (*Eucalyptus viminalis)*, white peppermint (*E. pulchella*) and occasional blue gum (*E. globulus*), with drooping she-oak (*Allocasuarina verticallata*) also present. Other common species in this landscape include stringybark (*E. obliqua*), black peppermint (*E. Amygdalina*) and swamp gum (*E. Ovata*), while the understorey may have consisted of grasses including kangaroo grass (*T. triandra*) and other species from *Austrodanthonia, Austrostipa* and *Poa*, with low trees including silver wattle (*Acacia dealbata*), black wattle (*A. mearnsii*), blackwood (*A. melanoxylon*), boxthorn (*Bursaria spinosa*) and the sticky hop bush (*Dodonaea viscose*) (CHMA 2014:18; Kitchener & Harris 2013a:14-15; 2013b:72-73; Terry 1999:5).

The study area has been completely cleared of vegetation and has been heavily concreted and covered with asphalt, although several tenacious invasive weeds are present growing through cracks within the surface.

The study area and its nearby surroundings would have provided habitats for the usual variety of macropods and fauna found along the eastern coast of Tasmania, including kangaroo, wallaby, pademelon, possum, potoroos, bettongs, brush- and ring-tailed possums, quolls, Tasmanian devils and bandicoots (Stokes et al 1994:4; Terry 1999:6) Bird life was equally abundant, with species recorded by the Reverend Robert Knopwood including bronzewings, ducks, teal, wattlebirds, eastern rosellas and 'partridges' (Terry 1999:6). Meanwhile, the rivers and creeks would have provided access to additional faunal resources such as shellfish, crustaceans and seabirds (Woodward n.d.). Fish and various sea-mammals would also have been present in the River Derwent, although the debate regarding actual Aboriginal exploitation of them as a resource is well-documented and ongoing (see, for example, Sims 1999 & Taylor 2007).

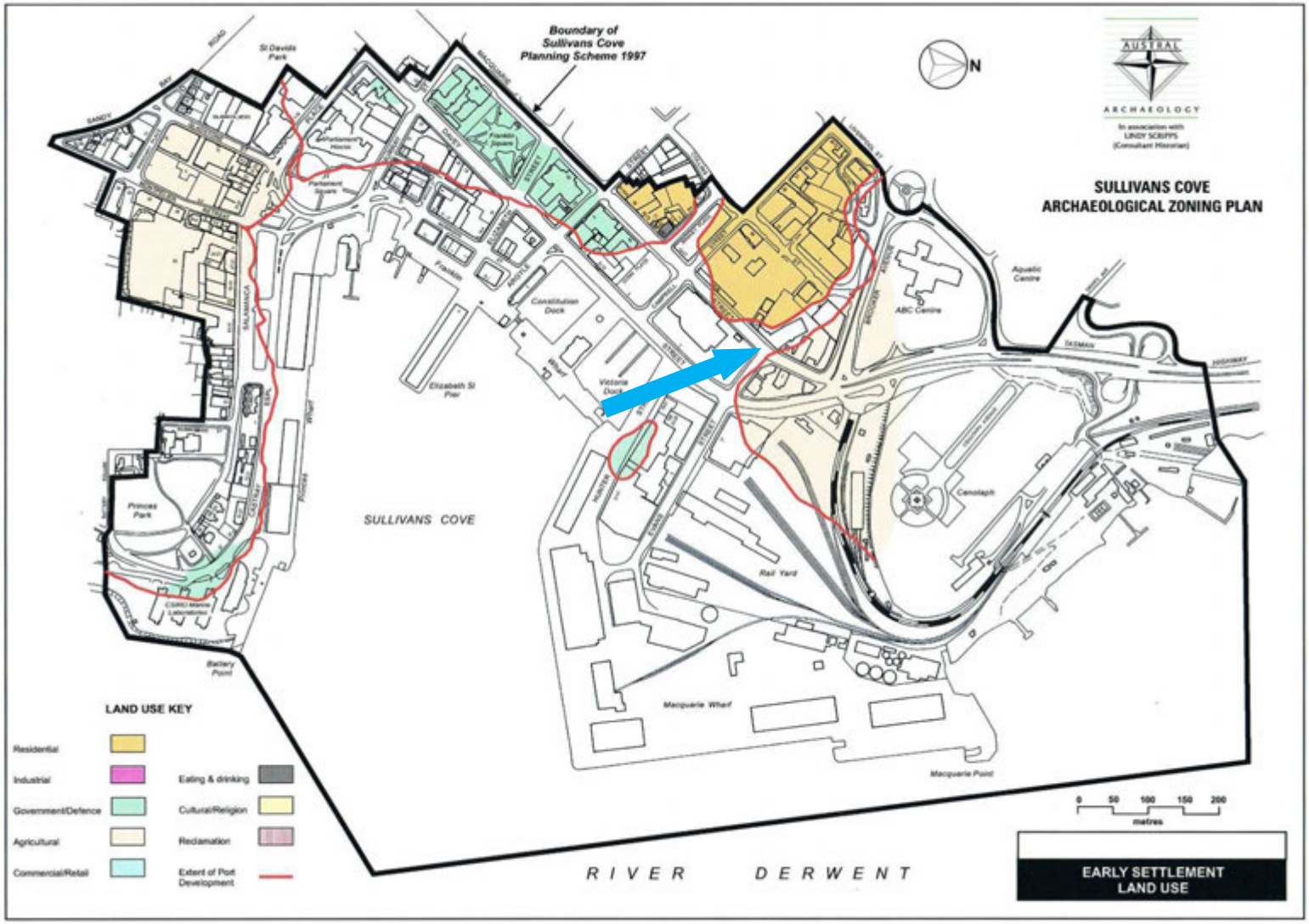


Figure 8: Plan of the probable original foreshore with the likely course of the Domain or Park Street Rivulet (marked with a blue arrow) in relation to the Macquarie Point rail yard (Austral Archaeology 2002)

2.1.6 Past Land Use Practices

Past land use practices affect the preservation of Aboriginal cultural heritage, and reflect the likelihood of any such material being identified within the study area. The following disturbance history of the study area has been summarised from the companion historical document being prepared by Austral Tasmania, *Archaeological Sensitivity Report for Macquarie Point Testing Works* (the ASR) and from the previous historical summary developed by Austral Tasmania (2013b). For a full overview of the historic development of the study area, please refer to either of these documents.

For clarity, the built evolution has been divided into six key phases depicting site development to a particular point in time. Each phase is provided a separate colour, with building sites allocated a number which cross-references with the explanatory tables. Secondary structures (where known) are identified by a letter suffix, e.g., '1a'.

Previous phases are also depicted (in grey) to show where one phase of development may have occurred on the same site. The result of these multiple phases is indeed complex and does not always allow for later extensions, building subdivision or other works which cannot clearly be understood from historical plans or other descriptions. In addition, parts of the site which do not directly contain buildings may still contain evidence of residential or industrial activity, such as associated yards, gardens, laneways and outdoor workspaces, or unmapped outbuildings.

Phase 1: 1804-1828

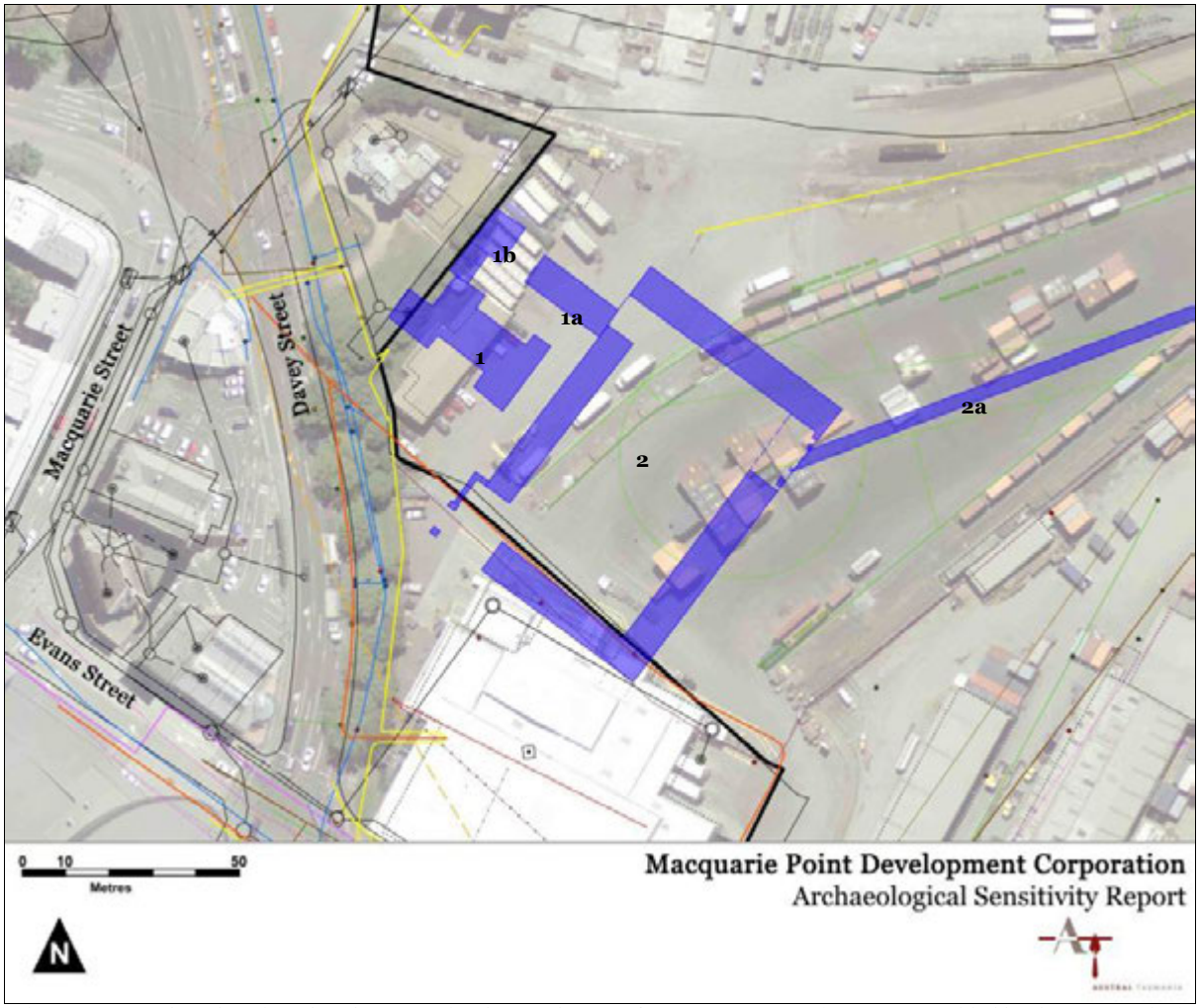


Figure 9: Overlay showing development in the study area from 1804- 1828 (Basemap provided by the Corporation)

No.	Development/Phase	Disturbances on Previous Phases
1, 1a, 1b	The site was first developed in c.1805 by the original grantee Leonard Fosbrook who constructed a small cottage somewhere on the site. The site was purchased by Edward Lord in 1814. Lord constructed a new, large single storey brick and stone house [1] and a large two storey store building to its rear [1a]. The site was acquired by the government in 1821 and used for a number of relatively short-lived functions. This included a public school within the house [1], temporary housing for female convicts [1b] and housing for veterans (unknown location, but probably [1]). John Lee Archer, Civil Engineer and Colonial Architect relocated to the site in 1827, using Lord's former house [1] as his office and residence. Modifications were made to the premises. A new stable was constructed on the site [1b] as part of these works.	Fosbrook's cottage was the first phase of development on the site, but the location of this building is not known. The first confirmed phase of development on the site was Edward Lord's house [1] and the large store building to the rear [1a].
2, 2a	Lumber Yard [2]. The government Lumber Yard was relocated to the site in 1826-27 in an area noted as the 'old garden'. A number of plans of the complex were prepared, and all differ in the depiction of the yard and the function of particular buildings. However, all consistently show a rectangular complex of narrow industrial buildings enclosing a central yard space. A slip for landing timber was constructed, extending out from the yard and entering the Derwent [2a].	First phase of built development within this location and no previous phase known.

Table 1: Phase 1 Development

Phase 2: 1836-1872

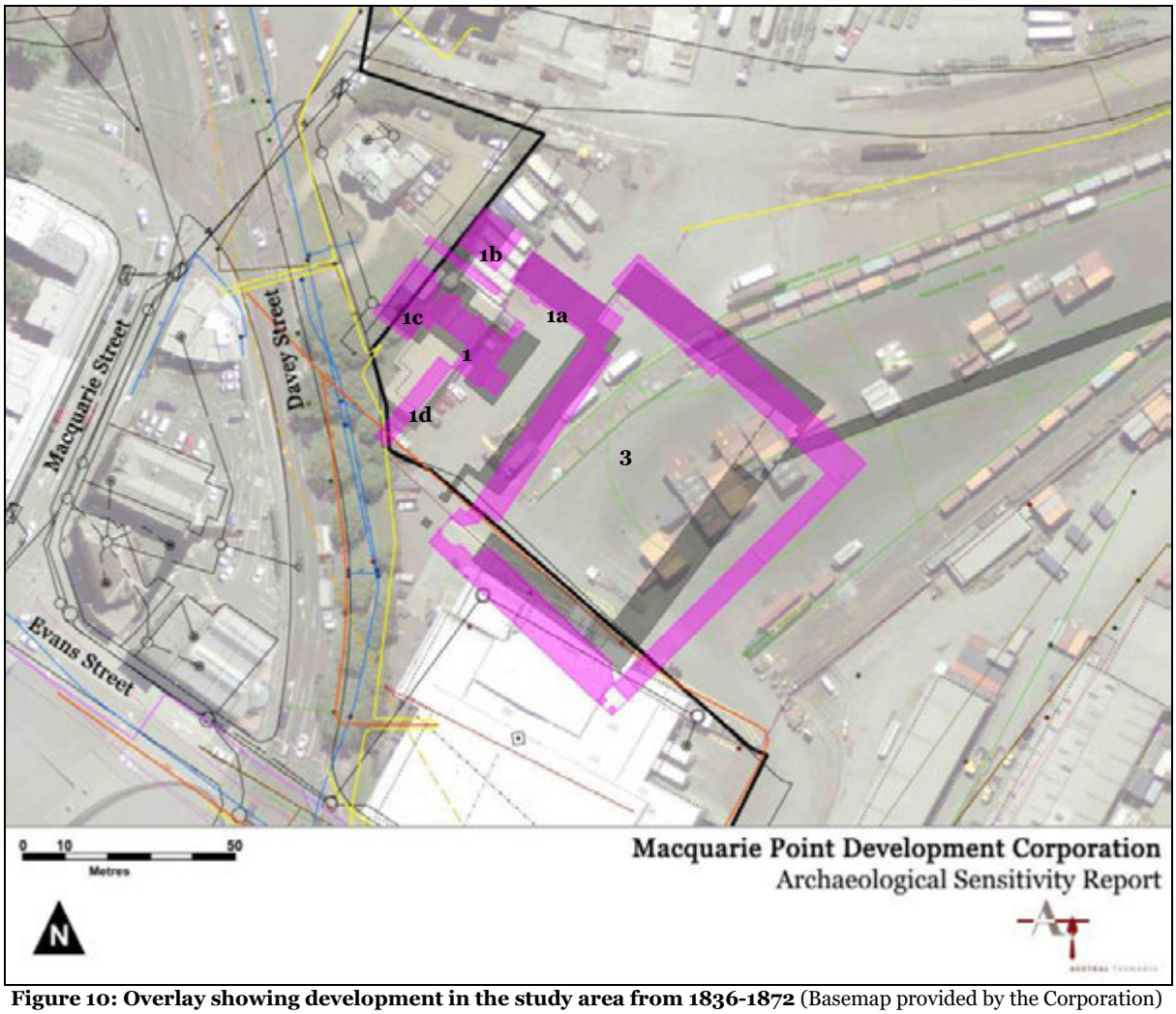


Figure 10: Overlay showing development in the study area from 1836-1872 (Basemap provided by the Corporation)

No.	Development/Phase	Disturbances on Previous Phases
1, 1a, 1b, 1c, 1d	The site was acquired by the Royal Engineers in 1836. Edward Lord's old house [1] was converted to use as barracks for the Engineers. The 1872 plan of the site shows a reconfiguration of the eastern wing of the old building, and a new, expanded western wing [1c]. The old store building [1b] is shown on an 1872 plan as being divided into two houses. It may have served this function for some time prior. It is unclear if the c.1827 stable building [1b] was retained during occupation by the Engineers. An 1857 photograph of the site shows this building as having dormer window and chimneys. This could suggest a new building on the footprint of the old stables, or alternatively, conversion of the stables to new uses. Small timber outbuildings were constructed during this phase, including a long narrow timber building to the front of the barracks. A later plan notes this as being 'sheds' [1d].	Notwithstanding some modifications to Lord's former house [1] and new users of the site, there was little substantial new built development during this phase.
3	Engineers Yard [3]. At some stage, the former Lumber Yard [2] was reconfigured from its rectangular shape to an irregular trapezoid shaped enclosure. The date or reason for this change is not known, but it may have coincided with the 1858 development of the adjacent slaughter yards which required extensive reclamation works. Some of the original Lumber Yard buildings were probably incorporated into the new complex, but its reconfiguration would have required new structures as well. They key area of change appears to have been on the alignment of those buildings forming the eastern end of the yard. The Engineers Yard became a drill yard for the various Volunteer Units in 1864. Some modifications were made to the old buildings, with the sheds surrounding the yard repaired for the storage of arms and one building converted to an amphitheatre to allow members of the public to watch the exercises. In 1872, the drill yard was temporarily used by railway workers for the construction of wagons. These works destroyed the previous level and smooth yard surface.	Some impacts to the previous Lumber Yard [2] can be expected from its reconfiguration to form the Engineers Yard [3]. However, the nature of the site clearance is likely to have been minimal and subsurface evidence of the eastern end of [2] is likely to have survived these works. It is also likely that old Lumber Yard buildings on the northern, southern and western end of the yard were incorporated into the Engineers Yard. The use of the site by railway workers would have disturbed artefactual material within the yard space itself.

Table 2: Phase 2 Development

Phase 3: 1872-1891

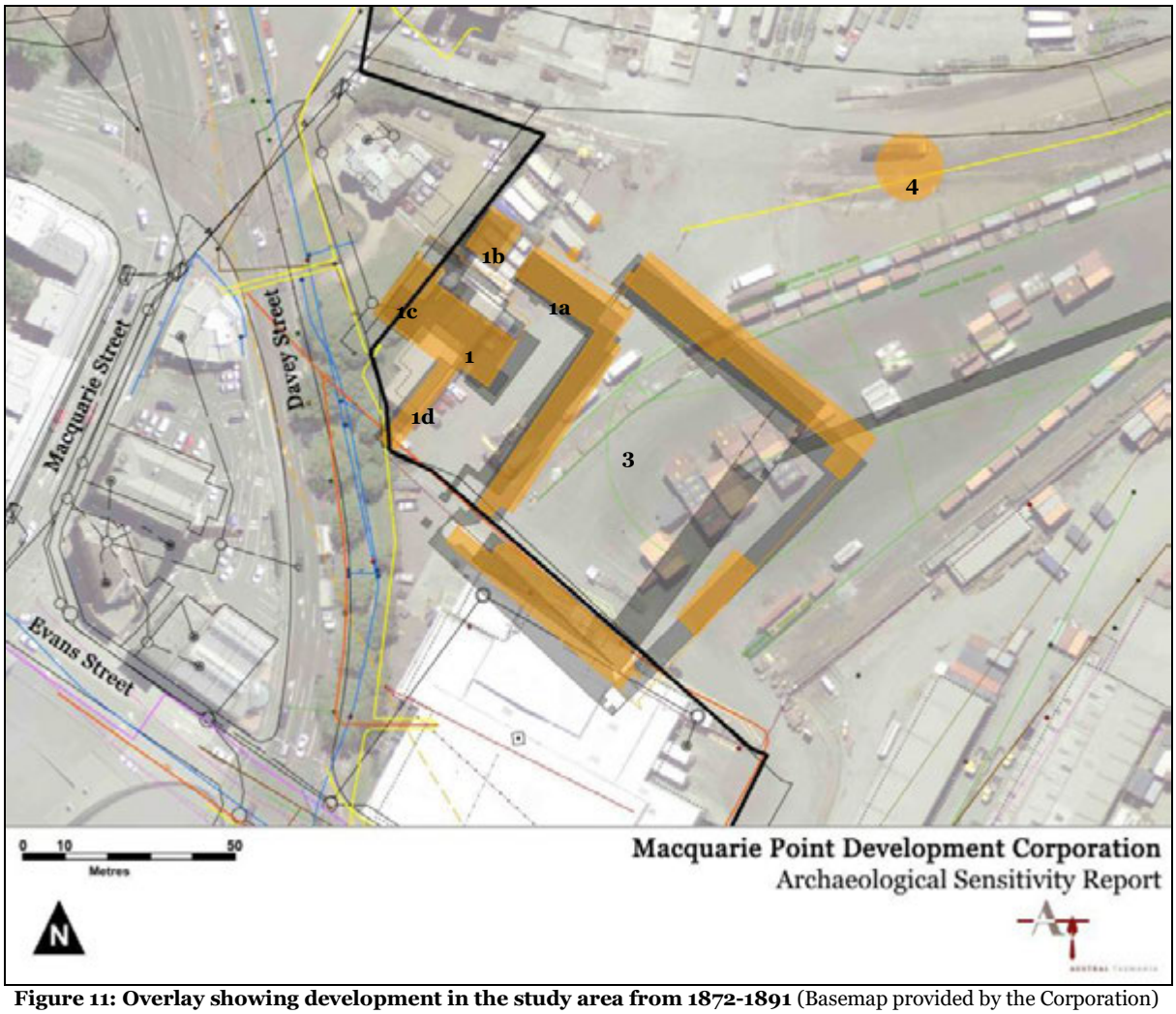


Figure 11: Overlay showing development in the study area from 1872-1891 (Basemap provided by the Corporation)

No.	Development/Phase	Disturbances on Previous Phases
1, 1a, 1b, 1c, 1d	The British Imperial troops left Tasmania in 1870. The site was retained in public ownership, but the uses of the old barracks building have not been established during this phase. It is likely however that it was used at various times by the Volunteer forces, and later by the police.	A high level of correlation exists between the 1872 and 1891 depictions of the old barracks complex, suggesting little physical change to the place during this phase.
3	Volunteer units returned to the drill yard in 1876. By this time, the complex of buildings was too large for their use, and it was recommended that the redundant buildings be demolished. By 1891, most of the buildings along the eastern side of the yard had been removed, although one end wall was retained to enclose the space.	Some impacts to the Engineers Yard can be expected from the removal of most buildings on the eastern side of the yard. However, the nature of the site clearance is likely to have been minimal and subsurface evidence of the eastern end of [3] is likely to have survived these works.
4	The first phase of railway use and development of the site occurred in this period. By 1891, a small turntable had been constructed to the north of the Engineers Yard [4].	The location of the turntable [4] is likely to have been the first phase of built development within this location.

Table 3: Phase 3 Development

Phase 4: 1891-1946

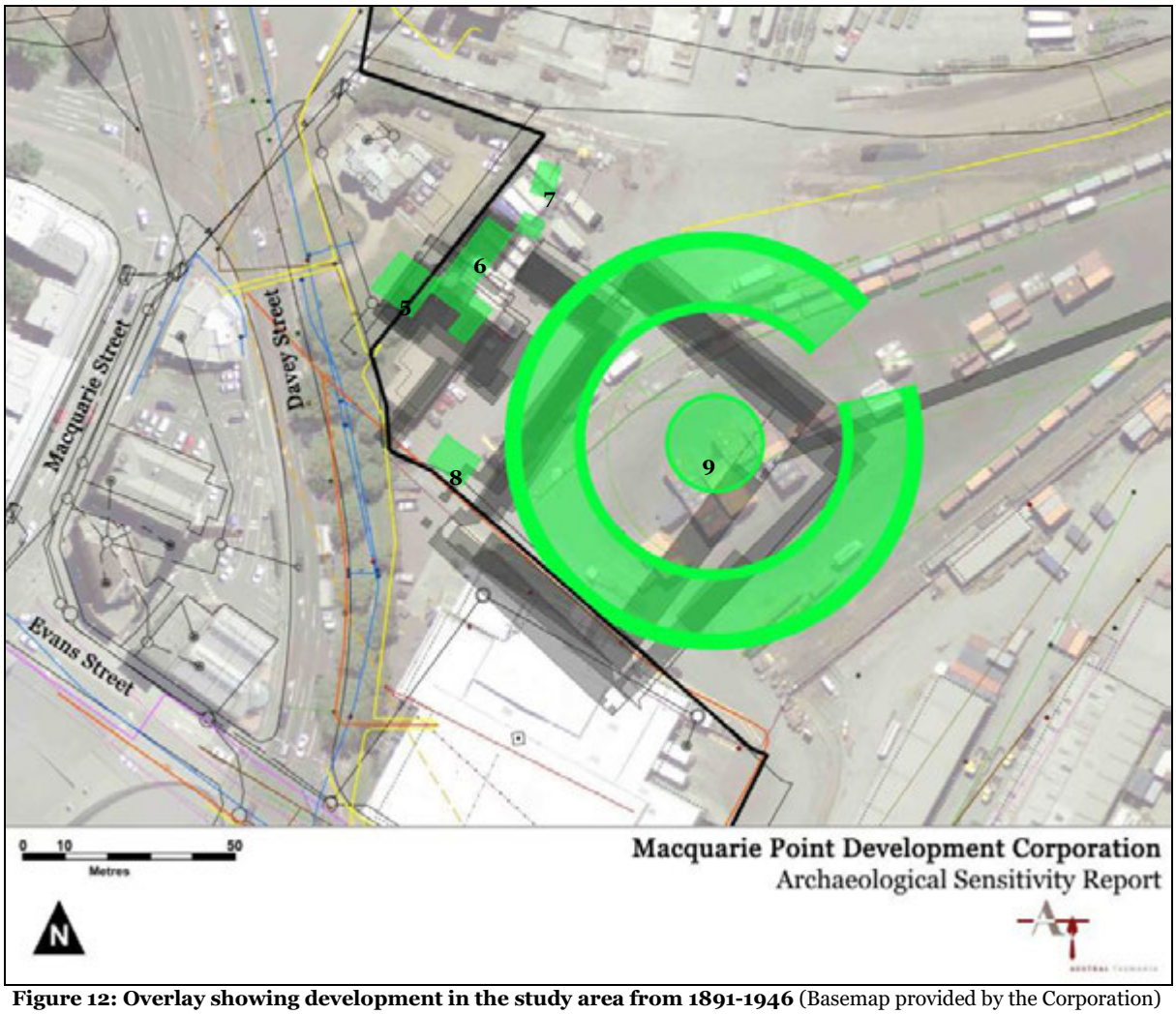


Figure 12: Overlay showing development in the study area from 1891-1946 (Basemap provided by the Corporation)

No.	Development/Phase	Disturbances on Previous Phases
5, 6, 7, 8	Railway development. The Railway Department acquired the old barracks site in the 1890s. Unfortunately, incomplete records have been retained and it is difficult to define with accuracy the nature and function of most buildings constructed by the Department. It is also unclear when the Department demolished the old barracks complex [1], [1a], [1b] and [1c], although it would appear that this occurred at different times. The barracks [1] continues to be shown on plans until 1911, and the former store building [2] had been removed by c.1925. Some of these buildings may possibly have been retained until the mid-1930s. A two storey hipped roof building is evident on the site by 1900 [5]. This structure was located hard against the old barracks building [1]. It is possible, but unconfirmed that this building corresponds with the western extension to the barracks constructed at some stage between 1856 and 1872 [1c]. New buildings were also constructed during this phase by the Railway Department. This includes a building of unknown date or function [6], and the office of the Resident Engineer [7]. A two storey utilitarian building was also constructed on the southern side of the complex [8].	Given the lack of information about the Railway Department phase of development, it is difficult to accurately quantify the extent of disturbances to [1] and [1c] that may have occurred through the construction of [5] and [6]. However, the results of the 2008 test excavations suggest that past disturbances within this area were probably minor and discrete given that evidence of [1] was found on the north-western side of the Corporation's office building.
9	Round House [9]. The Railway Department acquired the Drill Yard [3] in 1911 and the old buildings were demolished to make way for the large round house. Building plans for the round house have been retained, but do not detail the extent of preparatory ground works for this structure. A 1913 newspaper article describes that substantial amount of ground works were carried out to create a level surface and to connect the Macquarie Point site with the adjacent railway station on Liverpool Street. The article noted that a 'good deal of filling' was carried out to create the new level. The round house included an approximately 22 m turntable in the centre. The depth of the turntable well is not given on the plans, but it is likely to have been substantial. Other areas of deep excavation within the round house included at least three drop pits excavated between 1914-1946 and located towards the western side of the round house. The round house itself was a light weight structure constructed from timber and galvanised iron.	Known areas of deep excavation related to the turntable well and drop pits are likely to have substantially destroyed any archaeological evidence within their footprints. The round house itself is unlikely to have had substantial impacts on previous phases of development as it was a light weight structure. Preparatory ground works were the key phase of development that had the potential to destroy archaeological evidence from previous phases. Specifications for these works are not known to exist, although the 1913 article suggests that the preparatory works were more of a filling, rather cutting exercise. The 2008 test excavations considered that the Engineers Yard had a low level of potential to contain significant archaeological deposits due to these rail works. However, the extent to which this conclusion can be applied to the whole of the former yard site questionable at this stage.

Table 4: Phase 4 Development

Phase 5: 1946-1965

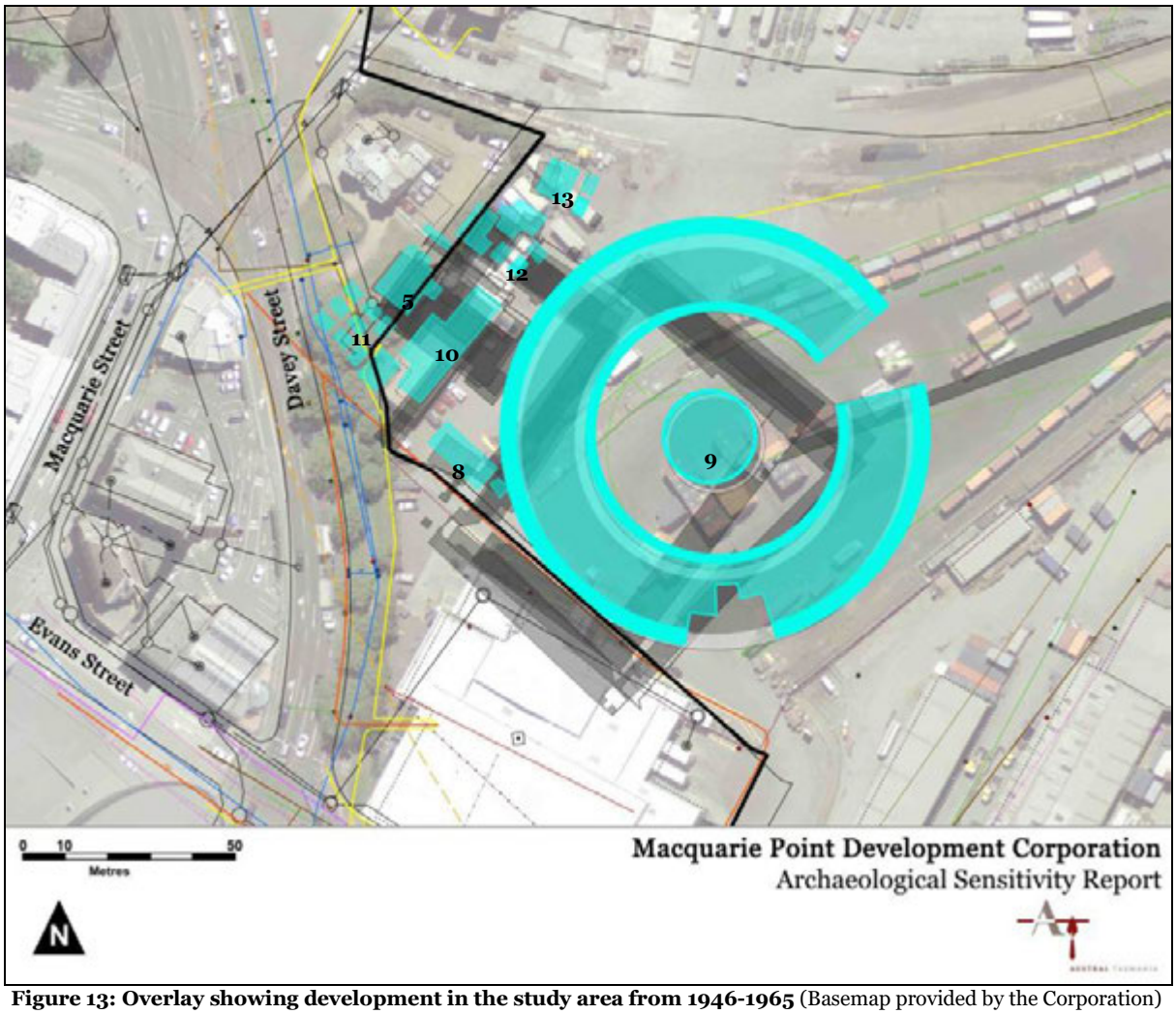


Figure 13: Overlay showing development in the study area from 1946-1965 (Basemap provided by the Corporation)

No.	Development/Phase	Disturbances on Previous Phases
5, 8, 10, 11, 12, 13	Railway development. Further development was carried out on this part of the site during this phase. The old two storey building [5] was retained until at least 1965, as well as the utilitarian structure to the south [8]. The office of the Resident Engineer had been removed by this time, and the site redeveloped with a new utilitarian structure [13]. The date at which the Corporation's office building [10] was constructed is unclear, although an application was made to Hobart City Council in 1952 for the construction of a two storey building, which may relate to the office. The 1965 aerial photograph shows a complex of small buildings to the west [11] and north [12] of the office building [10]. Clotheslines can be seen in the aerial photograph suggesting that these buildings were workers huts.	The key area of built development during this phase was the construction of the office building [10]. This building corresponds in part with Lord's former house/later barracks [1]. Impacts to archaeological deposits can be expected within the footprint of [10], but may not have destroyed all evidence of [1]. Similarly, the location of the store building [1b] appears to have escaped major built development during the mid-late twentieth century.
9	Round House [9]. Some modifications had occurred to the structure during this period, with the removal of a section of the southern side of the building.	Continuation of previous phase. Additional drop pits may have been excavated within the footprint of the building but are not documented in historical records.

Table 5: Phase 5 Development

Phase 6: 1965-2014

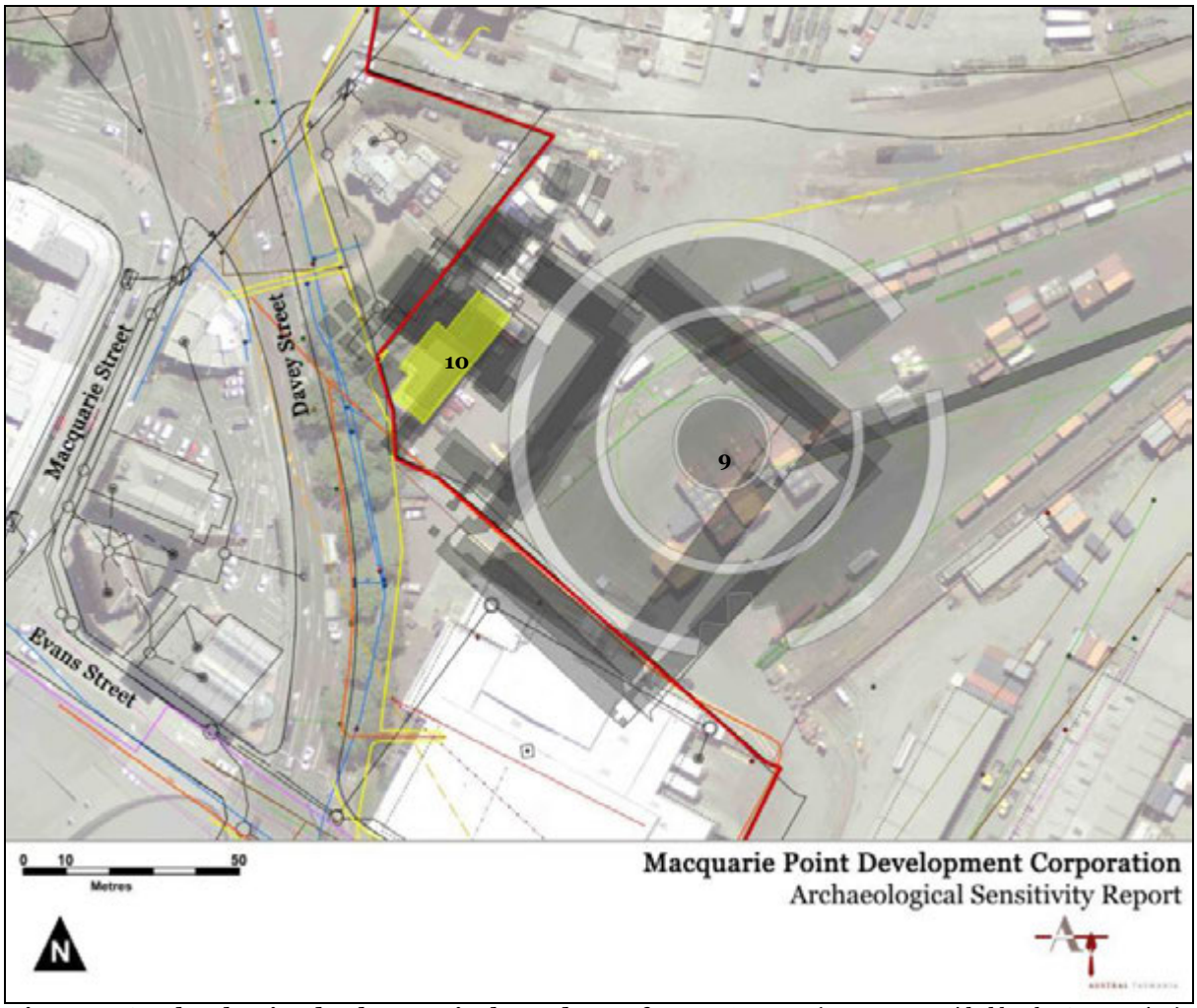


Figure 14: Overlay showing development in the study area from 1965-2014 (Basemap provided by the Corporation)

No.	Development/Phase	Disturbances on Previous Phases
10	The Corporation's office building [10] is the only previous railway building that remains extant in this part of the site. The 1984 aerial photograph shows that by this time, a number of buildings within the site had been removed including [5], [8], [11] and [12].	Some level of disturbances is likely to have occurred through the removal of buildings in this area. However, most of these structures (with the exception of [5]) would appear to have been small, light weight buildings. The extent of ground disturbances necessary for their removal may have been limited.
9	The round house was removed during the mid-1980s.	As a light weight timber and galvanised iron structure, demolition of the former round house is unlikely to have required deep disturbances. Some deeper disturbances may have occurred during site rehabilitation.

Table 6: Phase 6 Development

The preceding images and tables demonstrate the development history of the southern part of the study area. In contrast, a more complex development history has occurred in the northern part of the study area, where the cutting and embankment for the railway line potentially overlies the original shoreline.

Construction on the railway commenced in 1872 with the cutting of the hill around the Domain, with 20 men being employed solely for the purpose of the blasting of stone by January 1873. Much of this stone would have been used to level the drop on the opposite side of the slope and on 16 September 1874, the two lines of the railway were fully opened and trains departed Hobart (Austral Tasmania 2013a:28).

The effect of quarrying the hill, levelling and creation of an embankment is visible in cross-section and has been illustrated below in Figure 15, which demonstrates the different contours of the original hill slope, the areas of cutting and banking, and the levelled surfaces of the upper railway tracks and lower apron.

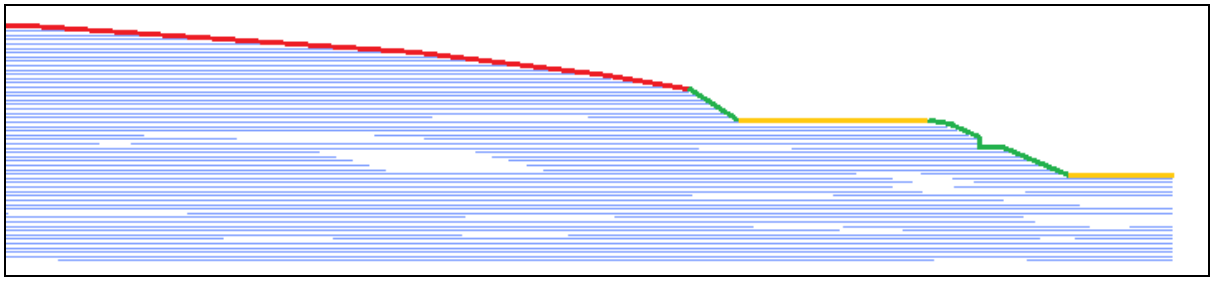


Figure 15: West to east cross-section based on 3D contour modeling of the study area showing the original hill slope (marked in red), areas of either cutting or fill (marked in green) and artificially flattened areas (marked in orange) (mapping supplied by Client)

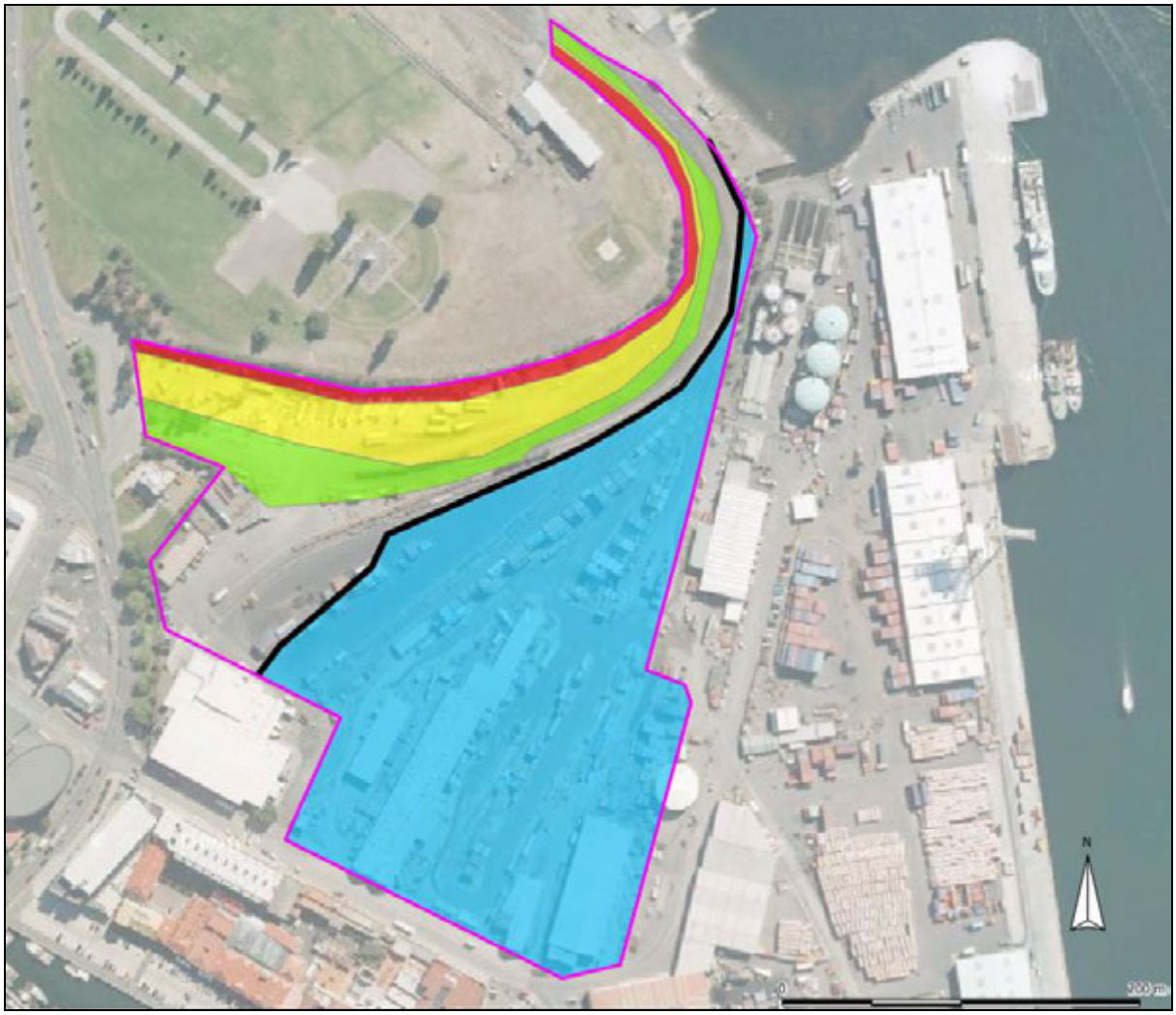


Figure 16: Schematic drawing showing the study area (marked in purple) probable extent of cutting (marked in red), leveling (marked in yellow) and banking (marked in green), with the probable location of the original shoreline (marked with a black line) and subsequent areas of reclamation (marked in blue) (background map from Google)

2.1.7 Potential Land Use Impacts on the Archaeological Resource

The main impacts on the subject land relate to the past residential and industrial use of the study area.

Land clearance in the early 19th century and earlier Aboriginal clearance practices may have resulted in soil disturbance and as a result, the overall archaeological resource is likely to have been affected to some degree by this activity. However, this is likely to have resulted in localised artefact displacement rather than widespread destruction of Aboriginal cultural heritage.

The tables and figures in the preceding section help to demonstrate the sequence of historical disturbances which occurred in the study area and can be separated into two main parts of the study area – the south-west and the north.

In the south-western part of the study area, European occupation commenced with the construction of Lord's house and proceeded through the various phases of activity associated with the Engineers' Yard, and the subsequent incorporation of the area into the rail yards. However, with the exception of the construction of two railway turntables, the majority of impacts within the south-western part of the study area are either of 19th century origin or appear to be a superficial level of construction which may not have penetrated the underlying apron. Previous reports have documented sites where Aboriginal cultural heritage has remained *in situ* below 19th century and early 20th century buildings (see, for example Austral Archaeology 2011; Stokes et al 1994) and it was considered that this may have been the case in the south-western part of the study area.

It was further considered that the results of the cut and fill undertaken in the northern part of the landscape for the railway line may have destroyed any *in situ* archaeological material where cutting work occurred. However, if the extracted material had been deposited on the downward slope in order to create the levelled embankment for the railway line, it was postulated that the natural ground level may have been preserved underneath (Figure 17).

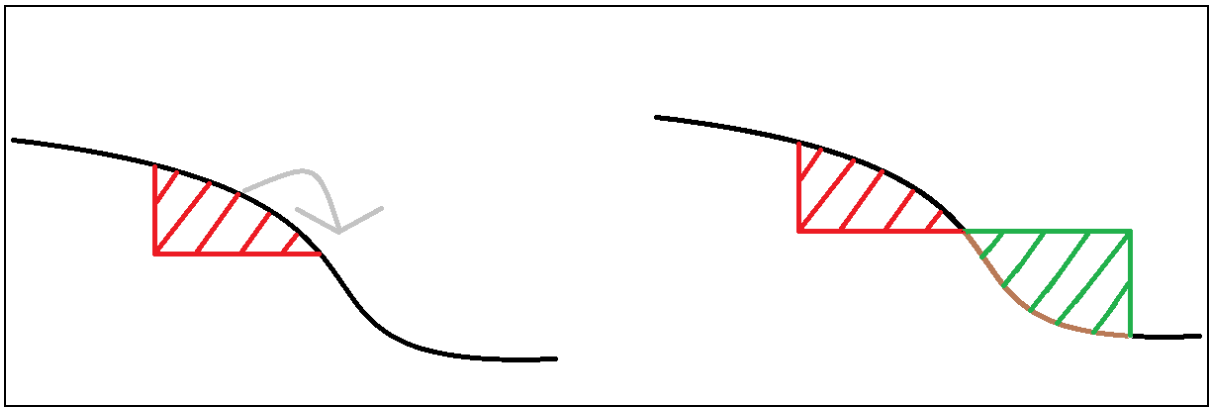


Figure 17: Diagram illustrating the potential destruction and preservation of the original ground surface with regards to the cut and deposit of material. If the material cut out of the slope (marked in red) was deposited further downslope (marked in green), it was considered that the original ground surface may have survived underneath (marked in brown)

The past land uses of the subject land and their potential impact on archaeological resources are summarised in Table 7 below.

Past Land Uses	Potential Impacts on Any Archaeological Resources
Vegetation clearance	The potential loss of scarred trees from the subject land as well as substantial erosion.
The channelling of the Domain Rivulet	Earth disturbance leading to the potential disturbance and dispersal of ground artefact scatters, and damage to any midden deposits on the bank of the rivulet.
Construction of housing and lumber yard	Significant potential ground disturbances within the footprint of the building, leading to the possible disturbance, re-distribution or destruction of artefacts and other subsurface Aboriginal cultural heritage.

Past Land Uses	Potential Impacts on Any Archaeological Resources
Livestock grazing on the subject land	Loss of native grasses and trampling of the ground has lead to increased erosion and potential dispersal of ground artefact scatters.
Creation of seawalls and deposition of reclamation fills	Possible destruction of artefacts and shell midden material along the coastal fringe through construction of the seawalls. Dependant on method of deposition, remaining midden material may be preserved beneath reclamation fills.
Construction of railway line	Significant ground disturbances through cutting into the original ground surface, leading to the potential disturbance, distribution or destruction of artefacts and other subsurface Aboriginal cultural heritage. Dependant on the methodology of creating the embankment, *in situ* material may still be preserved on the lower portion of the slope.
Construction of railway turntables	Significant ground disturbance leading to the potential disturbance and dispersal of ground artefact scatters and potential midden material.
Construction of the roundhouse	Dependant on construction methodology, may have either significant levels of ground disturbance, or may have preserved *in situ* sub-surface Aboriginal cultural heritage.

Table 7: Summary of past land uses within the study area, and the potential impacts on archaeological resources.

2.2 Cultural

2.2.1 The Derwent Estuary Archaeological Context

Archaeological investigations along the River Derwent and the sides of the surrounding valley have been primarily conducted in direct response to the spread of urban development. Once, the ethnographic accounts of early settlers and explorers were considered the primary source for archaeological enquiry. However, with an increase in urban development within the greater Hobart area and the introduction of legislative requirements for archaeological protection from the late 20th century onwards, archaeological investigations have undergone a corresponding increase.

The major studies which have contributed to our understanding of the Hobart region, and those with direct relevance to the study area through their proximity, are outlined below. Reference is made to the main trends garnered from these investigations which serve to provide a broad framework in which to base the current study.

Aboriginal occupation of Tasmania extends back well into the Pleistocene, around 37,000 to 39,000 years ago, although dates from Warreen and Parmerpar Meethaner caves in the central highlands suggest dates older than 40,000 years ago (Hiscock 2008:47, 115). While the earliest dates of occupation of the Hobart region are currently unknown (Whitehead et al 2010:18), Brown states that it is likely occupation stretches back at least 20,000 years, although no conclusive dates have been obtained for any site in the region beyond the last 6,000 years (Brown 1986:99-100). Sites with confirmed Pleistocene dates include Beginners Luck Cave, a tributary of the upper parts of the River Derwent, and an unnamed cave on the Weld River, a tributary of the Huon River (CHMA 2014:42).

2.2.2 Population and Contact History

Population estimates at the time of contact are notoriously problematic as Aboriginal groups avoided the early settlers and were highly mobile within the landscape, while the European settlers were initially low in number and settled at fixed locations.

Aboriginal people formed part of a dynamic culture which offered control over land boundaries and also encouraged movement throughout the landscape in order to assist in the ceremonial and functional practicalities of daily life (Keen 2010:46; Flood 2006:17; Ryan 1996:13-14, 17). As such, where boundaries can vary from "a sharp well-defined line…to a broad transition zone" (Jones, quoted in Ryan 1996:14), many borders for tribal groups need to be recognised as an artificial constraint designed by anthropologists (Organ 1990:xliii).

In addition, it is worth noting that any information contained in an ethnohistory should be employed with caution and Hiscock (2008:17) argues that even very early historical accounts may not be a suitable basis for analogy. As Aboriginal groups had to change their economic, cultural and political practices in order to cope with the social impacts of disease and limited access to food sources following the arrival of Europeans, he argues that it is likely that similar drastic changes happened repeatedly in the past in response to "altered cultural and environmental circumstances" and that behaviour is not fixed.

With these constraints in mind, it is possible to examine the early history of the area.

Estimations of the number of Aboriginal people in Tasmania during the Holocene vary from 3,000 to 6,000 people (CHMA 2014:27), based on the number of individuals within each clan posited by Jones and Ryan (1996:14). However, on the basis of genetic studies, suggestions have been made that these numbers are too low (Pardoe 1991:11).

The present study area is understood to lie within the land of the South East tribe or nation. While the terms have historically been used interchangeably, with a preference from Aboriginal people towards the use of 'tribe' (Flood 2006:17-18), it is noted that in current Tasmanian anthropology, 'nation' is the preferred term (Ryan 2012:8) and that term is used in this report. A typical nation, such as the South East Nation, was likely to contain between 350 and 470 individuals (Ryan 1996:14).

With their territory covering around 3,100 kilometres^2 and 555 kilometres of shoreline, the people of the South East Nation were able to live mainly off food caught in the marine environment and coastal fringes, only needing to undertake occasional trips inland to supplement their diet and obtain resources (Ryan 1996:39). While the South East Nation are believed to have been comprised of seven separate clans, the names of only four clans have survived including that of the Mouheneenner, who would have occupied the land surrounding the study area (Ryan 1996:16, 39).

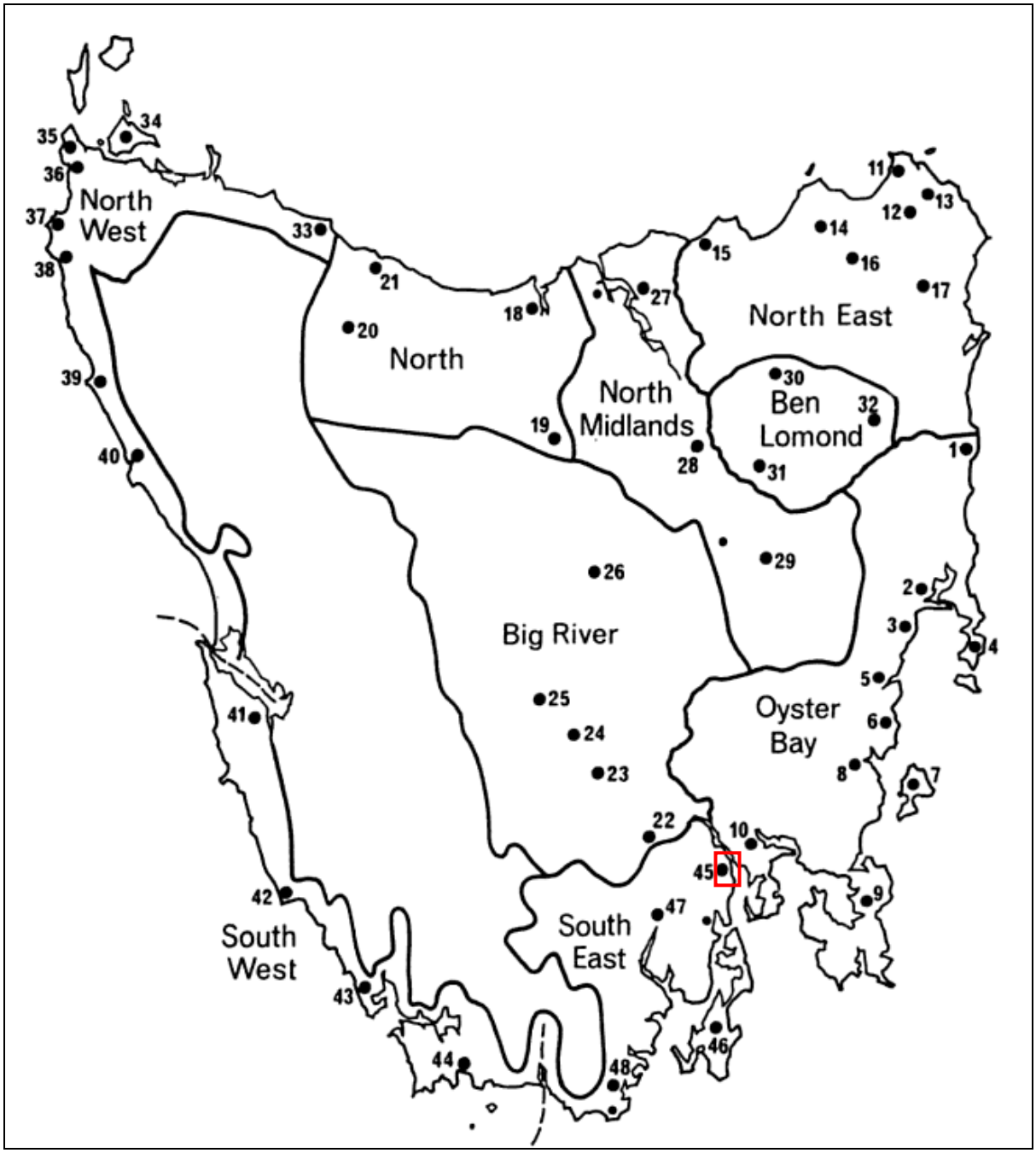


Figure 18: Proposed tribal boundaries in Tasmania. Note the approximate location of the study area (marked in red) (after Ryan 1996:15)

Like other clans, the Mouheneenner clan would actually have comprised of several smaller hearth groups, which were the basic family units and would have ranged from between two and 11 individuals (Ryan 1996:12). The groups would have moved through the landscape in seasonal migrations, congregating with other members of the clan at certain times of the year in order to exploit gatherings of animals, such as muttonbirds at North Bruny Island in November and the appearance of seals in Recherche Bay in summer (Ryan 1996:42). Winter would be spent exploiting shellfish along the coast, while other times of the year also saw journeys further afield for seal hunting or for hostile battles with other nations (Ryan 1996:41-42, 43-44).

The Nuenonne band from Bruny Island was visiting Little Sandy Bay when David Collins arrived in 1804. Woorady, of the Nuenonne later recalled how the people reacted and interpreted the events of early settlement, describing how:

> ...when the first people settled they cut down trees, built houses, dug the ground and planted; that by and by more ships came, then plenty of ships; that the natives went to the mountains [*Mount Wellington*], went and looked at what the white people did, went and told other natives and they came and looked also (Robinson, quoted in Plomley 2008:408)

Brief details of contact between the Aboriginal people and the British can be found in the diary of the Reverend Robert Knopwood. An entry in March 1804 records his observations on encountering 'a great many native hutts [*sic*] and the fires they made' on the western shore of the Derwent, north of Hobart. Two days later he noted many Aboriginal people were around the camp at Sullivans Cove, but could not be persuaded to enter. On numerous occasions, Knopwood wrote of the fires lit by the Aboriginal people for both land management and hunting (Brown 1986:171-172; Nicholls 1977:46).

At least two of the individuals central to the early European history of Macquarie Point also had documented contact with Aboriginal people. In July 1804, Knopwood wrote:

> He [*William Collins*] see many of the natives and was conducted to the town by some of them. Where there were about 20 families, he stayd all night with them; they were all very friendly. He see 3 of their cattemerans or small boats made of bark that will hold about 6 of them [*sic* throughout] (Knopwood, cited in Shillinglaw 1879:122).

Extended contact also existed between Edward Lord and the New South Wales Aboriginal man named 'Musquito' by the English, and whom Lord employed as a stock keeper. Musquito was from the Port Jackson area, and was transported to Norfolk Island in 1805 for raids on settlers in the Hawkesbury and Georges River districts. He was relocated to Van Diemen's Land in 1813 where he worked for Lord for a period (Ryan 1996:79).

Initial contact between the Mouheneener and Europeans was positive. Although not visiting the settlement, the Aboriginal people were friendly with small groups of Europeans they met at more isolated areas. Such relations were not to last, as by 1806, violence had already began to emerge. Conflict over food resources was one of the triggers in the deteriorating relationship. By necessity, the European settlers sought to augment their meagre stores with fresh caught game, mainly kangaroos, thereby placing them in direct competition with the Aboriginal people. So insatiable was the European demand for kangaroos, that by late 1808 this food resource had largely been exhausted from the immediate surrounds of Hobart, with hunting parties having to venture further afield (Ryan 1996:76-78).

This period saw a fundamental shift in colonial society with the relocation of Norfolk Islanders to Van Diemen's Land, beginning in 1805 and intensifying from 1807. Gradually, farms spread out along the shores of the Derwent as a burgeoning agricultural economy began to take shape. Over the coming years, more land was granted and brought into production, and the population grew, albeit slowly at first.

The period 1804 to 1824 has been described as one of 'uneasy coexistence' between Aboriginal people and Europeans. Certainly, there were outbreaks of hostilities, but by comparison with what occurred post-1824, the first two decades since the coming of the Europeans were relatively calm (Boyce 2008:67-68, 105-106; McFarlane 2005). Notwithstanding the increase in conflict, groups of Aboriginal people continued to occasionally visit Hobart into the early 1820s. One such group was known by the Europeans as the 'Hobart-Town tribe', visiting the growing town for food and other items (*The Hobart Town Courier*, Saturday 5 January 1828; *Hobart Town Gazette and Van Diemen's Land Advertiser*, Friday 5 November 1824; TAHO, CSO1/1/323/7578).

Robinson wrote of groups of Aboriginal people visiting Hobart Town in November 1824 and October 1825. Of the latter, he described:

> At ½ 3 pm 64 black natives came into town. They were naked. Under the protection of the government. Went to see them. At 8 pm they were placed in the market house. They were formed into 3 circles with a fire in the middle of each. On one side of each circle elevated about 3 feet above the rest sat a person whom I supposed were their chief. One out of the 3 of these chiefs could speak broken English. They were all committed to the care of Mr Mansfield the Wesleyan missioner [*sic*]. One of them had a white feather stuck in his ear (Plomley 1966:100)

Such relative peace was not to last. During the 1820s, the European population grew rapidly, accompanied by an explosion in the issuing of land grants over the most valuable grass plains. These actions created disputes over access to native game, hunting grounds and the connection of Aboriginal people with their traditional tribal lands. What followed was unprecedented violence (Boyce 2008:104-146).

Attempts at using force to remove Aboriginal people from the areas settled by Europeans invariably failed. More success was had by George Augustus Robinson who led a series of expeditions aimed at enticing the remaining Aboriginal people to leave their country. In January 1832, Robinson arrived in Hobart Town in the company of 26 surviving members of the Big River Tribe. They were sent to establishments in the Furneaux Islands ten days later (Bonwick 1870:228-229; Ryan 1996:157-158).

In 1847, the 47 remaining Aboriginal people at the mission on Flinders Island were transported to the former convict station at Oyster Cove, south of Hobart. Back on the Tasmanian mainland, the people would often leave Oyster Cove for weeks at a time to hunt, camp and collect traditional foods. Trips would also be made to Hobart and included attending a circus performance in 1861, and invitations to Government House in 1866 and 1870. Truganini and William Lanney were also presented to the Duke of Edinburgh, Prince Alfred during his attendance at the 1868 Hobart Regatta, to the north of Macquarie Point (Gough 2005:261-262; *The Mercury*, Friday 20 December 1861, Friday 25 May 1866, Friday 18 February 1870, Friday 19 January 1868; Woolley 2004:27-28).

2.2.3 Material Culture

The material culture of the Aboriginal people of the South East Nation at the time of European contact was diverse and utilised materials derived from a variety of plants, birds and animals as well as stone. Below is only a short summary of the types of material known to have been used by the Aboriginal people of the South East Nation.

Spears in Tasmania were usually shafts made from the bushy tea-tree measuring from 2.4 to 5.4 metres long and the use of spears was often complimented by a waddy – a wooden pole around 600 millimetres long with one pointed end and a rougher, rounded end for holding. The waddy could prove equally lethal being thrown in a spinning manner similar to a boomerang on the mainland, or being used as a club (Ryan 1996:12; West 1981:324). Women were recorded using a wooden implement sharpened to a chisel-like point which served a multitude of functions including prying shellfish off rocks, breaking into animal burrows and for stripping bark from trees, while the implement also doubled as a digging stick for tubers and roots (Ryan 1996:12).

Both animal skins and natural fibres also played an important role in the material culture of Tasmanian Aboriginal people. Although often seen naked in summer, Tasmanian Aboriginals made use of kangaroo skins as a form of simple cape in winter (West 1981:323), while kangaroo sinew and skin was used for creating slings to carry children, as CHMA note from early paintings of Tasmanian Aboriginals (CHMA 2014:31). Plant fibres were woven and turned into baskets and ropes (Ryan 1996:12; West 1981:324), while strips of tree bark were used as either windbreaks or, elsewhere in Tasmania, to construct "bee-hive" shaped huts (Ryan 1996:12).

The Aboriginal people of the South East Nation were known to build canoes, which were well documented by both La Billardière, on the 1791 expedition to search for the missing explorer La Pérouse, and again by Péron and Freycinet, sailing aboard *La Naturaliste* in 1802. The canoes are variously described as:

> made of the bark of trees...held together by cords, made of the leaves of grasses, forming a texture of very large meshes (La Billardière, quoted in Roth 1899:155)
>
> ...seven to nine feet [2.1 to 2.7 metres] long, equally flat above and below. Their width was from three to four feet in the middle, diminishing to each of their two extremities, which ended in a point. They were made of a very thick bark of trees, joined parallelly [*sic*], and fastened together with reeds, or other fibrous grasses (Péron, quoted in Roth 1899:155)
>
> Three rolls of Eucalyptus bark formed the body...These three bundles, which bore a fair resemblance to a ship's yards, were fastened together at their ends; this made them taper and formed the whole of the canoe. The scarfing was made fairly compact by means of a sort of grass or reed...Five or six savages can get into these canoes, but generally the number is limited to three or four at a time. Their paddles are simple sticks from 2.5 metres...to 4 and 5 metres...long, by 2 to 5 centimetres...thick. Occasionally when the water is shallow they make use of these sticks to propel themselves as we do with poles. Generally, they sit down when working their canoes and make use of a bundle of grass as a seat; at other times they keep standing...They always place a fire at one end of their canoes, and in order to prevent the fire from spreading they place underneath it a sufficiently thick bed of earth or cinders (Freycinet, quoted in Roth 1899:155)

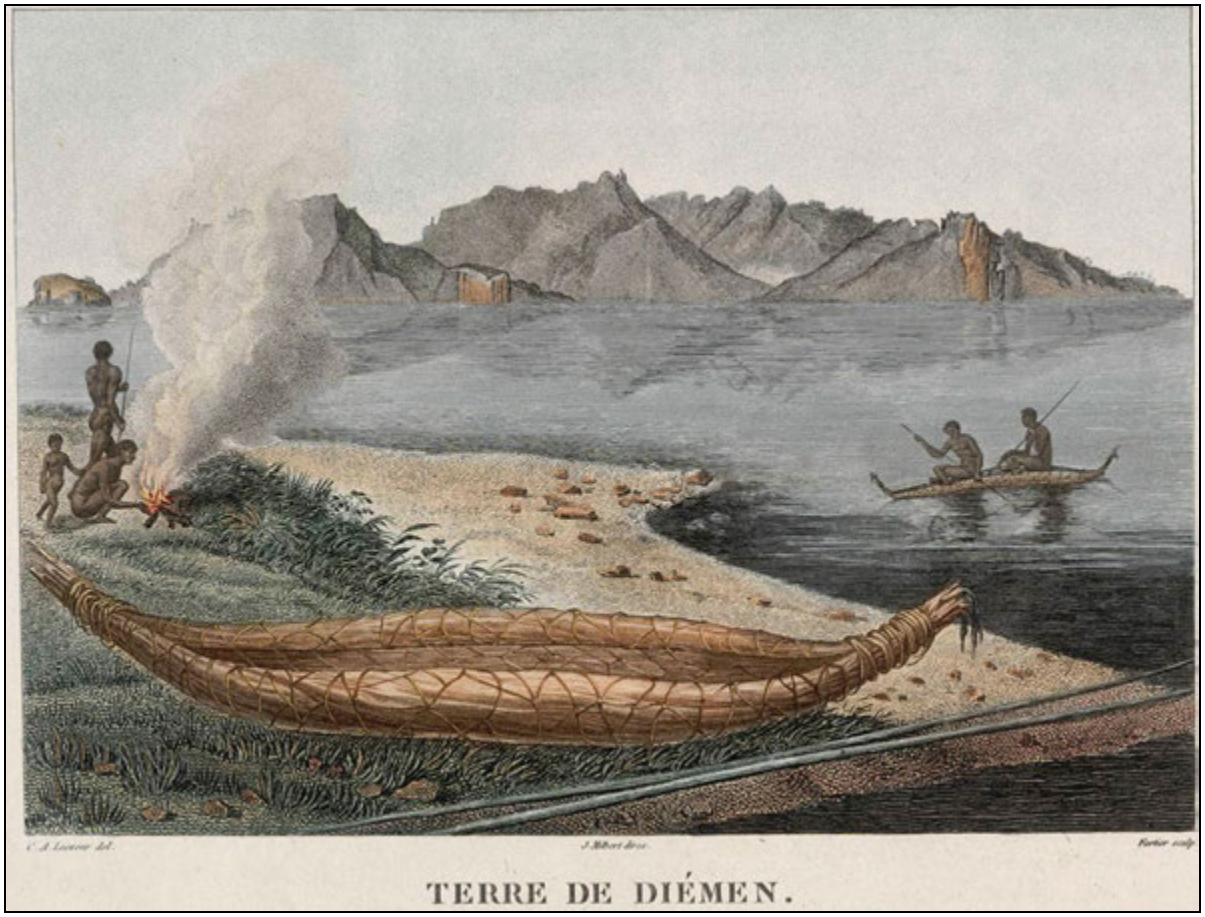


Figure 19: Example of Tasmanian Aboriginal canoe (Péron 1811:xiv)

Stone artefacts are often the only physical tools which survive and indicate Aboriginal use of an area. The knapping of stone artefacts can result in one of two types of artefact deposits being left in the landscape; sites where the knapping of stone occurred in order to create tools, and sites where the discard of these tools occurred once they have been used, or sometimes both events can occur at the same location. The knapping of stone creates a large amount of stone debris in very little time. Large knapping events tend to occur in proximity to sources of permanent water (McDonald 2000). This is probably because the availability and resources made these good places to camp for short periods of time. Small scale knapping events can occur anywhere in the landscape and are associated with the manufacture or maintenance of stone tools as a direct result of a specific need. This implies that locations of sites away from water courses will be more diffuse.

Stone was commonly used for tools and, apart from discarded shell in coastal middens, is the most common material found in archaeological sites in Tasmania. While CHMA (2014:32) have noted that few first-hand ethnographic sources describe the actual use of stone by Aboriginal people, Mitchell (1955) quotes second-hand sources who document the use of stone artefacts in the form of knives and blades, used for various functions such as:

> cut[ting] notches in the tree for climbing, cutting spears, and making the handles of the waddies rough, so as not to slip from the hand (Smyth, quoted in Mitchell 1955:131).

Stone procurement sites close to the present study area include several quarries located on the eastern shore of the River Derwent but only one, located at Blinking Billy Point, on the western shore of the river has so far been identified (Officer 1980, Figure A.6). A second-hand account tells of a settler walking home between 1813 and 1818, and chancing upon Aboriginal people quarrying stone. He described the sight to his son, G Rayner, as:

> twenty or thirty…men, women, and children. Nosily [*sic*] chattering, they were breaking the stones into fragments, either by dashing them on the rock or by striking them with other stones, and picking up the sharp edged ones for use. One old fellow he describes as dashing his stone upon another one on the ground and leaping up and spreading his legs out at the same time, to avoid as much as possible being struck by the splinters (Roth 1899:151)

While this account appears to suggest a relatively haphazard method for both extracting the rock and early reduction techniques for the artefacts, Roth and Rayner were able to relocate the potential quarry location (Roth 1899:151). Further work by Jones identified the location as a quarry site for indurated cherty hornfel at Plenty (CHMA 2014:33).

Archaeological investigations in Tasmania have been unable to define temporal changes in lithic technology to the extent that has been suggested elsewhere in Australia, such as the 'Eastern Regional Sequence' of New South Wales (McCarthy 1976:96-98). Instead, temporal changes in lithic technology in Tasmania are described as being "speculative", and likely to vary spatially over the island (Moore 2000:70).

Broadly speaking, Moore suggests a move from off-source artefact production during the Pleistocene to the production of cores knapped on-source for the purpose of creating blanks during the Holocene. In support, he notes that early Pleistocene assemblages are characterised by raw materials which were sourced from close to the location of their discard, and cobbles being reduced through freehand percussion away from their original source (Moore 2000:70-71).

Between around 18,000 and 16,000 Before Present, Moore notes an increase in the number of smaller thumbnail scrapers and increased evidence of bipolar flaking of smaller pebbles, including quartz. In turn, this leads to a shift in the Holocene towards an increase in knapping at source and the production of artefacts which were increasingly recycled and reused before discard (Moore 2000:71).

2.2.4 Food

A wide range of land mammals were hunted for food, including kangaroos, wallabies, possums, wombats, pademelon and echidnas (Stokes et al 1994:4; Woodward 2006). Birds, such as the mutton bird and penguin, were also eaten and it is recorded that eggs were a favourite food (Brown 1986:24; Stoke et al 1994:4; Woodward 2006). Shellfish and crustaceans were also a vital resource for coastal populations, as evidenced by the number of shell middens present along the banks of the River Derwent (Figure 21). Commonly eaten shellfish included oyster (*Ostrea angasi),* various species of mussel (including *Mytilus planulatus*, *Xenostrobis securis* and *Brachidontes rostratus*), and limpets (including *Bembicium auratum* and *B. nanum*) (Officer 1980, sec. 3.3).

An interesting question which cannot be answered in the limited space of this discussion is the role of scaled fish in the diet of Aboriginal people. While the archaeological record suggests that Tasmanian Aboriginals stopped eating fish around 3,500 years ago (Sims 1999:263), the reason behind this change is much discussed (see Sims 1999:263 for an overview). However, work by Taylor (2007) has presented an overview of ethnographic and archaeological sources which refutes this idea.

For the purpose of this report, it is considered that while fish may have occasionally been exploited as a food resource, it was only likely to have been exploited in small quantities and it is not possible to draw any conclusions with regards to any particular species which was favoured.

Table 1. Aboriginal Diet in Southeast Tasmania as Recorded by European Observers (after Brown 1986:25).

TERRESTRIAL	
Macropods	Forester kangaroo
	wallaby
Small Marsupials	possum
	bandicoot
	kangaroo Rat
	'mice'
Monotremes	platypus
Reptiles	'goanna' (Blue Tongue lizard?)
MARINE	
Seals	
Marine Crustacea	crayfish
	crabs
	abalone
	oyster
	limpet
OTHER FAUNA	
Birds	pelican
Eggs	penguin eggs
Insects	lice
PLANTS	
Plants	bracken fern roots
	pigface
	roots (from lagoon)
	fungus (native bread)
	native current
	'small red berry'
	'broad rush'
	banksia flowers
	seaweed

Figure 20: List of known food sources (Stokes et al 1994:8)

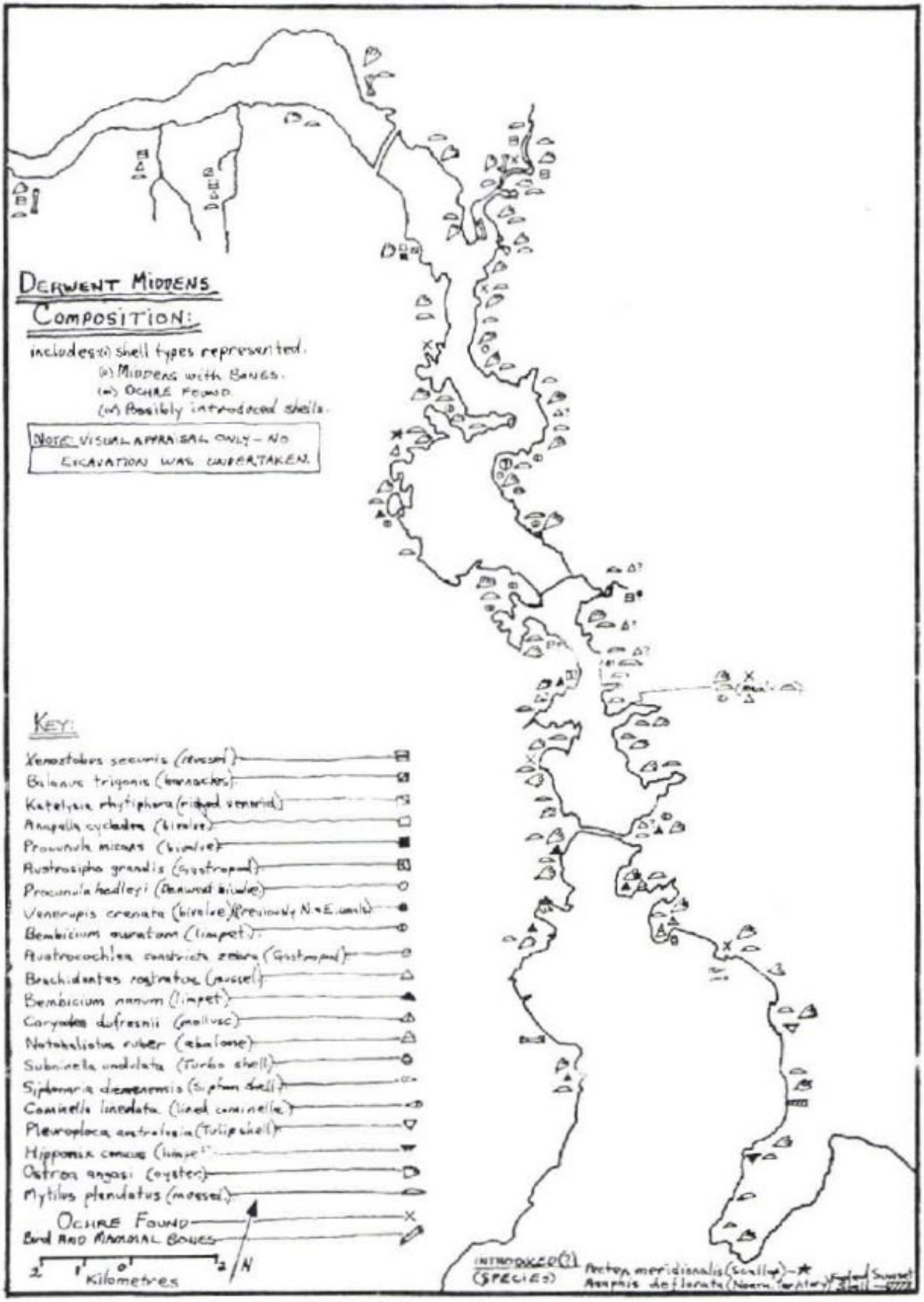


Figure 21: Shell species identified in middens on the River Derwent (source: Officer 1980, fig. A.5)

Jones has noted that Tasmanian vegetation communities include over 70 species that have edible parts, such as seeds, fruits, tubers/roots/rhizomes, leaves, flowers and nectar (Jones 1971:91-95). Several other plants have medicinal functions, many of which have only recently been discovered by science, although these were traditionally known to the Aboriginal people.

Observations from the earliest European settlers describe Aboriginal people in the Hobart region eating a fungus known as 'native bread' (*Laccocephalum mylittae*), along with vegetables including the potato orchid (*Gastrodia sesamoides*) and native carrot (*Geranium dissectum*) and fruit including native cherry (*Exocarpos cupressifomis*), native currant (*Coprosma quadrifida*) and kangaroo apple (*Solanum laciniatum*). In addition, the sap of the cider gum (*Eucalyptus gunnii*) could be tapped and eaten with a taste comparable to maple syrup, or fermented into a mildly alcoholic drink (Woodward 2006).

One key point, as noted by Attenbrow, is that in many cases, the settlers' lack of knowledge of the local plant species make actual identification of the various plants being discussed difficult, beyond vague terminology which compared plants to those which were known to the settlers' (Attenbrow 2002:76-79).

In summary, the Derwent estuary and the surrounding hinterland environments provided a wide variety of plants and animals which were used by the local Aboriginal populations for artefact manufacture, medicinal purposes, ceremonial items and food.

2.2.5 Early Archaeological Models

Due to a lack of supporting data, the earliest archaeological reports for the Lower Derwent focussed on identifying sites within the wider landscape rather than providing a summary of site distribution and composition (see, for example, Officer 1980).

Foley (1981) developed a general site distribution model for forager settlement patterns which has proved useful in understanding site location and distribution within the wider Australian landscape.

The model splits hunter-gatherer sites into two main categories: 'residential base camps' and 'activity areas'. People reside in one general location or locations, probably in proximity to a good source of permanent water with shelter from the elements, and travel throughout the local landscape to gather resources at known locations. The left hand side of Figure 22 shows how the landscape is utilised, while the right hand side shows how this settlement pattern would look in terms of artefact discard. The majority of artefacts are deposited in proximity to the residential base camp, fewer at the various resource locations and a generally low amount throughout the rest of the landscape, mainly while travelling between activity areas and the base camp. The model however, does not take into account the use of more than one base camp in an area or changing preferences of camping areas over time; nor does it account for the movement of resources over time.

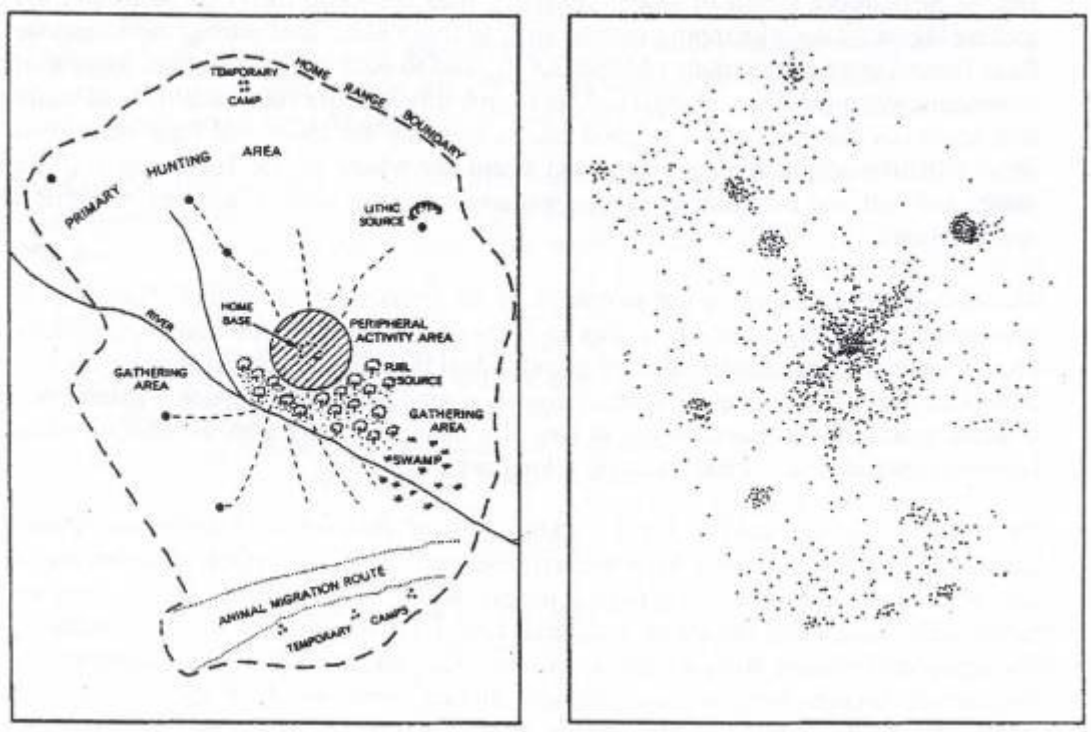


Figure 22: Foraging Model (Foley 1981)

One of the earliest and most useful predictive models was created by Brown (1986), who was commissioned to undertake an investigation of the south-east of Tasmania as part of a series of nine regional studies to be undertaken across the entire island. For the purpose of the investigation, Brown split his study area into five separate landforms units and prepared summaries of predicted site locations based on both his own fieldwork and previous archaeological investigations.

The current study area is situated in the land unit which covers "coastal and estuarine environments", including coastal margins, coastal plains, river estuaries, lagoons and swamps (Brown 1986:49-50). Based on his own fieldwork and that previously undertaken by Officer (1980), Brown noted that shell middens were the most common site type in the landscape unit, although both the size and composition of middens varied based on the location of the shell midden within the coastal or estuarine zone (Brown 1986:79).

In general, Brown made the following predictive statements regarding the presence of Aboriginal cultural heritage within the coastal and estuarine region (Brown 1986:79):

- Middens are more likely to be present in areas with low gradient shore profiles.
- Middens are more frequent on coastal stretches which combine a mixture of rocky headlands and short sandy beaches.
- The amount of midden material on a sandy beach declines in relation to distance from a rocky shoreline.
- Middens could be split into three categories based on landscape location and the predominance of certain shell species – rocky coastal, bay estuarine and intermediate zones (i.e. estuary and lagoon mouths).
    - Rocky coastal middens occur on headlands and points where rock platforms are present, in locations favoured by abalone, turbo, mussel and limpets.
    - Bay estuarine middens occur on sandier shorelines and predominately consist of oyster and mussel.
    - Intermediate zone middens occur where differing resources meet and comprise of species found in both other middens.

- Shell middens are normally found on the foreshore, but large middens can occur up to 500 metres from the shore, and smaller middens can occur up to 1 kilometre from the shore.
- It is rare for shell middens to contain large numbers of stone artefacts or other faunal remains.

It is also worth noting the following points which Brown raises in his summary of site distribution in south-east Tasmania (Brown 1986:99-102):

- Aboriginal cultural heritage can occur in any part of the landscape.
- Coastal margins and river estuaries contain large numbers of sites; predominantly shell middens with large amounts of archaeological material.
- Further inland, artefact scatters and isolated artefacts dominate the archaeological record.
- Artefact concentrations are highest along river, rivulet and creek valley floors, and are often adjacent to lower hill slopes with a preference for gently inclined, north facing slopes over a well-drained sandy soil.

In conclusion, Brown notes that the highest density band in regard to site numbers is within 300 metres of the coastline and immediately on the foreshore of coastal lagoons (Brown 1986:102).

2.2.6 Later Work

Despite a surge in the amount of archaeological fieldwork undertaken along the shores of the River Derwent, the development-led nature of the predictive models tend to focus on specific areas of development rather than forming widely applicable landscape models in the vein of Officer (1980) and Brown (1986). However, the following predictive models, used in conjunction with site modelling based on assessment data, can be adapted and used for the present project.

Austral Archaeology (2002) developed a cultural heritage management plan for the entirety of the Queens Domain and which considered management of Aboriginal heritage values based on the results of the Aboriginal assessment conducted by Stanton (1999). Stanton identified that shell middens in the Queens Domain were all located within a 50 metre elevation of the Derwent foreshore (Stanton 1999:8). As such Austral Archaeology developed areas of high and low archaeological sensitivity based on where the ground lay in relationship to the 50 metre contour (Austral Archaeology 2002:4-5).

Only one series of predictive statements have subsequently been developed. However, it should be noted that although these statements are referred to in the appropriate assessments (CHMA 2010, CHMA 2014) as being models, it is noted that neither the original series of statements made in the 2010 CHMA assessment, nor the amended statements made in the CHMA 2014 assessment include the necessary statistical requirements outlined in the Guide to qualify as a predictive model (AHT 2013:18).

Prior to undertaking an assessment in the eastern fringe of the Queens Domain, CHMA developed the following predictive statements with regards to Aboriginal cultural heritage (CHMA 2010:23-24):

- Stone artefacts scatters are frequent within large river valley systems.
- Larger artefact scatters are located in elevated positions above floodplains, with a northerly aspect and which are on well-drained sandy soils.
- Low-lying flood plains have lower artefact densities, possibly due to the poor suitability of the areas for occupation.
- Artefact densities also reduce in relation to distance from a watercourse and are lower on moderate to steeply sloping terrain.
- Shell middens in the Queens Domain area are likely to be bay estuarine type middens, dominated by mussel and oyster shell and will either "commonly contain artefacts" (CHMA 2010:23) or "rarely contain large numbers of stone artefacts or faunal remains" (CHMA 2014:24).
- The largest shell middens are found on the foreshore of the river, on elevated, gently sloping or level terrain.

The most recent predictive model was developed by CHMA in 2014 and is primarily a repetition of the model developed for their previous work in the Queens Domain (CHMA 2010). In summary, the newer model makes additional statements regarding the potential for sites to be present based on simple rules (CHMA 2014:50):

- Shell middens are the most frequent site types recorded in the Aboriginal Heritage Register (AHR) database.
- Artefact scatters are usually recorded in concentrations – "One artefact scatter has also been recorded in close proximity…and it is therefore possible that additional artefact scatters and/or isolated artefacts will be present (CHMA 2014:50).

The only specific predictive statements which are made in addition to the statements made in the previous CHMA assessment are that (CHMA 2014:50):

- Midden size depends on distance from the source of the shellfish, in this case the River Derwent.
- Middens away from the foreshore are likely to be in located in discrete areas, with low hill slope gradients.

2.2.7 Heritage Database Search Results

A search of the AHR database was undertaken to identify 100 sites within an approximate 3.5 kilometre area from the study area. No sites were located within the present study area or within a 200 metre boundary of the study area at the time of the initial permit application.

Rather than just limit the data to the western shore of the River Derwent, the search was widened to ensure it could provide data on eastern shores as well. It was anticipated that the extra data would provide increased certainty in regards to understanding the archaeological potential of the study area.

Although the results from the AHR search were limited to the first 100 sites within proximity to the study area, it should be noted that there are several duplications in the data received. Due to time constraints on the current assessment, an in-depth analysis of each site card has not been undertaken and each site is taken on face value in terms of the cultural heritage which is contained at that location. It is anticipated that this will change with production of the final assessment following the completion of test excavations.

The general distribution of these sites along the eastern and western shoreline of the River Derwent is shown on Figure 23, with a more detailed distribution map showing site distribution on the western shoreline around the study area shown on Figure 24. Although it is noted that the Guide requires all sites shown on maps to be labelled with AHR numbers, this is not practical due to the large quantum of data used. Instead, Figure 23 shows AHR numbers for sites on the eastern shoreline, and sites which are not specifically numbered on Figure 24. No sites are located within the present study area. At the time of the database search, no sites were recorded within a 200 metre boundary of the study area.

Feature Type	Total	%
Midden	80	80
Stone Artefact (Isolated or Scatter)	12	12
Rockshelter (Occupied and Unoccupied)	4	4
Midden with Stone Artefact	3	3
Unoccupied Rockshelter with Midden	1	1
TOTAL	100	100%

Table 8: Site-types of registered AHR site-types in the vicinity of the study area.

Table 8 shows that there are five different site types represented by the search results: stone artefacts, culturally modified trees, art sites, potential archaeological deposits (PADs) and grinding grooves. One rock shelter is recorded as containing a combination of rock art and stone artefacts. The spatial distribution of these sites is shown below (Figure 23 and Figure 24).



Figure 23: Distribution of previously recorded Aboriginal archaeological sites in the general area surrounding the study area (marked in green)



Figure 24: Detail of previously recorded Aboriginal archaeological sites in the area immediately surrounding the study area (marked in green)

The vast majority of the registered sites consist solely of either a shell midden, or a midden site in conjunction with either stone artefacts or a rock shelter. These sites represent 84% (n=84) of all reported sites in the localised search. In comparison, the second most common site type is stone artefacts (either isolated or as part of an artefact scatter), which account for 12, or 12% of the overall site type frequency. The remaining 4% of sites consist of either occupied or unoccupied rock shelters.

The distribution of the sites shows a clear spatial differentiation which relates to both land use history and geological aspects of the landscape. With high levels of disturbance caused by the expansion of Hobart on both shores of the River Derwent, the majority of sites have been identified either in foreshore nature reserves or within undeveloped lands such as the Queens Domain.

The majority of shell midden sites are either located on the current shoreline, in tidal areas off the coast or are in more elevated land further back from the shore, with the furthest inland midden being site AHR6976, located almost 400 metres from the shore in the Queens Domain. The other physical evidence relating to Aboriginal occupation of the landscape is stone artefacts, although the few sites which have been identified are all located in highly disturbed contexts in and around the centre of Hobart. However, artefacts have principally been identified along the banks of the former waterways, including the Hobart, Domain and New Town rivulets, whose original courses pre-date the European occupation of the area.

2.2.8 Previous Archaeological Investigations in the Vicinity of the Subject Land

Although European observers recorded various aspects of the lifestyles of Aboriginal people in Tasmania from the earliest days of European exploration of the area in the 18th century, it was not until the 20th century that archaeological investigations of Aboriginal archaeological sites were undertaken.

Since then, thousands of archaeological sites have been recorded across the region and several have been excavated. Most commonly, these contain open scatters of archaeological material such as stone artefacts, engraved or pigmented images or midden material.

2.2.9 Archaeological Investigations in the Local Region

Much of the archaeological work in the local area has been undertaken as a result of development-driven archaeological studies or surveys. Table 9 below outlines the details and results of some relevant archaeological consultant's reports from the region. Please note that this is not a complete list but only describes work which is relevant in terms of either proximity to the present study area or results which can inform the present work.

Reference	Study Area Location / Description	Results	Site Distribution / Conclusion
Stokes et al 1994	The Old Blundstone Factory Site, Hobart	Historic test excavations identified 23 artefacts (Stokes et al 1994:23), and another 19 artefacts were recovered from nine test pits (Stokes et al 1994:1). "[S]hell, animal bone and charcoal were also recovered...but these are considered not to be in association with the artefacts" (Stokes et al 1994:1).	Upper deposits were highly disturbed, although apparent *in situ* artefacts were recovered below a layer of "clean" sand (Stokes et al 1994:18-19). The shell, bone and charcoal came from all levels of testpits, including the disturbed upper deposits. The bone material included sheep remains and the shell were oyster and mussel (Stokes et al 1994:22). It was thought that the shell may have come from a disturbed and redeposited Aboriginal midden but there was no evidence to confirm it (Stokes et al 1994:24).
Stanton 1999	Queens Domain Aboriginal Assessment	Brief period of survey failed to identify any new archaeological sites.	-/-
Austral Archaeology 2002	Queens Domain Cultural Heritage Management Plan	-/-	Creation of map (based on Stanton 1999) showing location of known Aboriginal cultural heritage within the Queens Domain, and identification of areas of low and high archaeological sensitivity (Figure 25).
Stanton 2005	Domain Highway	No archaeological material identified.	High levels of disturbance noted in study area.
Sainty 2007	Proposed route of foreshore path between Old Beach and Bridgewater.	Confirmed presence of two previously recorded shell middens, sites AHR1335 and AHR1372.	-/-
CHMA 2010	Domain Highway	No archaeological material identified.	"Despite the generally poor conditions of surface visibility...and the large number of registered Aboriginal heritage sites recorded in the general vicinity...the negative results of the field survey are assessed as being an accurate reflection of the general absence of Aboriginal sites within the study area" (CHMA 2010:1).

Reference	Study Area Location / Description	Results	Site Distribution / Conclusion
CHMA 2014	Queens Domain	Confirmed presence of two previously identified sites. AHR11850 is an artefact scatter containing eight artefacts, and AHR11851 is a shell midden where a potential glass artefact was identified (CHMA 2014:2).	Both sites located on a ridgeline approximately 300 metres west of the River Derwent. The shell midden was located on the upper, south-east slope of a hill (2014:2).

Table 9: A summary of archaeological consultant reports from the region

Reference	Study Area Location / Description	Results	Site Distribution / Conclusion
Austral Archaeology 2002	Queens Domain Cultural Heritage Management Plan	-/-	Creation of map (based on Stanton 1999) showing location of known Aboriginal cultural heritage within the Queens Domain, and identification of areas of low and high archaeological sensitivity (Figure 25).
AHR5521	Temple House, Hobart	Two artefacts (flake and scraper) recovered from within a demolition deposit. Oyster shell also recovered during excavation.	Both artefacts disturbed and re-deposited within demolition rubble associated with a mid-20th century building. It was thought that the oyster shell had been used in mortar and that it was unlikely that it related to the presence of shell midden.
AHR9676	TMAG Private Secretary's Cottage	Shell midden identified during historic archaeological testing – "fragments of mussel shell & stone flake" noted below a brick surface or deposit in three test pits. Material included "fractured and burnt mussel shell/s" and "a piece of flaked stone" from between 160 to 200 millimetres from the surface.	Test pits were located on top of an escarpment, near to the original shoreline behind a retaining wall. Assumed that the excavation had identified the remains of a midden which had later been covered by reclamation fill.

