

ARTEFACT REPORT

PENITENTIARY ABLUTIONS AREA 2016 ARCHAEOLOGICAL INVESTIGATIONS

PAHSMA Archaeological Project PA2016-01

PORT ARTHUR HISTORIC SITE, TASMANIA



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1 INTRODUCTION

This artefact report is for artefact collections recovered during archaeological investigation of the Penitentiary Ablutions Block by Port Arthur Historic Site Management Authority (PAHSMA) at the Penitentiary, Port Arthur Historic Site, Tasmania. There were two separate excavation episodes between 2003 and 2016. The initial archaeological investigations were undertaken in 2003 and 2004 as part of Port Arthur's Summer Archaeology Program designed to gather new research and aid in site maintenance. Over two summer field seasons the Ablutions Block was subject to a series of test trench excavations and preliminary field and artefact reports were generated.¹ In 2016, the entire Ablutions Block was subject to a full-scale archaeological investigation conducted between January and June 2016.

1.1 Limitations

For the purpose of artefact analysis separate context discussions will be provided in this report for artefacts from these two archaeological investigations. There are two principal reasons for this approach. Firstly, there were differing excavation methodologies and secondly, the artefact catalogue for the 2003/2004 project was generated by numerous people in two different database formats over a 13-year time span. As a result, a number of inconsistencies were identified. These issues will be discussed as they arise during the progress of this report. Approximately 8% of the collection was catalogued in 2003/2004 using a limited database structure that has since been modified to allow a more in depth recordation of data. The artefact report generated for this partially catalogued collection discussed the limitations that were also identified when the remainder of the collection was catalogued in 2016 using the updated database, as part of a historic artefact analysis field school conducted by the University of New England (UNE) (under the supervision of Dr Martin Gibbs and Jeanne Harris) and attempts were made to analyse the data in the completed catalogue. Furthermore, the 2004 artefact report was a limited summary discussion of the analysed artefacts with no supporting technical data, which is consistent with the preliminary nature of the undertaking.²

This report is based on a comprehensive catalogue compiled from both excavation projects. The 2003/2004 Trench excavation artefact catalogue was generated by Alasdair Brooks and the assistance of UNE students Tracy Bruce, Leah Byrne, Amanda Crick, Christine Lehmann, Tim Reid, Crystal Phillips, Isobel Lloyd, Emma Dolan and Kirsten Nash. For the 2016

¹ Tuffin, R. 2004 Penitentiary Ablutions Block Archaeological Report; Brooks, A 2004 Penitentiary Ablutions Block Artefact Report.

² Brooks, A 2004 Penitentiary Ablutions Block Artefact Report.

excavation the artefact catalogue was generated by Jeanne Harris. None of the cataloguers are faunal specialists and as a result the bone and shell artefacts in this report were catalogued on a basic level wherein skeletal element was identified where possible, but specific species was often not identified

1.2 Acknowledgments

The 2016 phase of archaeological investigations for the Penitentiary Ablutions Block project could not have been achieved without the oversight, coordination and assistance of PAHSMA's archaeological staff. Dr David Roe's supervision and direction was paramount to the success of the project. Dr Richard Tuffin's project management skills, meticulous records and his constant coordination between laboratory and field personnel were invaluable.

Other PAHSMA staff provided services not directly associated with the laboratory, cataloguing and curation of archaeological materials. Thanks to Michael Smith (Conservation Project Officer) for his expertise in the stabilisation of organic and metal artefacts, as well as his ability to solve innumerable logistical and equipment issues that arose during this project. Thanks to Dr Jody Steele for providing invaluable advice and assistance.

PAHSMA would like to thank the Green Army Program participants for their involvement in the Green Armies first-ever heritage cooperative project and especially for their endless hours of artefact processing.

1.3 Historical Context

The earliest known structures in the Penitentiary Precinct were the workshops (1830–1842). Initially, these consisted of two weatherboard structures that housed a blacksmith and shoemaker workshops. By 1834 these structures were in a dilapidated state and were replaced by a new series of workshops completed in 1835. An 1843 illustration shows a Commissariat store south of the row of shops (Figure 1). In 1843 construction of a mill and store was undertaken and when completed in June 1845 the complex included a water wheel, treadmill, mill race and granary store.