Table 10: A summary of relevant archaeological AHR site records from the region

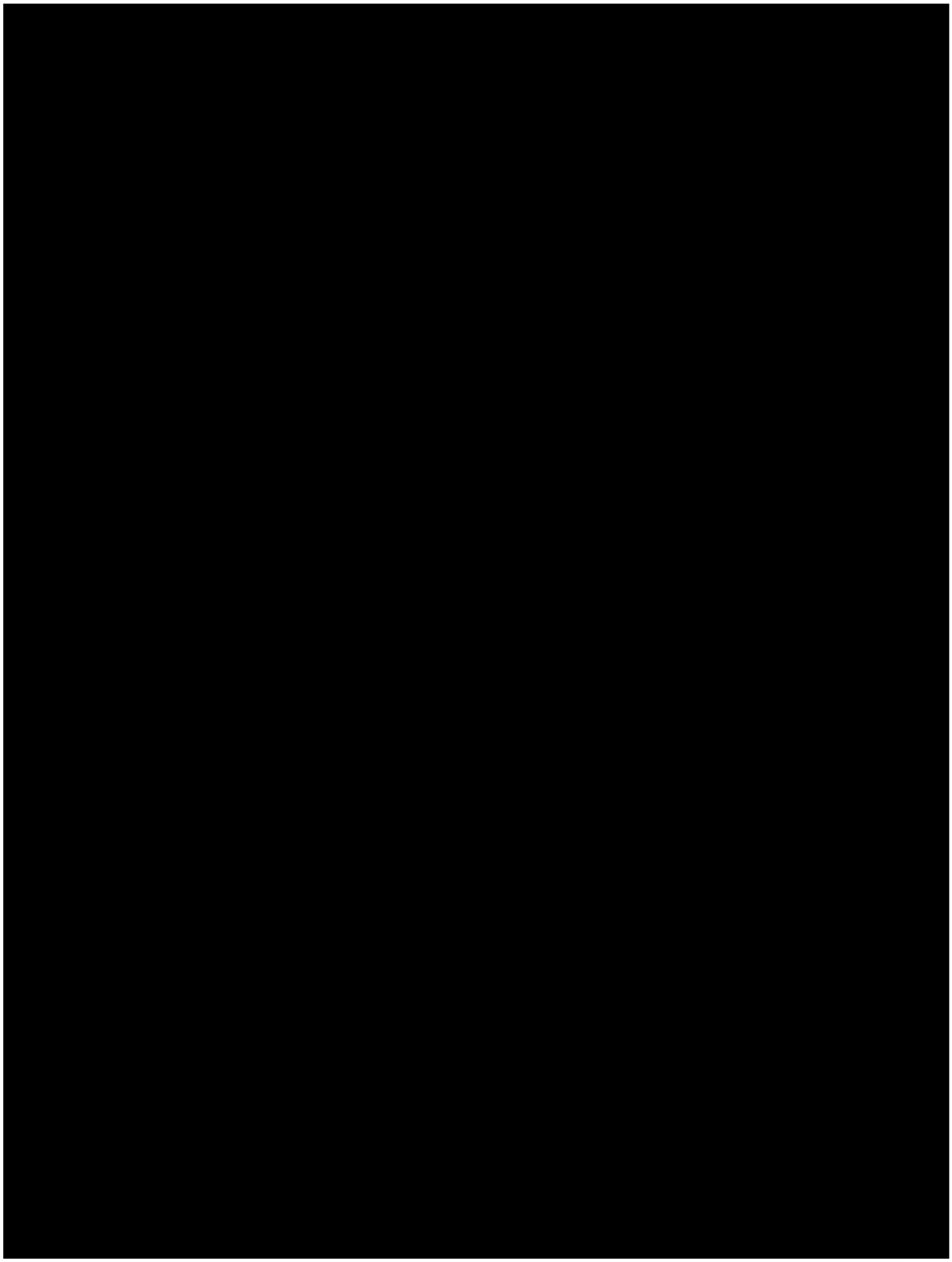


Figure 25: Areas of Aboriginal archaeological potential within the Queens Domain (Austral Archaeology 2002:5, based on Stanton 1999)

2.2.10 Archaeological Investigations within the study area

The study area was subject to an Aboriginal archaeological assessment undertaken by Steve Stanton in 1999 which formed a key component of the cultural heritage assessment undertaken by Austral Archaeology (2000a).

The site inspection undertaken by Stanton covered the entirety of the study area, and did not identify any sites of Aboriginal cultural heritage, heritage values or landscape values, including plants which may have cultural associations. However, Stanton noted that, in common with other sites in Central Hobart, it was possible for Aboriginal cultural heritage to survive intact below later European disturbances (Stanton 1999:4).

While acknowledging that the majority of the study area consisted of reclaimed lands, he identified an area of archaeological potential based on the original high water mark of the headland which he considered archaeologically sensitive (Stanton 1999:5, Figure 1). Stanton also recommended an archaeological sub-surface testing programme be developed prior to any works occurring above the high water level of the original shoreline (Stanton 1999:8).

Stanton's assessment of the area of a culturally sensitive zone based on the original shoreline of the headland (Stanton 1999: Figure 1) has informed all subsequent work relating to the Aboriginal cultural heritage potential of the study area.

2.3 Predictive Modelling

2.3.1 Aboriginal Material Traces Within the Local Region

Based upon analysis of information obtained from the AHR site search, the local and regional archaeological and environmental contexts, the types of sites which occur in the wider region and may occur within the current subject land are considered below.

Shell Middens range from thin scatters of shell to deep, layered deposits which have built up over time. They are generally found on the coast, but can be around inland lakes, swamps, and river banks. Shell middens are places where the debris from eating shellfish and other food has accumulated over time.

Open Camp Sites or Isolated Finds of durable material of flaked or ground stone that have been discarded across the site may be present. The presence of manuports potentially could occur at the study area. Manuports are stone artefacts of raw materials not naturally occurring within the soil profiles of a given site; essentially they have been brought onto the site by Aboriginal people from somewhere else.

Rock Shelter Sites are rock overhangs, which have artefacts on the surface of the deposit or within the deposit itself. Other forms of archaeological evidence commonly found within shelter sites are occupation deposit (i.e. stone artefacts, bone, shell, charcoal and artwork).

2.3.2 Predictive Statement

In general, an archaeological predictive statement on any study area draws on surrounding environmental data, previous archaeological research and any existing predictive models for Aboriginal occupation. Another essential aspect to predicting the archaeological integrity of a site and something that must be considered is previous land uses of the study area and the degree of disturbance. These are addressed in the following discussion.

The moderate climate of the Derwent estuary is believed to have been highly conducive to Aboriginal occupation in the past. The study area lies within a resource base associated primarily with the estuary of the River Derwent and the fresh water source of the Domain Rivulet. Habitats associated with the river and waterways would have supported a wide range of animals, fish, birds and mammals.

Due to the environmental setting, the Derwent Estuary landscape would have been subject to a variety of human activities. This primarily would have been due to the presence of sheltered camping locations followed by good resource availability in the immediate area and the potential for fresh water to be running in the rivulet. Activities undertaken in the vicinity of the study area would have included camping, hunting, gathering, cooking, ceremonies, and other cultural activities associated with semi-permanent settlement sites in the region. Some of these activities, mainly the results of resource gathering (i.e. shell midden material) and stone tool knapping, are seen in the archaeological record.

In predicting site types within the study area one would expect to find isolated artefacts and scatters on the ground surface of sensitive landforms, scarred trees in areas of remnant native vegetation, and rock shelters in areas of suitable geology. Locations of likely site recordings predictably may occur in areas of high ground visibility such as around dams, the base of trees, tracks and around the disturbances of the building constructions. However, surface sites will probably not be visible in the vast majority of present study area due to the ubiquitous asphalt surface.

If midden material or stone tools are recorded, they are likely to conform to other known sites in the region. This means that tools are likely to relate to occupation phases of the late Pleistocene through to the late Holocene. If stone tools are present on site they will predictably be made from material sourced from local quarries and will consist of igneous rocks including indurated cherty hornfel, while middens are likely to consist predominantly of mussel or oyster shell. These sites may be the results of activities attributed to people of the Mouheneenner clan of the South East Nation.

In summary, the main trends broadly seen across the Derwent Estuary are that:

- Archaeological sites have the potential to occur on most landforms, although site frequency and density are dependent on their location in the landscape.
- Middens occur in highest density within 200 metres of the shoreline.
- Aboriginal scarred trees may still be present in areas where remnant old growth vegetation exists and where land clearance has not occurred.
- Artefact scatters are commonly located in close proximity to permanent water sources, on north-facing slopes with good drainage.
- Fewer sites occur on ridge tops, crests and sloping topography.
- While surface artefact scatters may indicate the presence of subsurface archaeological deposits, surface artefact distribution and density may not accurately reflect those of subsurface archaeological deposits.
- Undisturbed areas close to the River Derwent are to be considered archaeologically and culturally sensitive due to the frequent evidence of Aboriginal occupational evidence in the vicinity.

While predictive models are useful for providing scientific frameworks which can be used to predict past behaviours and probable occupation sites, humans work on complex interrelated social connections that are also relevant but cannot necessarily be traced through the archaeological record.

With this caveat in place, it can be said that the general studies previously undertaken for the Derwent estuary, the specific investigations undertaken surrounding the study area and the search of the AHR database have helped to predict what site types could have been expected during the test excavations for this particular assessment. These are:

- Shell middens are highly likely to be present due to the former shoreline of the River Derwent passing through the site.
- Surface open camp sites or isolated finds of flaked or ground stone are moderately likely to be present in areas associated with the Domain Rivulet, while artefact scatters or isolated artefacts may be present associated with the midden material.
- Scarred trees will not be present due to the lack of any remnants of native vegetation within the study area.
- Rock shelter sites will not be present due to the lack of suitable rock outcrops in the study area.

3.0 RESEARCH DESIGN AND FIELD METHODS

The purpose of this section is to "outline and justify the survey strategy and provide a replicable description of the field methods employed" (AHT 2013:18). However, due to the nature of the historical works which have occurred in the study area, subsurface testing rather than a pedestrian survey has been identified by Austral Tasmania as the methodology most likely to confirm the presence or absence of Aboriginal cultural material within the study area.

While test excavations can normally be undertaken without the need to apply for a permit under the *ARA 1975*, the study area is situated on Crown land so a permit was required prior to test excavations commencing. Therefore, the following test excavation methodology was submitted to AHT to be endorsed as the approved test excavation sampling strategy for undertaking test excavations within the study area.

It should be noted that following the formal briefing with AHT, advice was received that it would not be necessary to strictly adhere to the Sampling Guidelines in respect to the following points:

- A statistician will not be required to assist with developing the test excavation methodology, as the purpose of the test excavations is to target a known landscape feature (i.e. the original shoreline) and not to provide a random data samples from across the study area.
- Excavation in obviously imported or disturbed fill will not need to be excavated in spits.

3.1 Proposed Test Excavation Methodology

Sampling works were carried out following receipt of permit number 1415-05, issued under the *ARA 1975*.

For the purpose of this discussion, an individual test pit is understood to measure 500 millimetres^2 and, dependant on levels of disturbance, four individual test pits could be combined as required to form 1 metre^2 test pit.

The location of all test pits was decided during the fieldwork by the lead archaeologist following discussions with the Aboriginal heritage officer. Initially, it was anticipated that 15 test pits would be excavated along various parts of the railway embankment in order to confirm whether the original shoreline was present in the northern part of the study area and whether any *in situ* Aboriginal cultural heritage had survived the later disturbances. A further 10 test pits were to be excavated on the original shoreline, where no known early historical disturbance had occurred, while the remaining 5 test pits were to be located in the base of the test trenches undertaken to identify early historical archaeological remains. The provisional boundaries of these zones are marked on Figure 26.



Figure 26: Proposed zones for test pit locations – the embankment area (marked in orange), the area of known historical disturbance (marked in blue) and the area of no known disturbance (marked in green)
(source map: Google Earth)

However, provision was made so that, dependant on the results obtained during the Aboriginal and historic test excavations, it was possible to alter the number and location of test pits within the study area. For example, if results consistently showed that no traces of the original shoreline existed below the railway embankment, it was not necessary to excavate further test pits in that location. In contrast, should positive results be obtained from elsewhere in the study area, it would be beneficial to excavate additional pits in those locations to determine the nature and extent of the archaeological material present. These decisions could only be made in the field.

As per the Sampling Procedure, excavation was to be split into phases for the purpose of initially identifying the presence of Aboriginal cultural heritage and for subsequently confirming its extent.

3.1.1 Phase 1 Investigation

The Phase 1 investigative test pitting works proceeded according to the following methodology, in line with the Sampling Procedure and the discussions undertaken with AHT:

- Test pits were to measure 500 millimetres². Excavation in an undisturbed soil profile was to occur in spits of no more than 100 millimetres through to a culturally sterile, 'B' horizon deposit, or were to cease once an Aboriginal shell midden had been identified within a test pit.
- Where modern levelling deposits were encountered, the material was to be bulk excavated prior to the commencement of hand excavation in spits.
- Photographs were taken at the end of each spit and at the completion of the pit.

- Excavation tools were to include flat bladed spades or shovels, or any other suitable non-mechanical device. However, a mechanical excavator could be used to remove bitumen and any modern fill deposits in an area larger than each individual test pit in order to reveal the natural stratigraphy. Excavation would then proceed manually within the standard 500 millimetre² test pit. This was approved "in principle" by AHT in a verbal discussion (McFadden K, pers. comm. 21 May 2014). Alternatively, as discussed in the formal AHT briefing meeting, mattocks and pickaxes would be used to excavate through any modern fill deposits.
- Recording of each test pit was conducted during the excavation, with any disturbance or features noted. Each spit was allocated an artefact bag which included the site name, pit number, spit and date to allow accurate tracking of all excavated materials throughout each stage of fieldwork to avoid cross contamination.
- All excavated material were transported to the sieve station in buckets and transferred onto the large sieves for processing.
- 100% of excavated potential artefact bearing deposit was to be wet sieved. Water for the sieving station would be provided by a water tanker and pump (refer to Section 3.3 regarding wet sieving).
- On-site processing of excavated soils and artefact retrieval occurred through sieving using 3 millimetre and 5 millimetre nested sieves. Artefacts were collected from the sieves and bagged according to excavation pit provenance.
- Any non-Aboriginal cultural material was also collected from the sieve to document disturbance through the deposit.
- In the case that human skeletal remains were uncovered during the testing of the study area, all work was to cease immediately and the process identified by AHT was to be adopted. This required Police notification; the establishment of a buffer zone of at least 50 metres by 50 metres; and the assessment of the skeletal remains by the Police and/or coroner. Where skeletal remains were determined to be of Aboriginal origin, the coroner was to contact an Aboriginal organisation approved by the Attorney-General (AHT n.d.). The determination of whether the remains were of European or Indigenous origin would require the services of a suitably qualified forensic anthropologist. Human skeletal material of European origin would require management under the *Burial and Cremation Act 2002* and the advice and/or approvals of the Director of Public Health, Hobart City Council Cultural Heritage Officer and Environmental Health Unit and Heritage Tasmania.
- Each test pit was to be backfilled to the best ability of the archaeological team, using the sieved material excavated from the pits at the conclusion of the testing program. Alternatively, sterile material would need to be used to backfill the test pits.
- If a shell midden was identified, excavation work would cease in the relevant test pit and the midden will be recorded.

3.1.2 Phase 2 Investigation

Should a test pit contain five or more Aboriginal artefacts, it would be necessary to consult with AHT and commence excavation test pitting under Phase 2 of the Sampling Procedure. For each test pit identified as containing five or more Aboriginal artefacts, a total of at least four (4) additional test pits would be excavated, with one test pit located along each cardinal axis at a distance from the original test pit determined at the discretion of the archaeologist.

If required, excavation for the Phase 2 works would proceed as per the excavation methodology noted above with the following additional requirements, in line in line with the Sampling Procedures:

- Test pits were only to be excavated manually with an archaeological pointing trowel, and spits were to measure no more than 50 millimetres.
- The location of all *in situ* artefacts was to be measured in 3-dimensions and mapped relative to the pit edges.

Upon completion of the Phase 2 excavations, AHT were to be provided with preliminary results to enable a decision to be made as to whether extended excavation test pitting in line with Phase 3 of the Sampling Procedure was warranted.

3.1.3 Artefact Collection and Storage

Collection and temporary storage of all artefacts was to be undertaken according to the following methodology.

- Each artefact recovered during any phase of subsurface testing was to be relocated and temporarily stored at Austral Tasmania's office located at 333 Argyle Street, North Hobart 7000.
- The artefacts were to be cleaned and would undergo an artefact analysis which would aim to identify details including, but not limited to, raw material type, colour of material, type of break, platform, length, width and thickness of the artefact and weight.
- Upon completion of the artefact analysis, and dependant on whether backfilling of the appropriate test pit had already occurred, the artefacts would either be returned in a sealed plastic bag to the base of the pit from which they were recovered or buried in a location as close as possible to the pit. The location of all alternative artefact burial spots were to be recorded with a GPS and the location provided to AHT. This approach may have needed to be modified following consultation with AHT and the Aboriginal community.

3.2 Timing and Personnel

Aboriginal test excavations were undertaken between 12 January and 16 January 2015 inclusive by David Marcus (Excavation Director, Austral Tasmania), Miles Robson (Site Assistant) and Caleb Pedder (Aboriginal Heritage Officer).

3.3 Summary of Alterations to Excavation Methodology and Limitations

As fieldwork progressed, it was necessary to amend the excavation methodology slightly to allow for changing circumstances. In the first instance, the excavation methodology originally anticipated that a total of 30 test pits would be required to test the archaeological potential of the study area. However, in accordance with the proposed methodology and following consultation between the Excavation Director and Aboriginal Heritage Officer, additional test pits were excavated along the base of an embankment which contained traces of the original ground surface.

Therefore, a total of 33 test pit locations were chosen and excavation proceeded using a combination of mechanical excavation to remove modern fill deposits and hand excavation for controlled excavation work on natural soil profiles. In the majority of test pits, the natural soil profile was only identified below a depth of 1.5 metres where hand excavation was not possible, although hand excavation was able to be undertaken in a total of seven test pits.

Secondly, the historic test excavations had been undertaken prior to the commencement of the Aboriginal test excavations and the results had demonstrated that the levels of historic disturbance in the vicinity of Lord's House (marked blue on Figure 26) was higher than previously expected. As such, no test pits were excavated in this location but additional test pits were placed in the embankment area and the area of no known previous disturbances.

The third aspect of the archaeological fieldwork which required a deviation from the excavation methodology was in terms of the use of dry sieving rather than wet sieving of all soil deposits. Where hand excavation was undertaken, the soil profile consisted of material which passed easily through a sieve without the need for wet sieving to occur.

4.0 RESULTS

4.1 Introduction

The test excavations detailed in this section were undertaken by Austral Tasmania, on the basis of the predictive modelling and archaeological excavation methodology outlined above.

The test excavation programme was undertaken in order to determine the nature and extent of any possible cultural material contained within the study area. In particular, the testing aimed to investigate and determine the presence of either intact archaeological deposits relating to possible shell middens or the original headland, as well as assist in determining the archaeological significance of the location.

Test pit locations were chosen following on-site discussion between the Excavation Director and the Aboriginal Heritage Officer. The location of the pits helped formulate a clearer understanding of the deposition or disturbance processes at work in the surrounding area.

Figure 27 displays the location of test pits in relation to the previously identified zones of disturbance. Note that test pit numbers followed by a letter (i.e. 14A, 14B and 14C) relate to test pits which were either relocated due to the presence of a modern disturbance or for the potential for a new test pit to be hand excavated.



Figure 27: Location of numbered test pit in relation to the embankment area (marked in orange), the area of known historical disturbance (marked in blue) and the area of no known disturbance (marked in green)
(source map: Google Earth)



Figure 28: Location and number of hand excavated test pits (source map: Google Earth)

4.2 Test Pit Excavation Data

The following section provides an overview regarding the stratigraphy and excavation method for each of the 33 test pits, with further discussion of the results to follow in subsequent sections. Although labelled and scaled drawings of the hand excavated test pits were drawn, in accordance with the Guide, these have not been included in this report. Due to the destruction of any intact soil profile, the section drawings only serve to illustrate layers of modern fill, overlying either a single deposit of clay or bedrock.

Test Pit 1 – The test pit was hand excavated for the upper 500 millimetres, which confirmed the presence of modern fill deposits. The excavation methodology was changed to the use of a mechanical excavator and the test pit finished at a depth of 750 millimetres on bedrock. No Aboriginal cultural material was noted on the interface between the overlying historic fills and the underlying bedrock.

Test Pit 2 – The test pit was hand excavated. No Aboriginal cultural material was noted, although the test pit was abandoned after 200 millimetres due to flooding following heavy rainfall.

Test Pit 3 – The test pit was hand excavated for the first 900 millimetres before using the mechanical excavator. Excavation ceased at the maximum reach of the mechanical excavator at a depth of 3 metres, still within historic reclamation fills. No Aboriginal cultural material was noted.

Test Pit 4 – The test pit was machine excavated and excavation ceased at the maximum reach of the mechanical excavator at a depth of 3 metres, still within historic reclamation fills. No Aboriginal cultural material was noted.

Test Pit 5 – The test pit was machine excavated but was abandoned due to the presence of a concrete service pipe at a depth of 0.7 metres. No Aboriginal cultural material was noted.

Test Pit 6 – The test pit was machine excavated and identified a clay deposit at a depth of 1.7 metres which was assumed to be natural. No evidence of any Aboriginal cultural material was noted on interface between overlying historic fills and the underlying clay.

Test Pit 7 – The test pit was machine excavated but the test pit was abandoned at a depth of 1 metre due to the presence of a plastic service pipe. No Aboriginal cultural material was noted.

Test Pit 8 – The test pit was machine excavated and ceased at a depth of 2.55 metres on the natural clay. No evidence of any Aboriginal cultural material was noted on interface between overlying historic fills and the underlying natural clay.

Test Pit 9 – The test pit was machine excavated and ceased at a depth of 2.5 metres on the natural clay. No evidence of any Aboriginal cultural material was noted on interface between the overlying historic fills and the underlying natural clay.

Test Pit 10 – The test pit was machine excavated but was abandoned at a depth of 1 metre due to the presence of the same plastic service pipe noted in test pit 7. The test pit was extended immediately southwards and excavation recommenced. No Aboriginal cultural material was noted.

Test Pit 10a – Southwards extension of the previous test pit. The test pit was machine excavated and excavation ceased at the maximum reach of the mechanical excavator at a depth of 2.6 metres, still within historic levelling deposits. No Aboriginal cultural material was noted.

Test Pit 11 – The test pit was machine excavated and identified a layer of dolerite rubble at a depth of 1.5 metres overlying the natural clay which was encountered at a depth of 1.6 metres. No evidence of any Aboriginal cultural material was noted on interface between overlying historic fills and the underlying natural clay.

Test Pit 12 – The test pit was machine excavated and excavation ceased at the maximum reach of the mechanical excavator at a depth of 2.2 metres, still within historic levelling deposits. No Aboriginal cultural material was noted.

Test Pit 13 – The test pit was machine excavated, although a modern service was noted in the western baulk of the test pit. The pit was extended slightly eastwards to compensate. Excavation ceased at a depth of 1.6 metres on natural clay. No evidence of any Aboriginal cultural material was noted on the interface between the overlying rubble deposit and the underlying bedrock.

Test Pit 14 – The test pit was machine excavated but was abandoned due to the presence of the same plastic service pipe identified in test pit 7 and test pit 10. The test pit was moved northwards and excavation recommenced. No Aboriginal cultural material was noted.

Test Pit 14b – The test pit was machine excavated but was abandoned due to the presence of a concrete plinth. The test pit was moved westwards and excavation recommenced. No Aboriginal cultural material was noted.

Test Pit 14c – The test pit was machine excavated and ceased at a depth of 0.6 metres on natural clay. No evidence of any Aboriginal cultural material was noted on the interface between the overlying historic fills and the underlying natural clay. However, as the clay was unexpectedly shallow, a new test pit was excavated 1 metre west of the test pit in order to enable a controlled hand excavation to occur on the interface between the overlying historic fill deposit and the underlying natural clay.

Test Pit 14d – The test pit was machine excavated to a depth of 0.5 metres, still within the historic levelling fills. Excavation continued through hand excavation to record the interface of the overlying historic levelling fills and the underlying natural clay. However, no evidence of any Aboriginal cultural material was identified during the hand excavation.

Test Pit 15 – The test pit was machine excavated and ceased at a depth of 1 metre on bedrock. The bedrock was covered by a remnant b-horizon consisting of natural clay, which appears to have been levelled. No evidence of any Aboriginal cultural material was noted on the interface between the overlying rubble deposit and the underlying clay.

Test Pit 16 – The test pit was machine excavated and ceased at a depth of 0.45 metres on bedrock. The bedrock appeared to have been artificially levelled and no evidence of any Aboriginal cultural material was noted above the bedrock deposit.

Test Pit 17 – The test pit was machine excavated and ceased at a depth of 0.5 metres with a partial appearance of bedrock. As with test pit 16, the bedrock appeared to have been levelled. However the deposit overlying the bedrock appeared to be highly contaminated and was giving off a strong hydrocarbon smell and the test pit was abandoned. No Aboriginal cultural material was noted.

Test Pit 18 – The test pit was machine excavated and initially ceased at a depth of 0.4 metres on bedrock in the northern half of the trench. Further excavation identified that the bedrock had been artificially levelled and cut to form a pit, approximately 0.5 metres wide. The material filling the pit contained a strong hydrocarbon smell and the test pit was abandoned. No Aboriginal cultural material was noted.

Test Pit 19 – The test pit was machine excavated and ceased at a depth of 0.2 metres on natural clay. No evidence of any Aboriginal cultural material was noted on the interface between the overlying historic fills and the underlying clay deposit. However, as the clay was unexpectedly shallow, a new test pit was excavated immediately adjacent in order to enable a controlled hand excavation to occur.

Test Pit 19b – Excavation commenced by hand and noted 200 millimetres of modern fill over the natural clay deposit. Fragments of extremely small (less than 10 millimetres^2) cockle shells were identified near the interface between the overlying modern fill and the underlying clay. However, it is likely that these shells were too small to form part of a shell midden and instead were part of a natural shell bed either at or immediately above the tidal interface. No Aboriginal cultural material was noted.

Test Pit 20 – The test pit was machine excavated and was abandoned at a depth of 0.9 metres due to an unexpectedly high water table. No Aboriginal cultural material was noted.

Test Pit 21 – The test pit was machine excavated and ceased at a depth of 1.2 metres on levelled bedrock. No evidence of any Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 22 – The test pit was machine excavated and ceased at a depth of 0.6 metres on bedrock. No evidence of any Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 23 – The test pit commenced by hand excavation and ceased at a depth of 0.3 metres on bedrock and clay. No evidence of any Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 24 – Excavation commenced by hand excavation and ceased at a depth of 0.5 metres on bedrock. No evidence of any Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 25 – Although a number was issued for this test pit, it was not utilised due to a clerical error.

Test Pit 26 – The test pit was machine excavated and ceased at a depth of 1.1 metres on bedrock. No evidence of any Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 27 – The test pit was machine excavated but was halted at a depth of 0.8 metres when the excavation identified a concrete feature under the northern and eastern baulks, preventing further excavation. No Aboriginal cultural material was noted.

Test Pit 28 – The test pit was machine excavated and ceased on bedrock at a depth of 0.2 metres. As the soil profile was unexpectedly shallow, the test pit was extended southwards to confirm the identify of the rock as being bedrock. While the extension did confirm the presence of the bedrock, it also demonstrated that it dropped sharply to the south and had been partially cut for the installation of a salt-glazed pipe. No Aboriginal cultural material was noted.

Test Pit 29 – The test pit was machine excavated but was halted due to the presence of asbestos within the test pit. No Aboriginal cultural material was noted.

Test Pit 30 – The test pit was machine excavated and identified a layer of dolerite rubble at a depth of 1.1 metres overlying the natural bedrock at a depth of 1.3 metres. No Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 31 – The test pit was machine excavated and ceased on bedrock at a depth of 1.8 metres. No Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 32 – The test pit was machine excavated and ceased on the natural clay at a depth of 1 metre. No Aboriginal cultural material was noted on the interface between the overlying fill deposit and the underlying bedrock.

Test Pit 33 – The test pit was machine excavated and was abandoned and the maximum reach of the mechanical excavator at a depth of 2.6 metres, still within historic levelling fills. No Aboriginal cultural material was noted.

4.3 Soil Profile Descriptions

A brief summary of the soils encountered during the test excavation is normally provided in order to ascertain the degree of integrity of the soil profile and explain the distribution of artefacts across the site. In this instance, the disturbance history of the site meant that the majority of soil profiles identified related to post-Aboriginal depositional process, while the natural soil profile was either rarely encountered or was subject to various forms of disturbance. As such, the following general description outlines both the natural, underlying soil profile and the profile associated with the post-Aboriginal occupation of Macquarie Point.

The test excavations identified significant variations in the soil profile across the study area in terms of the depth, level of disturbance and nature of the underlying natural soil profile. Profile depths of excavated test pits on this site ranged from a minimum of 200 millimetres to over 3 metres, with the depth of the natural soil profile being generally shallower in the western half of the study area and deeper in the east.



Figure 29: Depth and soil profile at completion of test pits (orange indicating clay, grey indicating bedrock and yellow indicating base not reached). Note that abandoned test pits are not shown (source map: Google Earth)

4.4 The Soil Profile

In general, while the soil profile across all the excavated pits varied dependant on whether the test pit was located on the railway embankment, the slope of the embankment or the levelled area to the west of the embankment, all test pits generally reflected the highly disturbed nature of the study area.

A general trend which was noticed was that bedrock was present in test pits in the western part of the study area. Moving eastwards, the bedrock was replaced by clay and it was not possible to reach the natural soil profile in the south-eastern test pits. This is seen as being representative of the original shoreline, demonstrating the rocky headlands in the west, the shoreline area and the steep drop-off below the tidal area.

The soil profile at the base of the railway embankment is typified by the stratigraphy of test pit 3, which consisted of several metres of poorly stratified dumps of clay, coal ash and other material. The fill became more homogenous at a depth of around 2.2 metres, below which the deposit was clayey and contained early 20th century waste material including stoneware bottles, part of a leather shoe and demolition rubble, including fragments of sandstock bricks. It was not possible for the mechanical excavator to reach the natural soil profile in any of the test pits in the south-eastern corner of the railway embankment.



Plate 1 North-west facing view of test pit 3 at limit of excavation. Note various dumps of soil visible in south-facing section.

The stratigraphy across the remainder of the site consisted of various historic fills designed to raise and consolidate the ground level for use by the railway or for vehicular access. The stratigraphy is typified by that of test pit 11, where a deposit of Fine Crushed Rock (FCR), approximately 300 millimetres thick and containing railway sleepers, overlay various deposits of differing compaction and composition of rubble, with a clear interface to the underlying natural clay at a depth of around 1.6 metres.



Plate 2 West facing post-excavation view of test pit 11 at a depth of 1.6 metres. Note the railway sleeper contained within the deposit of FCR (marked with a red arrow).



Plate 3 North facing, post-excavation view of hand-excavated sondage in the base of test pit 19.

While the depth of the natural soil profile was generally shallower in the western part of the study area, the stratigraphy itself changed little across the study area. For example, test pit 24, to the south-west of the railway embankment, consisted of approximately 200 millimetres of angular rubble overlying approximately 300 millimetres of black coal and ash material, which overlay the natural, undulating bedrock.



Plate 4 North facing, post-excavation view of hand-excavated test pit 24.

4.5 Evidence of disturbance

While it was expected that many of the test pits would show evidence of modern disturbance relating to the early land-use history of the site, the actual scale and extent of the disturbance was unanticipated. During the excavation, it became apparent that in addition to the expected deposition of levelling and reclamation fills, the natural bedrock had been worked, and it is possible that boring had taken place through the natural underlying clay.

Of note is that although evidence of post-European disturbance was noted from across the site, relatively few test pits actually contained artefactual material. While every test pit contained 20th century levelling fills, only four test pits contained artefactual material including stoneware vessels, glass fragments, shoe leather and other materials, although one of these pits, test pit 29, also included fragments of asbestos sheeting.

The remaining three test pits, test pit 3, 4 and 31, contained European material dating from the 19th and 20th centuries which is believed to be related to the use of the site as a rubbish dump for household waste from Hobart during an early phase of reclamation. Noticeably, these three test pits were located furthest south and east from the original shoreline, where the need for a reclamation fill would be the greatest.

Other test pits contained service pipes, or concrete plinths which prevented further excavation. However, of most interest were several test pits which demonstrated that exposed patches of bedrock may have been substantially modified prior to the deposition of the various levelling fills.

Throughout the western and northern part of the site, the bedrock naturally undulated, (c.f. test pit 1 [Plate 5] and test pit 28 [Plate 6]). However, the bedrock in test pit 16 and test pit 17 had been artificially levelled and was completely flat (Plate 7). Furthermore, a rectangular pit had been carved into the base of test pit 18 and filled with gravel and crushed bluestone (Plate 8). Unfortunately, due to contamination by hydrocarbon derivatives, it was not possible to further investigate this test pit.



Plate 5 North facing, post-excavation view of test pit 1, showing undulating bedrock.



Plate 6 North facing, post-excavation view of test pit 28, showing undulating bedrock.



Plate 7 East facing, post-excavation view of test pit 16, showing leveled bedrock.



Plate 8 West facing, post-excavation view of test pit 18, showing pit excavated into bedrock.

A full summary of test pits which contained direct evidence of either European artefactual material or disturbance are listed below in Table 11, followed by selected images from the excavation.

Test Pit	Nature of Disturbance
Test pit 3	Artefactual material from dump
Test pit 4	Artefactual material from dump
Test pit 5	Concrete pipe
Test pit 7	Plastic pipe
Test pit 10	Plastic pipe
Test pit 13	Plastic pipe
Test pit 14	Plastic pipe
Test pit 14b	Concrete plinth
Test pit 16	Levelled bedrock
Test pit 17	Levelled bedrock
Test pit 18	Levelled bedrock and excavated pit
Test pit 27	Concrete plinth
Test pit 28	Glazed pipe
Test pit 29	Asbestos fragments and historic artefacts
Test pit 31	Artefactual material from dump

Table 11: Summary of test pits which contained direct evidence of modern disturbances.



Plate 9 East facing, post-excavation view of test pit 7.



Plate 10 East facing, post-excavation view of test pit 27 showing concrete feature.

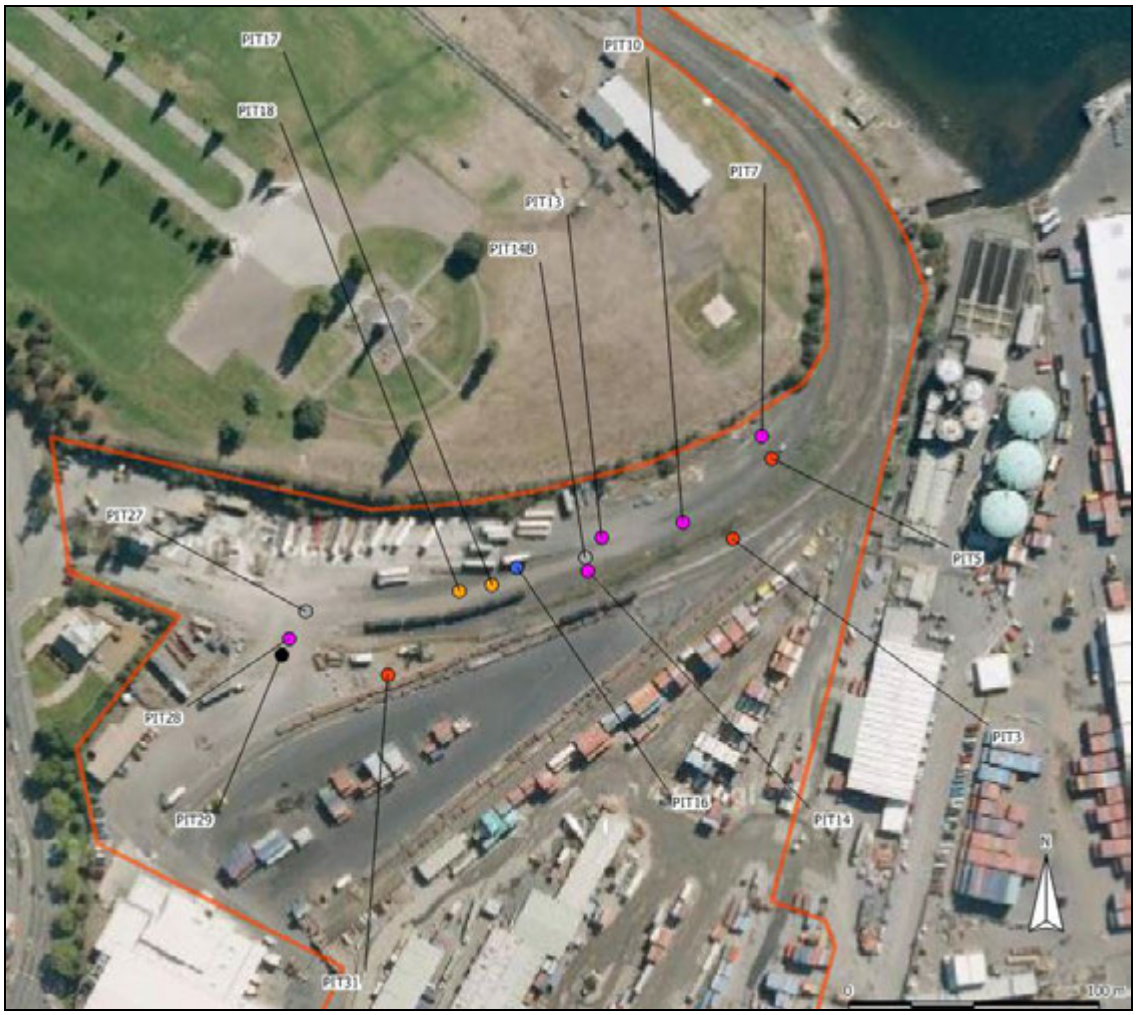


Figure 30: Evidence of European disturbance in test pits (red indicating rubbish dump, orange indicating hydrocarbon contamination, grey indicating concrete and purple indicating a service pipe). Note that completed test pits are not shown (source map: Google Earth)

4.6 Aboriginal Cultural Material

No worked lithics or suitable raw materials were identified during the test excavations. Shell material was only identified on two occasions; a single fragment of oyster shell recovered near the interface between the historic levelling fills and the underlying bedrock, and several, small fragments of oyster shell mixed in with the historic artefactual material from the rubbish dump. Neither occurrence of shell is believed to identify the presence of a shell midden within the study area.

5.0 INTERPRETATION AND DISCUSSION

The previous section summarises the course of test excavations undertaken over a period of five days in January 2015, focussing on the northern and western part of the site. Prior to the commencement of the archaeological testing, two scenarios were considered regarding the archaeological potential of the study area. In the first instance, the reclamation of the headland would have resulted in material being dumped over the site, burying the original shoreline but potentially leaving intact any middens or camp sites protected beneath the levelling fills. The second scenario was that the headland had been shaped prior to much of the early reclamation occurring, and all evidence of Aboriginal occupation of the headland was lost.

Unfortunately, the test excavations have confirmed that the second hypothesis is more likely and that no evidence of any Aboriginal cultural heritage is present within the study area. The natural shoreline of the headland is known to have been rocky (Figure 6), and a similar, undulating bedrock deposit was identified from several of the test pits. However, as other test pits demonstrated, the natural bedrock was also subject to levelling events, and a pit was also cut into the base of the rock, probably during the early to mid-20th century. As such, it is considered that levelling works were extensively undertaken across the site and have removed almost all traces of the original shoreline within the Macquarie Point promontory.

The lack of any Aboriginal cultural material is not seen as suggesting that Aboriginal people did not utilise the site in the past, and is instead interpreted as being solely a result of post-European disturbance and modification of the site.

The predictive model stated that areas of undisturbed land within the immediate vicinity of the River Derwent have high archaeological potential to contain archaeological materials. In this instance, it was considered that this material would include stone artefacts and shells, forming part of a midden deposit. By inference, the opposite statement is also true; that highly disturbed areas have no archaeological potential. Again, unfortunately, the test excavations documented in this report are only able to confirm this part of the predictive statement.

In summary, it is not considered that any part of the site contains known or potential heritage sensitivity, and that no proposed works threaten Aboriginal cultural material.

6.0 ABORIGINAL COMMUNITY CONSULTATION INCLUDING THE AHC

The information contained in this section has been authored by the Aboriginal Heritage Officer Caleb Pedder and adapted from the earlier report which accompanied the permit application.

The Australian Government provides a guide to consulting with Aboriginal people entitled *Ask First: a guide to respecting Indigenous heritage places and values*. A copy of this guide can be obtained from the Department of Sustainability, Environment, Water, Population and Communities in Canberra or from the following web page:

http://www.environment.gov.au/heritage/ahc/publications/commission/books/ask-first.html

The Australian Government position on consultation is explained on its web page, which contains the following relevant information:

Maintaining heritage values and places is a vital part of the community's 'sense of place', cultural identity and well-being. This is particularly true for Indigenous Australians, whose heritage creates and maintains links between ancestors, people and the land.

By using this guide and working together, we can ensure that the rights and interests of Indigenous people in maintaining their heritage is accepted and respected.

The International Council on Monuments and Sites (ICOMOS) provide guidance on Aboriginal involvement in Aboriginal heritage assessments within their "Code on the Ethics of Co-existence in Conserving Significant Places". The general thrust of the Burra Charter is to include Aboriginal people in all aspects of Aboriginal heritage investigations and management.

By consulting we acknowledge and facilitate Aboriginal participation in the management of their heritage. It also minimizes misunderstandings about the nature of the development and its possible impact on Aboriginal heritage.

In Tasmania, Aboriginal cultural heritage values are determined by consultation with relevant Aboriginal organizations, these include the state-wide Tasmanian Aboriginal Centre (TAC) and where necessary, smaller, regional groups.

The complexity of the consultation process will depend on the size and scope of the development project and its potential to impact on Aboriginal heritage values and country. If the project is large and has the potential to impact broadly on Aboriginal heritage then organisations may need to seek wider Aboriginal community involvement before they can advise on Aboriginal heritage values. Consulting broadly is a costly process and developers need to look at providing funds to facilitate this consultation. No Aboriginal organisation in Tasmania is funded to provide advice on Aboriginal heritage values.

As part of the initial consultation process the TAC was approached via email, phone and face to face discussion. The project was discussed with the TAC heritage contact, Andry Sculthorpe and a subsequent discussion was held with the TAC State Secretary Ruth Langford.

Following the completion of the draft Aboriginal archaeological assessment, further consultation was undertaken by the Aboriginal Heritage Officer Caleb Pedder. Mr Pedder advised that based on the results of the test excavations, no further comments had been received from the TAC (Pedder, C 2015, pers. comm. 29 July).

A copy of the draft report was also provided by post to the Karadi Aboriginal Corporation on 27 May 2015, and no comment was received.

7.0 STATEMENT OF SIGNIFICANCE

A statement of significance is not included in this report, due to the absence of any cultural material being identified during the test excavations.

8.0 CONCLUSIONS & RECOMMENDATIONS

The following recommendations are derived from the results of the test excavations and the previous archaeological assessment. The recommendations have been developed after considering the relevant legislation, the archaeological context, environmental information, consultation with the local Aboriginal community and the results of the test excavations. It is recommended that:

1) No further investigative work need be undertaken in regards to the Aboriginal cultural heritage within the study area. The test excavations have confirmed the disturbed nature of the study area.
2) In the event that Aboriginal archaeological material or deposits are encountered during earthworks, all work is to proceed in accordance with the Unanticipated Discovery Plan issued by Aboriginal Heritage Tasmania.
3) This report contains historic images which are subject to copyright. Should public exhibition of this document be required, it is advisable that the relevant copyright holders be contacted and permission obtained to use the images in the public domain.
4) This report contains descriptions and locational data relating to Aboriginal archaeological and cultural material and sites. Should public exhibition of this document be required, it is advisable that Austral Tasmania be contacted in order to ascertain information which should be removed prior to public release.
5) One copy of this report should be lodged with Aboriginal Heritage Tasmania for inclusion on the Aboriginal Heritage Register

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Final Phase I and Phase II Archaeological Excavation Report
Roundhouse Remediation Works
Macquarie Point

Version One

For the Macquarie Point Development Corporation

Aboriginal Heritage Investigations

AHI-011

AHTP-4159

PLN-20-295

30.04.23

Alan Hay

Caleb Pedder

Abstract

The archaeological works were undertaken in accordance with the following permits and have been completed:

- *Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination*
- *Permit for the purposes of Section 14 of the* Aboriginal Heritage Act *P155 11 June 2021 (P155)*
- *Permit for the purposes of Section 14 of the* Aboriginal Heritage Act *P155 11 August 2022(P183)*

Despite high levels of ground disturbance from the 1820s onwards the three trenches excavated at Mac Point during Phase I and Phase II of the archaeological programme accompanying the remediation works have produced important new information about the history of nipaluna and Mac Point.

Excavation produced results that were consistent with the predicted historical archaeological remains in the three trenches but encountered Aboriginal material culture in Trench One. The nineteenth century road surface in Trench Three was similar to the section of road earlier investigated during the historical testing of the site and confirms its continued presence throughout that area. The excavation of the turntable well in Trench Two has allowed the recording of the remains of that structure and the detailed documentation of the manner of its construction. Trench Two and Trench Three contained high levels of disturbance and demonstrated extremely low potential for the presence of any earlier surfaces.

In the case of the Lumber Yard, partly excavated in Trench One, not only were the anticipated structural remains present but a significant assemblage of Aboriginal cultural material as well. The intensive Aboriginal occupation of the site is likely from at least the early Holocene and it extended into the early colonial phase. As no historical record exists of an Aboriginal presence at Macquarie Point during the early colonial period, and very rarely for Hobart in general, the complex knapped glass artefacts recovered are highly significant within the context of both the historical and Aboriginal heritage management frameworks.

A total of 6,596 items were excavated and catalogued, all from Trench One. This included 31 lithic artefacts, eight knapped glass artefacts and 2,345 historical artefacts, 759 of which were faunal items. The count of shell fragments was 4,212 and this was accompanied by a large amount of shell fragments that were not counted individually but rather quantified according to weight. The items recovered from this excavation were primarily from disturbed nineteenth century deposits and were highly fragmented.

Therefore it is recommended that:

1. Consultation should be undertaken with the, the Hobart City Council and the Tasmanian Museum and Art Gallery regarding the ongoing care and conservation of the historical artefacts in the collection.
2. Ongoing consultation with Aboriginal community groups, the Aboriginal Heritage Council and Aboriginal Heritage Tasmania should determine the management of Aboriginal cultural materials.
3. Copies of this final excavation report must be lodged separately with the Tasmanian Aboriginal Centre, weetapoona, Karadi, Pungenna Community, South East Tasmania Aboriginal Corporation, the Tasmanian Aboriginal Centre, Hobart City Council,

Aboriginal Heritage Tasmania, the Aboriginal Heritage Council, the State Library of Tasmania and the Tasmanian Museum and Art Gallery.

4. Where practicable, effort should be made to identify any other contact artefacts in the current historical archaeological assemblage as well as in future excavated materials. Until such a time as this is able to take place, a precautionary approach towards the historical component of this assemblage should be adopted as outlined in Section 7.5. This would include Aboriginal community consultation as part of the decision making process for management decisions regarding the historical items in this assemblage.

Contents

Abstract 1

Contents 3

Figures 6

1.0 Introduction 11

1.1 Project Background 11

1.2 Summary of Results 16

1.3 Legislation and Approvals 18

1.4 Objectives and Structure 19

1.5 Authorship and Acknowledgements 20

1.6 Glossary 20

2.0 Environmental, Historical and Archaeological Background 23

2.1 Environmental Background 23
2.1.1 Geology and Soils 23
2.1.2 The Pleistocene Site Environment 24
2.1.3 The Holocene Site Environment 25

2.2 Historical Background 31
2.2.1 Ethnohistory 31
2.2.2 Site Specific History 35

2.3 Archaeological Background 59
2.3.1 Aboriginal Archaeological Investigations of nipaluna 59
2.3.2 The Archaeology of Contact in Tasmania 64
2.3.3 Previous Historical Archaeological Investigations at Macquarie Point 66

3.0 Research Design and Field Methods 69

3.1 Historical Archaeological Research Design 69
3.2.1 Tier 1 Research Questions 69
3.2.2 Tier 2 Research Questions 69
3.2.3 Tier 3 Research Questions 69

3.2 Aboriginal Archaeological Research Design 70

3.3 Usewear Analysis Research Design 70

3.4 Excavation Methods 71
3.4.1 Excavation 71
3.4.2 Recording 72
3.4.3 Artefact Management 73
3.4.4 Analytical Methods 73
3.4.5 Usewear Analysis 74
3.5 Summary 74

4.0 Results 77

4.1 Trench One - The Lumber Yard 79
4.1.1 Carpark, Overburden and Services 81

4.1.2 Locomotive Depot Demolition and Later Fills 85
4.1.3 Locomotive Depot Structures, Cuts and Construction 89
4.1.4 Lumber Yard Demolition 94
4.1.5 Lumber Yard Occupation and Structural Modification 98
4.1.6 Lumber Yard Structures, Cuts and Fills 106
4.1.7 Pre-colonisation Deposits 116

4.2 Trench Two - The Turntable Well 118
4.2.1 Turntable Well Construction 118
4.2.2 Circular Rail Footing 127
4.2.3 Modification of Turntable 130
4.2.4 Demolition Material and Fill 130

4.3 Trench Three - The Road 134

4.4 Summary 137

5.0 Analysis of Aboriginal Cultural Materials 138

5.1 Methodology 138
5.1.1 Lithic Analysis Methodology 138
5.1.2 Malacological Analysis Methodology 139

5.2 Overview and Spatial Distribution 140
5.3 Lithic Analysis 144
5.3.1. Morphology and Material 144
5.3.2 Cortex 149

5.4 Summary and Context of Usewear Analysis 154

5.5 Malacological Analysis 157

5.6 Summary 161

6.0 Analysis of Historical Archaeological Materials 162

6.0.1 Methodology 162

6.1 Overview and Spatial Distribution 164

6.2 Phase II 171

6.3 Phase III 179

6.4 Phase IV 184

6.5 Phase V 190

6.6 Phase VI 193

6.7 Discussion and Conclusion 195

7.0 Interpretation 196

7.1 Stratigraphic Integrity 196

7.2 Interpretation 199

7.3 Comparative and Regional Analysis 203

7.4 The Aboriginal Presence in Early Hobart and the Documentary Record 205

7.5 Management 206

7.6 Summary 207

8.0 Conclusions and Recommendations 209

9.0 References 211

9.1 Primary Sources 211
9.1.1 Newspapers and Journals 211
9.1.2 Archival Sources 211
9.1.3 Published and Miscellaneous Sources 211

9.2 Secondary Sources 212

Appendix A - Stratigraphic Table 216

Appendix B - Knapped Artefact Catalogue 231

Appendix C - Usewear Analysis Report 233

Figures

Figures 2.1.1 geological mapping of the of the area around the excavations site. The yellow area shown in plan is Jurassic dolerite, while the section to the south of the excavation areas is reclaimed land. 27

Figures 2.1.2 The pre-colonisation shoreline shown around the excavation area, with areas of shallow water, reef and deep water also shown (Basemap Supplied by Client). 28

Figures 2.1.3 Detail of the mouth of the Rivulet and Hunters Island after the construction of the causeway to Hunters Island, the current investigation site is located to the right of the image. The lack of detail around the excavation area in this image precludes accurate georeferencing, however the location of hunter street (shown leading to Hunter Island) provides some indication of the probable location of the site, i.e. to the east of the rivulet. Shoals or reefs, and areas of low water are also shown in this image (1820s CPO Hobart Plan14). 29

Figure 2.2.1 c.1826 floor plan of the Lumber Yard. Annotations refer to the following: 1: Carpenter's store; 2: Nailors; 3: Blacksmiths; 4: illegible; 5: illegible; 6: illegible; 7: illegible; 8: Cooper; 9: Painter; 10: Saddler; 11: Wheel smith; 12: Plumbers; 13: Gatekeeper's House; 14: tool shed; 15: Office; 16: Carpenter's office; 17: Engineer's office; 18: Carpenters; 19: Carpenters; 20: Carpenters; 21: Turners; 22: Cabinet Makers. North to top of figure (TAHO, PWD266/1/707, Plan-Royal Engineer's office and out buildings, Hobart. Reproduced with permission). 40

Figure 2.2.2 Undated, probably c.1827 floor plan of the Lumber Yard. Beginning at the bottom right and proceeding clockwise: 1: Turners Shop; 2: Carpenters Shop; 3: Engineers Office; 4: Nailors Shop; 5: Blacksmiths Shop; 6: Armourers; 7: Wheelwrights; 8: sawyers shades (i.e., open structure); 9: Gateway; 10: sawyers shades (i.e., open structure); 11: Bog House; 12: Cooperage; 13: Bag Maker; 14: Tin Smiths Shop; 15: Painters, Glaziers & Plumbers Shop; 16: Sadler and Harness Maker; 17: Overseer of Yard's Office; 19: Mason, Bricklayers and Quarry Store; 20: Gate Keeper's Rooms. North to top of figure (TAHO, PWD266/1/708, Plan-Lumber Yard (later Royal Engineers Office) with index to buildings. Reproduced with permission). 41

Figure 2.2.3 Undated, probably c.1827 floor plan of the Lumber Yard. Beginning in the long room the top right and proceeding clockwise: 1: Smiths Shop to contain 13 fires; 2: Carpenters; 3: Engineer's Office; 4: Constable of the gate; 5: Principal entrance; 6: Superintendent's Parlour; 7: Bedroom; 8: Pantry; 9: Bedroom; 10: Kitchen; 11: Courtyard and privy; 12: Store House; 13: Door leading to wood yard; 14: Occasional entrance to wood yard; 15: Storekeeper; 16: a 'range' of divided sawpits, the whole contained within a single excavation and covered by a roof; 17: Turners & Carpenters; 18: charcoal; 19: drying shed heated by flues to prepare timber (TAHO, PWD266/1/710, Plan-Lumber Yard, Hobart (later Royal Engineer's Office). Architect, Public Works Department. Reproduced with permission). 42

Figure 2.2.4 1847 watercolour taken from Macquarie Point, looking south. The Engineers Jetty is in the foreground (National Library of Australia, Stanley, CE, Sullivan's Cove & Mount Nelson from the Demesne (i.e. Domain) Hobarton, NLA, nla.obj-134676120-1. Out of Copyright). 47

Figure 2.2.5 1872 plan of the Royal Engineers Complex. Masonry buildings are shown by pink shading, timber buildings by grey. Remediation area outlined in blue (TAHO, PWD266/1/714, Plan-Royal Engineers Premises, Hobart. Architect, Royal Engineers, 1872. Reproduced with permission). 48

Figure 2.2.6 Photograph showing the Drill Yard (note the cannons), slaughter yard and land reclamation beyond, looking to the north east (Tasmanian Museum and Art Gallery, Q2001.15.56.57, The Old Drill Yards.). 49

Figure 2.2.7 Photograph of the Southern Volunteer Artillery in the Drill Yard, looking to the north east. Note the removal of buildings from the eastern side of the yard (Tasmanian Museum and Art Gallery, Q11915, Southern Tasmanian Volunteer Artillery, 13-pounder, c.1890, Lower Macquarie Street. Reproduced with permission). 49

Figure 2.2.8 1915 blueprint for the roundhouse. North to top of Figure (TAHO, P1330/1/2114, Plan 8827829 (12167) TGR - Main Line - Hobart Roundhouse - Plan, section and details [blueprint]). 55

Figure 2.2.9 1912 section of the roundhouse and an engine pit (TAHO, P1330/1/8467, Plan 3094083 (6130) TGR - Hobart Engine Shed - showing longitudinal section and details of roof, engine pit, sash). 56

Figure 2.2.10 1914 construction of the electrically driven turntable, 'the largest in the Commonwealth' (TAHO, The Weekly Courier, 28 May 1914:18). 56

Figure 2.2.11 The completed roundhouse, 1915. The double gabled roof of the goods shed can be seen in the background (TAHO, The Weekly Courier, 23 December 1915:23). 57

Figure 2.2.12 Detail of a 1984 aerial image showing the location of the excavation areas. 58

Figure 3.4.1 Looking to the north as the mechanical excavators commence the excavation of the turntable well by removing the asphalt of the former car park (11.02.21). 75

Figure 3.4.2 Looking towards the west and showing the grid system and excavation tools utilised at the site (14.08.21). 75

Figure 3.4.3 Looking to the northeast and showing the grid system and photographic recording scales used for recording. The scales have 100mm marks (04.04.21). 76

Figure 3.4.4 Showing materials being wet sieved during excavation. The scale has mm marks (10.08.21). 76

Figure 4.0.1 The stratigraphic sequence (Harris Matrix) for all trenches in Phase I and Phase II of the Remediation Works archaeological excavation. 78

Figure 4.1.1 Overview of Trench One showing the key features and deposits. 80

Figure 4.1.1 Looking to the south showing the concrete pads [005] and [010] in the top left of the image beneath the car park surface [001] and the dolerite cobble fill [006] below this and the ashy gravel deposit [007] above the demolition rubble deposit [018]. The finely crushed dolerite gravel is visible in the top right of the image below the current car park surface. The scales have 100mm marks (24.02.22) 83

Figure 4.1.2 Looking to the northeast showing the cut for the 2015 archaeological test trench [004] cutting through the trench wall of the open area excavation and into the deposits below. The geofabric used prior to backfilling is visible in the centre of the image. The scales have 100mm marks (17.02.21) 83

Figure 4.1.3 Looking to the west showing the removal of the dolerite cobble fill deposit [006] by mechanical excavation and also showing the upper horizon of the gravelly ash deposit [007] below (14.08.21). 84

Figure 4.1.4 Looking to the north and showing the cut into the earlier asphalt, ash and gravel deposit [068] and the deposition of the dolerite cobble fill above it [006]. The scale has 100mm marks (08.08.21). 84

Figure 4.1.5 Overview of Trench One showing the later features of Phase VI and Phase VII that are present in its upper strata. 86

Figure 4.1.6 Clearly seen in this south facing section is current car park surface [001], the dolerite cobble fill [006] beneath it, the thin deposit of gravelly ash [007] and the concrete and brick round house wall [012]. The scale has 100mm marks (02.02.21) 87

Figure 4.1.7 Looking to the northwest showing the round house wall [012] and the rubble deposits [016, 107 and 031] are shown cover the toe of the concrete wall in the centre and right of the photograph. The scales have 100mm marks (03.02.21). 87

Figure 4.1.8 The gritty ash surface [007] with the ceramic pipe with concrete bedding [011]. The archaeological test trench [004] is shown to the left of the image. The scales have 100mm marks (03.02.21). 88

Figure 4.1.9 Looking to the south during the excavation of the dolerite cobble fill, visible in all of the sections around the trench. Showing the extent of the gravelly ash deposit [007]. The ceramic pipe with concrete bedding [011] is visible as well as a mortar stain indicating the top of the dolerite wall footing [013] in the right of the image. The scales have 100mm marks (02.02.21) 88

Figure 4.1.10 View to the north showing the dolerite wall footing [013] to the left of the image as well as the mortar and brick demolition deposit [018] covering the majority of the trench. In the foreground right and centre is also visible the uppermost fill in the service trench [021] containing the truncated iron pipe [022]. The scales have 100mm marks (24.02.21). 91

Figure 4.1.11 Looking to the west northwest and showing the brick platform abutting [014] the concrete and brick roundhouse wall stub [012]. The scales have 100mm marks (4.02.21). 91

Figure 4.1.12 Visible in the centre of this image and truncating the dolerite spoon drain [050] is the service trench [021] and the truncated iron pipe [022] that it contained. Visible immediately to the left of the service cut [021] is the steel pipe [033] set within the cut that contains it. The scales have 100mm marks (24.02.21) 92

Figure 4.1.13 Detail view of the cut [033b], fill [033a] and steel pipe cut into the dolerite surface [028]. The scale has 50mm marks (24.02.21). 92

Figure 4.1.14 Looking to the south over the extension of the service cut [021] as it leads further to the north through the centre of the interior of the dolerite cobble footings. The scales have 100mm marks (14.08.21) 93

Figure 4.1.15 Looking to the north and showing the demolition rubble [018] covering the eastern half of the excavation area, a clear slope downwards can be seen from the dolerite wall [013] to the east. The scales have 100mm marks (26.02.21). 95

Figure 4.1.16 Looking to the west and showing the brick rubble contained within the demolition deposit [018] once all of the brick fragments and mortar has been removed. The scales have 100mm marks (24.02.21). 95

Figure 4.1.17 Detail view of the surface of the bricks from the demolition deposit [018]. The scale has 50mm marks (24.02.21). 96

Figure 4.1.18 Detail view of the broad arrow markings on the bricks contained in demolition rubble deposit [018]. The scale has 50mm marks (24.02.21). 96

Figure 4.1.19 Detail view of the depth of demolition deposit that accumulated over the surface of the iron grille of the modified drain mouth feature [048]. The scales have 250mm marks (26.02.21). 97

Figure 4.1.20 Detail view of an accumulation of paint and mortar at the bottom of the demolition rubble [018] against the hard packed dolerite gravel surface [028] (26.02.21). 97

Figure 4.1.21 Looking to the north and showing the chimney base [069], the brick footing [100] between the chimney base [069] and the wall [013 and on the southern face of the chimney base]. Also visible is the small cut [105] along the northern face of the chimney base. The scales have 100mm marks (14.07.21). 101

Figure 4.1.22 Looking to the north and showing the brick drain [072] added into dolerite gravel surface [067] in the west of the trench. Also shown is the remnant dolerite wall footing [104] to the top of this photograph as well as the extension of the central dolerite wall footing [013] in the right of the photograph. The scales have 100mm marks (14.08.21). 101

Figure 4.1.23 View to the west showing the extension of the dolerite wall footing [013] the brick wall foot butted against it the additional footing built against this. In the background of the image can be seen the brick drain [072]. The scales have 100mm marks (14.08.21). 102

Figure 4.1.24 Looking down on the intersection of the dolerite wall footing [013] at the bottom of the image, the brick footing built against it [100] in the left of the image and the further brick footing that had built against that in the centre of the image [104] (14.08.21). 102

Figure 4.1.25 Looking to the south over the modified brick drain structure [048] and the disturbed gravel deposit [064] around the drain. To the right of grill for the drain is the brick platform (26.02.21). 103

Figure 4.1.26 Looking to the north over the modified brick drain structure [048] and the disturbed gravel deposit [064] around the drain. To the left of grill for the drain is the brick platform. Also shown is the section of brick and mortar demolition deposit [051]. The scales have 100mm marks (26.02.21). 103

Figure 4.1.27 Looking to the north and showing the modified brick drain structure [048] after the excavation of the rubble and fill within it. The scales have 100mm marks (04.04.21). 104

Figure 4.1.28 Looking to the east at the detail of the walls of the modified drain structure [048], the upper section of the drain structure, the mortar ramp in the centre of the photograph and the lower surface to the left. The scale has 50mm marks (04.04.21). 104

Figure 4.1.29 Looking at the surface of hard packed dolerite gravel [028] showing wheel ruts in its surface. Also shown is the archaeological test trench [003 and 004]. The scales have 100mm marks (04.04.21). 105

Figure 4.1.30 Looking to the north and showing the dolerite surface [067] in the west of this excavation area as well as the post holes [078-090] cutting thought the fill [066] and the lower dolerite surface [067]. The scales have 100mm marks (08.08.21). 105

Figure 4.1.31 Showing the features and deposits associated with the earlier phases of Lumber Yard structures . 108

Figure 4.1.32 Looking to the northwest at the completion of excavation and showing the interior of the dolerite and mortar footings in the centre of the image (08.08.21). 109

Figure 4.1.33 Looking to the north showing at the completion of excavation and showing the interior of the dolerite and mortar footings in the centre of the image. The scale has 100mm marks (08.08.21). 109

Figure 4.1.34 Looking to the north and showing the mortar staining [095] of the southern space inside the Lumber Yard structure. Also visible is the unbonded dolerite footing in the centre of the image and the paired brick footings [070] in the abutting the wall footing [013] in the right of the photograph. The scales have 100mm marks (08.08.21). 110

Figure 4.1.35 Looking to the west and showing a section view of the brick wall stub atop the dolerite wall footing [013]. The scale has 50mm marks (08.08.21). 110

Figure 4.1.36 Looking to the west and showing the brick wall stub atop the dolerite wall footing [013]. The scale has 50mm marks (08.08.21). 111

Figure 4.1.37 View to the west showing the spoon drain [050] set into the hard packed dolerite surface [028]. The scales have 100mm marks (04.04.21). 111

Figure 4.1.38 Looking west and showing the dolerite gravel surface [028], spoon drain [050], modified drains structure [048] and dolerite wall footing [013]. The scales have 100mm marks. (04.04.21). 112

Figure 4.1.39 Looking to the north and showing the dolerite surface [028] with wheel ruts in evidence as well as the archaeological test trench [003 and 004] while the small test trench visible in the left of the image contains the post [057] buried below the disturbed surface [061] which is also visible against the dolerite wall footing (04.04.21). 112

Figure 4.1.40 Sandstone step bonded to the exterior of the dolerite wall footing [013], also shown is the extent to which the concrete toe of the roundhouse wall [012] has covered the surrounding features. The scales have 100mm marks (04.04.21). 113

Figure 4.1.41 Detail view of the post [057c], post cut [057a] and fill [057b] beneath the disturbed gravel surface [061]. This feature has been exposed by a test pit cut through the gravel surface (12.04.21). 113

Figure 4.1.42 Detail of the two ferrous stains on the centre of the sandstone step, consistent with the marks left by bolts as would be present at the closure of a double door. The scale has 10mm marks. (04.04.21). 114

Figure 4.1.43 Looking west at the paired brick footings [070] against the interior face of the dolerite and mortar wall [013] Also visible is sandy mortar deposit on top of the sterile natural clay (08.08.21). 114

Figure 4.1.44 Looking west at the dolerite and mortar footing [101] inside the norther space of the interior of lumber yard structure against the interior face of the dolerite and mortar wall [013]. The scales have 100mm marks (08.08.21). 115

Figure 4.1.45 Detail view of one [097] the brick piers placed on top of the cut [023] into the natural deposits. The scale has 50mm marks (08.08.21). 115

Figure 4.1.46 Looking to the north and showing the excavation into culturally sterile soil [020] to the north of the dolerite footing [013]. The scales have 100mm marks (08.08.21). 117

Figure 4.1.47 Looking at the natural clay [020] at the bottom of Sounding Pit Two. The scale has 100mm marks (24.07.21). 117

Figure 4.2.1 Plan of the turntable well. 120

Figure 4.2.2 Looking to the north and showing the removal of the upper fill deposits within turntable trench after the removal the asphalt car park surface (04.04.21). 121

Figure 4.2.3 Looking to the northwest and showing the turntable well at the completion of excavation (04.04.21). 121

Figure 4.2.4 Looking southeast over the interior of the turntable well, showing the manhole in the centre of the image above the concrete capstan footing. The spoil displayed in this image is not associated with the currently excavated area. The scale has 100mm marks (04.04.21). 122

Figure 4.2.5 Section view of a portion of the turntable well wall. 123

Figure 4.2.6 View to the west showing the internal wall of the turntable. The lower wall [205a] is distinct from the upper course by texture and colour even at the distance from which the photograph was taken. The scale has 100mm marks (04.04.21). 124

Figure 4.2.7 View to the south showing the internal wall of the turntable. The lower wall [205a] is distinct from the upper course by texture and colour even at the distance from which the photograph was taken. The scale has 100mm marks (04.04.21). 124

Figure 4.2.8 Looking north at the access area that had been installed as part of the modification to the turntable. The scales have 100mm marks (04.04.21). 125

Figure 4.2.9 Detail view of the original concrete of the turntable well wall, showing the variation in the size of the dolerite gravel. The scale has 500mm marks. 125

Figure 4.2.10 Looking at the surface of the concrete floor of the turntable well. The scale has 50mm marks (04.04.21). 126

Figure 4.2.11 Detail of the damage to and the matrix of the concrete floor of the turntable well. The scale has 50mm marks (04.04.21). 126

Figure 4.2.12 Plan of a single section of concrete rail footing, showing drainage lines, well wall, and sloping well floor also. 128

Figure 4.2.13 Looking at the level area at the base of the turntable well wall. Visible in this image are the baseplates and bolts that held the rail in place as well as the impression of the rail in the surface of the concrete. The scale has 100mm marks (04.04.21). 129

Figure 4.2.14 Detail view of a typical baseplate the connected the lower rail of the turntable to the concrete footing at the base of the well wall. The centre measures approximately 160mm in length and the two exterior panels measure 80mm in length. The scale has 500mm marks (04.04.21). 129

Figure 4.2.15 Detail view of the junction of the early well wall (205a), showing regular formwork and a series of bolts and the newer concrete (205b), showing stay marks. The scale has 50mm marks (04.04.21). 131

Figure 4.2.16 Looking to the north and showing the coupling system and rails associated with the later modification to the turntable wall. The scale has 50mm marks (04.04.21). 131

Figure 4.2.17 Looking to the east showing the extent to which the earlier phase [205b] of turntable well wall construction has truncated and replaced by the later concrete. 132

Figure 4.2.18 Detail view of the later phase of wall construction poured on top of the earlier phase. The scale has 50mm marks (04.04.21). 133

Figure 4.2.19 Looking at the second iteration of capstan footing in the centre of the turntable well. The scales have 100mm marks (04.04.21). 133

Figure 4.3.1 Plan overview of Trench Three, the road is visible. 135

Figure 4.3.2 Looking to the northeast and showing the upper strata within this excavation area. The scales have 100mm marks (04.04.21). 136

Figure 4.3.3 Looking to the southeast over the excavated area of nineteenth century road. The cut for the service trench [315] is visible in the centre of the image and the concrete footing [316] is in the right of the image. The scale has 100mm marks (04.04.21). 136

Figure 5.2.1 Distribution of Aboriginal cultural material plotted against the early and features present at the site. 143

Figure 5.3.1 Dorsal surface of the silcrete flake (Artefact 9) of the lithic assemblage. 145

Figure 5.3.2 The ventral surface of the quartzite proximal flake (Artefact 21) of the lithic assemblage. 145

Figure 5.3.3 The knapped glass bottle base core recovered during excavation (Artefact 7) showing extensive flaking across its surface. 146

Figure 5.3.3 Marine adhesions on the ventral surface of a mudstone artefact (Artefact 11), some of which are similar to those left by Galaeolaria caespitosa. 152

Figure 6.1.1 Distribution of historical cultural material plotted against the early and features present at the site. 170

Figure 6.2.1 Bone button blank [3-92-604] recovered from the early strata. 174

Figure 6.2.1 Early shell edged ware [3-62-262], top, recovered from the early strata and a later iteration, bottom, of the same pattern [3-96-616] recovered from later strata. 174

Figure 6.3.1 Hand carved pen knife handle [3-93-605] showing a closed fist, a typical nineteenth century motif indicating strength and good fortune. 180

Figure 6.4.1 Tasmanian Local Forces button [3-106-671] produced by V&R Blakemore, England. 186

Figure 6.4.2 A Tasmanian Local Forces infantry tunic showing the type of button [3-106-671] recovered from the site (Infantry tunic : Tasmanian Local Forces REL/18979 and https://www.awm.gov.au/collection/C215915). 186

1.0 Introduction

1.1 Project Background

This report documents the results of the archaeological excavations undertaken from 1 February to 5 March 2021 and from 6 July to 6 August 2021 as part of the roundhouse remediation works at Mac Point as well as the analysis of the cultural material recovered from that site. These works are hereinafter referred to as Phase I and Phase II excavations. These excavations were completed by Austral Tasmania Pty Ltd (Austral Tasmania) on behalf of the Macquarie Point Development Corporation (MPDC). As Austral Tasmania ceased trading after the completion of excavation the MPDC engaged Aboriginal Heritage Investigations (AHI) to complete the report and associated specialist analyses.

The roundhouse remediation works of the former rail yard roundhouse and proposed future underground car park, includes the removal of contaminants from an initial area of approximately 2700m^2. This contamination includes petroleum hydrocarbons, polyaromatic hydrocarbons and metals. Remediation will be carried out by mechanical excavation of affected soils, for either disposal off site or *in situ* treatment. Excavation of contaminated soils will vary across the site but is expected to be conducted to a maximum depth of 2-4m below the current ground level.

A series of cultural heritage investigations had been undertaken at Mac Point (and are considered in Section 2.0 below) however a series of historical archaeological test excavations by Archaeological Management & Consulting Group at the site in 2008 and by Austral Tasmania in 2014 as well as their Aboriginal archaeological test excavations in 2015 culminated in the 'Macquarie Point Roundhouse Area Remediation Works Archaeological Sensitivity Report, produced by Austral Tasmania (2020). This identified key sites of historical archaeological potential identified within the roundhouse remediation area and, in consideration of the planning framework existing for the site, recommended their open area excavation.

This initial phase of archaeological excavation was carried out in accordance with 'Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination' granted under the *Sullivans Cove Planning Scheme 1997* and the *Land Use Planning and Approvals Act 1993* to carry out the remediation works (Phase I) (PLN-20-295). Specifically condition HER 6 of permit PLN-20-295 requires archaeological investigation of 'any features or deposits of an archaeological nature' that are discovered during excavation or disturbance. The works are subject to the archaeological provisions of Schedule 1 of the Planning Scheme and the first phase of historical archaeological excavations commenced on 1 February 2021. The area has been subject to high levels of past disturbances, and archaeological excavations commenced at three discrete locations at Macquarie Point (Figure 1.1.2 and Figure 1.1.3):

- The south west corner of the 1826-27 Lumber Yard
- A section of a nineteenth century road formation
- The 1914 railway turntable well.

While all of these areas contained the anticipated, significant historical archaeological material, two Aboriginal lithic artefacts (AH13899, AH13900) were also encountered on the 19 February 2021 within the trench investigating the Lumber Yard. Consequently, works halted around the deposit containing these artefacts while a permit under the terms of the *Aboriginal Heritage Act 1975* was applied for. This application included consideration of an expanded area of excavation that would allow for a full investigation of the significant historical archaeological features and deposits that had been identified in this area.

As an administrative step during the permit application process Aboriginal Heritage Tasmania created the site AH13901 to represent both the two identified artefacts (AH13899, AH13900) and the deposits

that they were drawn from. This site was given boundaries that were coextensive with the boundaries of Phase I excavation and the proposed boundaries of Phase II excavation.

Subsequently, the City of Hobart approved the expansion of the excavation as being works substantially in compliance with PLN-20-295 and a permit (P155) was granted under the terms of the *Aboriginal Heritage Act 1975*. Excavations recommenced on the 6 July 2021 with the trench at the Lumber Yard site extended further to the northwest (Phase II). During Phase II a substantial amount of Aboriginal and early colonial historical artefacts were recovered, albeit the Aboriginal material was drawn from disturbed contexts. These artefactual materials provide a significant amount of scientific information about the occupation of the site prior to and after colonisation.

Some of the Aboriginal artefacts recovered from the excavation were knapped glass and ceramic contact materials. In order to provide sufficient information for stakeholders to be able to decide the correct management of any potential contact items it was decided that the identification of these materials through usewear analysis would be an important component of post excavation analysis, as these items are commonly difficult to identify even in standard analyses by specialists. To this end a permit, of which part consisted of the proposal for a usewear analysis of up to 50 artefacts was completed and submitted on the 13 May 2022 with a permit (P183) being granted for the analysis on the 16 June 2022, the usewear workshop taking place on the 14 November and the analysis itself taking place from the 15 November to the 6 December with Mr Pedder returning the artefacts to Tasmania on the 7 December 2022.

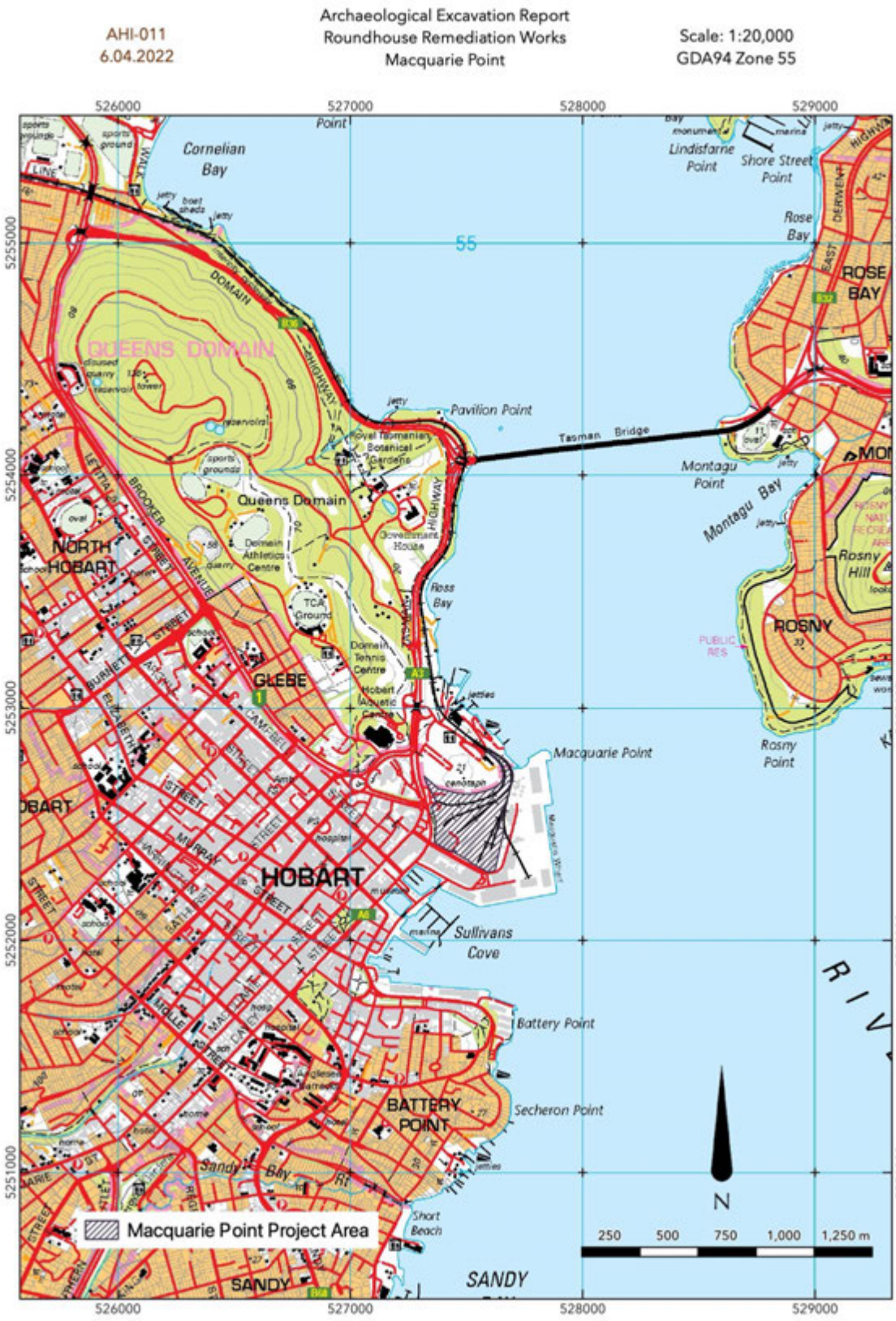


Figure 1.1.1 Overview of the Macquarie Point Study area within Hobart (Basemap: 1:25,000 Series Tasmap).



Figure 1.1.2 Overview of the trenches excavated as part of the archaeological works associated with the Roundhouse Remediation Works and the broader Macquarie Point study area (Basemap: Supplied by Client).



Figure 1.1.3 Overview of the trenches excavated as part of the archaeological works associated with the Roundhouse Remediation Works at Macquarie Point (Basemap: Supplied by Client).

1.2 Summary of Results

Excavation produced results that were consistent with the predicted historical archaeological remains in the three trenches but encountered Aboriginal material culture in Trench One, the potential for which was identified in only some earlier assessments, such as Stanton 2000 (Stanton's zoning was again summarised by Austral Tasmania in 2013) who predicted that the current areas of excavation held potential to contain Aboriginal archaeological material. The nineteenth century road surface in Trench Three was similar to the section of road earlier investigated during the historical testing of the site and confirms its continued presence throughout that area. The excavation of the turntable well in Trench Two has allowed the recording of the remains of that structure and the detailed documentation of the details of its construction. Trench Two and Trench Three contained high levels of disturbance and demonstrated extremely low potential for the presence of any earlier surfaces.

In the case of the Lumber Yard, partly excavated in Trench One, not only were the anticipated structural remains present but a significant assemblage of Aboriginal cultural material as well. The intensive Aboriginal occupation of the site is likely from at least in the early Holocene and extends into the early colonial phase. As no historical record exists of an Aboriginal presence at Macquarie Point during the early colonial period, and very rarely for Hobart in general, the complex knapped glass artefacts recovered are highly significant within the context of both the historical and Aboriginal heritage management frameworks.

A total of 6,596 items (MNI=7967, 9,034.79gm) were excavated and catalogued, all from Trench One. This included 31 lithic artefacts (296.5gm), eight knapped glass artefacts (301.5gm) and 2,345 historical artefacts (MNI=540, 870gm), 759 of which were faunal items. The count of shell fragments was 4,212 (MNI=218, 7, 566.2gm) and this was accompanied by a large amount of shell fragments that were not counted individually but rather quantified according to weight. The items recovered from this excavation were primarily from disturbed nineteenth century deposits and were highly fragmented.

1.2.1 Lumber Yard

Although the majority of structural features associated with this area of the site were present and in good condition, including the wall footings, courtyard surface and work station footings, there was a dearth of archaeological deposits containing artefacts from the occupation of this site from the 1820s through to the early twentieth century. Except within the deposits predating the construction of the lumber yard few artefacts were present within this excavation area. What artefactual evidence was from the occupation of this site from the 1820s onwards was primarily associated with the occupation of this site by the volunteer defence forces in the late nineteenth century. These early deposits contained not only Aboriginal cultural material but a range of early artefacts representative of the domestic European occupation of this site prior to 1826 and included Chinese export porcelain, shot, gunflint and buttons.

The structural evidence revealed in this trench was substantial and represented the use of the site from the construction phase through to the operation of the rail yard in the twentieth century. The cut into the natural clays, where cultural deposits had been removed to create a level building surface, that formed the first step of lumber yard construction was present across the entire excavation trench. Set on to this levelled natural surface was the dolerite footings of the wing of the lumber yard, which formed the dominant feature in this trench. To the south of these footings the crushed dolerite courtyard surface was extant and in good condition with a dolerite cobble drain feeding a subsurface brick box drain. These drain features had undergone some modification, likely during the late nineteenth century, and appear to match the apparently *ad hoc* construction of two small buildings on the southwestern extent of the lumber yard footing.

The brick footings of these two small additional buildings best represent the changing use of the site. Not only are these footings examples of clear additions to the original lumber yard structure but have themselves undergone several subphases of development with services and drains being added to

what would have been fixtures in the interior. As elsewhere in this trench scant artefactual evidence associated with the operation of these structures remained to be excavated.

The majority of nineteenth century features and deposits within this trench were located at a depth of 1,000 - 1,500mm below the current car park surface and were thus in a shallow 500mm band across the site. The upper portions of the lumber yard features and, on the balance of probability, the majority of any occupation deposit that would have been present had been removed during the clearance of the site in the early twentieth century for the construction of the roundhouse and ancillary structures.

The features and deposits associated with the roundhouse were limited to three key types; the concrete and brick wall footing below the eastern baulk of the trench, a 100-250mm thick deposit of ash, boiler scale and gravel representing redeposition of railway material during deposition and some deeper services that had been sunk into the earlier deposits below. It is likely that the rail yard features had been largely demolished and removed in the late twentieth century.

There is strong evidence that the construction of the roundhouse has removed earlier features and deposits within its footprint, confirming the findings of earlier test excavations completed at the site. This is especially the case as the band of earlier cultural material is relatively shallow, 500mm, and would have been readily destroyed by the construction of the roundhouse footings present at the western edge of the Lumber Yard Trench.

1.2.2 Nineteenth Century Road Formation

The nineteenth century road formation was found to be present, similar to that recorded in earlier test excavation and severely truncated by services and features associated with the railway phase of occupation. No unexpected features or deposits were encountered within this area of excavation. Twentieth century fill deposits were present above the road surface and planed dolerite bedrock present below.

1.2.3 Turntable Well

The turntable well was present at its predicted location and the wall and floor of this feature were mostly intact although the majority of the metal equipment associated with this feature had been removed. This feature has been filled with concrete rubble from the demolition of the roundhouse structure and contained a small amount of ferrous railway furniture associated with the operation of the railway, such as structural fittings, tracks or components of rolling stock.

1.2.4 Aboriginal Cultural Material

The contact deposits present within the Lumber Yard Trench had a complex taphonomic history, that includes a substantial contribution of material by Aboriginal people both before and after colonisation. These deposits began as shell material and lithic artefacts discarded by Aboriginal people at this location during the early Holocene, forming a midden of a type common to the Derwent Estuary. With the occupation of the site by a colonist in 1806, these earlier deposits were heavily disturbed and reworked through gardening and agricultural activity, with very early colonial artefacts also being added at this time. It is probable that it was also during this period that the knapped glass and earthenware artefacts were also left here by Aboriginal people, who continued to be present on site even after the beginning of colonisation. These deposits were once again heavily disturbed through the construction of the convict buildings in the 1820s. Although the deposits that comprise this soil were recorded as three separate contexts [034, 066, 076] they are similar in character and stratigraphic position, separated only by their horizontal location within the site and are clearly different areas of redeposition of the same material.

The shell material present in the garden soil deposits is highly fragmented and a comparatively small proportion yet it is highly likely that these shell materials were deposited by Aboriginal people. This is not only the case given the location of the excavation, the pattern of sites in the surrounding landscape and the presence of associated stone tools but also is indicated by the composition of shell species

that are present within the midden. Mussel (*Mytilus planulatus*) is the dominant shell species represented and oyster (*Ostrea angasi*) follows this but in a lesser amount. Small amounts of other species, such as periwinkle (*Bembicium auratum*) were also present. This conforms to other middens that have been excavated around nipaluna and the comparative absence of cockles (*Anadara spp.*), a favoured food source for colonists is further indicative that this material is associated with the Holocene occupation of this site by Aboriginal people.

With 32 artefacts recovered and identified at this stage of analysis silcrete and chert dominate the assemblage, as is common in other nipaluna midden sites, and a number of other material types including jasper and hornfels. Flakes are the most common artefact type found and this is again consistent with other midden sites around nipaluna. Some of the lithic artefacts presented evidence of marine adhesions on knapped surfaces, indicating that they had been submerged or within the intertidal zone subsequent to their manufacture. This may indicate that these artefacts had been redeposited from a nearby beach or rocky shore.

At least two clearly knapped glass artefacts were identified during excavation . These finds clearly demonstrate unrecorded evidence of the presence of Aboriginal people within Hobart after colonisation. While the Colonial Chaplin Robert Knopwood records Aboriginal people repeatedly visiting the land he occupied at Battery Point up to 1818 there are only a handful of other documents that record the presence of Aboriginal people within nipaluna after colonisation and they indicate only brief visits rather than the ongoing interaction documented by Knopwood.

1.3 Legislation and Approvals

The three key pieces of legislation that applied to the excavation of this site were the *Sullivans Cove Planning Scheme 1997*, the *Aboriginal Heritage Act 1975* and the *Land Use Planning and Approvals Act 1993*. As has been detailed above, each of these pieces of legislation required separate permitting and approval process for the excavation of the archaeological materials at the site. As noted above a permit under the *Aboriginal Heritage Act 1975* was not initially required by Aboriginal Heritage Tasmania, the discovery of Aboriginal cultural material meant that a permit was sought during the process of excavation.

Under the auspices of these three pieces of legislation a number of specific documents, issued under the auspices of the above Acts, have conditioned the management of heritage and the writing of this report, these are;

- *Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination*
- *Permit for the purposes of Section 14 of the* Aboriginal Heritage Act *P155 11 June 2021 (P155)*
- *Permit for the purposes of Section 14 of the* Aboriginal Heritage Act *P155 11 August 2022 (P183)*

Some of these documents rely upon specific archaeological methodologies submitted by Austral Tasmania and AHI as part of the approvals process and incorporate them into their conditions. These documents by are:

- *Macquarie Point Roundhouse Area Remediation Works. Archaeological Sensitivity Report*, AT0290 - Austral Tasmania Pty Ltd, 13 May 2020
- *Application for a Permit (Section 14 of the Aboriginal Heritage Act 1975*) - Austral Tasmania Pty Ltd, 15 March 2021
- *Application for a Permit (Section 14 of the Aboriginal Heritage Act 1975*) Aboriginal Heritage Investigations, 13 May 2022

- *Final Mac Point Aboriginal and Historical Archaeological Excavations - Phase III Application* - Aboriginal Heritage Investigations ,13 May 2022

1.4 Objectives and Structure

The objective of this document is to report the results of the archaeological excavations at Macquarie Point in 2021 and any subsequent analyses. It is also to interpret these results and provide conclusions and management recommendations relating to the site and its associated assemblage. Given that the site contained both Aboriginal and European cultural material and was managed simultaneously under both forms of heritage legislation it must also conform to a dual set of management requirements.

The recovery of obvious contact artefacts and the presence of artefacts protected by both legislative frameworks within the same strata means that it is impracticable to report on both separately. Therefore, this report will encompass all of the archaeological material encountered at the site.

This report will have the following objectives:

- Document and analyse the results of the excavation in their historical and environmental context.
- Interpret the material culture of the site in terms of current research frameworks and significance.
- Provide conclusions and recommendations for the management of the site and its associated assemblage in accordance with legislative requirements.

In order to achieve these objectives this report will be structured to consider the environmental, Aboriginal and European aspects of the site as part of an interrelated material culture and an intertwined history. Therefore a single set of results will be presented and interpreted as a whole as opposed to parallel sets only being drawn together in the conclusion. Therefore, this report will include the following:

- Abstract – A summary of the results of the investigations, conclusions and recommendations.
- Introduction, Section 1.0 - Project background, legislative context, authorship and overarching structure of the report.
- Archaeological, Historical and Environmental Background, Section 2.0 – Locality specific background covering archaeological culture, history, ethnohistory and their environmental and geological contexts.
- Methods, Section 3.0 – Statement of method for the excavation, analysis and interpretation of the site.
- Results, Section 4.0 – Illustrated description of the archaeological results and summary of the analytical results obtained for the site. The full results of the specialist analyses will be included in the appendices of the report.
- Analysis of Aboriginal Cultural Materials, Section 5.0 - An overview of the standard stone tool and midden analysis alongside an overview of the usewear analysis of actual and potential Aboriginal contact material from this site.
- Analysis of Historical Archaeological Materials, Section 6.0 - An overview of the historical artefact analysis.
- Discussion and Interpretation, Section 7.0 – Synthesis and analysis of archaeological, historical, environmental and specialist results in the context of prevailing archaeological theory and the site specific research questions.

- Conclusions and recommendations, Section 8.0 – Conclusions and management recommendations.
- References, Section 9.0 – Sources referred to in the report divided into type of source.
- Appendices – Appendix A containing the context tables, Appendix B containing a table showing the lithic catalogue and Appendix C containing the usewear analysis report.

1.5 Authorship and Acknowledgements

Phase One of this project was directed by Justin McCarthy, Alan Hay and James Puustinen as Austral Tasmania Pty Ltd. Justin McCarthy (Austral Tasmania) and Alan Hay (Aboriginal Heritage Investigations) directed the excavation of the site. Alan Hay wrote the report and, other than the usewear analysis, undertook the post excavation analysis.

The assistance of the following people is gratefully acknowledged:

Macquarie Point Development Corporation

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Steve Gall - Director

Kate Moody - Archaeologist

1.6 Glossary

Aboriginal community consultation – Communication between the proponent and the Aboriginal community (usually via the Aboriginal Heritage Officer or AHO) in relation to any potential impact/s of a proposed development on Aboriginal heritage site/s, and how they might be avoided, mitigated or managed.

Aboriginal heritage – This phrase refers to everything covered by the term "relics" as defined in Section 2(3) of the Aboriginal Heritage Act 1975 (AHT 2017:6).

Aboriginal Heritage Council (AHC) – The Aboriginal Heritage Council is established under Part 2 of the *Aboriginal Heritage Act 1975* to advise the Minister on Aboriginal heritage issues. One of its key roles is to provide advice on new permit applications, development or research proposals, and relevant documentation including policies and the Guidelines. The Council anticipates discussion with proponents regarding significant proposals (AHT 2017:6).

Aboriginal Heritage Officer (AHO) – A Tasmanian Aboriginal community member who is recognised by the Tasmanian Aboriginal community as being able to liaise with the community on Aboriginal heritage matters and who also possesses the skills and knowledge required to carry out Aboriginal heritage assessment reports (AHT 2017:6).

Aboriginal Heritage Register (AHR) – The Aboriginal Heritage Register (AHR) was launched in November 2014 to replace a number of internal systems, including the Tasmanian Aboriginal Site Index (TASI). The AHR records information about Aboriginal Heritage (AH) sites and supports many of Aboriginal Heritage Tasmania's business processes. Information recorded for an AH site may include site recording forms/site cards, photographs, slides, spatial data, site composition and associated Aboriginal heritage assessment reports (AHT 2017:6).

Aboriginal Heritage Tasmania (AHT) – Aboriginal Heritage Tasmania is part of the Department of Premier and Cabinet, and is responsible for administering the Aboriginal Heritage Act 1975 and maintaining the Aboriginal Heritage Register (AHR). Aboriginal Heritage Tasmania also provides secretariat support to the Aboriginal Heritage Council (AHT 2017:7).

Aboriginal Heritage Act 1975 – This is the new title of the *Aboriginal Relics Act 1975*. The Act provides the legislative basis for the protection and management of Aboriginal heritage in Tasmania (AHT 2017:7).

Archaeological Method Statement (AMS) - A statement of proposed methods to be submitted to the Tasmanian Heritage Council prior to an archaeological excavation. This method statement must contain a research design, methodology, recommendations among other components.

Australian Height Datum (A.H.D.) – Geodetic Datum for Australian altitude measurement where zero is the mean average sea level for 1971.

Below Sea Level (b.s.l) – Metres below the mean average sea level (0.0m AHD) for 1971.

Kilo annum (k.a.) – Refers to 'thousand years' with and will always be written as an abbreviation following a number.

Heritage Tasmania (HT) – is a business unit of the Department of Natural Resources and Environment Tasmania. It is responsible for coordinating historic heritage activity for the State Government, and supporting the work of the Heritage Council and the heritage sector (THC n.d.).

Permit – Under Section 14 of the Aboriginal Relics Act 1975 (now the Aboriginal Heritage Act 1975) permits may be granted by the Minister, (at the recommendation of the Director of Parks and Wildlife) to "destroy, damage, deface, conceal or otherwise interfere with a relic" (s14(1)(a)). Permits may be granted for other actions such as research (AHT 2017:7).

Statement of Historical Archaeological Potential (SoHAP) – A historical archaeological desktop assessment for submission to the Tasmanian Heritage Council that assists in understanding the archaeological value of a place and provides guidance how to protect this value.

Tasmanian Heritage Council (THC) – is the State's independent decision making body on historic heritage. It is responsible for administering the Historic Cultural Heritage Act 1995, including the Tasmanian Heritage Register (THC n.d.).

Unanticipated Discovery Plan (UDP) – An Unanticipated Discovery Plan (UDP) is a plan that the Aboriginal heritage practitioner provides in the Aboriginal Heritage Assessment Report (AHAR). It is a contingency plan detailing the process and procedures that should be followed if Aboriginal heritage including skeletal material is located during any stage of project works (AHT 2017:7).

Terminus ante quem (TAQ) – A Latin term meaning the "date before which" and which indicates the most likely time for a deposit to have been stratigraphically sealed. Normally determined by a statistical evaluation of the date range of artefacts within the deposit.

Terminus post quem (TPQ) – A Latin term meaning the "date after which" a deposit likely began to accumulate. Normally determined by a statistical evaluation of the date range of artefacts within the deposit.

2.0 Environmental, Historical and Archaeological Background

In order to interpret the results of the excavation in a meaningful way it is necessary to incorporate the environmental, historical and archaeological background of the site. This section presents that background, establishing first the broader conditions of the area and its peoples then tightening its focus to the site itself. Through this process the contribution that the archaeological investigation of this site can make to the broader picture of Hobart - nipaluna will be made clear.

First the environmental conditions prevailing at the site, during both the Pleistocene and the Holocene, will be examined (Section 2.1). Following from this the historical background will consider first the ethnohistorical context of the site and the material culture of the Muwinina people before considering their confrontation with colonisation and the development of this area from the arrival of Europeans (Section 2.2). The final part of the section will review the relevant archaeological findings, with a special focus on those documented around Hobart - nipaluna (Section 2.3).

2.1 Environmental Background

This section will consider first the geology and soils that are present in and around the study area (Section 2.1.1) Then the environmental conditions prevailing during human occupation for both the Pleistocene (Section 2.1.2) and the Holocene (Section 2.1.3) will be examined. Together this analysis will provide the geological, ecological and hydrological context for both the Aboriginal and European occupation of this site.

2.1.1 Geology and Soils

The Hobart - nipaluna district can be divided principally into the Mt Wellington Plateau and the Derwent Lowlands (Leaman 1970:4-5; Farmer 1979:5). Faulting substantially contributed to the shape of the coast in this area (Leaman 1970:5; Farmer 1979:5). Hills often extend to the coast where they form substantial sea cliffs (Farmer 1979:5). Faulting also contributes to the straight narrow valleys that are common in this area, usually aligned north to south with few large streams that run east to west against this grain, with the exception of the Derwent River from New Norfolk to Bridgewater (Leaman 1970:4-5). It is worth noting that silcrete, a raw material for lithic tools, is found abundantly and widely dispersed throughout the area (Brown 1986:4). Chert outcrops are also scattered across the area.

The site is located at Macquarie Point and is situated upon an area of dolerite bedrock (Forsythe and Clarke 1999) that was covered with a moderately well drained black soil that developed atop it (Spanswick and Kidd 2000). This dolerite is the most extensive form of rock found within the Greater Hobart - nipaluna area, and is referred to locally as ironstone or bluestone (Hofto, Sloane and Weldon 1991:17). Formed from the slow cooling of molten magma around 170 million years ago this rock has intruded into Permian and Triassic sediments (Hofto, Sloane and Weldon 1991:17). The soil profile specific to the study area has been described in detail (Hofto, Sloane and Weldon 1991:17):

> The third soil type mapped on dolerite bedrock is the black soil, which is almost entirely restricted to the mid and lower portions of east and south-facing slopes. The A or surface horizon consists of black, high-plasticity organic clay containing montmorillonite and kaolinite. A gradational boundary with a yellowish-brown, stony clay occurs at approximately 0.50 metres. Bedrock is usually encountered at less than 0.70 m depth. Free calcium carbonate usually occurs in joints and fractures in the bedrock, sometimes in sufficient amounts to form a marl in this horizon of weathered rock below the clay. The presence of free carbonate indicates a dry environment, and therefore minimal leaching, leaving the black soils nutrient rich.
>
> Black clay on dolerite bedrock contains very high percentages of montmorillonite, and is therefore particularly prone to seasonal volume changes because of shrink/swell characteristics.
>
> Destruction of, or damage to, man-made structures is often caused by differential expansion and contraction of the soil beneath the structure or building. This may be caused by variations in moisture content of the soil. For example, the area beneath the centre of a concrete slab will eventually reach

a constant moisture content, whilst the moisture content beneath the outer portions of the slab varies as a result of seasonal effects and introduced conditions, such as garden watering.

Immediately to the west of the site at a distance of approximately 300m are podzolic soils on Triassic Sandstone bedrock (Spanswick and Kidd 2000). These soils are often sandy or clayey sands which are generally nutrient poor for the purposes of agriculture (Hofto, Sloane and Weldon 1991:13).

2.1.2 The Pleistocene Site Environment

With Aboriginal people migrating to Tasmania well before the last glacial maximum (LGM) was reached, 21,000 ±3,000 BP (Barrows et al 2002:159), Tasmania was still connected to Australia through what is now the Bass Strait. While the current excavation site would come to be located along the Holocene shoreline much later, at this time it is likely that it appeared as a shallow hill slope or crest overlooking the valley around the Derwent River that had yet to be inundated.

The upper Derwent Valley was reached by Aboriginal Tasmanians by at least 30,000 BP (Cosgrove Allen and Marshall 1990) and it is highly likely that lower Derwent was reached soon after its upper reaches. Although the contours lines in Figure 4.2.1 show a much flatter appearance within this valley as opposed to the surrounding hills this is the result of the accumulation of marine and fluviatile sediments (Colhoun et al 2014:526). Excavations for the Tasman Bridge on the Derwent reached bedrock at 85.3m b.s.l. (Colhoun et al 2014:526) and it is likely that there would have been a similar fall immediately below the Macquarie Point site. The study area would have been situated atop a gently sloping hill crest overlooking a valley carved by the much narrower Derwent River as it fed into the plains that are now submerged below the D'Entrecasteaux Channel.

There were many climate changes during the Late Quaternary and for a detailed consideration of these the reader is referred to Macphail's (1979) 'Vegetation and climates in Southern Tasmania since the Last Glaciation', Colhoun and Shimeld's (2012) Late-quaternary vegetation history of Tasmania from pollen records' and 'The Quaternary in Tasmania by Colhoun et al (2014). The Pleistocene was arid and cooler, by 6-7°C at the LGM warming to around 3 ° leading up the Holocene, and a westerly air stream meant that south central and eastern Tasmania were particularly dry, up to 50% less precipitation than at present (Gilling 2007:557). The site would have been slightly protected from the prevailing southerly or southwesterly winter winds (Gilling 2007:557) by the hill slopes to the south but would still have been somewhat exposed. There is evidence that the temperature varied markedly from summer to summer (Cosgrove 1995b:100.) The Hobart Rivulet to the south of the study area was likely to have been a significant watercourse even during the Pleistocene, where the same areas of the Wellington Range would have held the same role as during the Holocene albeit with the potential for reduced flow resulting from the drier conditions of the Pleistocene.

The site itself and the river valley it overlooked would have been in the rain shadow of the western mountains. Palynological evidence suggests that at the LGM southeastern Tasmania was covered by dry sclerophyll forest (Colhoun and Shimeld 2012:303-304). Dry sclerophyll forest is dominated by Eucalypts "with an understorey of small trees including Casuarina, Bursaria, Dodonaea, Acacia, and Banksia and shrubs of *Epacridaceae*, *Proteaceae*, *Compositae*, *Mimosaceae*, and *Papilionaceae*…" (Macphail 1979:313). It is possible that at times the study area was within a broader area covered in a mosaic of dry sclerophyll forest types changing in response to a range of climatic, environmental and anthropogenic stimuli. Based on the current distribution of dry sclerophyll forests in Tasmania and given the Triassic soil profile of the study area the study area contained Black Peppermint (*E. Amygdalina*) and Silver Peppermint (*E. tenuiramis*) (Forestry Tasmania 2009:17). Given the comparative richness of the black soil at the site and low rainfall is also likely that the understorey was dominated by grasses or small shrubs (DPIPWE 2017:56).

2.1.3 The Holocene Site Environment

By c. 14,000 BP the land bridge between Tasmania and Australia had been flooded (Colhoun et al 2014:526) and during the transition from Pleistocene to Holocene conditions (11,500-9,500 BP) seawater reached the valley floor at Bowen Bridge, approximately 5km north of the study area along the Derwent and present around 40m b.s.l, at 10,400-10,800 BP (Colhoun et al 2014:526). Present sea levels were reached at 6,000 BP and in the intervening 4,000 years the valley filled with seawater and its floor was buried under mud and marine sediment. The shore level of Sullivans Cove at the time of colonisation was formed at about this time. Accompanying the rise in sea level during this transition was a rapid rise in temperature and precipitation across Tasmania (MacPhail 1979:331). While eastern Tasmania remained largely the domain of Eucalypt forests as Tasmania warmed rapidly and timberlines rose as a consequence (MacPhail 1979:334).

The early Holocene in Tasmania (9,000-6,000 BP) saw the further amelioration of temperatures across Tasmania with temperatures that may have reach up to 1° above modern temperatures as well as increased rainfall (MacPhail 1979:335). Maximum climate warmth during the Holocene occurred between 11,000 and 7,5000 BP (Colhoun and Shimeld 2012:319). Dry sclerophyll forest continued to occupy the southeast of Tasmania although wet sclerophyll forests began to establish themselves at lower altitudes (Colhoun and Shimeld 2012:313) reaching their peak in the Holocene by 7,800 BP (MacPhail 1979:335). These wet sclerophyll forests consisted of tall Eucalypts with a "wet scrub understorey of *Pomaderris apetala*, *Dicksonia antarctica*, and tree composites" (Macphail 1979:313). Where dry sclerophyll forests continued to dominate, such as the area around present day Hobart - nipaluna, there is some evidence to suggest that at this time *Allocasurina* may have become a subdominant in these forests (Jones, Thomas and Fletcher 2017:1347).

From the Middle Holocene (6,000 BP – Present) at least, the Tasmanian environment had again become gradually cooler and more arid (MacPhail 1979:335: Colhoun and Shimeld 2012:319). Data for rainfall and temperature recorded since 1882 at Ellerslie Road in Hobart - nipaluna, several hundred metres distant from the site, through to 2017 provide some indication of the site climate throughout the Holocene both prior to and after colonisation (BOM 2017). The mean yearly rainfall over this period is 613.4mm, mean high temperature of 16.9° and average low of 8.4° (BOM 2017), with monthly mean averages presented in Figures 4.3.1 and Figure 4.3.2. Colhoun and Shimeld (2012:300) further characterise the climate of the broader region as:

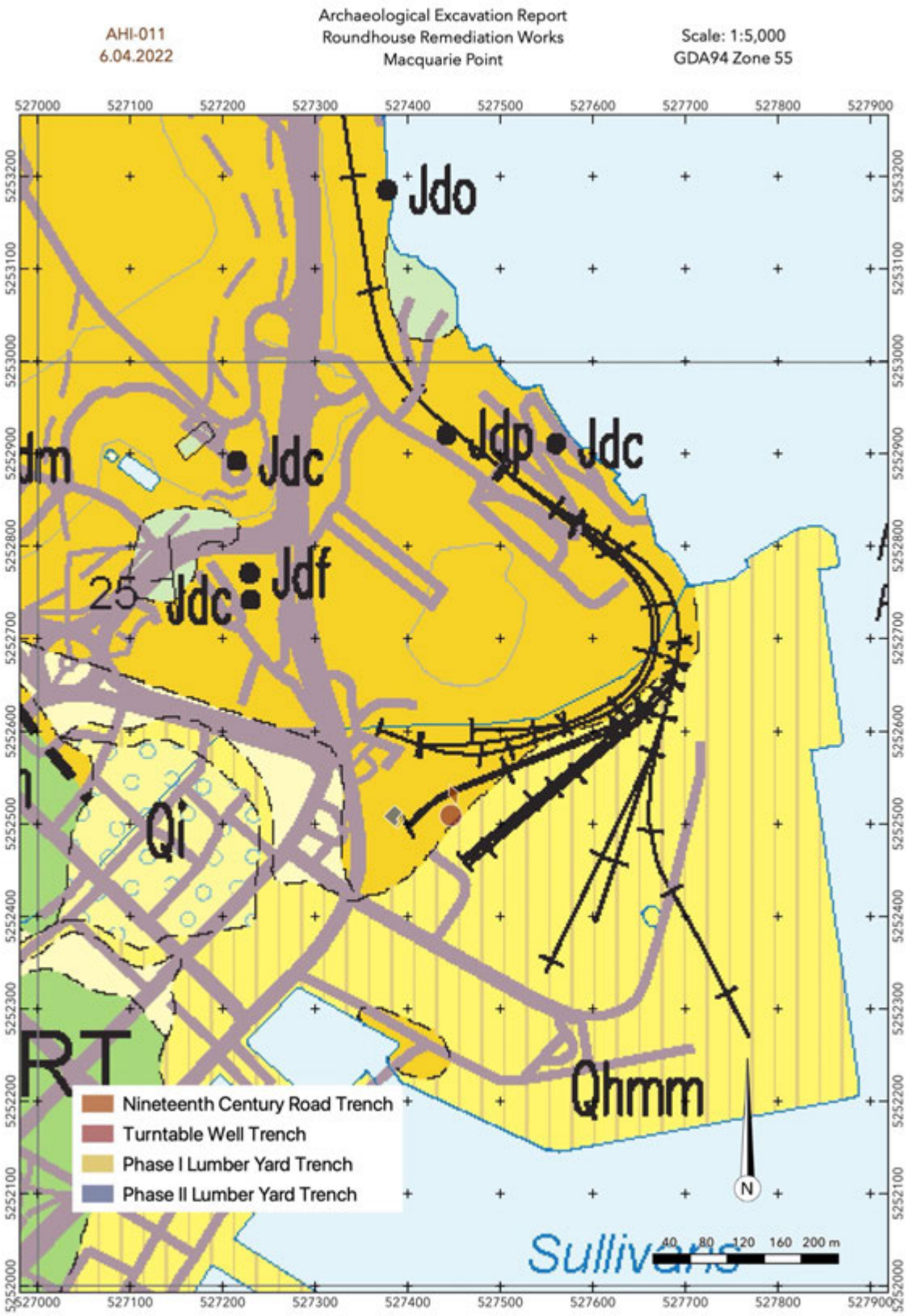
> Sporadic intrusions of cold air from Antarctica can produce frost and snow at any time of the year. On the other hand, dry and warm air from mainland Australia sometimes causes temperatures that may exceed 40° [although] coastal areas are mild and generally snowfree…. In summer, adiabatically warmed airflows descend from the plateau, bringing warm dry winds and extreme temperatures of 35-40°C, particularly to the Midlands and southeast.

In the case of the study area, which is relatively exposed coastal location during the Holocene it is likely that coastal scrub or She-oak (*Allocasuarina verticillata*) woodland, or a mosaic of the two, was present around the current area of investigation. The black clays forming the ground surface at this location is a common soil type occupied by She-Oak along the shores of the Derwent today and remnant vegetation communities still exist in the Domain to the north. However, given the use of fire in Aboriginal land management practices, the extent of She-oak, which is susceptible to repeated burning in a way that eucalypt species are not, it is possible that the area may have contained a different vegetation community than would be expected of such an area today.

The Rivulet would have been the chief source of freshwater for the surrounding area, while it is likely that it was saline immediately to the west of the excavation area it is likely that at a short distance to the northwest the water ran fresh. The likely extent of the shoreline is shown in the geological mapping of Figure 2.1.1, and in detail in Figure 2.1.2. That shown in Figure 2.1.1 is based on environmental modelling by GHD Pty. Ltd (n.d.) and Stanton in 2000. This modelling is supported by the soil mapping

and early historical plans of this area (Figure 2.1.1 to Figure 2.1.4). The current investigation area would have been within 100m of the original shoreline during the Holocene and in nearly equal proximity to the brackish water at the mouth of the Rivulet and the freshwater further upstream. This means that this location would have afforded easy access to a combination of littoral resources and drinkable water that would have supported intensive occupation.

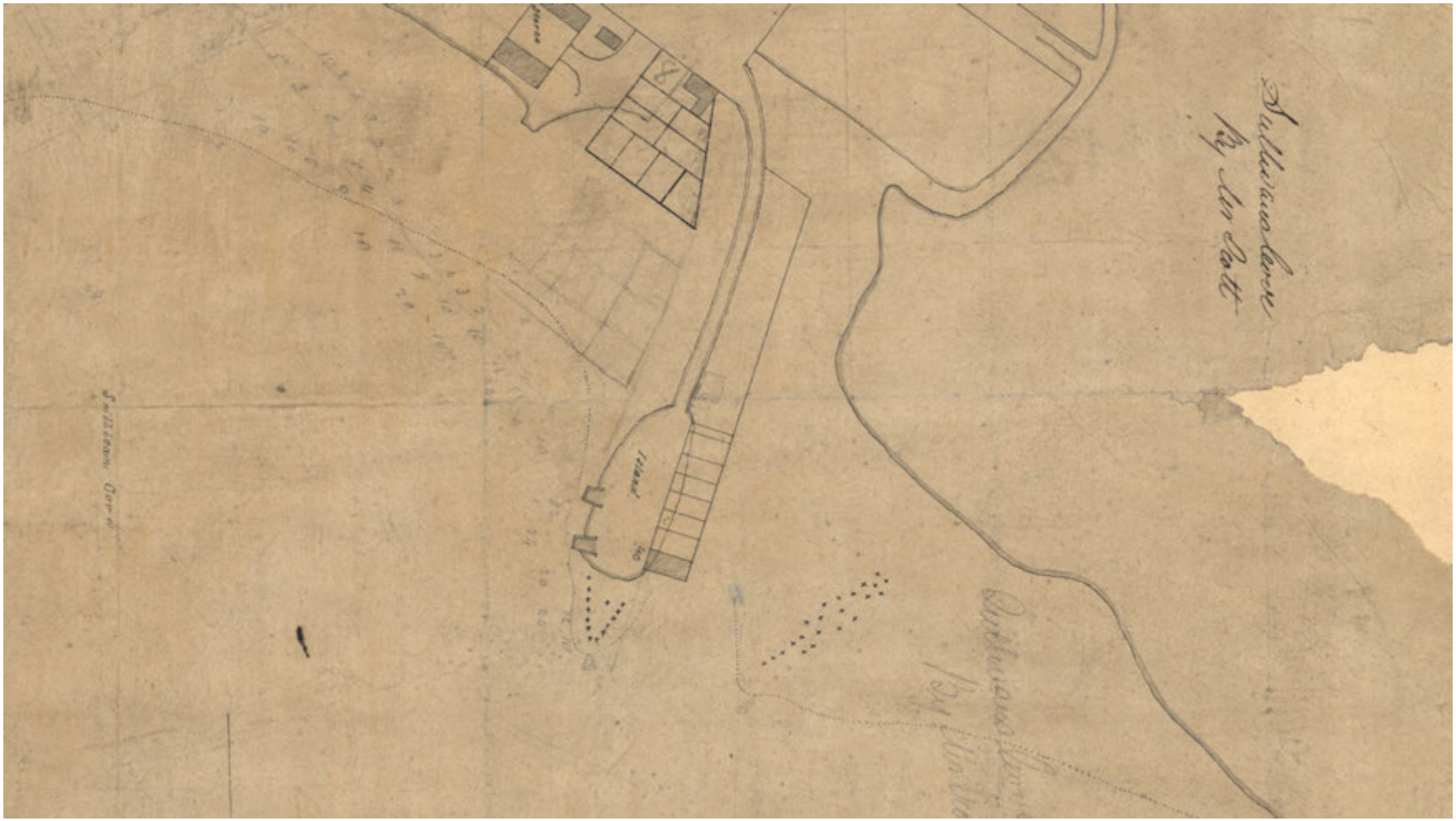
It is also likely that the combination of brackish water, shallow water and reefs, shown in the historical plans, would have been particularly amenable to present of a large amount of *O. angasi* alongside a wide range of other marine and estuarine species. Also located a short distance from the narrowest crossing point of the Derwent Estuary, the current area of investigation has a large number of attributes that would have made it favourable for human occupation.



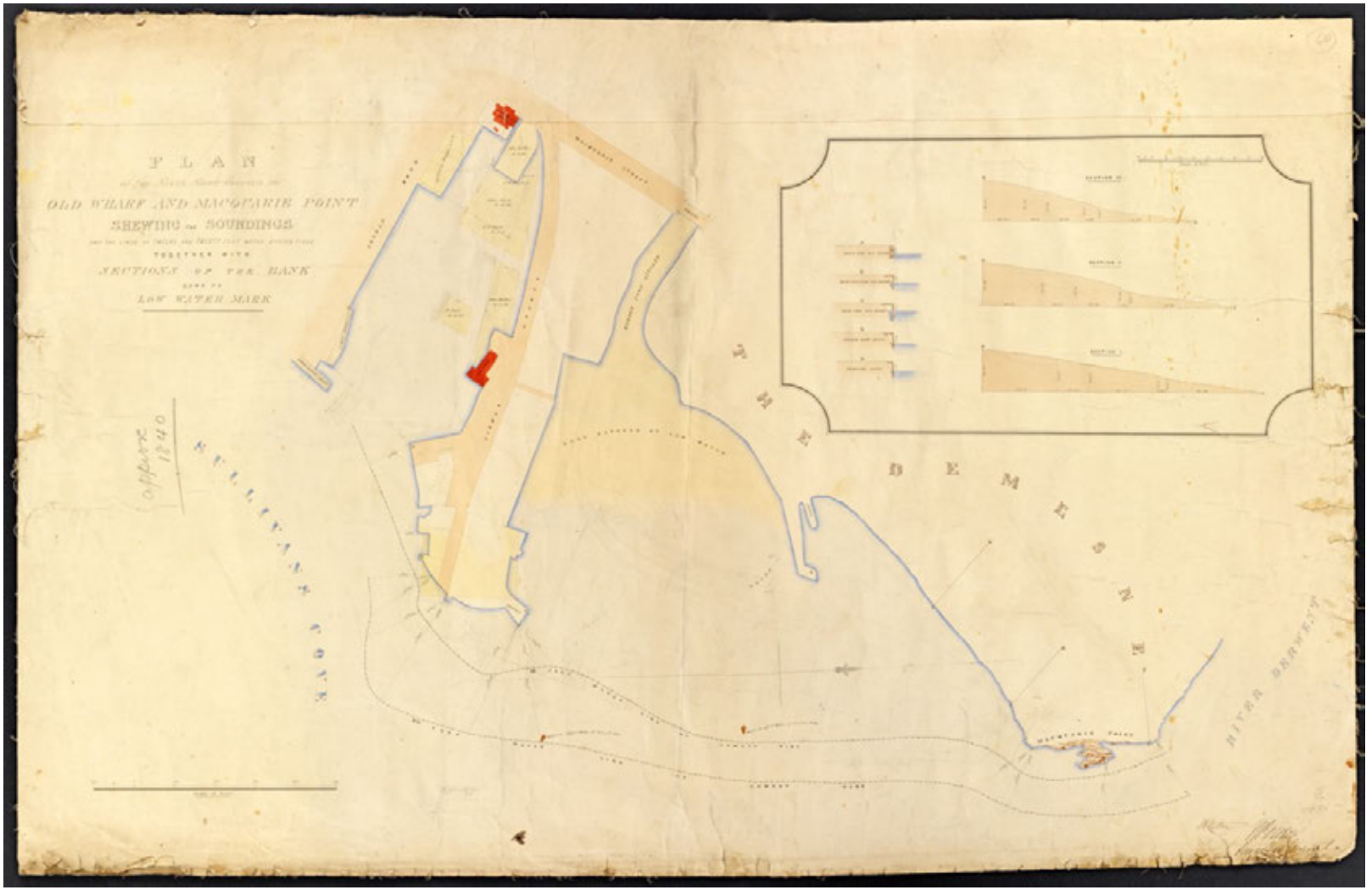
Figures 2.1.1 geological mapping of the of the area around the excavations site. The yellow area shown in plan is Jurassic dolerite, while the section to the south of the excavation areas is reclaimed land.



Figures 2.1.2 The pre-colonisation shoreline shown around the excavation area, with areas of shallow water, reef and deep water also shown (Basemap Supplied by Client).



Figures 2.1.3 Detail of the mouth of the Rivulet and Hunters Island after the construction of the causeway to Hunters Island, the current investigation site is located to the right of the image. The lack of detail around the excavation area in this image precludes accurate georeferencing, however the location of hunter street (shown leading to Hunter Island) provides some indication of the probable location of the site, i.e. to the east of the rivulet. Shoals or reefs, and areas of low water are also shown in this image (1820s CPO Hobart Plan14).



Figures 2.1.4 A depiction of the headland in 1840, with inset sections showing the fall of the land to the water. The sandy shallow bay at the mouth of the rivulet is also shown (TAHO, PWD266-1-782).

2.2 Historical Background

The section will present an ethnohistorical account of the Muwinina people (Section 2.2.1) who's land the excavation area falls within and the colonisation of Hobart with specific reference to the development of the site at Macquarie Point (Section 2.2.2). Throughout Section 2.2.2 text will be reproduced from Austral Tasmania's (2020b) 'Macquarie Point Roundhouse Area Remediation Works: Archaeological Sensitivity Report' in an abbreviated form for ease of reference, however the full detailed historical background exists in that report.

2.2.1 Ethnohistory

It is unknown how the flooding of the Derwent River Valley and the plains that it watered were perceived by the inhabitants of Tasmania nor, given the absence of archaeological data from the Pleistocene, is it clear what cultural changes took place as a result. What is known, however, is that by the time the *Calcutta* arrived with European colonists at the beginning of the nineteenth century the waters of the D'Entrecasteaux Channel and its surrounds were home to a people long established.

The Muwinina were the people who lived in the area around Hobart, called nipaluna. They were members of the South East Nation whose domain extended from the western shore of the Derwent River down to South Cape. Other people of the South East Nation included the Lyluequonny, the Nuenonne and the Mellukerdee.

A comparatively detailed ethnohistorical record exists for the South East Nation in comparison to other peoples in Tasmania, in particular the Lyluequonny encountered French explorers from Bruni D'Entrecasteaux's expedition at laylatiya (Recherche Bay) in 1792. These explorers created records of the culture of the South East Nation that have relevance to the current investigation and are a useful background to the information known about the Muwinina at nipaluna. The records of the expedition of Bruni D'Entrecasteaux, dating as they do before the colonisation of Tasmania, document a people free from the oppressive weight of the British and provide significant insight into the life of Aboriginal people around the bay, albeit conditioned by the interests of the explorers and brevity of the encounter.

D'Entrecasteaux (Duyker and Duyker 2001:325) describes in detail the manner in which shellfish were harvested, given the prevalence of midden sites in the area it is important to quote this section at length:

> On the 10th [February 1793], we had a third encounter... circumstances favoured us, and we saw the manner in which fishing, which is their means of sustenance, is carried out. By chance, we discovered that they eat seaweed; noticing one of the long leaves of this marine plant in the hands of one of the officers, they took it, and ate it after having toasted it. At the time appointed for the meals, the women light the fire where the food is to be cooked; they then light several smaller fires close to the first. After hanging a bag destined to receive their catch around their neck, they dive, armed with a small stick, narrowed at the end, with which they pick crayfish, abalones and other shell-fish, which they deposit in their bag. "After emerging from the water, they place themselves between the small fires they had prepared beforehand, and dry themselves all over. They then place themselves close to the principal fire, where they attend to the cooking of their catch, which they distribute to their husbands and their children. They renew this exercise until the appetites of the whole family have been satisfied. The women also fetch drinking water for the whole family group. This last custom seems to be common to this tribe...

Although there is no specific description of how the remains of the shellfish were discarded it can be assumed that it was likely in proximity to their consumption and that this took place where now middens are now present. It also indicates that there is likely a complex intra-site structure of the midden sites with different areas in each session of shellfish consumption accompanied by little fires, the large fires as well as the location of the shellfish discard itself. There is no evidence that these were the same between instances but the preference for repeated use of distinct areas cannot be ruled out. The harvesting, cooking and consumption of 'seaweed,' possibly bull kelp.

Mulvaney (2007:56-57) offers some broader comments on the potential for the consumption of fish in this area, he notes that the French explorers did not record any evidence of fish bones or fishing tools

amongst the Aboriginal people at Recherche Bay. He goes on to attribute this absence of evidence observed by the French to an absence of consumption arising from cultural preference. However, these comments were made at a time when the French were yet to encounter Aboriginal people at Recherche Bay and there were merely inspecting the material culture that was present. In the same sentence D'Entrecasteaux notes that no hunting implements were observed, while there is no dispute that Aboriginal people hunted terrestrial game, and this underlies the difficulty with the reliability of the European explorers to interpret Aboriginal Tasmanian material culture without observing it in use. It is not necessarily the case that fish consumption did not take place, but its evidence may not have been apparent to the Europeans.

Before encountering Aboriginal people in 1792 the members of the D'Entrecasteaux expedition encountered their material culture, including huts. Mulvaney (2007:56) quotes the botanist Labillardière observation at length:

> 'We found some rudiments of huts in these woods,' Labillardière reported soon after their arrival, 'consisting of a framework made of the branches of young trees, and designed to be afterwards filled up with pieces of bark, which the natives always use to cover the outside of their cabins.' Such shelters were made from intertwined sticks with bark covering, less than a metre and a half high and hemispherical in shape. The framework was semicircular and bent so that sticks were tied together with strands of rush where they met.

D'Entrecasteaux observed that the huts were twelve in number, elsewhere around the bay a single hut by itself had been observed by sailors, and that they were likely seasonally occupied and that the number of people that occupied the site were 'not very numerous' (Duyker and Duyker 2001:118). Windbreaks were also observed by Labillardière, quoted in Austral Archaeology (1992:9) and they 'consisted in strips of bark of the *Eucalyptus resinfera*, interwoven between stakes fixed perpendicularly into the ground, forming an arch, of about a third of the circumference of a circle, nine feet in length and three in height, with its convex side turned towards the bay.' Austral Archaeology (1992:11) go on to observe that from the writings of the French it is likely that these hut sites were concentrated in fairly close proximity to the shore.

From late January through to the end of February of 1793 the French returned to the area in what was then the height of summer where previously they had been present in late autumn. D'Entrecasteaux (Duyker and Duyker 200:332) describes the approach of an Aboriginal group:

> It seems that our stay at Port du Sud [Rocky Bay] coincided with the time when the inhabitants had begun to draw closer to that place, in quest of a sustenance that is easier to obtain there in summer than in the more rigorous season. On our arrival at this port, their fires revealed that they were probably north of the large lake which is not far from the Port du Nord. These fires were drawing closer each day; and it seems to me that the natives must continue their journey towards South Cape; because despite the friendships we had established, I do not believe that they were coming to Port du Sud just to see us. The tribe we have seen was composed of forty-eight individuals: ten young or old men, fourteen women of various ages, and twenty-four children aged between one to twelve years, comprising an equal number of boys and girls.

Austral Archaeology (1992:9) note that the oldest person present was guessed to be of about eighty by the French. The first encounter of the D'Entrecasteaux expedition occurred between a group of sailors and naturalists and an Aboriginal group to the south of the study area somewhere in the region of Southport Lagoon, it is important as it helps illuminate the size and demographics of the Aboriginal people populating the area at the time of the French's visit (Mulvaney 2007:64). The meeting was peaceful and the Aboriginal group was composed of forty two people, seven men, eight women and 27 children, they had been aware of the Europeans the previous night and some members of the group had observed them as they slept by the fire (Mulvaney 2007:64). Small gifts were exchanged and the Aboriginal group escorted the French back to their fellows by the shortest route. The French were conducted along an Aboriginal path back to Recherche Bay and the Aboriginal people cleared branches and other impediments out of the way as they went along. The next day, the French returned to Blackswan Lagoon and encountered 19 people eating shellfish around three fires (Mulvaney 2007:65).

Details of these encounters that illuminate the material culture of this group will be presented in the following paragraphs; in this section reflecting on ethnographic accounts of movement, it is worthwhile considering the nautical activities taking place in the area. Robinson (Robinson 1829-1834:84) remarks that the son of Mangana (Mangerner) from Recherche Bay - laylatiya, sixteen years old and not named in the journal, who possessed 'a first rate characteristically skill in nautical affairs and is esteemed a superior navigator. He has occasionally made comparatively long voyages extending a long way up the Huon River and is a perfect adept at constructing catamarans. In one of their maritime excursions, however, he had been driven out to sea by very violent weather and but for the time assistance of the pilot, by whom he was picked up at Recherche Bay almost in a dying state...' There is strong evidence from elsewhere of the extensive use of watercraft in the South East Nation and the vessels likely played an important role in the life of the people around the study area. Mulvaney (2007:26) was to observe that 'in such craft the Lyluequonny and Nuenonne bands interchanged seasonally, to maximise resource exploitation and cement social life and obligations. During the winter the Recherche Bay people evidently crossed to Bruny Island and the latter returned their visit during summer.' He goes on to estimate that the probable number of people present in the land around Recherche Bay during this period was close to 150 (Mulvaney 2007:26).

The French explorers left a brief record of the smaller parts of material culture that they observed around Recherche Bay. Although the majority of these items are perishable and unlikely to be present in the archaeological record it is still possible that they may be represented by enduring archaeological traces, such as usewear on lithic artefacts and sites of processing and manufacture.

Garments, or possible garments, were noted, for example when a soldier followed a fleeing Aboriginal man, during the first visit to the bay by the D'Entrecasteaux expedition, and encountering his solitary hut within it was noted to be a ' small piece of dried sea-weed was found in this hut; it was very thick and very dry, and was hanging by a straw-string. Its shape suggests that it was destined to cover the natural parts' although D'Entrecasteaux seemed to think this purpose unlikely based on the accounts of the people at Oyster Bay (Duyker and Duyker 2001:118). The following year when contact with Aboriginal people was made the French noticed that some people were wearing kangaroo skin mantles on their shoulders but that the lower half of the body was left uncovered (Mulvaney 2007:64). Charcoal powder, possible with a mixture of grease or fat, was used as a body covering and cicatrices formed by the use of mussel shell were also recorded (Mulvaney 2007:64). A shell necklace was also offered to the Europeans, indicating their presence at this location as well.

Elsewhere were noted 'baskets, woven with very narrow and thin strips of tree-bark, braided however with some skill, close like bags with strings of the same material. Other types of small bags, constructed with dried and very hard seaweeds, are seemingly used for drawing water, as for drinking cups' (Duyker and Duyker 2001:118). Quoting Labillardière, Austral Archaeology (1992:12) were able to observe that one camp site was seen to contain 'thirty baskets made from rushes, some of which were filled with shell fish and lobsters, others with pieces of flint and fragments of the bark of a tree as soft as the best tinder.' Long spears were also recorded by the explorers in the land around the study area.

Given the possibilities for travel and resources to be gained from the Derwent Estuary and the D'Entrecasteaux Channel, Ryan called the South East Nation "the most maritime people in Trouwunna [Tasmania]' (Ryan 2012: 41). In addition to this Knopwood records reports of the Muwinina on the water, stating that he saw "3 of their cattermerans [*sic*.] or small boats made of bark that will hold about 6 of them.' (Thursday 21 June 1804).

Of particular relevance to this study is the role that midden sites played in the life of the Muwinina, middens accumulating around the Derwent Estuary during the Holocene. The earliest work undertaken to systematically document the location of middens along the Derwent estuary was that undertaken by Officer (1980). Generally Officer (1980:3.3) notes that mussel (M. planulatus) and oyster (O. angasi) are the predominant species of shellfish recovered from middens on both sides of the Derwent. Providing a broader analysis than that of Officer (1980), and in part building on his work by utilising the information that he obtained, Brown's (1986) study engages more deeply with issues around the

interpretation of explanation of Aboriginal material culture. While drawing on ethnohistorical sources Brown (1986) also reviews the current archaeological evidence and compliments it with targeted surveys. The reader is referred to this work for a wide ranging discussion of Aboriginal material culture in southeast Tasmania.

In dividing his study up in to five regions for analysis, Brown (1986:83) differentiates the coastal margins from inland plains by the height of 40m asl. The study area is well below this height, so the focus of this study will be on Brown's modelling of coastal occupation of the southeast, in particular the sites on the Derwent Estuary in close proximity to the Macquarie Point.

Brown's (1986:75) observation of middens in the Derwent Estuary confirms the propensity of middens to be composed of mussel and oyster shells while also noting that there were some small scatters that were composed of only one or the other. In comparing the distance from shore of the shell midden sites at Droughty Point, 6.5km to the south of the study area and Bedlam Walls, roughly the same distance to the north, Brown (1986:75) notes that the overwhelming majority of sites at Droughty Point were within 30m of the shore while a much higher percentage of sites were over 50m distant from the shore at Bedlam Walls. The possible reasons that Brown (1986:75) supplies for this is that:

1. Bedlams Walls may have been richer in shellfish and supporting a larger number of people with a greater spread through the landscape.
2. There is a larger hinterland at Bedlam Walls and therefore shellfish exploitation would have been combined with game hunting meaning that processing and consumption sites were positioned further inland.
3. Shellfish consumption took place in sheltered location during harsh weather, which at Bedlam Walls could only be achieved by going a greater distance from the shore.

Brown (1986:75) also identifies the common lithic material present in a site at Risdon as hornfels, chert, quartzite, cherty hornfels, greywacke, metamorphosed mudstone and metamorphosed sandstone. Brown also states, that based on radiocarbon dating from a number of sites in the area, that the likely commencement of midden formation in this area ranged between 5,800 and 5,200 BP (Brown 1986:75). Jackman (2017:16) confirms that this is the general range, noting that uncontested dates for the Derwent Estuary fall within this spread. However, after this earlier work Austral Tasmania's (2021) excavation at Cottage Green were able to identify a remnant *in situ* midden with a basal date of 8,150 - 8,048 BP located within the footprint of a mid nineteenth century building.

Brown (1986:79-83) formulates a series of statements for the distribution and character of material culture relating to Aboriginal middens and shellfish harvesting in southeast Tasmania as they are the primary site type in coastal areas. This analysis of middens is extensive and complex and the reader is referred to the above work for a detailed understanding of its particulars, it will only be summarised here. Brown (1986:79-83) considers that middens in southeast Tasmania:

- Are not found in locations with steep shore profiles.
- High volume middens and the highest proportion of middens are found on coasts that are formed from a mixture of rocky headlands and short sandy beaches.
- Across long sandy beaches midden volume decreases in a direct relationship to the distance from rocky headlands. Small amounts of shell may be transported up to several kilometres.
- At mixed coast locations high volume amounts midden materials were found to be transported only several hundred metres inland, with a caveat that at Bedlam Walls this was up to 500m.
- Based on early analyses, midden location tends to be the result of opportunistic shellfish harvesting and less frequently were shellfish transported over long distance prior to consumption.

- Middens occur most frequently on rocky headlands with rocky platforms and where a great number of shellfish resources are present.
- Two subsets of midden types exist, rocky coastal shell middens and bay estuarine type middens.

Rocky coastal shell middens have the following character:

- Little difference is observed in the minor component of shellfish species present at each site.
- Compared to New South Wales, the proximity of available drinking water may have been less substantial although it still exerts some constraints on midden location.
- No data is available to indicate correlations between platform lithology, size and slope to midden frequency or volume in Tasmania.
- Mounding is not common.

Bay estuarine type middens have the following character:

- Sizeable middens occur up to 500m inland and small scatters up to 1km.
- Little survival of evidence for the consumption of terrestrial fauna is present.
- Lithic artefacts are sparse at midden sites unless in close proximity to quarry sites.

Clearly the rising sea levels had opened up new possibilities within the land around the study area. Shellfish, formerly available at a considerable distance, now became a staple food source for people already living in this area or who moved into it during the momentous environmental changes taking place during the Holocene. As the Derwent Estuary was formed, local advantages began to dictate the exploitation of shellfish along the coast as well as the possibilities for travel and shelter in a coastal environment.

Under these conditions the shape of the shoreline, the character of the intertidal zone and the exposure to foul weather influenced patterns of land use and yet it is likely that the immediate coastal hinterland played a significant role in the changing coastal economy of the Holocene. As such, although the use and occupation of the site had a strong association with the coastal exploitation of shellfish, a vast array of other economic, cultural, social and spiritual practices would likely have played out across the Derwent Estuary during the Holocene. Complementary to this was an equally broad range of material culture (see Figure 4.3.1 for example).

Suitable flora for the manufacture of baskets, rope, catamarans, shelter and spears, to name but a few, would have been highly prized within the surrounding landscape. Lithic resources in the local environment, such as quarries at Sandy Bay or Risdon Cove, would have been essential to the production of a wide range of tools. The geological background to this study has noted a number of chert quarries in the surrounds. In addition to this, terrestrial food sources would have also been valued as part of the economic practices and both plants and animals would have been incorporated into what may have been a predominantly coastal economy.

2.2.2 Site Specific History

This section of the report is a reproduction of part of the text of Austral Tasmania's (2020:24-58) 'Macquarie Point Roundhouse Area Remediation Works: Archaeological Sensitivity Report.' The original report by Australia Tasmania is thorough to the extent that it is not possible to add much additional information in this excavation report, nor is it necessary to reproduce the extensive mapping and complex analysis of disturbance that was contained in that work. For a full site history dealing with the European occupation of the study area the reader is referred to that report. However, a reproduction of some sections of that report here is considered to be warranted but only for ease of reference. The rest of Section 2.2.2 can be considered a reproduction and abridgement of text from that report.

1804-1814 Early European Settlement and Development of the Site

The first decade of European settlement in Hobart was marked by the close relationship between development and the waterfront. After the failure of the settlement at Risdon Cove and the relocation to Sullivans Cove on the western shore in February 1804, the early occupants of Hobart Town spent their first decade in a struggle for survival, building upon the camp clustered on the western boundary of the cove (Walker 1899:59). Food supply was of vital importance to the small town and the first grants of land were issued for agriculture. In January 1806, two blocks of land were granted on the point of land, north of the Rivulet. Leonard Fosbrook, the Assistant Commissary was granted 14 acres, and George Guest the adjacent 24 acres. Fosbrook's land corresponds to the western portion of Macquarie Point (TAHO, LSD405/1/5).

Fosbrook played a vital role in the colony, responsible for all government stores. On arrival in 1804, he pitched his tent on Hunter Island thereby establishing the first commissariat store. The adjacent point of land was initially known as 'Fosbrook's Point.' It was soon cleared of vegetation and stones, and planted out with crops. Overlooking Hunter Island and the Cove, Fosbrook built a small cottage.

1814-1821 Edward Lord's Purchase and Development of the Site

Initially Fosbrook enjoyed the confidence of Lieutenant-Governor David Collins. However, in August 1809, he resigned his position as Assistant Commissary following a disagreement over Collins' handling of Governor William Bligh's unwelcome visit to Hobart Town. Fosbrook's troubles mounted over the coming years, culminating in charges of fraudulent conduct. Although acquitted of embezzlement, he was found guilty of gross and criminal neglect and dismissed from his positions. Without close relatives and removed from colonial society, he left Van Diemen's Land in late 1814 (Wittenhall 1966).

Fosbrook sold his Sullivans Cove property to Edward Lord, one of the most prominent, if controversial figures of early Van Diemen's Land. An officer of the marines, commandant, pastoralist and merchant, Lord had also arrived with David Collins in 1804. In that same year, he built the first private house in Hobart and quickly prospered. By October 1806, he was the largest stock owner in the colony, and by the following year, had risen in rank, second only to David Collins. On Collins' death in March 1810, Lord assumed control of the settlement, until Captain John Murray could be sent from Sydney to take on the role of Lieutenant-Governor. Lord rapidly acquired thousands of acres of land through grants in Van Diemen's Land. His purchase of Fosbrook's waterfront land was confirmed on 1 January 1814 followed by Guest's adjacent grant (Rienits 1966). Fosbrook's original cottage had fallen into disrepair and in c.1815, Lord constructed a new large single storey stone and brick house, complete with circular entrance drive and a store building to the rear (AMAC 2000:12).

The extent to which Lord occupied the site is uncertain. A major landowner, Lord held properties throughout the colony and Hobart Town. He may have been residing on the site in mid-1818 when he warned the public against trespassing on his property, cutting timber and stealing the palings from his fence (*The Hobart Town Gazette and Southern Reporter*, 25 July 1818). By the following year, he was renting the premises to Captain John Howard, a merchant seaman, who operated the 'Europe Warehouse' from the site. The location of this warehouse is not known, although logically the large store building towards the rear of the site would seem most likely. Here, Howard brought from Sydney a 'choice assortment of European Goods,' available at reduced prices. A wide range of products was available, including alcohol, herrings, tongues, tripe, preserves, hardware, clothing, tools, agricultural equipment, furniture, tableware and toys. Howard remained the tenant of the site until mid-1819 (*The Hobart Town Gazette and Southern Reporter* 9 January 1819 and 14 August 1819).

1821-1835 Government Acquisition and the Development of the Lumber Yards

Government interest in the Macquarie Point site began shortly after European settlement. During his first visit to the colony in 1811, Governor Macquarie visited the spot and named it after himself, before deciding that the promontory of land should be reserved for the site of Government House (Solomon 1976). Macquarie's instructions set the course for future public ownership and development of the site.

The Government began to acquire the Macquarie Point land in 1821. Lieutenant-Governor Sorell granted Edward Lord 7,000 acres in exchange for his 14 acre waterfront allotment. Shrewdly, Lord purchased the adjacent 24 acres owned by George Guest, for which he was granted a further 3,000 acres, which combined to form the Lawrenny estate in the central highlands. (Terry 1999:7).

The site was described in 1826 by the Colonial Architect David Lambe. He noted that the building had been constructed in 1815 and was then in use as a school, and consisted of separate boys and girls classrooms, along with five other rooms and a kitchen. From the number of rooms, it would seem likely that Lord's former house was the building used for school purposes. Lambe wrote that the building needed repairs and its location was far from ideal, with roads to the site being impassable during winter (TAHO CSO1/1/107/2597).

At the same time the place was being used as a school, female convicts were also housed on the site, waiting to be assigned to settlers. In May 1826, this included convicts from the Providence, described as being 'in general a healthy and useful class' (TAHO CSO1/1/107/2597). These women were held in a building noted by Lambe to be a 'house' to the rear of the main structure. At this stage, the site was not known to contain a second house, and the reference may in fact be to the large store building to the rear of premises. Lambe continued that this particular building contained two rooms, and had originally been intended for use as part of the school, but instead became temporary housing for convicts owing to overcrowding at the Female Factory. The building was described as being in a good condition, having been recently repaired (TAHO, CSO1/1/107/2597).

Another use of the site was for the housing of military veterans. It is not known how many veterans lived on the site, or which particular buildings they occupied. However, like the school and convict housing, this was only a temporary use for the strategically important site. Moves towards permanent public uses began in 1826. The first such development was the relocation of the government Lumber Yard. By this time, the old Lumber Yard at the barracks was in a dilapidated state. The complex was not secured, with the theft of building materials a somewhat common problem.

After some consideration, the government decided to construct a new yard at Macquarie Point, some distance from the centre of the town. The chosen site was to the south east of Lord's house, in a location previously containing the garden. The Land Commissioner's opposed Macquarie Point because of the difficulty in landing timber. However, the benefit of the site was that timber could be landed from ships at either low or high tide and was relatively close to the penitentiary in Campbell Street (TAHO CSO1/1/116/2898 and TAHO PWD266/1/711).

Coinciding with the relocation of the Lumber Yard was the arrival in August 1827 of John Lee Archer to take up the position of Civil Engineer and Colonial Architect. Archer was provided Lord's old house as both his residence and office. Repairs were made to the building before he moved in and a new stable was built. The veterans and their families were asked to vacate the premises in August (TAHO CSO1/1/37/640, and TAHO CSO1/1/169/4058).

Over 1826-1827, the Lumber Yard and Engineer's Office were relocated to Macquarie Point (*Colonial Times and Tasmanian Advertiser* 5 January 1827 and *Colonial Times and Tasmanian Advertiser* Friday 5 October 1827). By February 1827, the Chief Engineer was able to report that the new Lumber Yard was in a 'very forward state', with the brickwork for the range of carpenters shops being completed, and the stone foundations and some of the brickwork for the buildings on the south side of the complex progressing. In early October it was noted that (*Hobart Town Gazette* 6 October 1827):

> The Engineer's office was removed last week from the old Lumber- yard at the top of Davey street to the new buildings at Macquarie point. When the workshops of the several mechanics are also removed, the general convenience and the safety of the public property in that department, will be very materially increased. The facilities afforded for pilfering by the old insecure fence were too great for men in their situation easily to withstand.

Other developments included the erection of a stone wall to divide the complex from Mrs Collins' garden next door and the construction of a 'spacious arched brick drain' which crossed through the centre of the Yard before entering the Derwent at a beach.

It is also in this period that the site began to be depicted in images, plans and surveys. Unfortunately, no sketches or paintings have been located which clearly show the front of the site.

Confusion exists over the Lumber Yard. A series of annotated floor plans were prepared of this complex. None are dated, and all slightly differ in the depiction of the site, arrangement of buildings and functions. Three of these plans have been reproduced below, given the lack of certainty as to which one actually depicts the Lumber Yard as constructed (Figures 2.2.1 to Figure 2.2.3).

Known at various times as the Lumber Yard, King's Yard and Queen's Yard, the place was far more than a location for the storage of timber, as indicated by the range of different trades shown on the figures above. Indeed, it was the government's principal works depot in the colony.

Here, a whole range of skilled trades were practiced by convicts, including blacksmithing, carpentry and furniture production. The workshops surrounding the yard were used by turners, nailors, carpenters, sawyers, wheelwrights, tin smiths, armourers, painters, glaziers, coopers, saddlers and harness makers. Stores were also erected for bricklayers, masons and stone cutters working in the nearby quarry (Austral Archaeology 2000:290).

Throughout its relatively brief life, the lumber yard was subject to intense criticism and inquiry. Complaints were varied: that the convicts could be better used elsewhere; that their labour was misappropriated; and that their work was counterproductive to private industry. Ridiculed as 'that worse than useless establishment,' 'slumber yard' or 'plunder yard', calls for its closure began as early as 1831 (*Colonial Times*, 26 April 1831; Colonial Times, Wednesday 10 August 1831; The Hobart Town Courier 9 November 1832 and The Hobart Town Courier 4 February 1832, p.4). Probably in response to these public criticisms, in 1833 James Simmons the Director of the King's Yard was charged to provide weekly reports on the productivity of the convict workforce. Two such reports continue to exist, and the following summarises production from the 1st to the 6th of April 1833:

- 10 blacksmiths had fabricated 76 road hammers, four boat hooks, 56 quarry picks and a range of equipment for carriages, ploughs and the ship the Tamar.
- Five nailors had made 10.6 kilograms of nails.
- One copper and tinsmith had made five boxes for seals and money scoops for the Treasury.
- Six cabinet makers had made a level to be used for constructing steps, chairs for the judges branch and a table for the secretary's office.
- The chair maker had finished six chairs ready for carving.
- Two turners had made legs for the judge's chairs, as well as equipment for schools, and the Tamar.
- Three sail makers were making a jib for the Tamar and were also in the process of making the jib and mainsail for a boat belonging to 'an Aboriginal native'. Flags were also being made or repaired for the harbour pilot and the flag at Mulgrave Battery.
- Six sawyers had cut 210 metres of pine, 34 metres of stringy bark and 3 metres of cedar.
- 15 wheelwrights had repaired a timber carriage, made 72 axe handles and finished 6 wheelbarrows.
- One painter had painted a boat.
- Eight labourers had been employed in sanding and stacking timber.

Private industry was also occurring nearby. In 1838, the first full-rigged ship was built in Tasmania on the sandy beach at Macquarie Point. The Maria Orr was 289 tons and was constructed for William M Orr as a whaling vessel (Scripps 1997:125; *The Mercury* 23 September 1922; *World* 20 November 1923 and *The Mercury* 15 October 1938).

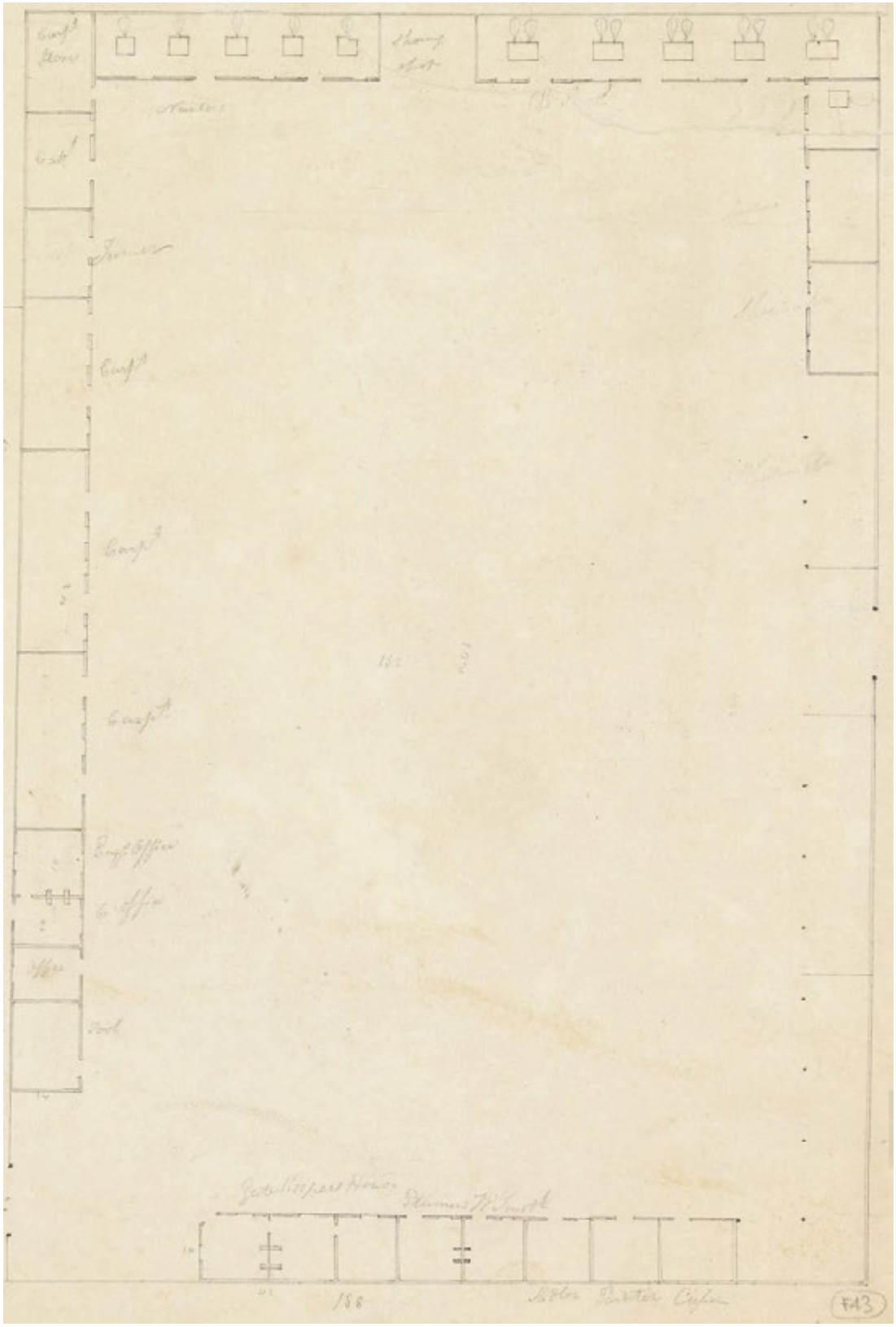


Figure 2.2.1 c.1826 floor plan of the Lumber Yard. Annotations refer to the following: 1: Carpenter's store; 2: Nailors; 3: Blacksmiths; 4: illegible; 5: illegible; 6: illegible; 7: illegible; 8: Cooper; 9: Painter; 10: Saddler; 11: Wheel smith; 12: Plumbers; 13: Gatekeeper's House; 14: tool shed; 15: Office; 16: Carpenter's office; 17: Engineer's office; 18: Carpenters; 19: Carpenters; 20: Carpenters; 21: Turners; 22: Cabinet Makers. North to top of figure (TAHO, PWD266/1/707, Plan-Royal Engineer's office and out buildings, Hobart. Reproduced with permission).

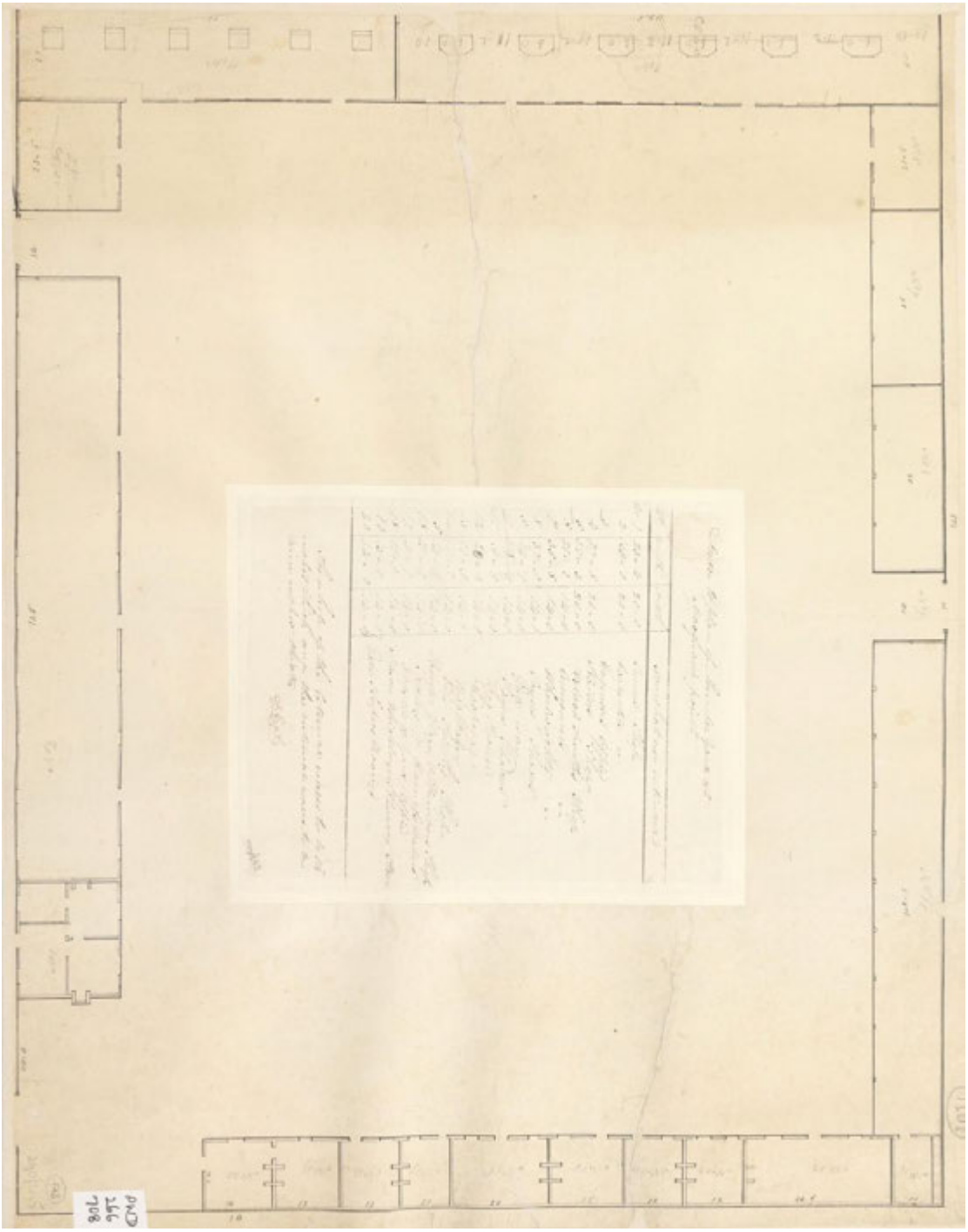


Figure 2.2.2 Undated, probably c.1827 floor plan of the Lumber Yard. Beginning at the bottom right and proceeding clockwise: 1: Turners Shop; 2: Carpenters Shop; 3: Engineers Office; 4: Nailors Shop; 5: Blacksmiths Shop; 6: Armourers; 7: Wheelwrights; 8: sawyers shades (i.e., open structure); 9: Gateway; 10: sawyers shades (i.e., open structure); 11: Bog House; 12: Cooperage; 13: Bag Maker; 14: Tin Smiths Shop; 15: Painters, Glaziers & Plumbers Shop; 16: Sadler and Harness Maker; 17: Overseer of Yard's Office; 19: Mason, Bricklayers and Quarry Store; 20: Gate Keeper's Rooms. North to top of figure (TAHO, PWD266/1/708, Plan-Lumber Yard (later Royal Engineers Office) with index to buildings. Reproduced with permission).

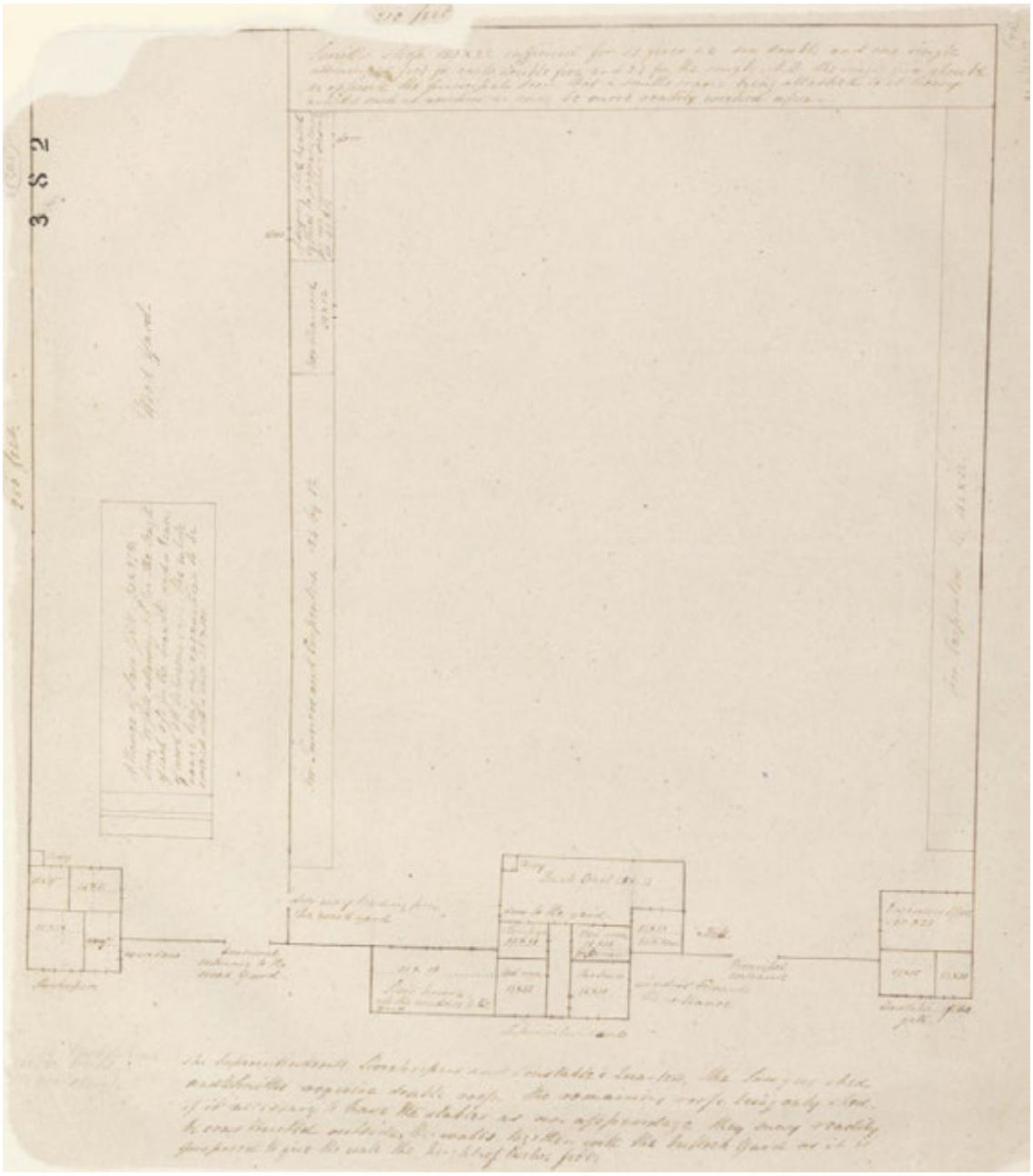


Figure 2.2.3 Undated, probably c.1827 floor plan of the Lumber Yard. Beginning in the long room the top right and proceeding clockwise: 1: Smiths Shop to contain 13 fires; 2: Carpenters; 3: Engineer's Office; 4: Constable of the gate; 5: Principal entrance; 6: Superintendent's Parlour; 7: Bedroom; 8: Pantry; 9: Bedroom; 10: Kitchen; 11: Courtyard and privy; 12: Store House; 13: Door leading to wood yard; 14: Occasional entrance to wood yard; 15: Storekeeper; 16: a 'range' of divided sawpits, the whole contained within a single excavation and covered by a roof; 17: Turners & Carpenters; 18: charcoal; 19: drying shed heated by flues to prepare timber (TAHO, PWD266/1/710, Plan-Lumber Yard, Hobart (later Royal Engineer's Office). Architect, Public Works Department. Reproduced with permission).

1835-1870 Acquisition & Redevelopment by the Royal Engineers

The Lumber Yard continued to operate until the mid-1830s, until displaced by the arrival of the Royal Engineers. In 1834, the London authorities put in place a new policy of stationing officers of the Ordnance Department in the Australian colonies. Captain Roger Kelsall of the Royal Engineers was appointed to Van Diemen's Land to command the branch of the Ordnance Department, arriving in Hobart in December 1835. His arrival preceded by one day the arrival in Sydney of the Royal Engineer appointed to New South Wales, thus giving Tasmania the distinction of having the first Royal Engineer in the Australian colonies (Australian Dictionary of Biography 1967 and Spratt 1992:97).

Kelsall took charge of the Macquarie Point yard in 1836. The Engineers made use of existing buildings, with Edward Lord's original 1815 house converted for use as barracks, and the former Lumber Yard reconfigured to become the Engineers Yard. At some stage, and for reasons not known, the shape of the yard was changed from a regular rectangular, to an irregular trapezoid. The date of this change is not known, but it may have been as early as the arrival of the Engineers in 1836. Some of the original Lumber Yard buildings were probably incorporated into the new complex, but its reconfiguration would have required new structures as well.

The role of the Engineers was broad and varied. They were responsible for the design, construction and maintenance of all convict and military buildings, fortifications and hospitals. Their work extended from Hobart to Launceston, including the towns of Ross, Campbell Town, George Town, Westbury, Richmond, New Norfolk and the penal settlements on the Forestier and Tasman Peninsulas (*Colonial Times* 5 April 1836 and MacFie 1985:1).

During the 1840s, the role of the Royal Engineers was further expanded. Their responsibility grew to include all civil government works in addition to military and convict projects, together with maintaining provisions for troops and convicts. In 1837, this amounted to 500 military personnel and 4,000 convicts. By 1847, it had exploded to 3,000 troops and 20,000 convicts (Spratt 1992:98).

In response to this massive increase in work, a new headquarters was established on Macquarie Point, adjacent to the Engineers Yard, and outside of the study area. Constructed in 1846, the Royal Engineers headquarters remains extant to this day. A new large stone jetty had also been constructed on the waterfront by the Engineers, possibly as early as c.1840 (Spratt 1992:97-99).

A laneway used to follow along the northern edge of the Engineers Yard, leading down to a beach on the Derwent. Here, the armed sailing ships would be landed for repairs. The crews would travel along the laneway to reach the city, painting the names of their ships on the wall of the Yard building (*The Mercury* 2 January 1911).

A new plan of the Macquarie Point site was prepared towards the end of the tenure of the Royal Engineers (Figure 2.2.5). Dating from 1872, the plan shows the former Lumber Yard reconfigured from a rectangular shape to an irregular trapezoid shaped enclosure. Changes were also made to the barracks building. The largest area of works was the construction of a new western wing of the building, extending on its previous footprint. Its date of construction is not known, but it does not appear in the 1856 photograph. Small timber extensions or outbuildings were also present to both the front and rear of the barracks. The long narrow building to the front of the building was noted as being 'sheds' on a later plan (TAHO, P1330/1/5115, Plan 7807568 (628)).

By this time, the old store building to the rear had been converted to two houses. The date at which this conversion occurred is not known, although it could have been in use as housing for some time prior. It is less clear if the c.1827 stable building was retained, during the occupation of the Engineers, or if a new building was constructed on its footprint. The plan does not show the unknown building located to the south east of the Engineers Headquarters, perhaps suggesting its removal by 1872.

The Royal Engineers and Ordnance served in Tasmania from 1835 to the early 1870s. With the end of transportation and the advent of self-government in 1856, greater responsibility for defence fell on the Tasmanian government. This was coupled with a surge in military interest following the Indian mutinies

and the Crimean War. It resulted in the establishment of volunteer forces, including the first Hobart unit in 1859.

The yard was transferred to the Southern Volunteers Unit for use as a drill yard in 1864. The site was far from perfect. The Colonel in charge of the Volunteers complained of the stench emitted from the slaughter yards and the interruption to rifle practice caused by the comings and goings of carts (TAHO, COM1/41/1/1). The drill yard became the headquarters of a number of different groups including the Hobart Town Artillery Company, the First Rifles, the Second Rifles, the Derwent Rifles, the Manchester Unity Riles, the Buckingham Rifles and the City Guards. Modifications were made to the old buildings, with the sheds surrounding the yard repaired for the storage of arms and one building converted to an amphitheatre to allow members of the public to watch the exercises. As the drills mostly took place at night, gas lights were fitted (MacFie 2005:1; *The Mercury* 2 January 1911; TAHO, COM1/41/1/1and *The Mercury* 22 October 1864).

With the removal of the Imperial troops in 1870, the volunteer groups transferred to Anglesea Barracks. Two years later, the old drill yard was provided to the contractors of the Main Line railway for use as a storage ground. Use was made of the existing stables, carpenters and blacksmiths shops in the construction of wagons. The heavy traffic from these works destroyed the previous level and smooth yard surface. Volunteerism was revived in 1876 following fear of Russian invasion, and the space was again turned over for use as a drill yard. By 1879, the former Engineers Yard and its buildings were too large a complex for the volunteers who only occupied a few rooms for the storage of muskets and band and orderly rooms. Recommendations were made that the remainder should be demolished unless the government agreed to the maintenance of the unused sections of the complex (TAHO, COM1/41/1/1).

Photographs were taken of the drill yard during the late nineteenth or early twentieth century. These are highly useful in understanding the complex, and are among the only known depictions of the interior of the space. Figure 2.2.6 was taken from an elevated position, most likely from one of the tall structures at the adjacent gas works. The photograph shows the northern range of buildings in the yard, although those on the eastern side and the roof of the western side can also be made out. It also assists in understanding the relationship between this part of the site and the adjacent slaughter yards, reclamation works and the railway.

Figure 2.2.7 shows the Volunteer Artillery with 13 pounder guns within the drill yard. The photograph looks towards the buildings forming the northern end of the yard. The wall at the eastern end of the yard can also be seen, and above this, the distant hills of the Eastern Shore of the Derwent. By comparing these two photographs, it can be seen that the range of buildings on the eastern side of the yard had been largely demolished by this time, leaving only one end wall to enclose the space.

1858-1909 the Slaughter Yards

From 1820 the lower Domain area was the site of the government stockyards. This was followed by construction of a slaughterhouse west of Collins' property and adjacent to the Domain Creek, near what is now 2-6 Collins Street.

The yards removed the practice of slaughtering animals from individual butchers, and in theory, allowed health standards to be enforced. However, situated within the town boundaries, the foul nature of the place and associated waste disposal methods attracted unfavourable comment. As early as 1826 the Land Commissioner's recommended that the slaughter yards be shifted east of Collins' property, but to no avail. Later in 1843, the Government Medical Officer condemned the Public Slaughter House as 'one of the filthiest places in the city', and urged the authorities to relocate the operation so that the offal and filth could be carried out to deep water, instead of rotting away in the mouth of the Rivulet. More than a decade later - in 1858 - the government took action with the construction of a new and larger slaughter yard on Macquarie Point (The Wapping History Group 1988:30,32).

The yards were expansive, needing more room than was available at Macquarie Point. The solution was to carry out substantial reclamation works beyond what was then called the Queen's Yard. These works formed part of a larger and progressive program of remaking Sullivans Cove (Hudspeth and Scripps 1988:6 and TAHO, PWD266/1/780).

As early plans of Sullivans Cove show, the area surrounding Macquarie Point and the mouth of the Rivulet were shallow and exposed at low tide. These natural advantages allowed for a fairly simple process of reclamation. A sea wall formed from dolerite, or 'iron stone' was constructed along the outer edge of the area. This was then filled in with rubble to form the flat area for the slaughter yards (TAHO, PWD266/1/723). The resulting site was lower in level than the adjacent Queen's Yard marking the first of several major phases of reclamation that has taken place at Macquarie Point.

Public architect, surveyor and engineer, William Porden Kay was responsible for the design of the reclamation as well as the yards. The site initially consisted of two large brick buildings with flagged floors for the butchering of animals. Surrounding the slaughter houses were a series of stock yards for the cattle, sheep and pigs as well as sale yards (TAHO, PWD266/1/726). A small section was reserved for government meat supply, while the remainder was leased for use by private butchers. A purpose built jetty – located near the site of the present Regatta Grandstand – was also constructed for the landing of animals. Uncomfortably close to the operation, a two storey stone house was built for the superintendent of the yards, with Mr Dossiter the first occupant. A photograph was taken soon after showing the house and yards and buildings behind (TAHO, PWD266/726).

Whilst built by the government, management of the site was the responsibility of the Hobart Municipal Corporation. The same pollution and public health problems that had always dogged the operation soon emerged at Macquarie Point, but were exacerbated by being such a low lying site with poor drainage. By the 1880s, Wapping had unofficially become a noxious trades area, with tanneries, a soap and candle making factory as well as the gas works and slaughter yards all virtually cheek-by-jowl. One correspondent to the Mercury observed that the stench and stagnant pools of blood were 'enough to make a man forswear meat, and become a vegetarian for the rest of his life', while the meat itself was tainted by ammonia fumes from the gas works and fly-blown owing to the nearby presence of the town tip (Clark1997:41; Stephenson EMF Consultants 1993:23; *The Courier* 10 February 1858; The Mercury 31 July 1883 and The Mercury 3 November 1883).

Calls began to be made for the closure of the Macquarie Point slaughter yards in the early 1890s, with a petition receiving 1,012 signatures. A yearly record from the time noted slaughter records at the yards of 6,835 cattle, 51,021 sheep, 18,351 lambs, 847 calves and 10,662 pigs (*The Mercury* 11 March 1893). A description of the complex was also published (*The Mercury* 11 March 1893):

> You enter a rough uneven surfaced yard filled with strong pens and a maze of yards and buildings to get at the business proper. When animals arrive by sea they are driven up the beach from the landing jetties, and like their fellow victims from shore are yarded off, the sheep into pens accommodating 25. There are 54 pens, securing when required, 1,350 head of mutton. The heavier kind – bullocks, etc. – are provided for in 26 pens, while a similar number of stys [sic] house the pigs. …. The killing is in "full swing" in the afternoon, especially on Mondays and Thursdays, which are the busy days, though sacrifices for the carnivorous are made hourly. …. But as to the abattoirs, the most cursory inspection is sufficient to condemn them in toto. They are no way suitable. The site is a bad one, being hemmed in on all sides by higher ground. Everything is on the most primitive scale. Open drains, inconvenient arrangements, all the drawbacks customary in an establishment that rather wears the appearance of being added to periodically by rule of thumb than built to any sort of plan.

Plans and images of the period show this extensive complex of buildings and its relationship with the drill yard and nearby gas works.

Despite the criticism, not all were in favour of abandoning Macquarie Point. City butchers, for example, argued that relocation would be both inconvenient and result in the price of meat being raised. Works were carried out to address some of the most pressing problems at Macquarie Point with improving drainage, installing asphalt floors and removing the pig sties. The slaughter yards remained on site

until 1909 when relocated to Derwent Park in Glenorchy (The Wapping History Group 1988:75; *The Mercury* 18 August 1893 and *The Mercury* 5 December 1893).

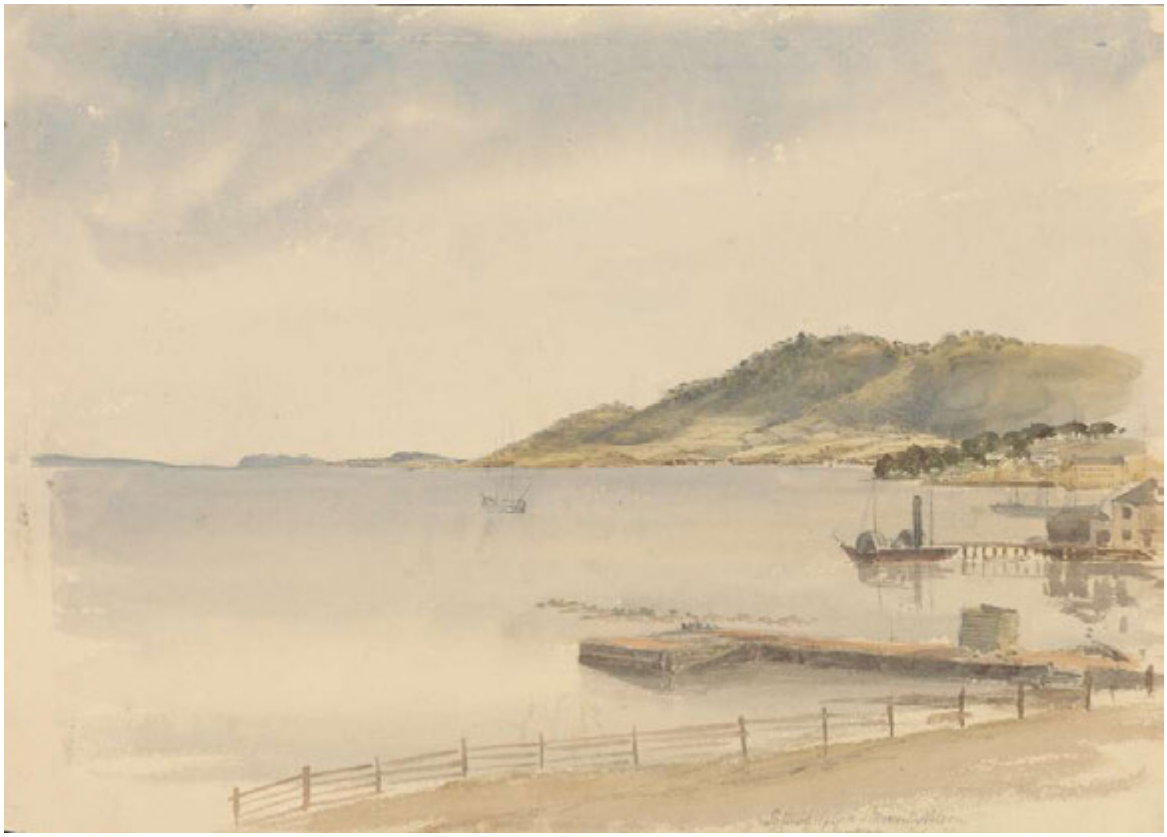


Figure 2.2.4 1847 watercolour taken from Macquarie Point, looking south. The Engineers Jetty is in the foreground (National Library of Australia, Stanley, CE, Sullivan's Cove & Mount Nelson from the Demesne (i.e. Domain) Hobarton, NLA, nla.obj-134676120-1. Out of Copyright).

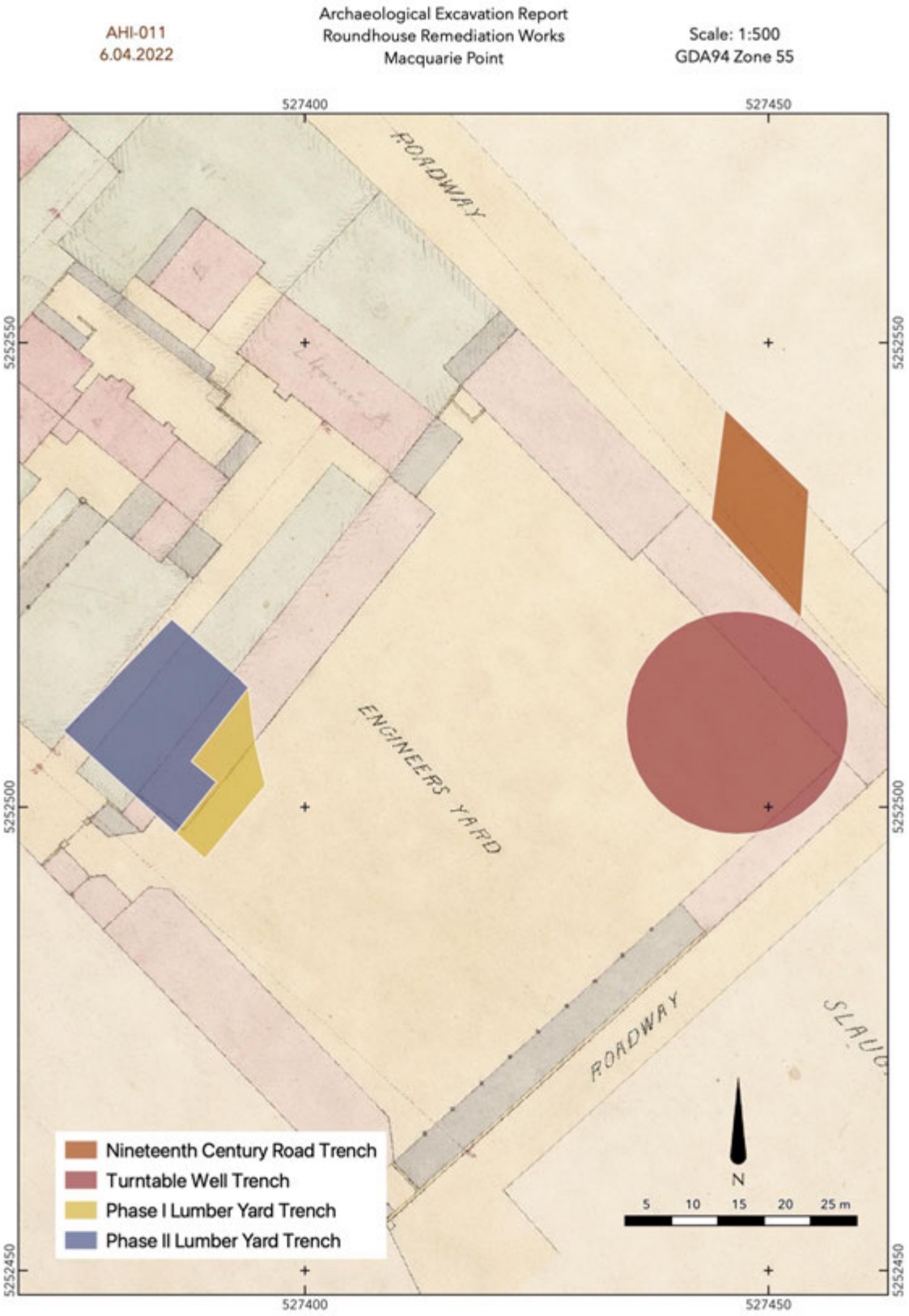


Figure 2.2.5 1872 plan of the Royal Engineers Complex. Masonry buildings are shown by pink shading, timber buildings by grey. Remediation area outlined in blue (TAHO, PWD266/1/714, Plan-Royal Engineers Premises, Hobart. Architect, Royal Engineers, 1872. Reproduced with permission).



Figure 2.2.6 Photograph showing the Drill Yard (note the cannons), slaughter yard and land reclamation beyond, looking to the north east (Tasmanian Museum and Art Gallery, Q2001.15.56.57, The Old Drill Yards.).



Figure 2.2.7 Photograph of the Southern Volunteer Artillery in the Drill Yard, looking to the north east. Note the removal of buildings from the eastern side of the yard (Tasmanian Museum and Art Gallery, Q11915, Southern Tasmanian Volunteer Artillery, 13-pounder, c.1890, Lower Macquarie Street. Reproduced with permission).

1872-2014 the Development of the Railyards

Perhaps best known of the various users of the site was the railway, a role that commenced in the 1870s. Discussions on building a north - south railway began as early as 1856 but nothing came of this early work. Interest was rekindled in the early 1860s, and in 1863 a survey was completed to link Hobart with Launceston by rail. After much deliberation, the route of the railway was finally decided during 1867-68 by a Royal Commission. However, the honour of establishing the first mechanically driven railway in Tasmania went to the Launceston and Western Railway Company which completed the 72 kilometres line between Launceston and Deloraine in 1871 (Chamberlain1991:2; TAHO RC20/2 and Clements 2005).

The contract to construct the line connecting Hobart and Launceston was awarded to the Tasmanian Main Line Company in 1871, but considerable delays followed with disputes over the terms of the agreement and the proposed route. For the Hobart terminus, local aldermen pushed for the station site to be located within the city at the Market Place (now City Hall). The Royal Commission decided otherwise, nominating a site at Macquarie Point. Several routes for the railway to the Point were considered. One followed Park Street and would have required a tunnel to avoid the hill of the Domain. The second and adopted option skirted the Domain along the foreshore. (*The Cornwall Chronicle* 20 June 1868).

Construction began in 1872, using many imported British workers, or 'navvies' (Conservation Services & MacFie 1983:9-10). By the end of the year, works had begun on cutting around the Domain, and by early January 1873, 20 men were employed, blasting away the stone. The Mercury was able to report by July that (*The Mercury* 25 July 1873):

> Very good progress is being made with the railway works in the domain. Nearly all the cutting has been done, with the exception of a portion between the lower cricket ground and the engineers' offices. The large body of earth which has been placed in the lower ground for the site of the railway station, is being covered with stone taken from the cutting. Going round by the line to MacGregor's ship-yards, the work of laying the rails has begun, and in a very short time the rails will have been laid on the route through the domain.

The site chosen for the Railway Station and yards was the old cricket ground on the Domain - a matter of some controversy. The Domain is precious to Hobartians and not surprisingly there was criticism for giving away what amounted to 'public commons' to the railways. These concerns were raised in Parliament, with Mr Jackson MHA arguing against granting part of the Domain, 'the only pleasure park the citizens had' (*The Mercury* 25 January 1872). Questions were asked whether the terminus could be located at the Engineers Yard and thus save the Domain (*The Mercury* 12 November 1872).

Legal issues also existed. Whilst the Main Line Company had the right to use Crown land, the Domain was subject to special legislation to prevent it being alienated (*The Mercury* 24 October 1872). As a result, amendments were passed to grant the Company land on the Domain. In its favour, the Company did attempt to respond to some of these concerns by trying to minimise visual impacts. They agreed that they would not construct buildings fronting Liverpool Street that were 'utilitarian in character', whilst the station building itself would be aesthetically pleasing. Landscaping works were also undertaken to preserve existing trees along Park Street as well as plant new ones around the grounds to screen the railyards.

On 16 September 1874, trains departed Hobart for the first time successfully, travelling as far as Risdon - where the rails ended. Over the coming months, the laying of the track continued and more trips were made, extending further northwards. By August the following year, the goods sheds, offices, engine shed and workshops had been completed. The Tasmanian Main Line Railway Company finally opened the completed line in its entirety in 1876 (Clements 2005).

A photograph taken in 1900 partially shows the western end of the site. The hill behind Macquarie Point had been extensively quarried away, with the rail lines located at the base of the cutting. The roof of the old barracks, can be made out, but the old two storey store building behind is more clearly

shown. Possibly to the west was the c.1827 stable. To the left of the old barracks can be seen a hipped roof building with a central valley. From the photograph, it would appear to be hard against the old barracks building and of two-storeys. It is possible, but unconfirmed that this building corresponds with the western extension to the barracks constructed at some stage between 1856 and 1872. The Railway Department had also constructed a new building within the complex, with the erection of an office for the Resident Engineer (TAHO, P1330/1/1960 Plan 8844064 (12252) TGR).

During the early years of operation, the rail complex was centred on its Liverpool Street site outside the study area. The rail line snaked along the shore of the Derwent and the base of the hill where the Cenotaph is now located before reaching the station. A small railway turntable for rotating the engines was located beneath the escarpment. Fronting the main complex was the impressive sandstone station building. To the rear were the railway platforms covered by canopies. The railyards, good sheds and workshops were located elsewhere on the approximately 3 acre site .

In 1890 the government took over the main line, first under the control of the Tasmanian Government Railways. By this time, the Liverpool Street site was already too small, inefficient and dangerous for the growing passenger and goods business. Discussions were first held in 1891 on expanding the railyard onto the Macquarie Point site, then in use as a drill yard for volunteer forces, slaughter yards, septic tanks and the municipal rubbish tip. Whilst the railways did take over the former Engineers Headquarters building, plans for the development of a new railyard were postponed due to costs. Parochial arguments over whether the workshops should be located in Hobart or Launceston also appear to have been a consideration, a question eventually resolved in Launceston's favour (Clements, 2005; Conservation Services & MacFie 1891:3; *Launceston Examiner* 9 April 1891; *The Mercury* 9 September 1891; *The Mercury 20* March 1908 and *The Mercury* 25 March 1908). Meanwhile, it was proposed that the headquarters of the territorial police would relocate to the old barracks building (i.e., Lord's former house) (*Launceston Examiner* 5 June 1891; *Launceston Examiner* 9 April 1891 and *The Mercury* 9 September 1891).

It was to take several decades before definitive action was taken. By 1906 the new slaughter yards in Glenorchy were well advanced and the government again turned their attention to Macquarie Point for the expansion of the railyards.

The early twentieth century was a period of growth in railway traffic. The expansion of the closer settlement scheme lead to increased agricultural production, and in particular orcharding, and as a result, a massive expansion in rail transport (TAHO, Journals and printed papers of the Parliament of Tasmania, 'Tasmanian Government Railways: Report for the Year ended June 30th 1910', Report No. 40). Passenger numbers in Hobart had increased by 21.8% in the period from 1891 to 1906-07, and goods traffic by 71.5%, or 31,900 tons. The old goods shed was inconveniently located, with trains unable to directly access the building, whilst the yard itself was a 'scene of marvellous confusion', with carts and carters making 'valiant attempts to load and unload trucks' with considerable delays. Danger was also present, with no signals and points to warn of the movement of trains (*The Examiner* 15 September 1906 and *The Mercury* 23 March 1908).

The government started planning for the redevelopment in 1908. Part of the scheme was to connect the rail lines with the wharves of Sullivans Cove to service the booming interstate and international fruit export market. Early proposals suggested the acquisition and infilling of Victoria and Constitution docks to provide a terminus for the railway. The Marine Board opposed the concept, arguing against the costs involved as well as congestion that would be caused on the waterfront. The matter was eventually resolved in the favour of Marine Board, with the government deciding that the drill yard, slaughter yards and tip site would be given over for the development of the new railyards, sheds and coal yards. In October 1908, £5,000 was provided as the first instalment for the removal of the engine shed and workshop to the Macquarie Point site. The works were to be carried out over 1908-09, but were again delayed (*The Mercury* 11 April 1908; *The Mercury* 15 April 1908 and *The Mercury* 13 October 1908).

A more developed proposal was put forward in 1910. The Macquarie Point site posed certain difficulties for railway expansion. Towards its eastern end were the septic tanks operated by the Metropolitan Drainage Board. The location of these tanks was a constraint on railway development, as was the pollution they generated. The problem was so severe that when the tanks were being cleared out 'the railway men could scarcely do their work.' despite being some distance away (*The Mercury* 2 June 1910).

Questions were raised as to the stability of the site. It was suggested that because the reclamation work was carried out by filling in the basin with Hobart's rubbish, the resulting land would be unstable. Until it settled, it could not be used to carry heavy wagons, nor take important buildings without the use of piles, a costly exercise (*The Mercury* 2 June 1910).

Ownership was also problematic. Whilst the railways had possession of the Liverpool Street site and the abandoned slaughter yards, the old drill yard between the two remained in military ownership. It was not until December 1911 that the Commonwealth finally transferred the site to the Tasmanian government and works could commence. A second instalment of £5,000 was approved, with the Minister for Lands estimating that the total costs of creating new railyards and a new railway station would be between £30,000-£40,000 (TAHO, Journals and printed papers of the Parliament of Tasmania, 'Ministerial Statement of the Minister of Lands, Works, Railways and Agriculture, 1910;' *The Mercury* 2 June 1910; NAA, P1325, 1380, 7806037; *The Mercury* 27 June 1911 and *The Mercury* 11 October 1911).

The location of the slaughter yards, septic tanks and municipal tip was to become the goods yard. The old drill yard was to be redeveloped as the roundhouse. John McCormick, the General Manager of the Railways Department reported his regret in the delays in establishing the new station yard with works finally commencing in 1911. Early works focussed on preparations for the roundhouse and laying additional sidings for goods traffic. It was anticipated that the new sidings would be available in time for the 1912 fruit season. This would somewhat alleviate difficulties in transporting agricultural produce, although the Minister warned that it would not be possible to improve the storage of general goods until the whole Hobart station was remodelled (TAHO Journals and printed papers of the Parliament of Tasmania, 'Tasmanian Government Railways: Report for the Year ended June 30th 1911').

The redevelopment of the railway site was one part of broader expansion plans for Hobart's waterfront. This included the construction of new wharf and jetty facilities within Sullivans Cove by the Marine Board, and the diversion of the Hobart Rivulet under what is now the Cenotaph Hill by way of a tunnel. The diversion would allow for the reclamation of the old Rivulet outfall (commonly known as Gasworks Straits) behind Hunter Street, which in time would become Evans Street.

Preparatory works were well in hand by 1913 and the old tip site had been given a 'quite respectable and business like appearance' and with works commencing on the foundations for the roundhouse. The topography of the site posed certain challenges for establishing a railyard, with different levels between the Macquarie Point site, the railway station on Liverpool Street and the wharves. Because of these topographical challenges, it was necessary to establish high and low level areas within the railyards. The roundhouse was to be constructed on the high level, with the goods yard on the lower. A concrete retaining wall was built between the two, measuring some 160 metres in length, and in some places, 2.4-2.7 metres in height. Because it was located on reclaimed land, foundations for the wall had to be carried down for a considerable depth through many feet of rubbish before a solid base was reached. The wall was finished with a fence formed from old rails recycled from the Western Railway, and joined by worn out boiler tubes. At the same time, the concrete septic tanks were in the process of being filled in, using sandstone taken from the railway cutting at Austins Ferry.

Meanwhile, the Marine Board was in the process of constructing the 140 metre long Ocean Pier. Rail lines extended on to the pier, crossing the Rivulet outfall by a temporary bridge before its course was filled to become Evans Street. It was hoped that the reclamation works and extension of the railway

would be completed in time for the 1914 fruit season (*The Mercury* 11 January 1913; *The Mercury* 4 August 1913; Scripps 2004:26 and TAHO, Journals and printed papers of the Parliament of Tasmania, Report on the Workings of the Government Railways for the Year ended 30th June 1913, Report No. 44).

Perhaps the greatest accomplishment was the construction of the locomotive roundhouse and electrically driven turntable, located on the site of the old drill yard. As the name implies, a roundhouse was a circular building used for servicing and storing locomotives. At its centre was a turntable which rotated the engines to face the bays. The roundhouse was a simple timber framed building clad in iron. It included 30 pits radiating out from the turntable and used for engine maintenance, with the workshops located on the south western side. The distinctive building also included lecture and classrooms for staff, sleeping quarters for drivers, dining and bath rooms. The electrically driven turntable was located within the centre of the roundhouse. This was reputedly the largest such turntable in Australia, capable of turning engines 73 feet long (i.e., approx. 22 metres) weighing up to 120 tons and was able to accommodate the new Garratt engines. It is not clear how long this record was maintained. The completed building was quite a novelty for Hobart, even being used for a pageant and rotating tableau during the 1915 Queen's Carnival (*The Examiner* 22 July 1922; *The Mercury* 24 June 1914 and *The Mercury* 26 October 1915). A selection of plans and photographs of the building are reproduced below.

After the roundhouse, the goods shed was the second largest building project at the railyards, constructed to the south east, and originally hard against the outfall of the rivulet. The function of the goods shed was for the temporary storage of good entering or leaving the railyards. The timber framed building was originally 91.5 metres long and divided into 25 bays. It was approximately 23 metres wide, with office accommodation located at its southern end (Figure 2.2.8). The new rail and coal yards, and the roundhouse were completed by June 1915, followed by the goods shed in December. Some delays in completing the works were incurred due to the outbreak of the First World War. The goods shed was later extended in c.1946 at its northern end by a further 22 metres, or six bays to accommodate growing transport demands (*The Examiner* 24 December 1915; TAHO, TC10/1/10430, Resident Engineer to Secretary of Transport Department (Railway Branch), 14 June 1945; Resident Engineer to Secretary of Transport Department (Railway Branch) 31 December 1945; General Superintendent of Transportation to General Manager - Hobart, 9 September 1946 and Chief Civil Engineer to Secretary of Transport Department (Railway Branch), 28 June 1949).

Whilst the Railway Department moved quickly to demolish the drill yard, it is less clear when the old barracks and its associated outbuildings were demolished. The barracks continue to be shown on 1911 plans, at which time the complex is noted as being in use for stores, carpenters and mess room (TAHO, P1330/1/9420, Plan 7812366 (7101)). The site can just be made out in an oblique aerial photograph of Hobart. Although undated, it would have been taken at some stage between 1926 and 1938 (based on known construction dates for other buildings absent or present in the photograph). The old store building appears to have been removed by this time and the 1890s office of the resident engineer can be located. Other buildings are present to its south, and although speculative, the roof forms of these buildings do share similarities with those shown in the 1900 photograph.

The first systematic aerial photographs of Hobart were taken in 1946 (Figure 2.2.12). Again, somewhat unclear, it would appear that buildings present in Figure 2.2.12 continued to exist in 1946. Most distinct is the two storey building with the hipped roof and central valley. Buildings are located to both the south east and north east. New railway buildings had also been constructed at the base of the escarpment, including the coal gang quarters and signal workshops, and most notably a large wheat shed, over 80 metres long (TAHO, P1330/1/2062, Plan 7812391 (653)).

In c.1952, the railways constructed a new two storey amenities building costing £21,000 located at the far western end of the site, and now known as 8A Evans Street (TAHO, AE417/2/4813). The completed office building was on a north east to south west alignment, and crossed through the site of Lord's 1815 house. Somewhat surprisingly, the two-storey building with the distinctive hipped roof was

retained as part of these works, and was removed at some stage between 1965 and 1973. To the south west and north east, a number of small workers huts were constructed.

In 1978, the Tasmanian Government Railways were taken over by the Australian government. Modernisation of the system was initiated by Australian National Railways; this resulted in the purchase of new locomotives but the accompanying rationalisation of services had a drastic impact on railway heritage. Across the State, most railway station buildings, housing, and sheds were removed or sold. This same process occurred at the Hobart railyards during the 1980s, with the removal of the majority of the rail buildings, including the roundhouse (*Clements* 2005:218 and *The Mercury* 23 November 1983). Constrained by both its size and location, the Macquarie Point railyards became increasingly inefficient for handling modern containerised freight trains. A new site was needed, and in 2009 works began on constructing a road and rail interchange and freight distribution hub for southern Tasmania at Brighton, north of Hobart. The last train left the Macquarie Point site in June 2014 (*Media Release* AA129/2009).