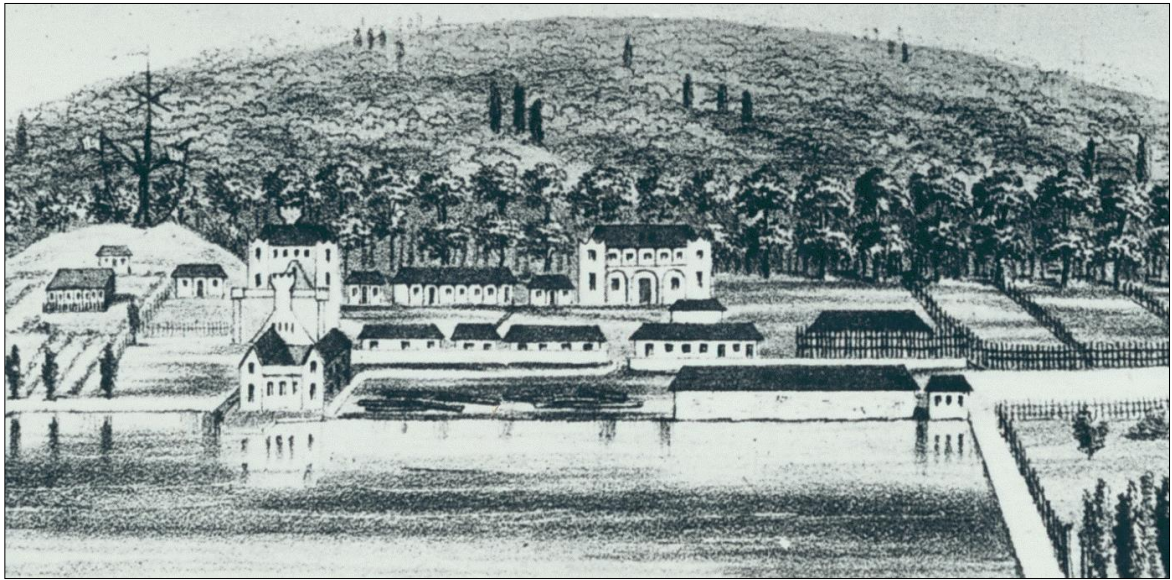


Figure 1: Lithograph by Captain Hext of the Kings Own Regiment, showing Port Arthur in Late 1842 or early 1843³

Between 1853 and 1858 the mill and granary complex was converted to prisoner accommodations. The following year a two-story bakehouse was completed at the western end of the Penitentiary building, which was constructed over the site of the 1830s workshops. In 1858 the Watchman's Quarters was completed at the east end of the structure. Between 1857 and 1877 the structure operated as a penitentiary until the closure of Port Arthur.

Within this convict timeframe the Ablutions Block went through two phases of occupation. Phase 1 dates 1856–1862 with the construction of a laundry, a central building housing privies and urinals, and other areas such as exercise yards and fireplaces, with a dominant feature being the diagonal sectioning of the western and eastern yards (Figure 2). Phase 2 dates 1862–1877 when the diagonal partitions and fireplaces were removed, the central building converted to a day room, and the water closets and urinals re-located as a range along the south of the yard (running along Champ Street). The post-convict era saw the partial destruction of the Penitentiary as decay and neglect set in, until in 1897 when the bushfires gutted the building and the remaining timber structures in the Ablutions area would have been destroyed.⁴

³ National library of Australia Plate 710/6 NK No 421/0).

⁴ Tuffin, R. & Brooks, A., Port Arthur Archaeological Summer Season 2003/2004 Report, Port Arthur Historic Site Management Authority, Port Arthur 2005.