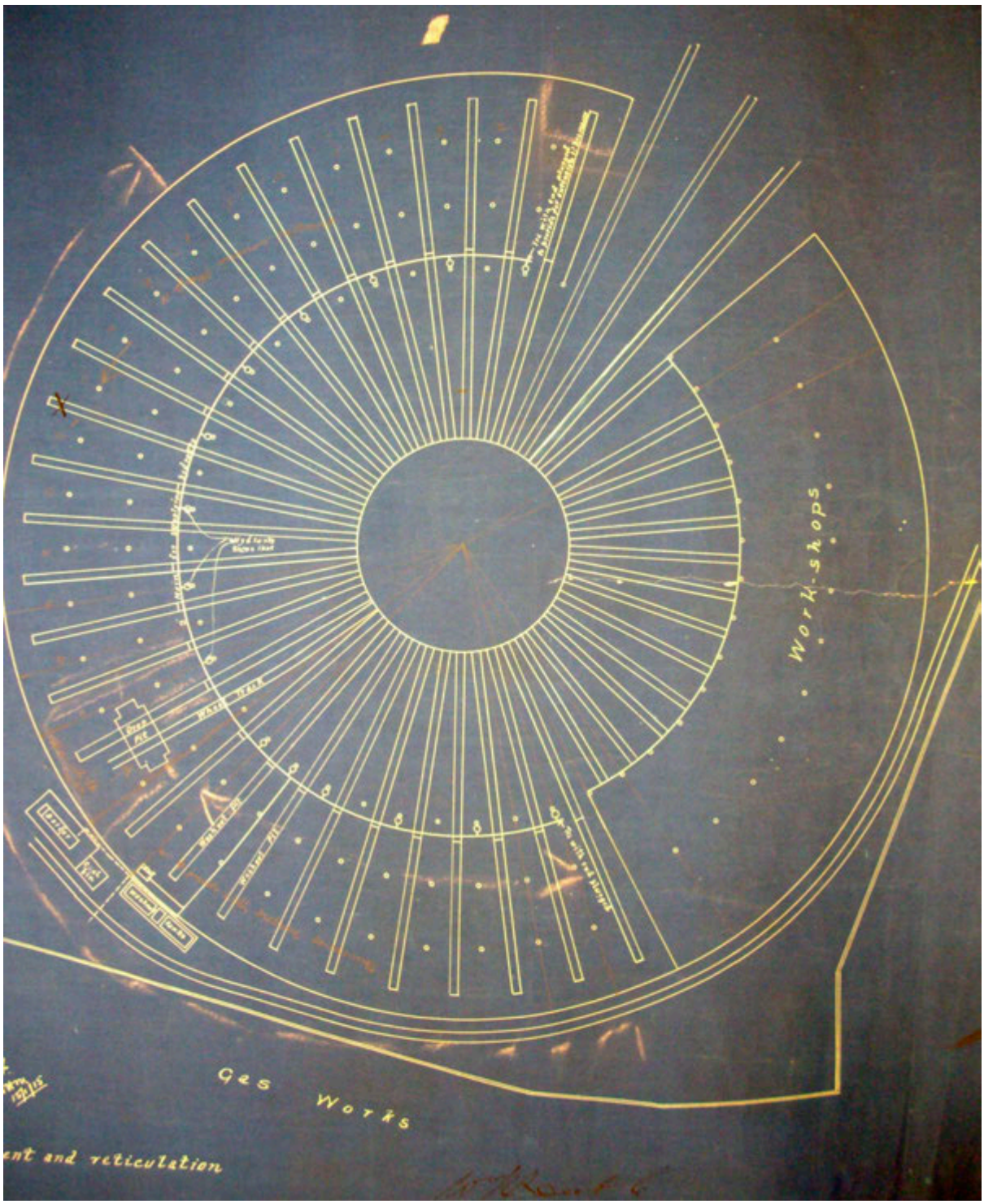


Figure 2.2.8 1915 blueprint for the roundhouse. North to top of Figure (TAHO, P1330/1/2114, Plan 8827829 (12167) TGR - Main Line - Hobart Roundhouse - Plan, section and details [blueprint]).

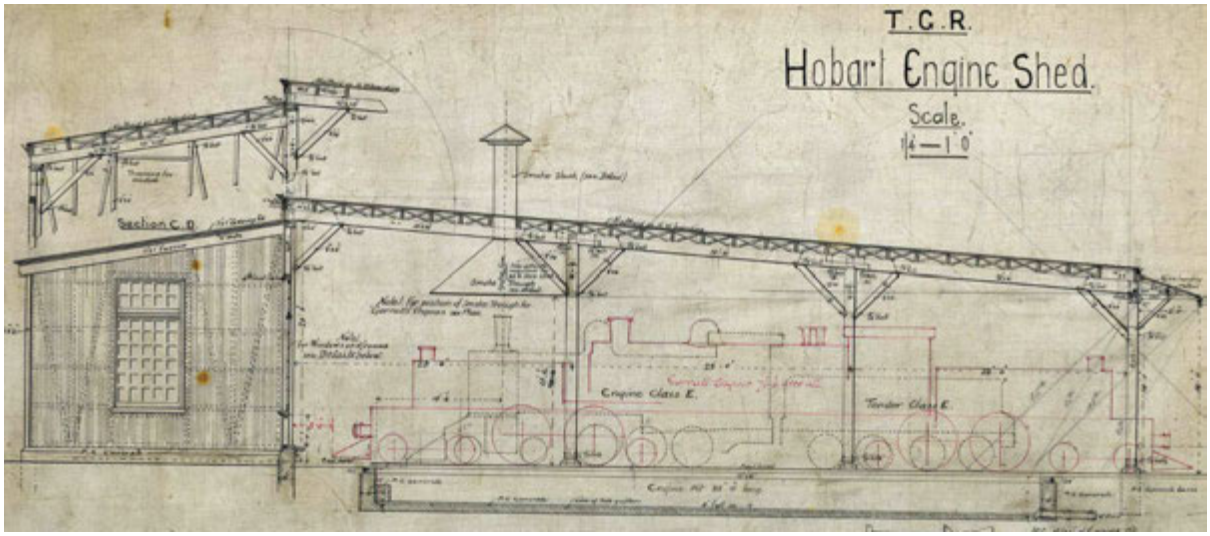


Figure 2.2.9 1912 section of the roundhouse and an engine pit (TAHO, P1330/1/8467, Plan 3094083 (6130) TGR - Hobart Engine Shed - showing longitudinal section and details of roof, engine pit, sash).



Figure 2.2.10 1914 construction of the electrically driven turntable, 'the largest in the Commonwealth' (TAHO, The Weekly Courier, 28 May 1914:18).

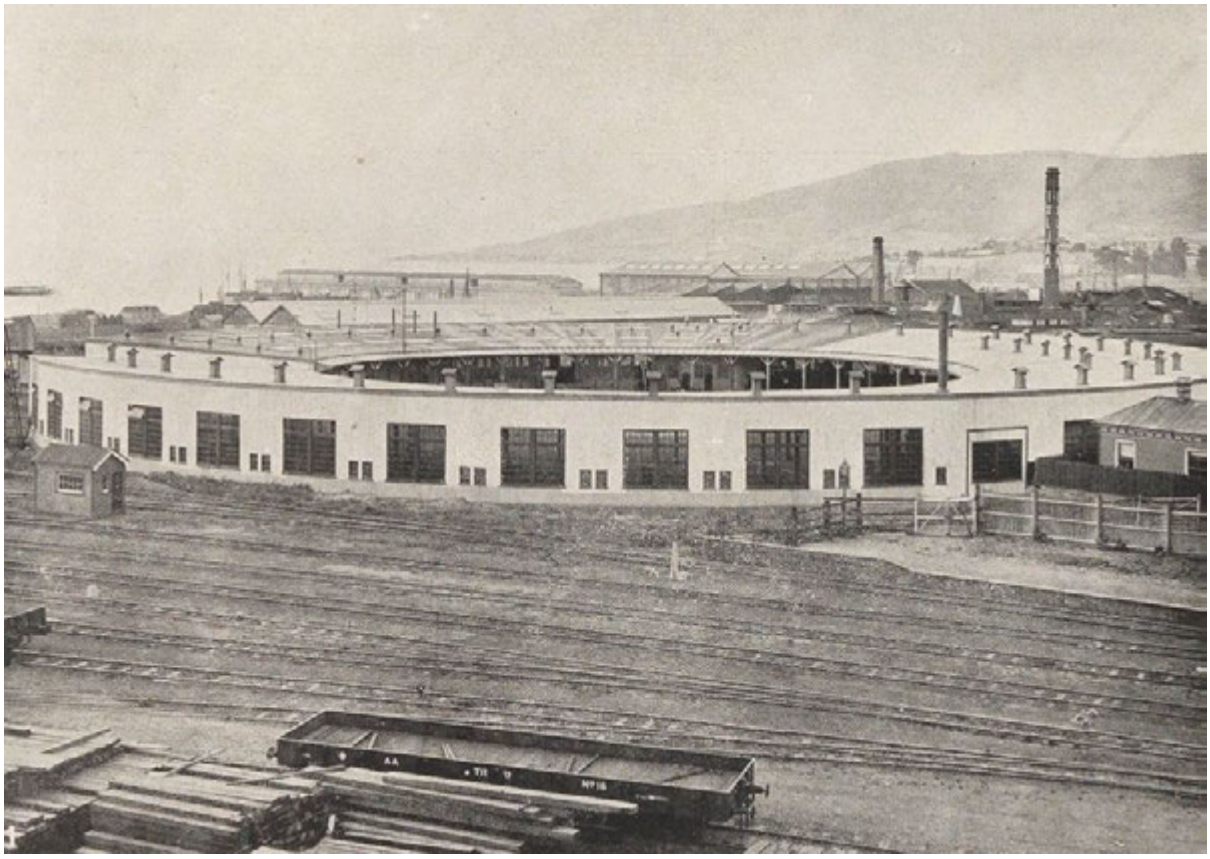


Figure 2.2.11 The completed roundhouse, 1915. The double gabled roof of the goods shed can be seen in the background (TAHO, The Weekly Courier, 23 December 1915:23).

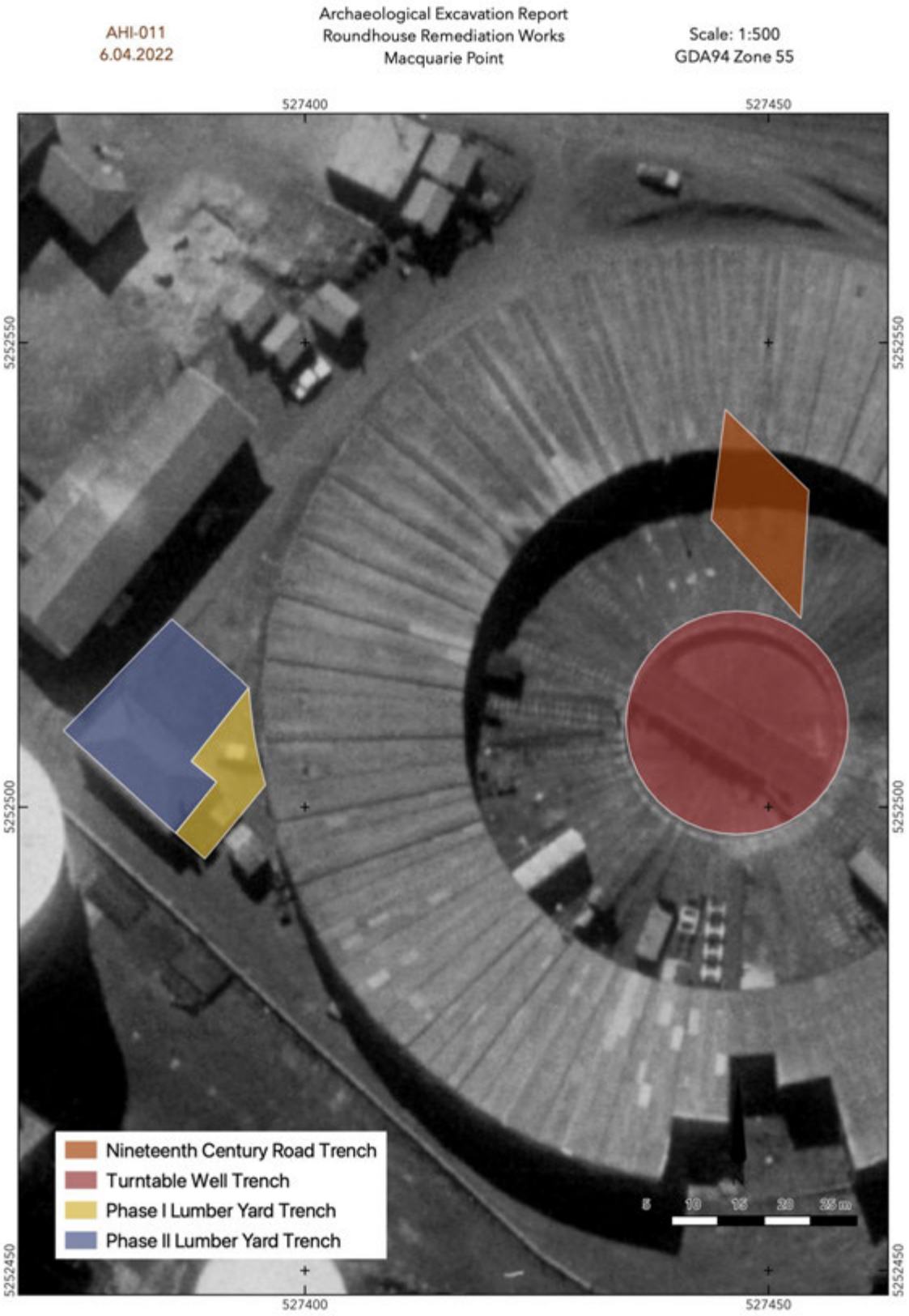


Figure 2.2.12 Detail of a 1984 aerial image showing the location of the excavation areas.

2.3 Archaeological Background

The archaeological background will concentrate on four areas that are most pertinent to the current investigation. First the pre-contact archaeological traces of the Muwinina from around nipaluna will be examined (Section 2.3.1). Then other contact archaeology sites in Tasmania will be considered along with a specific analysis of the Cottage Green site in Battery Point (Section 2.3.2), which contained contact material that bear the closest resemblance to the contact materials recovered from the Macquarie Point site. Relevant historical archaeological investigations, including the excavations that have already taken place within the Macquarie Point Area will be considered in Section 2.3.3)

2.3.1 Aboriginal Archaeological Investigations of nipaluna

Archaeological investigations of Pleistocene sites in southeast of Tasmania are rare and tend to focus on north, southwest or western Tasmania. In these studies Aboriginal land use in the southeast is commonly considered in contradistinction to the intensive occupation of the southwest. A summary of Pleistocene land use in southeast Tasmania is presented in Austral Tasmania's (2021) report on the Cottage Green Site and provides an analysis of the models presented in published works. However, working from the findings of that report as a basis for this analysis, with no archaeological evidence that can be clearly linked to the Pleistocene, the focus in this document will be on the Holocene occupation.

That the land around nipaluna was a site of sustained habitation by the Muwinina when the colonists arrived is indicated by Knopwood in his diary in February 1804 where he records that 'many fires of the natives around but none come to the camp' and a week later 'I walked some distance, see many of the native huts but none of them' (Knopwood 1803-1838:43-46). Knopwood, a vigorous perambulator, may have been here referring to Little Sandy Bay (referred to as 'kreewer' by Wurati), approximately two and a half kilometres to the south, where Wurati is recorded by George Augustus Robinson as saying that there was a large native village there (Robinson 1829-1834:349). However, Knopwood may have been referring to huts in the vicinity of the Hobart camp.

There is some evidence from a close reading of Robinson that would suggest that these huts were much closer and possibly within Hobart. When giving the name of nipaluna in the first instance, Robinson transliterates it as NIB.BER.LOON.NE and gives another name in association with this LING.HE although does not explain the association. The Tasmanian Aboriginal Centre considers this conjunction, stating 'Two of Robinson's recordings of '(1) Nibberloonne' each have a second word with them: '(2) linghe/lineghe'. While no further information or context is given for this other word, it is very similar to several recordings (European spellings) for a word for 'huts'/'house'/'encampment,' and so may well refer to the buildings erected at the site of the town within nipaluna. (TAC n.d.). The association of linghe with an encampment does seem likely but it is not clear whether this refers to the European settlement or whether it refers to an Aboriginal habitation site that existed prior to colonisation. However, Knopwood's mention of huts close to the colonists' camp is certainly suggestive of the latter.

According to Robinson's (Robinson 1829-1834:408) recording of Wurati the initial response of the Muwinina to the colonists arriving at nipaluna was that 'when they saw the first ship coming at sea they were frightened and said it was Wrageowrapper [a maleficent entity]; that when the first people settled they cut down the trees, built houses, dug the ground and planted; that by and by more ships came, then at last plenty of ships; that the natives went to the mountains, went and looked at what the white people did, went and told other natives and they came and looked also.'

It is likely that the sheltered area around Sullivan's Cove would have provided both a source of food and plant resources, a sheltered location and potential for coastal travel. Furthermore it is likely that the midden site within Macquarie Point is likely part of a large complex of middens that stretched further north along the Derwent and south to Sandy Bay.

The archaeological studies in nipaluna associated with Aboriginal cultural heritage fall broadly into two categories, *post hoc* recording of Aboriginal sites found during historical archaeological excavations

and littoral surveys, which are primarily concerned with midden sites, with or without associated scatters.

Three studies (Austral Archaeology 2002; Stanton 1999 and Green 1995) are associated with a Cultural Heritage Management Plan of the Domain for both historical and Aboriginal heritage. These studies do not identify any new sites within the Domain but summarise the present sites and provide sensitivity modelling for the Domain landform. Most importantly Austral Archaeology (2002), with input from Stanton (1999) and Green (1995) present sensitivity modelling for Aboriginal sites within the Domain that indicate that the greatest probability for sites, which are primarily midden sites, are present at an elevation of less than 150m a.s.l. along the slopes of the Domain.

Additional investigations in this area (Huys 2010, 2014a and 2014b) in the following decades have identified and rerecorded a range of sites in the Domain and the adjacent Cenotaph area. These sites are typical of the sites found throughout the locale, with sparse scatter of shell material, often with a range of associated lithic material. In some instance flaked artefacts made from dark olive green glass were encountered either as part of broader artefact scatters or as part of artefact scatters associated with midden sites.

A recent survey of the Domain Campus of the University of Tasmania by Austral Tasmania (2019) identified additional midden sites, very heavily fragmented, and isolated artefact scatters with the campus precincts. Additional shell material was present within the mortar for mid nineteenth century buildings of the campus and it is highly likely that this shell material was drawn from nearby middens.

Aboriginal heritage test excavation (Austral Tasmania 2015) has recently taken place at Macquarie Point and served to identify areas of low Aboriginal potential, caused through extreme disturbance, along the base of the escarpment. While it had been anticipated that fill had been deposited in these areas to build up the land there was no evidence to suggest that these fills had simply covered the earlier ground surface without disturbance. The deposition of the fills in this area has clearly caused disturbance to the original soil profile and in this case has limited the potential for Aboriginal cultural material to be present. The testing has therefore identified areas of low potential along the base of the escarpment. The extent of this disturbance was shown by the test excavation to be more extensive than the historical record had documented. Even in areas some distance south of the escarpment there was evidence of cutting and filling on to bedrock and from this test excavation it is likely that earlier deposits, both Aboriginal and historical, to the north of the round house has been severely limited. Owing to errors in the mapping of archaeological potential that had developed after Stanton's (2000) original assessment of the land around Macquarie Point, this earlier assessment had correctly predicted areas of potential at the site of the current excavation, the test excavation was able to assess the potential in the west of the broader Macquarie Point Site.

The work by Officer (1980) is responsible for the identification of a large amount of midden sites identified on the Derwent Estuary. These sites were identified as part of a wider study of the Derwent Estuary which focused on identifying midden and lithic sites. Generally Officer (1980:3.3) notes that mussel (*M. planulatus*) and oyster (*O. angasi*) are the predominant species of shellfish recovered from middens on both sides of the Derwent. Of relevance to the study area is the presence of abalone (*Haliotus sp.*) and turbo (*S. undulata*) shells in middens only near to the study area. Officer (1983:3.3) supposes that the area around Kangaroo Bluff may be amenable to the growth of these species as the swell is strong enough to provide the aerated water that they need.

Officer (1980:A6) identifies a number of stone quarries around the Derwent and the study area is roughly equidistant to one group of quarries on Droughty Point and another group in the hills to the north of Bedlam Walls. At Droughty Point there are identified quarries of silicified breccia while to the north there is a much wider range of raw materials. At Geilston Bay, cherty hornfels, opal in quartzite, pyroclastic blocks, at Shag Bay, opal-quartzite outcrops while at Tommy's Bight there are worked boulders of mudstone.

The excavation reports dealing with the discovery of Aboriginal cultural material across Hobart generally provide a restricted scope of recording of the stratigraphic context of the Aboriginal cultural material generally because it was often in a disturbed context, with stratigraphic information considered as incidental. A single Aboriginal heritage test excavation was undertaken in 1994 as part of the archaeological investigation of the old Blundstone Factory site, and was consequent of the archaeological discovery of lithic artefacts as part of the excavation of the historical strata.

The single Aboriginal heritage test excavation undertaken by Stokes et al (1994:24), where the interpretation offered for artefacts derived from two clearly different, albeit inadequately, described contexts is that most of the artefacts may have come from the general area although a few were considered to be *in situ*. Instead of examining the taphonomic and disturbance factors with a coherent level of detail, the authors prefer to claim 'that it was little short of miraculous that anything remains of this site.' It is not necessary to invoke the supernatural to explain the presence of artefacts within these subsurface contexts but it is rather the case, based on their own descriptions, that intra-site differences in the levels of disturbance arising from nineteenth century construction and occupation practices removed some areas of earlier stratigraphy and worked to inadvertently preserve others. Footings, trenches and occupation deposits among other features of post colonisation sites in Hobart have the capacity to both conceal and destroy Aboriginal material culture. In this case sections of pre-colonial soil profiles were able to persist beneath nineteenth century structures due to a preference for filling as opposed to benching and levelling. Overall the findings of this investigation help contribute to an understanding of the archaeological potential

Conversely, the report by ArcTas & Godden Mackay Logan (2013:132, 176) provides a discussion of the taphonomic history of the deposits from which the archaeological materials were recovered, including later disturbances to earlier strata. This report is concerned with documenting the historical archaeological excavation of urban housing and development in the Hobart CBD but also includes information regarding the deposits from which the Aboriginal artefacts were recovered. In considering pre-contact strata the report states:

> ... Aboriginal artefact-rich clayey loam [elsewhere described as chocolate coloured]
>
> This context consisted of a 200mm thick layer of dark grey clayey loam that was confined to three proximal localities in the northeastern corner of the site, the largest of which measured less than 4 x 2 metres in dimension. This material consistently contained numerous small charcoal grains and flecks which had discoloured and darkened the colour of the parent clay. Numerous Aboriginal artefacts were recovered from this unit.

Further, in discussion of the presence of archaeological deposits in contact-phase strata the report states:

> Two localities revealed soil units deemed to relate to the original contact landscape. The first was exposed beneath the stables building and the second beneath the coach-way. It should also be noted that one Aboriginal flaked stone piece was recovered from this soil unit within the test pit. As with adjacent features, the survival of original proto-historic soils here is due to the relative lack of subsequent intrusive disturbance at these localities in contrast to the rest of the site where extensive sub-surface disturbance at depth has occurred because of the early-twentieth-century hostel related additions. Additional discoveries of similar contact period soils were initially expected in the back yard, but this appears to have been historically excavated down to sterile clay during initial preparation of the site in the mid-1820s.

There are a number of descriptions that indicate the survival of small vestigial remnants of pre-1804 soils with Aboriginal cultural material in close proximity, generally cut by, later historical features of an early period. This is a similar pattern to that observed at the Blundstone Factory site, where the specific extent of disturbances of early features are determinative of the potential for pre-contact artefacts to remain *in situ*.

Several reports document the findings of archaeological investigations into the Private Secretary's Cottage and they also record Aboriginal cultural material as part of an ostensibly historical archaeological investigation. A report by Bickford (1994) mentions the presence of Aboriginal cultural

material, including a 'knapping floor,' created by the museum previous curator, as well as shell midden material within the former gardens of the Private Secretary's Cottage. However, the report is incomplete and no detailed information, such as what deposits were present, in what sequence any material culture was deposited, what archaeological features were present (if any), how many knapped artefacts there were present or any accompanying information such as photographs or context records. The plans provided in this report are not annotated and are simple facsimiles of the field records. This report, referred to as such by a technicality, adds scant information to the archaeological record other than that mentioned above.

Following from this investigation, subsequent excavations (Austral Archaeology 1995; 2006), were able to record in detail the presence of midden material and lithic artefacts within the deposits. The midden material, usually intermixed with European artefacts in a disturbed or redeposited context, also displayed lithic artefacts. The cultural material bearing deposits were described as 'a dark mottled soil deposit... comprised mainly of bricks, shell and Aboriginal stone artefacts (probably redeposited shell midden of local provenance).' Indicating that the redeposition of this material likely occurred around 1828. The original pre-colonisation strata were described as 'a layer of yellowish/brown mottled clay loam representing the upper gradation of the natural surface.' This tends to indicate that Aboriginal cultural materials were disturbed and redeposited early and remained relatively undisturbed by later modifications of this area.

A single study by Everett (2007) considers the archaeological sensitivity of the Tasmanian Museum and Art Gallery. This consideration summarises and considers the potential for buried Aboriginal cultural material to be present within the museum precinct. It notes that despite nineteenth and twentieth century development, large parts of the property have the potential to contain Aboriginal cultural material in a subsurface context, including deposits that may have been previously undisturbed.

The site that contained the most similar deposits was recently excavated in Battery Point by Austral Tasmania (2021). While containing urban development from the middle of the nineteenth century onwards, and thus differing markedly from Macquarie Point, the earliest phases of development contained knapped glass and ceramic artefacts and redeposited midden material disturbed during early gardening and farming activity. Additionally *in situ* midden material was located at this site and was able to provide the earliest date for the human occupation of nipaluna during the Pleistocene. A succinct summary of the results of this investigation were provided in that report (Austral Tasmania 2021:186):

> The results concerning the Aboriginal use of the site are comprehensive and span the Holocene through to the opening decades of colonisation. In this single site is a record of both the Aboriginal response to rising sea levels and the arrival of Europeans. 302 Aboriginal artefacts were recovered from this site; 286 were lithic artefacts, 12 were glass artefacts and two were ceramic artefacts. Among the lithic artefacts were a large number of flakes, a hammerstone and a ballawinnie stone. The ballawinnie stone was placed atop a pre-1830s garden path and this implied post contact use. Also present was a significant amount of pigment that had the potential to be used for decoration, including bodily adornment.
>
> The majority of contexts containing Aboriginal cultural material were principally shaped by European activity and were the result of earlier midden deposits being turned over into garden soil during the early nineteenth century. At the same time as this was taking place shellfish harvesting, likely less frequent, continued to occur within the area by Aboriginal people for at least 12 years after colonisation. Nevertheless a small area of remnant midden with dates for its lower strata of 8,150 - 8,048 BP and its uppermost of 3,231 to 3,014 BP indicates a period of occupation from a time before the sea levels reached their current level, with the truncation of the midden likely being the cause for the early closure date of the deposit.
>
> The pollen record has demonstrated the presence of two plant foods at the time of the middens formation: the man fern (*Dicksonia antarctica*), likely collected from the slopes of Mt Wellington, and the potato orchid (*Gastrodia sesamoides*), which may have been available within the local area. The former, must have been brought to the site deliberately by people and was a valuable source of non-seasonal food for Aboriginal people. The residue and usewear analysis of the 19 lithic items from the in situ midden material indicated the presence of artefacts that may have been used, briefly and then discarded, for scraping and cutting.

> Features and deposits associated with Cottage Green, the first phase of European occupation 1805-1830, were restricted to two garden beds, a garden path, postholes, yard surfaces and demolition deposits. These strata concentrated, in the northern portion of the site, revealed a large amount of information not only about the European occupation of the site but also about the Aboriginal presence after colonisation.
>
> The garden beds [0222 and 0400] and associated yard surfaces, appeared to represent the first phase of construction and occupation within the site. Both using and reusing very early sandstock brick in their construction these garden beds integrated posts into their design. The smaller less intact garden bed [0222] appeared to be earlier than the more substantial one [0400]. The later phase is likely to have included demolition deposits [e.g. 0405] and other posts throughout the site. The garden path [0022, 0336 and 0428] may have straddled the earliest and later sub phases of the first European occupation of the site.
>
> The demolition of tiled structures dispersed broken tiles throughout the later phases of deposits and formed several demolition deposits [0405 and [0336]. Later surfaces, now including tile fragments, began to cover earlier features and deposits. A highly plastic clay yard surface [0382], which was likely churned over and reworked well after Knopwood had departed the site also began to form at this time.

The very early date range of 8,150 - 8,048 BP for the lower strata of midden material can be considered to be a baseline date for midden formation along the current shores of the Derwent Estuary. This is one of the earliest uncontested dates obtained for an Aboriginal site in South East Tasmania, although this prominence likely reflects the result of the inundation of a great many earlier sites. The timing of this date in conjunction with the rise of the sea level to current height in c. 6,000 BP, and to a slightly greater height in the preceding millennium, indicates that this midden is likely the result of people following the retreating coast inland as it is the earliest possible time that such a midden is likely to have formed. It represents a human response to extreme climate change and the beginning of patterns of Holocene land use that would characterise this area through to the nineteenth century.

In addition to this the presence of expedient artefacts with some evidence of cutting and scraping, activities unlikely to be required during shellfish harvesting, within the in situ midden deposit suggests that processing terrestrial game or other plant resources may have been taking place on site. There is also evidence that lithic materials may have been processed or maintained in this area, with some evidence showing that hornfels may have been more available locally than silcrete although silcrete was clearly the more dominant material type in this area.

There is strong evidence of Aboriginal people sourcing terrestrial resources, such as *D. antarctica*, from the broader landscape in order to process or consume them at midden sites. This emphasises the role of a midden sites as part of a broader network; a site for the exchange and processing of materials as well as their consumption.

Further underlining the significance of midden sites around Hobart, and this midden site in particular, is the continued visits by Aboriginal people during the opening decade of colonisation. The shellfish along the shores of Sullivan's cove continued to be harvested by Aboriginal people as late as 1817. Nor did Aboriginal people discontinue the use of this site but instead maintained their connection with it, likely as they had done for the past millennia, as a place of meeting and of contact.

These visits, occurring in late spring and early summer, also support the seasonality of shellfish harvesting that is suggested by the presence of *M. planulatus* and *B. auratum* within the shell assemblage. Given the archaeological background of Hobart, with numerous midden sites clustered along the coast and lithic sites present in advantageous locations further inland, it seems likely that this site functioned as a specific and possibly seasonal node of occupation within a sustained system of settlement.

The ethnographic evidence that indicates the presence of native villages or encampments, words used by the early European ethnographers to translate Aboriginal concepts of place relating to nipaluna, supports a complex use of the land. Similarly, there is evidence of a division between sites of habitation and sites of shellfish processing that are indicative of a range of specific areas of activity in the local landscape. Wurati uses the term 'linghe' in association with nipaluna and this has been identified by the Tasmanian Aboriginal Centre as similar to the word encampment. However, from Robinson's

transcription of the conversation it is not clear if Wurati was referring to the then established European settlement or was using a longer term name that may have indicated a sustained form of Aboriginal habitation, contingent, seasonal, or occasional in the area. The presence of a large number of huts noted by an early colonist would certainly suggest that this area had been intensively occupied.

These studies together indicate that there is a dense concentration of cultural material, shell midden and lithic artefacts throughout the city, surviving as surface expressions within undisturbed areas along the littoral zone below an elevation of 50m a.s.l. Further concentrations of these materials were likely to have been present across the entirety of the CBD, with a corresponding scarcity of midden material at increasing distance from the shore. Although disturbed by intensive urban development, the excavation reports documenting the discovery of Aboriginal finds demonstrate that Aboriginal landscape still persists, in a modified form, beneath the urban development of Hobart.

Within the highly developed areas of Hobart, Aboriginal archaeological deposits tend to be associated with early nineteenth century features and deposits. Although this sounds like a simple matter of sequential deposition, with the next earliest features covering those deposited immediately prior and the two surviving or being destroyed together, the intricacies of this process is more complex. Previous excavations indicate that early historical features tend to cause limited impacts, in comparison to later development, but also serve to physically protect the nearby remnant undisturbed deposits by covering and providing obstacles to their later removal through more intensive development. Filling, not just cutting and trenching activity associated with this early development, creates a patchwork of in situ strata underneath later and more comprehensive development. Even in cases of comprehensive later disturbance, as was demonstrated by extreme disturbance at the Old Blundstone Factory, Aboriginal archaeological material can be found at depth in close association with early nineteenth century features and deposits.

Given that a pattern of contact sites have been emerging around Hobart, from surface sites identified in the Domain, to excavated sites along the foreshore it is necessary to examine the context of archaeological studies of contact within the Australian, and specifically Australian context.

2.3.2 The Archaeology of Contact in Tasmania

Recent developments in theorising the contribution of archaeology to an understanding of the history of Australia has tended to emphasise the dissolution of traditional conceptual boundaries, especially those relating to the role of Aboriginal people in the past. This emphasis relates to both the boundaries between pre-contact and historical archaeology (Williamson 2004:197) as well as those between Aboriginal historical and Non-Indigenous historical archaeology (Byrne and Nugent 2004:5). A similar approach will inform this report as it concentrates on archaeological sequence in order to move beyond disciplinary and sub-disciplinary boundaries.

Changes in thinking about contact archaeology in Australia has party arisen from and partly led to a wide range of studies in recent decades. These studies include analyses of the formal criteria of knapped glass artefacts (e.g. Harrison 2000; Goward 2011) to site specific considerations (e.g. Harrison 2004a; Collins, O'Sullivan and Huys 2011; Lydon 2014) and regional studies (e.g. Byrne 2004; Harrison 2004b; Head and Fullagar 1997; Irish 2011). An important collection of works appeared as After Captain Cook: The Archaeology of the Recent Indigenous Past in Australia (Harrison and Williamson 2002), which considers many aspects of contact archaeology in Australia. In association with Aboriginal Tasmanians, Murray (1993) has considered Aboriginal occupation in the northeast of Tasmania during the contact period and Bowdler (2014) has investigated a site in Western Australia likely associated with displaced Aboriginal Tasmanian women.

In Tasmania and of particular relevance is the work of Christine Williamson (2004) and the seminal study of Judy Birmingham (1992a; 1992b) at Wybaleena, considering the Aboriginal establishment on Flinders Island. Williamson conducted a detailed intra-site spatial analysis of a hut site excavated by a team of excavators led by Tim Murray (1993). The hut site related to the late 1830s and early 1840s occupation by Aboriginal people that had escaped George Augustus Robinson's attempt to move all

Aboriginal people to Flinders Island. This analysis revealed a significant degree of intra-site spatial variation in activity clusters, patterns of usewear and edge modification distinctive to knapped and unknapped glass flakes (Williamson 2002:85-88). Williamson also noted a number of flint artefacts that had the rough approximation of gunflints in terms of morphology but their presence at the site could not be readily attributed either to Europeans or to Aboriginal people (Williamson 2002:95).

Birmingham's (1992a; 1992b) study of Wybaleena is significant not only because of its direct association with Aboriginal Tasmanian culture in a contact setting and the presence of post-contact midden material but also because of its theoretical approach. Wybaleena was occupied by Aboriginal Tasmanians and the British staff from 1832 and 1847 after the Aboriginal people had been taken from mainland Tasmania. This study found differences between occupation sites in the character of post-occupation diet and material culture that will be considered as relevant in the final analysis of the site.

In Australian contact archaeology there are often readily understood spatial boundaries for Aboriginal places or times of occupation that have been established either through historical sources or the archaeological record. These boundaries can be stratigraphic in nature with different phases of occupation taking place at the same site (e.g. Murray 1993) or horizontal structure to the site with historically defined areas of use buttressed by distinctive material remains (e.g. Harrison 2004a; Lydon 2014). The Cottage Green site is different because there is continued Aboriginal use of the site for pre-contact practices, apparently undertaken with little regard for European claims of ownership, albeit likely reduced in frequency because of it. There is also contact initiated outside of the institutional context that often characterises archaeological contact sites.

This raises a number of issues in regards to the division into areas of distinct Aboriginal and European use that has been apparent at other sites but does not appear to be the case here. The presence of knapped glass and ceramic artefacts within the social garden space of Knopwood clearly indicates the presence of Aboriginal people within a location that was primarily a European social and economic space during the colonial period. Nor is the familiar narrative of control and interest on behalf of the colonising power applicable to the historical encounters. The material culture excavated at this site is an example of both Aboriginal responses to colonialism and the continuation of cultural practices outside of an institutional context.

What becomes striking in this scenario is that the difference between domestic and economic places have little distinction in either the Aboriginal or the European use of the area. Both cultures saw the site as a place for habitation as well as a place for economic activity and thus there is little opportunity to parse the material culture based on possible different uses of the site pursued by each group. This lack of clear spatial or functional differences of the material culture recovered from the site is best viewed in terms of the recent criticism of the division between the coloniser and colonised, expressed by Harrison (2014:15) as:

> conceptually problematic through the history of the past 500 years... it is entirely an artificial assumption that... hampers interpretations arising from the archaeology of colonialism and any understanding of the complex processes at play for all actors in particular temporal and regional contexts.

Particularism and process based reasoning highlighted by Harrison as a means of moving beyond conceptual dichotomies will be utilised to interpret the material culture of this site that would not lend itself to standard categories in any case. The central concept used in this approach will be that of trajectory, of particular artefacts and site specific processes, in order to understand an assemblage and site that is neither wholly shared nor readily divided.

In consideration of the results obtained at Cottage Green (Austral Tasmania 2021), which has been discussed in detail in Section 2.3.1 above, there is a pattern of Aboriginal people continuing their customary use of the Cottage Green Site, the land around that site was clearly an important location for harvesting resources from the intertidal zone. In addition to this there may have been broader cultural or social reasons for the occupation of this site or other significance in the land around Cottage Green that long preceded the occupation by Europeans. At the same time Aboriginal people were

able to combine their harvesting of shellfish with utilising resources that Knopwood was able to provide them.

Present in the house and garden, and over sustained periods of time, with recorded interaction with colonists extending beyond that of Knopwood and his household, there is also evidence of wider social interactions with the colony. It cannot be overstated the extent to which Knopwood's Garden was also a social space for the colonists, with a large variety of interactions taking place there. For the times that Aboriginal people occupied this location there was undoubtedly contact and interactions across a wider range of colonists than just the inhabitants of Cottage Green. The references to the 'usual' and 'fresh tribe' also indicates a long term engagement spanning years. This has important implications for the Macquarie Point site as there is potential that the people who were visiting Cottage Green were also present at the site of the current excavation.

2.3.3 Previous Historical Archaeological Investigations at Macquarie Point

Two previous phases of archaeological excavation have taken place in and around the current area of excavation, as well as several minor phases of monitoring associated with late nineteenth and twentieth century features that were also encountered in the current stage of excavations.

The earliest archaeological excavation at the site took place by AMAC in 2008 with eight widely spaced trenches placed throughout the entire Macquarie Point the project area. Three of these sites corresponded with the 'Royal Engineers Headquarters and Kings Yard.' The remaining five test sites were located to the east and outside of the listed boundaries of this place of archaeological sensitivity, but instead investigated phases of development associated with land reclamation. The investigations located what is believed to be an interior portion of Edward Lord's 1815 house, later modified by the Royal Engineers on the north west side of the former amenities building at 8A Evans Street, at the far western end of the site. The remaining two trenches within the listed boundaries of the 'Royal Engineers Headquarters and Kings Yard' did not locate significant nineteenth century archaeological features or deposits related to the Lumber/Engineers Yard or Slaughter Yards but were able to provide additional information to the depth and disposition of archaeological features at the site.

The description of each of these three trenches was accompanied by a detailed record of the height of archaeological features and deposits within each trench. Even though there was no direct evidence of features or deposits associated with the lumber yard, the regularity with which certain deposits, that share some similarities with strata identified in the lumber yard trench, is able to indicate a height range in which the archaeological features and deposits are likely to occur. The trenches in Table 2.3.1 shows the height of these key deposits, there is an evident fall in the landscape from Trench One, Trench Two and Trench Four.

The natural or sterile soil throughout all three of these trenches was a termed 'natural clay' or 'natural-dolerite with some clay' (AMAC 2008:91, 108) and appeared to be a highly plastic grey clay that is present within the soil profile between the dolerite bedrock and the loamy, plastic black clay above. There is no evidence of a pre-colonisation top soil or A horizon present in any of these trenches and it is likely that these soils were modified very early during colonisation as whatever features are present, primarily in Trench One, are bedded into these lower strata.

The band of archaeological material varied between 6.9m a.h.d. and 4.99m a.h.d. across all three trenches although no trench had a profile much deeper than 1m below the current ground surface, the variance in overall height reflects the underlying slope of the topography. While there was also some changes in the character of the deposits in each trench it is possible to characterise the fills in Trench One, Trench Two and Trench Four as similar to one another and to other test excavations in this area.

All three of the trenches also contained sandstock brick rubble, and in the case of trench one, evidence of internal structural elements associated with Lords House. It is clear that in the case of Trench One and Trench Two that twentieth century disturbance has removed a large amount of earlier strata. The extent of this disturbance was to later be further investigated and defined by Austral Tasmania in 2015.

Austral Tasmania (2015) excavated four 20 x 3m trenches to confirm the findings of the historical heritage assessment that had taken place for this portion of the site and to shed further light on the findings documented by AMAC several years earlier. These trenches were (Austral Tasmania 2015:ii-iii):

> Trench 1: on the south-eastern side of the Corporation's office building to locate Lord's House/Barracks;
>
> Trench 2: to the north-east of the Corporation's office building to locate the c. 1815 store building, later used for housing female convicts before being converted into two houses;
>
> Trench 3: in the centre of the study area to investigate the relationship between the Lumber/Engineers Yard and the later round house turntable, and to test the levels of disturbance within the yard area which were hypothesised in the 2008 report; and
>
> Trench 4: to the south-eastern of the Corporation's office building, to investigate the Lumber/Engineers Yard.
>
> Based on the results of the archaeological testing, a fifth trench was also excavated which extended westwards from the northern end of trench 1 for the purposes of determining if any archaeology from Lord's House/Barracks continued to exist in this location. Approval for the excavation of a fifth trench was provided by Hobart City Council (email B Ikin, HCC, 11 December 2014).
>
> The archaeological testing confirmed that the majority of the study area is highly disturbed and contained no in situ Aboriginal cultural material. However, of the five historic archaeological test trenches excavated, historic archaeological material was identified in test trenches 1, 3, 4 and 4. The material has been identified as belonging variously to part of the late 19th, early 20th century sewage system for Lord's house (test trench 1), a roadway which was ran adjacent to the Engineers Yard (test trench 3), a wall relating to either the Engineers Yard or the earlier Lumber Yard (test trench 4) and the footings of an outbuilding and brick yard area associated with Lord's house (test trench 5).

While missing the substantial deposits of Aboriginal cultural material that were present, this testing did identify a number of features including the walls of the Lumber Yard, which were to form a core part of the current excavation.

These five test trenches demonstrated that remnant and discrete areas of archaeological potential remained within the boundaries of this place. Evidence of Lord's house and outbuildings was located to the north of the former amenities building, but had been destroyed on the south east side, whilst discrete evidence of the south western corner of the Lumber/Engineers Yard was found. To the north east, the excavation located an historic road alignment which had followed the boundary of the Lumber/Engineers Yard. This testing also critically identified the extent of disturbance caused by the later rail yard construction on the nineteenth century features that were present at the site in a much more precise manner than had been recorded during the 2008 excavations.

Later (Austral Tasmania 2020) environmental test excavation at the former roundhouse site was archaeologically monitored in accordance with the testing methodology presented in 'AT0286 Macquarie Point Development Corporation Roundhouse Remediation Testing Works. Archaeological Methodology.' A single long trench identified the structural remains of several maintenance bays associated with the roundhouse and further defined the extent and high level of intactness of the turntable well.

While these three phases of testing and monitoring were limited in the interpretative power owing to the small scope inherent in the testing programme, they did effectively define the extent of disturbance that had affected early and sensitive areas of the site. It is unnecessary to recapitulate the findings of these reports in detail as they either documented materials outside of the current area of investigation and wholly different to them or they documented small elements of material that was recorded in full during the open area excavation. However, these excavations will be referred to in the discussion and interpretation section of the report as the full picture of the archaeological materials recorded at this site is considered and elaborated.

Table 2.3.1 Depths of key deposits in nearby 2008 test trenches.

Deposit Type	Trench One Depth A.H.D.	Trench Two Depth A.H.D.	Trench Four Depth A.H.D.
Current Ground Surface	6.900	6.34	5.940
Ashy gravel [007] variant	6.247 - 6.268	-	5.75 - 5.505
Sandstock Brick Rubble or features	5.959 - 5.748	5.605 - 5.455	5.325 - 4.990
Natural/Sterile Soil	5.748	5.455	~4.990

3.0 Research Design and Field Methods

Three research designs have been incorporated into this project, the initial historical archaeological research design to investigate the expected features (Section 3.1) a second research design that was developed to consider the Aboriginal archaeological material encountered during excavation (Section 3.2) and a research design developed to inform the usewear analysis of the potential contact artefacts (Section 3.3). The methods associated with Aboriginal archaeological excavation were nested within the historical archaeological methods and the two will be considered together as a single methodology in Section 3.4.1 and Section 3.4.2. This will be followed by the methodologies that will be used for the analytical approaches (Section 3.4.3) as well as the specialist usewear analysis of potential contact artefacts (Section 3.4.4).

These research questions are addressed in Section 7.1 to Section 7.5 of this report.

3.1 Historical Archaeological Research Design

3.2.1 Tier 1 Research Questions

1. Historical records show different configurations of the Lumber Yard during the 1820s. Can the subsurface remains clarify how the Yard was arranged and whether evidence of the different configurations survive?
2. What are the characteristics of the section of historic road alignment recommended for excavation?
3. Does evidence of the turning mechanisms exist in the 1914 railway turntable well?

3.2.2 Tier 2 Research Questions

1. What is the nature, extent and integrity of subsurface archaeological features and deposits within the site? How and to what extent has subsequent disturbance affected the survival of archaeological features and deposits and their interpretation? Based on the evaluation of what has survived, what attributes have been lost?
2. Does the archaeology confirm or enhance what we already know from the historical record? Alternatively, does the archaeology represent original information of a phase or phases not described in any documented history and for which the archaeology comprises the only source?
3. The Lumber Yard was used by a number of skilled trades: blacksmiths, nailers, sawyers, carpenters, tinsmiths, wheelwrights, glaziers, armourers, saddle and harness makers, sail makers, cabinet makers and turners. What evidence of these trades continues to exist? Collectively, what do they demonstrate about industry during the early nineteenth century?
4. Does the archaeology demonstrate the reconfiguration of the Lumber Yard to become the Engineers Yard?

3.2.3 Tier 3 Research Questions

5. What does the archaeology reveal about the early European settlement of Hobart, and therefore Tasmania?
1. How does the site compare with archaeological sites investigated in other parts of urban Hobart?
2. Can a typical artefactual 'footprint' be established by comparing assemblages excavated from this site with assemblages from other sites both locally and further afield?

These research questions will be considered in Section 7.0 of this report

3.2 Aboriginal Archaeological Research Design

The excavation report will address the following research design to contribute new and important information regarding Aboriginal heritage. Please note that this application, and research design solely relates to Aboriginal heritage objects found in disturbed contexts. Flexibility exists to include further research questions should consultation with Aboriginal community groups identify new avenues of research:

1. What was the extent of disturbance?
2. What are the primary forms of disturbance affecting the archaeological record?
3. In what way does the disturbance of the subsurface profile reflect that predicted by earlier investigations and the current excavation?
4. What strata are present? And what level of uniformity does the stratigraphic profile possess?
5. Is there any evidence of the contact period within the study area, and if so, can it be associated with the known contact events during the early nineteenth century?
6. How has the European development in the area disturbed Aboriginal heritage items?
7. Despite high levels of disturbance does the location contribute new important information about the Aboriginal use and occupation of the Hobart area, or more broadly?
8. What does the strata containing the disturbed Aboriginal artefacts indicate about the potential for Aboriginal cultural material to be encountered in the rest of the property?
9. If they are present, at what depth are artefact bearing strata encountered?
10. Based on analysis arising from stratigraphic description, what is the likely date of deposition of any cultural materials?
11. Despite the high levels of disturbance, what is the character and density of artefactual material in the subsurface context?
12. In what way does the archaeological profile of the subsurface profile reflect that predicted through earlier test excavations?

Questions that relate to the project area more generally may also be postulated:

1. How do the characteristics of these lithic artefacts relate to lithic materials from Aboriginal sites around Hobart-nipaluna, especially those encountered in the littoral zone?
2. What are the key characteristics of the lithic materials recorded within the project area?
3. How are the activities represented by the lithic materials related to the wider cultural landscape?
4. Can any material culture present within the project area be inferred to be likely to be present in other locations?

These research questions will be considered in Section 7.0 of this report.

3.3 Usewear Analysis Research Design

The key objectives of the research design are to determine if each glass or ceramic artefact was modified or used by humans and, if so, how. As mentioned above the key driver in this analytic approach is to provide a sufficient level of information to the Aboriginal community and a determination of their use or modification by Aboriginal Tasmanian people is fundamental to that. The analysis will also provide information in the way that these artefacts, for those identified as such, were used and to what end. The additional step of residue analysis will not be employed in this case as it is

necessarily destructive of the residue present on the artefact and therefore involves additional harm to Aboriginal cultural material. If such information is sought by the Tasmanian Aboriginal community then these artefacts will be available for this and further forms of analysis in the future as the usewear analysis will not harm or remove this residue.

This investigation will be the first usewear analysis of contact artefacts in Tasmania and will help to establish a background against which further contact materials may be more readily identified.

Specific questions that will be answered by the analysis are:

1. Which of the potential artefacts have been created and modified by Aboriginal people?
2. With what techniques were these artefacts produced?
3. What were these artefacts used for and how were they used?
4. What do these artefacts reveal or contradict about a history of post contact Aboriginal presence within nipaluna that has not been documented in the historical sources?
5. What do these artefacts indicate about the use of the Mac Point area more specifically within the broader context of nipaluna?
6. How do these artefacts indicate a pattern of behaviour that is reflected elsewhere in the surrounding landscape or as form of cultural continuity that extends both before and after colonisation?
7. What are common characteristics of these artefacts (form, material etc.) and to what extent are these characteristics likely to represent a broader pattern within nipaluna and Tasmania?

These research questions will be considered in Section 7.0 of this report.

3.4 Excavation Methods

3.4.1 Excavation

Stratigraphic excavation was undertaken by a team of professional archaeologists and Aboriginal community members. Two mechanical excavators were used during works, a large 15,400kg Doosan DX140LCR-7 with a 2 claw bucket (2000m) to clear the overburden from the site, i.e. deep fills associated with construction of the late twentieth century car park or concrete rubble inside the turntable well, and a 2,706kg 8025 ZTS Mini Excavator with a wide (1600mm) mud and narrow (600mm) claw buckets being used as required on site. Mechanical excavation was restricted to larger deposits of overburden or the removal of substantial stone features, all *in situ* early colonial materials were excavated by hand. All mechanical excavated was undertaken under the direction of an experienced archaeologist. The spoil from the excavation was stored on site owing to the requirement that it be reused in further construction work to be undertaken after the completion of excavation.

This mechanical excavation took place via a series of shallow scrapes so that the exposed surface is progressively reduced in a controlled manner. Mechanical excavation ceased on encountering any historical features and deposits or any despot that is likely to contain disturbed Aboriginal cultural material (Figure 3.4.1) These features and deposits were then excavated by hand or by hand with mechanical assistance where the deposits were bulk disturbed fills.

Small hand tools such as picks, shovels, trowels, brushes and pans were used in manual excavation for either cleaning up excavated areas or revealing exposed features or deposits. Mechanical excavation was used to assist hand excavation be removing newly encountered areas of fill, such as within service trenches, or culturally sterile material. When encountered during hand excavation, prior to recovery, the location of each Aboriginal artefact was be recorded by reference to the site datum. Each exposed object was be recorded within their context.

Each new deposit below the overburden was assessed by a combination of visual inspection and sieving, to determine its potential to contain Aboriginal cultural material. Outside of the observable presence of shell material or knapped artefacts within these deposits, examples of characteristics that will warrant detailed investigation included the presence of pre-1820s European material or redeposited soils that are likely removed from the pre-colonisation A or B soil horizon. Where deposits that had the potential to contain Aboriginal cultural material are identified, excavation proceeded within 1m or 2m grid squares, referenced to a single site datum, and in spits of no more than 100mm. Excavation ceased on reaching culturally sterile material.

As earlier deposits and features were encountered a 2 x 2m grid, aligned to site north, was strung out in the two areas of the site that contained them (see Figure 3.4.2 and Figure 3.4.3). These deposits and features contained disturbed midden and garden soil deposits used as fill during the construction of the Lumber Yard. Excavation continued at these locations both by strata and by spit with a single square excavated by an archaeologist using trowel. All historical artefacts were bagged by context and while some were also bagged by grid square where this was appropriate. Each deposit was excavated stratigraphically across the whole surface of each of these areas at once, with the same deposit from each square being removed successively before another deposit began to be excavated. Where delicate early deposits were encountered, they were covered with geofabric while not being excavated. Excavation ceased once natural and culturally sterile soil was reached.

On-site processing of disturbed soils that contain Aboriginal cultural material occurred through wet sieving using a 3mm mesh screen or a 5mm mesh screen for deposits that had a low potential to contain substantial amounts of cultural material (Figure 3.4.4). Items were collected from the sieves and bagged according to context. Each finds was marked with excavation name, area number, space (if required), unit (or context) number, date excavated and excavator's initials to allow accurate tracking of all excavated material throughout each stage of works and to avoid cross contamination. The sieving of soil deposits was the primary method for the recovery of shell material during excavation and small shell fragments will be collected from the sieve alongside any other Aboriginal cultural material. Any non-Aboriginal cultural material was also be collected from the sieve to document disturbance through the deposit. Samples of natural material that had been culturally modified including rocks and ecofacts will be retrieved from these deposits during sieving in order to provide further detail about the provenance of these deposits.

A hold point was established where if any *in situ* cultural materials were encountered all excavations will cease and AHT's Unanticipated Discovery Plan will be implemented. The disturbance of *in situ* cultural material was not permitted in this methodology.

3.4.2 Recording

Proceeding by stratigraphic recording each strata was numbered in the sequence that they were encountered. The site was further divided up into areas based on features that formed the clearest boundary. Information was collated to a context register to prevent duplication of context numbers.

Each context was recorded on a context sheet or in a notebook. Where excavation was taking place by grid square each spit in each square was also recorded in the notebook of the supervisor responsible for that area. Harris matrices were completed in the field for each area although they are subject to revision and correction during the analysis phase of this report writing. Sketches and additional notes were included by the area supervisors and site director in their notebooks detailing the disposition of strata in each area and patterns of archaeological materials across the.

Photography was undertaken with a digital (Olympus T5) camera. Alongside overviews of areas and methods, all features and context were recorded photographically and in the case of gridded excavation each completed square was also photographed. Range poles were used that graduated from 250mm (with 50mm increments) and 1000mm (with 200mm increments).

The site was also recorded through a series of archaeological site plans made by measured drawings using 2, 5, 20, 30 and 50m tape measures, a drawing board and Mylar paper. Scales from 1:20 to 1:50

were used in conjunction to graphically record the site. All features and deposits were measured using a dumpy level that was taken in reference to an established site datum. At the completion of the removal of a single context from each area during excavation by grid, two dumpy measurements were taken, one at the centre and one at the southwest corner of each square. All heights given in this report are given in reference to the Australian Height Datum (AHD).

The location of each stone artefact was recorded either to the nearest centimetre in reference to the same coordinates as the grid square from which it was retrieved. The exception to this were the first few lithic artefacts recovered before the grid was in place that were recorded by having their location plotted on to the site drawings. Each Aboriginal artefact was assigned a 'an artefact number ("A") number, a unique series of numbers identifying each artefact on both the bag and the Aboriginal artefact register, this applied to contact artefacts as well as lithic materials.

3.4.3 Artefact Management

All artefacts recovered from significant or potentially significant in situ artefact bearing contexts were retrieved and retained for cataloguing as part of the collection. Artefacts from imported fill deposits, disturbed contexts (including surface collections), and/or which were non-diagnostic were not be retained unless they were rare, and/or have a high interpretive value or are otherwise of significance.

Artefacts were recorded with all standard information required to identify them. This information will include site name, area number, space (if required), context (unit) number, date excavated and excavator's initials. If deemed necessary, some artefacts or artefact groupings may be recorded in situ (through inclusion on measured drawings or through survey) prior to their removal. All artefacts were cleaned (if appropriate), bagged in suitable polyethylene or paper bags, double-tagged with Tyvek (or similar) labels. The labels were annotated using permanent ink pens.

All Aboriginal heritage items recovered were recorded with all standard information required to identify it. This information will include site name, area number, grid square, spit number, unit (or context) number, date excavated and excavator's initials.

All items were be cleaned (if appropriate), bagged in suitable polyethylene or paper bags, double-tagged with Tyvek (or similar) labels. The labels will be annotated using permanent ink pens. A full catalogue, including photographic records will be made by suitably qualified archaeologists on site.

3.4.4 Analytical Methods

Lithic artefacts have been weighed, measured and described by type, raw material, colour, flaking quality, type of fracture initiation, type of platform, platform angle, type of termination, percentage of dorsal cortex, fragment (portion of artefact), length, width, weight, presence of heat affects, category of core, number of scars, length of scars, scar direction, retouched flake, surface texture, extent of adhesions on surface, discolouration, surface loss, weathering, excavation damage, and details of joined artefact or non-artefact. The statistical methods employed for the historical analysis will be considered as part of the main body of the analysis in Section 6.0.

All of the midden material was sorted into shell, rock fragments and charcoal and bone. No other organic material was present and the lithic materials were separated either during excavation or during the sorting process. The shell species were further sorted by species, then shell element and fragment. Whole shells, which proved to be rare, were also sorted separately. Whole shells and shell elements were counted and weighed according to species. Given the historical disturbance of the excavated deposits charcoal was not counted and weighed. Shell fragments were weighed by species; the fragments retrieved were sorted under the undifferentiated heading of 2mm fragments and kept separate from the 6mm shell fragments. The statistical methods employed for the malacological analysis will be considered as part of the main body of the analysis in Section 6.0.

Historical artefacts were cleaned and re-bagged according to context and spit. Each artefact was weighed, measured, and described by material type, additional material, decoration, decoration type, intactness, fragment, length, width thickness and other class specific attributes. The statistical methods

employed for the historical analysis will be considered as part of the main body of the analysis in Section 7.0.

3.4.5 Usewear Analysis

The usewear analysis was completed by Dr Simon Munt (2022) at Flinders University and his analytical report, 'Use-wear Analysis of Aboriginal Glass Artefacts from Macquarie Point, Tasmania' is present in Appendix C, which includes a full description of the methodology used for this work. An excerpt summarising the practical methods of this analysis is presented here for ease of reference:

> No chemical cleaning was undertaken for this analysis but some artefacts were cleaned by hand with warm, soapy water to remove any sediment that presented a significant impediment to a clear microscopic view of the surface. Almost all artefacts had some form of residue on them and although no chemical staining or formal residue analysis was undertaken, observations of particles under the metallographic microscope were most often consistent with the appearance of natural sediment. I do not favour cleaning with toothbrushes or similar items because of the possibility, albeit minimal, of the creation of scratches that may mimic use-related striations.
>
> Each artefact was analysed under low and high-powered digital microscopy, predominantly using an Olympus BH-2 metallographic microscope, with brightfield/darkfield, vertical incident lighting and objective lenses of x5, x10, x20 and x50. The x20 lens followed by the x10 lens were most commonly used, as was brightfield, and all edges of each artefact were examined for use-wear at a range of angles. The microscope eye pieces were x10 magnification so each objective can be multiplied by ten to determine the total magnification e.g. x20 objective lens = total magnification of x200. Most micrographs were taken using a DinoEye microscope camera attached to the metallographic microscope. Further micrographs were captured and analysis undertaken with a Dino-Lite digital microscope (DinoCapture 2.0 Version 1.3.7.A) whose magnification ranged from x0 to x250. Helicon Focus 7.6.4 software was used for Z-stacking multiple images taken from several levels of artefact surface microtopographies.

The full analysis, methodology and scientific context for this analysis is presented in Appendix C.

3.5 Summary

This broad research design incorporates 26 questions that relate to the Aboriginal and historical past of the site and its material remains. These questions will be considered in detail in the latter sections of the report and addressed specifically in Section 7.3 of this report. The methods that have been followed to obtain answers to these research questions have been briefly described above, with further detailed description of analytical methods presented in Section 6.0 and Section 7.0 where they will accompany further detail of the results of the analytical approaches.



Figure 3.4.1 Looking to the north as the mechanical excavators commence the excavation of the turntable well by removing the asphalt of the former car park (11.02.21).



Figure 3.4.2 Looking towards the west and showing the grid system and excavation tools utilised at the site (14.08.21).



Figure 3.4.3 Looking to the northeast and showing the grid system and photographic recording scales used for recording. The scales have 100mm marks (04.04.21).



Figure 3.4.4 Showing materials being wet sieved during excavation. The scale has mm marks (10.08.21).

4.0 Results

This section documents the archaeological strata recorded during excavation in each of the three trenches, the Lumber Yard Trench, the Turntable Well and the Road Trench. The Turntable Well and the Road Trench were completed during Phase I of these works but, owing to the discovery of Aboriginal cultural heritage within early fill deposits, the excavations in the Lumber Yard Trench was completed in a second phase. A total of 890m^2 were excavated during this investigation and a total of 108 distinct archaeological features and deposits were recorded, the majority of these were present within the Lumber Yard Trench.

Each of these trenches will be considered in turn:

- Trench One - The Lumber Yard Trench (Section 4.1) contained the most substantial and complex suite of features encountered during the excavation. Aboriginal midden material, lithic artefacts and knapped glass artefacts were encountered within disturbed early deposits along with evidence of the first phases of European occupation at the site. The structural remains of the Lumber Yard were also present within this area as well as some small occupation deposits dating to the nineteenth century. Some evidence related to the Locomotive Depot that operate at Macquarie Point from the early twentieth century was also encountered within this trench. The Phase I excavation of this trench covered an area of 132m^2 and the Phase II excavation encompassed a further 226m^2.
- Trench Two - The Turntable Well (Section 4.2) was the largest excavation area measuring 451m^2 but also presented the simplest stratigraphic profile consisting nearly entirely of the intact turntable well filled with concrete demolition deposit from the roundhouse structure.
- Trench Three - The Road Trench (Section 4.3) contained the anticipated road surface and a small number of features relating to the twentieth century occupation of the site. This trench was 80m^2.

The stratigraphy in each of these sections will be described in relational terms in the following sections and will be supported by detailed description of the characteristics of the strata documented in the context tables supplied in Appendix A.

Owing to the clear phasing afforded by widespread cuts (Figure 4.0.1) and otherwise shallow stratigraphy of the site, the excavated materials can be placed into seven phases:

- Phase I - Natural Deposits
- Phase II - Lumber Yard Structures, Cuts and Fills
- Phase III - Lumber Yard Occupation and Structural Modification
- Phase IV - Lumber Yard Demolition
- Phase V - Locomotive Depot Structures, Cuts and Construction
- Phase VI - Locomotive Depot Demolition and Later Fills
- Phase VII - Carpark, Overburden and Services

Each of these phases will be considered in turn follow the order of reverse deposition, beginning with the most recent through to the earliest.

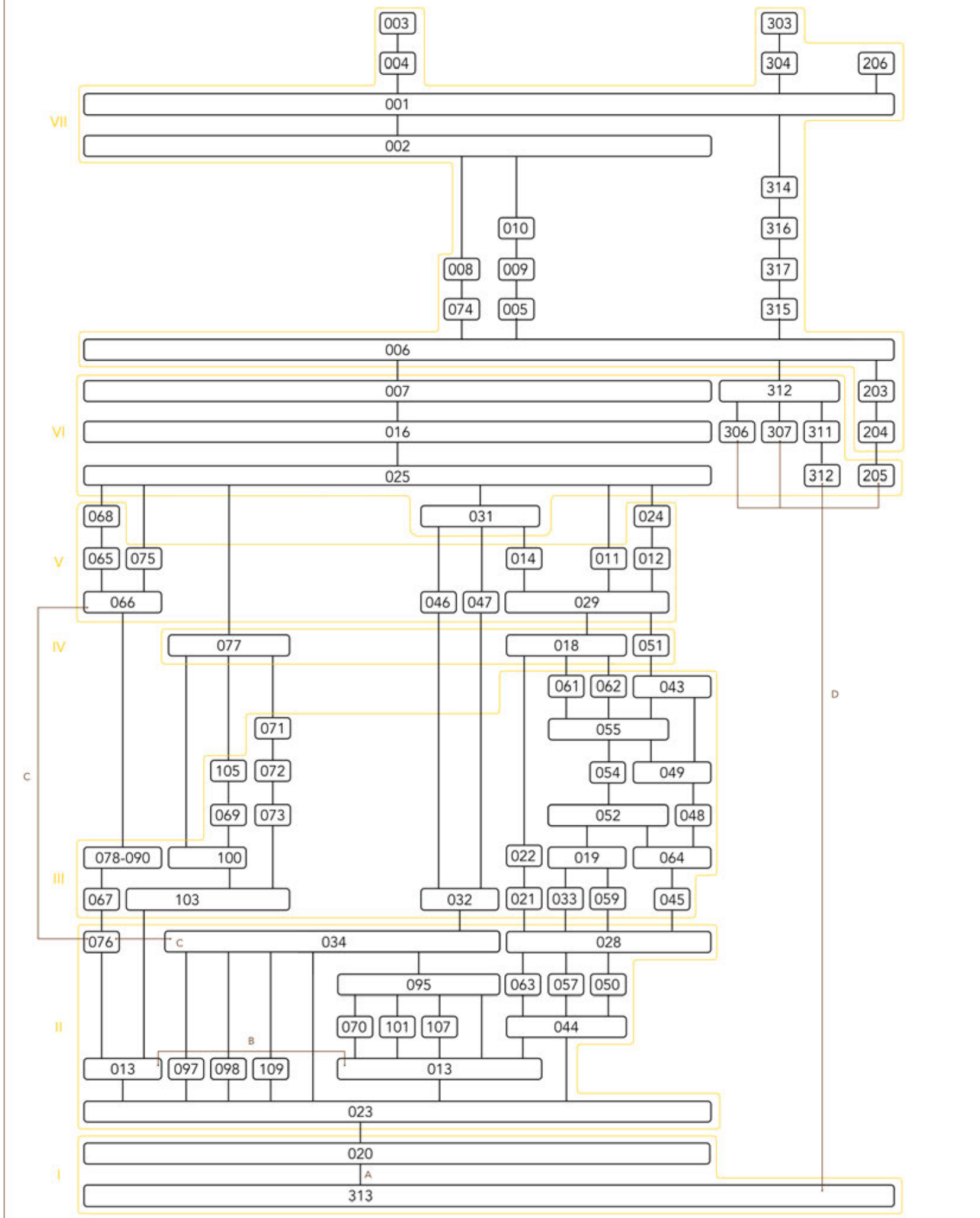


Figure 4.0.1 The stratigraphic sequence (Harris Matrix) for all trenches in Phase I and Phase II of the Remediation Works archaeological excavation.

4.1 Trench One - The Lumber Yard

The archaeological materials within the Trench One, included substantial fills, footings and services. Despite this, and owing to a series of aggressive levelling cuts accompanying the commencement of each new building phase, the stratigraphy was relatively simple. Occupation deposits were absent from this trench except for pockets of material within the larger features. Construction and demolition deposits that can be clearly tied to a specific building phase were the chief source of artefactual material in this trench. These included the early construction fills that also contained redeposited Aboriginal cultural material. However, each phase of historical occupation was represented, including that of the Lumber Yard which was the intended target of this excavation.

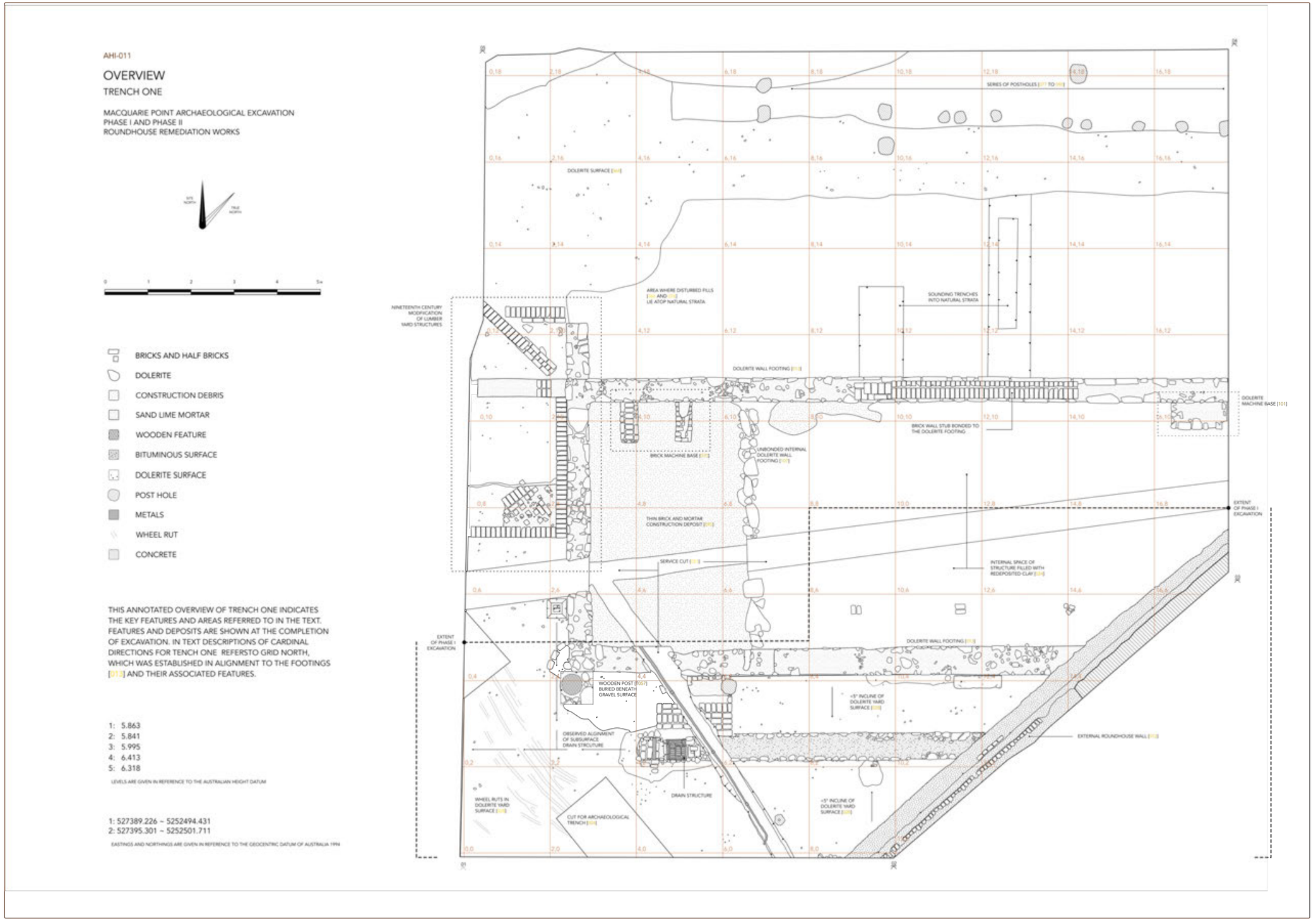


Figure 4.1.1 Overview of Trench One showing the key features and deposits.

4.1.1 Carpark, Overburden and Services

The upper strata within the Lumber Yard Trench were uniform and consisted of a series of fills and services relating to the use of the site since the 1985 demolition of the Locomotive Depot and construction of the car park. Unsurprisingly the first deposit was the current asphalt car park surface [001]. The current car park surface within Trench One was up 80mm thick but is composed of varied pours and cuts that are likely associated with several different excavations and modifications to this surface (Figure 4.1.1). This surface contains angular gravel, ~30mm in diameter, and varies widely in quality. This deposit was considered to have been redeposited after the excavation of the archaeological test trench [003 and 004] as further asphalt had been re-laid on to an existing car park surface.

Beneath the current car park surface is a strata of finely crushed dolerite [002] gravel that has a maximum depth of approximately 200mm. This deposit underlies the current car park surface except for where is has been truncated by the cut for the recent archaeological trench [004] or in the case of a series of concrete pads, possibly footings, in the southeast corner of the trench. The depth of this deposit varies based upon the height of the uneven dolerite cobble surface below.

Trench Four, one of the 2014 historical archaeological test trenches which had identified the remnant structural materials of the Lumber Yard at this location, intersected with the extent of the current open area excavation and its cut [004] and fill [003] were recorded during the current phase of excavation (Figure 4.1.2). This cut measures 30m by 2m and it extends beyond the limits of excavation to the east and west as well as at depth. A fill composed of gravel, sand, dolerite rubble and clay that represents the material that had been excavated during the archaeological works at this site. This material is soft and friable compared to the in situ fills present in the upper strata of this site and it had calved away early during the early stages of the open area excavation.

To the south of the test trench [003 and 004] were two layers of concrete set immediately below the current car park surface [001]. The upper most layer of concrete was a shallow lens [005], up to 100mm in depth, below the current car park surface in the southeast corner of the trench. Between the two layers was a thin lens of silty black sand [009]. This deposit contained no artefact and extended no further than edge of the concrete pad. The second concrete pad [010] was much thicker than the upper concrete strata. Like the upper concrete pad it extends beyond the limits of excavation to the west and south and extended less than a metre into the current area of excavation. This deposit has uneven surface and irregular boundaries but a very sharp horizon to the surrounding deposits. The greatest depth of this deposit was 200mm. It is likely that this pad was either a remnant footing or spot repair after the removal of another feature. If either of these features had been a footing, any components of the structure that it supported were without the bounds of the current excavation area as no evidence could be observed of any additional components to either of these pads.

Beneath these upper strata was an orange brown sand and cobble fill [006]. This orange brown sand and cobble fill was by far the largest deposit encountered during the excavation (Figure 4.1.3). With a maximum depth of 520mm in the south of the excavation area, where it rested immediately below the current asphalt car park surface, this deposit more commonly measured 400mm in depth. Above the concrete and brick roundhouse wall [013] this deposit was at its shallowest and was only 200mm in depth. This deposit, except where truncated by the later archaeological test trench [004] was present across the entirety of Trench One open area excavation. The fill was composed of large rounded and sub angular dolerite cobbles and angular dolerite gravel within an orange brown sandy matrix.

Within this deposit were two services. One of these was a concrete cap [008a], fill [008b], ceramic pipe [008c] and cut [008d] aligned east to west in the south of the trench. The broken concrete cap was a light grey, very hard concrete with <30mm diameter dolerite gavel inclusions. The service itself was an inactive high voltage cable within an orange polyvinyl chloride pipe, both the housing and the cable itself were intact at the commencement of excavation but were cut and removed during works. The uniformity of the dolerite cobble fill consisted of a 40mm galvanised iron pipe that was set within the

dolerite cobble fill [006]. There was no evidence of a cut associated with this service and it is possible that the dolerite cobble fill had been deposited around it.

The dolerite cobble fill [006] rested upon a layer of ashy grit [007] across the breadth of the trench. This interface marked the end of the upper strata associated with the occupation of this site as a car park. All of the features above this had been formed during 1985 or later and bore no relation with the lower strata, except for the obvious exception for the cut for the archaeological trench and the more complex case of the deposition of the dolerite gravel [006] and a thick deposit of layered asphalt tar and gravel [068] present only in the northwestern corner of this excavation area (Figure 4.1.4).

This deposit represents the only part of the uppermost sequence that isn't obviously explainable by reference to the formation and maintenance of the car park and later structures . Resting on the ashy grit deposit [007] below, this deposit is immediately below the current car park surface and also below the dolerite cobble fill [003]. Being restricted to this small area in the extreme northwest and without any structure indicating a pit of any kind it is difficult to assume that this material had been deposited here into a standing structure during the occupation of this by the Locomotive Depot. Conversely, as a range of earlier features directly associated with the demolition of the Locomotive depot are present at a much greater depth across the rest of the excavation area it cannot be easily assumed that this thick deposit really represents the level of the former ground surface in this area prior to the demolition of the rail yard. Additionally, as this deposit was composed of a series of compact and dense gravel and asphalt layers it makes little sense that they would have been excavated during the construction of the car park to make a good basis for the current asphalt surface, which had been laid upon it.



Figure 4.1.1 Looking to the south showing the concrete pads [005] and [010] in the top left of the image beneath the car park surface [001] and the dolerite cobble fill [006] below this and the ashy gravel deposit [007] above the demolition rubble deposit [018]. The finely crushed dolerite gravel is visible in the top right of the image below the current car park surface. The scales have 100mm marks (24.02.22)



Figure 4.1.2 Looking to the northeast showing the cut for the 2015 archaeological test trench [004] cutting through the trench wall of the open area excavation and into the deposits below. The geofabric used prior to backfilling is visible in the centre of the image. The scales have 100mm marks (17.02.21)



Figure 4.1.3 Looking to the west showing the removal of the dolerite cobble fill deposit [006] by mechanical excavation and also showing the upper horizon of the gravelly ash deposit [007] below (14.08.21).



Figure 4.1.4 Looking to the north and showing the cut into the earlier asphalt, ash and gravel deposit [068] and the deposition of the dolerite cobble fill above it [006]. The scale has 100mm marks (08.08.21).

4.1.2 Locomotive Depot Demolition and Later Fills

This phase is associated with the demolition and levelling of the structures associated with the operation of the railyard. The most distinctive deposit from this phase and the clear marker of its break with the upper strata was a deposit of gritty ash [007], which was omnipresent beneath the dolerite cobble fill above (Figure 4.1.5 and Figure 4.1.6). This deposit was friable, loose and gritty. The depth of this deposit varied between 20mm and 50mm in depth, although deeper pockets existed where the underlying deposits had created hollows or declivities. The material from this deposit consisted of very small fragments (<10mm) of gravel, coal and brick fragments. Sand, possibly introduced from the dolerite fill above, was also present in this matrix and small amounts of clay also. A small amount of highly fragmented boiler scale (<10%) was also present in this deposit.

This deposit [007] produced a strong smell of tar and left black stains on anything that came into contact with it. The most likely explanation for this deposit is that it is composed of working detritus from the rail yard, trace elements of surroundings deposit and demolition rubble associated with the levelling of the roundhouse and associated structures. This strata represents a transitional phase between the demolition of the Locomotive Depot and the construction of the current car park.

This gritty ash deposit [007] covered a range of other lower features beneath it but the most substantial was a patches of brick and clay rubble fill that were present across the lower portions of this site. These clay rubble fills were likely the result of minor variations in the deposition of waste materials during the demolition of the Locomotive Depot. In particular three deposits [015, 017 and 031] could be identified by the higher concentration of brick rubble that were identified and recorded separately but were in reality only greater concentration of bricks in the general fill (Figure 4.1.7).

The largest body of clay rubble fill [016] stretched across the majority of the site, underneath the above mentioned brick concentrations and the overlying ashy layer, was considered as a single deposit. This deposit consisted of sandy clay and brick rubble with gravel inclusions below the ashy gravel [007] deposit across the extent of the site. A mixture of nineteenth and early twentieth century historical artefacts were present in this deposit and it clearly consisted of redeposited material moved here during the demolition of the roundhouse structure. This deposit varied in thickness, 50-200mm, as the depth differed based on the height of the features and deposits that it covered (Figure 4.1.8).

This deposit covered a lower clay fill deposit in the western sections of the trench. This secondary clay fill [066] below [065] and [016] was very similar to the overlying deposit of clay fill [016]. The chief difference in this deposit is that it contained a very small amount of shell fragments and less larger brick fragments than the deposit that was above it. It still contained substantial amounts of fine brick fragments, nineteenth and twentieth century historical artefacts and dolerite gravel.

In the eastern area of the trench, above the yard area, the upper clay fill deposit [016] rested atop the mortar and brick rubble [018] associated with the demolition of the lumber yard. Between these two deposits [016 and 018] lenses of plastic silty clay [024] had developed. This deposit was really a series of discontinuous patches. This deposit was not more than 20mm thick and the largest patch observed was no more than 400mm in diameter. It differed from the above deposits in that it contained a high percentage of silt in comparison to clay, while the inclusion in these silty patches remained the same.

Below the clay fill deposit [016] in the extreme west of the trench was a brick rubble deposit [065] against the northwest baulk a thick lens (140mm) of light red pressed brick rubble present in the northern section of the site (Figure 4.1.9). This rubble measured 8m in length and 700mm in width. It is highly likely that this rubble represented the remains of a structure that had been demolished during the removal of the Locomotive Depot at this site. A small structure is indicated at this location in the mid nineteenth century aerials showing this area and it is possible that all or large amounts of this brick rubble has been derived from that building.

AHI-011

UPPER STRATA

TRENCH ONE

MACQUARIE POINT ARCHAEOLOGICAL EXCAVATION
PHASE I AND PHASE II
ROUNDHOUSE REMEDIATION WORKS





- BRICKS AND HALF BRICKS
- DOLERITE
- BRICK RUBBLE FILL
- SAND
- SAND LIME MORTAR
- CONCRETE
- ASPHALT AND TAR

1: 5.863
2: 5.841
3: 5.995
4: 6.413
5: 6.318
6: 5.225
7: 5.599
8: 5.293
9: 5.344
10: 5.301
11: 5.807
12: 5.549
13: 5.236
14: 5.149
15: 5.327
16: 5.424
17: 5.347
18: 5.313
19: 5.315
20: 5.514
21: 5.554
22: 5.670
23: 5.641

LEVELS ARE GIVEN IN REFERENCE TO THE AUSTRALIAN HEIGHT DATUM

1: E:527389.226 N:5252494.431
2: E:527395.301 N:5252501.711

EASTINGS AND NORTHINGS ARE GIVEN IN REFERENCE TO THE GEOCENTRIC DATUM OF AUSTRALIA 1994

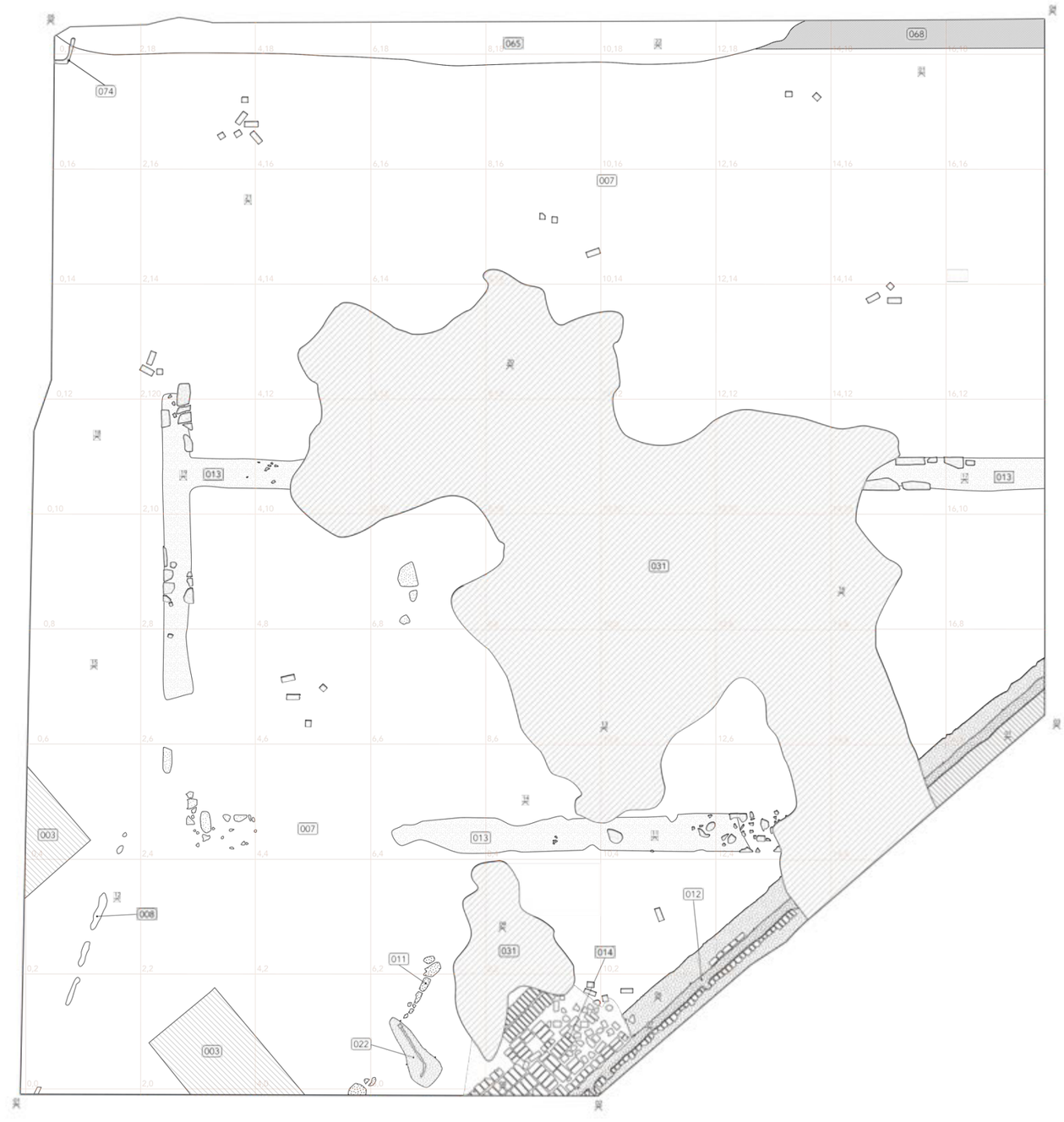


Figure 4.1.5 Overview of Trench One showing the later features of Phase VI and Phase VII that are present in its upper strata.



Figure 4.1.6 Clearly seen in this south facing section is current car park surface [001], the dolerite cobble fill [006] beneath it, the thin deposit of gravelly ash [007] and the concrete and brick round house wall [012]. The scale has 100mm marks (02.02.21)



Figure 4.1.7 Looking to the northwest showing the round house wall [012] and the rubble deposits [016, 107 and 031] are shown cover the toe of the concrete wall in the centre and right of the photograph. The scales have 100mm marks (03.02.21).



Figure 4.1.8 The gritty ash surface [007] with the ceramic pipe with concrete bedding [011]. The archaeological test trench [004] is shown to the left of the image. The scales have 100mm marks (03.02.21).



Figure 4.1.9 Looking to the south during the excavation of the dolerite cobble fill, visible in all of the sections around the trench. Showing the extent of the gravelly ash deposit [007]. The ceramic pipe with concrete bedding [011] is visible as well as a mortar stain indicating the top of the dolerite wall footing [013] in the right of the image. The scales have 100mm marks (02.02.21)

4.1.3 Locomotive Depot Structures, Cuts and Construction

The features that remained from the use of the time as a Locomotive Depot were deep footings and services that would have been buried during the time that the depot had been in operation. This speaks to the severity of the levelling activity [025] that had accompanied the demolition of the roundhouse. It is likely that the clay fills [105, 016, 017 and 031] considered above were remnant fills that had existed at depth since the demolition of the Lumber Yard structures but they have clearly been disturbed and redeposited, at least in part, during the demolition of the roundhouse. What is left beneath those fills and that cut is the roundhouse wall [012], a damaged stoneware pipe and a substantial service trench [021] cutting through some of the most prominent Lumber Yard features.

Marking the northwestern extent of the Lumber Yard Trench was a concrete and brick wall [012], which was clearly the external footing of the roundhouse (Figure 4.1.10). This feature extended along the length of the northeastern trench wall and continued beyond the limits of excavation, with a maximum height of 360mm and width of 170mm. This feature had been heavily damaged by the demolition of the roundhouse but was substantial enough that its upper portions had been smashed and removed rather than being grubbed out wholesale. The concrete was a very hard, light grey and composed of 30% dolerite gravel inclusions, with the dolerite gravel measuring 20-30mm in size.

The wall was formed of one visible course of bricks, with likely more courses extant beneath this or beyond the limits of excavation, laid either rowlock or stretcher. The bricks were bonded together with concrete and were set within an exterior cement shell that had been poured with formwork on the south face, the northern face was not visible in the excavation area. The concrete formed an L shape with the toe of the concrete extending to the south and west and covering and being bonded to the earlier archaeological features and deposits below. This feature was set within a cut [029], however the dimensions of this cut and its depth could not be recorded as it extended beyond the limits of excavation and was nearly entirely obscured by the concrete that had leaked from below the formwork and formed a toe on top of the features and deposits that remained outside the cut.

Partly bonded to the roundhouse wall was a brick raft [014] that had apparently been used as a working surface during the construction of the roundhouse (Figure 4.1.11). This working surface appears as to be a temporary, unbonded single layer of bricks against the exterior of the roundhouse wall. These bricks are bonded to the concrete wall where they are pressed against it but this does not appear to be the intent of this feature and it is likely that these bricks were placed here, with some likely robbed from the nearby lumber yard structure during the construction process of the roundhouse. The bricks were varied in their make and manufacture, with some of them a dull reddish orange sandstock, some of the bricks showed broad arrow marks, brick to others that were light yellow bricks with frogging or a stamp bearing a makers mark.

The limited impact of this phase of construction is exemplified by how little disturbance was caused outside the footprint of the wall. The concrete from the wall simply covered the surrounding materials and the cut for the wall is no more extensive than the wall itself. Similarly the brick surface was simply placed on top of the earlier demolition deposit. This limited impact is especially clear in juxtaposition to the deep cutting and levelling that accompanied the construction of the car park late in the twentieth century.

The single stoneware pipe [011] with concrete bedding was a remnant service that likely had been disturbed and redeposited during the construction of the car park. Broken stoneware pipe set in concrete bedding and resting below the orange cobble fill [006] and above the ashy gravel deposit [007]. The concrete is a very hard light grey with dolerite inclusions between 5mm and 30mm in diameter. The extent of this pipe was limited in the trench to several metres perpendicular to the eastern trench wall. It is likely that this pipe was not in its original location of discard but had been moved during the demolition of the Locomotive Depot although this is not certain. It is possible that the rest of the pipe had been taken during the later aggressive demolition and the remnant pipe, including the section still extant in the wall, were able to survive the demolition in a position close to their original.

Conversely, the 'Y' shaped service trench [021] that can be seen to cut through the early demolition deposits [i.e. 018] and earlier structural features [i.e. 013] but not the later clay fills [105, 016, 017 and 031] was clearly associated with the operation of the rail yard (Figure 4.1.12 to Figure 4.1.14). This trench was a rough and shallow cut through the earlier demolition deposits and earlier Lumber Yard features. It was ~350mm in width and up to 400mm deep. This cut is an earlier feature than the demolition associated with the occupation of the site during the time of the Locomotive Depot. While appearing to have regular edges higher in the strata, at depth the sides of the trench were uneven and irregular and gave every indication of having been excavated by hand.

This trench contained an iron pipe [022a] and fill [022b] which were recorded together as the contents of this large service trench. The pipe was 35mm in diameter and heavily corroded, it had been truncated [025] at its eastern end and wrenched from within its fill to rest on the deposits above it [007]. The fill within the trench was a mixture of clay, mortar and brick rubble and, as such, it is representative of the deposits that had been cut [021] for its installation.

As this area was selected for its lack of disturbance from the Locomotive Depot it is not surprising that few features associated with rail infrastructure were identified in this trench. However, even though it is likely that at least superficial layer detritus and other rail yard artefacts from the occupation of the site during the early twentieth had accumulated it is principally the levelling and cutting that took place in the late nineteenth century that has left such a limited record of material culture from this time. The presence of the roundhouse wall at its current location, 300mm from where it was predicted to be, which had only been identified through geographical information systems mapping rather than by testing is strongly indicative of the high level of accuracy that possessed by the nineteenth century mapping for this site.



Figure 4.1.10 View to the north showing the dolerite wall footing [013] to the left of the image as well as the mortar and brick demolition deposit [018] covering the majority of the trench. In the foreground right and centre is also visible the uppermost fill in the service trench [021] containing the truncated iron pipe [022]. The scales have 100mm marks (24.02.21).



Figure 4.1.11 Looking to the west northwest and showing the brick platform abutting [014] the concrete and brick roundhouse wall stub [012]. The scales have 100mm marks (4.02.21).



Figure 4.1.12 Visible in the centre of this image and truncating the dolerite spoon drain [050] is the service trench [021] and the truncated iron pipe [022] that it contained. Visible immediately to the left of the service cut [021] is the steel pipe [033] set within the cut that contains it. The scales have 100mm marks (24.02.21)



Figure 4.1.13 Detail view of the cut [033b], fill [033a] and steel pipe cut into the dolerite surface [028]. The scale has 50mm marks (24.02.21).



Figure 4.1.14 Looking to the south over the extension of the service cut [021] as it leads further to the north through the centre of the interior of the dolerite cobble footings. The scales have 100mm marks (14.08.21)

4.1.4 Lumber Yard Demolition

The effect of the cutting and levelling associated with the construction of the car park had also an impact upon the strata below that of the 1915 Locomotive Depot and is likely responsible for removing a significant amount of demolition material associated with the destruction of the Lumber Yard buildings. As a result of this, much less demolition material than may have been reasonably anticipated remained. Nevertheless, below the clay fills in the east of the site [105, 016, 017 and 031] and above the hard packed dolerite surface [028] a significant demolition deposit survived (Figure 4.1.15).

This sandstock brick and mortar demolition deposit [018] extended beyond the limits of excavation to the south and east of the wall footing [013]. This deposit, or any comparably substantial deposit, is not present within the footprint of wall footings but is instead thickly piled against the exterior of the wall footing, up to a depth of 150mm. This deposit gradually decreases in size and feathers out to less than 10mm away from the trench. Some accumulations of whole brick are included within this deposit and these bricks are all clearly sandstock, with some bearing broad arrow marks (Figure 4.1.16 to Figure 4.1.18). It is clearly the case that the superstructure of the lumberyard structure has been demolished out and away from the interior of the building. This deposit covers the earlier in situ features within the internal Lumber Yard and serves as a distinct boundary between this phase and the earlier phases of occupation and modification in this area.

A variation on this demolition deposit [018] was more mortar and brick that had [051] accumulated within the drain opening and below the drain grate. This deposit was given an additional number to accommodate any artefacts or remnant deposits that may have been mixed into it from deposits lying around the drain mouth. However, in terms of description and material it is the same and continuous with the overlying mortar and brick debris demolition deposit [018]. Additionally a deposit of orange brown sandy clay with charcoal [052] was below the demolition rubble [018] and around the modified drain mouth [048] (Figure 4.1.19). This deposit, measuring approximately 400mm in diameter and less than 20mm in depth was an accumulation of orange sand and mortar, with a large amount of small brick and mortar inclusions, around the drain mouth. It likely represents demolition debris accumulating in the comparatively uneven gravel surface that had been modified by the alterations made to the structure of the drain during its use life.

The interior of the lumber yard structure, i.e. the space within the dolerite and mortar footings [013] was disturbed to a far greater degree than the comparatively lower lying deposit of mortar and brick to the east [018]. This meant that a comparatively thin skin of silt and rubble deposits were present against the footings in the interior of this feature. Uppermost was a lens of silty clay [032] in the interior of the dolerite and mortar footing [013]. This deposit consisted of a thin lens of silty clay within the interior space formed by the dolerite footings. This lens was approximately 10mm deep and very dark grey in colour.

Against the mortar wall [013] was a thin section of sandy mortar and brick fragments [046]. This deposit was similar in its constituent materials as the much more substantial demolition deposit on the other side of the wall [018] but was much more restricted in size. This deposit consisted of a narrow band, <400mm extending along 1500mm along the wall footing and overlying the lower clay deposits. This deposit was at its most substantial where it had accumulated against the side of the footings and measure 40mm in depth but quickly diminished in thickness until it terminated at its western boundary. Beneath both these deposits was a thin, <20mm, lens of orange brown sandy clay [047] with charcoal pressed into the surface of the black clay and rubble fill within the footings. This deposit was composed of a coarse, compact orange sand with a large amount (20%) of buff coloured boiler scale within it.

While it is likely that the overlying clay deposits [105, 016, 017 and 031] contained some elements of demolition material of both the Locomotive Depot and the Lumber Yard the highly disturbed state of those deposits meant that only the easternmost section of demolition material remained intact (Figure 4.1.20). Similar to the removal of the later demolition material by the later cutting activity much of the occupation and structural features associated with the Lumber Yard had been removed, with principally footings and hard packed dolerite surfaces extant.



Figure 4.1.15 Looking to the north and showing the demolition rubble [018] covering the eastern half of the excavation area, a clear slope downwards can be seen from the dolerite wall [013] to the east. The scales have 100mm marks (26.02.21).



Figure 4.1.16 Looking to the west and showing the brick rubble contained within the demolition deposit [018] once all of the brick fragments and mortar has been removed. The scales have 100mm marks (24.02.21).



Figure 4.1.17 Detail view of the surface of the bricks from the demolition deposit [018]. The scale has 50mm marks (24.02.21).



Figure 4.1.18 Detail view of the broad arrow markings on the bricks contained in demolition rubble deposit [018]. The scale has 50mm marks (24.02.21).



Figure 4.1.19 Detail view of the depth of demolition deposit that accumulated over the surface of the iron grille of the modified drain mouth feature [048]. The scales have 250mm marks (26.02.21).



Figure 4.1.20 Detail view of an accumulation of paint and mortar at the bottom of the demolition rubble [018] against the hard packed dolerite gravel surface [028] (26.02.21).

4.1.5 Lumber Yard Occupation and Structural Modification

Despite late twentieth century damage, the long history of use of the Lumber Yard left a substantial record of structural modification as the yard was adapted to and modified for its changing roles. Three main areas of modification were present; the addition of small services and structures to the southern end of the Lumber Yard structure, the modification of the drain within the hard packed dolerite gravel surface and the insertion of a number of posts into the dolerite surface in the west of the excavation area.

Of these three areas of modification the addition of small structures and accompanying services at the site of the former entrance present the most complex stratigraphic record of changes taking place at the Lumber Yard in the nineteenth century. The dolerite and mortar footings [013] had a small return that extended to the south along the western alignment of these footings. This alignment corresponds to part of the gate that was present at the Lumber Yard in the earlier phases. However, over time it is clear that a number of smaller structures were added to this area, enclosing part of this former gateway. Bonded to the dolerite footing [013] is a course of shiner bricks that have been laid into the dolerite gravel surface [028] that had been cut for the inclusion of this structure.

This structure continues beyond the limits of excavation. Forming part of this structure and bonded to the brick wall is a small brick chimney or stove base [069]. This base measures 1200 x 1200mm in plan and is composed of half and whole bricks laid on their stretcher sides (Figure 4.1.21). These bricks are laid diagonally to the surrounding wall footing structure and give some indication that the stove or fireplace faced diagonally into the structure that it was present in. The brick footing extends to the protruding return of the dolerite footing [013] and is met by another small brick return [104] two courses of stretchers deep, parallel to the dolerite and mortar return but set back at a distance of 240mm. All of these structure are composed of dull red sandstock bricks that are bonded together by a sandy lime mortar. The surface of some of these bricks shows whitewash adhering to them and it clear that they have been reused to form these structures.

A small cut [105a] is present along the face of this base [069] and while it is irregular in plan it measures 40mm in depth. This small cut terminates at the brick wall footing [101] and continues beyond the limits of excavation. There was a silty clay fill [101b] within it that contained small amounts of brick and gravel fragments but no evidence of a service was present.

Further to the west an additional dolerite and mortar wall footing [103] has been added to the core wall structure [013], formed in a similar fashion to it and bonded to it but not part of it (Figure 4.1.21). This wall is again joined by a small, heavily damaged brick returned aligned north to south, bonded in the same way and composed of the brick as the other additions in this area. It is composed of a single course of bricks laid stretcher and another brick laid header. The interior space created by these two additional walls contains a surface, possibly a remnant of the nearby dolerite cobble surface [067] and the interior measurement of this space is 1800 x 1600mm although it continues beyond the limits of excavation to the south (Figure 4.1.23 and Figure 4.1.24). However, this small remnant surface and the brick wall have been truncated by a cut [073] for a latter sandstock brick box drain [072]. This brick drain is aligned diagonally from the corner of the dolerite and mortar footing and extends beyond the limits of excavation. This drain is formed of a row bricks laid on the bedding faces and aligned stretcher side to stretcher side as a floor, two courses of bricks laid shiner as walls and another course bricks laid stretcher side to stretcher side.

Between the spoon drain to the north and subsurface box drain to the south a brick drain mouth [048] has clearly been added as a form of modification or repair (Figure 4.1.26 to Figure 4.1.28). This feature is comprised of an iron grill and unbonded brick work and dolerite cobbles placed between the buried opening of the brick box drain [063] and the dolerite spoon drain [050]. The disturbance of the hard packed dolerite surface [028] is the clearest indication of the modifications that have taken place to this structure as the original structure has been removed, however the cut [045] through the dolerite surface is clear and the later bricks, sandstone and iron fittings have been placed against the earlier box drains structure. The drain mouth consists of small area immediately in front of the box drain

mouth with side walls of bricks and half bricks placed shiner on the sides and a floor of broken bricks placed on their bed surfaces to form the floor of the mouth. The total size of this lower area is 450x500mm and the wall are a single course of bricks deep, although broken bricks have been placed above and on top of the brick wall in order to leave a lip on top of the brick work, likely to allow for the fitting of a metal plate.

This lower area is joined to the shallow ramp immediately beneath the grill by an inclined mortar pad, which may have previously been the bedding for a brick. The shallow brick ramp above this is composed of a series of bricks laid stretcher and with a single course of bricks forming its walls. This shallow ramp continues until it is covered by dolerite cobbles that are likely the disturbed and redeposited remnants of the dolerite cobble spoon drain [050]. Further details of the articulation of the spoon drain and the modified drain mouth area unclear as they have both been truncated by the service [021]. A single metal strap was placed across the brick walls of the lower area and ferrous scrap and staining adhering to the top of the brick side walls of this lower area suggest that it was covered with a metal maintenance plate that has corroded in situ.

This brick drain was accompanied by a series of cuts and fills associated with its construction. The first of these was a cut [045] around later drain mouth [048] This cut extends approximately 100-150mm around the drain mouth set into the hard packed dolerite surface [028] and truncates both this surface and the remnants of the earlier drain. This cut contains the later bricks and dolerite blocks of the drain mouth [048]. Within and around this cut is a disturbed and possibly redeposited form [064] of the hard packed dolerite surface [028]. This deposit has the same composition as the hard packed surface but has a less even surface, with larger gravel fragments standing 20-30mm above the surface. As there is a very poor horizon to the rest of the hard packed surface there is every reason to believe that this is simply part of the hard packed surface [028] that has suffered some surface damage.

Possibly related to this drain or its function is a brick pad [054] placed against the dolerite and mortar footing. This brick pad shows little indication of its intended use. The dull red sandstock bricks that form it have been laid stretcher and are bonded together by a very soft sand mortar. These bricks are only a single course deep and is 500 x 1500mm in plan and has been truncated by the later service cut [021]. These bricks have been set within a disturbed area of the dolerite surface [028].

Adjoining both disturbed dolerite gravel surface around the drain [064] as well as the brick pad [054] is a concrete raft of dolerite gravel redeposit [061]. This gravel surface [028] has been reworked as part of concrete raft [061] that had been poured against the brick platform and the dolerite wall footing [013]. This reworking consisted of roughly the same dolerite material now included with 20% cement in an area that was 100-110mm thick in an east to west alignment and 120mm. This shape was irregular, the cement also included <2mm brick fragments and was brittle and hard. It is likely that this material had been redeposited after the removal of the upper section of the post [057c].

Connected with the modifications to the drain mouth is the asphalt surface applied to the dolerite cobble spoon drain [049]. This deposit formed a structural element of the dolerite spoon drain and may have been an original bonding for this feature or a later repair or addition. This asphalt is restricted to the interior of the shallow drain although small splashes of this material can be seen on the dolerite gravel surface [028] to the east and west. It does not cover the majority of larger dolerite cobbles forming the edge of the drain and at its observed deepest observable measures ~10mm.

In this area, accumulating in small pockets, are a series of sandy silt deposits. The first three of these deposits are associated with the modified drain mouth. One of these is a silty clay deposit [055] below the brick and mortar rubble [018] grilling the drain mouth. This deposit was a soft silty clay that had accumulated within the drain mouth to a depth of approximately 50mm and had clearly been accumulating after the completion of the modifications to the drain. Similar to this deposit was a silty clay deposit [043] that had formed a thin, irregular accumulation on the upper parts of the modified drain structure and roughly corresponded to the extent of the cut around the drain mouth. It likely

represents a small amount of silty clay that had accumulated against the metal plate and on top of the drain walls during the operation of the drain.

Underneath the demolition deposit [018] and above the dolerite gravel surface [028] was a thin lens of artefact rich sandy silt [019]. It likely represents accumulated puddles of silt from the later periods of use of this courtyard during the occupation of the site by the volunteer military forces (Figure 4.1.29).

Adjacent to the dolerite spoon drain [050] was a hallow pit [059] pit containing a number of large bone fragments. This pit, 40mm in depth and approximately 170mm in diameter, appeared to have been worn into the hard packed dolerite cobble surface [028].

In the west of the trench are a series of post holes [078-090] that appear to truncate the earlier [067] surface. These post holes generally measure around 250mm in diameter are irregular in shape and do not contain the remnants of any posts within them, the presence of posts are inferred from the form of the posthole cuts (Figure 4.1.30). They did not cut through the upper strata but were only present at this depth. It is clear that these posts were added after the packed gravel surface [067] and it is likely that the posts were removed during the demolition of the Lumber Yard. The fill within these post holes is a mixed similar to the clay deposits [016] but they contain a large amount of dolerite gravel than brick fragments.

Two additional postholes, or cuts to support small features are also present in the hard packed dolerite surface [028] on the east of the site. One of these was a posthole [062] north of the brick pad [054] and to the south of the dolerite wall footing [013]. This posthole consisted of a cut [062a] measured 170mm in plan and 120mm deep and it contained [062b] redeposited gravel fill [028] mixed with brick fragments and additional amounts of clay.

A single steel pipe [033] set into the hard packed dolerite surface [028] adjacent to the service cut [021] also dates to the construction This feature consists of redeposited dolerite gravel and clay [033a], a steel pipe [033b] and the cut [033c] that contains it. The cut is 130mm in width and 240mm in depth and the steel pipe, set vertically in the fill is 45mm in diameter and approximately 250m in length. It is likely that this pipe was part of a small structure within the open space of the interior Lumber Yard courtyard. This feature was likely installed during the latter part of the occupation of the Lumber Yard as the steel of the pipe is not consistent with early metals that would have been present at this site. The fill in this deposit was the same as the gravel surface [028] surrounding it, and equally compact, but contained a small amount of clay (10%) and less gravel within its matrix.



Figure 4.1.21 Looking to the north and showing the chimney base [069], the brick footing [100] between the chimney base [069] and the wall [013 and on the southern face of the chimney base]. Also visible is the small cut [105] along the northern face of the chimney base. The scales have 100mm marks (14.07.21).



Figure 4.1.22 Looking to the north and showing the brick drain [072] added into dolerite gravel surface [067] in the west of the trench. Also shown is the remnant dolerite wall footing [104] to the top of this photograph as well as the extension of the central dolerite wall footing [013] in the right of the photograph. The scales have 100mm marks (14.08.21).



Figure 4.1.23 View to the west showing the extension of the dolerite wall footing [013] the brick wall foot butted against it the additional footing built against this. In the background of the image can be seen the brick drain [072]. The scales have 100mm marks (14.08.21).



Figure 4.1.24 Looking down on the intersection of the dolerite wall footing [013] at the bottom of the image, the brick footing built against it [100] in the left of the image and the further brick footing that had built against that in the centre of the image [104] (14.08.21).



Figure 4.1.25 Looking to the south over the modified brick drain structure [048] and the disturbed gravel deposit [064] around the drain. To the right of grill for the drain is the brick platform (26.02.21).



Figure 4.1.26 Looking to the north over the modified brick drain structure [048] and the disturbed gravel deposit [064] around the drain. To the left of grill for the drain is the brick platform. Also shown is the section of brick and mortar demolition deposit [051]. The scales have 100mm marks (26.02.21).



Figure 4.1.27 Looking to the north and showing the modified brick drain structure [048] after the excavation of the rubble and fill within it. The scales have 100mm marks (04.04.21).



Figure 4.1.28 Looking to the east at the detail of the walls of the modified drain structure [048], the upper section of the drain structure, the mortar ramp in the centre of the photograph and the lower surface to the left. The scale has 50mm marks (04.04.21).

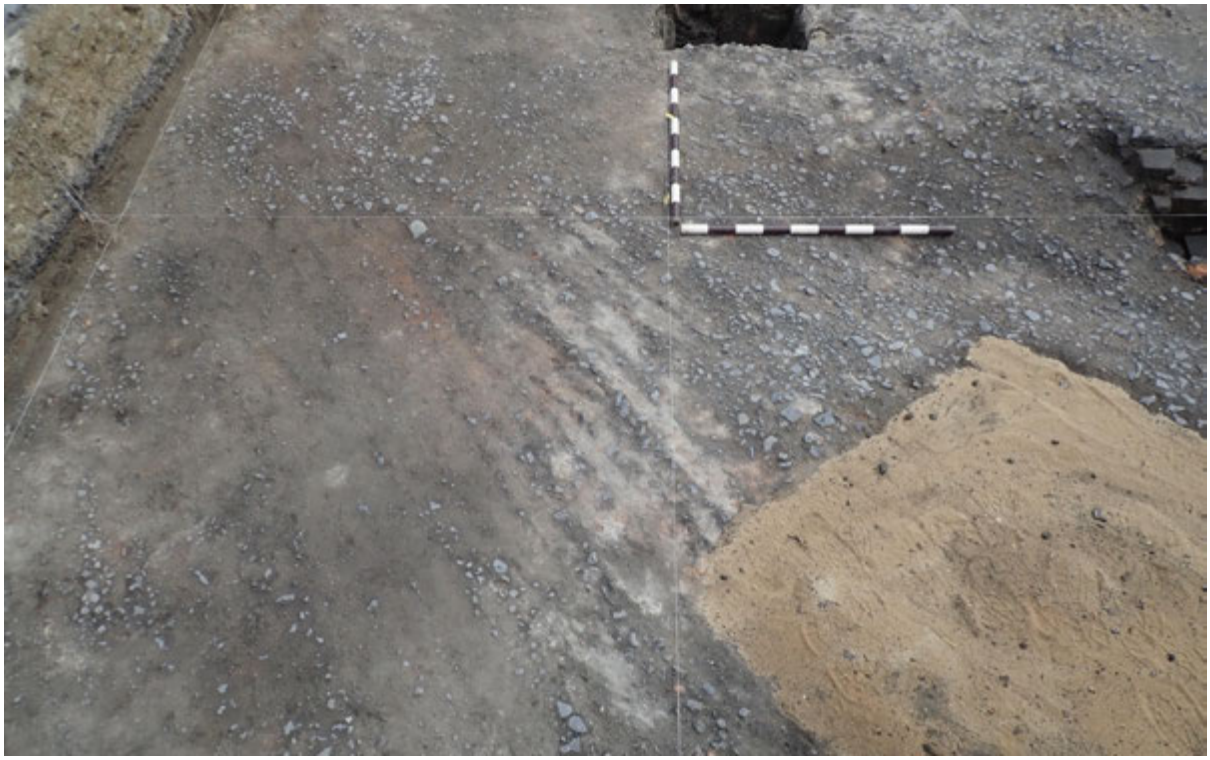


Figure 4.1.29 Looking at the surface of hard packed dolerite gravel [028] showing wheel ruts in its surface. Also shown is the archaeological test trench [003 and 004]. The scales have 100mm marks (04.04.21).



Figure 4.1.30 Looking to the north and showing the dolerite surface [067] in the west of this excavation area as well as the post holes [078-090] cutting thought the fill [066] and the lower dolerite surface [067]. The scales have 100mm marks (08.08.21).

4.1.6 Lumber Yard Structures, Cuts and Fills

The core structural features recovered from within this trench relate to the early construction phase associated with the Lumber Yard buildings (Figure 4.1.31). As has been considered above, the majority of comparatively fragile occupation had likely been removed by the late twentieth century demolition activity taking place in this area. The key structural remains from this early phase consist of the dolerite and mortar wall footing [013], the dolerite gravel surfaces [028 and 067], the initial levelling cut, and the early fills [034 and 076] redeposited within and around the dolerite and mortar footings (Figure 4.1.32 to Figure 4.1.33). These key components will be considered in the order of their likely construction.

The earliest *in situ* feature at this site is likely the levelling cut [023] for Lumber Yard footings and surfaces into natural soil. This large levelling event was present across the entirety of the site interrupting the natural soil profile and removing the upper soil strata typical of this area (Figure 4.1.32). This cut was observable wherever the excavation extended past historical fill deposits and into the natural soil profile and continued beyond the limits of excavation. That this cut was the earliest extant *in situ* feature on the site is attested to by the presence of thin construction deposits on the surface of the exposed culturally sterile clay deposits. These construction deposits consisted of a thin layer [095] of mortar and fine, 5mm, brick fragments within the interior of the Lumber Yard structure and to the south of the rough loose boulder and cobble footing [107]. This deposit was <5mm in thickness and was extensive throughout the entire southern space of this structure. Similarly, observed below the dolerite surface [028] and other early features was a construction deposit [044]. This deposit consisted of a series of very thin <5m patches of sandy mortar and very fine brick fragments resting on the surface of the extensive cut [023] into the natural strata of this area. These deposits likely accrued during the construction of the dolerite and mortar wall footing, which also rested on the cut [023] into the natural deposits.

This dolerite and mortar wall footing [013] was a substantial dolerite footing that corresponded to the historical plans of the alignment of the walls of the western wing of the Lumber Yard. With a width measuring 600mm, some minor deviations were observed along its length although this was principally caused by variation in the size and shape of dolerite rocks and boulders that had been used to form the footing. The footing had a depth of 400mm, where it was observed to rest in a shallow trench that had been cut as part of the broader levelling cut.

This feature had been damaged on its upper surface during demolition and truncated several times by an early service [021]. An upper course of sandstone bricks was present in two places on this feature and in two other places distinct patterns in the mortar showed locations where bricks had been bonded to the upper surface of this feature (Figure 4.1.35 and Figure 4.1.36). It is likely that these brick courses on top of this footing were the basal courses of the wall for the lumber yard structures but had been removed during demolition. The dolerite footing is 280mm above the packed gravel yard surface [028]. The footings itself was composed of 30mm to 300mm angular dolerite gravel and cobbles, with the larger dolerite rocks placed towards the exterior of the footing with their straightest faces outwards. The wall was bonded by a light yellow sandy cement mortar.

Packed against the exterior of this structure to the east was the dolerite gravel surface [028]. This surface is present above the construction debris [044] resting on the natural clay. It is generally composed of hard packed dolerite gravel with the average fragment measuring 20-40mm, at 80% of the deposit, although there are larger fragments of up to 60mm composing 5% of the deposit and an additional 15% of sand matrix. The colour of the surface is a grey blue and the depth of the deposit is approximately 100 - 170mm deep as observed by earlier cuts through this deposit. A series of ruts were present in this surface, and curved from the east northeast to the west. The ruts were 20mm at their greatest depth and were up to 100mm in width.

Set within this surface was a dolerite cobble spoon drain [050]. This feature had been formed from water worn dolerite cobbles that had preceded the dolerite gravel surface [028] that had been packed around it (Figure 4.1.37 and Figure 4.1.40). With a total length of 6m but had been truncated on its

northern end by the cut [029] concrete roundhouse footing [012] and truncated nearly at its termination at the brick box drain [048] by a service trench [021]. The width of this drain was 650mm and it was shallowly concave. The structure of the drain itself was formed from dolerite cobbles, with larger cobbles measuring between 150mm and 230mm forming the edge of the drain and smaller cobbles, between 50-150mm packed tightly within to form the concavity of the drain. Where this drain has been truncated by the service trench [021] it is observable in profile and it can be clearly seen that it is bedded onto the thin construction deposit [023] that rests on the truncated [023] natural surface [020].

Constructed beneath the later surface [028] was a substantial post [057] and the box drain structure [063] associated with the dolerite spoon drain and modified drain mouth (Figure 4.1.413). This post was recorded as a cut [057a], packing [057b] and post [057c] below the disturbed gravel [061]. This cut was 570mm in diameter and contained the remnants of 250mm diameter post that had been broken at its uppermost extent. The cut for this fill shared the same diameter at the fill but extended 400mm in depth below the surface of the hard packed dolerite surface [028]. The post itself was butted against the dolerite and mortar wall footing [013]. The box drain [063] connected to the later drain mouth modification consisted of a floor single course of bricks laid with the stretcher faces abutting each other and supporting two walls of bricks laid shiner that in turn supported a brick roof, which was laid in the same manner as the floor. This box drain continued beyond the limit of excavation along the alignment of the visible spoon drain.

Corresponding to the dolerite gravel surface in the east of the trench was another surface [067] in the west of the trench. This dolerite surface was similar to the hard packed dolerite surface [028] within the yard area to the east recorded but was less compact and was much shallower, measuring 60mm in depth (Figure 4.1.42). This surface also rested on a deposit of clay and brick rubble levelling fill [094], which measured 300mm in depth and contained large (~500-750mm) areas of dolerite cobbles. This surface and the fill beneath had been removed from large sections of the area around the dolerite and mortar wall footing [013]. The inclusion of brick and clay rubble fill beneath this surface suggest that this was a later addition than the surface to the east. This fill [094] was also present beneath a shelly, highly plastic black clay and brick rubble deposit [076] with a high concentration of lithic and early European artefacts.

Within the interior of the dolerite and mortar footing [013] were two footings [070 and 101]. These features rested on he cut surface [023] and were bonded to the external dolerite and mortar wall. In the south the brick machine base [070] against the lumber yard wall [013]. This feature consisted of a matched set of two brick footings bonded to the interior of the dolerite wall footing [013]. Each of these footings measured 800 x 370mm in plan (Figure 4.1.43). The total height of these features was 150mm and each consisted of three courses of bricks. These features had been built on top of the cut [023] that had levelled this area prior to construction. The northernmost of these two features was 600 x 1600mm in plan and composed of dolerite and brick in the same manner as the external wall (Figure 4.1.44).

Also within the interior of this structure and north of the internal dolerite boulder structure was a series of three small brick piers [097, 098 and 107] aligned parallel to the external wall (Figure 4.1.45). The two intact piers [097 and 098] consisted of two bricks laid onto the surface of the cut [023] side by side without being bonded together. The third pier [109] was heavily damaged and consisted of broken brick but maintained its position in the sequence.

Burying all of these internal deposits was a fill [034] had been redeposited within the interior of the footings [013]. This deposit is composed of shelly loamy black clay with distinct grey green mottles of sterile clay material. Numerous early nineteenth century artefacts were present within this deposit and a small amount of knapped lithic items. The shell fragments were principally *M. planulatus*, were highly fragmented (<5mm) and composed less than 5% of the deposit although infrequent intact or large specimens were present.

AHI-011

LOWER STRATA

TRENCH ONE

MACQUARIE POINT ARCHAEOLOGICAL EXCAVATION
PHASE I AND PHASE II
ROUNDHOUSE REMEDIATION WORKS





- BRICKS AND HALF BRICKS
- DOLERITE
- CONSTRUCTION DEBRIS
- SAND LIME MORTAR
- WOODEN FEATURE
- BITUMINOUS SURFACE
- DOLERITE SURFACE
- POST HOLE
- METALS
- WHEEL RUT
- CONCRETE

1: 5.863	15: 4.804	29: 5.227
2: 5.841	16: 4.878	30: 5.257
3: 5.995	17: 4.686	31: 5.029
4: 6.413	18: 5.129	32: 5.410
5: 6.318	19: 5.225	33: 5.328
6: 5.159	20: 5.459	34: 5.518
7: 5.144	21: 5.344	35: 5.442
8: 5.027	22: 5.295	36: 3.848
9: 5.599	23: 5.218	37: 4.892
10: 5.225	24: 5.095	38: 4.955
11: 5.209	25: 5.049	39: 5.262
12: 5.087	26: 4.972	40: 5.222
13: 5.069	27: 5.109	41: 5.348
14: 5.125	28: 4.955	42: 5.402

LEVELS ARE GIVEN IN REFERENCE TO THE AUSTRALIAN HEIGHT DATUM

1: E:527389.226 N:5252494.431
2: E:527395.301 N:5252501.711

EASTINGS AND NORTHINGS ARE GIVEN IN REFERENCE TO THE GEOCENTRIC DATUM OF AUSTRALIA 1994

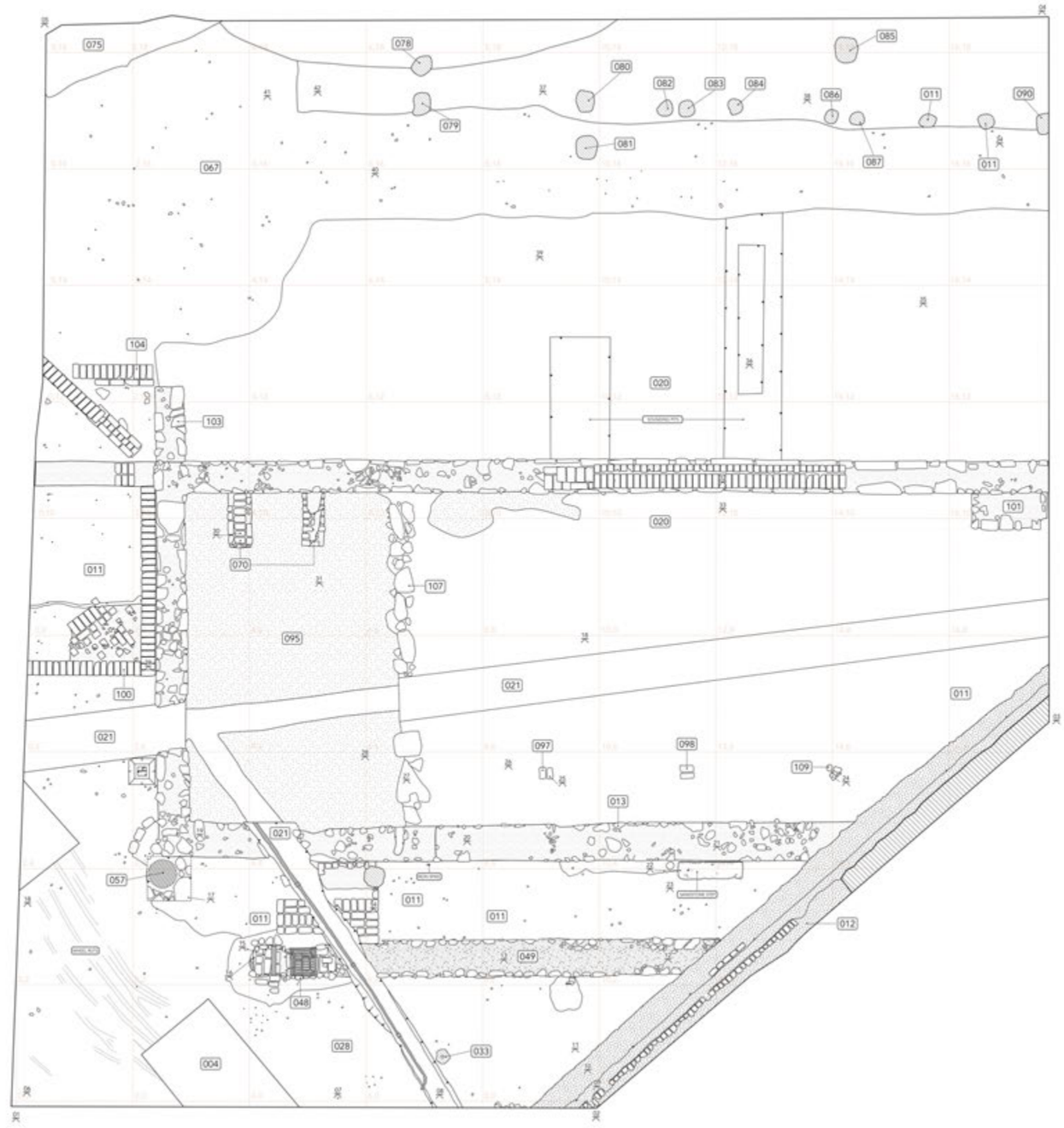


Figure 4.1.31 Showing the features and deposits associated with the earlier phases of Lumber Yard structures .



Figure 4.1.32 Looking to the northwest at the completion of excavation and showing the interior of the dolerite and mortar footings in the centre of the image (08.08.21).



Figure 4.1.33 Looking to the north showing at the completion of excavation and showing the interior of the dolerite and mortar footings in the centre of the image. The scale has 100mm marks (08.08.21).



Figure 4.1.34 Looking to the north and showing the mortar staining [095] of the southern space inside the Lumber Yard structure. Also visible is the unbonded dolerite footing in the centre of the image and the paired brick footings [070] in the abutting the wall footing [013] in the right of the photograph. The scales have 100mm marks (08.08.21).



Figure 4.1.35 Looking to the west and showing a section view of the brick wall stub atop the dolerite wall footing [013]. The scale has 50mm marks (08.08.21).



Figure 4.1.36 Looking to the west and showing the brick wall stub atop the dolerite wall footing [013]. The scale has 50mm marks (08.08.21).



Figure 4.1.37 View to the west showing the spoon drain [050] set into the hard packed dolerite surface [028]. The scales have 100mm marks (04.04.21).



Figure 4.1.38 Looking west and showing the dolerite gravel surface [028], spoon drain [050], modified drains structure [048] and dolerite wall footing [013]. The scales have 100mm marks. (04.04.21).



Figure 4.1.39 Looking to the north and showing the dolerite surface [028] with wheel ruts in evidence as well as the archaeological test trench [003 and 004] while the small test trench visible in the left of the image contains the post [057] buried below the disturbed surface [061] which is also visible against the dolerite wall footing (04.04.21).



Figure 4.1.40 Sandstone step bonded to the exterior of the dolerite wall footing [013], also shown is the extent to which the concrete toe of the roundhouse wall [012] has covered the surrounding features. The scales have 100mm marks (04.04.21).



Figure 4.1.41 Detail view of the post [057c], post cut [057a] and fill [057b] beneath the disturbed gravel surface [061]. This feature has been exposed by a test pit cut through the gravel surface (12.04.21).



Figure 4.1.42 Detail of the two ferrous stains on the centre of the sandstone step, consistent with the marks left by bolts as would be present at the closure of a double door. The scale has 10mm marks. (04.04.21).



Figure 4.1.43 Looking west at the paired brick footings [070] against the interior face of the dolerite and mortar wall [013] Also visible is sandy mortar deposit on top of the sterile natural clay (08.08.21).



Figure 4.1.44 Looking west at the dolerite and mortar footing [101] inside the norther space of the interior of lumber yard structure against the interior face of the dolerite and mortar wall [013]. The scales have 100mm marks (08.08.21).



Figure 4.1.45 Detail view of one [097] the brick piers placed on top of the cut [023] into the natural deposits. The scale has 50mm marks (08.08.21).

4.1.7 Pre-colonisation Deposits

Only a single context was recorded for the natural strata within this excavation area. Although there was variation within the natural clays, these were gradual and consistent with the expected natural soil profile of this area and therefore were assigned a single number [020]. This highly plastic clay is a natural occurring part of the soil profile in this area and is commonly present as a culturally sterile B horizon below the loamy black clay of the upper strata and the regolith below (Figure 4.1.46 and Figure 4.1.47).



Figure 4.1.46 Looking to the north and showing the excavation into culturally sterile soil [020] to the north of the dolerite footing [013]. The scales have 100mm marks (08.08.21).



Figure 4.1.47 Looking at the natural clay [020] at the bottom of Sounding Pit Two. The scale has 100mm marks (24.07.21).

4.2 Trench Two - The Turntable Well

The turntable trench contained nine archaeological strata distributed across three phases (Figure 4.2.1 to Figure 4.2.5). The first phase consisted the original turntable structure [205a], the second phase relates to the modification of the structure by the removal of sections of the original and the installation of a new upper wall with iron fittings [205b] and the third phase included the fills [203 and 204] associated with the demolition of the roundhouse structure and the filling of the turntable well to create the current asphalt car park surface.

This was similar to the phase of car park construction that was observed in both the other two trenches. The car park surface [201] contains angular gravel, ~20mm in diameter, at 95% of the volume of the deposit, that was bonded together by asphalt. Beneath this was a deposit of finely crushed bluestone gravel [202] that had a maximum depth of 150mm. Beneath this was the dolerite and cobble fill deposit [203] with a maximum depth of 400mm.

Beneath this sequence of typical upper car park deposits the turntable well was filled with concrete debris and clay fill [204] clearly associated with the demolition of the standing structures of the roundhouse. This demolition material included large amounts of reinforced concrete footings, columns and large structural elements that were so heavily damaged that their original functions were unrecognisable. Substantial iron structural elements were included in this deposit, such as axels, wheels, rails and struts, that were all also clearly associated with the operation of the Locomotive Depot.

A concrete manhole [206a] had been cut [206b] through these upper strata and filled [206c] with redeposited clay and rubble from the lower deposit [204] packed around. The manhole was formed from reinforced concrete with a round concrete and steel plate sealing the concrete manhole interior. At the bottom of the manhole was a square access point to the water service below. This manhole had been placed in almost the exact centre of the turntable wall partially damaging the capstan footing at the base of the turntable. The manhole measured 1200mm in diameter and was 1950mm deep.

4.2.1 Turntable Well Construction

The original turntable well was extant as four distinct elements, the sloped concrete floor of the well a concrete footing in the centre of the well and a level area and track at the base of the well wall and the lower half of the wall itself. Any additional structures, including the original capstan and, likely, the capstan footing had been removed during the second phase of construction that took place here.

Given the total demolition of above ground elements and their deposition of substantial amounts of concrete and iron fell on to the floor of the turntable, the concrete flooring was well preserved at the time of excavation. The turntable well had an internal diameter of 23.2m This flooring of twenty sectors equally divided around the circumference of the well. Each of these sectors had a length of approximately 7m, at their greatest width measured 3.5m and were bonded to the circular central floor. These sectors were angled slightly down to the central floor with an overall fall of 700mm and therefore a gradient of 5.7°. The concrete that formed these sectors was composed of 95% 5-15mm dolerite gravel within a sandy cement matrix.

This floor extended beyond the current limit of excavations and its thickness could not be determined. Previous excavation, archaeologically monitored by Austral Tasmania 2020) associated with remediation testing of the turntable well had penetrated the floor of the turntable. This testing observed that the 'floor of the turn table was formed of smooth concrete, formed from cement and a rough aggregate of finely crushed dolerite. The bottom of the concrete had been poured into a cut into the dolerite clay and dolerite rubble fill that was present below and that extended beyond the limits of excavation.' (Austral Tasmania 2020). It is likely that the excavations beneath the turntable well and the cut for the roundhouse wall [029] either very closely related stratigraphically or the same.

The level area of concrete in the centre of the excavation area was composed of the same concrete as the rest of the floor. This central floor measured approximately 4.2m in diameter. It had been damaged

by the insertion of the later concrete footing to support the later iteration of the turntable capstan. It is unclear to what extent a separate footing for the original iteration of the capstan.

The level area at the base of turntable well wall extended around the entire circumference of the structure. This concrete was poured separately from both the wall and the sectors that compose the floor of the well. It measured 910mm in width and at its centre point it retained some iron fittings, such as fish plates and holding down bolts that would have secured the lower internal rail, likely ~120mm in width, on which the castors of the turntable would have run. This outer rim was divided into sixteen equal sections, all longer (4.6m) than the sectors forming the floor were wide and each of these concrete footings for the iron rail were 890mm wide. A 140mm wide spoon drain was evident in these upper sections and extended 1400mm from the base of the well wall into the sloping concrete floor of the turntable.

The original walls of the turntable well were composed of similar concrete as the floor and upper section of the well (Figure 4.2.5 to Figure 4.2.11). The impression of form work is visible in the surface of the well wall, with three rows of planks, each ~120mm in width, clearly visible in some sections. The impressions of upright posts of the formwork were also visible in some sections of the early well wall.

Some threaded rods are also visible in the earlier well wall. These threaded rods are likely the remains of bolts appear to have either been sheared off, either after their use had been served, possibly during an early post construction phase, or as the structure elements with which they were associated were removed.

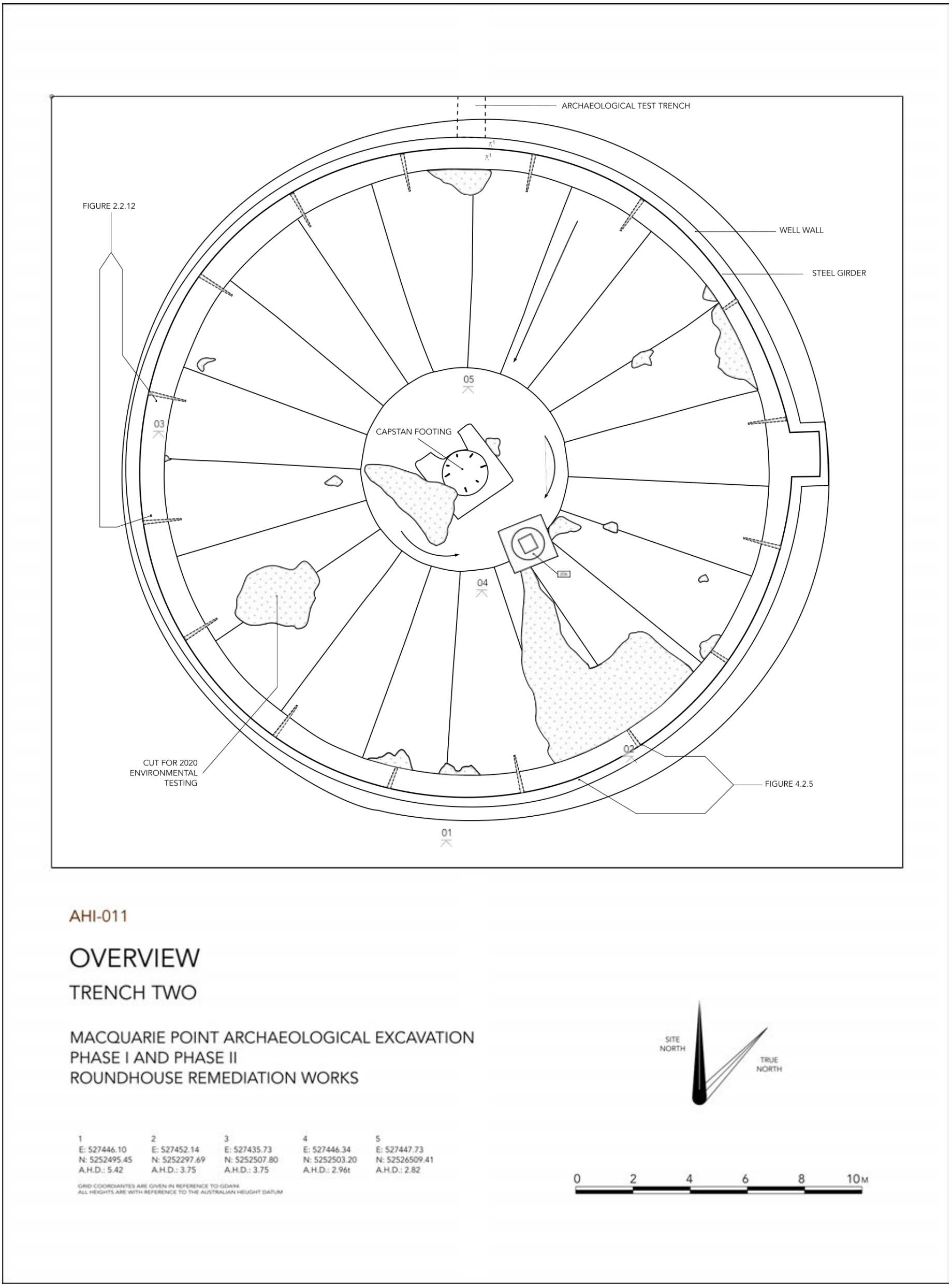


Figure 4.2.1 Plan of the turntable well.



Figure 4.2.2 Looking to the north and showing the removal of the upper fill deposits within turntable trench after the removal the asphalt car park surface (04.04.21).



Figure 4.2.3 Looking to the northwest and showing the turntable well at the completion of excavation (04.04.21).



Figure 4.2.4 Looking southeast over the interior of the turntable well, showing the manhole in the centre of the image above the concrete capstan footing. The spoil displayed in this image is not associated with the currently excavated area. The scale has 100mm marks (04.04.21).

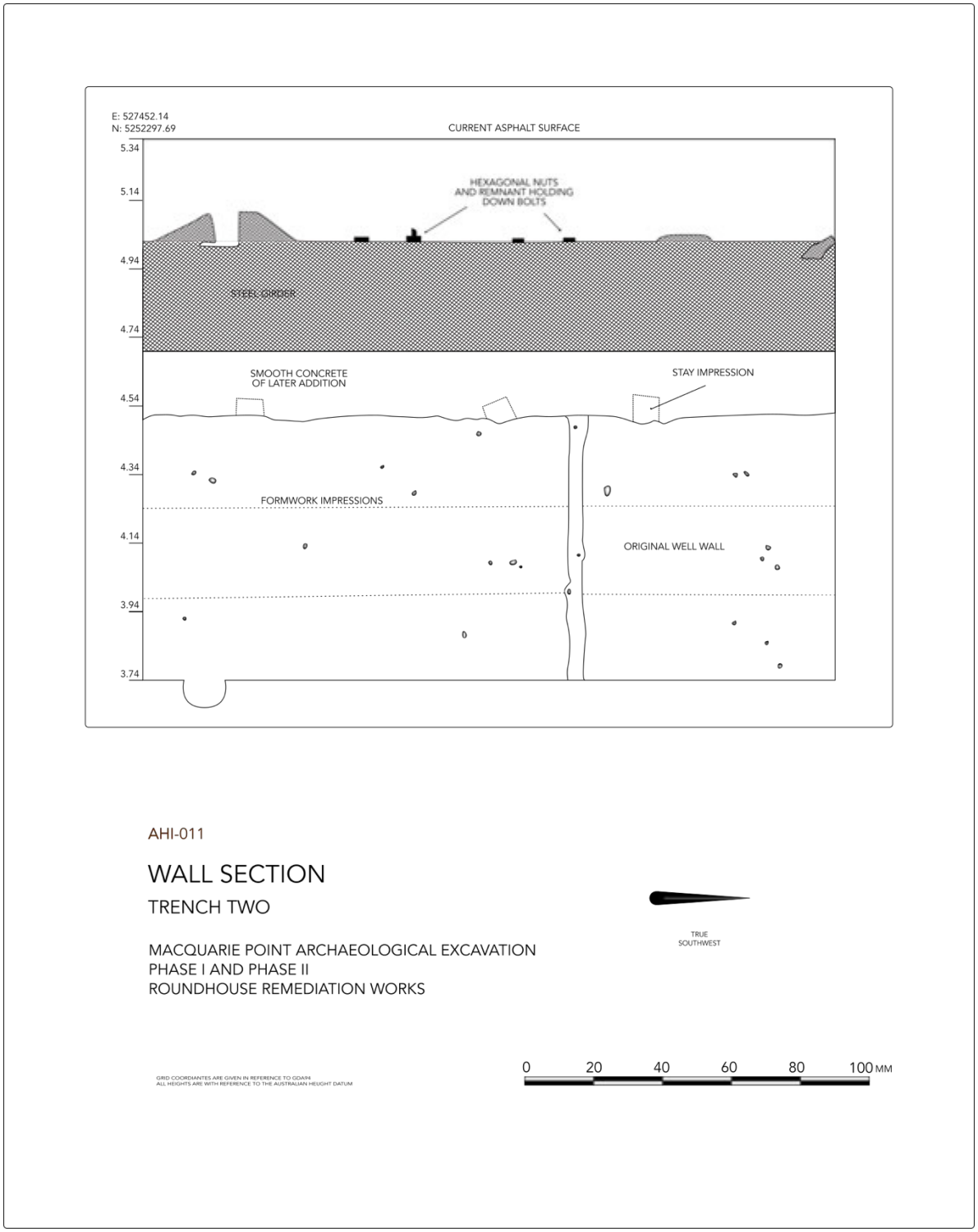


Figure 4.2.5 Section view of a portion of the turntable well wall.



Figure 4.2.6 View to the west showing the internal wall of the turntable. The lower wall [205a] is distinct from the upper course by texture and colour even at the distance from which the photograph was taken. The scale has 100mm marks (04.04.21).

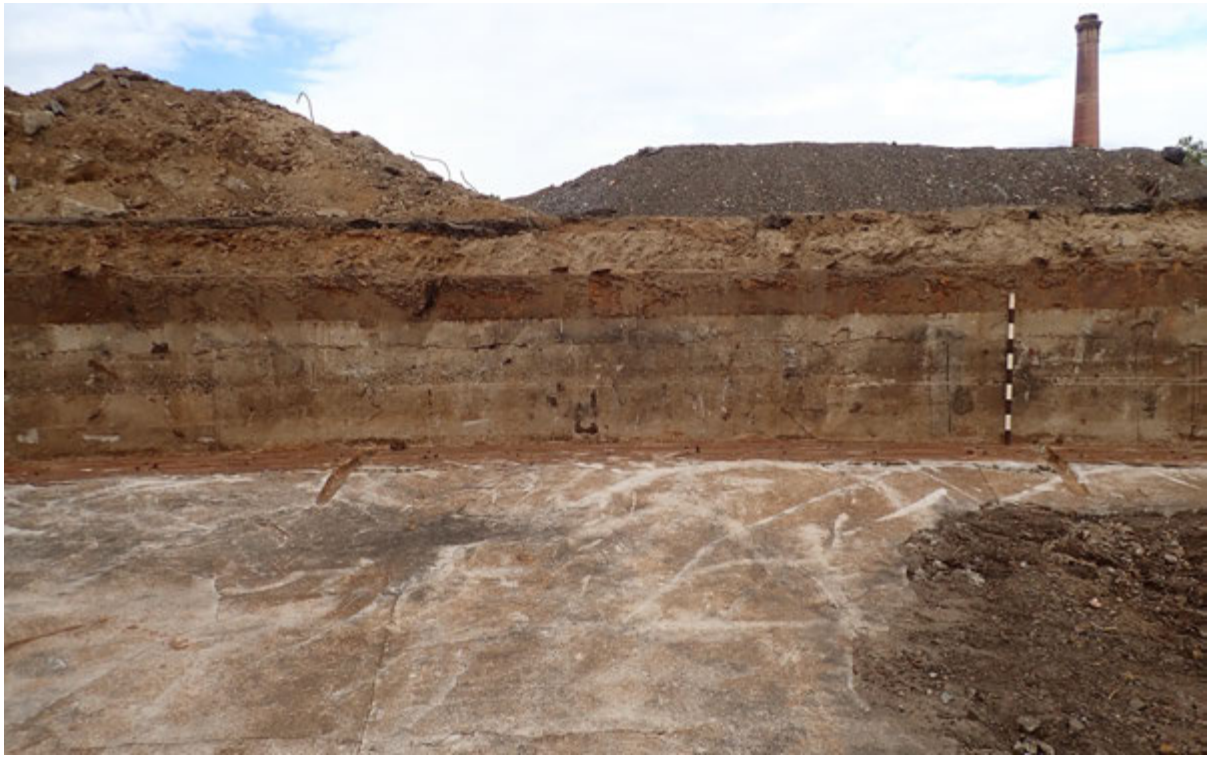


Figure 4.2.7 View to the south showing the internal wall of the turntable. The lower wall [205a] is distinct from the upper course by texture and colour even at the distance from which the photograph was taken. The scale has 100mm marks (04.04.21).



Figure 4.2.8 Looking north at the access area that had been installed as part of the modification to the turntable. The scales have 100mm marks (04.04.21).



Figure 4.2.9 Detail view of the original concrete of the turntable well wall, showing the variation in the size of the dolerite gravel. The scale has 500mm marks.



Figure 4.2.10 Looking at the surface of the concrete floor of the turntable well. The scale has 50mm marks (04.04.21).



Figure 4.2.11 Detail of the damage to and the matrix of the concrete floor of the turntable well. The scale has 50mm marks (04.04.21).

4.2.2 Circular Rail Footing

The circular rail footing appears to be the original rail used as part of the turntable construction as there is no evidence of modification to this structure prior to its demolition (Figure 4.2.12). This component of the turntable well is footed on a concrete ring running around the base of the well, which was likely poured as a separate component to the turntable floor and wall. The width of the concrete is ~900mm and it is punctuated by shallow spoon drain, <55mm in depth, that each fed into a matching spoon drain in the concrete floor that would drain the water away to the bottom of the well.

Within the centre of the concrete footing is a single ghost rail, visible as an absence of ferrous staining on the surface of the concrete and a 10-20mm deep impression left in the concrete by the rail (Figure 4.2.13). Spaced along this rail at a distance of approximately 420mm from one another are ferrous base plates and the remnants of holding down bolts that would have secured the fishplate over the rail (Figure 4.2.14). The bolts that had held the rail in place had been torn or sheared off during the demolition of this structure and it is likely that this rail was salvaged during demolition.

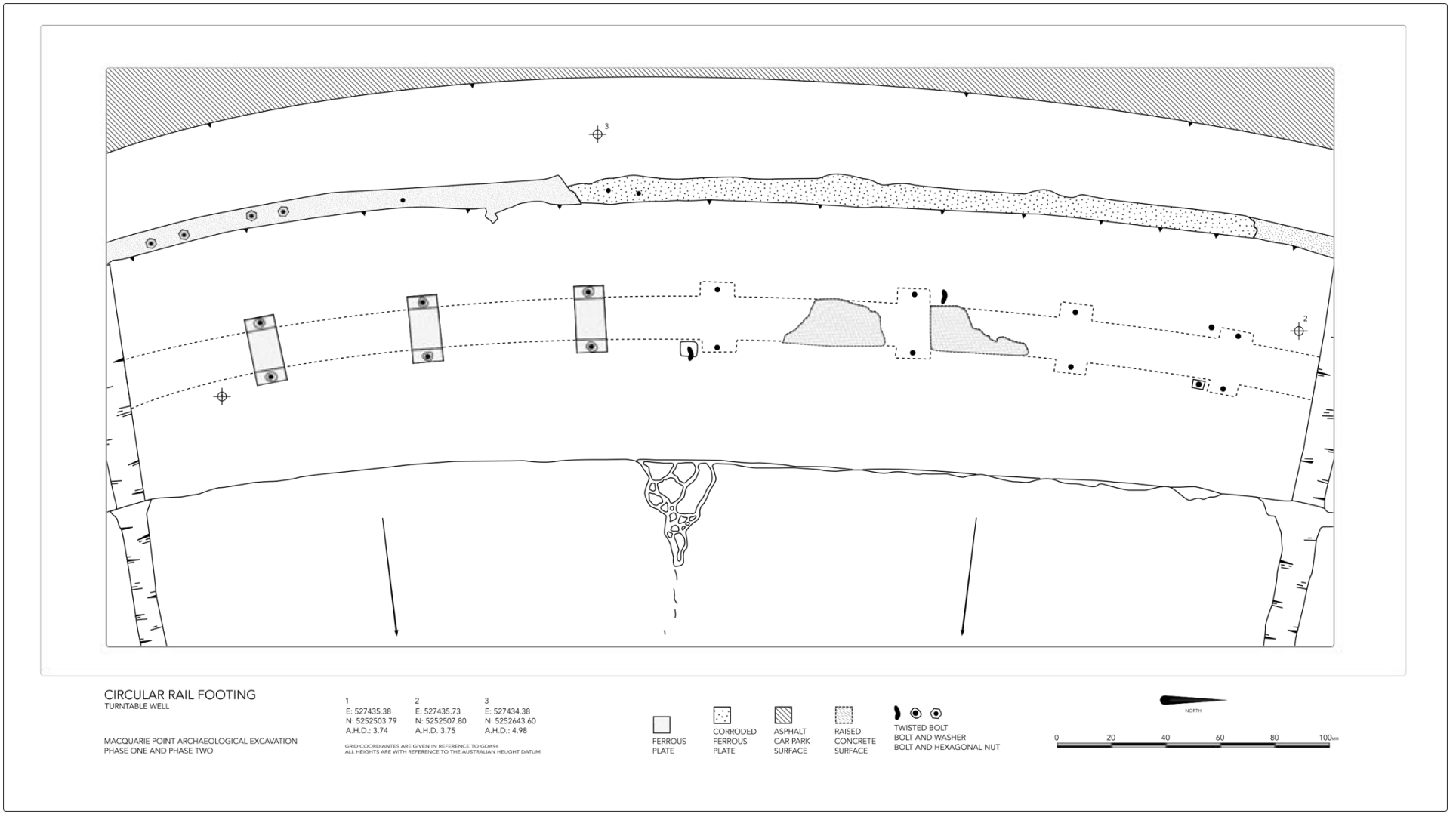


Figure 4.2.12 Plan of a single section of concrete rail footing, showing drainage lines, well wall, and sloping well floor also.



Figure 4.2.13 Looking at the level area at the base of the turntable well wall. Visible in this image are the baseplates and bolts that held the rail in place as well as the impression of the rail in the surface of the concrete. The scale has 100mm marks (04.04.21).



Figure 4.2.14 Detail view of a typical baseplate the connected the lower rail of the turntable to the concrete footing at the base of the well wall. The centre measures approximately 160mm in length and the two exterior panels measure 80mm in length. The scale has 500mm marks (04.04.21).

4.2.3 Modification of Turntable

The key modifications [205b] to the turntable well structure consisted of the replacement of the capstan, the removal of the upper section of the turntable well wall (Figure 4.2.15 to Figure 4.2.16). The floor of the turntable and the iron rail around the base of the well wall show no sign of modification consistent with an overhaul of the structure and likely continued in use throughout.

The new capstan footing that was placed in the centre of the turntable well consisted of a round 1100mm diameter concrete centre with eight 24mm holding down bolts in an even larger ~2.5 x 2.5m rough concrete footing. Excavation within a damaged section of this concrete floor indicated that it extended to a depth of over 450mm. Due to the damage to this part of the turntable well it is unclear to what extent the central part of the footing was a distinct from its surrounding footing or whether the smooth surface of this central area was the result of the impression of the capstan base during construction.

The upper section of the wall of the turntable well was formed from a smoother white concrete than had formed the earlier turntable wall. Although the relative proportion of dolerite gravel within the cement matrix appears to be similar the dolerite gravel used for the more recent structure appeared to be larger in size, i.e. the majority of gravel visible measured roughly 20mm in diameter. This later wall section also bore an iron plate running around the entirety of its upper rim, extending 300mm down the face of the wall and, on its upper surface are small upright coupling gates. Some remnant sleepers, fishplates and holding down bolts are still extant around the rim of the turntable. An access area had also been added in the north of the turntable wall as part of this phase of modification to the wall. The concrete for the new section of wall appeared to have been poured *in situ* as there were a number of stay impressions in its surface.

4.2.4 Demolition Material and Fill

The demolition of the roundhouse and all above ground structure associated with the turntable is clearly documented in the substantial amount of reinforced concrete fill. These fills are composed of sandy silt and concrete rubble. Some distinct voids were present in these rubble fills. The concrete rubble appeared sometimes as discrete fragments of concrete and at other times were part of over 10m long strings of gnarled rebar and concrete chunks. This clearly indicates that the nearby structures had been directly pushed into the well.



Figure 4.2.15 Detail view of the junction of the early well wall (205a), showing regular formwork and a series of bolts and the newer concrete (205b), showing stay marks. The scale has 50mm marks (04.04.21).



Figure 4.2.16 Looking to the north and showing the coupling system and rails associated with the later modification to the turntable wall. The scale has 50mm marks (04.04.21).



Figure 4.2.17 Looking to the east showing the extent to which the earlier phase [205b] of turntable well wall construction has truncated and replaced by the later concrete.



Figure 4.2.18 Detail view of the later phase of wall construction poured on top of the earlier phase. The scale has 50mm marks (04.04.21).



Figure 4.2.19 Looking at the second iteration of capstan footing in the centre of the turntable well. The scales have 100mm marks (04.04.21).

4.3 Trench Three - The Road

The third area of excavation with the smallest amount of archaeological potential was the area around the late nineteenth century road (Figure 4.3.1 to Figure 4.3.3). The stratigraphy here was simple and the features similar to that recorded elsewhere, only more damaged.

This trench also had the same asphalt [001] and finely crushed rock dolerite [002] as was present in the other two trenches. Similarly this trench also had a cut [303] and fill test trench [304]. Similarly a deposit of dolerite cobble fill was also present in this area [006]. All of these deposits shared the same characteristics as had been documented in the Lumber Yard Trench. The upper strata also included a concrete kerb associated with the car park as well as large dolerite gravel fill [310]. The dolerite gravel fill features large 70mm angular dolerite gravel and was 500mm in depth.

Within the dolerite cobble fill [305] was extant a pair of heavily damaged sleepers [306] visible in the trench wall (Figure 4.3.2). A service trench [315] was present through the centre of the excavation area aligned approximately northeast to southwest. The trench contained a sectional, collar join ceramic pipe [317] 300mm in diameter. The fill within this trench contained an upper strata of boiler scale [314] and a lower strata of clay and brick rubble fill [316]. The trench measured 600mm in width and 650mm in depth.

Above and aligned with this service trench was a concrete footing [307], which was likely also acting as a cap on the service trench [315] before its demolition. This footing was formed from hard, light grey concrete with ~30mm angular dolerite gravel. and two rails ~400mm apart were set into its surface.

The previously recorded nineteenth century road surface [311] was still present and rested upon a layer of crushed dolerite [312] that in turn rested upon bedrock [313]. Little additional information was gained from this trench than had already been obtained from the test excavation.

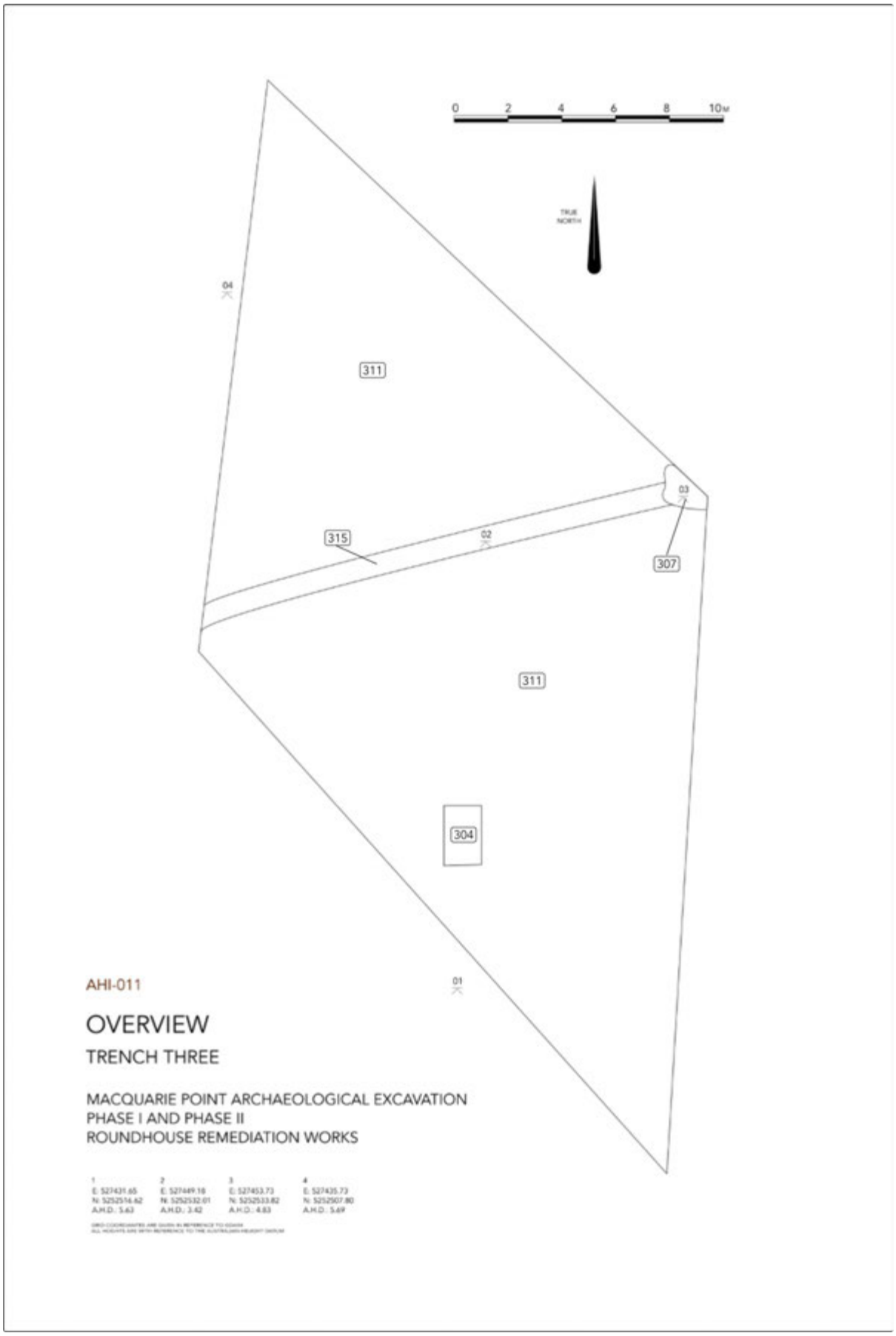


Figure 4.3.1 Plan overview of Trench Three, the road is visible.



Figure 4.3.2 Looking to the northeast and showing the upper strata within this excavation area. The scales have 100mm marks (04.04.21).



Figure 4.3.3 Looking to the southeast over the excavated area of nineteenth century road. The cut for the service trench [315] is visible in the centre of the image and the concrete footing [316] is in the right of the image. The scale has 100mm marks (04.04.21).

4.4 Summary

Excavation of the three trenches revealed the anticipated archaeological remains, although Trench One also contained Aboriginal material culture that had not been predicted by some earlier investigations. Subfloor deposits, yard surfaces, rubbish pits or other strata that may have contained *in situ* early to mid-nineteenth century material were also not present to the extent that may have reasonably been expected prior to excavation. Thus, while the features and structural phases anticipated in the research design are present, it was often the case that deposits bore artefacts from phases other than ones represented by the structural items with which these strata were associated.

Trench One contained the footings of the Lumber Yard structures that had been built on to a broad cut across the ground surface and backfilled with deposits that contained both Early European and Aboriginal contact materials. A total of 94 archaeological strata were recorded in Trench One. Features and deposits associated with the construction and occupation of the lumber yard from the 1820s are characteristic of this trench but features and deposits from all phases are represented to a lesser extent. An unexpected amount of lithic and glass that had been knapped or used by Aboriginal people were encountered in fills deposited during the construction of the lumber yard but included pre-colonisation material along with early colonial contact artefacts. Later cuts had strongly affected the upper strata in this trench and it is likely that deposits containing artefacts associated with the mid-nineteenth century of the site as a lumber yard were almost entirely removed through twentieth century levelling cuts. However, below the horizon of these cuts the archaeological material remained largely undisturbed outside of two distinct service cuts.

Trench Two was the largest excavation area and presented the simplest stratigraphic profile consisting nearly entirely of the intact turntable well filled with concrete demolition deposit from the roundhouse structure. Within this trench only 11 deposits and features were recorded and this was the result of the fact that the well structure was intact and filled with two clear strata of demolition debris. Even though the well structure was intact the steel or iron components of the turntable structure had been deliberately and carefully removed during construction. Only ferrous baseplates or other fixtures cemented to the well present *in situ*. The interpretation of the archaeological features in this trench is simple as the turntable well has been photographically documented both during construction and operation.

The archaeological features and deposits within Trench Three represented the expected suite of late nineteenth century road features, services, pervious archaeological trenches and rubble. There were seven strata documented in this trench. As the trench contained very large road surfaces, massy bedrock and rubble fill that had been exactingly documented in earlier excavations (Austral Tasmania 2015) there is scant need to expand the nuances of these seven large strata further. Remains of the road that had been built upon a levelled section of headland bedrock were present in this trench. They appear to have retained the same characteristics that they held when they were last documented.

5.0 Analysis of Aboriginal Cultural Materials

This section presents the methods and results of the analysis of Aboriginal lithic material and shell material that may be associated with Aboriginal activity. The specialist usewear analysis of potential contact artefacts is presented in Appendix B but the identified contact artefacts are included in the broader analysis of morphology and material presented in this section. Given the shared history of this site, and the high probability that the majority of shell within the excavation was deposited by Aboriginal people, the malacological analysis will take place alongside the lithic analysis. This is the case even though the potential remains for some parts of the shell assemblage to have been deposited by Europeans.

This section consists of six subsections:

- The methodology for the lithic (Section 5.1.1) and malacological (Section 5.1.2) analyses.
- An overview of the shell and knapped artefacts and their distribution across the site by context and square (Section 5.2).
- The analysis of knapped materials in terms of morphology and material (Section 5.3).
- The summary of the usewear analysis of knapped glass material (Section 5.4).
- The analysis of shell material (Section 5.5).
- A discussion of the results of both analyses side by side and the conclusion of the analysis (Section 5.6).

The disturbed nature of these materials is of necessity a limiting factor for this analysis. Therefore, the purpose of this analysis is to provide context for the cultural significance of the artefacts, inform management approaches and to broadly characterise the materials that have been recovered during excavation.

5.1 Methodology

As noted above, the determining factor in the analysis of Aboriginal cultural material in this case was the high levels of disturbance that had taken place to any deposit that contained shell and stone. This approach was required by the permit (P155), granted under the terms of the *Aboriginal Heritage Act 1975,* that precluded the excavation of any *in situ* Aboriginal cultural material. This means that the methodology is required to eschew any complex analytical programmes and instead focus on identifying the characteristics of the assemblage that will provide the best information for their management and curation.

5.1.1 Lithic Analysis Methodology

All Aboriginal artefacts were catalogued with standard information required for identification, site name, permit number, pit number, spit number, context, date excavated and excavator's initials. As lithic, or knapped glass, artefact identified as culturally modified by Aboriginal people was entered into a separate register during excavation this 'A' (artefact number) was reused as the catalogue number for each artefact. Where further contact artefacts or lithic artefacts were identified during the post excavation phase they were added to this register.

Lithic artefacts have been weighed, measured and described by type, raw material, colour, flaking quality, type of fracture initiation, type of platform, platform angle, platform length, platform width type of termination, percentage of dorsal cortex, location of dorsal cortex, fragment (portion of artefact), length, width, weight, axial length, midpoint width, presence of heat affects, category of core, number of scars, length of scars, scar direction, retouched flake, surface texture, extent of adhesions on surface, surface loss, weathering, excavation damage, and details of joined artefact or non-artefact.

All of the definitions used in this analysis are drawn from Holdaway and Stern's (2005) *A Record in Stone: The Analysis of Australia's Flaked Stone Artefacts*.

In this study the use of quadrants for the ventral surface of the artefact in order to classify the location of marine adhesion, or for other purposes in this catalogue, include the designation '5','6','7' and '8' to indicate the quadrats of the ventral surface proceeding clockwise around the dorsal surface from the proximal quadrat.

5.1.2 Malacological Analysis Methodology

During excavation all deposits that had the potential to contain Aboriginal cultural material were sieved through 2mm mesh screens. Once the potential for a spit and square had been established, either having a large amount of cultural material or only a small amount, then the sieving would continue on 2mm screens, in the case of the former, and on 4mm screens in the case of the latter. This led to a sampling bias in some cases where only larger shell fragments were retained from deposits with a small amount of cultural material.

After excavation, all of the midden material was sorted into shell, brick fragments, gravel and charcoal. No other organic material was present and the lithic materials were separated either during excavation or during the sorting process. The shell species were further sorted by species, then shell element (including left and right) and fragment. Whole shells, which were rare and limited to specific species, were also sorted separately. Owing to the extensive disturbance of the deposits containing shell material, the charcoal and gravels present were not subject to further analysis as their association with the shell material had been weakened.

Once the brick fragments, gravel and charcoal were sorted they were documented by volume and percentage of deposit and then discarded. The disturbance of the site means that the potential for further analysis of these materials is extremely limited. Thus, as these items bore a relationship to the shell material only insofar as stratigraphic analysis is able to demonstrate it, the consideration of these items is not included in the malacological analysis. Instead these materials are considered as inclusions in the stratigraphic section of the report.

Each square and spit was treated separately with all of the shell material, sorted into its appropriate categories, counted and weighed together on this basis. For bivalves, *M. planulatus* represented 89% of the shell assemblage in terms of quantity, the left and right valves/umbo were sorted separately. Where the umbo was complete and the orientation of valve was clear it was sorted by half, otherwise the shell was included as a fragment. Gastropod shell were counted as a single individual where approximately >50% of the columella remained intact, otherwise the shell was considered to be a fragment.

Each classification of non-'fragment' shell included taxonomic name, common name, chirality, quantity and MNI. The identification of species relied upon the work *The Seashells of Tasmania: A Comprehensive Guide* by Simon Grove (2011). Some of the information contained in this book and further information that can be used as a reference for the shell material considered in this report are included on the website: https://molluscsoftasmania.org.au.

After cataloguing, a basic analysis of the shell material was undertaken. The simplicity of the analysis is a consequence of the disturbance of the shell bearing strata at the site. Finer analyses that would include fields such as shell size are not likely to lead to an increase in an understanding of past human behaviour at this site because unlike ceramic, glass or lithic artefacts that have a definite cultural provenance, any given shell item may have been contributed by European or Aboriginal people prior to the construction of the lumber yard footings. Although the presence of other midden sites with similar characteristics, the position of the site, the presence of lithic artefacts and a host of other factors all indicate that the majority of shell is likely to have been deposited as midden prior to its redeposition, it's disturbed provenience strongly limits the information that can be obtained directly from complex analyses of this shell material.

5.2 Overview and Spatial Distribution

What becomes immediately apparent on the initial review of the results (Table 5.2.1 and Figure 5.2.1) is that the presence of lithic items and the amount of diagnostic shell material recovered from an excavation square correlate. Only rarely was either shell or lithic material recovered from a spit without the other being present. Furthermore, the greater the amount of shell material that was recovered, the higher likelihood that greater numbers of lithic materials would also be present at that particular location. This strongly suggests that both the shell and lithic artefacts were drawn from the same source deposit.

However, despite the correlation of shell and lithic material their manner of redeposition during the construction of the Lumber Yard had caused the distribution of these materials across the site in a way that certainly does not reflect their original relationship beyond this. Distinct clusters of shell midden and lithic materials occurred in relation to the European features of the site and not in a way that would reflect either pre-existing topography or cultural preferences of Aboriginal people. Leaving aside the obvious disturbance seen in the stratigraphic record of the site and the large amount of European artefacts that were included in these deposits, the concentration of Aboriginal cultural material, for example within the footings of the Lumber Yard building as the context [034] as opposed to outside of these footings, suggests that the distribution of this material across the site is a direct outcome of the 1820s construction process.

Although this subject will be addressed in a more comprehensive manner in Section 7.1 and Section 7.2 of this report, the consequences of the high levels of disturbance that prevailed across the site for the integrity of any artefact analysis must briefly discussed here.

The most likely scenario that would explain this is that both culturally sterile and substantial midden deposits were sourced at the same time to use as levelling fill. Thus, some spits and squares with a dearth of Aboriginal cultural material were placed between squares with a large amount of shell or lithic items. The presence of shell etc. was extraneous to the selection and deposition process of this fill, but rather the fill material was sought out based on its proximity and convenience.

The presence of marine adhesions on lithic artefacts and shell material that is not commonly associated with human consumption also dispersed across the site is indicative of deposits much closer to the shoreline and exposed to some level of tidal action being utilised as well. Thus it is possible to identify four key kinds of deposit that are likely source material for the fills [i.e. 034 and 076] that retained Aboriginal cultural material:

- Natural, culturally sterile, clay deposits of highly plastic black or grey clay, dolerite bedrock and saprolite.
- Slightly sandy black clay matrix midden.
- Highly disturbed garden deposits and other early external surfaces prior formed between 1805 and c.1825, composed of the above two soil profiles and pre-colonisation topsoils.
- Littoral deposits, or tidally affected deposits, containing midden material, natural shell wash and lithic artefacts displaying marine adhesions.

The first three of these parent deposits were all visibly evident on the site in clear but uncommon mottles of contiguous material buried within disturbed deposits. Uncommon because generally all of these deposits had been thoroughly mixed together. The littoral deposits with evidence of post deposition tidal modification closely resembled the disturbed garden deposits and early yard surfaces and are chiefly inferred from the character of the shell and artefact assemblage.

The likeliest scenario is that once removed from their original position by the cut [023] for the lumber yard, the parent deposits for the early filled were stockpiled nearby and returned to the site as a mixed construction fill once, at least, the footings of the lumber yard buildings had been laid. This evidence

is plain not only from the fact that the clay fill [034, 066 and 076] has been deposited against the footings [013] themselves but that they were also above a brick fragment and mortar construction deposit [095] that also was stratigraphically later the construction of the footings and earlier than the deposition of the fills. The cuts [025 and, to a lesser extent 029] truncate these earlier fills and bracket the phase that they occupy. Even though there are some small deposits on these earlier fills that had been placed there after the levelling cut. For example, the shallow rubble deposits [015, 017 and 031] encountered beneath the dolerite cobble fill [006] were artefact poor demolition debris smears that had been placed onto the surface of these earlier fills during either the earlier or later phases of demolition and cannot represent a distinct subphase.

Generalising, all of these deposits [034, 066 and 076] retained significant amounts of brick, dolerite and other local stones as <30mm gravels of up to 15% of these deposits. Though, as with other cultural and natural materials, the amount of these gravel inclusions varied widely by spit and square. The gravels tended to be angular and weathered rather than water worn. The brick gravel, was composed of sandstock brick fragments. Although small, approximately 20% of these fragments bore evidence of shell lime mortar and plaster.

Two distinct clusters of archaeological material can be seen to be present (Figure 5.2.1) one concentrated within the footings of the lumber yard structures and one to the north. The key difference between them is the presence of contact materials in the deposits to the north of the lumber yard footing and a much larger amount of shell within the footings. The amount of lithic items present appears to be consistent within these two clusters. As the character of the deposits themselves suggest, it is likely that these fills have been drawn from the same source but that variations within that original source deposit and the way in which it was deposited as fill has likely lead to this differential distribution of contact artefacts and shell rather than it being reflective of the *in situ* arrangement of these materials.

Table 5.2.1. Context and square location for knapped artefacts and diagnostic shell material.

Context and Square	Knapped Artefacts	Diagnostic Shell
18	1	303
0-2	1	303
22	0	2
4-2	0	2
34	24	3692
10-4	3	249
10-7	1	62
12-4	4	0
12-5	0	188
2-4	1	283
2-6	3	131
4-6	2	462
4-9	1	83
6-4	0	42
6-7	0	16
8-2	2	0
8-4	5	1737
8-5	0	19
8-7	2	100
9.5-5	0	320
46	1	0
14-8	1	0
66	4	70
2-16	2	0
2-6	1	42
6-14	1	21
8-7	0	7
76	9	145
10-12	0	35
10-14	3	22
12-12/13.5	2	0
12-13.5	0	28
12-14	0	0
12-16	2	21
4-14	0	11
6-14	0	28
8-14	2	0
Total	39	4212

AHI-011

ABORIGINAL ARTEFACT DISTRIBUTION

TRENCH ONE

MACQUARIE POINT ARCHAEOLOGICAL EXCAVATION
PHASE I AND PHASE II
ROUNDHOUSE REMEDIATION WORKS



0 1 2 3 4 5m

- BRICKS AND HALF BRICKS
- DOLERITE
- CONSTRUCTION DEBRIS
- SAND LIME MORTAR
- WOODEN FEATURE
- BITUMINOUS SURFACE
- DOLERITE SURFACE
- POST HOLE
- METALS
- WHEEL RUT
- CONCRETE

KEY TO THE DISTRIBUTION OF ABORIGINAL ARTEFACTS

[CONTEXT NUMBER]
G.C. = GLASS CORE
C.F. = CONTACT FLAKE
L.Q. = LITHIC QUANTITY
S.Q. = SHELL QUANTITY

NUMBER OF KNAPPED GLASS AND LITHIC ARTEFACTS PER SQUARE

1 2 3 4 5 SHELL ONLY

1: 5.863
2: 5.841
3: 5.995
4: 6.413
5: 6.318

LEVELS ARE GIVEN IN REFERENCE TO THE AUSTRALIAN HEIGHT DATUM

1: E:527389.226 N:5252494.431
2: E:527395.301 N:5252501.711

EASTINGS AND NORTHINGS ARE GIVEN IN REFERENCE TO THE GEOCENTRIC DATUM OF AUSTRALIA 1994



Figure 5.2.1 Distribution of Aboriginal cultural material plotted against the early and features present at the site.

5.3 Lithic Analysis

39 knapped artefacts were recovered from the excavation, 31 were manufactured from lithic materials typical to sites around nipaluna and eight of these artefacts were made from early nineteenth century glass bottles. A full description of the artefacts are provided in Appendix B while a summary is provided in Table 6.3.1 to Table 6.3.3.

The eight knapped glass artefacts received further specialist usewear analysis alongside 28 other potential contact artefacts, identified either during sieving or processing. This analysis of all potential contact artefacts, including the eight with evidence of usewear, was undertaken by Dr Simon Munt in South Australia and the findings of this investigation are summarised in Section 5.4, analysed in Section 7.0 and presented in full in Appendix C and are summarised in spatial terms in Section 5.4.

5.3.1. Morphology and Material

The morphologies included in the lithic assemblage was diverse although they tended to mirror other assemblages from around nipaluna. Flakes were the most common form with 13 making up 33% of the assemblage (Figure 6.3.1). They were followed closely by angular fragments, (n=11, 28%) and then by the category of 'contact flake,' (n=6 15%). The term contact flake was used to describe a knapped glass artefact with evidence of usewear regardless of characteristics that may be typical of tool types that have been traditionally employed by archaeologists. Contact flakes can be distinguished by two cortical surfaces, i.e. the interior and exterior surfaces of a bottle, and may not necessarily display a clear ventral or dorsal surface with bulb, erailure scars etc., yet each contact flake demonstrates usewear that indicated they had been used as a tool.

Seven other flakes (18%) were present but were further delineated on the basis of the damage that they had received as; proximal, distal and medial (Figure 6.3.2). Two (5%) glass bottle base cores (Figure 6.3.3) were also present and, while they did not display traces of use for the processing of other materials, had most likely been used in the production of other knapped glass artefacts.

The most common material used to create these artefacts was silcrete, with 17 artefacts (44%) being formed from that material. Glass was the next most common raw material sourced for tools with 8 items (21%) being made from glass. Quartzite and hornfels each contributed four artefacts (10%) to the assemblage, while both chert and mudstone provided two artefacts (5%) each. A single artefact each of chalcedony and mineral crystal were also present.

The small sample size of lithic artefacts precludes a detailed analysis of morphology and material but some simple comparative observations can be made. The range of materials, dominance of flakes in the assemblage and even the comparatively small amount of lithic artefacts are consistent with the findings at other midden sites around nipaluna. There is every reason to believe that the lithic artefacts and, by extension, the midden material have been redeposited from a nearby location, even returned roughly to its original place.

Given the dominance of flakes in contrast to angular fragments and the 2mm mesh adopted to sieve these materials there is little evidence to suggest that this site was significantly involved in the production and maintenance of lithic items. Excavations on the eastern shore of the Derwent suggest that the area immediately behind midden sites may have been utilised for a range of activities that may have included the manufacture and maintenance of stone tools (Austral Tasmania 2019). In contrast to this, the potential for this to have been a glass artefact knapping site is much stronger, with two bottle-base cores identified. The problematic nature of differentiating accidental glass breakage from debitage produced by the knapping process means that a number of knapped glass flakes that had not been used may have been present but could not be identified as such. Additionally, if the immediate coastal hinterland behind midden sits had been location of knapping prior to colonisation the restriction of movement represented by early Hobart Town may have forced this activity to the coastal margins.



Figure 5.3.1 Dorsal surface of the silcrete flake (Artefact 9) of the lithic assemblage.



Figure 5.3.2 The ventral surface of the quartzite proximal flake (Artefact 21) of the lithic assemblage.



Figure 5.3.3 The knapped glass bottle base core recovered during excavation (Artefact 7) showing extensive flaking across its surface.

Table 5.3.1 Overview of the distribution of knapped glass artefacts by context, square and spit arranged by tool type.

Context, Square and Spit	Contact Artefacts
34 8-2 2	 1
66 2-16 1 6-14 1	 1 1
76 12-12/13.5 1 12-16 1 8-14 1	 2 2 1
Total	8

Table 5.3.2 Overview of the distribution of knapped artefacts by context, square and spit arranged by tool type.

Context, Square and Spit	Angular Fragment	Contact Flake	Core	Distal Flake	Flake	Medial Flake	Proximal Flake	Right Lateral Flake	Total
18									
0-2									
1					1				1
34									
10-4									
1				1			2		3
10-7									
1	1								1
12-4									
1	3				1				4
2-4					1				
3				1					1
2-6									
1					1				1
2	1								1
3					1				1
4-6									
1	1				1				2
4-9						1			
1					1				1
8-2									
2	1	1							2
8-4									
2	3				2				5
8-7		1					1		
1	1					1			2
46									
14-8									
1					1				1

66 2-16 1		1	1				2
2-6 1				1			1
6-14 1	1						1
76 10-14 1			2		1		3
12-12/13.5 1	2						2
12-16 1	2						2
8-14 1		1	1				2

Table 5.3.3 Overview of the material and morphology of the knapped glass and stone artefacts.

	Angular Fragment	Contact Flake	Core	Distal Flake	Flake	Medial Flake	Proximal Flake	Right Lateral Flake	Total
Chalcedony					1 (3%)				1 (3%)
Chert	1 (3%)							1 (3%)	2 (5%)
Glass		6 (15%)	2 (5%)						8 (21%)
Hornfels	1 (3%)				2 (5%)		1 (3%)		4 (10%)
Mineral Crystal							1 (3%)		1 (3%)
Mudstone				1 (3%)	1 (3%)				2 (5%)
Quartzite					3 (8%)		1 (3%)		4 (10%)
Silcrete	9 (23%)			1 (3%)	6 (15%)	1 (3%)			17(44%)
Total	11 (28%)	6 (15%)	2 (5%)	2 (5%)	13 (33%)	1 (3%)	3 (8%)	1 (3%)	39

5.3.2 Cortex

In this section, a brief analysis of lithic material by type of and percentage of cortex remaining to assess the potential for the presence of local raw materials is followed by the identification and discussion of a pattern of surface adhesions that may indicate that prior to their redeposition in fill, six (15%) lithic items may have spent time within the intertidal zone. The distribution of shell species (Section 5.5) indicates the collection of naturally deposited shell as fill had occurred during the 1820s earthworks at the site and supports the idea that artefacts with these adhesions may have been in areas where such natural shell would have also been abundant.

The percentage of cortex remaining and the type of cortex present can be used as proxies for the local availability of lithic raw materials. Given the dominance of silcrete, hornfels and quartzite material for lithic artefacts at other recorded sites around nipaluna it is possible that there were local sources or routes of supply of raw materials for these items.

Nineteen artefacts displayed cortex, seven of these were contact artefacts and their cortex consisted of the slightly weathered surface of former gin and wine bottles. When excluding the glass artefacts (n=7) and any artefact that bore no trace of cortex (n=20), angular weathered cortex (n=8, 66%) was the predominant form of cortical surface in this assemblage. Half of the artefacts that carried this type of cortex were silcrete (n=4, 33%) and this was the only type of cortex any silcrete artefact displayed in this assemblage.

There was a single artefact of mudstone, hornfels and silcrete each that bore a water smoothed cortex on its dorsal surface and also displayed a rounded and smooth cortical surface (Table 6.3.4). This suggests that these materials may have been found nearby or produced expediently from river cobbles found either in the littoral zone or along the banks of the nearby rivulet.

The measurement of dorsal cortex shows that the vast majority of these flakes and cores were already processed by their time of deposition within the site although this was not the case in all instances. The profile is suggestive of a site that is not associated with intensive lithic manufacture or processing but indicates maintenance and production patterns broadly reflective of raw lithic resources in the surrounding area.

The presence of weathered though angular cortical surfaces for hornfels chert, silcrete and quartzite reinforces the idea that these materials may have been locally available. However, as with other results this must be treated with caution due to the colonial disturbance and the small number of artefacts recovered from this site.

Table 5.3.4 Amount of cortex present as a percentage and type of cortex present for each artefact.

Material, Cortex Type and Cortex Percentage	0	5	10	35	40	50	70	75	80	90	100	Total
Chalcedony												
None	1											1
Chert												
Smooth Weathered										1		1
River Cobble											1	1
Glass												
Manufactured					1	1		1	1	1	2	7
None	1											1
Hornfels												
Angular Weathered				1			1					2
Cobble											1	1
None	1											1
Mineral Crystal												
None	1											1
Mudstone												
None	1											1
River Cobble							1					1
Quartzite												
Angular Weathered			1							1		2
None	2											2
Silcrete												
Angular Weathered	2	1							1			4
None	13											13
Total	20	1	1	1	1	1	2	1	2	3	4	39

5.3.3 Adhesion

The malacological evidence at Macquarie Point shows a greater percentage of estuarine shell species, avoided for consumption by Aboriginal and European peoples, that are not in evidence at similar local sites in other deposits that are either middens or sourced from middens. It is likely that the comparatively high percentage of shells in the assemblage from such genera as *Bembicum*, *Mitrella* and *Notoacmea*, in comparison to other midden sites on the Derwent Estuary, suggests that naturally occurring shell wash deposits from within and around the intertidal zone may have been sourced as material for fill alongside established midden deposits. For any artefacts displaying evidence of marine adhesions it is possible that they may have been deposited here alongside these naturally deposited estuarine species. The analysis of these adhesions can help to explain the variation in this shell assemblage and, specifically, the manner of construction that saw the fill deposits [034, 066 and 076] of the mid 1820s lumber yard construction include mixed and natural shell deposits, or 'shore wash,' alongside midden material.

Unsurprisingly, the six artefacts that display some form of marine adhesion on their surface, the result of spending a significant amount of time submerged or in the intertidal zone, are silcrete (n=3, 8%), hornfels, quartzite and chert. As these were common material types in the assemblage this range is unsurprising, yet 16% of an, admittedly small, sample still implies a pattern where parts of the assemblage has been exposed to a tidal environment then been reincorporated within the current site. It is also the case that where present this adhesion tended to adhere to one side of the artefact or the other with all but one of the artefacts showing marine adhesion either on the dorsal (n=4) or ventral (n=1) side of the artefact. The sole exception displayed marine adhesions across all ventral quadrats but a small amount of marine adhesion in a single quadrat on the dorsal surface. The presence of this type of adhesion generally on one side of each artefact only is also consistent with artefacts that have been partially buried within a marine environment.

There is not, however the kind of weathering that one might expect to find on artefacts that were exposed to tidal action for a very long time. When viewed in comparison to the site at Rocky Point (Cosmos Archaeology 2010), or other midden and quarry sites in the Derwent Estuary, the edge rounding and smoothing that could be expected to arise from tidal movement and prolonged shore exposure is not evident on the artefacts from this site. Of the six artefacts that displayed marine adhesions, none of them also showed evidence for very long term tidal exposure, such as smoothing. It is probably that after a short period of exposure these artefacts were buried in the littoral zone to be excavated and redeposited during the filling of the footings for the lumber yard. These artefacts are not conclusive by themselves, yet they do provide more evidence, with the results of the malacological analysis, for a more complex stratigraphic history of the site which has been partially occluded by drastic levelling activity in the early nineteenth century.



Figure 5.3.3 Marine adhesions on the ventral surface of a mudstone artefact (Artefact 11), some of which are similar to those left by Galaeolaria caespitosa.

Table 5.3.5 The extent of adhesion on the surface of the lithic artefacts excavated by material and tool type.

	Marine Adhesion	Marine Adhesion %	No Adhesion	No Adhesion %	Total
Chalcedony	0	0%	1	3%	1
Flake	0	0%	1	3%	1
Chert	0	0%	2	5%	2
Angular Fragment	0	0%	1	3%	1
Right Lateral Flake	0	0%	1	3%	1
Glass	0	0%	8	21%	8
Contact Flake	0	0%	6	15%	6
Core	0	0%	2	5%	2
Hornfels	1	3%	3	8%	4
Angular Fragment	1	3%	0	0%	1
Flake	0	0%	2	5%	2
Proximal Flake	0	0%	1	3%	1
Mineral Crystal	0	0%	1	3%	1
Proximal Flake	0	0%	1	3%	1
Mudstone	1	3%	1	3%	2
Distal Flake	1	3%	0	0%	1
Flake	0	0%	1	3%	1
Quartzite	1	3%	3	8%	4
Flake	0	0%	3	8%	3
Proximal Flake	1	3%	0	0%	1
Silcrete	3	8%	14	36%	17
Angular Fragment	2	5%	7	18%	9
Distal Flake	0	0%	1	3%	1
Flake	1	3%	5	13%	6
Medial Flake	0	0%	1	3%	1
Total	6	15%	33	85%	39

5.4 Summary and Context of Usewear Analysis

The eight knapped glass artefacts that form part of the results considered in this report received further specialist usewear analysis alongside 28 other potential contact artefacts that were all identified either during sieving or processing. The findings of the usewear analysis of potential contact artefacts undertaken by Dr Simon Munt are reproduced in Appendix C. After the historical artefacts had been cleaned and sorted in Tasmania, but prior to cataloguing, the 36 likeliest candidate items were identified for further analysis.

While the permit (P183) allowed for up to 50 artefacts to be sent to South Australia, only 36 items were selected to be sent for usewear analysis.

These 36 items were chosen as they demonstrated strong evidence of some or all of these qualities:

- Morphological attributes that are consistent with modification by Aboriginal people, either through knapping or use.
- Fabric dating to the early nineteenth century timeframe during which it is likely any contact would have taken place at this site.
- Surfaces and margins on glass or ceramic items that had the potential to retain meaningful evidence of usewear.
- Macroscopic evidence of damage or modification to the surfaces and margins of items that may have been caused by use.

Historical disturbance of a deposit or excavation square around an artefact was not a cause for its exclusion from this analysis. The deposits under investigation had all been disturbed to a greater or lesser extent throughout the nineteenth and twentieth centuries. Most of the artefacts sent for analysis were drawn from the deposits [especially 076] to the north of the structural remains of the lumber yard's west wing. However, specific strata were not targeted for sampling, rather, artefacts were identified at the cleaning and processing stage as having potential for further analysis based on their individual merit in regards to the above criteria.

A4 and A26 are the only two artefacts to return from the usewear analysis without having any usewear identified and still retain their identification as Aboriginal artefacts. They were also the only two artefacts not subject to further morphological analysis in Section 5.1 of this report. These artefacts are bottle base cores with a large degree of modification. Given their rarity in the context of early Hobart these and the potential for these artefacts to reveal information above and beyond morphological analysis, such as through residue analysis. The decision was made not to subject to a full morphological analysis in case it limits the research potential of these items.

Three deposits [034, 066 and 076] contained identified contact artefacts, all three were construction fills associated with the 1820s lumber yard features. The fill within the footings of the lumber yard [034] was stratigraphically well preserved and had suffered little intrusive disturbance from later phases but only truncation from both the early and late twentieth century cuts [025 and 029] to the site.

Nevertheless a distinct pattern of spatial distribution of these contact artefacts emerged (Figure 5.2.1) with all but one of these artefacts recovered from squares to the north of the lumber yard wall footings [013]. While there is no continuity of deposition or concentration of these artefacts as would suggest a possibly *in situ* location of discard, i.e. as might be the case had a significant proportion of these artefacts been recovered from a single square, it seems likely that the fill deposited to the north of the footings was drawn from a consistent source.

The distribution of Aboriginal cultural material reflects three key loci of material scattered around the footings of the Lumber Yard. The knapped glass items were drawn from a number squares in the north of the site. These northern fills contained far less shell material, but still a substantial amount, than that present in the interior of what would have been the Lumber Yard structure. However there was no

pattern of material that reflected a distinct activity area or working surface which is consistent with the highly disturbed nature of these deposits.

There are several distinctive morphological characteristics for the knapped glass artefacts identified within the assemblage. These are:

- All of these artefacts displayed two cortical surfaces, with the exception of a single small flake (1-PA23-37).
- All of these artefacts were formed from greenish black (5GY2/1) glass associated with glass bottles. These bottles are likely to be government issue as several G.R. government seals of the same material were encountered during excavation. A single flint glass artefact was tested based on the results but did not show any evidence of usewear.
- The bottle bases do not show evidence of wear but do show strong morphological evidence for their use as cores.

Three deposits contained these items and all of them were early soils redeposited in 1827 during the construction of the Lumber Yard.

The clay fill deposit [034] is composed of shelly loamy black clay (60%) with distinct grey green mottles of sterile clay material (40%). Numerous, highly fragmented, early nineteenth century European artefacts were present within this deposit as were a small amount of knapped lithic and glass items. The shell fragments, principally *M. planulatus*, were highly fragmented (<5mm) and composed less than 5% of the deposit and rarely (<5%) were intact or large specimens present. This deposit was within the footings of the northwest wing of the Lumber Yard and rested on top of the construction deposits [094] and wall footings [013] of the lumber yard structure. This deposit contained the artefact a contact flake [1-PA23-38] in Square 8-12 Spit 2.

To the north of the dolerite footings [013] was deposit of highly plastic clay [066] that contained other nineteenth European century cultural material, dolerite gravel and shell fragments. Within this square, the clay deposit closely overlay an earlier dolerite gravel surface [028] in the northwestern corner of the trench. The position of this material on top of this hard packed gravel and with a very poor horizon to the later demolition fills above indicated it had been severely disturbed or redeposited at least once after the construction of the lumber yard. This deposit contained a knapped glass bottle base [1-4-4] in Square 2-16 Spit 1. This artefact was identified during excavation and logged as Aboriginal in consultation with Mr Pedder. It was the first indication during works that contact materials were present beyond the potential represented by numerous early bottle glass fragments. This deposit also contained a contact flake [1-PA23-39] in Square 6-14 Spit One.

The bulk of items were included in a deposit [076] of mottled slightly sandy black clay (20%), highly plastic black clay to greenish black clay (60%) and dolerite and brick rubble gravel (<10mm) at 10%. An uneven distribution of shell material was present across the deposit. Shell fragments were primarily associated with areas of sandy black clay but were still present within the mottles of highly plastic clay. The mottles of the slightly sandy clay (<300-400mm) were thoroughly mixed with the highly plastic and culturally sterile clay. It is likely that this soil material as a whole represents up to 400-500mm of an *in situ* soil profile excavated and redeposited here during the 1820s construction on the site, which in this square may have been redeposited again during demolition. This deposited contained:

- A bottle base core [1-26-26] in Square 8-14 Spit 1.
- A contact flake [1-PA23-40] in Square 12-16
- A contact flake [1-PA23-41] in Square 12-13.5
- A contact flake [1-PA23-42] in Square 12-13.5
- A contact flake [1-PA23-37] in Square 12-16

These deposits were all effectively sealed c.1827 and are likely the remains of yard deposits that accumulated between 1805 and 1815. This will be discussed further in Section 7.0 of this report alongside the results of the usewear analysis itself.

5.5 Malacological Analysis

A total of 4,212 diagnostic shell elements were recovered from the Phase II excavations at Macquarie Point, a large amount of non- diagnostic, primarily mussel, fragments were also collected processed and recorded. As can be seen from Table 4.4.1 and Table 4.4.2, these shell fragments were recovered from only a handful of contexts with the majority of these being drawn principally from the highly plastic black clay [034] within the footprint of the Lumber Yard structure. Smaller amounts of shell were recovered from pockets of redeposited clay from across the site.

The shell assemblage is typical of those found around the immediate shores of nipaluna in that it is dominated by *M. planulatus* shells. A total of 3,756 (89% of all identified shell fragments) *M. planulatus* umbones were recovered from the excavation, meaning that at least 1878 individuals were represented in the assemblage. A further 40 (1%) *O. angasi* shells (MNI=20) were present and this is consistent with other midden sites around nipaluna, which had a marine environment that likely strongly favoured the growth of *M. planulatus* among other species, such as *Bembicius spp.* and *Anadara trapezia* are also prevalent in this environment.

When considered in comparison to other midden sites around nipaluna the shell assemblage displays a wide variety of species than is commonly noted (Table 6.4.3). This may be, in part, due to European predation on species such as *Anadara Trapezia* (n=293, 7%) and *Pecten Fumatus (n=1 <1%)* but is unlikely to account for the full range of species that are present, including a large number of smaller species that are not likely to have been selected by Europeans or Aboriginal for use or consumption.

Nassarius sp, . Notoacmea sp,.Phasianotrochus sp. Sassia eburnea and *Zeacumatus diemenensis* shells were all recovered from the site and are not commonly recorded on midden sites in this area. In addition to this, *Bembicium sp.* were present in greater abundance than has been noted on other midden sites, although smaller amounts are often recorded with midden material. It is worth noting that all of the above species are typically found in shallow shores and estuarine waters in eastern and southeastern Australia. This is consistent with the sheltered character of Sullivan's Cove prior to colonisation and the shoreline to the south and southeast of the excavation area would have been especially protected from tidal action.

This evidence together indicates a typical nipaluna midden site that has been heavily disturbed and received a significant amount of naturally deposited shell during its redeposition. This shell may have been included within the midden prior to or during colonisation if, for example, the midden site had been placed in an area that was exposed to tidal action. It also may also have entered into the deposit as part of the construction process, with fills containing shells not commonly consumed by Aboriginal Tasmanian people deposited alongside the midden deposits during the construction of the Lumber Yard.

While the majority of shell were drawn from three strata of redeposited garden soil [034, 066 and 076] and its presence in these deposits are consistent with the idea that this is redeposited midden it is worthwhile considering in detail the presence of a significant amount of *M. planulatus* fragments in a single square of demolition material [018, square 0-2] in the southwest of the site. The most likely explanation for this midden material to be present here was that it was disturbed during excavation. The footings [016] of the lumber yard structure had been cut down to a greater depth in this area during the construction of the locomotive yard than further east or north and it is therefore likely that demolition rubble and the redeposited midden fill adjacent to the footings had been smeared together.

Table 4.4.1. The distribution of diagnostic shell by context, square and spit.

Context, Square and Spit	1	2	3	Total
18				
0-2	303			303
22				
4-2	2			2
34				
10-4	154	95		249
10-7	62			62
12-5	188			188
2-4	110	144	29	283
2-6	79	36	16	131
4-6	462			462
4-9	83			83
6-4	42			42
6-7	16			16
8-4	839	898		1737
8-5			19	19
8-7	100			100
9.5-5	79	127	114	320
66				
2-6	42			42
6-14	21			21
8-7	7			7
76				
10-12	35			35
10-14	22			22
12-13.5	28			28
12-14	0			0
12-16	21			21
4-14	11			11
6-14	28			28
Total	2734	1300	178	4212

Table 4.4.2. The distribution of diagnostic shell by context and square in terms of the identified species.

Context and Square	18	22	34													66			76						
	0-2	4-2	10-4	10-7	12-5	2-4	2-6	4-6	4-9	6-4	6-7	8-4	8-5	8-7	9.5-5	2-6	6-14	8-7	10-12	10-14	12-13.5	12-14	12-16	4-14	6-14
Anadara trapezia	10		15	6	6	3	43	23	7	2		69		3	21	9	14	7	26	7	4	0	15	3	
Bambicum melanostoma						1											1								
Bembicium auratum				1		1						1			8	1									
Bembicium nanum												1													
Bembicium sp.	11		7		7		1	8				33		1		3			3	1	1		3		1
Mitrella semiconvexa						1																			
Mitrella sp.			2		1							8		1						1					
Mytilus planulatus	279		223	55	173	276	85	429	76	40	16	1620	19	95	275	23	3	0	2	13	16	0	3	8	27
Nassarius nigella												1													
Nassarius sp.	2						0									1									
Notoacmea alta												1													
Notoacmea sp.								1				1													
Ostrea angasi	0	2	0	0	0	0	2	0	0		0	2	0	0	15	5	3	0	4	0	7	0	0		0
Pecten fumatus			1									0			0										
Phasianotrochus sp.	1																								
Sassia eburnea															1										
Unidentified			1			1		1																	
Zeacumatus diemenensis					1																				
Total	303	2	249	62	188	283	131	462	83	42	16	1737	19	100	320	42	21	7	35	22	28	0	21	11	28

Table 4.4.3. The distribution of all shell by context and square in terms of the identified species. As body fragments of relatively rare species were sometimes included in an overall quantity count, some total sums of quantity may appear as greater than the sum of left and right valve counts for bivavles.

Context	18		22		34		66		76			
Species	Sum of Quantity (Left/Right)	Sum of Weight	Sum of Quantity (Left/Right)	Sum of Weight	Sum of Quantity (Left/Right)	Sum of Weight	Sum of Quantity (Left/Right)	Sum of Weight	Sum of Quantity (Left/Right)	Sum of Weight	Total Quantity (Left/Right)	Total Weight
Anadara trapezia	10 (5/5)	14.4			198 (93/90)	196.3	30 (21/5)	26.5	55 (21/34)	62.1	293 (140/134)	299.3
Bambicum melanostoma					1	0.2	1	0.9			2	1.1
Bembicum Auratum					11	6.4	1	2.8			12	9.2
Bembicum nanum					1	0.2					1	0.2
Bembicum sp.	11	5.9			57	32.6	3	1.8	9	5.6	80	45.9
Mitrella semiconvexa					1	2.5					1	2.5
Mitrella sp.					12	14.9			1	0.1	13	15
Mytilus planulatus	279 (117/162)	809			3382 (1680/1682)	3489.3	26 (15/11)	69.8	69 (9/42)	64.2	3756 (1821/1897)	4432.3
Nasarius nigella					1	0.1					1	0.1
Nassarius sp.	2	0.4			0	0.1	1	1.3			3	1.8
Notoacmea alta					1	0.1					1	0.1
Notoacmea sp.					2	0.7					2	0.7
Ostrea angasi		129.6	2 (1/1)	45.7	19 (5/1)	1055.5	8	26.7	11 (5/6)	1488.9	40 (11/8)	2746.4
Pecten fumatus					1	3.6					1	3.6
Phasianotrochus sp.	1	1.2									1	1.2
Sassia eburnea					1	0.2					1	0.2
Unidentified					3	6.3					3	6.3
Zeacumatus diemenensis					1	0.3					1	0.3
Total	303	960.5	2	45.7	3692	4809.3	70	129.8	145	1620.9	4212	7566.2

5.6 Summary

A total 31 lithic artefacts, 8 knapped glass artefacts and 4,212 diagnostic shell elements were recovered from the excavations. All of these items were present in disturbed contexts alongside European materials and likely represent items that have been redeposited during the construction of the Lumber Yard. Nevertheless, the assemblage as a whole tended to mirror the profile of other deposits of other assemblages from around nipaluna with some key differences. Flakes were the most common form with 13 making up 33% of the assemblage (Figure 6.3.1). They were followed closely by angular fragments, (n=11, 28%) and then by the category of 'contact flake,' (n=6 15%).

Seven other flakes (18%) were present but were further delineated on the basis of the damage that they had received as; proximal, distal and medial (Figure 6.3.2). Two (5%) glass bottle base cores (Figure 6.3.3) were also present and, while they did not display traces of use for the processing of other materials, had most likely been used in the production of other knapped glass artefacts.

The shell assemblage is typical of those found around the immediate shores of nipaluna in that it is dominated by *M. planulatus* shells. A total of 3,756 (89% of all identified shell fragments) *M. planulatus* umbones were recovered from the excavation, meaning that at least 1878 individuals were represented in the assemblage. A further 40 (1%) *O. angasi* shells (MNI=20) were present and this is consistent with other midden sites around nipaluna, which had a marine environment that likely strongly favoured the growth of *M. planulatus* among other species, such as *Bembicius spp*. and *Anadara trapezia* are also prevalent in this environment.

When considered in comparison to other midden sites around nipaluna the shell assemblage displays a wide variety of species than is commonly noted (Table 6.4.3). This may be, in part, due to European predation on species such as *Anadara Trapezia* (n=293, 7%) and *Pecten Fumatus* (n=1 <1%) but is unlikely to account for the full range of species that are present, including a large number of smaller species that are not likely to have been selected by Europeans or Aboriginal for use or consumption.

The eight knapped glass artefacts received further specialist usewear analysis alongside 28 other potential contact artefacts, identified either during sieving or processing. This analysis of all potential contact artefacts, including the eight with evidence of usewear, was undertaken by Dr Simon Munt in South Australia and the findings of this investigation are summarised in Section 5.4, analysed in Section 7.0 and presented in full in Appendix C and are summarised in spatial terms in Section 5.4.

6.0 Analysis of Historical Archaeological Materials

The historical archaeological materials recovered from the excavation were both highly fragmented, representing a very limited selection of original items, and displayed a consistent and distinct character within each stratigraphic phase. With 2,345 historical artefacts recovered, the vast majority were under 40mm in size and this reflects the dominance of the artefacts recovered on the 2mm sieves from the early occupation of the site (Figure 6.1).

Given that the deposits from each phase generally reflect a distinct and discrete activity taking place over a short period rather than the steady accumulation of strata during the long phases of occupation at the site the most meaningful way to examine the assemblage is in terms of phasing rather than by context. For example, Phase II - the construction of the Lumber Yard, Phase IV - the demolition of the lumber yard and Phase V - the construction of the Locomotive Depot comprise over 95% of the assemblage and yet the total cumulative time covered by all these phases of construction and demolition is unlikely to extend beyond a year or two. Thus this historical assemblage reflects a series of brief pictures of the development of the site rather than consistent change over time. Also given that the fine grained approach to documenting the strata across the site, with what is likely to be the same fill deposit given different context identifiers based on location and disposition within the site, a detailed look at the differences between the artefacts within each context is likely only to reveal minor differences in construction or demolition activity rather than significant information about the occupation of the site.

Nowhere is this more apparent than in the case of the early fill deposits [034, 066 and 076] associated with the construction of the lumber yard. These deposits contain historical artefacts from the first decades of colonisation as well as Aboriginal cultural material accumulated over thousands of years, yet their disposition at the time of excavation reflects only weeks or months of activity by people more or less unconnected to the preceding history of the site. Thus in order to obtain the most meaningful information out of heavily disturbed strata it is necessary to consider and compare them together as a phase.

Therefore this historical archaeological analysis reflects this with Phase II to Phase VI (Section 6.2 to Section 6.5) considered in turn as discrete analytical groups. This analysis will conclude with an analysis and discussion of the most significant points of the assemblage (Section 6.7), which will be followed by the holistic interpretation of these materials alongside the stratigraphic description and the results of the analysis of Aboriginal Cultural Material in Section 7.0.

6.0.1 Methodology

Historical artefact collection during excavation and the post excavation storage of artefacts has been discussed in Section 3.4.5 of this report. This section considers the cataloguing and analytical methods employed in the following sections of the report. Each artefact or group of artefacts sharing the same characteristics (i.e. a small group of black glass body fragments from the same context, square and spit) is assigned a unique identifier with catalogue ('3' for the historical archaeological catalogue) bag number and artefact ID.

The cataloguing in this report is intended to be consistent with the EAMC Archaeology Database and the analysis undertaken by Jennifer Porter (2021), Melanie Fillios (2021) and Bronwyn Woff (2021) at Cottage Green, Montpelier Retreat. This site is significant in that it was excavated recently, bears similar archaeological materials and strata insofar as the site relates to early nineteenth century occupation. As such, the catalogues, methodologies and results of these works provide the basis for the current approach. Category hierarchies, such as those associated with 'material' or 'function' from EAMC, have been preserved in the current work. Therefore the definition for the following categories are consistent with the above cataloguing system; Weight, Length, Width, Thickness, Weight, Conjoin, Quantity, MNI, Class, Function 1, Function 2, Subfunction, Material 1, Material 2, Portion, Manufacture, Colour, Glaze Type, Glaze Colour, Decoration Technique, Decoration Pattern,

Decoration Colour 1, Decoration Colour 2, Marks, Mark Type, Makers Mark, Manufacturer, Country of Origin, Modification, Modification Location, TPQ, TAQ, Notes, Special Find.

Owing to the large number of highly fragmented items included in this assemblage and the extent of disturbance to the deposits that contained them, the potential for a MNI total that would correspond to a real estimate of the lower end of the possible range that this statistical population would have been very low. It is also not very likely that a MNI count would even indicate roughly how many whole items these large numbers of fragments correspond to. Additionally, as each group of artefacts are first organised according to square and spit before context and so determining what constitutes an appropriate boundary for a new item is not always clear. To this end, the MNI count has been included on individual line items that are traditionally considered diagnostic and a value of '1' has been assigned to body and fragment items. Owing to the difficulties MNI will generally not be utilised in this analysis.

Further categories are tailored to the site specific conditions required to manage the assemblage, such as the requirement to incorporate Aboriginal and European items in a holistic catalogue containing all the excavated material. These categories are: Cat No, Artefact ID, Bag ID, Identifier Site, Date, Trench, Phase, Unit, Easting, Northing, Square, Spit, and Location Note.

Similarly the categories used to specific document the faunal materials for this assemblage are consistent with the approach presented in *Animal bones in Australian archaeology: A Field Guide to Common Native and Introduced Species* (Fillios and Blake 2016) and the faunal analysis (Fillios 2021) associated with the Cottage Green Site, Montpelier Retreat. These categories are; Animal Group, Taxonomic, Common, Element Group, Side, Element, Intactness, Fusion, Taphonomic Modification, Taphonomic Modification Location, Butchery and Butchery Location.

The high levels of disturbance affecting the excavated materials also required some modification in the objectives of the analysis and, therefore, in the methodology as well. With some exceptions, the excavated materials are a highly disturbed sample of 1805 - c.1820s soil with artefacts distributed across the site in a way that primarily reflects the process of redeposition. Therefore in order to provide a measure of the level of disturbance and allow a stratigraphically limited and highly fragmented assemblage a measurement called 'fragment size' has been produced. It is the mean estimate diameter of each item or group of items included as a single line entry within the catalogue. While it would be possible to produce more accurate measurements from a series of measurements, such as the mean of maximum dimensions utilised in the Aboriginal lithic catalogue in Appendix B, as this measurement is intended to provide a heuristic measure of the rough size of a very large number of fragments, only the mean of the largest dimension (i.e. length) will be used to calculate fragment size. In order to make this data comprehensible, and so as to make the recording process more efficient, fragment size will be measured in 5mm brackets, beginning at 0-5mm.

In further consideration of fragment size, the way in which artefacts from different material types fracture is likely to strongly influence the results of this analysis, beyond an assessment of fragment size. Glass is likely to be over represented in this assemblage as a result of this and it is likely that bone may also be strongly or over represented.

Although incomplete fragments were scaled by 'fragment size' a single category of fragmentary items, window glass, was also measured for fragment thickness, as this measurement not only allowed the differentiation of glass types but also, following this, arrive at potential dating evidence for these archaeological strata.

The division of the assemblage into analytical units based on phasing has been considered in Section 6.0 above and the horizontal distribution of historical archaeological material across the site will be considered in Section 6.1 below. Although detailed records of each artefact are contained in the electronic catalogue associated with this report, the high levels of disturbance within the excavation area means that the focus in this analysis will be on outlining the broad characteristics of the assemblage and explaining the articulation of the artefactual materials with the deposits from which they were drawn and the associated features. Therefore, each phase will be subject to simple

description, attention will be drawn to function, class, material, faunal species and faunal element, as indicators of the overall structure of the assemblage.

This will be followed by an analysis of the attributes of the artefacts that are suitable for providing date ranges, a discussion of any special finds and a comparative discussion of this phase in the context of other strata and the assemblage as a whole.

After each phase has been considered in the above way, the entire assemblage will be characterised in terms of material class. This will support the arguments used in the discussion of phasing by providing additional information about the types of artefacts present but will also present the important features and characteristics of the assemblage that may be relevant to management or temporary storage considerations in Section 7.0 of this report.

6.1 Overview and Spatial Distribution

The historical artefacts have been divided into stratigraphic phase as has been discussed above, and it is clear that Phase II, associated with the construction of the lumber yard, contain 1714 artefacts which is 76.76% of all historical artefacts recovered during the excavation (Table 6.1.1). The artefacts from this phase all date to the construction of the Lumber Yard. The next greatest quantity of artefacts was drawn from the deposits associated with Phase IV, the demolition of the Lumber Yard, with 338 artefacts (14.41%) present. The remaining 207 (8.83%) artefacts were present across the other three phases, which contained artefacts, and represented a scattering of disturbed and redeposited items. Unsurprisingly, the distribution of artefact by context matches the distribution of artefacts across phases with the large early deposits containing the overwhelming majority of material (Table 6.1.2).

The assemblage was dominated by glass (n=848, 36.16%) and bone (n=765, 32.62%) in terms of quantity, the difficulty at arriving at accurate MNI for this site has been discussed above, although this likely reflects the highly fragmented nature of these materials at the time of excavation and does not necessarily imply such an actually high percentage of items. Both metal (n=310, 13.22%) and ceramic (n=371, 15.82%) items also contributed a significant amount of items to the assemblage, with metal artefacts also being common in later deposits and phases, whereas glass and ceramics are largely restricted to Phase II (Table 6.1.3).

The spatial distribution of artefacts reflects their phasing with the largest artefact bearing deposits concentrated in clusters of material in distinct parts of the site (Table 6.1.4 and Figure 6.1.1). The artefacts from Phase II were concentrated in the footings of the Lumber Yard structure and to the north of these footings. The artefacts from Phase IV were present in the demolition deposits principally located to the south of the Lumber Yard footings and the artefacts from Phase III were almost exclusively concentrated around the drain structure in the gravel surface. The deposits containing the sparse amount of artefacts from the other phases were scattered across the site in small areas. This reasonably clear horizontal distinction between the artefacts from the later phases is, as much else is on this site, heavily conditioned by the significant later cuts. It is likely that occupation deposits built up on the earlier fills and that demolition rubble was spread far more widely across the site prior to the later truncations, however, the repeated planing of the site throughout the twentieth century has largely removed those strata.

Table 6.1.1 Distribution of artefacts by phase.

Class	Quantity	% Quantity
II	1714	76.76%
III	66	2.81%
IV	338	14.41%
V	127	5.42%
VI	14	0.60%
Total	2345	100.00%

Table 6.1.2 Distribution of artefact by context.

Context	Quantity	% Quantity
7	5	0.21%
14	1	0.04%
16	9	0.38%
18	250	10.66%
19	4	0.17%
22	126	5.37%
34	771	32.88%
42	30	1.28%
43	21	0.90%
46	93	3.97%
51	6	0.26%
53	37	1.58%
55	16	0.68%
66	176	7.51%
71	25	1.07%
75	7	0.30%
76	767	32.71%
77	1	0.04%
Grand Total	2345	100.00%

Table 6.1.3 Distribution of artefact by material class

Class	Quantity	% Quantity
Bone	765	32.62%
Building Materials	26	1.11%
Ceramic	371	15.82%
Glass	848	36.16%
Metal	310	13.22%
Miscellaneous	5	0.21%
Organic	1	0.04%
Other	3	0.13%
Shell	5	0.21%
Synthetic	10	0.43%
Textile	1	0.04%
Grand Total	2345	100.00%

Table 6.1.4 Distribution of historical artefacts within Trench One.

Context, Square and Spit	1	2	3	Total
7				
No Square	5			5
14				
No Square	1			1
16				
0-11/12	9			9
18				
0-0	33			33
0-2	2			2
No Square	19			19
10-0	1			1
10-2	18			18
2-0	9			9
2-2	50			50
4-0	41			41
4-2	49			49
6-2	28			28
19				
No Square	4			4
22	126			126
4-2	84			84
4-4	18			18
6-2	24			24

Context, Square and Spit	1	2	3	Total
22				
No Square	15			15
10-2	22			22
34				
No Square	30			30
10-7	22			22
12-4	70			70
12-5	15			15
2-4	33		56	89
2-6	39	19		58
4-6	29	31	2	62
4-7	8			8
4-9	77			77
6-4	24			24
6-7.1	3			3
8-4	139	123		262
8-5			9	9
8-7	72			72
43	21			21
No Square	21			21
46				
10-10	3			3
14-10	10			10
14-6	10			10
14-8	35			35
16-10	3			3
16-6	10			10
16-8	16			16
8-10	1			1
8-8	5			5
51				
4-2	6			6
55				
No Square	16			16
66	176			176
2-14	33			33
2-16	93			93
6-14	21			21
8-5	29			29
71	25			25
0-11	25			25

Context, Square and Spit	1	2	3	Total
75				
No Square	7			7
76				
10-12	225			225
10-14	7			7
12-12	10			10
12-12.5	436			436
12-14	41			41
4-14	10			10
6-14	8			8
8-12	7			7
8-14	23			23
77				
No Square	1			1
Total	2105	173	67	2345

Table 6.1.5 Distribution of historical artefacts by class and function

Material and Function	Architectural/Non-Structural	Architectural/Structural	Armament	Clerical	Clothing	Domestic	Economy	Food Service	Food Storage	Hygiene	Jewellery	Manufacturing	Military	Miscellaneous	Organic	Personal	Pharmaceutical	Recreation	Unidentified	Total
Alloy					4														1	5
Bone					3							1			759	1				764
Brass													5							5
Carbon																			1	1
Composite													1							1
Copper Alloy	7	17		3	4	1	1	4	3										2	42
Coral														1						1
Earthenware		26				1		214		2								1	2	246
Fine Earthenware								24											1	25
Flint			1																	1
Glass	274					488		1	60								9	3	13	848
Iron		207			1			1						2		1			40	252
Kaolin									6									13		19
Lead	1						1							1				1		4
Leather					1															1
Pearl					5															5
Plastic					3													4	1	8
Porcelain								81												81
Seed															1					1
Slate				3																3
Stoneware	1				1			2	22											26
Tin																			1	1
Unidentified											2	2								4
Wood					1															1
Total	283	250	1	6	23	490	2	327	91	2	2	3	6	4	760	2	9	22	62	2345

AHI-011

HISTORICAL ARTEFACT DISTRIBUTION
TRENCH ONE

MACQUARIE POINT ARCHAEOLOGICAL EXCAVATION
PHASE I AND PHASE II
ROUNDHOUSE REMEDIATION WORKS



0 1 2 3 4 5m

- BRICKS AND HALF BRICKS
- DOLERITE
- CONSTRUCTION DEBRIS
- SAND LIME MORTAR
- WOODEN FEATURE
- BITUMINOUS SURFACE
- DOLERITE SURFACE
- POST HOLE
- METALS
- WHEEL RUT
- CONCRETE

KEY OF ARTEFACT QUANTITIES

CONTEXT (TOTAL ARTEFACTS)
1.2.3.4.5.6.7.8.9.10.11.12
1: BONE
2: BUILDING MATERIALS
3: CERAMIC
4: GLASS
5: LITHIC
6: METAL
7: MISCELLANEOUS
8: ORGANIC
9: OTHER
10: SHELL
11: SYNTHETIC
12: TEXTILE

1: 5.863
2: 5.841
3: 5.995
4: 6.413
5: 6.318

LEVELS ARE GIVEN IN REFERENCE TO THE AUSTRALIAN HEIGHT DATUM

1: E:527389.226 N:5252494.431
2: E:527395.301 N:5252501.711

EASTINGS AND NORTHINGS ARE GIVEN IN REFERENCE TO THE GEOCENTRIC DATUM OF AUSTRALIA 1994



Figure 6.1.1 Distribution of historical cultural material plotted against the early and features present at the site.

6.2 Phase II

The historical artefacts associated with the Phase II deposits are the most significant of the site in that they not only contain the largest amount of Aboriginal and historical artefacts but in that they represent the earliest phases of occupation that are still extant. The three contexts that contained the historical artefacts for this phase consisted of fills deposited around the 1820s footings at the site. The redeposited garden soil [034] used as internal fill within the footings [013] and the two iterations of that same material used as fill [066 and 076] to the north of these footings. All of these contexts were placed in the present position within a short span of time, unlikely to be greater than a year or two, but they contain European materials that accumulated during the first two decades of settlement. It is also likely that the two fill deposits to the north of the footings had been disturbed by twentieth century developments.

A total of 1,714 historical artefacts, including 636 faunal items, were contained in these three fill deposits. The artefacts in this phase were highly fragmented and therefore constituted 73% of the total amount of historical archaeological material excavated on site. The two deposits [034 and 076] provided almost equal (n=771, 44.98% and n=767 44.75%) amounts of artefacts with the balance being made by the far smaller section of fill material [066] that overlay the earlier surfaces in the north of Trench One.

The mean average fragment size of artefacts in these deposits was 31.23mm (*s*=20.23) with one of the deposits [076] skewing the sample by containing a number of large black glass bottle fragments with that context's mean average fragment size at 39.22mm (*s*=26.88). Small fragment sizes were common across all material types except metal, with all but the larger ferrous items removed through corrosion. It is possible that the small average size of artefacts in these deposits reflects both that these artefacts were originally discarded in yard or garden deposits, that tend to return smaller fragments during excavation, and that they were worked over with heavy tools again as they were excavated and redeposited.

A bone button blank (Figure 6.2.1) recovered from the disturbed soil [034] is a special find recovered from this deposit. Although given its stratigraphic context it is likely that this item is associated with the occupation of the site prior to the construction of the lumber yard. Nevertheless, it provides a visible link to the manufacturing history of the site.

Bone (n=640, 37.34%) and glass (n=591, 34.48%) artefacts formed near equal portions of this deposit. With ceramic (n=269, 15.69%), metal (n=184, 10.74%) and building materials (n=24, 1.4%), such as tiles or brick, forming the rest of assemblage other than one or two items each in organic, shell and synthetic. This pattern is mirrored in the functional distribution of artefacts in this phase with organic material (n=636, 37.11%) dominating the assemblage and domestic (n=355, 20.71%) and food service (n=248, 14.47%) items accounting for the large of amount of glass and ceramic artefacts. Architectural items were generally divided into window glass (n=226, 13.19%), and nail, spikes and wire (n=188, 10.97). The remaining materials numbered less than a hundred and were distributed over a wide range of functional categories.

Sheep (*Ovis aries*) were the most prominent animal in this phase, with 43 (6.76%) elements associated with them. Cow (*Bos taurus*) bones were the next largest quantity with 26 items associated with them. The majority of items (n=555, 87.26%) were less than 30mm fragments of unidentifiable bone, which undoubtedly reflects both the fine grained collection methodology and taphonomic degradation of bone but may also indicate a high level of processing prior to discard. The identifiable elements in this assemblage tended to be foreleg, foot, spinal and cranial elements, such as teeth (21.19% of identifiable elements), mandibles (9.62% of identifiable elements) metatarsals (14.42% of identifiable elements) and vertebrae (15.38% of identifiable elements). Some clear butchery marks were present on the larger elements, exclusively cuts except for a single sawn cow radius [3-72-38]. The highly fragmentary bone present throughout these deposits suggests butchery and often bore traces of

butchery either in cut marks on the face of these fragments, with edges that are suggestive of a cut or clean break, but the small size of these items makes the positive attribution of source fraught.

Several incomplete rat (*Rattus sp.*) skeletons were recovered from discrete squares of early fill deposit in this phase and they were associated with several intrusive later items into this material. The elements; mandible, tibia, femur, etc., of the skeletons were entirely intact and strongly indicate that these animals had been accidentally interred in their burrow as these items would be easily damaged if exposed. The presence of these rat skeletons suggests animal burrowing activity as a possible explanation for the intrusion of a small number of late items into this phase.

A range of artefact types recovered from these deposits provide dates that are consistent with the idea that these fills were deposited and sealed early. Banded ware mugs produced from 1770 and only common in the first half of the nineteenth century were present in this deposit. Also within these deposits were examples of numerous fragments of pearlware with scalloped rim and impressed curved lines that date from the end of the eighteenth century to the middle of the nineteenth century, with its peak popularity achieved in the early nineteenth century (Figure 6.2.2).

Two key forms of dating evidence that become important in the context of the Cottage Green, Montpelier Retreat, site (Austral Tasmania 2021) are the presence of roof tiles and Chinese export porcelain within these deposits. These two types of items were present in significant quantities within the early strata at that site, including the basal colonial occupation deposits and building trenches although the tiles were present only in building trenches associated with additions and modifications to the property. The history of production and disuse of this type tiles in early Hobart have been considered in great detail in Ziesing and Puustinen (2021), where they identify that historical sources indicate the tiles were locally made early in the establishment of Hobart Town but archaeologically sources indicate they fell out of popularity quickly. It is likely that only a one or a few runs of production on these tiles were made as they are restricted only to the earliest sites in Hobart. Therefore, their presence here suggests a similarly early date, which is consistent with the overwhelming majority of artefactual and stratigraphic evidence.

Similarly, while Chinese export porcelain can occur in other types of contexts and at later dates the high percentage of this porcelain (n=74, 25.26%) even in comparison to the large amount of earthenware (n=184, 62.80%) is similar to the percentage of porcelain material present in the early deposits at Cottage Green, Montpelier Retreat. Together, these strands of dating evidence derived from the early phase of construction indicate an early colonial time frame for these deposits, 1805-1825 and this is consistent with the stratigraphic results of the excavation, it is likely that the small amount of later materials recovered from these deposits entered into them after the construction of the Lumber Yard.

Four small finds, two small fragments of moulded glass dating to 1881 and two buttons dating from 1880 and 1892 respectively are likely to have entered into these fill deposits. All of these later items were drawn from the fill deposit [034] within the interior space of the lumber yard footings and from squares associated with the remains of rats. The two buttons are military issue and almost certainly associated with the local defence forces. Four transfer printed fragments in green, black, brown and red have likely similarly arrived after the deposition of the fill as their mean production date (Samford (2016:18) suggests that the introduction to the site took place in the mid to late nineteenth century. It is highly likely that these items were moved into the lower fill deposit from a subsequently destroyed subfloor deposit by the burrowing of rats.

What this means in plain English, is that the artefact assemblage from this phase was almost entirely composed of a *gravel* of bone, glass and ceramic artefacts drawn from three disturbed fills. Insofar as it is possible to interpret these materials in the limits imposed by this disturbance, it is likely that these items were deposited around the house of one of the earlier colonial elite prior to 1815. There is currently no evidence of the production of this particular type of ceramic roof tile in Hobart other than has been historically in 1805 and this roof tile has only been found in association with the first phase

of stone and brick structures in the city. The scalloped edged designs and porcelain, present as a high proportion of the ceramic assemblage, exclusively in the earlier strata, would by itself be strong evidence of an early date for these deposits but the near total absence, other than might be explained by intrusive artefacts moved through animal burrowing, minor modifications etc., of later domestic items in these deposits confirms the already tight time frame provided by the stratigraphy. Banded ware and early window glass included in these deposits also point to an early provenance for these materials.



Figure 6.2.1 Bone button blank [3-92-604] recovered from the early strata.

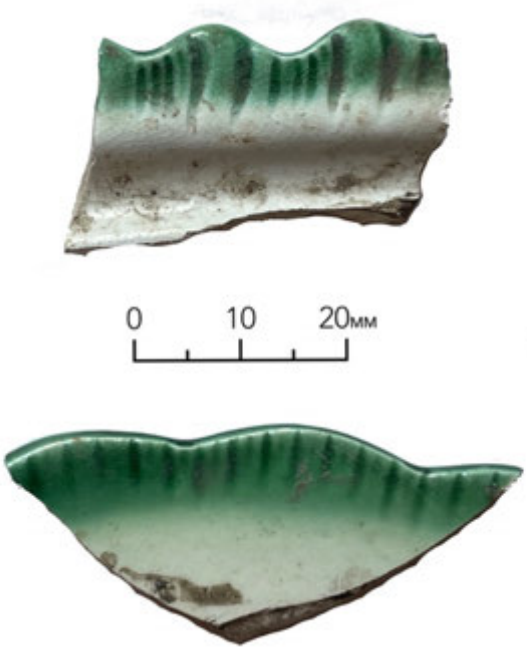


Figure 6.2.1 Early shell edged ware [3-62-262], top, recovered from the early strata and a later iteration, bottom, of the same pattern [3-96-616] recovered from later strata.

Table 6.2.1 Distribution of artefact by context within Phase II.

Unit	Quantity	% Quantity
34	771	44.98%
66	176	10.27%
76	767	44.75%
Total	1714	100.00%

Table 6.2.2 Distribution of artefact by class within Phase II

Class	Quantity	% Quantity
Bone	640	37.34%
Building Materials	24	1.40%
Ceramic	269	15.69%
Glass	591	34.48%
Metal	184	10.74%
Miscellaneous	1	0.06%
Organic	1	0.06%
Other	1	0.06%
Shell	1	0.06%
Synthetic	2	0.12%
Total	1714	100.00%

Table 6.2.3 Distribution of artefact by function within Phase II.

Function	Quantity	% Quantity
Architectural/Non-Structural	226	13.19%
Architectural/Structural	188	10.97%
Clerical	3	0.18%
Clothing	11	0.64%
Domestic	355	20.71%
Food Service	248	14.47%
Food Storage	11	0.64%
Jewellery	1	0.06%
Manufacturing	1	0.06%
Military	3	0.18%
Miscellaneous	4	0.23%
Organic	636	37.11%
Personal	1	0.06%
Pharmaceutical	3	0.18%
Recreation	9	0.53%
Unidentified	14	0.82%
Total	1714	100.00%

Table 6.2.4 Distribution of Phase II historical artefacts by class and function.

	Alloy	Bone	Brass	Carbon	Composite	Copper Alloy	Coral	Earthenware	Fine Earthenware	Flint	Glass	Iron	Kaolin	Lead	Pearl	Plastic	Porcelain	Seed	Slate	Stoneware	Unidentified	Wood	Total
Architectural						5		25		1	335	160		1						1			417
Bail						1																	1
Pipe																				1			1
Strap														1									1
Clench Nail												1											1
Nail						3						101											104
Roofing Nail and Washer												1											1
Strap												3											3
Tile								25															25
Unidentified											335	53											278
Washer						1						1											2
Armament										1													1
Flint										1													1
Clerical						3													1				4
Pen Barrel						1																	1
Slate Pencil																			1				1
Split Tack						2																	2
Clothing	3	3				1						1			1	1				1		1	12
Bottle																				1			1
Buckle												1											1
Button	3	3				1									1	1						1	10
Domestic						1					363												364
Unidentified											360												360
Vial											3												3
Food Service								167	14								77			1			259
Mug								13															13
Plate									5														5
Platter								2															2
Tea Cup								7															7
Unidentified								145	9								77			1			232
Food Storage											8		6							5			19
Marble													6										6
Unidentified											8									5			13
Jewellery																					1		1
Bead																					1		1

	Alloy	Bone	Brass	Carbon	Composite	Copper Alloy	Coral	Earthenware	Fine Earthenware	Flint	Glass	Iron	Kaolin	Lead	Pearl	Plastic	Porcelain	Seed	Slate	Stoneware	Unidentified	Wood	Total
Manufacturing		1																					1
Button Blank		1																					1
Military			3		1																		4
Cartridge			3		1																		4
Miscellaneous							1					2		1									4
Coral							1																1
Link												1											1
Rivet and Plate												1											1
Scrap														1									1
Organic		663																1					664
Faunal		663																					663
Seed																		1					1
Personal												1											1
Scissors												1											1
Pharmaceutical											9												9
Unidentified											6												6
Vial											3												3
Recreation													9	1									10
Figurine														1									1
Pipe													9										9
Unidentified					1				1		11	17											30
Bolt												1											1
Nail												14											14
Rod					1																		1
Unidentified									1		11												12
Wire												2											2
Total	3	667	3	1	1	10	1	193	14	1	616	181	15	3	1	1	77	1	1	8	1	1	1714

Table 6.2.5 Distribution of Phase II faunal artefacts by species and element.

Species	Unidentified	Astralagus	Calcaneus	Femur	Humerus	Incisor	Innominate	Ischium	Mandible	Metacarpal	Metatarsal	Molar	Parietal Bone	Phalanx	Radius	Rib	Scapula	Thoracic Vertebrae	Tibia	Tooth	Ulna	Various	Vertebrae	Xiphoid Process	Total
Bos taurus						11			4	1	7	5		3	1	3	1	2							38
Gallus sp.																								1	1
Macropus rufogriseus											1														1
Ovis aries		2	1		1	6	1		4	1	6	8		9		3	2	1		1					46
Rattus Sp.				1	2		1		1						2				2						9
Sus scrofa									1																1
Unidentified	37			1				1	2		2		2			3					1	505	14		568
Total	37	2	1	2	3	17	2	1	12	2	16	13	2	12	3	9	3	3	2	1	1	505	14	1	664

6.3 Phase III

As a result of later earthworks and the removal of subfloor deposits, occupations deposits associated with the occupation of the Lumber Yard structures are scarce, contain few artefacts and what artefacts they do contain relate primarily to the use of the site by the Tasmania Local Defence Forces in the late nineteenth and early twentieth centuries. Three of these deposits, silty clay deposit [043], silty clay in later drain [055] and fill within brick drain [071], were all located within the brick drain in the south of the excavation area. This modified brick and iron drain is stratigraphically late, and any artefacts that these deposits contain likely date to the late nineteenth century. The fourth and final deposit associated with this phase is a thin skin of silt [019] that was present on the dolerite gravel surface [028] below the demolition rubble [018].

There were a total of 66 artefacts included within these three deposits, the artefacts were spread evenly across the deposits except in the case of the silty material [019] that only contained four artefacts. This is, quite obviously, a very low of number artefacts, a number so low that it strictly limits the value of the statistical analysis about to be undertaken. Nevertheless, as is required, analysed they shall be.

The artefacts from these deposits were larger than those found in the earlier and later phases. The bone (n=15, 22.73%), ceramic (n=15, 22.73%), glass (n=18, 27.27%), and metal artefacts (n=21, 21.21%), formed near equal parts of this deposit with a single slate pencil and three pearl buttons the only other items present. The metal items presented a wider variety of artefact type than was observable in other phases for this material class. Several teaspoons, a door rose, several handles, a cartridge and a penny were all present in these deposits.

As with other phases, the bone was highly fragmented and the majority (n=9, 64.29%) could not be identified to species level. Where they could be identified to species level, three damaged fragments of sheep scapula, incisor and thoracic vertebrae were recorded as well as a medial fragment of a cow's axial rib and a chicken left innominate. It is likely that these are the remains of food eating during the later phase of occupation of this area during the late nineteenth and early twentieth century.

Two handmade colourless cat's eye marbles, likely after 1849, were present as was a single stamped copper alloy penny with the date 1891. This is consistent with the stratigraphic evidence. All other artefacts in these deposits tend to indicate a mid to late nineteenth century provenance even if not indicating a specific date.

The artefacts in this phase require little explanation as they clearly represent material that has fallen into the drain opening during its use or during the demolition of the nearby structures in the early twentieth century. They represent a typical assortment of domestic plate and bottle fragments, building materials and organic domestic refuse. The presence of a rifle cartridge is most likely to be associated with the presence of the Tasmanian Local Forces in the late nineteenth century. The artefacts in this deposit likely reflects the day to day accumulation of material during the latter half of the nineteenth century and early twentieth century.

A special find in this deposit (Figure 6.3.1) was a carved pen knife [3-93-605]. This item was located in the thin skin of silt [019] beneath the demolition rubble within the lumber yard courtyard. It seems unlikely that this delicate item was lying on the surface of the courtyard prior to the commencement of demolition but has instead likely arrived at this location during the demolition process. It may have been removed from a surrounding context and redeposited, been dropped during demolition or been within the building at the time of demolition and moved to this location.



Figure 6.3.1 Hand carved pen knife handle [3-93-605] showing a closed fist, a typical nineteenth century motif indicating strength and good fortune.

Table 6.3.1 Distribution of artefact by context within Phase III.

Context	Quantity	% Quantity
18	250	72.67%
46	93	27.03%
77	1	0.29%
Total	344	100.00%

Table 6.3.2 Distribution of artefact by class within Phase III.

Class	Quantity	% Quantity
Bone	73	21.22%
Building Materials	1	0.29%
Ceramic	43	12.50%
Glass	123	35.76%
Metal	91	26.45%
Miscellaneous	3	0.87%
Other	1	0.29%
Shell	1	0.29%
Synthetic	8	2.33%
Total	344	100.00%

Table 6.3.3 Distribution of artefact by function within Phase III.

Function	Quantity	% Quantity
Architectural/Non-Structural	8	12.12%
Clerical	1	1.52%
Clothing	3	4.55%
Domestic	6	9.09%
Economy	2	3.03%
Food Service	20	30.30%
Food Storage	2	3.03%
Military	1	1.52%
Organic	14	21.21%
Personal	1	1.52%
Recreation	3	4.55%
Unidentified	5	7.58%
Total	66	100.00%

Table 6.3.4 Distribution of Phase III historical artefacts by class and function.

Function	Bone	Brass	Copper Alloy	Earthenware	Fine Earthenware	Glass	Iron	Lead	Pearl	Porcelain	Slate	Total
Architectural			2			6						8
Door Rose			1									1
Handle			1									1
Unidentified						6						6
Clerical											1	1
Slate Pencil											1	1
Clothing									3			3
Button									3			3
Domestic						6						6
Lamp Glass						1						1
Unidentified						5						5
Economy			1					1				2
Penny			1									1
Weight								1				1
Food Service			4	13	1		1			1		20
Cup				4								4
Handle			2									2
Teaspoon			2				1					3
Unidentified				9	1					1		11
Food Storage						2						2
Stopper						1						1
Unidentified						1						1
Military		1										1
Cartridge		1										1
Organic	14											14
0	14											14
Personal	1											1
Handle	1											1
Recreation						3						3
Marble						3						3
Unidentified						1	4					5
Nail							4					4
Unidentified						1						1
Total	15	1	7	13	1	18	5	1	3	1	1	66

Table 6.3.5 Distribution of Phase III faunal artefacts by species and element.

Row Labels	Unidentified	Incisor	Innominate	Rib	Scapula	Thoracic Vertebrae	Various	Total
Bos taurus				1				1
Gallus sp.			1					1
Ovis aries		1			1	1		3
Unidentified	4						5	9
Total	4	1	1	1	1	1	5	14

6.4 Phase IV

Three deposits bearing artefacts represent the demolition of the lumber yard and are together dated stratigraphically to 1915 and Phase IV, they are a sandstock brick and mortar demolition deposit [018], a thin deposit of demolition material [046] and demolition rubble [077]. The demolition deposit [018] resting on the dolerite gravel surface [028] is the most substantial of the three and the other two can be considered variations; on the additional structures to the west [077] and as small amount of rubble against the interior face of the dolerite wall footings [013]. There is a high probability that all three of these deposits were once a single deposit but were truncated during the demolition of the Locomotive Depot. The material of each demolition deposit was very similar.

As the largest of these deposits it is unsurprising that the demolition rubble fill [018] also contained the largest amount of artefacts (n=250, 72.67%), the demolition material [046] on the interior of the footings [013] provided most of the remainder of the artefacts (n=93, 27.03%) and the westernmost section of rubble [077] furnished only a single hand painted Chinese export porcelain plate fragment, and it is possible that this artefact is intrusive from the surrounding deposits (see the discussion in Section 6.2). These artefacts had a higher mean average fragment size (43.66mm) and were 4 standard deviations further from the mean than the artefacts of Phase II. This indicates that the materials in this deposits have likely been less highly disturbed than those of Phase III, if it is accepted that continuous disturbance tends towards a reduction in fragment size, which seems likely at this site.

With brick being considered part of the matrix for these deposits the assemblage is dominated by glass (n=123, 35.76%) and metal (n=91, 26.45%), with bone (n=73, 21.22%) and ceramic (n=43, 12.50%) also present to a lesser extent. Due to the small size of the assemblage for this phase and its specific character, the functional analysis of the artefacts provide the clearest indication of the uses that some of the items in the assemblage may have had prior to deposition.

In functional terms, architectural items (n=98, 28.49%) were the single largest category and were composed of a mixture of window glass fragments and nails, both displaying a range of types dating from across the entirety of the nineteenth century and early twentieth century. The food service (n=27, 7.85%) items were exclusively ceramic and consisted of principally body fragments of mid to late nineteenth century transfer printed earthenware. Some fragments of shell edged ware were also present in these deposits and may have been transported from earlier deposits during demolition. Food storage items were composed almost exclusively of fragments from aqua or colourless glass bottles from the early twentieth century.

As could be expected from a structure that remained standing throughout the nineteenth and into the twentieth century, the architectural materials in this rubble reflect a wide range of dates. The 52 nails were wire drawn (n=9, 17.31%), stamped (n=2, 3.85%), machine made (n=9, 17.31%) and hand wrought (n=11, 21.15%) and the remainder of the nails were not able to assigned a method of manufacture owing to the corrosion of their fabric. These four types of manufacturing processes were the most significant forms of production for nails in the nineteenth century and the mechanised processes for nail manufacture are well documented will clear *terminus post quem* dates for their production, which occurred progressively throughout the nineteenth century. This spread is expected in a demolition deposit for a structure that was maintained and modified for nearly a century.

The faunal materials contained a large quantity of unidentified bone fragments (n=52, 71.23%) but when these were removed from the total, the two dominant species could be seen as *B. taurus* (n=8, 38.10%) and *O. aries* (n=11, 52.38%). The presence of beef and mutton within demolition deposits is common and often reflects consumption patterns of those involved in demolition.

The bricks, sandstock and often stamped with a broad arrow, are discussed in Section 5.0 as they were so numerous that they formed a matrix for this deposit and are considered as stratigraphic material. These bricks were light orange to dull red sandstock bricks, that were friable with a coarse paste and quartz inclusions of up to 5mm at 5%, uniformly and clearly of early manufacture and dated to the construction of the lumber yard. Not only were they similar to other bricks in early deposits or features

they matched exactly the type of manufacture of the bricks in the stub wall adhering to the dolerite footing [013]. These bricks were produced in the 1820s or slightly earlier and were deposited at this location in 1915, all of the artefacts were either deposited at this time or introduced through later demolition activities.

Although the date of the demolition of these structures is known from the historical sources, 1915, and it is stratigraphically clear that these materials date to that time, a consideration of the time frame during which some of the artefacts recovered from these deposits were produced will provide insight into the taphonomic processes the wider site has undergone. Within the context of the broader site the most incongruent materials included in these deposits are shell edged ware fragments, which often indicate a date range earlier than the late nineteenth century. A single fragment, discussed above, is likely to be an intrusive item from later deposits but the other fragment of shell edged ware (3-106-671) has a *TPQ* of 1860 and a *TAQ* of 1890 and may have been an item deposited during the use of the Lumber Yard during the nineteenth century. This late date range is consistent with the stamped copper alloy Tasmanian Local Forces Button (3-106-671, Figure 6.4.1 and Figure 6.4.2) which also has a high interpretive value as a result of its visual representation of a section of the colonial history of the site.

While this adds little new information, the timing of the demolition and the use of the area are already known from historical sources, the results of the analysis of the artefacts from these deposits confirms the stratigraphic understanding of this phase of development. It is unsurprising that elements of the original structure, represented by wrought nails, and later additions, stamped, drawn and cut nails, should all be represented in the terminal deposit formed from the remains of this structure.



Figure 6.4.1 Tasmanian Local Forces button [3-106-671] produced by V&R Blakemore, England.



Figure 6.4.2 A Tasmanian Local Forces infantry tunic showing the type of button [3-106-671] recovered from the site (Infantry tunic : Tasmanian Local Forces REL/18979 and https://www.awm.gov.au/collection/C215915).

Table 6.4.1 Distribution of artefact by context within Phase IV.

Row Labels	Quantity	% Quantity
46	93	98.94%
77	1	1.06%
Total	94	100.00%

Table 6.4.2 Distribution of artefact by class within Phase IV.

Row Labels	Quantity	% Quantity
Bone	6	4.76%
Ceramic	15	11.90%
Glass	94	74.60%
Metal	10	7.94%
Textile	1	0.79%
Total	126	100.00%

Table 6.4.3 Distribution of artefact by function within Phase IV.

Row Labels	Quantity	% Quantity
Architectural/Non-Structural	7	5.56%
Architectural/Structural	2	1.59%
Clothing	1	0.79%
Domestic	87	69.05%
Food Service	10	7.94%
Food Storage	8	6.35%
Hygiene	2	1.59%
Organic	6	4.76%
Recreation	1	0.79%
Unidentified	2	1.59%
Total	126	100.00%

Table 6.4.4 Distribution of Phase IV historical artefacts by class and function.

Function	Alloy	Bone	Copper Alloy	Earthenware	Fine Earthenware	Glass	Iron	Kaolin	Pearl	Plastic	Porcelain	Slate	Stoneware	Tin	Unidentified	Total
Architectural/Non-Structural			1			38										39
Mortise Plate			1													1
Unidentified						38										38
Architectural/Structural			12	1			46									59
Bail			1													1
Brad							2									2
Nail			11				41									52
Spike							1									1
Tile				1												1
Unidentified							2									2
Clerical												1				1
Slate Pencil												1				1
Clothing			3						1	2						6
Button			3						1	2						6
Domestic						31										31
Unidentified						31										31
Food Service				21	6						2					29
Mug				1												1
Plate					5											5
Platter				4												4
Saucer				1												1
Unidentified				15	1						2					18
Food Storage						46							16			62
Stopper						1										1
Unidentified						45							16			61
Jewellery															1	1
Bead															1	1
Manufacturing															2	2
Sharpening Stone															2	2
Organic		76														76
0		76														76
Recreation				1				3		4						8
Cog										1						1
Pipe								3		3						6
Saucer				1												1
Unidentified	1				1	1	19			1				1		24
Knob					1											1
Nail							16									16
Unidentified	1					1				1				1		4
Wire							3									3
Total	1	76	16	23	7	116	65	3	1	7	2	1	16	1	3	338

Table 6.4.5 Distribution of Phase IV faunal artefacts by species and element.

Species	Unidentified	Canine	Femoral Head	Femur	Lumbar Vertebrae	Mandible	Maxilla	Metatarsus	Molar	Proximal Phalanxs	Rib	Scapula	Thoracic Vertebrae	Tibia	Ulna	Various	Total
Bos taurus						2			2	2	1	1					8
Gallus sp.														1			1
Ovis aries				1	1			1	2		3	1	1	1			11
Sus scrofa		1															1
Unidentified	20		1				1								2	31	55
Total	20	1	1	1	1	2	1	1	4	2	4	2	1	2	2	31	76

6.5 Phase V

Only two deposits associated with the construction or operation of the locomotive depot retained artefacts in Trench One; a brick working surface [014] and a fill and iron pipe [022] that had been cut into the early dolerite gravel surface [028]. In reality the brick working surface only had a single artefact, a black enamelled, copper alloy, stamped button (9 3-96-610). It is likely that this button came from those involved in the construction of the Locomotive Depot. In reality the entirety of this phase has artefactual evidence only from a single deposit, the service [022] that is centrally placed within the excavation area, below the later cuts and fills but unequivocally truncating early Lumber Yard features, this cut was made either during the construction of the Locomotive Depot or prior to its demolition. The artefacts in this deposit can be expected, based upon the stratigraphic evidence, to reflect a range of mid to late nineteenth century materials that have been moved into the fill of this service. Having noted the stamped button present on the brick working surface the analysis will henceforth only concern itself with the fill within the service cut.

This phase [022] contains 127 artefacts, the single artefact in [014] has been considered above, the overwhelming majority of these are glass bottle fragments (n=94, 74.60%), that consist of at least three dark olive green bottles and at least one aqua and one olive green bottle. The ceramic (n=15, 11.81%) artefacts included in this deposit were a scattering fragments related to tableware, hygiene (two fragments of the same chamber pot were present) and food storage. The metal artefacts (n=10, 7.94%) in this deposit were entirely copper nails, bails, wires and rings, except for a single iron bolt. A small amount of artefacts were present in other categories, including a sheep metacarpal and femur.

This phase consists entirely of the materials recovered from a service trench excavated during the operation or construction of the Locomotive Depot. It contains a small amount of artefactual material that have likely been redeposited in the fill from deposits that no longer existed at the time of excavation, having been destroyed through the cutting activity of the car park.

Table 6.5.1 Distribution of artefact by context within Phase V.

Context	Quantity	% Quantity
14	1	0.79%
22	126	99.21%
Total	127	100.00%

Table 6.5.2 Distribution of artefact by class within Phase V.

Class	Quantity	% Quantity
Bone	6	4.72%
Ceramic	15	11.81%
Glass	94	74.02%
Metal	11	8.66%
Textile	1	0.79%
Total	127	100.00%

Table 6.5.3 Distribution of artefact by function within Phase V.

Function	Quantity	% Quantity
Architectural/Non-Structural	226	13.19%
Architectural/Structural	188	10.97%
Clerical	3	0.18%
Clothing	11	0.64%
Domestic	355	20.71%
Food Service	248	14.47%
Food Storage	11	0.64%
Jewellery	1	0.06%
Manufacturing	1	0.06%
Military	3	0.18%
Miscellaneous	4	0.23%
Organic	636	37.11%
Personal	1	0.06%
Pharmaceutical	3	0.18%
Recreation	9	0.53%
Unidentified	14	0.82%
Total	1714	100.00%

Table 6.5.4 Distribution of Phase V historical artefacts by class and function.

Row Labels	Alloy	Bone	Copper Alloy	Earthenware	Fine Earthenware	Glass	Iron	Kaolin	Leather	Stoneware	Total
Architectural/Non-Structural			3			4					7
Bail			2								2
Handle			1								1
Unidentified						4					4
Architectural/Structural			1				1				2
Bolt							1				1
Nail			1								1
Clothing	1								1		2
Button	1										1
Upper									1		1
Domestic				1		86					87
Gin						1					1
Jar				1							1
Unidentified						82					82
Wine						3					3
Food Service				9	1						10
Platter				2							2
Unidentified				7	1						8
Food Storage			3			4				1	8
Unidentified						4				1	5
Wire			3								3
Hygiene				2							2
Chamber Pot				2							2
Organic		6									6
0		6									6
Recreation								1			1
Pipe								1			1
Unidentified			2								2
Ring			2								2
Total	1	6	9	12	1	94	1	1	1	1	127

Table 6.5.5 Distribution of Phase V faunal artefacts by species and element.

Species	Unidentified	Femur	Metacarpal	Total
Ovis aries		1	1	2
Unidentified	4			4
Total	4	1	1	6

6.6 Phase VI

The latest phase of materials is represented only by a handful of fragments distributed across the black ashy gravel deposit [007] (5, 35.71%) and the clay brick and rubble fill deposit [016] (9, 64.29%). A full analysis is not warranted in this case as these artefacts can be considered in a high level of detail. The stratigraphic integrity of these deposits is high insofar as they are considered as an accumulation of disturbed earlier materials and not as proxies for *in situ* earlier deposits. It is likely that these deposits were formed and sealed rapidly during the demolition of the Locomotive Depot and construction of the car park. The matrix and material of these deposits primarily reflects the inclusion of disturbed early materials rather than the deposition of new materials during the time these deposits were open, i.e. in the late twentieth century.

As such, these 14 artefacts represent a grab bag of artefacts from the previous two centuries, including, an 1888 Remington 303 cartridge, a fragment of Chinese export porcelain, a fragment of post 1883 brown transferware with the 'Hampden' pattern and other stoneware and earthenware food storage and service fragments. There is little reason to believe that these items have been placed in a location of primary discard, instead it is highly likely that they have been redeposited as part of these deposits during demolition and construction.

Table 6.6.1 Distribution of artefact by context within Phase VI.

Context	Quantity	% Quantity
7	5	35.71%
16	9	64.29%
Total	14	100.00%

Table 6.5.2 Distribution of artefact by class within Phase VI.

Class	Quantity	% Quantity
Ceramic	9	64.29%
Glass	4	28.57%
Metal	1	7.14%
Total	14	100.00%

Table 6.5.3 Distribution of artefact by function within Phase VI.

Function	Quantity	% Quantity
Architectural/Non-Structural	1	7.14%
Domestic	2	14.29%
Food Service	9	64.29%
Military	1	7.14%
Unidentified	1	7.14%
Total	14	100.00%

Table 6.6.4 Distribution of Phase VI historical artefacts by class and function.

Function	Brass	Earthenware	Fine Earthenware	Glass	Porcelain	Stoneware	Total
Architectural/Non-Structural				1			1
Unidentified				1			1
Domestic				2			2
Unidentified				2			2
Food Service		4	2	1	1	1	9
Platter		2					2
Tea Cup			2				2
Unidentified		2			1	1	4
Vial				1			1
Military	1						1
Cartridge	1						1
Unidentified		1					1
Handle		1					1
Total	1	5	2	4	1	1	14

6.7 Discussion and Conclusion

Owing to the high levels of disturbance prevailing across the site and doubly disfiguring the potential of the most significant artefact bearing deposits of the site [034, 066 and 076] through a turbulent history of modification and redeposition. Given the limited scope for these artefacts to provide further information about the use of the site, their chief role is in providing insight into the stratigraphic development of the site.

As mentioned above the artefacts associated with Phase II, the construction of the Lumber Yard, are the most numerous and significant of the site and all have close association with the Aboriginal material that was also recovered from these deposits. As has been argued in Section 6.2, the collection of domestic artefacts and items in these fill deposits are unlikely to be associated with the operation of the Lumber Yard but instead correspond to the occupation of the site during the opening decades of colonisation. The artefactual profile closely matches the earliest phases of the Cottage Green site, (Austral Tasmania 2021) a contemporaneous site located across Sullivan's Cove in Battery Point. It is therefore far more consistent with the materials used by the early colonial elite, such as Fosbrook would have been, than other sites around Hobart. While it is possible that those that were present during Edward Lord's occupation of the site, there is little artefactual evidence to suggest this. Moreover, there is little industrial character to these items that would suggest that they were in anyway associated with the operation of the Lumber Yard. It is reasonable to expect that the core of industrial production in early Hobart would leave some traces of industrial material in any subfloor or soil nearby, this clearly has not occurred in these early deposits.

Even Phase IV, associated with the demolition of the Lumber Yard, and Phase II, associated with its occupation barely retain any traces of items that may have been associated with the convict phase of operations at the site. The use of the site by the Tasmanian Local Forces is far better represented in the artefactual record with numerous shell casings and buttons associated with military garb recovered from these later deposits.

Therefore, the historical artefacts from this excavation fall into two major categories, the vast mass of highly fragmented artefacts that were likely originally deposited prior to the lumber yard then redeposited again during its construction and a more diverse but much smaller range of artefacts from the late nineteenth and early twentieth century use of the site. These groups of artefact were spatially discrete owing to the two phases of significant levelling and cutting that took place during the twentieth century. Unfortunately, as a result of this high level of disturbance there is scant additional information that can be conveyed about the use of the site through a detailed analysis of these artefacts.

7.0 Interpretation

The interpretation in this section is presented in response to the three sets of research questions that have guided this investigation; the historical archaeological (Section 3.1), Aboriginal archaeological (Section 3.2) and usewear analytical (Section 3.3) research designs. It is presented in five subsections (Section 7.1 to Section 7.5) that each provide an answer to a set of research questions. Rather than provide an onerous series of call and response answers for three sets of research questions, which would include significant repetition, each section will answer a set of related research questions, namely:

- Section 7.1 Stratigraphic Integrity - Answers Historical Archaeological Research Design Tier 1 Questions 1-3 and Tier 2 Question 1 and Aboriginal Archaeological Research Design Tier 1 Questions 1-6.
- Section 7.2 Interpretation - Answers Historical Archaeological Research Design Tier 2 Questions 3-4, Aboriginal Archaeological Research Design Tier 1 Questions 9-11 and Usewear Analysis Research Design Questions 1-5.
- Section 7.3 Comparative Analysis and Regional Analysis - Answers Historical Archaeological Research Design Tier 3 Questions 1-2 and Aboriginal Archaeological Research Design Tier 1 Questions 4-7 and Tier 2 Question 1-4.
- Section 7.4 Regional Implications - Answers Historical Archaeological Research Design Tier 3 Question 1 and Aboriginal Archaeological Research Design Tier 1 Questions 4-7 and Tier 2 Questions 2-4.
- Section 7.5 The Aboriginal Presence in Early Hobart and the Documentary Record - Answers Historical Archaeological Research Design Tier 2 Question 2 and Aboriginal Archaeological Research Design Tier 1 Question 1.

A discussion of management approaches that may be appropriate to the site and assemblage follows in Section 7.6.

7.1 Stratigraphic Integrity

Answers Historical Archaeological Research Design Tier 1 Questions 1-3 and Tier 2 Question 1 and Aboriginal Archaeological Research Design Tier 1 Questions 1-6.

The site's stratigraphic integrity had been affected by extensive ground modification caused by three phases [II, V, VII] of nineteenth and twentieth century development. Differences in intent and available technology led to successive phases of earthworks that resemble one another only in the novelty of the levelling methods each employed. Thus, successive phases of historical disturbance have created a site where deep structural footings, such as the turntable well [205] and the dolerite wall footings [013] of the Lumber Yard, have remained *in situ* while only a handful of deposits from the late nineteenth and early twentieth century remain undisturbed.

The construction of the lumber yard [II] in c.1825, locomotive depot [V] in 1915 and car park [VI] in the 1980s occurred far enough from one another apart in time to have caused significantly different types of disturbance. The disparity of means and motive for disturbance after colonisation means that while the archaeological record is unequally representative of the site's past it nevertheless remains recognisable as a material representation of patterns in the historical fabric of Macquarie Point and nipaluna.

The stratigraphic profile across all three trenches was uniform, with the important caveat that the materials encountered in Trench Two and Trench Three represent only small sections of the broader record contained in Trench One. The upper strata comprising the current car park and its associated fills was the same across all three trenches. Trench One could readily be linked to Trench Two in that the external wall of the roundhouse [012] was present in that trench and provided a clear link to the turntable well. Trench Three can be linked to Trench One through the similarity of the fill deposits

associated with the rail yard occupation as well as the presence of a stoneware service pipe and concrete cap [011] that are the same as those found in Trench Three.

However, there are also important differences in the stratigraphic integrity of the three trenches. While steel and iron fittings had been ripped loose from the turntable well during demolition the concrete elements of the structure escaped largely unscathed. All of the demolition material filling the well related to a discrete phase of structures that were associated with the well itself. This trench provided a tight range of well-defined features associated with a single phase of operation at the site. Evidence of the turning mechanism existed mostly as remnant material within the concrete. Holding down bolts, base plates and the ghost rail about the base of the well provided additional information outside of the structure of the well itself.

Trench Three retained the road structure under a layer of fill it was largely intact but presented little further information in terms of its stratigraphy. It is reasonable to state that the characteristics of the excavated section of the road conformed precisely to the section that had been previously indicated, perhaps unsurprisingly, no new information was obtained about the road itself.

In Trench One strong stratigraphic evidence existed that allows the identification a range of structural changes and modification of the Lumber Yard but this was not accompanied by a series of artefact rich, well stratified occupation deposits. The remains of the Lumber Yard provide enough structural evidence to trace the phases of its initial construction, early modification use and demolition. The Phase II excavations included a section to the west of the core footings [013] which contained the former entrance to the Lumber Yard as well as range of additional buildings and features which had been added over time. The drain structure in the courtyard also is demonstrative of ongoing modification to the arrangement of the site.

The cut [023] associated with the construction of the lumber yard was not only the overall earliest archaeological feature at the site but also a record of the site's earliest phase of comprehensive disturbance. This disturbance likely took the form of hand excavation of the existing soil profile around the footprint of the proposed Lumber Yard, the stockpiling of these materials nearby and then their return to site as fill around the completed footings or structures of the proposed work. On the balance of evidence there seems little chance that these fills were introduced from another location. In order for them to have been brought in, first the original deposits at this site, which would have resembled them exactly, would have had to be removed to a different location then the fills would have been brought in. Without there being any evidence of, or even a conceivable reason for, removing fill of this site to replace it with what would have been *exactly* the same type of fill from somewhere else is a highly unlikely proposition.

There is some reason to believe, i.e. in the sharp distinction between the presence of shell material in the fill deposit [034] inside the footings of the Lumber Yard and the contact material in the fill deposit to the north of these footings [066 and 076], that these fill deposits may have been put in place while more than the footings of the Lumber Yard had been constructed. If this fill material had been reintroduced to the site when only the footings of the walls had been constructed then it is more likely that there would have been less difference in the character of these fills, as the fill could be spread on either side of the relatively low footings. However, this is far from conclusive evidence.

Regardless of the stage of the construction of the Lumber Yard buildings as these fills were deposited, they were clearly sealed prior to the time that the Lumber Yard commenced operation. These early deposits only contained trace amounts of artefacts that may have been associated with any of the sites industrial phases and this can be readily explained by isolated disturbances or intrusive materials. So while these materials were deposited in a disturbed c.1827 they were also effectively sealed until their excavation as part of this project. Their disturbance is discrete and related to a specific event and, as such, are jumbled but still retain a high degree of integrity as regards later intrusions.

These later cuts [025 and 029] that with the possible exception of the disturbance of the surface of the fills to the north of the footings [066 and 076] avoided these earlier materials had a much larger impact

on the convict materials that may have been present at the site. One of the chief stratigraphic issues throughout the excavation was the near total absence of any deposit associated with the occupation of the Lumber Yard. Subfloor deposits, yard surfaces and small areas of microrelief often provide rich sources of artefactual material but were not present within Trench One.

The small amount of artefacts recovered from the surface of the courtyard is readily understandable given that it was extremely well made and maintained and efficiently drained. However, the total lack of evidence of subfloor deposits within the Lumber Yard structures themselves are best explained by straightforward demolition activity.

An absence of significant rubble fill deposits to the north of the Lumber Yard that may have been associated with its demolition is in strong contrast to the thick deposit of demolition material [018] located on the surface of the courtyard [028] to the south. This strongly suggests that the building may have been pulled down towards the south, in 1915 at the time of demolition mechanical demolition machinery would have been available and the subfloor deposits may have been scraped and pushed to the south with the rubble. A thin skin [046] of demolition rubble was presently directly atop the early fills [034] within the interior of the Lumber Yard and this likely represents a small spray of rubble falling to the surface or being moved about prior to the levelling and filling that took place after the demolition.

Phase II excavations at this site also sought to determine the extent and location of the saw pits or whatever timber milling structures that were indicated to the north of the principal Lumber Yard structures on the historical plans of the site. However, no convincing evidence for the presence of any structure was discovered. The row of post holes in the north of the site are aligned with the walls of the Lumber Yard which would suggest some association but for the fact that historical maps and images show a number of other structures in this area on the same alignment. What would have constituted the uppermost surface of the soil profile into which the post holes had been cut was impossible to determine as a result of the extensive truncation of upper deposits. It was clear that they cut the gravel surface [067] in that area of the site, as the boundary between the fill in the post holes and the gravel surface was far too sharp to have been exposed on the surface for any period of time, as would have happened while the gravel surface was used.

It is important to note that those early deposit within the Lumber Yard commence at about the same height as the wall footings. This strongly implies a sweeping cut across a surface rather than targeted areas of demolition. It is likely that these deposits from the Lumber Yard were removed by the early cut [025] for the construction of the Locomotive Depot but the extent of disturbance caused by the later cut [029] for the car park makes this impossible to tell as it was as more extensive in some places than the earlier one.

Other forms of disturbance within the site were limited and the principal culprit was the cut [021c]. While this service truncated almost all of the early strata at the site it also provided a window into the stratigraphy below the dolerite surface and the Lumber Yard footings. Some excavation took place around the drain structure as it was modified during in the nineteenth century but this was limited in scope to the dolerite surface and the removal of whatever structural elements were to be replaced.

The marine adhesions present on some of the lithic artefacts indicates a complex taphonomic history for the midden and lithic materials present on the site. As was discussed in Section 6.0 above.

Earlier investigations predicted the disposition of historical archaeological strata on the site with extreme accuracy but were unable to predict, with the exception of Stanton (2000) and Everett (2007), the potential for Aboriginal cultural material to be present. Although Everett's assessment of sensitivity applied to the land under the current TMAG car park, her model was equally applicable to the land within the study area. The decision to test the northern part of the site for Aboriginal heritage and not the southern portion (Austral Tasmania 2015) strongly limited the ability of that investigation to accurately predict the potential for Aboriginal heritage. In turn this decision was rooted in a later

redefinition of Stanton's (2000), not undertaken by Stanton himself, area of sensitivity that placed much more emphasis on the headland than on the littoral zone around the former course of the rivulet.

Previous historical archaeological excavations at the site have, on the contrary progressively developed an increasingly accurate picture of the post colonisation archaeological record. The location of the turntable well was predicted in the historical assessment within millimetres of its actual location, a noteworthy feat of precise historical reconstructionist mapping (Austral Tasmania 2020b). The archaeological excavation reports from AMAC (2008), Austral Tasmania (2016 and 2020) give clear insight into the depths and disposition of the historical features and deposits that were to be encountered and this report is deeply indebted to these works and especially Austral Tasmania's (2020b) 'Macquarie Point Roundhouse Area Remediation Works: Archaeological Sensitivity Report' for an understanding of the features and deposits encountered.

7.2 Interpretation

Answers Historical Archaeological Research Design Tier 2 Questions 3-4, Aboriginal Archaeological Research Design Tier 1 Questions 9-11 and Usewear Analysis Research Design Questions 1-5.

As has been discussed above the interpretive potential of the site is limited principally to structural evidence and the early deposits present as fill around the Lumber Yard footings. While later deposits provide some insight into the development and use of the area, they are generally small and represent of short term or isolated events and contribute little further information or artefacts.

Nevertheless, a clear record of development and change at the Lumber Yard and the Turntable Well is displayed in these two trenches, there appears to have been little development of the road in Trench Three. The turntable well clearly shows the extent to which it was modified in order to receive the new turntable mechanism in the mid twentieth century but it also retains a large amount of information as regards its original manner of construction.

The probable sequence of construction of the turntable well likely proceeded with the construction of the concrete footing for the lower rail which also acted as footing for the well wall which has been visibly poured *in situ* on top of it. It is likely then that the capstan footing was constructed prior to the floor of the well itself. The external concrete footing and the floor bore matching drainage channels in their surfaces and this is a strong indication that these elements had remained as original until the demolition of the turntable.

With a clearly defined purpose the elements of the turntable well are readily explainable. The small deviation to the circular outline of the well in the north is likely an access hatch but may have been the location of machinery or other components of the turntable well that have since been removed. However, this is unlikely as there is no evidence of any bolts or attachments points in this area. The upper girder around the lip of the wall had an opening for the insertion of the turntable coupling set between a pair or rails. This later addition to the structure had replaced the earlier turntable docking mechanism that would have been present here. The rail at the foot of the turntable, where the external wheel of the turntable would have run along, appears to have been the original up until its demolition as there is no evidence of modification to this part of the structure. It is likely that the capstan footing was also replaced during the upgrade to the turntable. However, the damage to the capstan footing as a result of the demolition of the site obscured potential information on how or if it was modified as part of the change.

As had been discussed in Section 7.1 above, Trench Three afforded little new information. The road remained as it had at the time it had been previously excavated. A service trench had been cut through it in the early twentieth century, likely in association with the Locomotive Depot, and the 2016 archaeological trench had also cut some of it. Otherwise the road was consistently intact and very much the same as it had been during the previous excavation.

The most complex record of change over time after colonisation at the site is found in the structures and demolition deposits present in Trench One. It is likely that the construction of the Lumber Yard

features began with the demolition of any existing structures and the wholesale removal of the uppermost portion of the soil profile, at least in proximity to the Lumber Yard footings. This soil was then stockpiled elsewhere on site and the construction of the footings began. At this time also the large wooden post that was adjacent to the southwestern corner of the Lumber Yard footing was also probably put in place. Given its position right at the entrance it likely served as an early gate structure. It is possible that possibly one which was always intended to be temporary as it does not appear in even the earliest plans of the structure. It is also possible that it was used during construction or for an industrial purpose that now cannot be identified.

The internal features within the Lumber Yard footings were also constructed, the series of brick bearers, machine bases and loose rubble internal wall were all beneath the redeposited fill soils. The brick bearers were clearly meant to form part of the internal floor structure and likely supported further bricks that were scraped away during later levelling activity. Little evidence existed in relation to the possible machine bases within the structure. The paired brick footings and the dolerite footing gave no indication of being chimney bases, were clearly part of the original structure (the paired machine footing was below the original construction layer) and it is likely that the served a purpose in the early industrial working of the site. Without additional structural information or associated artefacts it is not possible to venture further.

The brick box drain beneath the gravel surface was also likely constructed at this time, no evidence of a later cut through the gravel surface was evident and it is probable that the later modification to the drain related exclusively to the drain mouth and not the subsurface structure of the drain.

During this process a construction deposit was forming below the gravel courtyard surface as well as within the footings of the Lumber Yard. Clearly neither the internal fills nor the gravel surface were deposited at the time these footings had been constructed. It is likely that the fills were deposited rapidly after the construction of the Lumber Yard buildings or at least that a roof was built rapidly because there is no evidence of silt or the accumulation of other deposits that would suggest that the construction deposit had been left exposed to the rain. It is possible that the dolerite packed surface and original spoon drain structure were the last things to be put in place among the original structures for which archaeological evidence remains other than the sandstone step butting against the dolerite wall footing in the east of Trench One. This sandstone step is undoubtedly part of the original structure and bears marks on its surface from the operation of a door.

The features in the north of the trench appear to present a much less certain date of construction. While it is likely that the gravel surface in this area is contemporaneous with that in the south, owing to later truncations there is no direct stratigraphic link.

The additions to the Lumber Yard structures are discrete and it is not possible to determine the sequence of construction between the additional structures to the west of the dolerite footing, the modification to the drain mouth in the courtyard and the addition of ranks of postholes in the north. Each of these modifications will be considered in turn but the order in which they are presented does not imply a sequential development.

The drain mouth, had clearly been modified due to the disturbance of the gravel surface around its borders and the abrupt end to the spoon drain that had been truncated by these later modifications. The spoon drain itself may have only received its bituminous surface during the occupation of the Lumber Yard and not at construction but this surface was in place before the drain mouth was altered as it had also been truncated by this modification.

The western features consisting of a small brick structure with an internal fireplace built against the western end of the Lumber Yard structure. Later a small service, most likely a water pipe for a small tap and possibly an associated small drain pipe for a basin, was cut along the base of the chimney prior to its demolition. It's likely that this tap was affixed to the eastern internal wall of this structure. This structure was most likely used as a guard house or watchhouse and had been built against the internal wall of the Lumber Yard, which was itself a later addition (i.e. bonded to but not keyed into).

The addition of an external gate wall after the construction is further evidence that wooden post adjacent to the footing was a temporary gate during the early phase of the Lumber Yard. It is likely that when this stone footing it was removed and the hole filled in. Additionally, against this later wall a new box drain, likely connected to a down pipe at the northwestern corner of the Lumber Yard structure was built.

The row of postholes in the north of the site are likely deep footings associated with a later structure in this area. It can be determined for certain whether or not these post holes were related to a Lumber Yard structure or with the Locomotive Depot as historical plans show structures from both phases at this location. They are certainly much later than the original Lumber Yard structures as they appear to truncate a surface that had clearly been built much later than the footings. In any case, these post holes bear little relation to any other feature on the site other than their alignment generally matches the alignment of the lumber yard and other structures in this area.

The demolition deposit to the south of the Lumber Yard footings also provided a substantial amount of information about structural changes that took place at the site. This deposit contained the four most common nail type encountered in nineteenth century deposits, wrought nails, cut nails, stamped nails and wire drawn nails. With the cut and stamped nails representing a range of individual production techniques. This clearly indicates the progressive addition of these items over time as the three latter types of nail only became available in a staggered process across the nineteenth century. Additionally, the thickness of window glass from these deposits presents a bimodal distribution with similar amounts of thick and thin fragments present. It is likely that this is reflective of the progressive replacement of windows over time when they were damaged or in need of repair. There does, however appear to have been little substantial structural change to the original structure of the Lumber Yard itself as the bricks in the 1915 demolition deposit were exclusively early sandstock bricks. Had later modifications taken place it is likely that there would have been stronger variation in that deposit.

The deposition of materials was rigidly consistent with the time frame provided by the historical record. The absence of substantial *in* situ occupation deposits meant that all of the deposited tended to be placed in a short period of time and in association with an obvious structural change that was also historically documented.

In considering how the site was used there is little more evidence to utilise in order to provide insight into the industrial arrangement of the site. Outside of the machine bases and the single button blank [3-92-604] there was scant evidence of industry at all present. The later phases of occupation by the Tasmanian Local Forces was marginally better represented with a scattering of rifle cartridges, shotgun shells and military buttons. Yet overall, as has been noted above the artefactual evidence relating to the use of the Lumber Yard was limited and it is not possible to provide much more additional information about the functioning of the site or its role in colonial industry.

It is again necessary to refer to the Cottage Green, Montpelier Retreat, site (Austral Tasmania 2021) in order to understand the Aboriginal occupation of the site. Although this site will again be referred to in the comparative analysis, the context that it provides for interpreting the current site helps to mitigate some of the interpretive problems arising from the high levels of disturbance. It is perhaps more appropriate to think of these excavations not as two distinct sites but as two samples from a single site, albeit a site which has suffered some truncation since colonisation. It is undoubtedly the case that the land around nipaluna was intensively occupied and it is likely that cultural material stretched along it's coastal margin, punctuated only by the rivulet or other small water courses. There is high probability that similar activities as took place 500m to the south in a similar location with similar conditions and similar materials so it is possible to provide some simply context from this nearby location.

It is likely that this site shares the early date range of c. 8,000BP for its basal strata prior to their disturbance which is likely to be the result of Aboriginal Tasmanian people following the retreating coast further inland during the early Holocene. Furthermore, the Cottage Green site provided

evidence of the harvesting of *D. antarctica* and its transport to site from the nearby slopes of kunanyi for consumption alongside shellfish and it would have been surprising if similar activities did not occur here. Silcrete was the most common material type across both sites, with both sites showing some indication that quartzite and hornfels may have been sourced locally for expedient tool manufacture. The predominance of mature mussels at this site suggests that it was occupied during warmer months when they were in season. Evidence of cutting and scraping was found on the lithic tools in the *in situ* midden at Cottage Green and a wider range of activities could be expected at this site, especially in the light of the diversity of activities that left evidence on the contact artefacts from the current excavation.

The eight contact items recovered from this site are one of the most significant components of this excavation and they are able to provide significant information about the Aboriginal presence in Hobart after colonisation. These artefacts were certainly deposited prior to the construction of the Lumber Yard in 1827, when the fill deposits that contained them were sealed by later strata and it is unlikely, although not impossible, that these materials were deposited here earlier than 1805. It is possible that Aboriginal Tasmanian people obtained these materials from the settlement at Risdon Cove, yet no evidence supports this as an explanation and the presence of the glass cores here may indicate that these artefacts were produced and used in proximity to their raw material source. Nevertheless, by enlisting the historical artefactual evidence it is possible to refine this time frame even further.

The presence of fired clay roofing tiles fragments throughout these early deposits, and very little other building material, is indicates of the earliest phases of colonial occupation. These roofing tiles have only been found in association with buildings constructed between 1805 and 1815, the same timeframe as Fosbrook's occupation of the site. With these tiles quickly falling out of popularity and only ever produced in a limited run, they are a strong indicator of strata associated with the first decade of occupation. This invariably was the case at Cottage Green, which also produced an artefactual profile that closely matched the other materials present in those early deposits, especially the high proportion of Chinese export porcelain. On the balance of evidence, these contact materials were most likely deposited in the first ten years after the colonisation of Hobart.

The range of usewear present on the small selection of contact flakes is significantly wide, evidence for sawing and cutting of soft and hard wood as well as other non-woody plant matter along with the scraping and processing of animal skins. Several of the tools had been used for multiple functions, such as scraping both wood and animal hide. This usewear in conjunction with bottle cores constitutes a complex use of the site with some form of sustained occupation. It is likely that any of the activities represented by these materials, from knapping flakes to the processing of raw plant and animal material were at least somewhat time consuming. With the ethnographic evidence documenting that Aboriginal people would camp one or two nights around Battery Point at a time in their visits between 1815 and 1817, it is possible a similar scenario occurred here, with Aboriginal people staying in the area for a period of days and utilising the local raw materials, in much the same way as there was a tendency to expediently produce hornfels items from cobbles in the nearby rivulet or Sullivan's Cove. Additional archaeological investigations are likely to be able to provide further insight into this and will be able to offer more detailed explanations for how these and similar items came to be buried in the soils of nipaluna.

Critically, the diversity of use displayed on these items vitiates the possibility that these items may not have Aboriginal Tasmanian provenance. If a single flake with a single type of usewear was present then it would certainly be possible to explain that as an item used by the colonists expediently in the pursuit of a particular task. However, the evidence of a wide range of uses is itself a strong argument for their production and use by Aboriginal people in the context of this site. It would require very strong evidence to demonstrate that either the household of the Assistant Commissary or that of the wealthiest man in the colony, or whoever occupied the site during Lord's tenure, would employ

knapped lithic items in preference to the extensive suite of task specific tools they would have undoubtedly possessed.

The implications in terms of disturbance and potential for the rest of the site have already been considered in detail in Aboriginal Heritage Investigation's (2022) 'Final Archaeological Acquittal Report Roundhouse Remediation Works Macquarie Point.' However, it is possible to provide some further information based on the detailed analysis of these materials. Aboriginal deposits were present between 5.00 A.H.D. and 5.50m A.H.D. and are likely to be restricted to the areas, already identified in that earlier report, that retained original shoreline and have received the least amount of disturbance since colonisation. To the north and west of Trench One, in an area roughly contiguous with the already excavated Aboriginal cultural material, is the location that is most likely to reveal further disturbed material or even *in situ* material. Give that the land rises in this direction it is also possible that archaeological features and deposit lie closer to the surface there. There is a high probability that further Aboriginal Tasmanian artefacts, post and pre-contact.

7.3 Comparative and Regional Analysis

Answers Historical Archaeological Research Design Tier 3 Questions 1-2 and Aboriginal Archaeological Research Design Tier 1 Questions 4-7 and Tier 2 Question 1-4.

Owing to Hobart's role as Tasmania's urban centre, the landscape of nipaluna has received sustained archaeological attention from the 1980s onwards and provides a wide range of recorded comparative sites. Notwithstanding this diverse archaeological record, the familiar combination of disturbance and different excavation methodologies across time means that results can often only be compared at higher levels of analysis. This is also true in this case, yet several recent excavations in Tasmania, Hobart and Macquarie Point itself are able to provide a close comparative model at lower levels and document results that strongly resemble parts of the stratigraphic record of this site.

The closest point of comparison for the turntable well can be found at the Inveresk complex in Launceston, where an extant turntable, later than the one excavated in Trench Two, and an earlier archaeologically excavated turntable have been recorded in Austral Tasmania's 2021 'UTAS Launceston Willis Street Campus Archaeological Excavations.' The earlier turntable, located on a Cimitiere Street site just to the west of the Tamar River, was constructed in 1876 and is a composite structure of brick, sandstone, concrete and wood. The scale and sophistication of the Mac Point turntable is significant in comparison to this earlier structure. Over four times its size, the Mac Point structure shows a consideration for drainage and the use of modern concrete materials that make a significant improvement on the structure of the earlier. The other extant turntable in Launceston, near to the Queen Victoria Museum, is much closer in scale and structure to the Mac Point turntable and this likely indicates a standardisation of style arising from an increasing understanding of the use of modern materials for rail yard structures.

The historical features within this deposit are similar in form to others constructed during the first half of the nineteenth century in Hobart. With little artefactual evidence dating to the historical after the construction of the Lumber Yard there is little that can be said about the ongoing occupation of this area in relation to other sites. Dolerite footings supporting a brick superstructure is a common enough site on archaeological sites and even extant buildings in Hobart. Internal footings of brick or dolerite are also common, even on domestic sites and the courtyard and drainage structures are similar to those observed at other public buildings. However, what is distinctive about the historical archaeological signature of this site is the extensive levelling that accompanied the first phase of construction.

The total removal of all prior deposits from the excavation area before the construction of the Lumber Yard structures at first seems to be an unnecessarily labour intensive approach. However, given the certainty of plentiful convict labour and a potentially sloping ground surface this levelling activity becomes much more reasonable. Nevertheless, this is an unusual feature in early archaeological sites around Hobart.

While the Cottage Green Site has been considered above as a means of interpreting the Aboriginal history of the site it is also possible to consider it in the context of comparative analysis alongside several other nearby midden sites that have been previously excavated. Through this the regional implications of the findings of the excavation will be drawn out.

The results of the excavation by Kerrison and Binns (1984) in the Hobart Botanical Gardens are also consistent with the results of the current excavation. The midden excavated as part of that project was far more intact than either at Mac Point or at Cottage Green. The vast majority of shell material was M. *planulatus* with a smaller amount of *O. angasi* throughout. Similar estuarine shell species such as *B. auratum* and *N. alta* were also present. 60 'flakes' (Kerrison and Binns 1984:58-61) were also obtained from this midden with the majority being identified as hornfels. No silcrete artefacts were recovered from this excavation but it is suspected that this may be a difference in classification terminology.

Excavations, primarily historical in purpose at the Private Secretary's Cottage at the Tasmanian Museum and Art Gallery, 400m from the Cottage Green Site, also encountered some Aboriginal midden material along what would have been the shoreline of Sullivans Cove (Austral Archaeology 1995; Austral Archaeology 2006). The excavations there reported a similar soil profile of dolerite clays and highly plastic clay loam with the predominance of *M. planulatus* shells in the assemblage with a lesser amount of *O. angasi* but also recorded the presence of *Phasianotrochus rutilus*, a shell used in the making of necklaces by Tasmanian Aboriginal people.

With these four excavations returning similar proportions of shell species and material it is possible to make some statements that appear to apply to all midden sites so far excavated in Hobart:

- Midden sites are likely to occur on elevated land within 150m of the pre-colonisation shoreline.
- The primary type of shell species that will be present is *M. planulatus* and this is accompanied by lesser but still significant amounts of *O. angasi*.
- Other estuarine species not favoured for consumption are also likely to be present but the higher proportion of the shell material they constitute the more like the midden material is to be disturbed or a natural shell bed. The exception to this is the potential for *P. rutilus*, which is known to be used in the production of items of adornment.
- The artefacts within midden sites are likely to be sparse in proportion to shell material or other lithic sites and are likely to be mostly silcrete items with hornfels and quartzite also contributing lesser amounts.
- In two of the four midden sites excavated, contact artefacts have been present and it is possible that they will be present at other midden sites around nipaluna.
- The sheer volume of midden material present before colonisation means that in any area where disturbance is not simply absolute removal, or if redeposition may have occurred, even highly developed industrial sites have the potential to retain midden material.

These simple characteristics of midden materials at urban sites can be considered to nest in Brown's (1986) wider modelling of midden sites in the Derwent Estuary in that it conditions his 'Bay Estuarine Type' midden modelling to the Hobart context.

The context for contact artefact in the Derwent Estuary is far less studied than the pre-contact materials. A number of other contact sites exist in the region, both in close proximity to Hobart and further afield. The archaeological sites which have not already been identified in the historical record (Section 2.0), will not be identified here due to their highly sensitive nature. These sites provide a network of Aboriginal Tasmanian movement and occupation across the landscape of nipaluna and

beyond during the first phases of colonisation. With the findings from Phase II excavations, Hobart and Mac Point in particular, is now part of that network from its beginning.

This concept of a network is of critical importance in making the first steps to identifying the contact history of the Derwent Estuary in the first years of British Colonisation. The historical record indicates that at least one group of Aboriginal people visited Battery Point approximately every six months, from 1815 to 1817, and stayed for several days at a time (Knopwood 1838). It is reasonable to assume that under similar circumstances they may have done the same at Mac Point, possibly far earlier than 1815. It is likely that other sites in this area were visited in a similar matter. The significance of this cannot be overestimated, although there is evidence of Aboriginal Tasmanian people being present in Hobart and interacting with the colonists and their goods there is no evidence of Aboriginal people permanently residing in the town of their own volition at this time. On the contrary, there is every evidence that Aboriginal Tasmanian people continued their own activities and followed established paths through the landscape while bringing European materials into their own frameworks of understanding.

The brutality and horror of colonisation, especially within the Tasmanian context, tends to overshadow the effective use that Aboriginal people were often able to make of colonists and the attraction that some European goods are likely to have held. Bottle glass was already favoured over trade goods during the time of the early French explorers and it is likely that if nothing else, the fledgling town presented a ready source of useful raw material. There is no evidence at this site that shows Aboriginal Tasmanian people were subsumed into the population of Hobart, instead there is clear evidence of Aboriginal people acquiring European artefacts in a very considered way and incorporating them into traditional practices. This highlights the extreme cultural resilience of the Aboriginal Tasmanian people and is a necessary starting point for investigating the contact history of the Derwent Estuary. The most successful form of investigation will likely be one which bases its approach on the premise that Aboriginal people incorporated some aspects of colonial society into their lives while avoiding others. Even though violence and aggressive colonisation will always be a consistent theme in Tasmanian contact history their prominence cannot be allowed to obscure the agency of Aboriginal Tasmanian people, especially in the earliest phases of occupation where the ravages of colonisation were not so advanced.

7.4 The Aboriginal Presence in Early Hobart and the Documentary Record

Answers Historical Archaeological Research Design Tier 2 Question 2, Tier 3 Question 1.

The most significant finding of this investigation is that Aboriginal Tasmanian people were present in in Hobart during the earliest years of colonisation in a way that had not been identified by historical sources. Outside of the diary of Robert Knopwood there is no historical record for Aboriginal Tasmanian people being present in Hobart during the first decade of colonisation, and there is no evidence at all to indicate that they were at Macquarie Point. The single reference to the presence of Aboriginal people in Hobart at this time is stated by Knopwood (1838) as:

> Friday 4 April 1806 At 8 a.m. a native girl about 17 was in my garden [Battery Point], the first that I ever see near me. She ran away some small distance and then stopd [*sic.*]. I went to her, she wanted some fire which got for her, and some fish and bread, but returning to get some more fire she ran off. I see no more of her.

This sole reference to Aboriginal people in the early town becomes much more significant in the light of the findings of the current investigation, which includes artefacts that may have been deposited contemporaneously with the appearance of this Aboriginal girl. It is possible that she was associated with those who used these artefacts or she may have used them herself. Even were this not the case, the historical record has certainly provided some evidence of Aboriginal people in Hobart at this time that is entirely consistent with the artefactual and stratigraphic evidence recovered from this site.

Only in 1815, the same year that Fosbrook had sold his property to Lord, was Knopwood to begin recording an ongoing presence of Aboriginal people at Battery Point. Although the years from 1812 to 1815 are missing from his diary, the appearance of Aboriginal Tasmanian people near his house in

1815 is not greeted with surprise, which may imply sustained contact over some or all of the previous three years that the journal had not covered. Given the brief amount of time that these people would stay at Knopwood's property at any one time and the length between their stays, the shortest time between visits about six months, it is possible that they were moving around the local area and may have been staying at other locations nearby including Macquarie Point.

In any case, the glass cores indicate that this site was likely used for the production of flaked tools and the usewear left on the identified contact flakes shows that they were also used in the harvesting and processing of wood and animal skin. This range of activity implies an intensity of use that goes beyond a temporary halt or a specific activity area. It is therefore possible that these artefacts are associated with a site of contact *habitation*, however brief, which implies a social dynamic between coloniser and the people of nipaluna that has previously not been considered part of Hobart's early story.

While it is common to examine the impact of colonisation on Aboriginal society, recently, James Boyce (2008), has argued that it is likely some form of information sharing was taking place between colonists and Aboriginal people on the fringes of settlement as it pushed out past Hobart. Boyce considers that even against the inevitable context of colonisation and oppression, this information sharing was an important part of how Europeans came to understand the landscape and it shaped their understanding of the bush. The presence of Aboriginal Tasmanian people during the opening years of colonisation might imply other forms of influence that Aboriginal people had on early Hobart and therefore Tasmanian culture more generally. It is certainly not possible to propose or identify such an influence on the basis of a handful of knapped glass artefacts but now that two contact sites dating to the very beginning of settlement have been excavated in Hobart serious questions must be asked about the experiences of Aboriginal people among these early settlers. Thought must also be given to the way in which the very earliest form of European society in Tasmania was indebted to the knowledge of the people they dispossessed and how it has shaped wider patterns of Tasmanian social and cultural history.

7.5 Management

Mac Point's commitment to as far as practicable limiting the impact of the proposed works, public presentation of results, protecting *in situ* heritage and involving the Aboriginal community in the practical phases of this project have allowed for successful outcomes throughout the archaeological excavations accompanying the remediation works so far. The management of archaeological heritage at Macquarie Point has been based on an understanding of the site that has developed in accordance with the increasingly detailed picture of its stratigraphy afforded by the long term archaeological programme of research and excavation. Phase I and Phase II excavations of the archaeologically sensitive area of the remediation works has revealed substantive new artefacts and information that once again require new management approaches.

The continuing archaeological work at the site will to refine the process and scope of heritage management at Macquarie Point but it is important to make some observations at this transitory stage. In particular, there is potential for unidentified contact artefacts to remain in the historical assemblage (Catalogue Three, Bag 1-125 and Artefact Identifier 3-1-1 to Artefact Identifier 3-125-843) associated with this project. It was not possible within the scope of this project to send all 848 glass items for a detailed analysis and instead only those that appeared most likely to bear evidence of usewear were sent. Nonetheless, it is possible that other items remain within the assemblage. The *Aboriginal Heritage Act 1975* provides blanket protection to all Aboriginal heritage items in Tasmania. Therefore even though any potential unidentified contact artefact remaining in the assemblage is not currently explicitly managed under the Act they are still afforded its protection.

Over and above the requirements imposed by the planning approvals for this project this ambiguity is something that should be considered in the curation of the historical artefact assemblage. Connection to country and to the identified Aboriginal artefacts in this assemblage should be maintained where possible and any decisions about the curation, storage, accessioning or deaccessioning of these items

should include consultation with the Aboriginal community. It may be possible at a future date to reliably identify all of the contact items in the assemblage but this is not within the bounds of the current investigation.

In the present project usewear analysis has proved an effective tool to identify and manage Aboriginal contact artefacts. The significant contribution that usewear analysis has made to the management of this assemblage cannot be overstated. Without the usewear analysis one of the most significant components of this assemblage would not have been fully identified and there would have been no opportunity to inform and involve the Tasmanian Aboriginal community in its management. The continued use of usewear analysis is a critical part of managing and identifying important artefacts in the context of Macquarie Point.

While it is not within the scope of this project to consider broader approaches to the management of contact sites in Hobart, this report must provide some comment on the methodological outcome of this project and its technical implications for similar local excavations. Even with an extensive history of management and assessment at this site, the complexity of the Aboriginal heritage present was only understood progressively during excavation and only in its latest and most pressing stages. This placed additional burdens on consultants, proponents and regulators to effectively manage the site's heritage within an already established project time frame. Similar scenarios may occur again unless methodologies for the historical archaeological excavation of pre-1820s historical sites in Hobart include a substantive consideration of Aboriginal contact potential in their research design. If they do not, it is unlikely that they will successfully manage either Aboriginal or historical heritage. The Tasmanian Aboriginal community must be given adequate time and information to consider such works and should also have the opportunity to be involved in the planning of archaeological methodologies from the very beginning.

In this case, as Aboriginal cultural heritage had already been identified prior to the exposure of contact material, the excavation team consisted of Aboriginal community members and archaeologists experienced with Aboriginal heritage. However, in some cases in Australia, historical archaeological practitioners are not experienced in Aboriginal archaeology and may not be able to reliably identify potential contact artefacts in the field. There is a strong potential for pre-1820s sites in and around Hobart to contain Aboriginal contact items, which may or may not be accompanied by obvious pre-contact items, they should be excavated by a suitably qualified archaeologist. The protection of significant contact sites in Hobart should not hinge on the colocation of pre-contact cultural material or on an historical archaeologist that also happens to be capable in Aboriginal archaeology. Until such a time as contact heritage is considered an intrinsic part of the early Hobart landscape and is actively managed and anticipated in the pre-excavation process, *ad hoc* management of sites will continue to be the norm in the fortunate cases where they are identified at all.

7.6 Summary

Despite high levels of disturbance this excavation has been able to provide a wealth of information from the findings in Trench One and Trench Two. Noticeably less information was afforded by Trench Three. The site's stratigraphic integrity had been affected by extensive ground modification caused by three phases [II, V, VII] of nineteenth and twentieth century development. Differences in intent and available technology led to successive phases of earthworks that resemble one another only in the novelty of the levelling methods each employed. Thus, successive phases of historical disturbance have created a site where deep structural footings, such as the turntable well [205] and the dolerite wall footings [013] of the Lumber Yard, have remained *in situ* while only a handful of deposits from the late nineteenth and early twentieth century remain undisturbed.

The construction of the lumber yard [II] in c.1825, locomotive depot [V] in 1915 and car park [VI] in the 1980s occurred far enough from one another apart in time to have caused significantly different types of disturbance. The disparity of means and motive for disturbance after colonisation means that while the archaeological record is unequally representative of the site's past it nevertheless remains

recognisable as a material representation of patterns in the historical fabric of Macquarie Point and nipaluna.

The presence of contact artefacts at this site is highly significant and provides a substantive contribution to our understanding of the history of Hobart. With evidence for a wide range of uses of these eight contact items they clearly represent a site where an equally wide range of activities occurred. It is likely that these artefacts were deposited prior to 1815 and are likely closely linked to a network of contact sites around the Derwent Estuary.

There is potential for unidentified contact artefacts to remain in the historical assemblage (Catalogue Three, Bag 1-125 and Artefact Identifier 3-1-1 to Artefact Identifier 3-125-843) associated with this project. It was not possible within the scope of this project to send all 848 glass items for a detailed analysis and instead only those that appeared most likely to bear evidence of usewear were sent. Nonetheless, it is possible that other items remain within the assemblage. The *Aboriginal Heritage Act 1975* provides blanket protection to all Aboriginal heritage items in Tasmania. Therefore even though any potential unidentified contact artefact remaining in the assemblage is not currently explicitly managed under the Act they are still afforded its protection.

8.0 Conclusions and Recommendations

The archaeological works were undertaken in accordance with the following permits and have been completed:

- *Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination*
- *Permit for the purposes of Section 14 of the* Aboriginal Heritage Act *P155 11 June 2021 (P155)*
- *Permit for the purposes of Section 14 of the* Aboriginal Heritage Act *P155 11 August 2022 (P183)*

Despite high levels of ground disturbance from the 1820s onwards the three trenches excavated at Mac Point during Phase I and Phase II of the archaeological programme accompanying the remediation works have produced important new information about the history of nipaluna and Mac Point.

Excavation produced results that were consistent with the predicted historical archaeological remains in the three trenches but encountered Aboriginal material culture in Trench One. The nineteenth century road surface in Trench Three was similar to the section of road earlier investigated during the historical testing of the site and confirms its continued presence throughout that area. The excavation of the turntable well in Trench Two has allowed the recording of the remains of that structure and the detailed documentation of the details of its construction. Trench Two and Trench Three contained high levels of disturbance and demonstrated extremely low potential for the presence of any earlier surfaces.

In the case of the Lumber Yard, partly excavated in Trench One, not only were the anticipated structural remains present but a significant assemblage of Aboriginal cultural material as well. The intensive Aboriginal occupation of the site is likely from at least in the early Holocene and extends into the early colonial phase. As no historical record exists of an Aboriginal presence at Macquarie Point during the early colonial period, and very rarely for Hobart in general, the knapped glass artefacts recovered are highly significant within the context of both the historical and Aboriginal heritage management frameworks.

A total of 6,596 items were excavated and catalogued, all from Trench One. This included 31 lithic artefacts, eight knapped glass artefacts and 2,345 historical artefacts, 759 of which were faunal items. The count of shell fragments was 4,212 and this was accompanied by a large amount of shell fragments that were not counted individually but rather quantified according to weight. The items recovered from this excavation were primarily from disturbed nineteenth century deposits and were highly fragmented.

Therefore it is recommended that:

1. Consultation should be undertaken with the, the Hobart City Council and the Tasmanian Museum and Art Gallery regarding the ongoing care and conservation of the historical artefacts in the collection.
2. Ongoing consultation with Aboriginal community groups, the Aboriginal Heritage Council and Aboriginal Heritage Tasmania should determine the management of Aboriginal cultural materials.
3. Copies of this final excavation report must be lodged separately with the Tasmanian Aboriginal Centre, weetapoona, Karadi, Pungenna Community, South East Tasmania Aboriginal Corporation, the Tasmanian Aboriginal Centre, Hobart City Council, Aboriginal Heritage Tasmania, the Aboriginal Heritage Council, the State Library of Tasmania and the Tasmanian Museum and Art Gallery.

4. Where practicable, effort should be made to identify any other contact artefacts in the current historical archaeological assemblage as well as in future excavated materials. Until such a time as this is able to take place, a precautionary approach towards the historical component of this assemblage should be adopted as outlined in Section 7.5. This would include Aboriginal community consultation as part of the decision making process for management decisions regarding the historical items in this assemblage.

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Appendix A - Stratigraphic Table

Context Number	Name	Description	Phase
001	Asphalt Car Park Surface	The current car park surface within the area of Trench One is up 80mm thick but is composed of varied pours and cuts that are likely associated with various excavations and modifications to this surface that have taken place since its construction. This surface contains angular gravel, ~30mm in diameter, and varies widely in quality. This deposit was considered to have been redeposited after the excavation of the archaeological test trench [003 and 004] as further asphalt had been re-laid and bonded to the undisturbed car park surfaces.	VII
002	Finely Crushed Rock Fill	A strata of finely crushed dolerite gravel that has a maximum depth of 100mm. This deposit underlies the current car park surface except for where is has been truncated by cuts, for example the recent archaeological trench [004]. The depth of this deposit varies based upon the height of the uneven dolerite cobble surface below.	VII
003	Fill in Archaeological Trench	A fill composed of gravel (30%), sand (15%), dolerite rubble (15%) and clay (40%) that represents the material that had been excavated during the archaeological works at this site. This material is soft and friable compared to the *in situ* fills present in the upper strata of this site and it had calved away early during the stages of the open area excavation. When excavated, this material was so poorly compacted that it would often calve away from sections or trench walls.	VII
004	Cut For Archaeological Trench	This cut measures 30m by 2m and it extends beyond the limits of excavation to the east and west. This cut is discontinuous within the area of current excavation as the previous investigations had encountered a service [008] that they had later removed.	VII
005	Concrete Pad	A shallow lens of concrete, up to 100mm in depth, below the current car park surface in the southeast corner of the trench.	VII
006	Orange Brown Sand and Cobble Fill	The orange brown sand and cobble fill was by far the largest deposit encountered during the excavation. With a maximum depth of 520mm in the south of the excavation area, where it rested immediately below the current asphalt car park surface, this deposit more commonly measured 400mm in depth. Above the concrete and brick roundhouse wall [013] this deposit was at its shallowest and was only 200mm in depth. This deposit, except where truncated by the later archaeological test trench [004] was present across the entirety of the LYT open area excavation. The fill was composed of large rounded and sub angular dolerite cobbles and angular dolerite gravel within an orange brown sandy matrix.	VII

Context Number	Name	Description	Phase
007	Black Ashy Gravel Deposit	This deposit formed a strata that was omnipresent beneath the dolerite cobble fill above. This deposit was friable, loose and gritty. The depth of this deposit varied between 20mm and 50mm in depth, although deeper pockets existed where the underlying deposits had created hollows or pockets. The material from this deposit consisted of very small fragments (<10mm) of gravel, coal and brick fragments. Sand, possibly introduced from the dolerite fill above, was also present in this matrix and small amounts of clay also. A small amount of highly fragmented boiler scale was present in this deposit although it was only a very small amount especially when compared to earlier deposits. The deposit itself smelt of tar and left a clear black stain on anyone that handled it or anything that touched it. The most likely explanation for this deposit is that it is composed of working detritus from the rail yard, trace elements of surroundings fills and demolition rubble associated with the levelling of the roundhouse and associated structures. It represents a transitional phase between the demolition of the Locomotive Depot and the construction of the current car park.	VI
008	Concrete Cap, Cut, Trench, Pipe	This feature consisted of a concrete cap [008a], fill [008b], ceramic pipe [008c] and cut [800d] aligned east to west in the south of the trench. The concrete cap was a light grey, very hard concrete with <30mm dolerite gavel inclusion and was broken in place. The service was inactive copper electrical wiring within a bright orange PVC pipe. This service cuts the earlier galvanised iron	VII
009	Lens of Sandy Silt between the Concrete [005] [010]	A thin lens of silty black sand between two concrete pads in the southeastern corner of Trench One. This lens was no thicker than 20mm in depth and is likely the accumulation of waterborne sediment that occurred between the pouring of the two slabs.	VII
010	Concrete Pad below Sand Lens [009]	This concrete pad extends beyond the limits of excavation to the west and south and extended less than a metre into the current area of excavation. This deposit has an uneven surface and irregular boundaries. The greatest depth of this deposit was 200mm. It is likely that this pad was either a remnant footing or spot repair after the removal of another feature. If this feature had been a footing any components of the structure that it supported were without the bounds of the current excavation area as no evidence could be observed of this in its surface as exposed in the trench.	VII
011	Stoneware Pipe with Concrete Bedding	Broken stoneware pipe set in concrete bedding and resting below the orange cobble fill [006] and above the ashy gravel deposit [007]. The concrete is a very hard light grey with dolerite inclusions between 5mm and 30mm in diameter.	V

Context Number	Name	Description	Phase
012	Concrete and Brick Wall Footing	Marking the northwestern extent of the LYT this feature is clearly the external footing of the roundhouse. This feature extended along the length of the northeastern trench wall and continued beyond the limits of excavation, with a maximum height of 360mm and width of 170mm. This feature had been heavily damaged by the demolition of the roundhouse but was substantial enough that its upper portions had been smashed and removed rather than being grubbed out wholesale. The concrete was a very hard, light grey and composed of 30% dolerite gravel inclusions, with the dolerite gravel measuring 20-30mm in size. The wall was formed of one visible course of bricks, with likely more courses extant beneath this or beyond the limits of excavation, laid either rowlock or stretcher. The bricks were bonded together with concrete and were set within an exterior cement shell that had been poured with formwork on the south face, the northern face was not visible in the excavation area. The concrete formed an L shape with the toe of the concrete extending to the south and west and covering and being bonded to the earlier archaeological features and deposits below. This feature was set within a cut [029], however the dimensions of this cut and its depth could not be recorded as it extended beyond the limits of excavation and was nearly entirely obscured by the concrete that had leaked from below the formwork and formed a toe on top of the features and deposits that remained outside the cut.	V
013	Dolerite Wall Footing	This feature was a substantial dolerite footing that corresponded to the historical plans of the alignment of the walls of the western wing of the Lumber Yard. With a width measuring 600mm, some minor deviations were observed along its length although this was principally caused by variation in the size and shape of dolerite rocks and boulders that had been used to form the footing. This footing had a depth of 400mm, where it was observed to rest in a shallow trench that had been cut *as part* of the broader levelling cut. This feature had been damaged on its upper surface during demolition and truncated several times by an early service [021]. An upper course of sandstone bricks was present in two places on this feature and in two other places distinct patterns in the mortar showed locations where bricks had been bonded to the upper surface of this feature. It is likely that these brick courses on top of this footing were the basal courses of the wall for the lumber yard structures but had been removed during demolition. The dolerite footing is 280mm above the packed gravel yard surface [028]. The footings itself was composed of 30mm to 300mm angular dolerite gravel and cobbles, with the larger dolerite rocks placed towards the exterior of the footing with their straightest faces outwards. The wall was bonded by a light yellow sandy cement mortar.	II

Context Number	Name	Description	Phase
014	Brick Working Surface abutting [012]	This working surface appears as to be a temporary, unbonded single layer of bricks against the exterior of the roundhouse wall. These bricks are bonded to the concrete wall where they are pressed against it but this does not appear to be the intent of this feature and it is likely that these bricks were placed here, possibly robbed in part from the nearby lumber yard structure during the construction process of the roundhouse. The bricks were varied in their make and manufacture, with some of them a dull reddish orange sandstock, some of the bricks showed broad arrow marks, brick to others that were light yellow bricks with frogging or a stamp bearing a makers mark.	V
015	Brick Rubble same as [031]	Deposit of sandstock brick rubble below the black ashy gravel deposit and above the lower clay fills.	VI
016	Clay and Brick Rubble Fill Deposit	Thick deposit of sandy clay and brick rubble with small amounts of brick and gravel inclusions that was present below the ashy gravel deposit across the extent of the site. A mixture of nineteenth and early twentieth century historical artefacts were present in this deposit and it clearly consisted of redeposited material moved here during the demolition of the roundhouse structure. This deposit varied in thickness between 200mm and 500mm, the depth altered based on the height of the features and deposits that it covered.	VI
017	Brick Rubble same as [031]	Deposit of sandstock brick rubble below the black ashy gravel deposit and above the lower clay fills. The brick content of this rubble mirrors the composition of the nearby larger deposit of brick rubble.	VI
018	Sandstock Brick And Mortar Demolition Deposit	This is the principal demolition deposit associated with the destruction of the Lumber Yard structures prior to the construction of the features associated with the rail yard. This deposit extends beyond the limits of excavation to the south and east of the wall footing [013]. This deposit, or any comparably substantial deposit, is not present within the footprint of wall footings but is instead thickly piled against the exterior of the wall footing, up to a depth of 150mm. This deposit gradually decreases in size and feathers out to less than 10mm away from the trench. Some accumulations of whole brick are included within this deposit and these bricks are all clearly sandstock, with some bearing broad arrow marks. It is clearly the case that the superstructure of the lumberyard structure has been demolished out and away from the interior of the building. This deposit covers the earlier *in situ* features within the internal Lumber Yard courtyard.	IV
019	Sandy Silt Deposit Below [018]	As a thin lens of artefact rich sandy silt between the demolition deposit [018] and the dolerite gravel surface [028] this deposit was never more than 10mm thick. It likely represents accumulated puddles of silt from the later periods of use of this courtyard during the occupation of the site by the Tasmanian Local Forces.	III

Context Number	Name	Description	Phase
020	Dolerite Clay	The natural dolerite clay present at this location. Highly plastic and fine, this deposit is a natural occurring part of the soil profile in this area. It is commonly present as a culturally sterile B horizon below the highly plastic black clay of the upper deposits and the regolith below.	I
021	Cut for Truncated Iron Pipe	A roughly and shallow cut through the earlier demolition deposits [018 etc.] and earlier Lumber Yard features . The cut is ~350mm in width and up to 400mm deep. This cut is an earlier feature than the demolition associated with the occupation of the site during the time of the Locomotive Depot.	V
022	Fill And Iron Pipe in cut [021]	These two features were recorded together as the fill [021a] and iron pipe [021b] within the cut [021c]. The pipe was 35mm in diameter and heavily corroded it had been truncated at its southern end and wrenched from within its fill to rest on the deposits above it [007]. The fill within the trench was a mixture of clay, mortar and brick rubble and, as such, it is representative of the deposits that had been cut [021] for its installation.	V
023	Levelling Cut for Lumber Yard Phase into Natural	This large levelling event was present across the entirety of the site interrupting the natural soil profile and removing the upper soil strata typical of this area. This cut was observable wherever the excavation extended past historical fill deposits and into the natural soil profile and continued beyond the limits of excavation.	II
024	Thin Lenses Of Plastic Silty Clay on the demolition rubble [018]	Small variations of the ash and gravel deposit [007] pressed into the surface of the demolition deposit below. This deposit was likely a minor variation of the upper deposit [007] with the only difference being a larger portion of clay contained in its matrix. This deposit was never more than 20mm thick and the largest patch observed was no more than 400mm in diameter.	VI
025	Cut And Demolition Activity	Associated with the demolition of the roundhouse and rather than being a single cut with measurable qualities, this cut is hypothesised as a stratigraphic unit based on a wide range of observed impacts. It represents the demolition and levelling activities associated with the demolition of the roundhouse and its associated features and deposits. Its impacts include the truncation of the roundhouse wall [012], the damage to the iron pipe [021] and the cutting of a number of other deposits and features across the site.	VI
028	Dolerite Gravel Surface	The dolerite gravel surface is present above the construction debris [044] resting on the natural clay. It is generally composed of hard packed dolerite gravel with the average fragment measuring 20-40mm, at 80% of the deposit, although there are larger fragments of up to 60mm composing 5% of the deposit and an additional 15% of sand matrix. The colour of the surface is a grey blue and the depth of the deposit is approximately 100 - 170mm deep as observed by earlier cuts through this deposit. A series of ruts were present in this surface, and curved from the east northeast to the west. The ruts were 20mm at their greatest depth and were up to 100mm in width.	II

Context Number	Name	Description	Phase
029	Cut for Roundhouse Wall	The extent and details of this cut was not observable during excavation and was chiefly observable by the limits of the roundhouse wall [012]. Nineteenth century deposits and, as far as is observable, Aboriginal archaeological deposits have been entirely truncated by this cut within the footprint of the turntable structure. This cut has also	V
031	Clay Rubble Fill North of Lumber Yard Wall	A deposit of clay and rubble to the west of the dolerite wall footing [013].	IV
032	Thin Lens of Silty Clay	This deposit consisted of a thin lens of silty clay within the interior space formed by the dolerite footings. This lens was approximately 10mm deep and very dark grey in colour. This silty clay had formed as a skin on the surface of earlier deposits. The lens was nowhere deeper than 20mm but was more commonly less than 10mm in thickness. The variation in the depth of the deposit	IV
033	Cut, Fill and Steel Pipe in Gravel Surface [028]	This feature consists of redeposited dolerite gravel and clay [033a], a steel pipe [033b] and the cut [033c] that contains it. The cut is 130mm in width and 240mm in depth and the steel pipe, set vertically in the fill is 45mm in diameter and approximately 250m in length. It is likely that this pipe was part of a small structure within the open space of the interior Lumber Yard courtyard. This feature was likely installed during the latter part of the occupation of the Lumber Yard as the steel of the pipe is not consistent with early metals that would have been present at this site. The fill in this deposit was the same as the gravel surface [028] surrounding it, and equally compact, but contained a small amount of clay (10%) and less gravel within its matrix.	III
034	Redeposited Clay Soil	This deposit is composed of shelly loamy black clay (60%) with distinct grey green mottles of sterile clay material (40%). Numerous, highly fragmented, early nineteenth century European artefacts were present within this deposit as were a small amount of knapped lithic and glass items. The shell fragments, principally *M. planulatus*, were highly fragmented (<5mm) and composed less than 5% of the deposit and rarely (<5%) were intact or large specimens present. This deposit was within the footings of the northwest wing of the Lumber Yard and rested on top of the construction deposits [094] and wall footings [013] of the lumber yard structure. The impact of the twentieth century phases of demolition to the site means that it is likely that this material has at least a partially and disturbed upper horizon. Thin pockets of late nineteenth and early twentieth century materials survive between the larger lower deposits and upper fills and suggest that what remains of the deposit [034] has remained largely *in situ* since the construction of the lumber yard, despite the fact that large sections have been cut or levelled in the mid to late twentieth century.	II
043	Silty Clay Deposit [048]	This deposit consisted of a thick irregular accumulation of silty clay that had accumulated on the upper parts of the modified drain structure and roughly corresponded to the extent of the cut around the drain mouth, and was shallow and irregular in form. It likely represents a small amount of silty clay that had accumulated against the metal plate and on top of the drain walls during their operation.	III

Context Number	Name	Description	Phase
044	Construction Deposit Above [023]	This deposit consisted of a series of very thin <5m patches of sandy mortar and very fine brick fragments resting on the surface of the extensive cut [023] into the natural strata of this area.	II
045	Cut around Later Drain Mouth [048]	This cut extends approximately 100-150mm around the drain mouth set into the hard packed dolerite surface [028] and truncates both this surface and the remnants of the earlier drain. This cut contains the later bricks and sandstone and dolerite blocks of the drain mouth [048].	III
046	Thin Deposit of Demolition material	A small area of sandy mortar and brick fragments against the western face, i.e. the interior of the easternmost section of the dolerite footing [013]. This deposit was similar in its constituent materials as the much more substantial demolition deposit on the other side of the wall but was much more restricted in size. This deposit consisted of a narrow band, <400mm extending along 1500mm along the wall footing and overlying the lower clay deposits. This deposit was at its most substantial where it had accumulated against the side of the footings and measure 40mm in depth but quickly diminished in thickness until it terminated at its western boundary.	IV
047	Deposit of Orange Brown Sandy Clay	A small patch of orange brown sandy clay with charcoal pressed into the surface of the black clay and rubble fill within the footings. This deposit was composed of a coarse, compact orange sand with a large amount (20%) of buff coloured boiler scale within it.	IV

Context Number	Name	Description	Phase
048	Later Drain Mouth Structure	This feature is comprised of an iron grill and unbonded brick work and dolerite cobbles placed between the buried opening of the brick box drain [063] and the dolerite spoon drain [050]. The disturbance of the hard packed dolerite surface [028] is the clearest indication of the modifications that have taken place to this structure as the original structure has been removed, however the cut [045] through the dolerite surface is clear and the later bricks, sandstone and iron fittings have been placed against the earlier box drains structure. The drain mouth consists of a small area immediately in front of the box drain mouth with side walls of bricks and half bricks placed shiner on the sides and a floor of broken bricks placed on their bed surfaces to form the floor of the mouth. The total size of this lower area is 450x500mm and the wall are a single course of bricks deep, although broken bricks have been placed above and on top of the brick wall in order to leave a lip on top of the brick work, likely to allow for the fitting of a metal plate (see below). This lower area is joined to the shallow ramp immediately beneath the grill by an inclined mortar pad, which may have previously been the bedding for a brick. The shallow brick ramp is composed of a series of bricks laid stretcher and with a single course of bricks forming its walls. This shallow ramp continues until it is covered by dolerite cobbles that are likely the disturbed and redeposited remnants of the dolerite cobble spoon drain [050]. Further details of the articulation of the spoon drain and the modified drain mouth area unclear as they have both been truncated by the service [021]. A single metal strap was placed across the brick walls of the lower area and ferrous scrap and staining adhering to the top of the brick side walls of this lower area suggest that it was covered with a metal maintenance plate that has corroded *in situ*.	III
049	Asphalt Surface on Spoon Drain	This deposit formed a structural element of the dolerite spoon drain [049] and may have been an original bonding for this feature or a later repair or addition. This asphalt is restricted to the interior of the shallow drain although small splashes of this material can be seen on the dolerite gravel surface [028] to the east and west. It does not cover the majority of larger dolerite cobbles forming the edge of the drain and at its observed deepest observable measures ~10mm.	III
050	Dolerite Cobble Spoon Drain	Spoon drain formed of water worn dolerite cobbles placed into the hard packed dolerite gravel surface [028]. This feature had a total length of 6m but had been truncated on its northern end by the cut [029] concrete roundhouse footing [012] and truncated nearly at its termination at the brick box drain [048] by a service trench [021]. The width of this drain was 650mm and it was shallowly concave. The structure of the drain itself was formed from dolerite cobbles, with larger cobbles measuring between 150mm and 230mm forming the edge of the drain and smaller cobbles, between 50-150mm packed tightly within to form the concavity of the drain. Where this drain has been truncated by the service trench [021] it is observable in profile and it can be clearly seen that it is bedded onto the thin construction deposit [023] that rests on the truncated [023] natural surface [020].	II

Context Number	Name	Description	Phase
051	Demolition Rubble Below Drain [048] Grate	Lumber Yard demolition rubble [018] accumulated within the drain opening and below the drain grate. This deposit was given an additional number to accommodate any artefacts or remnant deposits that may have been mixed into it from deposits lying around the drain mouth. However, in terms of description and material it is the same and continuous with the overlying mortar and brick debris demolition deposit [018].	IV
052	Orange Brown Sandy Clay	This deposit, measuring approximately 400mm in diameter and less than 20mm in depth was an accumulation of orange sand and mortar, with a large amount of small brick and mortar inclusions, around the drain mouth. It likely represents demolition debris accumulating in the comparatively uneven gravel surface that had been modified by the alterations made to the structure of the drain during its use life.	IV
054	Brick and Mortar Pad	This brick pad shows little indication of its intended use. The dull red sandstock bricks that form it have been laid stretcher and are bonded together by a very soft sand mortar. These bricks are only a single course deep and is 500 x 1500mm in plan and has been truncated by the later service cut [021]. These bricks have been set within a disturbed area of the dolerite surface [028].	III
055	Silty Clay In Later Drain	This deposit was a soft silty clay that had accumulated within the drain mouth to a depth of approximately 50mm in depth and clearly accumulating after the completion of the modifications to the drain.	III
057	Post Cut (A) Packing (B) and Post (C) below the Disturbed Gravel [061]	This cut was 570mm in diameter and contained the remnants of 250mm diameter post that had been broken at its uppermost extent. The cut for this fill shared the same diameter at the fill but extended 400mm in depth below the surface of the hard packed dolerite surface [028].	II
059	Shallow Pit South of [050]	This shallow pit, 40mm in depth and approximately 170mm in diameter was set into the hard packed dolerite cobble surface [028] and against the dolerite cobble drain [050].	III
061	Concrete and Gravel Raft [028]	This gravel surface [028] has been reworked as part of concrete raft [061] that had been poured against the brick working surface [014] and the dolerite wall footing [013]. This reworking consisted of roughly the same dolerite material now included with 20% cement in an area that was 100-110mm thick in an east to west alignment and 120mm in a north to south alignment. This shape was irregular, the cement also included <2mm brick fragments and was brittle and hard. It is likely that this material had been redeposited after the removal of the upper section of the post [057c].	III
062	Posthole North of Brick and Mortar Pad [054]	This posthole consisted of a cut [062a] measured 170mm in plan and 120mm deep and it contained [062b] redeposited gravel fill [028] mixed with brick fragments and additional amounts of clay.	III

Context Number	Name	Description	Phase
063	Box Drain Structure	The box drain connected to the later drain mouth modification consisted of a floor single course of bricks laid with the stretcher faces abutting each other and supporting two walls of bricks laid shiner, that in turn supported a brick roof, which was laid in the same manner as the floor. This box drain continued beyond the limit of excavation along the alignment of the visible spoon drain. It is likely that this drain intersected with a similar drain placed next to the small additional brick structure	II
064	Disturbed Dolerite Gravel [028]	As a disturbed and possibly redeposited form of the hard packed dolerite surface [028]. This deposit has the same composition as the hard packed surface but has a less even surface, with larger gravel fragments standing 20-30mm above the surface. As there is a very poor horizon to the rest of the hard packed surface there is every reason to believe that this is simply part of the hard packed surface [028] that has suffered some surface damage.	III
065	Brick Rubble Deposit Against Northwest Baulk	Thick lens (140mm) of light red pressed brick rubble present in the northern section of the site. This rubble measured 8m in length and 700mm in width.	VII
066	Disturbed Clay Fill below Brick Rubble [065 and 016]	This deposit consisted of a clay fill very similar to the overlying deposit of clay fill [016]. The chief difference in this deposit is that it contained a very small amount of shell fragments and less larger brick fragments than the deposit that was above it. It still contained substantial amounts of fine brick fragments, nineteenth and twentieth century historical artefacts and dolerite gravel.	VI
067	Compact Dolerite Surface	This dolerite surface was similar to the hard packed dolerite surface [028] within the yard area to the east recorded in the east of the trench but was less compact and was much shallower, measuring 60mm in depth.	II (III)
068	Asphalt Surface	This later surface resting above the brick rubble fill in the west of the trench.	VI
069	Chimney Base	This chimney base consisted of a single layer of brick and half brick embedded in a thick lime mortar. The chimney base is bonded to the interior corner of the brick wall footing [100] placed against the southern end of the dolerite wall footing [013] that dominated the centre of the excavation area.	III
070	Brick Machine Base	This feature consisted of a matched set of two brick footings bonded to the interior of the dolerite wall footing [013] with a shell lime mortar. Each of these footings measured 800 x 370mm in plan. The total height of these features was 150mm and each consisted of three courses of bricks. These features had been built on top of the cut [023] that had levelled this area prior to construction.	II
071	Fill Within Brick Drain	This rubble fill consists of <25mm brick, mortar and plaster fragments within a clay matrix.	III

Context Number	Name	Description	Phase
072	Brick Drain	The box drain connected to the later drain mouth modification consisted of a floor single course of bricks laid with the stretcher faces abutting each other and supporting two walls of bricks laid shiner, that in turn supported a brick roof, which was laid in the same manner as the floor. These bricks were machine made and reddish orange.	III
073	Cut for Brick Drain	This cut was assigned to the area of disturbance around the brick drain [071].	III
074	Galvanised Iron Service Pipe (SW-NE)	This pipe consisted of an 40mm galvanised iron pipe that was set within the dolerite cobble fill [006]. There was no evidence of a cut associated with this service and it is possible that the dolerite cobble fill had been deposited around it, however the nature of the cobble fill deposit may limit evidence of trenching if the spoil was returned to the trench. This service had been truncated by the later concrete and plastic service [008].	VII
075	Cut in the Western Corner of Phase Two Area through dolerite gravel surface [067]	This cut extended beyond the limits of excavation to the northeast and southwest of the excavation area as well beyond the depth of the excavation area. This cut was underneath the fill of clay and rubble fill [016] and truncated the later lumber yard features in this area of the trench, however it may have also cut through rail yard deposits but due to the severity of the widespread demolition activity [025].	IV
076	Redeposited Clay Soil on the north of the Lumber Yard Footings [013]	This deposit was one of a group of redeposited garden soils and early clays that dominated the lower strata of the site. It consisted of mottled slightly sandy black clay (20%) and highly plastic black clay to greenish black clay (60%) and dolerite and brick rubble gravel (<10mm) at 10%. An uneven distribution of shell was within it, primarily associated with areas of sandy black clay but also present within the highly plastic clay. The mottles of the slightly sandy clay (<300-400mm) and were thoroughly mixed with the mottles of clay. It was between lower surfaces associated with the early phases of the lumber yard and disturbed deposits excavated and replaced as late as the 1980s. It showed a poor horizon to the fills [016] above.	II
077	Demolition Rubble [018] of Guard House	Containing the same materials as was observed in [018] but deposited discretely to the west of the dolerite footings [016].	III
078	Posthole Below Brick Rubble Deposit [065]	350 x 300mm in plan and 250mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
079	Posthole Below Brick Rubble Deposit [065]	320 x 290mm in plan and 270mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
080	Posthole Below Brick Rubble Deposit [065]	340 x 300mm in plan and 350mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III

Context Number	Name	Description	Phase
081	Posthole Below Brick Rubble Deposit [065]	400 x 350mm in plan and 400mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
082	Posthole Below Brick Rubble Deposit [065]	300 x 250mm in plan and 350mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
083	Posthole Below Brick Rubble Deposit [065]	300 x 300mm in plan and 350mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
084	Posthole Below Brick Rubble Deposit [065]	250 x 250mm in plan and 200mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
085	Posthole Below Brick Rubble Deposit [065]	480 x 400mm in plan and 400mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
086	Posthole Below Brick Rubble Deposit [065]	250 x 250mm in plan and 300mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
087	Posthole Below Brick Rubble Deposit [065]	250 x 250mm in plan and 300mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
088	Posthole Below Brick Rubble Deposit [065]	250 x 250 mm in plan and 250mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
089	Posthole Below Brick Rubble Deposit [065]	350 x 300mm in plan and 300mm in depth this post hole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole.	III
090	Posthole Below Brick Rubble Deposit [065]	350 on its north to south axis and over 200mm along its east to west axis and 300mm in depth this posthole contained a mixture of clay and rubble fill, with brick and dolerite fragments present. No artefacts were recorded in this post hole and it continued beyond the limits of excavation.	III
094	Brick Rubble Levelling Fill Below Part Of	This deposit varied in depth between 300 and 350mm and consisted of brick and clay rubble directly below the dolerite gravel surface. This deposit was compact and displayed a lack of artefact and shell material.	VI

Context Number	Name	Description	Phase
	The Dolerite Gravel Surface [067]		
095	Brick And Mortar Deposit Below Fill [034] In Lumber Yard Interior	This deposit was a thin smear of mortar and brick fragments that was present on top of the cut into the natural clay [023] within the interior of the lumber yard footing and was especially prominent in the west of this structure where it formed large uniform patches resting against the dolerite wall footings [013].	II
097	Brick Pier	This brick pier consisted of two bricks placed on the brick and mortar deposit [095] within the interior of the lumber yard structure.	II
098	Brick Pier	This brick pier consisted of two bricks placed on the brick and mortar deposit [095] within the interior of the lumber yard structure.	II
099	Demolition Rubble Fill below the Black Ashy Deposit [007]	Variation of the clay and brick fill [016] located above the earlier clay fill deposit [034] within the interior of the lumber yard building.	IV
100	Brick Wall Footing	This wall footing consisted of two courses of bricks laid stretcher to stretcher against the dolerite wall footing [013] and bonded to the chimney base [069]. The bricks were reddish orange sandstock and measured 210 x 100 x 70mm.	III
101	Dolerite Machine Base	Bonded to the internal face of the dolerite wall footing [013] this feature consisted of a random dolerite rubble bonded together in a 600 x 1200mm rectangular footing. This footing is not part of the lumber yard footing but is instead bonded to it by the same shell lime mortar that constitutes its matrix.	
103	Extension of Dolerite Footing [013]	This small section of dolerite cobble has been bonded to but not keyed into the original lumber yard footing. It is extended 1000mm north of the northwesternmost corner of the dolerite footing [013].	III
104	Brick Footing bonded to Dolerite Footing [103]	This brick feature is bonded to the dolerite footing [103] 1340mm in length, 340mm in width and 150mm in depth. It is two courses of brick deep and two wide, with the upper course consisting of one row bricks laide stretcher against one row laid header.	III
105	Small Cut along Chimney Base	This cut, that extended beyond the limits of excavation, but which had a width and depth of 60 x 40mm had been cut into the chimney base.	III

Context Number	Name	Description	Phase
107	Dolerite and Cobble Footing	This dolerite and cobble footing formed the boundary between Space One (west) and Space Two (east) in the interior of the Lumber Yard and had been placed on the cut [023] into the natural clay of this area. This footing consisted of large, rounded, dolerite cobbles and boulders placed along a north to south line within the interior of the dolerite lumber yard footings [013]. These items were not bonded to each other nor were they bonded to the nearby wall footings. This feature measured 400mm in width and extended across the interior of the lumber yard structure, except where truncated by later service cuts.	II
109	Damaged Brick Pier	This remnant pier of shattered brick appears to have originally matched the form of the other extant brick piers in the interior of the Lumber Yard footing.	II
203	Upper Demolition Deposit within Turntable Well	Reinforced concrete and rail yard furniture debris within an orange brown sandy silt matrix. This demolition material included large amounts of reinforced concrete footings, columns and large structural elements that were so heavily damaged that their original functions were unrecognisable. Substantial iron structural elements were included in this deposit, such as axels, wheels, rails and struts, that were all also clearly associated with the operation of the Locomotive Depot.	VI
204	Lower Demolition Deposit within Turntable Well	Reinforced concrete and rail yard furniture debris within a black brown sandy silt deposit with a small amount of coal fragments.	VI
205a	Concrete and Iron Wall of Turntable Well	This context consists of the original structural elements associated with the turntable well wall. The Section 4.2 of this report consists solely of the description of the physical character of the well wall, it is not necessary to reproduce these materials here.	V
205b	Concrete and Iron Wall of Turntable Well	This context is assigned to the additional structural elements associated with the turntable well wall. The Section 4.2 of this report consists solely of the description of the physical character of the well wall, it is not necessary to reproduce these materials here.	V
206a	Concrete Manhole	A 1200mm diameter and 1950mm deep reinforced concrete manhole with iron cover.	VII
206b	Fill Within Manhole Cut	Dolerite gravel fill within the manhole cut [206b].	VII
206c	Cut For Manhole	Roughly circular cut through the demolition fills [203 and 204] within the turntable well.	VII
303	Test Trench	The cut and fill [304] of the 2015 archaeological Test Trench 3 was present in the southeast of the excavation area.	VII
304	Fill in 303	Backfill of archaeological Test Trench 3.	VII
306	Sleepers	Within the dolerite cobble fill [305] was extant a pair of heavily damaged sleepers [306] visible in the trench wall.	V

Context Number	Name	Description	Phase
307	Concrete Feature W. Rails	This footing was formed from hard, light grey concrete with ~30mm angular dolerite gravel. and two rails ~400mm apart were set into its surface.	V
310	Dolerite Gravel Fill	Dolerite gravel fill features large 70mm angular dolerite gravel and was 500mm in depth.	VII
311	Road Surface	Compacted dolerite gravel.	V
312	Road Gravel	Dolerite gravel fill beneath the road surface [311].	V
313	Bedrock	Dolerite bedrock.	I
314	Boiler Scale Deposit	Fawn to black coloured boiler scale fragments (<20mm in diameter).	V
315	Cut For Service Trench	This trench measured 600mm in width and 650mm in depth and was aligned east to west across the centre of Trench Three.	V
316	Fill In Service Trench	Clay and brick rubble fill.	V
317	Ceramic Pipe	A sectional, collar join ceramic pipe 300mm in diameter.	V

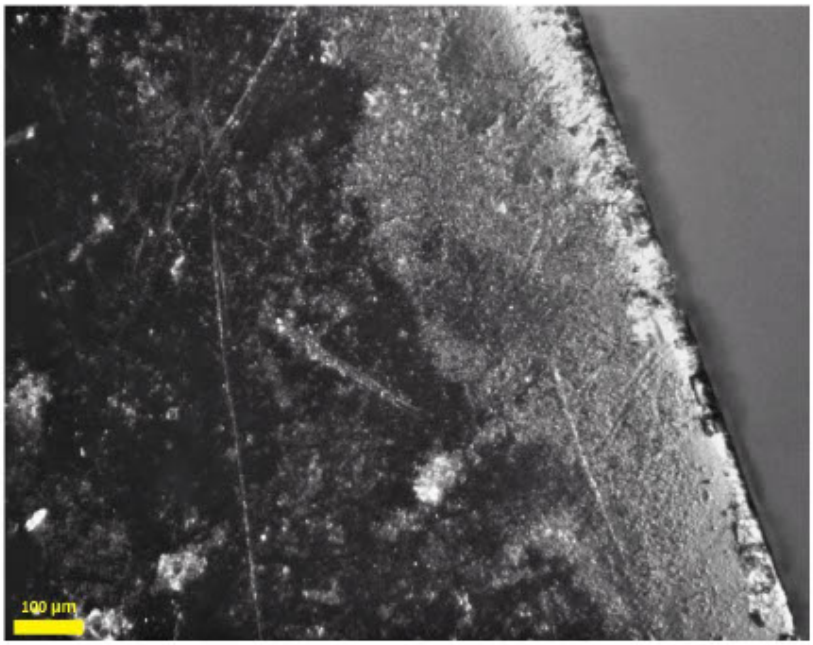
Appendix B - Knapped Artefact Catalogue

Identifier	Unit	Square	Spit	Matrix Colour	Material	Matrix Colour No.	Cortex Colour	Cortex Colour No.	Morphology	Lithic Weight	Maximum Length	Percussion Axis	Maximum Width	Midpoint Width	Maximum Thickness	Platform Surface	Platform Angle	Platform Length	Platform Width	Termination	Mean Maximum Dimensions	Overhang Removal	Cortex Type	Cortex %	Cortex Location	Dorsal Flake Scar Number	Dorsal Partial Flake Scar	Dorsal Flake Scar Orientation	Retouch	Retouch Location	Retouch Initiation	Heat Treatment	Adhesions	Adhesion Location	Damage
1-1-1	34	10-4	1	Gray	Hornfels	10YR 5/1	Dark Reddish Gray	5YR 4/2	Proximal Flake	26.6	38.03	n/a	30.31	n/a	20.84	Flaked	Oblique	28.49	14.51	n/a	29.73	n	Angular Weathered	35	134	1	2	3	n	n/a	n/a	None	None	0	None
1-2-2	34	10-4	1	Greenish Gray	Quartzite	Gley 1 5/10Y	n/a	n/a	Proximal Flake	11.6	31.15	n/a	12.29	n/a	11.6	Crushed	n/a	n/a	n/a	n/a	18.35	n	n/a	0	0	2	5	14	n	n/a	n/a	None	Marine	56	None
1-3-3	34	10-4	1	Pale Reddish Brown	Silcrete	10R 5/4	n/a	n/a	Distal Flake	1.7	20.99	n/a	19.88	n/a	7.04	n/a	n/a	n/a	n/a	Stepped	15.97	n	n/a	0	0	0	0	0	n	n/a	n/a	Slight Reddening	None	0	Proximal break
1-4-4	66	2-16	1	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Core	242.8	74.98	n/a	74.98	n/a	36.62	n/a	n/a	n/a	n/a	n/a	62.19	n	n/a	0	0	0	0	0	n	n/a	n/a	None	None	0	None
1-6-6	66	2-6	1	Brownish Black	Mineral Crystal	5YR 2/1	n/a	n/a	Proximal Flake	8.1	26.56	n/a	22.01	n/a	13.99	Crushed	Acute	17.92	15.54	Indeterminate	20.85	n	n/a	0	0	0	8	1234	n	n/a	n/a	None	None	0	Distal Break
1-7-7	66	2-16	1	Greyish Red	Hornfels	10R 4/2	Greyish Red	5R 4/2	Flake	40.9	38.51	36.2	52.04	50.64	20.66	Flaked	Acute	47.36	20.68	Feather	37.07	n	Angular Weathered	70	1234	0	9	124	n	n/a	n/a	None	None	0	None
1-9-9	76	10-14	1	Gray	Silcrete	5Y 6/1	n/a	n/a	Flake	7.8	46.36	34.35	40.11	26.36	15.23	Flaked	Oblique	26	14.74	Stepped	33.90	n	n/a	0	0	1	5	1234	n	n/a	n/a	None	None	0	None
1-10-10	34	2-6	2	Light Brown	Silcrete	7.5YR 6/3	n/a	n/a	Angular Fragment	1	20.74	n/a	10.14	n/a	5.38	n/a	n/a	n/a	n/a	n/a	12.09	n	n/a	0	0	0	6	0	n	n/a	n/a	None	None	0	None
1-11-11	34	2-4	3	Pale Brown	Mudstone	10YR 6/3	n/a	n/a	Distal Flake	5.2	24.12	n/a	25.87	n/a	10.4	n/a	n/a	n/a	n/a	Feather	20.13	n	n/a	0	0	0	4	124	n	n/a	n/a	Slight Reddening	Marine	3467	Proximal Break
1-13-13	34	2-6	3	Light Yellowish Brown	Silcrete	10YR 6/4	n/a	n/a	Flake	1.2	16.79	16.79	24.37	24.37	4.58	Flaked	Oblique	9.99	4.83	Feather	15.25	n	n/a	0	0	0	1	3	n	n/a	n/a	None	None	0	Broken Left Lateral Margin
1-14-14	34	2-6	1	Greenish Gray	Silcrete	Gley 1 5/1	n/a	n/a	Flake	6.8	42.91	32.65	38.57	20.57	8.11	Flaked	Oblique	10.76	6.95	Feather	29.86	n	n/a	0	0	0	4	34	n	n/a	n/a	None	None	0	None
1-15-15	76	10-14	1	Yellowish Brown	Chert	10YR 5/4	Brown	7YR 4/4	Right Lateral Flake	4.6	29.96	n/a	17.7	n/a	6.44	Cortical	Acute	n/a	n/a	Feather	18.03	n	River Cobble	100	1234	0	0	0	n	n/a	n/a	None	None	0	Vertical Medial Break
1-16-16	34	4-6	1	Very Dark Gray	Hornfels	5Y 3/1	n/a	n/a	Flake	2.1	26	n/a	16.95	n/a	6.24	Flaked	Acute	n/a	n/a	Feather	16.40	n	n/a	0	0	0	2	0	n	n/a	n/a	None	None	0	Vertical Medial Break
1-17-17	34	4-6	1	Red	Silcrete	5R 4/6	n/a	n/a	Angular Fragment	5.9	31.3	n/a	16.9	n/a	10.56	n/a	n/a	n/a	n/a	n/a	19.59	n	n/a	0	0	0	0	0	n	n/a	n/a	None	Marine	1234	None
1-18-18	34	8-2	2	Light Gray	Silcrete	5Y 7/1	n/a	n/a	Angular Fragment	3.2	20.32	n/a	18.64	n/a	13.93	n/a	n/a	n/a	n/a	n/a	17.63	n	n/a	0	0	0	0	0	n	n/a	n/a	None	None	0	None
1-19-19	34	8-4	2	Gray	Mudstone	5Y 5/1	Dark Reddish Gray	10R 4/1	Flake	42.5	43.33	43.71	46.43	43.61	20.3	Crushed	Acute	36.3	10.93	Feather	36.69	n	River Cobble	70	1234	0	4	12	n	n/a	n/a	None	None	0	None
1-20-20	34	8-4	2	Pale Brown	Silcrete	10YR 6/3	Weak Red	7.5R 4/4	Angular Fragment	7.8	27.82	n/a	18.6	n/a	12.31	n/a	n/a	n/a	n/a	n/a	19.58	n	Angular Weathered	0	0	0	0	0	n	n/a	n/a	None	None	0	None
1-21-21	34	8-4	2	Dusky Red	Quartzite	10R 3/4	n/a	n/a	Flake	4	24.65	24.65	27.14	25.88	5.58	Flaked	Acute	8.93	3.32	Feather	19.12	n	Angular Weathered	90	1234	0	2	14	n	n/a	n/a	None	None	0	None

1-22-22	34	8-4	2	Olive grey	Silcrete	5Y 4/2	n/a	n/a	Angular Fragment	6.5	25.5	n/a	23.41	n/a	14.69	n/a	n/a	n/a	n/a	n/a	21.20	n	Angular Weathered	0	0	0	0	0	n	n/a	n/a	None	None	0	None
1-23-23	34	8-4	2	Light Olive Grey	Silcrete	5Y 6/2	n/a	n/a	Angular Fragment	0.8	16.12	n/a	12.23	n/a	13	n/a	n/a	n/a	n/a	n/a	13.78	n	n/a	0	0	0	0	0	n	n/a	n/a	None	None	0	None
1-24-24	76	10-14	1	Light Brownish Gray	Quartzite	10YR 6/2	n/a	n/a	Flake	13.2	53.06	44.89	26.66	21.61	10.6	Flaked	Acute	13.06	8.69	Feather	30.11	n	Angular Weathered	10	12	0	6	123	n	n/a	n/a	None	None	0	None
1-25-25	76	8-14	1	Light Brownish Gray	Silcrete	2.5Y 6/2	n/a	n/a	Flake	5.2	41.26	35.34	24.97	22.99	5.27	Flaked Gullwing	Acute	10.12	1.71	Feather	23.83	n	n/a	0	0	1	5	124	n	n/a	n/a	None	Marine	12	None
1-26-26	76	8-14	1	Olive Black	Glass	5Y 2/1	Olive Black	5Y 2/1	Core	23	55.11	n/a	34.65	n/a	21.01	n/a	n/a	n/a	n/a	n/a	36.92	n	Manufactured	90	1234	0	5	1234	y	Distal Margin	Unifacial from Dorsal	None	None	0	None
1-27-27	34	8-7	1	Light Yellowish Brown	Silcrete	10YR 6/4	Weak Red	7.5R 4/4	Medial Flake	7.6	7.5	n/a	26.48	n/a	10.75	n/a	n/a	n/a	n/a	n/a	14.91	y	Angular Weathered	80	1234	4	3	124	y	Left Lateral Margin	Bifacial	None	None	0	Distal and Proximal Breaks
1-28-28	34	12-4	1	Gray	Silcrete	2.5Y 6/1	n/a	n/a	Flake	19.7	40.52	39.88	42.11	28.01	12.96	Flaked	Oblique	10.37	6.88	Feather	31.86	n	Angular Weathered	5	3	3	6	1234	y	Distal Margin	Indeterminate	None	None	0	None
1-29-29	34	12-4	1	Gray	Silcrete	2.5Y 6/1	n/a	n/a	Angular Fragment	1.1	26.48	n/a	15.67	n/a	3.36	n/a	n/a	n/a	n/a	n/a	15.17	n	n/a	0	0	0	3	0	n	n/a	n/a	None	Marine	1234	None
1-30-30	34	10-7	1	Brown	Chert	10YR 5/3	n/a	n/a	Angular Fragment	14.1	41.81	n/a	28.62	n/a	16.91	n/a	n/a	n/a	n/a	n/a	29.11	n	Smooth Weathered	90	0	0	3	23	n	n/a	n/a	None	None	0	None
1-31-31	34	12-4	1	Gray	Silcrete	2.5Y 6/1	n/a	n/a	Angular Fragment	2	22.37	n/a	13.76	n/a	10.43	n/a	n/a	n/a	n/a	n/a	15.52	n	n/a	0	0	0	3	123	n	n/a	n/a	None	None	0	None
1-32-32	34	12-4	1	Gray	Silcrete	2.5Y 6/1	n/a	n/a	Angular Fragment	1.8	19.79	n/a	16.48	n/a	5.67	n/a	n/a	n/a	n/a	n/a	13.98	n	n/a	0	0	0	4	1234	n	n/a	n/a	None	None	0	None
1-33-33	18	0-2	1	Pale Red	Silcrete	10R 6/2	n/a	n/a	Flake	0.3	16.57	15.72	15.03	14.68	1.82	Flaked Gullwing	Oblique	14.57	1.72	Feather	11.14	n	n/a	0	0	0	0	0	n	n/a	n/a	Slight Reddening	None	0	None
1-34-34	46	14-8	1	Dusky Red	Quartzite	7.5R 3/3	n/a	n/a	Flake	6.5	29.88	29.31	38.18	28.9	5.88	Flaked	Oblique	12.15	5.77	Hinge	24.65	n	n/a	0	0	1	5	1234	n	n/a	n/a	None	None	0	None
1-35-35	34	4-9	1	Very Dusky Red	Chalcedony	7.5R 2.5/2	n/a	n/a	Flake	0.4	16	12.28	19.88	19.88	3	Flaked	Acute	10.65	4.29	Feather	12.96	n	n/a	0	0	1	3	34	n	n/a	n/a	None	None	0	None
1-36-36	34	8-7	1	Olive Grey	Hornfels	5Y 5/2	Olive Gray	5Y 4/2	Angular Fragment	36.3	67.25	n/a	41.41	n/a	20.7	n/a	n/a	n/a	n/a	n/a	43.12	n	Cobble	100	1234	0	0	0	n	n/a	n/a	None	Marine	12	None
1-PA23-37	76	12-16	1	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Contact Flake	0.7	32.84	n/a	11.83	n/a	7.15	n/a	n/a	n/a	n/a	n/a	17.27	n	Manufactured	50	134	1	0	1	SA	SA	SA	None	None	0	None
1-PA23-38	34	8-2	2	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Contact Flake	10.9	44.38	n/a	30.94	n/a	5.35	n/a	n/a	n/a	n/a	n/a	26.89	n	Manufactured	100	1234	0	0	0	SA	SA	SA	None	None	0	None
1-PA23-39	66	6-14	1	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Contact Flake	0.5	25.46	n/a	5.53	n/a	4.28	n/a	n/a	n/a	n/a	n/a	11.76	n	Manufactured	80	134	1	0	1	SA	SA	SA	None	None	0	None
1-PA23-40	76	12-16	1	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Contact Flake	2.3	23.89	n/a	13.75	n/a	10.31	n/a	n/a	n/a	n/a	n/a	15.98	n	Manufactured	40	14	0	2	23	SA	SA	SA	None	None	0	None
1-PA23-41	76	12-12/13.5	1	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Contact Flake	16.2	56.52	n/a	25.87	n/a	14.46	n/a	n/a	n/a	n/a	n/a	32.28	n	Manufactured	75	123	2	0	3	SA	SA	SA	None	None	0	None
1-PA23-42	76	12-12/13.5	1	Greenish Black	Glass	5GY 2/1	Greenish Black	5GY 2/1	Contact Flake	5.3	27.58	n/a	21.69	n/a	8.59	n/a	n/a	n/a	n/a	n/a	19.29	n	Manufactured	100	1234	0	0	0	SA	SA	SA	None	None	0	None

Appendix C - Usewear Analysis Report

Use-wear Analysis of Aboriginal Glass Artefacts from Macquarie Point, Tasmania



Report prepared by Dr Simon Munt for *AH Investigations*,

Tasmania

November 2022

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Contents

1.0 Introduction 2

1.1 A note on diagnosing glass artefacts and the related value of microscopic use-wear analysis 2

1.2 A note on the term 'artefact' 4

1.3 Interpretational confidence levels 5

2.0 Methods 5

2.1 Specimen handling and cleaning 5

2.2 Microscopes and imagery 5

2.3 Use-wear analysis 6

2.4 Analysis for hafting wear 7

3.0 Results and interpretations 8

3.1 Part 1: Artefacts with use-wear 8

3.2 Part 1 Summary: Artefacts with use-wear 18

3.3 Part 2: Specimens with no use-wear 19

4.0 Conclusions 22

5.0 References 24

Front cover: polish, edge rounding and striations on artefact 'AH1-011, C = 076, E12, N16, no spit, N.D.; PA-22'; x100 magnification.

1.0 Introduction

This report presents the results and interpretations of a microscopic use-wear analysis of 35 glass and one ceramic specimen from Macquarie Point, Tasmania, for *AH Investigations*, Tasmania. My remit was to determine:

(i) Whether each artefact was used by humans; and
(ii) If so how, in terms of tool motions(s) and broad class of worked material(s)

'Tool motion' refers to the movement with which an artefact was used, such as scraping, sawing or cutting, while the 'worked material' is the material that the artefact was used to process, such as wood, bone, meat etc.

1.1 A note on diagnosing glass artefacts and the related value of microscopic use-wear analysis

Diagnosing pieces of stone as artefacts can typically be achieved through macroscopic observations based on widely accepted technical criteria (e.g. Clarkson 2007; Clarkson and O'Connor 2006; Cotterell and Kamminga 1987; Hiscock 2007), but this is not always the case with fragments of glass. The major difficulty is that the accidental breakage of glass can result in a number of the same or similar macroscopically observable features as those produced by intentional human modification (Allen and Jones 1980:231; Beaumont 1961; Carver 2005:82–86; Conte and Romero 2008:251–252; Cooper and Bowdler 1998:74; Harrison 2005:19; Martindale and Jurakic 2015:35–38; Ulm et al. 2009; Wolski and Loy 1999:65). Diagnostic issues have beset many previous studies of glass and despite many efforts (e.g. Allen and Jones 1980:231; Goward 2011; Harrison 2000:45; Paterson 1999:18; Runnels 1976:29; Veth and O'Connor 2005:8; Williamson 2004:86) there is still no consensus as to precise diagnostic criteria based on macroscopic observations.

Despite these limitations applying to many glass fragments, occasional glass pieces can be irrefutably diagnosed as artefacts based on their macroscopically visible characteristics. For example, (i) the continuously serrated margins on the well-known Kimberley point can only occur as a result of intentional human retouch (Akerman

1978, 2006, 2007; Akerman et al. 2002; Harrison 2002, 2003, 2006); and (ii) some bottle bases and/or other parts of glass bottles display many continuous, relatively large negative scars and negative bulbs of percussion or other distinct patterns that can only have been created by intentional human activity (Figure 1).



Figure 1 A heavily worked core derived from the base of a black glass bottle in Western Australia. Adapted from Gibbs and Harrison (2008:65).

For all other pieces, microscopic use-wear analysis can not only often overcome the diagnostic impasse for glass but can inform about how an artefact was used (as it can for artefacts of other raw materials). However, this can only occur when comprehensive use-wear analysis is conducted, where ***all*** forms of wear that may result from human use are investigated (this has not always been done by previous studies): (i) polish and abrasive smoothing, (ii) striations, (iii) edge scarring and (iv) edge rounding. Only three comprehensive use-wear analyses of glass pieces have been published in Australia to date (Munt and Owen 2021; Ulm et al. 2009; Wolski and Loy 1999 [which also incorporated residue analysis]). However, although rare, the data from these archaeological studies and other experimental use-wear analyses (Munt 2022) are valuable for informing the analysis for the Macquarie Point assemblage.

Evidence for use of an artefact and the nature of such use is most robust when ***multiple*** forms of use-wear are present in physical association, and, of course, when the characteristics of the wear can be attributed to human use rather than non-use-related post-depositional processes. Many previous studies undertaken on taphonomic influences on wear indicate that while variation exists in characteristics, non-use-related wear is typically identifiable based on its random, isolated and

disorganised distribution on a specimen (Asryan et al. 2014:20, 23; Lemorini et al. 2014:14; Nielsen 1991:500; Rots and Williamson 2004:1288; Shea and Klenck 1993:178; Tringham et al. 1974:113).

Microscopic use-wear analysis can never definitively determine that a piece was ***unused***, because any use may have been for such a short time (e.g. 1–2 minutes) that no use-wear occurred. In such cases the more accurate conclusion is that there is no positive evidence for artefact use (and therefore, for glass pieces, that no microscopically visible diagnostic evidence exists for artefact status). However, these cases would be relatively rare for glass (and similar natural glasses such as obsidian) given that use-wear can accrue after as little as five minutes of artefact use (Walton 2019:914–921, 924, 927–928, 930, 933–934, 937).

1.2 A note on the term 'artefact'

In light of the difficulties of macroscopically diagnosing pieces of glass as artefacts, and the fact that 35 of the 36 pieces in this assemblage are glass, it is necessary to explicitly describe the use of the term 'artefact' in this report. There are no specimens in this assemblage that display unambiguous evidence of intentional knapping or conform to a formal tool type (although macroscopic observation is sufficient to suggest that some specimens were probably used as cores [e.g. the two bottle bases: 'AH1-011, C = 076; E10, N12, no spit, 02.08.21; PA-31' and 'MP11, C = 066; E2, N16; A4, 08.07.21']). Therefore, the only pieces that can be irrefutably diagnosed as artefacts are those which display use-wear. As such, I use the term 'artefact'—and occasionally 'tool'—only for these specimens and refer to all others, interchangeably, as 'shards,' 'specimens,' 'fragments' or 'pieces'. However, I acknowledge that some may consider some or all of the pieces in the assemblage as artefacts based on cultural reasons, unrelated to manufacture or use. For example, there may be tangible or intangible cultural values ascribed, of which I, at the time of writing this report, am unaware.

1.3 Interpretational confidence levels

An artefact (of stone, glass, ceramic etc) can be confidently interpreted as used based on use-wear evidence alone (i.e. without residue analysis, despite the fact that residue analysis can, under appropriate preservation and other circumstances, sometimes provide further, additional information). Inferences for the nature of the utilitarian task(s) undertaken with a tool can then be made with increasing confidence when ***multiple*** forms and particular combinations of use-wear are present. On some occasions, evidence may be compelling for the fact that an artefact was used, but not for the specific tool motion or worked material. At other times there is sufficient evidence for the worked material but not the tool motion or vice-versa. In this report, a specimen was only interpreted as used (and thus considered an artefact, as per the note above) when evidence was compelling.

2.0 Methods

2.1 Specimen handling and cleaning

Nitrile, powder-free gloves were worn at all times during specimen handling, so as to prevent the transfer of lipids and oils that can appear similar to and/or obscure use-wear and residues. Fragments on which sediment and any other residues initially prevented or obscured a clear view of the surface microtopography were cleaned with warm, soapy water then air-dried.

2.2 Microscopes and imagery

Every specimen was analysed for use-wear under low and high power, predominantly with an *Olympus BH-2* metallographic microscope, using brightfield, vertical incident lighting, and objective lenses of x10, x20 and x50. The x20 lens followed by the x10 lens were most commonly used and all edges of each fragment were examined for use-wear at a range of angles. The microscope eye pieces are x10 magnification so each objective can be multiplied by ten to determine the nominal total magnification, e.g., x20 objective lens = total magnification of x200.

Most micrographs were taken using a *DinoEye* microscope camera attached to the metallographic microscope. Additional micrographs were captured and analysis undertaken with a Dino-Lite digital microscope (*DinoCapture 2.0 Version 1.3.7.A*), with magnifications ranging from x50 to x245. For all photos (as distinct from micrographs) of artefacts in this report, the brackets indicate the working edges and scale bars are in centimetres. *Helicon Focus 7.6.4* software was used for Z-stacking multiple images (sometimes up to 200) taken from many levels of artefact surface microtopographies.

2.3 Use-wear analysis

All specimens were examined for each form of use-wear: polish, abrasive smoothing, striations, edge rounding and edge scarring. It is beyond the scope of this report to describe the full details of the methods with which each aspect of use-wear was analysed (for comprehensive descriptions see Munt 2022:162–167), but the following aspects were investigated:

1. *Polish*: brightness; texture; distribution (in relation to the working edge); microtopography—the depth of the artefact surface at which it was present; i.e., on high points ('peaks'), low points ('valleys') or both; extension (the extent to which it was present on both faces of an artefact).

2. *Striations*: type (sleek or furrow); orientation (in relation to the working edge); width; extension.

3. *Edge scarring*: mean length and width; orientation; clustering: the extent to which scars are physically clustered; initiation type; termination type.

4. *Edge rounding*: the extent to which the working edge(s) became rounded as a result of use: low, medium, or high.

2.4 Analysis for hafting wear

Every specimen was also examined for potential hafting wear. There may currently be little if any evidence for this practice in Tasmania but this is not to say that it did not occur because there is always the possibility that people did indeed haft some tools and evidence of this is yet to emerge. Aboriginal Australians in various parts of the continent sometimes hafted tools onto wooden handles, particularly smaller tools such as geometric microliths (a form of backed artefact), and examining whether this occurred around the Macquarie Point site has the potential to provide more dynamic information about past activities undertaken. In particular, hafting can indicate behavioural patterns such as pre-planning concerning raw material acquisition and knapping procedures, as well as, potentially, efforts to extend the use-life and/or effectiveness of a tool (e.g., Clemente-Conte et al. 2017:209; Rots 2003:805–808).

Microscopic evidence for hafting can be complex, particularly due to the potential influence of post-depositional factors (e.g., Pyżewicz 2017:122; Rots 2003). The presence of resin or other adhesives, particularly on the edge of an artefact that is opposite the working edge, is one of the most compelling forms of evidence, and this was investigated on each occasion in this analysis. Despite the complex nature of hafting evidence, previous studies have indicated further key criteria, which I also used:

1. Bright spots in association with scarring—especially when the scarring is present in an organised, rather than random distribution (Chen et al. 2017:185; Robertson et al. 2019:76; Rots 2003:809–810, 813).

2. Hafting wear is concentrated most intensely at the limits of the haft, on the edge opposite the working edge (Rots 2003:810; Rots and Plisson 2013:159).

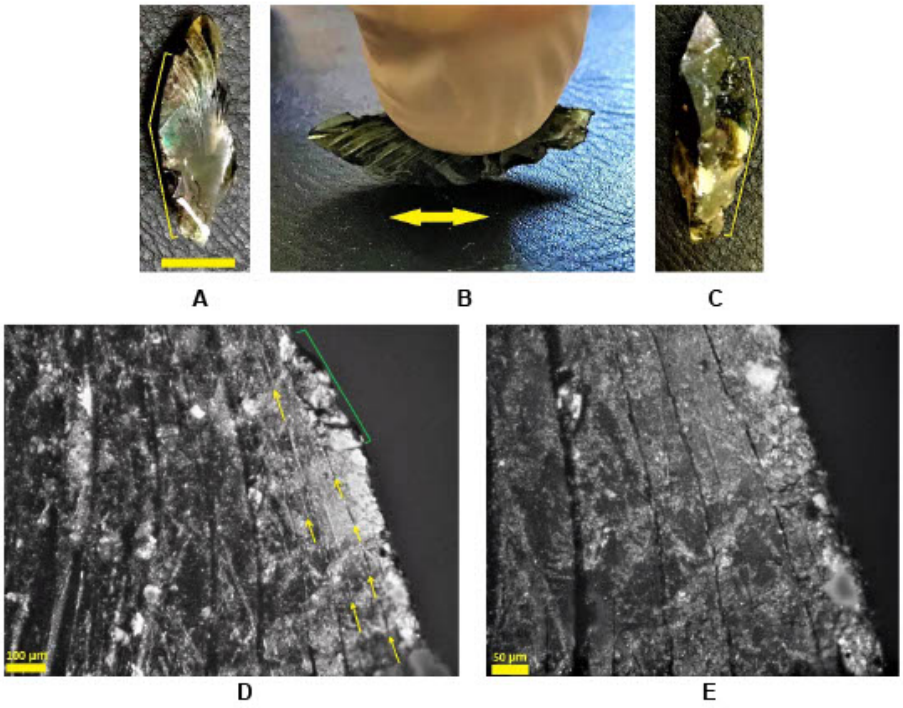
3. Any hafting polish lacks directionality (Rots 2003:810).

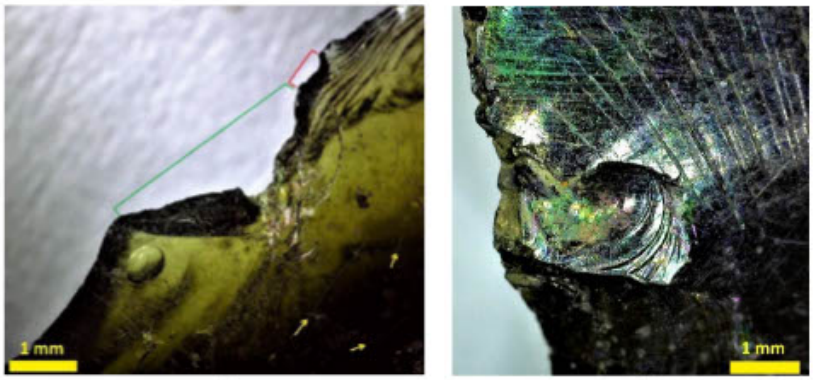
3.0 Results and interpretations

3.1 Part 1: Artefacts with use-wear

Artefact: 'AH1-011, C = 076; E12, N16, no spit, N.D.; PA-23'

Use-wear in the form of polish, striations and edge scarring attests to the past use of this tool (Figure 2). The solitary working edge also became rounded to a very low extent. The polish is distributed in streaks in approximately equal abundance on both faces of the working edge and is relatively smooth and well-developed in the zones in which it is present. Striations are located in physical association with the polish, and are wide (≥ 2 µm) sleeks orientated parallel to the working edge. Edge scars display mixed terminations and sizes but are often relatively large (0.5–1 mm in length). These characteristics in combination indicate that **this tool was used for sawing wood**.





F G

Figure 2 Artefact: 'AH1-011, C = 076; E12, N16, no spit, N.D.; PA-23'. **A:** one face (not 'ventral' or 'dorsal' because this is not a knapped shard). **B:** demonstration of the sawing tool motion (enlarged). **C:** opposite face. **D:** polish along the edge, parallel striations (arrows) and edge scarring (green brackets); x100 magnification. The other, wider lines are not use-related—rather, they are a product of the shattering that occurred as this shard became detached. **E:** the same polish, striations and edge scarring; x200 magnification. **F:** a large, wide edge scar showing some crushing (green brackets), a small, bending-initiated and axial-terminated edge scar (red brackets), and three approximately parallel striations (arrows); x55 magnification. **G:** **non**-use-related edge scarring (it is a fresh fracture scar) and an example of the common, **non**-use-related lines that occur particularly on glass; x55 magnification.

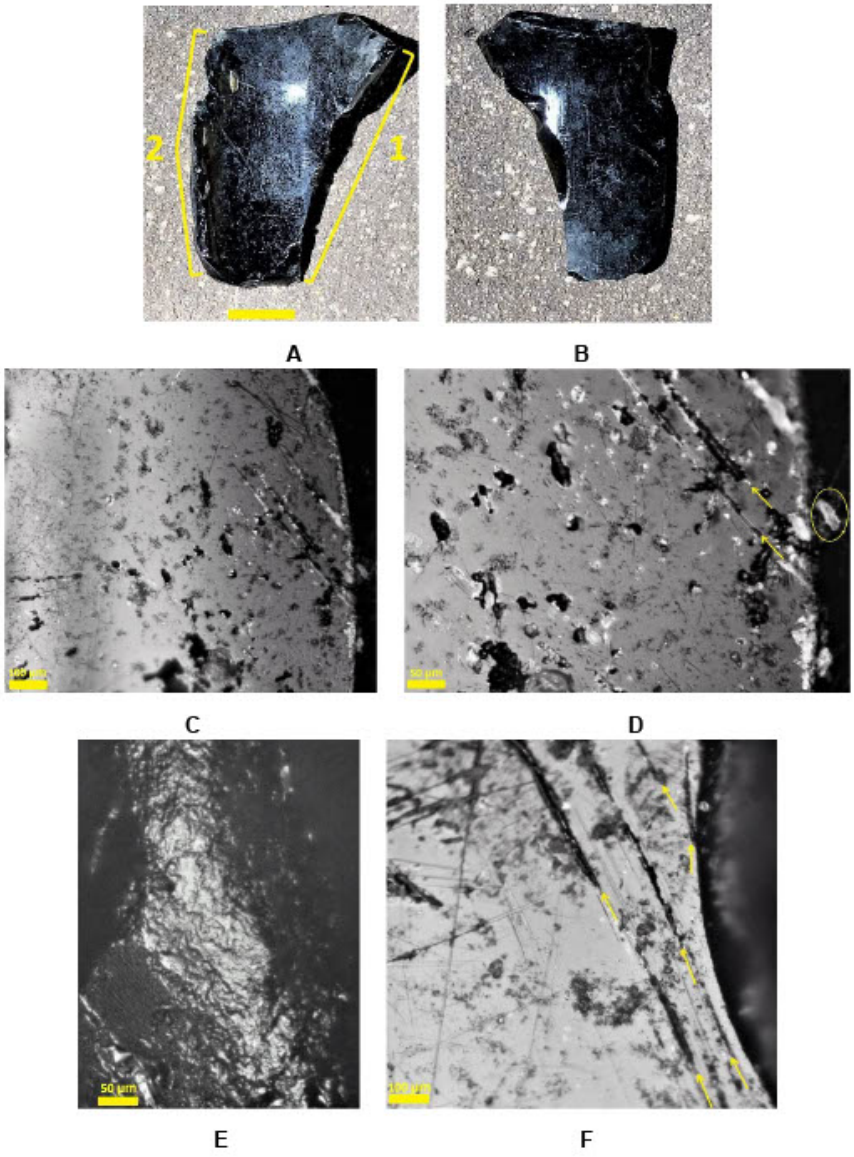
Artefact: 'AH1-011, C = 034; E8, N4, spit 2, 26.07.21, PA-17'

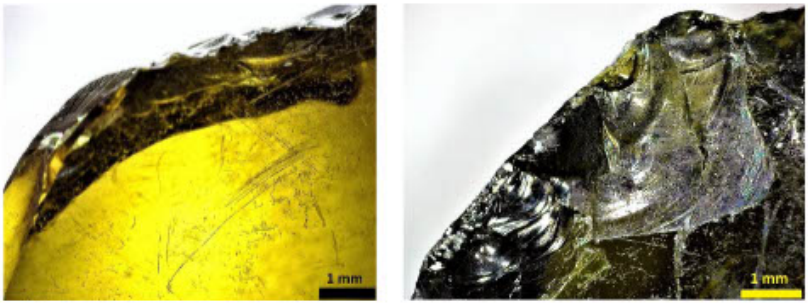
There are two working edges on this artefact and each was used for a subtly different task (Figure 3).

On working edge 1 there is polish and striations. No use-related edge scars were detected and the working edge did not become discernibly rounded. The polish is bright, smooth and distributed in streaks. Striations are wide sleeks, orientated in perpendicular clusters, other parallel clusters and further oblique clusters. Many are located within the polished zones.

On working edge 2 there is polish, striations and use-related edge scars (visible macroscopically as well as microscopically). The working edge did not become discernibly rounded. The polish is again bright and smooth and on this edge is distributed as spots. Striation characteristics are the same as those on working edge 1. Edge scars are large, clustered, have mixed terminations and are mostly perpendicular to the working edge.

The use-wear evidence is compelling for **this tool being used to cut and scrape non-woody plant material**. Working edge 1 was used to cut and scrape softer parts of plant(s), while working edge 2 was used to cut and scrape harder parts of plant(s). Given the slight difference in the nature of the materials worked with each edge, it could be argued that this was a multifunctional tool.





G H

Figure 3 Artefact: 'AH1-011, C = 034; E8, N4, spit 2, 26.07.21, PA-17'. **A:** one face ('2' = working edge 2; '1' = working edge 1). **B:** opposite face. **C:** oblique striations within a polished zone on working edge 1; x100 magnification. **D:** the same striations (two of which are indicated by arrows; a phytolith, circled, is also visible); x200 magnification. **E:** bright polish on working edge 2; x200 magnification **F:** parallel striations on working edge 2; x100 magnification. **G:** parallel and perpendicular striations on working edge 2; x55 magnification. **H:** edge scars of mixed sizes and terminations, on working edge 2; x55 magnification.

Artefact: 'AH1-011, C = 066, E6, N14, spit 1, N.D.; PA-19'

Polish, striations and edge scarring attest to the use of both faces of one edge of this artefact (Figure 4). The working edge did not become discernibly rounded. The polish is quite bright, smooth, well-developed and distributed as a band along most of the edge. Striations are plentiful and are wide sleeks, parallel and oblique in their orientations to the working edge. They are frequently in the polished zones and also physically associated with the many use-related edge scars. Edge scars are mostly parallel to the working edge and large (typically 0.5–1 mm in width), but there are also many smaller ones (< 0.5 mm). Their terminations are mixed but the majority are steps. Some are bending-initiated and axial-terminated, which is common after sawing with tools that have acute edge angles such as this.

The use-wear is present in approximately equal abundance on both faces of the working edge, although very slightly more on one than the other. The evidence is compelling that **this tool was used to saw wood**.

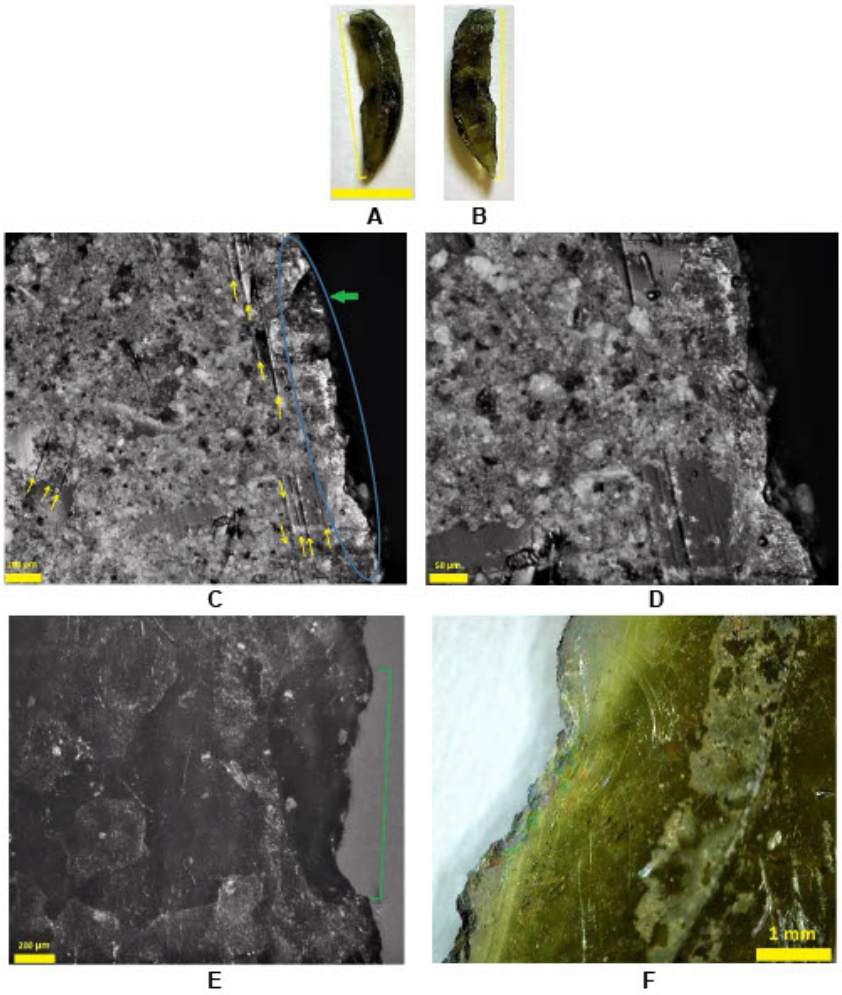


Figure 4 Artefact: 'AH1-011, C = 066, E6, N14, spit 1, N.D.; PA-19'. **A:** one face. **B:** opposite face. **C:** polish on edge (blue oval), parallel striations (yellow arrows) and an edge scar (green arrow); x100 magnification. **D:** the polish and striations seen in 'D'; x200 magnification. **E:** a parallel edge scar; x50 magnification. **F:** edge scarring and striations; x55 magnification.

Artefact: 'AH1-011, C = 076, E12, N16, no spit, N.D.; PA-22'

Use-wear, in the form of polish, striations and edge rounding, is present on predominantly one face of the single working edge of this artefact (Figure 5). The polish is not particularly bright and is smooth, distributed as streaks and in physical association with marked edge rounding. Striations are wide and oblique and

perpendicular to the working edge, while no use-related edge scars were detected. The polish and edge rounding are consistent with previous experimental and archaeological analyses (e.g. Conte and Romero 2008:257; Munt 2022) for this tool being **used to scrape dry animal hide**.

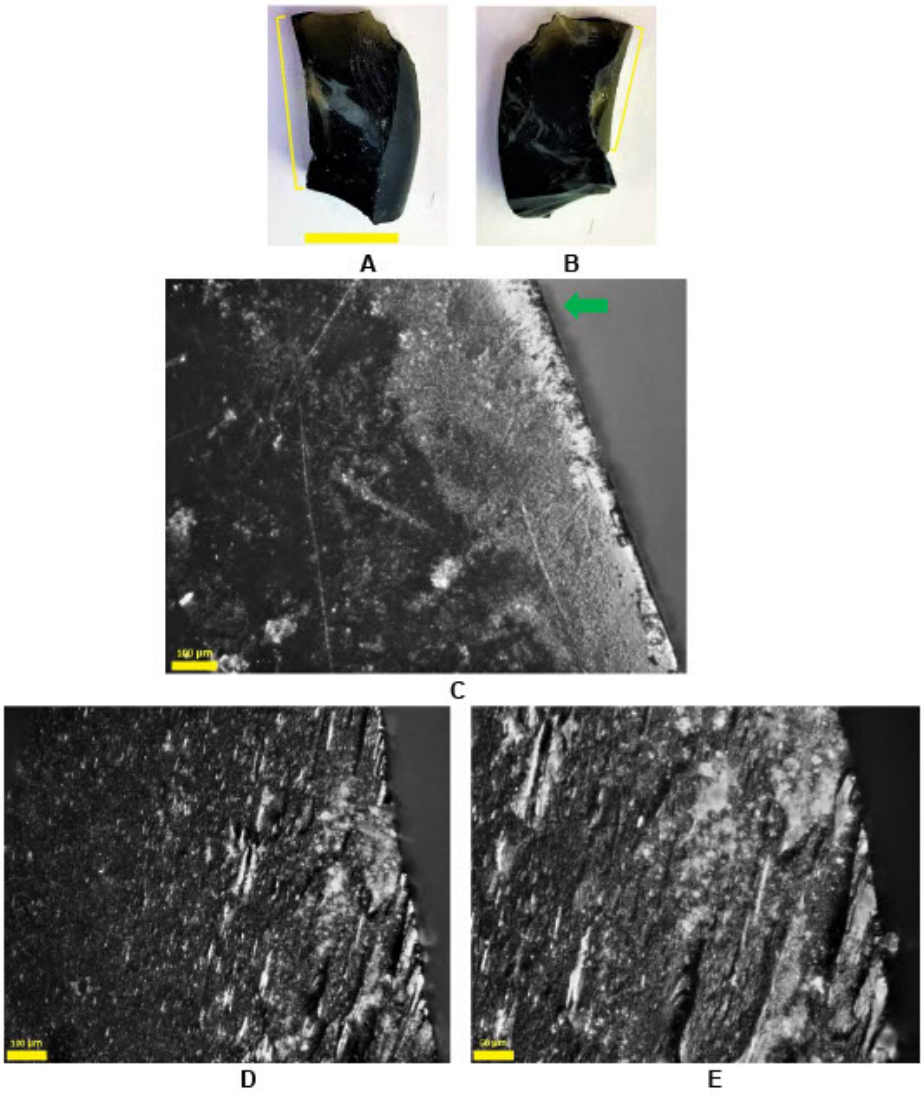


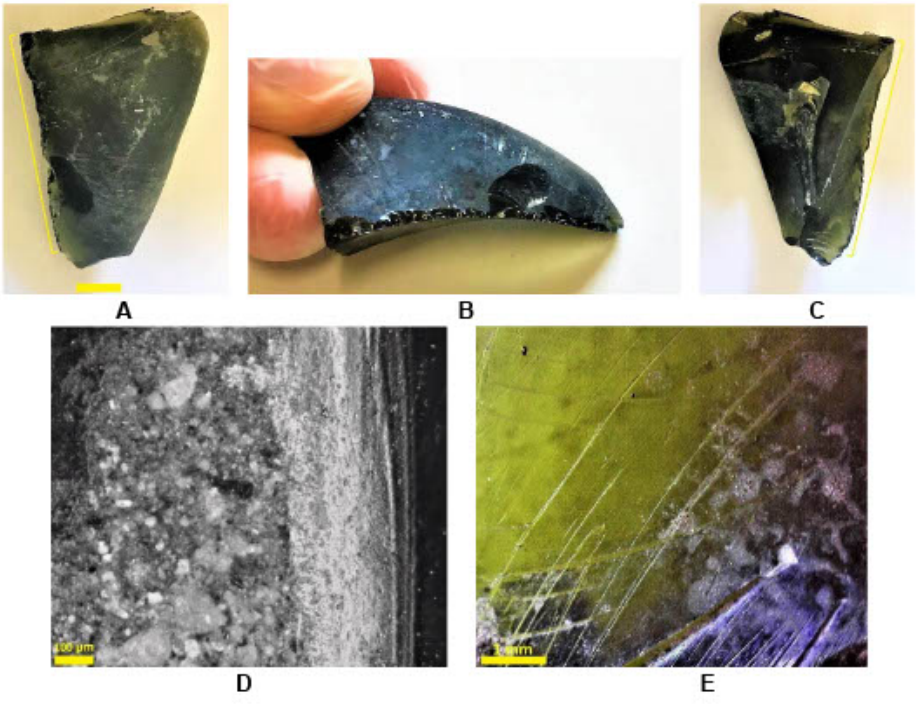
Figure 5 Artefact: 'AH1-011, C = 076, E12, N16, no spit, N.D.; PA-22'. **A:** one face. **B:** opposite face. **C:** polish and marked edge rounding—and numerous small, perpendicular striations can be seen within the polish (green arrow); x100 magnification. **D:** polish and oblique striations (spots of residues are also visible); x100 magnification. **E:** the same polish and striations; x200 magnification.

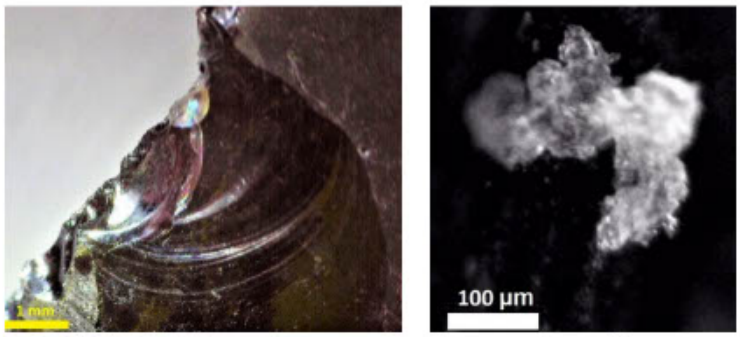
Artefact: 'MP11, C = 076, E8, N14, no spit, 02.07.21; A26'

This is a multifunctional tool, yet with one working edge (Figure 6). All forms of use-wear are present on both faces of the edge and although my remit is to conduct use-wear analysis, I also detected what I interpret as probably use-related residue.

The polish is relatively rough, occasionally somewhat pitted, striated and distributed in a wide band along most of the edge. Striations are frequent and in physical association with the polish and edge scarring. They are wide, orientated in all directions (parallel, perpendicular and oblique) and mostly sleeks but occasionally rough-bottomed. The working edge became rounded to a considerable extent, although this is obscured in parts by the edge scarring. The edge scars are large (over 1 mm in length), continuous, heavily clustered and stacked and mostly step-terminated. Residues are sheet collagen (i.e. from an animal) and reasonably abundant.

In combination, the evidence indicates that **this tool was used for scraping wood and dry animal hide.**





F G

Figure 6 Artefact: 'MP11, C = 076, E8, N14, no spit, 02.07.21; A26'. **A:** one face. **B:** outer face of working edge, with continuous edge scars macroscopically visible. **C:** other face. **D:** a wide band of polish (to the left is natural sediment, subsequently cleaned); x100 magnification. **E:** a series of parallel striations; x50 magnification. **F:** stacked, step-terminated edge scars; x50 magnification. **G:** residue: sheet collagen; x50 magnification.

Artefact: 'AH1-011, C = 076, E12, N12–13.5, 19.07.21; PA-08'

Use-wear, in the form of polish, striations and edge scarring, is present exclusively on one face of the solitary working edge of this tool—which, perhaps somewhat surprisingly, is not that with the small notch, but the opposite edge (Figure 7). The polish is quite bright, relatively smooth, occasionally pitted and distributed in spots and streaks, being not well-developed and as such undiagnostic. Small, short, wide sleek striations are occasionally present within the polish and many are also located near polished zones, mostly perpendicular but occasionally parallel or oblique to the working edge. Edge scars are relatively infrequent, with mixed sizes and terminations. The working edge did not become discernibly rounded. Although the evidence for the tool motion is clear—primarily transverse (scraping, adzing or planing) and some parallel (cutting and/or sawing)—the evidence for the worked material(s) is not. The polish, albeit in its early stages of development, resembles early development seen on some experimental artefacts (not in this assemblage), which were used to scrape bone (and whose subsequent polish development was distinctive). However, bone-working cannot be confidently inferred for this tool. Not only does the polish not indicate a particular worked material, but the striations on this tool are wider than those typically present after bone-processing, and the edge scars are rarely step-terminated, so it remains possible that a softer material was processed. In sum, **this tool was used for scraping, adzing or planing but evidence for the worked material(s) is inconclusive**.

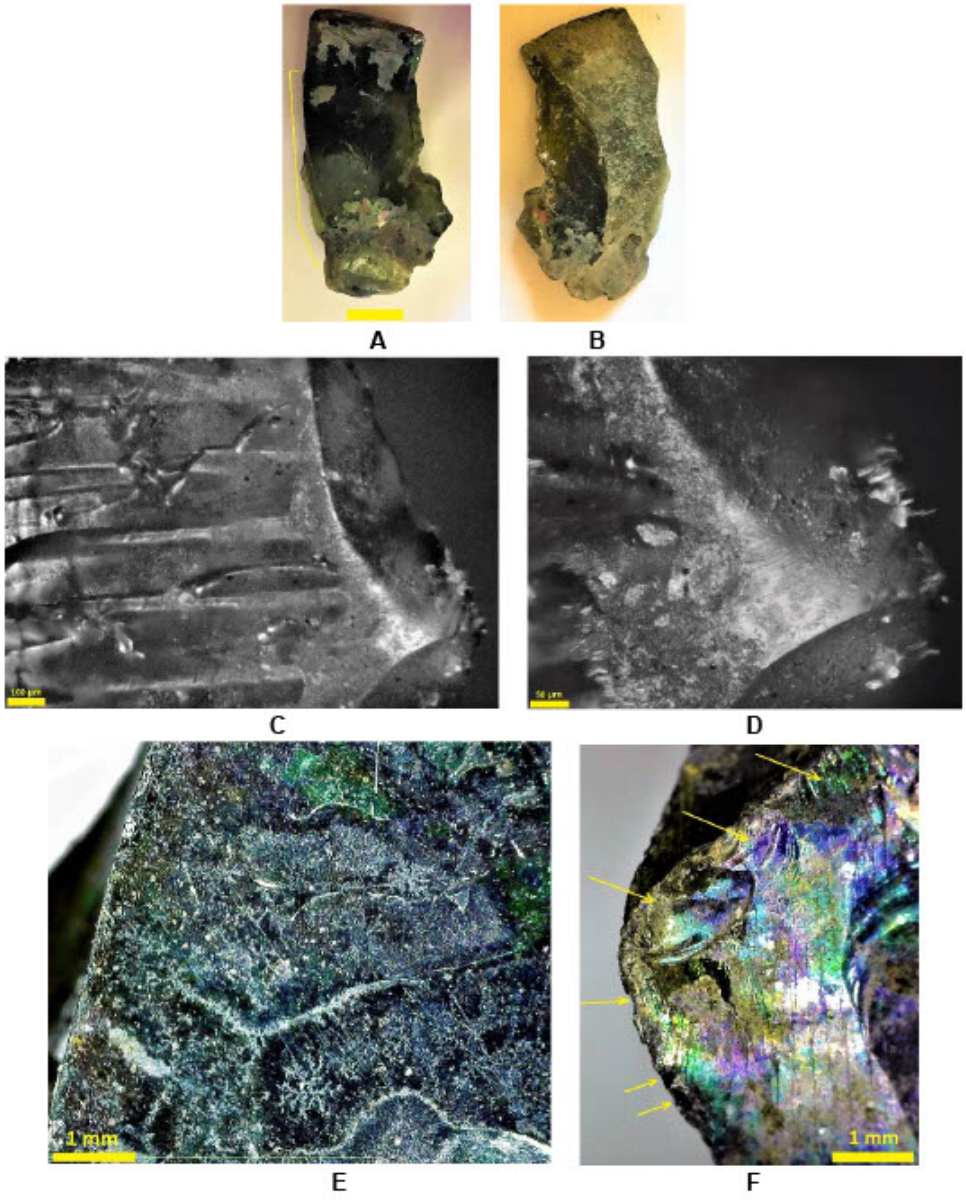
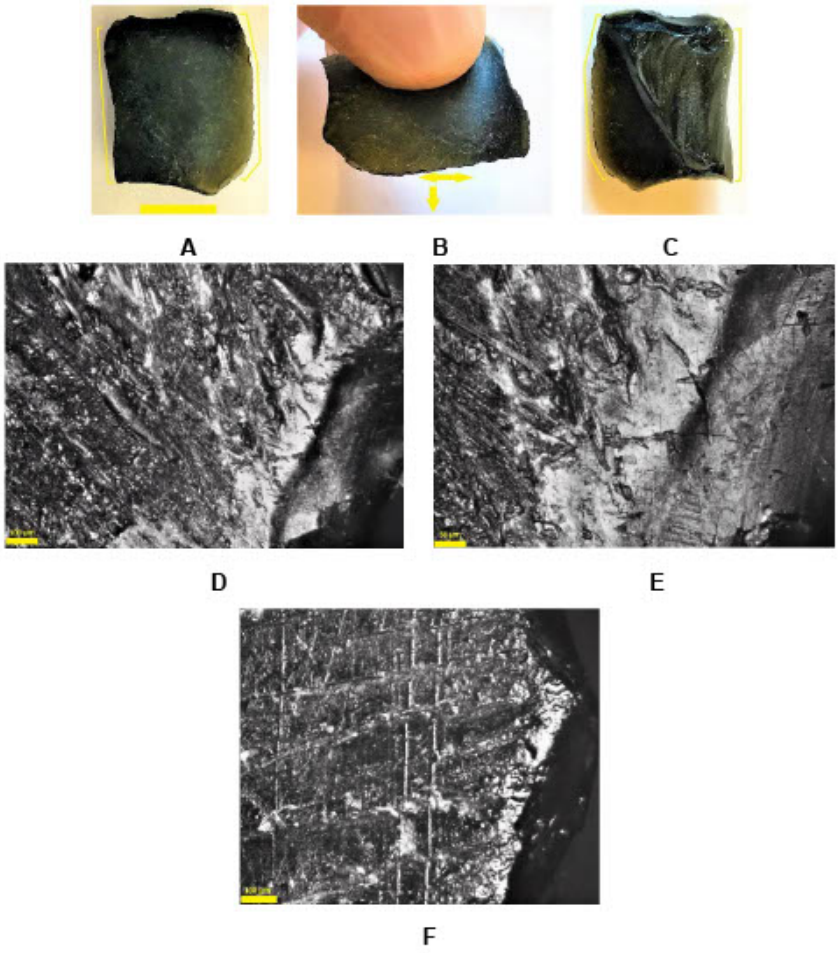
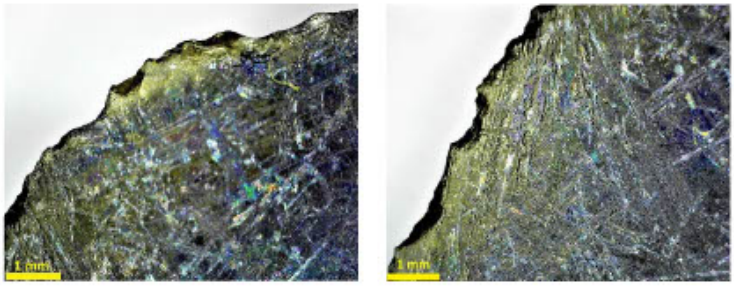


Figure 7 Artefact: 'AH1-011, C = 076, E12, N12–13.5, 19.07.21; PA-08'. **A:** one face. **B:** other face. **C:** a streak of quite bright polish; x100 magnification (the lines are not striations but rather are non-use-related stress lines). **D:** the same polish; x200 magnification. **E:** numerous oblique striations; x55 magnification. **F:** edge scars of various sizes (arrows); x55 magnification.

Artefact: 'AH1-011, C = 076, E12, N12–13.5, 19.07.21; PA-01'

Each face of the two working edges of this tool displays use-wear of the same nature, consisting of polish, striations and edge scarring (Figure 8). The polish is particularly bright, relatively smooth, somewhat dome-shaped, and distributed in streaks. It is well-developed in some parts and weakly to moderately developed in others. Striations are plentiful, wide and orientated in all directions (parallel, perpendicular and oblique). Edge scars are small (typically < 0.5 mm in length and width), mostly perpendicular, and adjacent to each other, with mixed terminations but particularly feathers. This use-wear indicates that **the tool was used to cut and scrape soft, non-woody plant material.** Plant fibres are also abundant on the working edge, which, along with their physical association with the use-wear, indicates that they are probably use-related.





G H

Figure 8 Artefact: 'AH1-011, C = 076, E12, N12–13.5, 19.07.21; PA-01'. **A:** outer face. **B:** an example of how the tool would have been held (arrows indicate directions of tool motions). **C:** inner face. **D:** bright polish; x100 magnification. **E:** the same polish; x200 magnification. **F:** another example of bright polish; x100 magnification. **G–H:** various kinds and sizes of edge scars, and striations with a range of orientations; x55 magnification.

3.2 Part 1 Summary: Artefacts with use-wear

Of the 36 artefacts analysed, seven display evidence of use-wear. The inferred tasks undertaken are summarised in Table 1.

Table 1 Summary of artefacts with use-wear.

Artefact ID, according to label on artefact bag	Form(s) of use-wear present	Inferred task(s)
'AH1-011; C = 076; E12, N16; No spit, N.D. PA-23'	polish, striations, edge scarring, edge rounding	sawing wood
'AH1-011; C = 034; E8, N4; spit 2, 26.07.21, PA-17'	polish, striations, edge scarring	cutting and scraping soft and hard parts of non-woody plant material
AH1-011; C = 066, E6, N14, spit 1, N.D.; PA-19'	polish, striations, edge scarring	sawing wood
'AH1-011; C = 076, E12, N16, no spit, N.D.; PA-22'	polish, striations, edge rounding	scraping dry animal hide
'MP11; C = 076, E8, N14, no spit, 02.07.21; A26'	polish, striations, edge scarring, edge rounding	scraping wood and dry animal hide
'AH1-011, C = 076, E12, N12–13.5, 19.07.21; PA-08'	polish, striations, edge scarring	scraping, planing or adzing, but evidence is inconclusive for the worked material(s)
'AH1-011, C = 076, E12, N12–13.5, 19.07.21; PA-01'	polish, striations, edge scarring	cutting and scraping soft, non-woody plant material

3.3 Part 2: Specimens with no use-wear

A total of 29 specimens do not display use-wear (Table 2).

Table 2 Summary of specimens with no use-wear.

Specimen ID, according to label on artefact bag	Comments
'AH1-011, C = 076; E10, N12, no spit, N.D.; PA-25'	No features of note (occasional isolated fibrous residues).
'AH1-011, C = 076; E10, N12, no spit, 02.08.21; PA-28'	No features of note (many fibrous and other residues but these are not use-related).
'MP11, C = 034; E2, N4; A12, spit 2, 19.07.21'	No features of note (many isolated edge scars—and some clustered—along with abundant fresh fracture scars); one negative scar on the external surface could be the result of the use of this piece as a core, with this scar potentially indicating the removal of a micro-blade (this aspect is not strictly within my remit given that this is a use-wear analysis).
'AH1-011; C = 034; E4, N9(7), spit 1, 22.07.21; PA-18'	There are vast quantities of plant fibres, as well as occasional phytoliths, on all edges and many parts of the surface of this specimen. However, there is no use-wear, and as such, this residue cannot be reliably interpreted to be use-related (as per e.g. Fullagar and Matheson 2014:7062; Hayes et al. 2017:257–259; Huntley et al. 2021:55, 57, 70; Langejans 2010:983; Lombard 2005:280).
'AH1-011, C = 046; E10, N10; no spit, 24.07.21; PA-16'	No features of note.
'AH1-011, C = 076; E10, N12; no spit, 02.08.21; PA-29'	There is insufficient evidence to confidently infer that this fragment was used, but enough to suggest that it possibly was: (i) occasional isolated spots of polish, yet this polish is weakly developed and therefore non-diagnostic (polish forms differently on glass than it does on stone; Fullagar 1991); (ii) many striations are present but not in physical association with the polish and only sometimes clustered together; and (iii) some clustered edge scars (although Hertzian initiations were not detected). Were this specimen indeed used, there is insufficient evidence for inferring the nature of such use.
'AH1-011, C = 076; E10, N12, no spit, 02.08.21; PA-30'	No features of note.

'MP11, C = 066; E2, N16; A5, 08.07.21'	The macroscopic appearance of this ceramic shard certainly suggested potential for use-wear, given the rounded edge and several negative scars, but ultimately there was no use-wear present.
'AH1-011, C = 076; E10, N12, no spit, 02.08.21; PA-27'	There are many macroscopically visible, small edge scars, along with larger ones, but no use-wear. The larger negative scars may indicate that this fragment was used as a core.
'AH1-011, C = 076; E10, N12, no spit, 02.08.21; PA-26'	No features of note (many fibrous and other residues but these are not use-related).
'AH1-011, C = 066; E6, N14, spit 1, N.D.; PA-20'	No features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-03'	No features of note.
'MP11, C = 066; E2, N16; A8, 12.07.21'	No features of note, although macroscopically visible large scarring and the nature of some crushing suggests that this specimen may have been used as a core (note, however, that this is only a possibility and is separate from my use-wear remit).
'AH1-011, C = 076; E12, N16, no spit, N.D.; PA-21'	There are many edge scars, some clustered and others isolated, but there is no evidence that these are use-related. Many are fresh fractures and no scars are associated with any forms of use-wear. There is a possibility that some of the larger scars were part of a manufacturing process (were this shard indeed intentionally manufactured), but, as in earlier sections herein, these could also have been caused by taphonomic processes—there is insufficient evidence for intentional knapping.
'AH1-011, C = 076; E12, N16, no spit, N.D.; PA-24'	No features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-14'	No features of note (there is slight damage on one tip but this is not use-wear, let alone reflective of the use of this piece as a projectile or armature).
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-10'	No features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-02'	No features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-05'	No features of note.

'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-11'	There are abundant plant fibres on all edges and many parts of the surface of this part bottle-top (even after cleaning), but in the absence of use-wear these cannot be confidently interpreted as use-related.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-13'	There is one small, isolated band of polish on one edge of the inner surface but given its isolation and lack of development, and the absence of use-related striations, edge scarring or edge rounding on the shard, this polish is almost certainly the product of taphonomic influences, e.g. movement within the sediment while buried or during or after excavation.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-04'	There are many edge scars but most are isolated, as well as occasional shiny spots, but these are neither polish nor spots that can sometimes contribute to evidence of hafting—rather, they are natural parts of the glass surface.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-15'	No features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-07'	There are many edge scars, most of which are isolated but some of which are clustered, but these are not use-related and there are no other features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-12'	No features of note.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-09'	No use-wear was detected. However, there are several large, macroscopically visible negative scars at one end of the outer surface, and these suggest the possibility that this specimen was used as a core. Accompanying these larger scars are a series of smaller, yet still macroscopically visible scars.
'AH1-011, C = 076; E12, N12-13.5, 19.07.21; PA-06'	No features of note.
'AH1-011, C = 076; E10, N12, no spit, 02.08.21; PA-31'	No use-wear but there are a number of negative scars, which suggests that this bottle base (with parts of the bottle wall still attached) was used as a core.
'MP11, C = 066; E2, N16; A4, 08.07.21'	No use-wear but there are many continuous, large negative scars (and much crushing), which suggests that this bottle base (with parts of the bottle wall still attached) was almost definitely used as a core.

4.0 Conclusions

Use-wear evidence attests to a range of utilitarian tasks being conducted with the Macquarie Point glass artefacts. On the basis of probabilities, particularly contextually (both the physical setting and patterns of known historical behaviours across the country by Aboriginal and European peoples), it is presumed that it was Aboriginal people who used the artefacts. Tasks included (i) sawing wood (n = 2 tools), (ii) cutting and scraping soft and hard parts of non-woody plant material (n = 1 tool), (iii) cutting and scraping soft parts of non-woody plant material (n = 1 tool), (iv) scraping dry animal hide (n = 2 tools), (v) scraping wood (n = 1 tool), and (vi) scraping, planing or adzing a material for which evidence is inconclusive (n = 1 tool). One of the tools was multifunctional—used for scraping both wood and dry animal hide—and another could be argued to be multifunctional because evidence suggests that it was used to process both soft and hard parts of plant material.

Retouch or notching was evidently not a manufacturing prerequisite for glass artefact use. Only one of the seven used artefacts displayed any form of retouch (artefact 'AH1-011, C = 076, E12, N16, no spit, N.D., PA-23'), and this was only two or three retouch scars and 'teeth,' suggesting that the retouch was aborted because it quickly became apparent that it was unnecessary—even for sawing wood, the task undertaken with this tool. Retouch is probably often unnecessary on glass tools because the edges of most shards are already sufficiently sharp and readily usable for many tasks. The presence of notches on occasional shards was also found to be unrelated to use or hafting: indeed there was no evidence of hafting among the assemblage. Some artefacts were probably used as cores: particularly the two large bottle bases, given the prevalence of negative scars and negative bulbs of percussion (although it should be noted that this inference concerns artefact manufacture rather than use-wear and therefore is in addition to my remit of analysing use-wear).

It is understood that the artefact uses detected through this analysis may, for some, constitute new understandings about aspects of past Aboriginal Tasmanian technological behaviour. For example, scraping animal hide/skin with glass tools is,

according to my knowledge, a behaviour not previously documented in the State. The new evidence demonstrates the value of scientific microscopic use-wear analysis, particularly in light of the above discussion about the difficulties of diagnosing glass pieces as artefacts based on macroscopic observations, let alone understanding how they were used. Perhaps most notably, this new microscopic evidence for the manner in which Aboriginal Tasmanians used tools made from glass introduced by Europeans demonstrates an ongoing ability and willingness to adapt to changing technological and other circumstances. Not only does this flexibility mirror that repeatedly demonstrated by Aboriginal peoples across the country since their first arrival in the continent tens of millennia ago (e.g. Florin et al. 2021:300; Ford and Hiscock 2021:9, 16–20; Hamm et al. 2016:281; Maloney et al. 2018:205, 216, 224–226; McNiven 1994:77–80), but it adds to the evidence against Rhys Jones' (1977) now infamous hypothesis that Tasmanian Aboriginal people underwent a 'slow strangulation of mind' after their isolation from the mainland.

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Roundhouse Remediation Works
Macquarie Point

Version Two

Aboriginal Heritage Investigations
AHI-011
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Alan Hay

1.0 Introduction

This document summarises the results of the archaeological excavations undertaken from 1 February to 5 March 2021 and from 6 July to 6 August 2021 as part of the roundhouse remediation works and also presents updated sensitivity mapping based on the preliminary results of this excavation. These excavations have been completed by Austral Tasmania Pty Ltd (Austral Tasmania) on behalf of the Macquarie Point Development Corporation (MPDC). As Austral Tasmania is no longer conducting business, this acquittal report and subsequent reporting is being completed by Aboriginal Heritage Investigations (AHI) who were associated with Austral in the excavation works. The location of these excavations are shown in Figure 1.

This acquittal report has six sections, introduction, background, results, sensitivity mapping, conclusion and references. The background will describe the reasons for the archaeological excavation within the planning framework. The results section will provide the method, timing and summary results of the work. The sensitivity mapping will update existing archaeological geospatial records of the site and provide a current analysis of archaeological sensitivity in the land around the excavation area. The conclusion of this document will assess the extent of compliance of these works against the legislative and regulatory framework as well as describing the programme of analytical work to be completed. This will be followed by a reference list of the works referred to in the text. At the end of this report, to support the sensitivity mapping, will be an appendix containing earlier sensitivity maps for the site.

This report is for the MPDC to demonstrate the acquittal of the archaeological works described. The sensitivity mapping, a synthesis of earlier sensitivity maps and assessments, contained in this report may be used as a tool to guide ongoing development but is itself not a formal archaeological assessment.

The sensitivity mapping in this report also considers the archaeological potential of 2 Davey Street, the Royal Engineers Building, in light of the findings of the recently completed archaeological excavations. Although not land owned by the MPDC its proximity to potential development in the future means that MPDC is seeking an understanding of the archaeological potential of this land as well. In the figures included in this report, this area will be included within the overall Macquarie Point Project area but denoted as a separate parcel of land.

2.0 Background

This archaeological excavation is specifically associated with the site of the remediation of the former rail yard roundhouse and proposed future underground car park, which includes the removal of contaminants from an initial area of approximately 2700m^2. This contamination includes petroleum hydrocarbons, polyaromatic hydrocarbons and metals. Remediation will be carried out by mechanical excavation of affected soils, for either disposal off site or *in situ* treatment. Excavation of contaminated soils will vary across the site but is expected to be conducted to a maximum depth of 2-4 m below the current ground level.

There has been a range of heritage assessments and two phases of archaeological test excavations, in 2008 and 2014, at Macquarie Point, with additional archaeological monitoring works in 2015 and 2020. Together these works created a detailed picture of archaeological sensitivity across the site and directly contributed to the planning constraints governing the management of archaeological heritage at Macquarie Point.

The two most significant historical archaeological features at Macquarie Point are the remnants of Lord's house and the Hobart Rivulet Domain Diversion Tunnel. Both are subject to the archaeological provisions of the Planning Scheme and these features will be conserved as part of the works. Sites of archaeological potential within the roundhouse remediation area relate to the southwestern corner of the Lumber/Engineers Yard, an historic road alignment and the 1914 railway turntable well. The

remainder of the study area has not been assessed as having archaeological potential or significance warranting further heritage management. Part of the project area is included as the 'Royal Engineers Headquarters and Kings Yard' (Schedule 1: Table 2: Ref. No. 12) in the *Sullivans Cove Planning Scheme 1997*.

The historical archaeological sensitivity of the current excavation was fully articulated in Austral Tasmania's (2020) 'Macquarie Point Roundhouse Area Remediation Works. Archaeological Sensitivity Report,' which also provided the programme for the initial phase of excavation.

This initial phase of archaeological excavation was carried out in accordance with 'Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination' granted under the *Sullivans Cove Planning Scheme 1997* and the *Land Use Planning and Approvals Act 1993* to carry out the remediation works (PLN-20-295). Specifically condition HER 6 of permit PLN-20-295 requires archaeological investigation of 'any features or deposits of an archaeological nature' that are discovered during excavation or disturbance. The works are subject to the archaeological provisions of Schedule 1 of the Planning Scheme and the first phase of historical archaeological excavations commenced on 1 February 2021. The area has been subject to high levels of past disturbances, and archaeological excavations commenced at three discrete locations at Macquarie Point:

- The south west corner of the 1826-27 Lumber Yard
- A section of a nineteenth century road formation
- The 1914 railway turntable well.

While all of these areas contained the anticipated, significant historical archaeological material, two Aboriginal lithic artefacts (AH13901) were also encountered on the 19 February 2021 within the trench investigating the Lumber Yard. Consequently, works halted around the deposit containing these artefacts while a permit under the terms of the *Aboriginal Heritage Act 1975* was applied for. This application included consideration of an expanded area of excavation that would allow for a full investigation of the significant historical archaeological features and deposits that had been identified in this area.

Subsequently, the City of Hobart approved the expansion of the excavation as being works substantially in compliance with PLN-20-295 and a permit (P155) was granted under the terms of the *Aboriginal Heritage Act 1975*. Excavations recommenced on the 6 July 2021 with the trench at the Lumber Yard site extended further to the northwest (Phase II). During Phase II a substantial amount of Aboriginal and early colonial historical artefacts were recovered, albeit the Aboriginal material was drawn from disturbed contexts. These artefactual materials provide a significant amount of scientific information about the occupation of the site prior to and after colonisation. Some of the Aboriginal artefacts recovered from the excavation were knapped glass and ceramic contact materials.

The *Historic Cultural Heritage Act 1995* protects places of 'State historic cultural heritage significance,' primarily when they are listed on the Tasmanian Heritage Register. Places so listed receive statutory protection under the *Historic Cultural Heritage Act 1995.* Works at places on the Tasmanian Heritage Register require approval by a Certificate of Exemption for works which will have no or negligible impact, or through the granting of a discretionary permit for those works which may have an impact upon the significance of the place.

No statutory requirements exist under the *Historic Cultural Heritage Act 1995* for any part of the land owned by the MPDC as it is not listed on the Tasmanian Heritage Register. However, while no land owned by the MPDC is listed on the Tasmanian Heritage Register, the adjacent property at 2 Davey Street is included on the register as 'Royal Engineers Building and Stone Post' (Place ID: 2,280). Any ground disturbing works at 2 Davey Street would be required obtain either a Certificate of Exemption or a discretionary permit under the terms of the act. This would in turn likely require a detailed

investigation of the archaeological sensitivity and heritage significance of that property. The sensitivity mapping included in this report does not constitute a formal assessment of that property other than that it indicates the risk of encountering archaeological features and deposits within the property based on the findings of the research undertaken for the broader Macquarie Point area.



Figure 1. Overview of the trenches excavated as part of the archaeological works associated with the Roundhouse Remediation Works at Macquarie Point and the adjacent property of 2 Davey Street also considered in the sensitivity mapping of this report (Basemap: Supplied by Client).

3.0 Results

As stated in Section 2.0 above, there were three locations where open area archaeological excavation took place and, at each of these, the features and deposits were consistent with that identified in the archaeological sensitivity report. Additionally, at the site of the former lumber yard earlier deposits that contained both pre and post contact Aboriginal as well as European cultural material were found to be present in a substantial quantity.

3.1 Methods

While the archaeological works did not deviate from the archaeological method statement and the methodology included in the permit application submitted under the terms of the *Aboriginal Heritage Act 1975* it is possible to give a description of core methodological approaches that will inform the following summary of results.

The overburden was removed through mechanical excavation in all three excavation areas under the direction of an archaeologist. All archaeological features were excavated by hand and all archaeological contexts were recorded through photography, drawing and written description. Where deposits that had the potential to retain early nineteenth or Aboriginal artefacts were detected they were excavated within a 2 x 2m grid pattern established across the site. Where these deposits were over 50mm in depth they were excavated in 50mm spits.

Every deposit that had a potential to hold Aboriginal cultural material was excavated to a culturally sterile layer, these deposits only existed within the Lumber Yard Trench. No Aboriginal archaeological material was left within the area of excavation insofar as these deposits were identifiable during excavation or sieving. All deposits that had the potential to contain Aboriginal cultural material were stockpiled according to spit (50mm) and excavation square (2 x 2m). Each of these stockpiles were wet-sieved through a 3mm or 5mm sieve. Where sieving demonstrated continued potential to retain Aboriginal artefacts or realised this potential by disclosing artefacts, the entirety of each of these deposits were sieved.

This approach means that all Aboriginal cultural material and all significant historical archaeological cultural material, as could be reasonably identified, was recovered from the excavation area and processed on site. These materials have been retained for further analysis, which is ongoing as described in Section 5.0.

3.2 Lumber Yard

Although the majority of structural features associated with this area of the site were present and in good condition, including the wall footings, courtyard surface and work station footings, there was a dearth of archaeological deposits containing artefacts from the occupation of this site from the 1820s through to the early twentieth century. Except within the deposits predating the construction of the lumber yard few artefacts were present within this excavation area. What artefactual evidence was from the occupation of this site from the 1820s onwards was primarily associated with the occupation of this site by the volunteer defence forces in the late nineteenth century. These early deposits contained not only Aboriginal cultural material but a range of early artefacts representative of the domestic European occupation of this site prior to 1826 and included Chinese export porcelain, shot, gunflint and buttons.

The structural evidence revealed in this trench was substantial and represented the use of the site from the construction phase through to the operation of the rail yard in the twentieth century (Figure 2). The cut into the natural clays, where cultural deposits had been removed to create a level building surface, that formed the first step of lumber yard construction was present across the entire excavation trench. Set on to this levelled natural surface was the dolerite footings of the wing of the lumber yard, which formed the dominant feature in this trench. To the south of these footings the crushed dolerite courtyard surface was extant and in good condition with a dolerite cobble drain feeding a subsurface brick box drain (Figure 3). These drain features had undergone some modification, likely during the

late nineteenth century, and appear to match the apparently *ad hoc* construction of two small buildings on the southwestern extent of the lumber yard footing.

The brick footings of these two small additional buildings best represent the changing use of the site. Not only are these footings examples of clear additions to the original lumber yard structure but have themselves undergone several subphases of development with services and drains being added to what would have been fixtures in the interior. As elsewhere in this trench scant artefactual evidence associated with the operation of these structures remained to be excavated.

The majority of nineteenth century features and deposits within this trench were located at a depth of 1,000 - 1,500mm below the current car park surface and were thus in a shallow 500mm band across the site. The upper portions of the lumber yard features and, on the balance of probability, the majority of any occupation deposit that would have been present had been removed during the clearance of the site in the early twentieth century for the construction of the roundhouse and ancillary structures.

The features and deposits associated with the roundhouse were limited to three key types; the concrete and brick wall footing below the eastern baulk of the trench, a 100-250mm thick deposit of ash, boiler scale and gravel representing redeposition of railway material during deposition and some deeper services that had been sunk into the earlier deposits below. It is likely that the rail yard features had been largely demolished and removed in the late twentieth century.

There is strong evidence that the construction of the roundhouse has removed earlier features and deposits within its footprint, confirming the findings of earlier test excavations completed at the site. This is especially the case as the band of earlier cultural material is relatively shallow, 500mm, and would have been readily destroyed by the construction of the roundhouse footings present at the western edge of the Lumber Yard Trench.

3.3 Nineteenth Century Road Formation

The nineteenth century road formation was found to be present, similar to that recorded in earlier test excavation and severely truncated by services and features associated with the railway phase of occupation. No unexpected features or deposits were encountered within this area of excavation. Twentieth century fill deposits were present above the road surface and planed dolerite bedrock present below.

3.4 Turntable Well

The turntable well was present at its predicted location and the wall and floor of this feature were mostly intact although the majority of the metal equipment associated with this feature had been removed (Figure 4). This feature has been filled with concrete rubble from the demolition of the roundhouse structure and contained a small amount of ferrous railway furniture associated with the operation of the railway, such as structural fittings, tracks or components of rolling stock.

3.5 Aboriginal Cultural Material

The contact deposits present within the Lumber Yard Trench had a complex taphonomic history, that includes a substantial contribution of material by Aboriginal people both before and after colonisation. These deposits began as shell material and lithic artefacts discarded by Aboriginal people at this location during the early Holocene, forming a midden of a type common to the Derwent Estuary. With the occupation of the site by a colonist in 1806, these earlier deposits were heavily disturbed and reworked through gardening and agricultural activity, with very early colonial artefacts also being added at this time. It is probable that it was also during this period that the knapped glass and earthenware artefacts were also left here by Aboriginal people, who continued to be present on site even after the beginning of colonisation. These deposits were once again heavily disturbed through the construction of the convict buildings in the 1820s.

From observation during sieving and initial processing of the Aboriginal cultural material, mussel (*Mytilus planulatus*) is the dominant shell species forming the midden material followed by oyster (*Ostrea angasi*) although a range of other common Derwent Estuary species were also present. With over 40 identified lithic artefacts within these deposits, silcrete and chert were the most common material and flakes the most common morphological type. A number of lithic artefacts presented evidence of marine adhesions on knapped surfaces, indicating that they had been submerged or within the intertidal zone subsequent to their manufacture. This may indicate that these artefacts had been redeposited from a nearby beach or rocky shore. A number of knapped glass and ceramic artefacts were also present. Of particular significance, a very dark olive green bottle base was recovered that had been elaborately worked along the majority of its circumference to form several distinct working surfaces (Figure 5).

3.6 Summary and Preliminary Interpretation

Excavation produced results that were consistent with the predicted archaeological remains for this area in all three trenches. The nineteenth century road surface was similar to the section of road earlier investigated during the historical testing of the site and confirms its continued presence throughout that area. The excavation of the turntable well has allowed the recording of the remains of that structure and the detailed documentation of the details of its construction.

In the case of the Lumber Yard Trench, not only were the anticipated structural remains present but a significant assemblage of Aboriginal cultural material as well. The intensive Aboriginal occupation of the site is likely from at least in the early Holocene and extends into the early colonial phase. As no historical record exists of an Aboriginal presence at Macquarie Point during the early colonial period, and very rarely for Hobart in general, the complex knapped glass and earthenware artefacts recovered are highly significant within the context of both the historical and Aboriginal heritage management frameworks.



Figure 2. Looking to the west over the Lumber Yard Trench at the completion of excavation and showing the footings of the lumber yard building in the centre of the photograph.



Figure 3. View to the northeast over the courtyard surface in the Lumber Yard Trench, also showing the spoon drain in the centre of the photograph and the wall footing in the left of the photograph. The scales have 100mm marks.



Figure 4. Looking to the north over the turntable well in the centre of the photograph, the concrete tube visible in the photographs is the remains of a service access point that was inserted through the turntable well after it was buried.



Figure 5. Detail view of the knapped glass bottle bass showing some of the knapping around its circumference and a possible working edge.

4.0 Sensitivity Mapping

The purpose of the sensitivity mapping in this acquittal report is not to recapitulate the earlier detailed sensitivity mapping produced in Austral Tasmania reports. Moreover, the findings of the excavations associated with the remediation works have tended to confirm the accuracy of the existing mapping for historical archaeological material so the sensitivity mapping presented here will constitute an update and addendum to the existing archaeological spatial understanding of the site rather than a reassessment or management programme.

While a high resolution awareness of historical archaeological sensitivity exists in these earlier reports there is a pressing need to consolidate an understanding of Aboriginal archaeological sensitivity present within the project area. It is outside the scope of this acquittal report to reconsider aspects of site wide sensitivity that are unconnected to the results of the completed excavations but the discovery of Aboriginal cultural material during excavation presents an opportunity to examine the Aboriginal archaeological potential across the site.

4.1 Previous Sensitivity Mapping

A significant body of archaeological spatial information already exists for the Macquarie Point Site. Earlier sensitivity maps from these works are collated in the Appendix to this acquittal report.

Part of the project area is included as the 'Royal Engineers Headquarters and Kings Yard' (*SCPS 1997*, Schedule 1: Table 2: Ref. No. 12) in the *Sullivans Cove Planning Scheme 1997*. Although intended as a mechanism for the management of heritage significance, the area associated with this inclusion is a broad indication of the location of Lord's House and the King's Yard but does not present a nuanced understanding of the disposition of archaeological features (Figure 6).

The 2013 'Macquarie Point Development Project Historical Summary' by Austral Tasmania first draws together historical sources for the project area and traces the development of the site while identifying the key areas of historical archaeological sensitivity and, more broadly, heritage significance. Specific buildings and areas of potential are identified, while spatial definition is afforded to the progressive stages of land reclamation that came to form the majority of the site (Figure A1 and Figure A2).

In 2008 and 2014 (Austral Tasmania 2020:18-19) historical test excavation took place around the area of the Lumber Yard trench as well as targeting the location of ancillary buildings of Edward Lord's residence providing substantial data about the subsurface potential of the western portion of the project area (Figure A3). While little evidence indicated the presence of features or deposits associated with Lord's residence, the structures associated with Lumber Yard were determined to be intact and indicative of further potential in this area. The location of some rail yard features were also confirmed during the 2014 works and the severe disturbance that they have caused was also observed at this time.

Desktop mapping of Aboriginal heritage potential, based essentially on the interpretation of the location of the former shore line, had been undertaken in 2000 by Stanton and in 2013 by Aboriginal Heritage Tasmania (Figure 7). It was in 2015 that Aboriginal heritage test excavations were carried out at 33 test pit locations. No Aboriginal heritage items were located as part of the 2015 works (Figure A4). The works confirmed high levels of past disturbances and suggested low potential for the property to contain Aboriginal heritage items. The results of these works are documented in the report: Austral Tasmania, Macquarie Point Aboriginal Test Excavations, Final report prepared for the Macquarie Point Development Corporation, AT0174, 18 August 2015.

With further minor archaeological investigations occurring at Macquarie Point in 2015 and 2020, (Austral Tasmania 2020:18-19) a detailed assessment of archaeological sensitivity concentrating specifically on the area around the remediation works was produced in 2020. The 'Macquarie Point Roundhouse Area Remediation Works Archaeological Sensitivity Report, produced by Austral

Tasmania (2020), was the document that gave shape to the phases of excavation that this acquittal report documents. This sensitivity report brought together earlier investigations of the site to provide a detailed sensitivity map of the historical archaeological potential of the area around the remediation works. It's applicability to Aboriginal heritage was limited as a result of the negative results of the earlier Aboriginal heritage test excavation.

The location of previous archaeological testing and monitoring within the Macquarie Point Project Area is shown in Figure 8. As can be seen from this image, the landscape of Macquarie Point is one of the most extensively archaeologically tested in Tasmania and testing has broadly concentrated on the areas of significance identified in early phases of sensitivity mapping. Nearly the entirety of the pre-colonisation ground surface, excluding the heavily disturbed area of the former Gas Works, has been subject to some form of archaeological testing with a lesser amount of testing confirming the character of the land reclamation. Austral Tasmania (2020:18-19) provides a summary of the results of the historical excavations, discussing the outcome of each trench, and the 2015 Aboriginal Heritage Assessment Report also by Austral Tasmania similarly describes the outcome of each Aboriginal archaeological test pit.

Key understandings from these earlier investigations include:

- The historical documents have accurately represented the location of what was the original pre-colonisation ground surface and what was the littoral zone subject to land reclamation.
- That universally high levels of disturbance along the base of the escarpment, with either fill on to planed bedrock or fill below the water level in areas outside of the original ground surface. This has severely affected Aboriginal archaeological potential to the north of the former roundhouse structure.
- Structural remnants of twentieth century industrial features are largely intact and have often also caused severe impact to earlier archaeological strata.
- The degree of disturbance tends to be less further inland, i.e. towards the western corner of the site, in comparison to the former littoral zone.
- Historical archaeological structures present in the western area of the site, in an area corresponding with part of the original ground surface, have survived *in situ* but are subject to widely varying level of disturbance resulting from localised impacts, such as services.
- Specific archaeological complexes, such as Lord's House or the Lumber Yard, have survived as at least substantial structural remnants although these are not always accompanied by a comparative amount of artefactual material.

This tendencies observed across the site are part of the contributing factors that has led to the open area excavation of high potential areas in the west of the study area during as part of the recent excavations considered in this acquittal report. However, with the deeper understanding obtained, even at this preliminary stage, by open area excavation it is possible to further refine the archaeological sensitivity of the Macquarie Point Project Area.



Figure 6. Area originally designated as 'Royal Engineers Headquarters and Kings Yard' Sullivans Cove Planning Scheme 1997, Schedule 1: Table 2: Ref. No. 12. (Basemap: Supplied by Client).



Figure 7. Overview of the previously identified areas of sensitivity for Aboriginal heritage within the study area, note that the Stanton 2000 estimation of potential was limited to 10 Evans Street and therefore did not consider potential at the former gasworks site (Basemap: Supplied by Client).



Figure 8. Map showing the location of former archaeological testing in comparison to the recent areas of open excavation at Macquarie Point. Austral Tasmania (2015 and 2020) have provided detailed summaries of earlier trench results in the associated reports (Basemap: Supplied by Client).

4.2 Consideration of Sensitivity Arising from the Completed Archaeological Works

Seven key considerations arise out of the completed archaeological works that change our understanding of archaeological sensitivity across the site:

- Existing sensitivity mapping of historical archaeological features and structural remains is highly accurate.
- There is a greater variation in the degree of disturbance arising from twentieth century construction than had at first been anticipated.
- Pre-contact Aboriginal cultural material is likely to be present in the area of the original ground surface, albeit within a disturbed context, unless it has been completely removed by later development.
- Early deposits dating to the first decade of colonisation contain Aboriginal contact artefacts and early European cultural material are present around the site of pre-1820s structures.
- Where early nineteenth century features and deposits have remained intact there is also a high probability that Aboriginal cultural material is also present.
- Early archaeological strata appear to occur in a narrow 500mm band through the excavated area at a depth of 1000mm below the current ground surface and it is likely a similar depth is probable for other such strata within sensitive areas.
- The shoreline may not be an effective guide to the presence of Aboriginal cultural material in both the sense that the original ground surface is not a definite indicator to the presence of cultural material and in that potential for marine deposits of Aboriginal cultural material also exist within the project area.

These considerations, discussed in the context of excavation in Section 3.0 of this acquittal report, will help inform the updated assessment of sensitivity below.

4.3 Updated Assessment of Sensitivity

The predicted locations and level of integrity for the historical archaeological features across the site is highly accurate. For example, the eastern baulk of the Lumber Yard trench was intended to terminate in line with the known disturbance from the roundhouse wall footing. The location of this wall footing had been predicted by the existing sensitivity mapping to within 300mm and only a small section of this wall footing obtruded into the excavation area. As such the existing mapping of historical archaeological features remains relevant and will form the basis of the sensitivity mapping presented in this acquittal report. As noted in Section 4.2, the Appendix to this acquittal report contains relevant existing sensitivity maps for ease of reference.

The historical analysis and disturbance histories presented in the works considered in Section 4.2 above also remain broadly accurate but can now be supplemented by detailed recordings of archaeological remains in the field. This means that a more nuanced assessment of sensitivity can be made for some areas around the site and a range of potential archaeological subsurface strata may be identified.

Additionally, it is considered that the excavations as completed thus far have substantively realised the scientific potential of features and deposits of the archaeological material associated with the rail yard occupation of the site and the late nineteenth century road identified in the archaeological sensitivity report (Austral Tasmania 2020). This means that the current formulation of sensitivity mapping will consider the features and deposits related to these phases as possessing low archaeological sensitivity. Furthermore, as this sensitivity mapping is dependent both on the potential for Aboriginal cultural material to be present as well as significant historical archaeological deposits that may not be

represented in historical mapping, as was uncovered during excavation, it will broadly characterise areas that retain the potential for identifying significant historical archaeological features and deposits rather than specific features or structures. It is especially important to consider both Aboriginal and very early colonial deposits in the same way given that Aboriginal people may have been present on site during the early colonial phase of the site.

On this site the potential for Aboriginal material to be present is primarily governed by two factors; the presence of ground surface prior to land reclamation and the extent of disturbance that has taken place since colonisation.

The predicted location of early shorelines have informed the modelling of Aboriginal heritage on the site, first by Stanton in 2000 and then by Aboriginal Heritage Tasmania in 2013 (Figure 7). The area given by Stanton is far more accurate as an indication of potential, being that it indicates the area where Aboriginal heritage was excavated, whereas the area indicated by AHT shows areas that have been subject to the complete removal of original soil profiles to bedrock, which is a very unlikely location for cultural material to be present as was demonstrated through the later test excavations. The area indicated by Stanton is a reasonable baseline for where Aboriginal cultural material may have been present within the project area.

To a certain extent, the location of the original shoreline is of limited value in the consideration of Aboriginal archaeological sensitivity as there is every appearance that the material form of the shoreline has been obliterated by successive phases of development within the project area. Archaeological evidence recovered from the excavation also shows that lithic artefacts have accumulated marine adhesion strongly suggesting that they had been present below the water level or within the intertidal zone. This indicates that Aboriginal cultural material may have been present in the areas identified as low lying beach or rocky shore in the documentary record (Figure 9 and Figure 10). Therefore there is some indication that Aboriginal cultural materials may have been present beyond what has been identified as the original shore line. Nevertheless, the potential for Aboriginal cultural material would have been concentrated on the existing ground surface and, to a lesser extent, in the intertidal zone along the shore or at greater depth further from the shore.

Given the archaeological background of Hobart and the Derwent Estuary, it is likely that much of the original ground profile within the project area existed as a single complex site prior to colonisation. These deposits have been truncated, disturbed and redeposited during the development activity taking place on the site since colonisation, although some areas of *in situ* Aboriginal cultural material may survive beneath the early colonial deposits where they have been sealed in by fill. It is deep disturbances, such as earthworks or the construction of deep footings that would have removed Aboriginal cultural material entirely. The results of the excavation have confirmed this and allow for the identification of areas that may contain further Aboriginal cultural material.

The Aboriginal heritage test excavation of 2015 served to identify areas of low Aboriginal potential, caused through extreme disturbance, along the base of the escarpment. While it had been anticipated that fill had been deposited in these areas to build up the land there was no evidence to suggest that these fills had simply covered the earlier ground surface without disturbance. The deposition of the fills in this area has clearly caused disturbance to the original soil profile and in this case has limited the potential for Aboriginal cultural material to be present. The testing has therefore identified areas of low potential along the base of the escarpment. The extent of this disturbance was shown by the test excavation to be more extensive than the historical record had documented. Even in areas some distance south of the escarpment there was evidence of cutting and filling on to bedrock and from this test excavation it is likely that earlier deposits, both Aboriginal and historical, to the north of the round house has been severely limited.

This high level of recorded disturbance is likely the result of the historically known quarrying that has occurred along the escarpment and the levelling process involved in land reclamation. The quarrying would not only have removed large parts of the escarpment, producing the distinctive cut face of the escarpment but it also likely affected the bae of the hill. A consideration of the quarrying activity based on 3d modelling was considered by Austral Tasmania (2015:24) in the Aboriginal heritage test excavation of the site. There is strong evidence for cutting and benching activity across the slope of the escarpment as was borne out in the results of the Aboriginal heritage test excavations in this area, which commonly found recent rubble fills deposited on bedrock across an even more widespread area than had been predicted by the 3D modelling of the quarrying. Where this has not taken place, the levelling of landward topography prior to land reclamation has also contributed to a very high level of disturbance in this area. Therefore, the area to the north of the former roundhouse structure and the nineteenth century road cutting are likely highly disturbed and of low archaeological sensitivity.

As with the consideration of Aboriginal archaeological sensitivity, the potential for the presence of colonial deposits or features that may be associated with the pre-Lumber Yard occupation of the headland is strongly connected to the original ground surface and is equally strongly limited by later disturbance. The same taphonomic factors that condition the potential of Aboriginal cultural material to be present within the project area also affect these early deposits with the exception that these early European materials would tend to be closely associated with the original extent of the point with less probability for them to occur in the low lying land along the shore. These deposits would also be concentrated around the locations of any structures or features that may have been present. The pattern of contact material is likely to be similar to this as well and each of these cultural material types can be considered to be co-extensive for the purposes of assessing sensitivity, with the caveat that buried marine deposit of Aboriginal cultural material may exist below reclamation and outside areas of identified sensitivity.

For deposits containing either or both the early colonial and Aboriginal cultural material what determines their distribution across the project area concrete shape is the pattern of deep disturbance that has affected the original ground surface and the littoral zone. While structures constructed through the early to mid-nineteenth century (Figure 11), such as the convict lumber yard, have also impacted upon these early deposits it is likely the case that rail and gas structures of the late nineteenth and early twentieth century would have had the most severe impact to not only the potential of these very early deposits and features but also those associated with the lumber yard.

The key forms of disturbance affecting the archaeological record on this site are the result of the industrial use of the area in the late nineteenth and early twentieth century. The wide extent of this disturbance can be easily identified through the documentary record (Figure 12 and Figure A2). Both Aboriginal and early European archaeological material on this site are horizontally co-extensive, with early European occupation taking place in areas that would likely have been intensely occupied by Aboriginal people in the past and likely retaining at least a baseline of remnant Aboriginal cultural material at these locations.

4.3.1 2 Davey Street - Royal Engineers Building

As noted in Section 1.0 of this report the property at 2 Davey Street is not owned by MPDC and is not formally within the Macquarie Point development area (Figure 13). However, given its proximity to proposed works an understanding of its archaeological sensitivity is worthwhile considering. The site is listed on the *Sullivans Cove Planning Scheme 1997* as 'Royal Engineers Headquarters and Kings Yard' (*SCPS 1997*, Schedule 1: Table 2: Ref. No. 12) and is included on the Tasmania Heritage Register as 'Royal Engineers Building and Stone Post' (Place ID 2,280) and as such also has statutory protection under the terms of the *Historic Cultural Heritage Act 1995*.

These listings go some way to indicate the likely level of archaeological potential present in this area but it is also worthwhile considering the *de facto* archaeological sensitivity of the property at 2 Davey Street. With the Engineers Building and associated landscaping and outbuilding constructed in the middle of the nineteenth century, there is very little evidence of subsequent historical development. This structure has been thoroughly, albeit tangentially, considered in Austral Tasmania's (e.g. 2013 and 2020) assessments of the nearby archaeological potential within the current Macquarie Point development area and the reader is referred to these documents for a detailed historical consideration of the development of this area.

As this site was never brought within the boundaries of the late nineteenth and twentieth century industrial development of Macquarie Point, there is a minimum of historical disturbance recorded at this location outside of the currently existing building at this site (Figure 14 to Figure 16). The buildings observable in heritage investigations of the general area, additional wings built on to Lord's House in the middle of the nineteenth century, which are no longer extant, are likely to have caused some disturbance to Aboriginal cultural material or earlier historical deposits but this would have been restricted in extent. While it is almost certainly the case that further small scale disturbances, such as services, have caused ongoing impact to the archaeological record at this location there is little evidence to suggest that this location had suffered the same level of impact as has been recorded to the south and east.

Given its proximity to Lord's Residence, and possibly the early cottage known to have existed in this area, there is also a reason to expect there to be earlier deposits and possibly features not recorded in historical plans within the bounds of this property as well as those associated with the occupation of the structure by the Royal Engineers. Given the substantial amount of Aboriginal cultural material encountered during excavation of the Lumber Yard Trench there is also a high probability that similar amounts of such material persist at this location as well. Furthermore, the lower levels of disturbance that may possibly be present here, as there is no disturbance caused by the construction of the lumber yard, may mean that any Aboriginal cultural materials present at this site have been less disturbed than those that have been recently excavated.

Given that the archaeological excavation at the Lumber Yard Trench recovered a substantial amount of both early colonial and Aboriginal deposits despite the historical disturbances that took place in this area the far smaller amount of recorded disturbance at 2 Davey Street would suggest a high potential for the recovery of significant archaeological features and deposits. This means that on the basis of current archaeological understanding, the property at 2 Davey Street is of high sensitivity for both historical and Aboriginal cultural material.

This acquittal report is not a an assessment under either the terms of either the *Aboriginal Heritage Act 1975* or the *Historic Cultural Heritage Act 1995* instead it should serve to indicate the practical aspects of the high archaeological sensitivity of this area in the light of the findings of the excavations at the Lumber Yard Trench. Prior to any ground disturbing works proceeding in this area it is extremely likely that formal assessments will be required for both Aboriginal and historical heritage.

4.4 Sensitivity Mapping

The mapped sensitivity of the project area can be seen in Figure 17 with a detailed view of the areas of high and moderate sensitivity presented in Figure 18 through to Figure 21. This sensitivity mapping is intended to supplement the detailed historical mapping analysis only and must be read in conjunction with the background information referred to in Section 4.1 above.

4.4.1 Low Archaeological Sensitivity

These areas are distinguished by disturbances associated with twenty-first, twentieth century or late nineteenth centuries' industrial development. The pre-colonisation ground surface in this area may be entirely removed or stripped to bedrock. These locations may also be the site of significant land

reclamation. The potential for isolated pockets of redeposited archaeological material remains but is considered to be very small. There is a very low likelihood for Aboriginal cultural material to be present even in secondary contexts.

Existing protocols for the unplanned discovery of archaeological material, such as condition HER 6 of the Planning Permit (PLN-20-295) and Aboriginal Heritage Tasmania's *Unanticipated Discovery Plan* are to be considered sufficient for managing heritage within these areas of low potential.

Expected subsurface profiles for low sensitivity areas include:

- High levels of disturbance.
- Modern materials, such as concrete and steel.
- An absence of the original soil profile.
- Deposits of ash, gravel and boiler scale.
- Deposits of twentieth century levelling fill, including finely crushed rock and dolerite cobbles.
- Twenty-first and twentieth century structures or fills placed directly on to bedrock.
- Land reclamation fills continuing below the water table.
- No significant archaeological features should be expected at any depth.

Specific examples of areas of low sensitivity are:

- The site of the former gasworks.
- The location of the roundhouse or substantial ancillary railyard structures.
- The footprint of late twentieth century structures.
- The footprint of the northern access road and transit/landscaping zone.
- Where the escarpment has been cut back and benched.

4.4.2 Moderate Archaeological Sensitivity

Areas of moderate archaeological sensitivity include two places that are within or near to the original shoreline but may have been heavily or moderately disturbed by twentieth century or late nineteenth century industrial development. These areas may be covered by fill or built upon by later development but there remains a reasonable probability that significant historical or Aboriginal archaeological materials are retained, although it is likely they are in a disturbed or secondary context. Any significant archaeological materials that are present may be intermittent or truncated. While twentieth century or late nineteenth construction has left structural remnants this has not resulted in the total removal of the early soil profile.

Excavations within an area of moderate sensitivity may require an Aboriginal Heritage Assessment completed in accordance with AHT's (2018) *Aboriginal Heritage Standards and Procedures*. If any Aboriginal heritage site is identified during an Aboriginal heritage investigation preceding such work a permit under the terms of *Aboriginal Heritage Act 1975* may also be required. Where ground disturbance works take place in an area of moderate potential, consultation with AHT to determine the best approach to manage the risk of encountering heritage.

As areas of moderate potential include features and deposits associated with the 'Royal Engineers Headquarters and Kings Yard' (SCPS 1997, Schedule 1: Table 2: Ref. No. 12) a permit may be required under the Sullivans Cove Planning Scheme 1997 prior to any ground disturbance taking place in these areas. Additionally archaeological materials in these areas can be considered as 'features or deposits of an archaeological nature' under condition HER 6 of Planning Permit PLN-20-295 and the terms of

HER 6 applies to them, including requirements for archaeological advice and notification of Hobart City Council. Although it must be noted that protocols already exist for the management of historical heritage within land owned by the MPDC.

Expected subsurface profiles for low sensitivity areas include:

- Deep but not total levels of disturbance.
- Modern materials, such as concrete and steel but also dolerite building rubble and nineteenth century bricks.
- Remnant sections of the original soil profile, likely deeply buried, or early reclamation fills.
- Deposits of industrial waste, redeposited natural soils and redeposited occupation deposits.
- Intact but significantly truncated deposits of significant historical and Aboriginal material occurring at depth.
- Deposits of twentieth century levelling fill, including finely crushed rock and dolerite cobbles covering remnant and shallow early soil profiles.
- Twentieth century features intruding into early nineteenth century or pre-colonial strata but not obliterating them completely.
- Deeply buried littoral deposits.

Two areas of moderate sensitivity have been identified:

- Below the footprint of twentieth century structures that have not necessarily required bulk excavation during construction and may have retained earlier archaeological strata intact.
- An area to the southeast of the Lumber Yard Trench that has been disturbed through the construction of nearby industrial buildings and would have been the location of a service bottleneck during the twentieth century. However, there is no evidence that deeply buried littoral deposits, remnant early historical features and small amounts of the original ground surface have been completely removed from this area.

4.4.3 High Archaeological Sensitivity

High archaeological sensitivity is present within a single location of the Macquarie Point Project Area in an area of original ground surface with demonstrated or historically documented high levels of preservation. This area is highly sensitive both in terms of Aboriginal and early colonial archaeological potential.

Excavations within an area of high sensitivity are likely to require an Aboriginal Heritage Assessment completed in accordance with AHT's (2018) *Aboriginal Heritage Standards and Procedures*. If any Aboriginal heritage site is identified during an Aboriginal heritage investigation preceding such work a permit under the terms of *Aboriginal Heritage Act 1975* may also be required. Where ground disturbance works take place in an area of moderate potential, consultation with AHT to determine the best approach to manage the risk of encountering heritage.

As areas of moderate potential include features and deposits associated with the 'Royal Engineers Headquarters and Kings Yard' (SCPS 1997, Schedule 1: Table 2: Ref. No. 12), including the Engineers Building itself, a permit will likely be required under the Sullivans Cove Planning Scheme 1997 prior to any ground disturbance taking place in these areas. Additionally archaeological materials in these areas can be considered as 'features or deposits of an archaeological nature' under condition HER 6

of Planning Permit PLN-20-295 and the terms of HER 6 applies to them, including requirements for archaeological advice and notification of Hobart City Council. Although it must be noted that protocols already exist for the management of historical heritage within land owned by the MPDC.

The property at 2 Davey Street adjacent to the Macquarie Point Development area is included in this area of high sensitivity not only for strong *de facto* archaeological potential but also as it a place listed on the Tasmanian Heritage Register. This property has also not been formally assessed for Aboriginal heritage. Any work in this area should be proceeded by formal heritage investigations under the terms of the *Historical Cultural Heritage Act 1995* and the *Aboriginal Heritage Act 1975*.

Expected subsurface profiles for the area of high sensitivity include:

- Superficial levels of later disturbance, with fills covering earlier intact strata.
- Early materials such as brick, lime mortar and dolerite building material.
- Intact sections of the original soil profile or sections of the early nineteenth century soil profile.
- Limited disturbances from later services may be present.
- Intact, albeit possibly disturbed, deposits of early European and Aboriginal cultural material.
- Deposits of substantial European and Aboriginal cultural material within a secondary context but with disturbances relating to mid-nineteenth century activities.
- Deposits of twentieth century levelling fill, including finely crushed rock and dolerite cobbles covering remnant or substantial early soil profiles.
- Occasional intrusive late nineteenth or twentieth century features that are limited in extent and impact.
- Intact natural soil profiles below cultural deposits and above bedrock.
- Potential for *in situ* Aboriginal cultural material and intact early colonial structural remains.

A single, complex area of high sensitivity is present in the west of the Macquarie Point Project Area, examples of specific locations within this broader area of high sensitivity are:

- Areas of low disturbance adjacent to the Lumber Yard trench.
- Sections of limited disturbance along the western boundary of the site around Lord's residence.
- The Engineers Building and grounds.

4.4.4 Indeterminate or Nil Archaeological Sensitivity

This rating of sensitivity reflects a lack of determination or a positive assessment of nil archaeological sensitivity across the broader area of the site as documented in earlier reports and sensitivity mapping. It denominates areas for which detailed subsurface information is lacking but which have not been considered to contain any significant archaeological material. The inclusion of an area within this level of sensitivity rating is not intended as a definitive statement of its sensitivity but rather indicates that while previous sensitivity mapping may have considered the historical development of this area there has been no assertion of archaeological potential. These parts of the Macquarie Point project area have not been assessed as having archaeological potential or significance warranting further archaeological management. Please note that this level of archaeological sensitivity does not apply to

any built heritage or other forms of heritage material that may be considered significant outside of the context of archaeological sensitivity.

4.4.5 Unknown Sensitivity

A single small area of unknown sensitivity is present in the extreme northwest of the project area. This area is outside of the industrial development typical of the majority of project area and has not been considered in previous assessments.

4.4.6 Lord's Residence and Rivulet Diversion Tunnel.

These two locations are special cases within the sensitivity framework of Macquarie Point as they have been identified as highly significant colonial era locations and are to be conserved.

The extent of Lords House has been previously illustrated by Austral Tasmania (2015, 2016 and 2020) with the focus on the extent of the structure and ancillary buildings located within the land owned by the MPDC. However, as this sensitivity mapping includes a consideration of potential of the land at 2 Davey Street as well the location of Lord's house has been both extended and refined based on the historical mapping. The excavations that this report documents have demonstrated the high level of accuracy inherent in the historical mapping of Austral Tasmania, identifying the location of specific structural elements well within the range of sub-metre accuracy and therefore also support the refinement of the location of Lord's house based on this mapping.

As can be seen in Figure 18, the area of what is specifically denominated as Lord's House has been reduced by approximately 50% but has also been extended further to the northwest based on the historical mapping. This new location reflects the location of Lord's House itself as well as adjacent buildings present during the time of Lord's occupation along with any nearby yard surface that is likely to retain archaeological deposits associated with its early use.

4.4.7 Areas Cleared Through Open Area Archaeological Excavation

Another level of sensitivity, similar to areas of nil sensitivity, is that associated with areas cleared by open area archaeological works. In these areas all archaeological features have been exposed and recorded and all significant deposits excavated and removed. Therefore although these areas once contained material warranting archaeological management, through the statutory heritage management process these areas can now be considered to no longer retain the sensitivity that they had formerly held. As test excavation does not necessarily remove all of the significant deposits or fully record the features that it encounters, test pits and trenches cannot be considered to substantially alter the significance of the location where they are excavated.

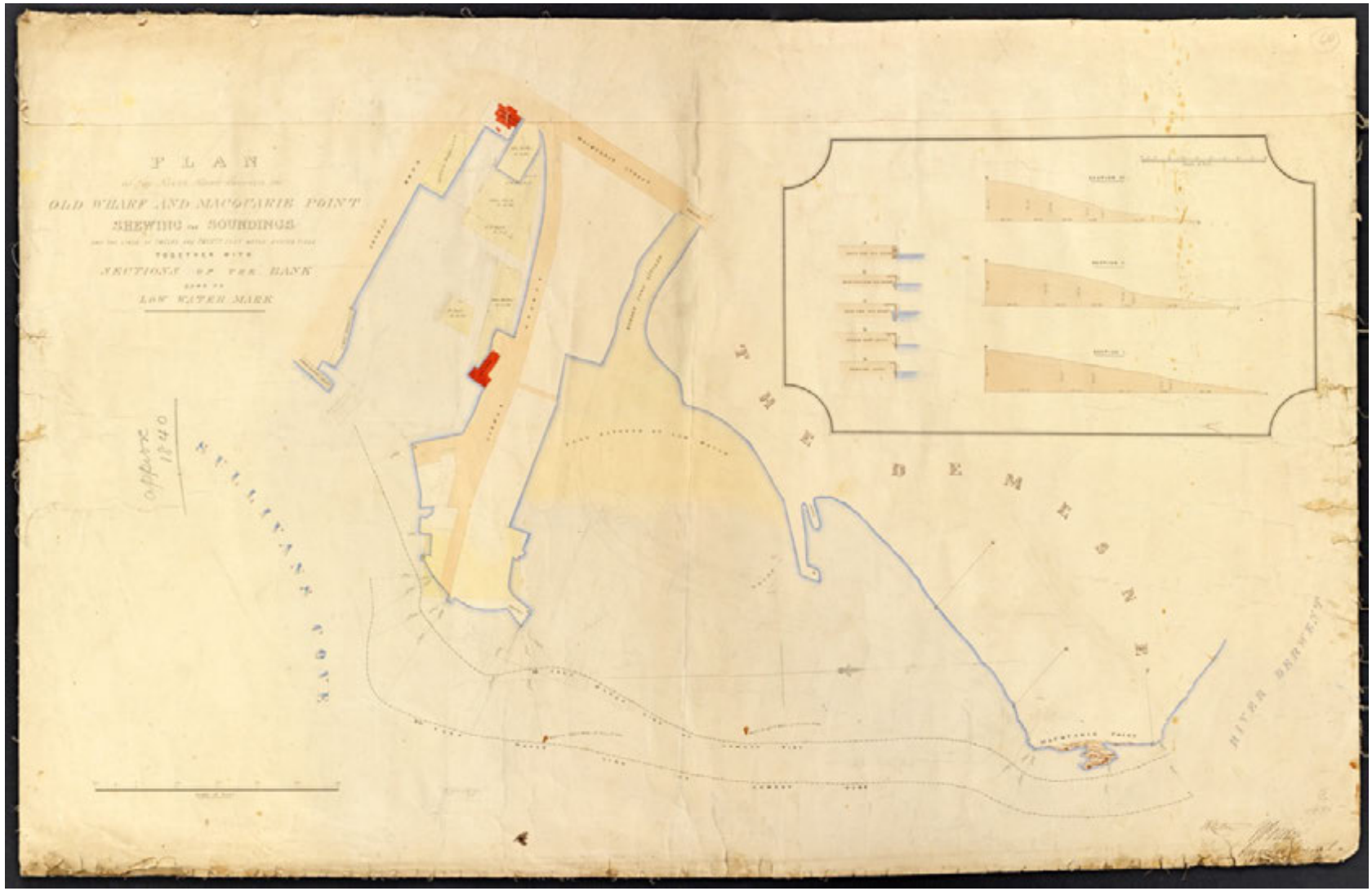


Figure 9. A depiction of the headland in 1840, with inset sections showing the fall of the land to the water. The sandy shallow bay at the mouth of the rivulet is also shown (TAHO, PWD266-1-782).



Figure 10. Historical landform modelling of pre-colonisation headland based on GHD (2013) showing the shallow water and outline of Macquarie Point prior to land reclamation (Basemap: Supplied by Client).



Figure 11. Areas of nineteenth century historical development at Macquarie Point identified in Austral Tasmania (2013) and also depicted in Figure A2. As the 2013 report did not consider the potential of the area around Royal Engineers building it is not shown here (Basemap: Supplied by Client).

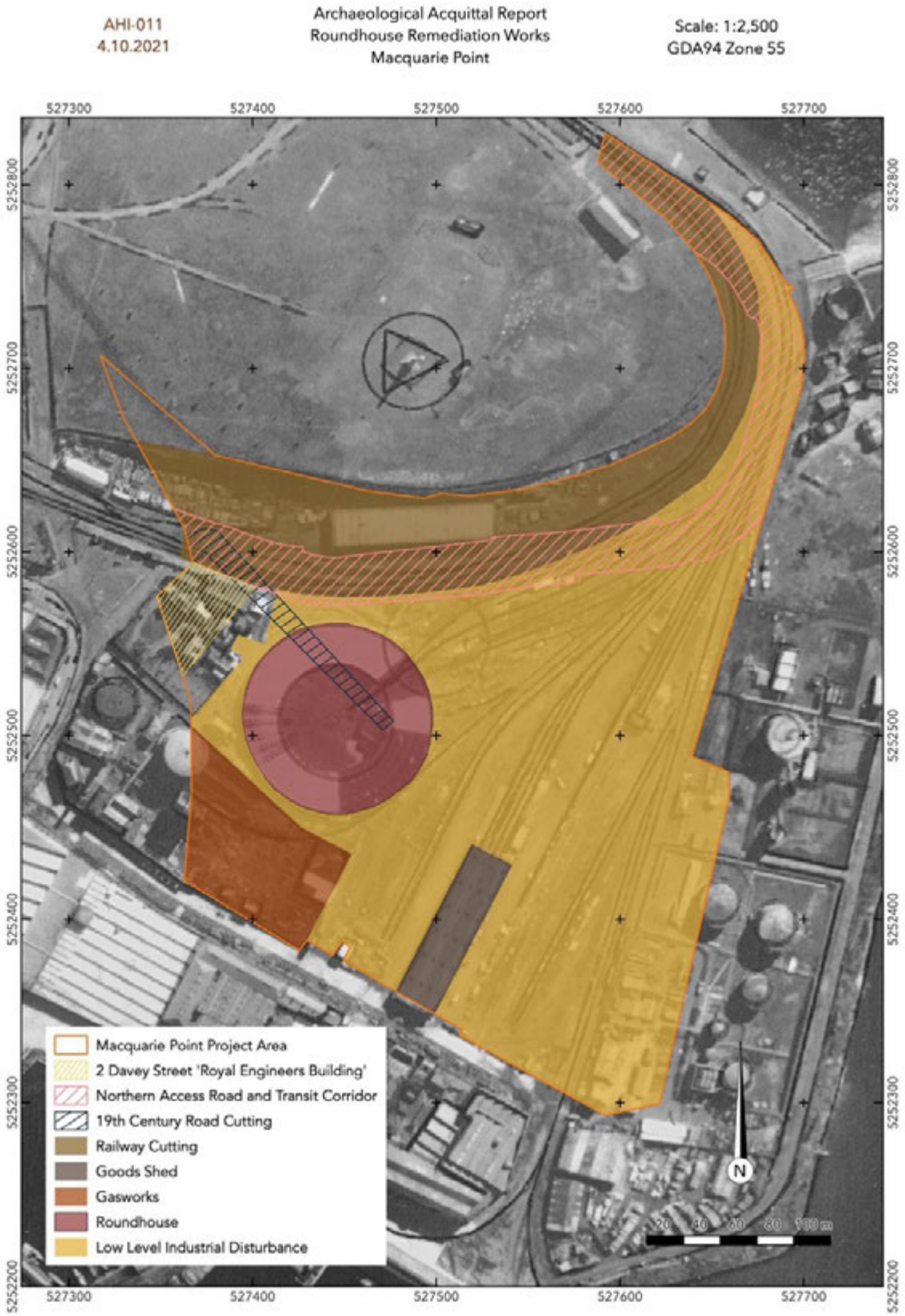


Figure 12. 1946 Orthophoto of Macquarie Point with the most significant forms of twentieth century disturbance highlighted across the site. The cutting of the nineteenth century road and the recent northern access road and transit corridor have also been shown as hatched areas.

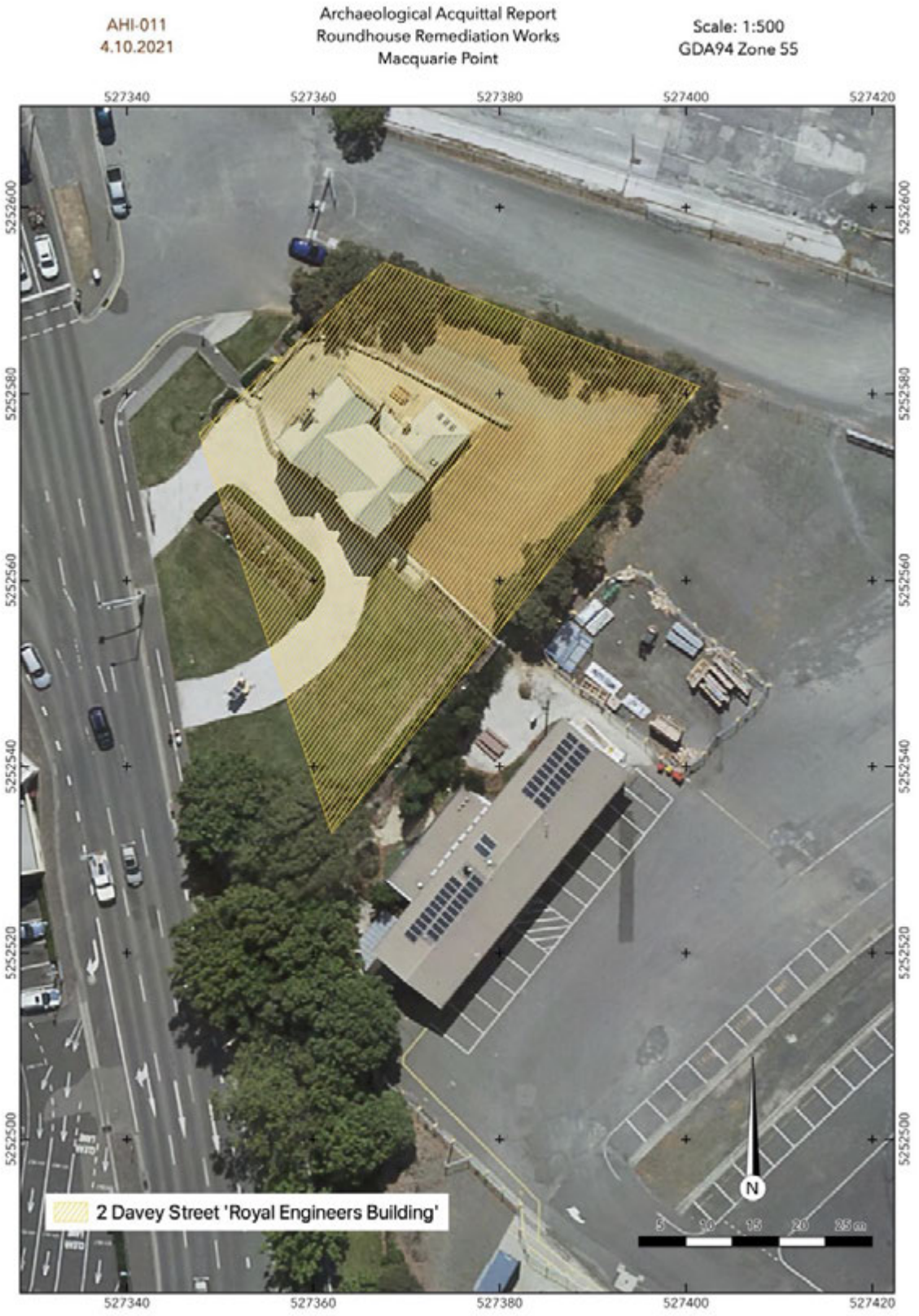


Figure 13. The property at 2 Davey Street shown over a current aerial image (Basemap: Supplied by Client).



Figure 14. The property at 2 Davey Street shown over an 1872 plan of the study area (Basemap: 1872, TAHO, PWD266-1-714, Plan-Royal Engineer's Premises, Hobart. Architect, Royal Engineers, 1872).

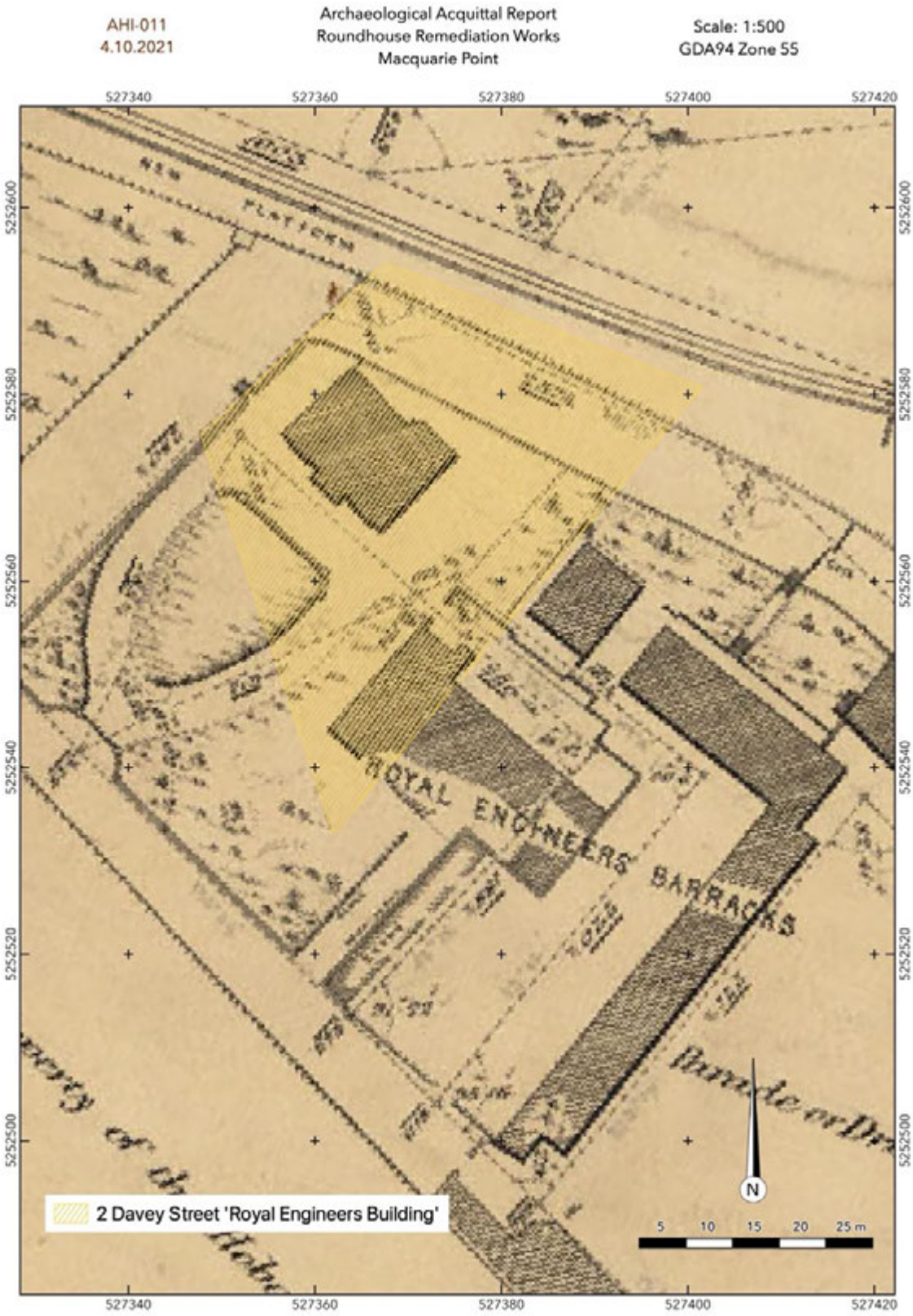


Figure 15. The property at 2 Davey Street shown over an 1891 plan of the study area (Basemap: 1891 NAA, P1330, 654, 7812383, TGR, Hobart Railway Station - plan of proposed extension).

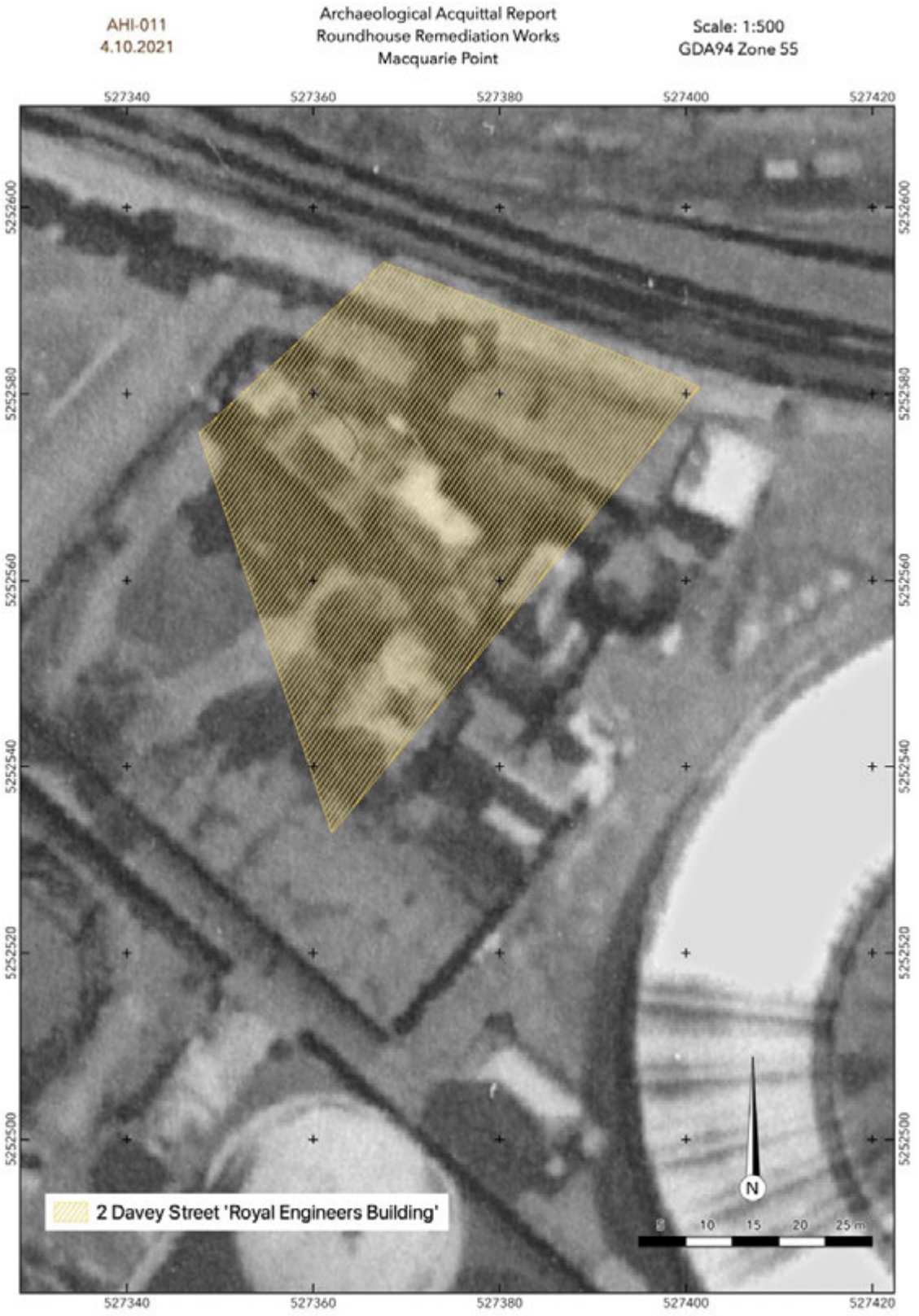


Figure 16. The property at 2 Davey Street shown over a 1946 orthophoto of the study area (Basemap: Land Tasmania, Department of Primary Industries Park Waters and Environment).

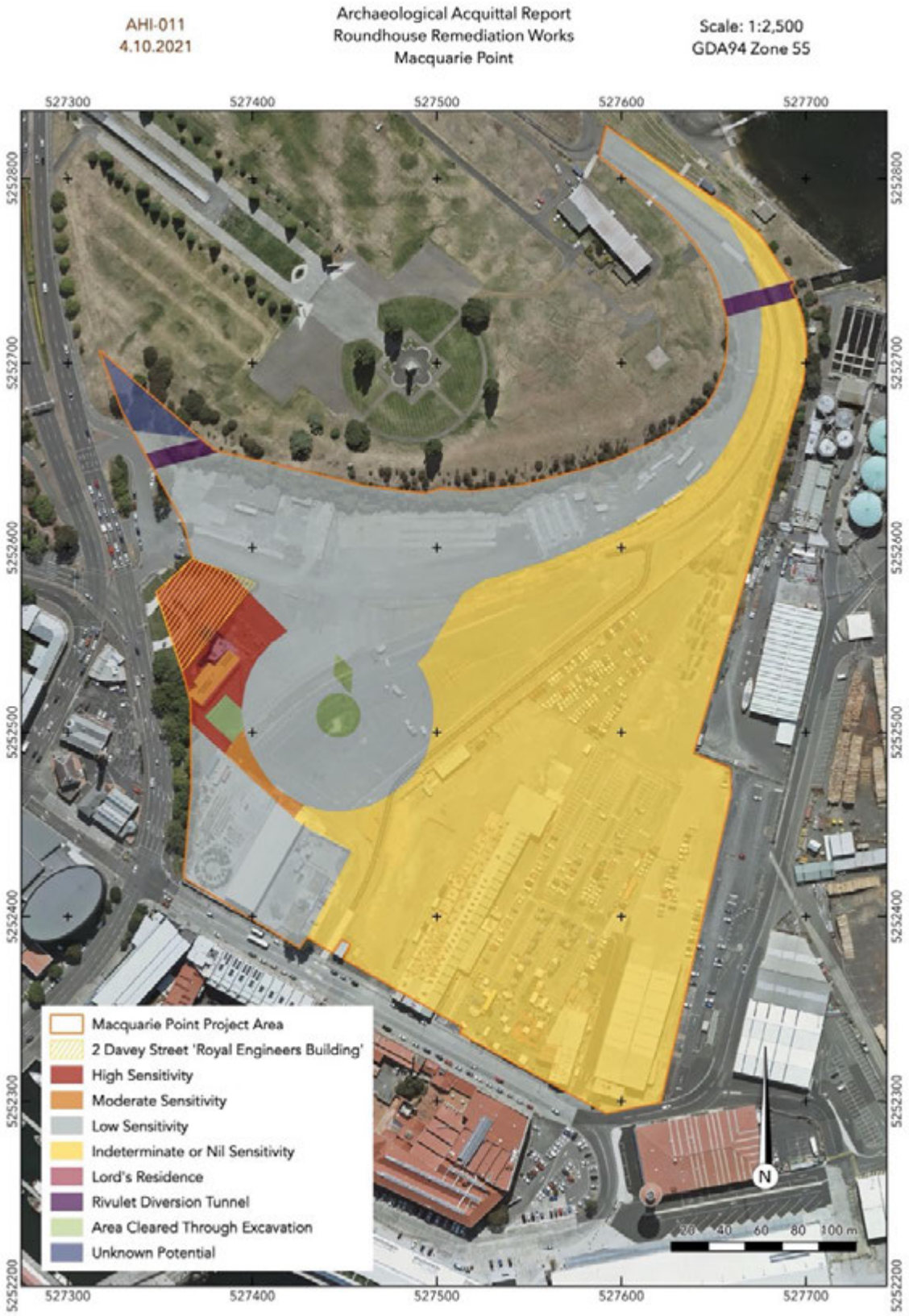


Figure 17. Overview of the archaeological sensitivity present across the Macquarie Point Project Area. This sensitivity mapping is the synthesis of earlier archaeological assessments updated with the results of the recently completed excavation (Basemap: Supplied by Client).



Figure 18. A detailed view of areas of high and moderate sensitivity shown over a current aerial image (Basemap: Supplied by Client).

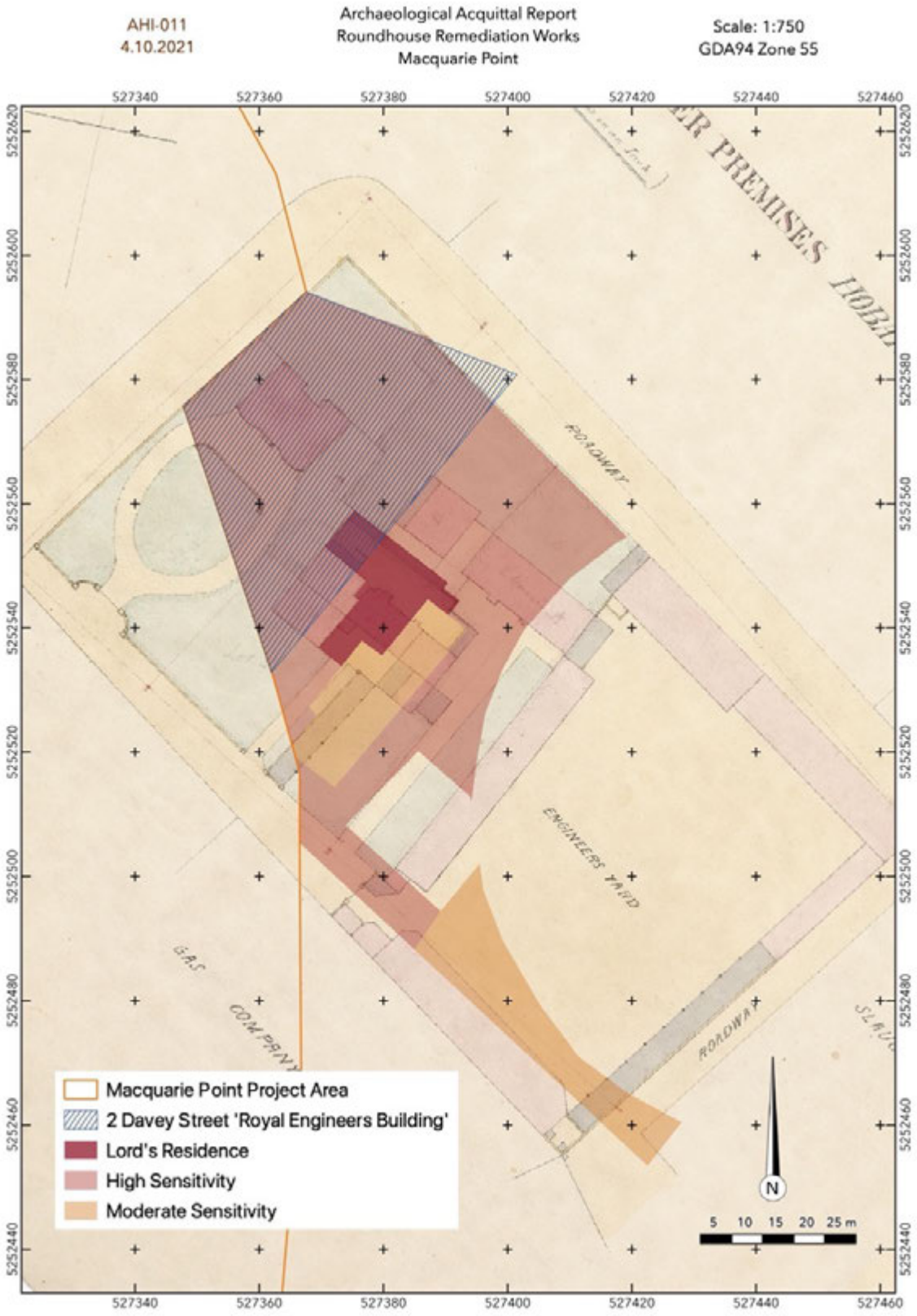


Figure 19. A detailed view of areas of high and moderate sensitivity shown over an 1872 plan of the study area (Basemap: 1872, TAHO, PWD266-1-714, Plan-Royal Engineer's Premises, Hobart. Architect, Royal Engineers, 1872).

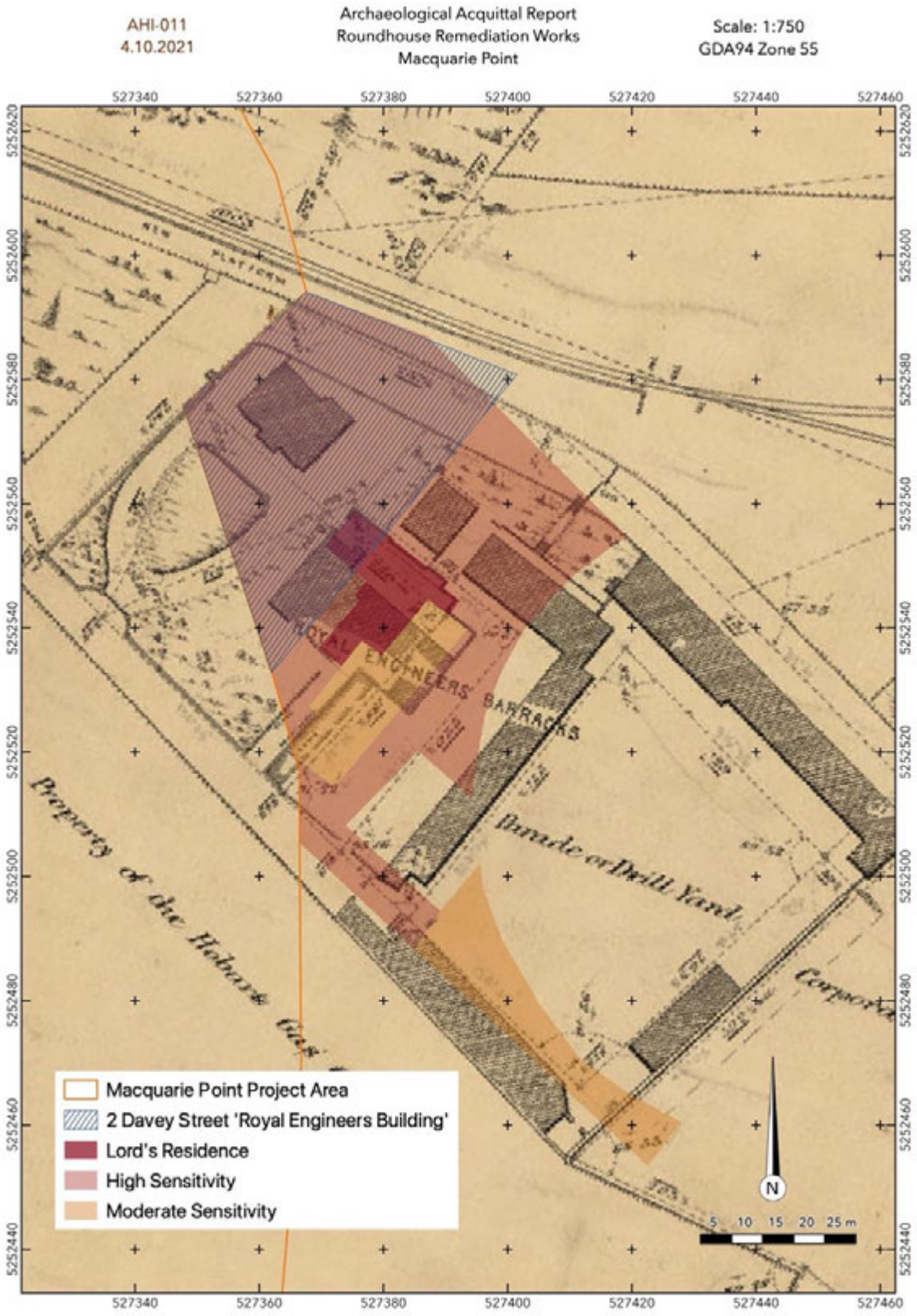


Figure 20. A detailed view of areas of high and moderate sensitivity shown over an 1891 plan of the study area (Basemap: 1891 NAA, P1330, 654, 7812383, TGR, Hobart Railway Station - plan of proposed extension).

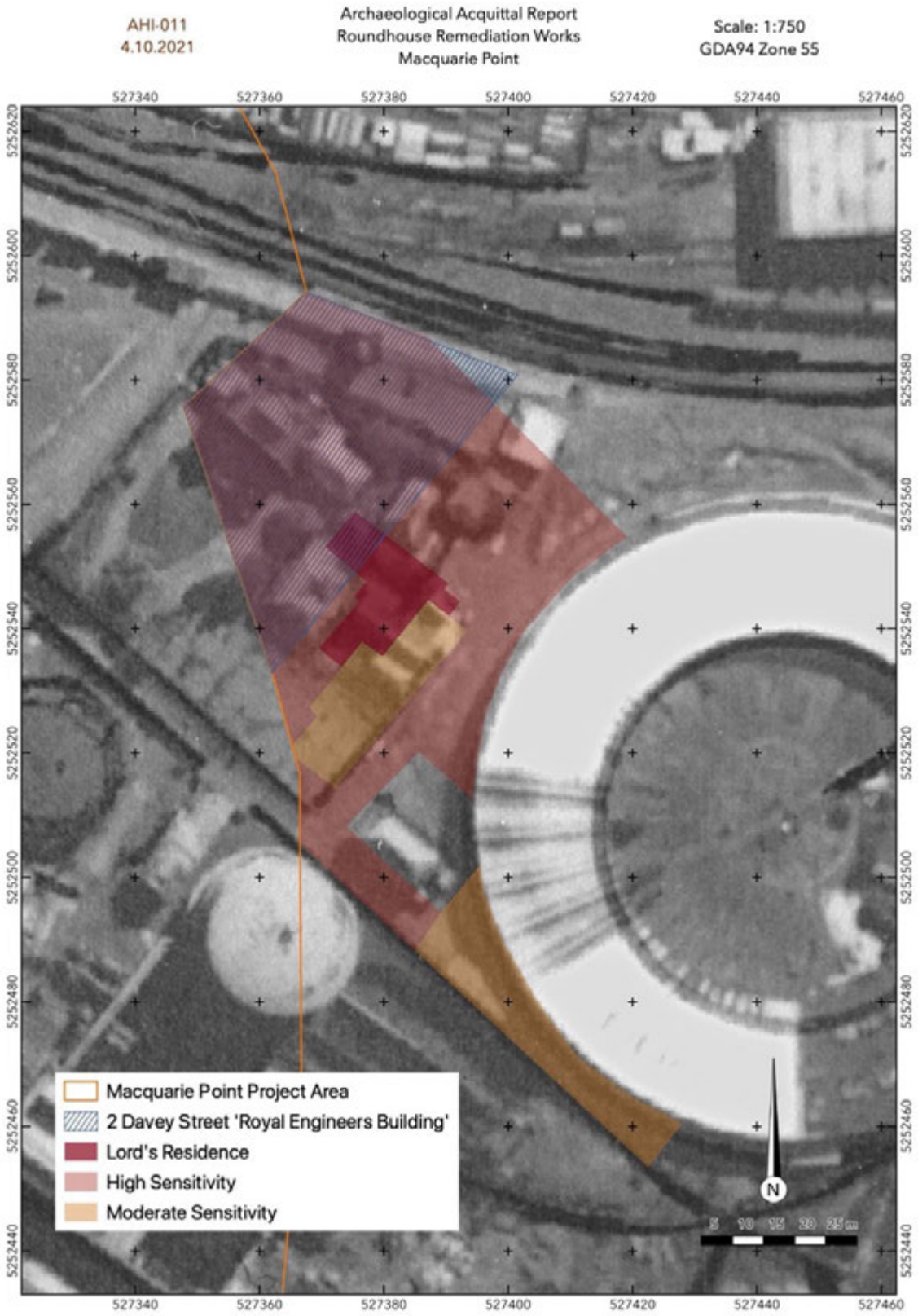


Figure 21. A detailed view of areas of high and moderate sensitivity shown over a 1946 orthophoto of the study area (Basemap: Land Tasmania, Department of Primary Industries Park Waters and Environment).

5.0 Conclusion

The archaeological works currently completed have been undertaken in accordance with the archaeological method statement, Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination and Aboriginal Heritage Permit P155. The results of the excavation are consistent with the archaeological potential predicted in the archaeological sensitivity report (Austral Tasmania 2020) and a significant amount of archaeological features relating to a range of phases across the site. Additionally a substantial amount of Aboriginal cultural material and early colonial artefacts were recovered from the Lumber Yard trench. All deposits identified as having potential to contain Aboriginal heritage material have been recovered from within the excavation area and processed on site.

The excavations have satisfied the conditions of HER 6 of Planning Permit PLN-20-295 in regard to the roadway alignment, rail yard features and the lumber yard features within the excavation area. It is not considered that further excavation of any rail yard features is required and that the most significant rail heritage items present on site are not found within an archaeological context but instead exist as extant built heritage. Any remaining archaeological sensitivity within proximity to the remediation works and associated with Aboriginal heritage or nineteenth century structures has been considered in Section 4.0 above. The scientific research potential of the areas excavated (section of excavated Lumber Yard, roadway formation and turntable) has been realised. Further archaeological management of these features is not considered warranted and the areas may be made available for remediation works.

Further analysis will also continue as specified in the methodologies supplied for this project. This will include the analysis of European and Aboriginal cultural material, the analysis of shell material, the usewear analysis of the knapped glass and ceramic artefacts and the production of a fully illustrated report documenting the findings of the archaeological excavation. The usewear analysis of the knapped glass and ceramic artefacts is critical in suitably realising their scientific potential but as these artefacts will need to be temporarily supplied to a specialist outside of Tasmania an additional permit will be sought under the terms of the *Aboriginal Heritage Act 1975* for this usewear analysis to take place.

6.0 References

Austral Tasmania Pty Ltd 2013 *Macquarie Point Development Project Historical Summary*, prepared for the Department of Economic Development, Tourism and the Arts.

Austral Tasmania Pty Ltd 2015 Macquarie Point Aboriginal Test Excavations, Final report prepared for the Macquarie Point Development Corporation.

Austral Tasmania Pty Ltd 2016 *Macquarie Point Heritage Management Plan*, Final report prepared for the Macquarie Point Development Corporation.

Austral Tasmania Pty Ltd 2020 Macquarie Point Roundhouse Area Remediation Works. Archaeological Sensitivity Report, Final report prepared for the Macquarie Point Development Corporation.

GHD 2013 2012 Aerial Photo with History of Landform, Unpublished plan prepared for the Macquarie Point Development Corporation.

Permit for the Purposes of Section 14 of the Aboriginal Heritage Act 1975 (Tas), Permit No.: P155 Not Dated.

Planning Permit PLN-20-295 6 Evans Street, Hobart & 10 Evans Street, Land Decontamination 30 July 2020

Appendix

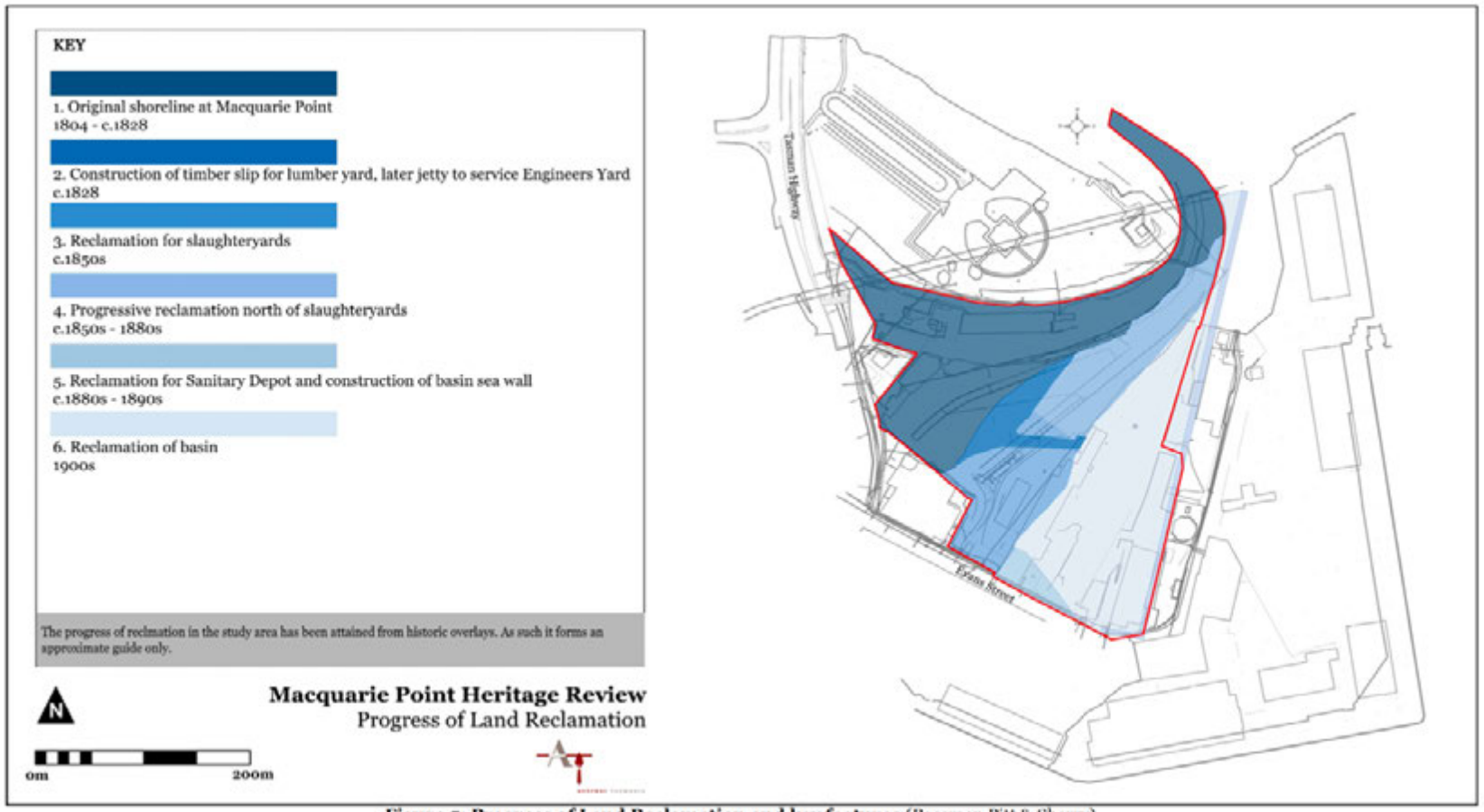


Figure 5: Progress of Land Reclamation and key features (Basemap Pitt & Sherry)

Figure A1. Progress of land reclamation and key features from Austral Tasmania (2013).

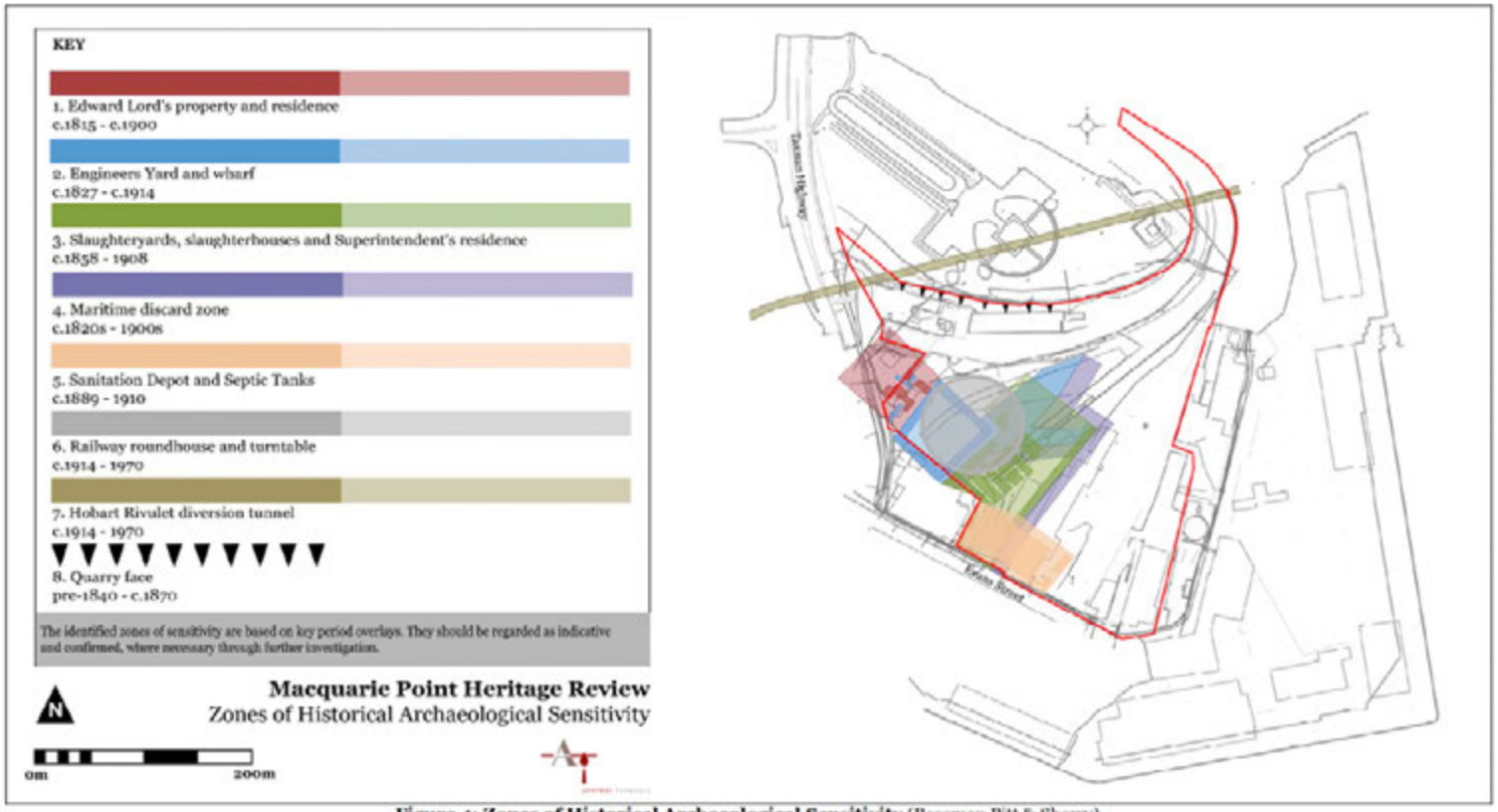


Figure 4: Zones of Historical Archaeological Sensitivity (Basemap Pitt & Sherry)

Figure A2. Zones of historical archaeological sensitivity from Austral Tasmania (2013).

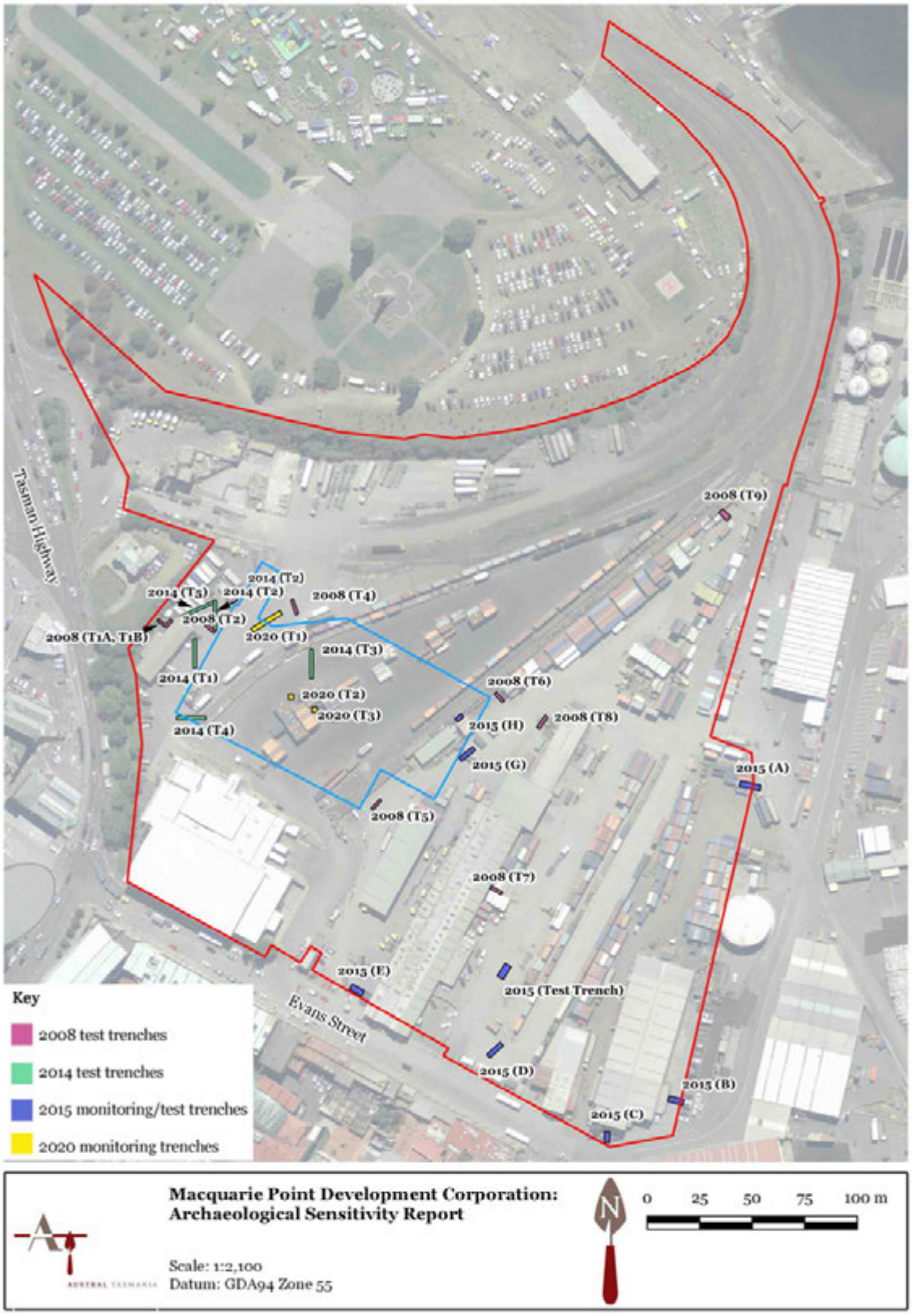


Figure A3. Location of previous historical archaeological investigations from Austral Tasmania (2020). The blue area indicates the area of proposed remediation works and extent of proposed future underground car park.



Figure A4. Location of Aboriginal heritage test pits in relation to the embankment area (marked in orange), the area of known historical disturbance (marked in blue) and the area of no known disturbance (marked in green) from Austral Tasmania (2015).