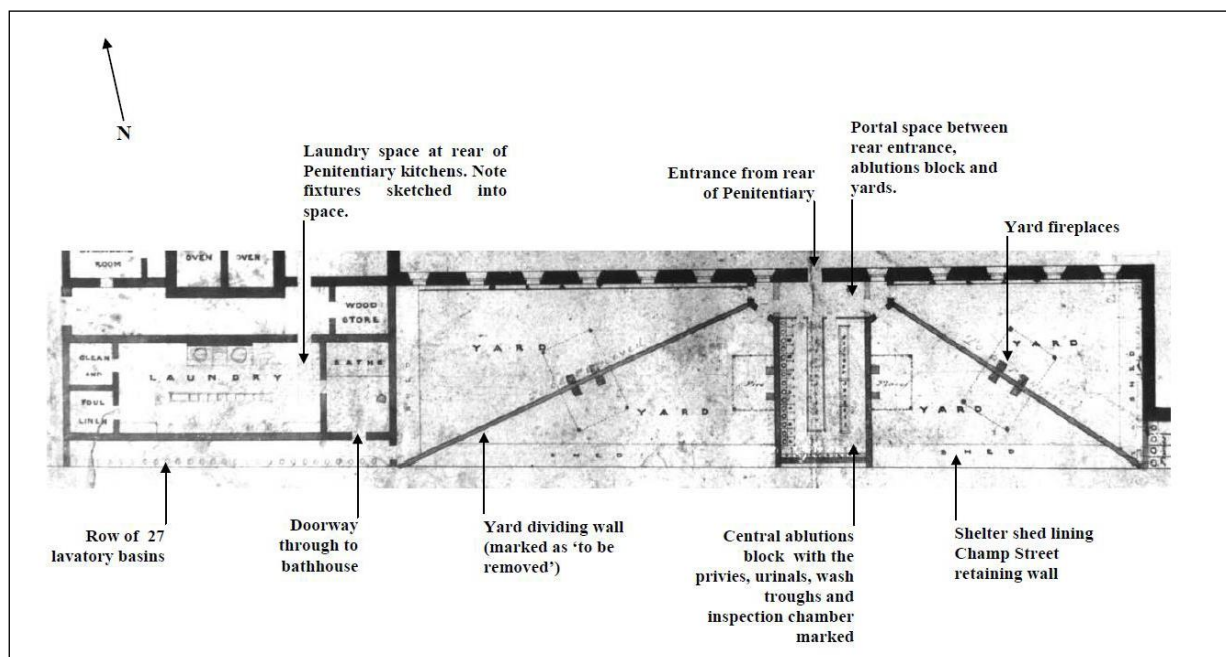


Figure 2: 1856 Plan of Ablutions Area

2 LABORATORY PROCEDURES AND METHODS

2.1 Cataloguing

2.1.1 2003/2004 Archaeological Testing

A total of 14,378 artefacts (3,610 MNI) from the archaeological research excavations for the 2003/2004 Port Arthur Penitentiary Ablutions Block Excavation were catalogued in 2016. These materials were retained for analysis and form part of the archaeological collection for this site.

The general procedure carried out for processing and cataloguing was as follows:

1. Artefacts were systematically catalogued using the 2012 PAHSMA Archaeological Database, a customised Microsoft Access database.
2. Artefacts were catalogued according to guidelines providing information on form, material, temporal placement, colour, count, weight, technomorphology (how something is made), completeness, size, patterns, products, manufacturer, place of manufacture, and date of manufacture.
3. Each artefact, or grouped artefacts, was allocated Catalogue Number that was recorded on the Tyvek context label and place in the bag with the artefact(s).
4. All efforts were made to assure that all diagnostic data for each artefact or class of artefacts was recorded.

The 2003/2004 PAHSMA Archaeological Database did not accommodate a field for recordation of minimum item count. A discussion of the utility of minimum item counts is addressed in Section 2.2. This issue was discussed in the 2003 Artefact Report in which Brooks outlined how he retro-fitted this information with the following solutions for major artefact categories:

For the smoking pipes, a pipe count was undertaken on a context by context basis, usually relying on counting the number of marked stem fragments, but sometimes – in the absence of any other fragments in a context – on the largest number of unique portions in a specific context. For example, if there was only one marked stem in a context, but two complete bowls in a context, then that particular context had a pipe count of 1. But the use of marked stems was the more frequent method.

Using a context by context count approach similar to that used for clay pipes, but using a combination of glass colour and diagnostic body portions (i.e., three body fragments of aqua glass in one context count as one bottle, but one body fragment and

two complete bottle lips of aqua glass in the same context count as two bottles), then we arrive at a minimum of 26 glass bottles across the convict-era contexts.⁵

For consistency the same procedures were applied to the remainder of artefact cataloguing conducted in June–August 2016.

2.1.2 2016 Archaeological Excavation

A total of 18,519 artefacts (8,271 MNI) from the archaeological research excavations for the 2016 Port Arthur Penitentiary Ablutions Block Excavation were catalogued in 2016. These materials were retained for analysis and form part of the archaeological collection for this site.

The general procedure carried out for processing and cataloguing was as follows:

1. Artefacts were systematically catalogued using the 2012 PAHSMA Archaeological Collections Database, a customised Microsoft Access database.
2. Artefacts were catalogued according to guidelines providing information on form, material, temporal placement, colour, count, weight, technomorphology (how something is made), completeness, size, patterns, products, manufacturer, place of manufacture, and date of manufacture.
3. Each artefact, or grouped artefacts, was allocated Catalogue Number that was recorded on an archivally-stable (or Tyvek tag for metal and unstable organic material) context label and place in the bag with the artefact(s).
4. All efforts were made to assure that all diagnostic data for each artefact or class of artefacts was recorded.

2.2 Minimum Item Count

For archaeological research purposes, artefacts need to be considered as objects rather than rubbish. For the purpose of this study, the assemblage is detailed by Minimum Number of Items (MNI). Artefacts must be quantified in such a way as to facilitate functional and temporal analyses.⁶ Furthermore, it is an essential requirement when comparing data from this study with contemporary archaeological sites.⁷ During cataloguing, designation of

⁵ Brooks, A 2004 Penitentiary Ablutions Block Artefact Report, p 2

⁶ Casey, M. 2004 "Falling Through the Cracks: Method and Practice at the CSR Site, Pyrmont," *Australasian Historical Archaeology*, Vol. 22, pp. 27–43.

⁷ Davies, P. 2004 "Glass and Stoneware Containers" in *Casselden Place: 50 Lonsdale Street, Melbourne, Archaeological Excavations*, prepared by Godden Mackay Logan, La Trobe University and Austral Archaeology, Vol 4

“single element” was assigned in a dedicated field to an artefact or artefacts that represent one item. The designation of “individual element” was assigned to a record for grouped fragments that represented multiple or indeterminate number of items, with notations made if the number of items could be determine. Subsequent to cataloguing, MNI were assigned for fragmented items and MNI are used throughout this report so that counts used in the following discussion represent whole, partial and fragmented items. Unless otherwise specified, the use of the term ‘artefact’ in this report is synonymous with ‘minimum number of items.’

2.3 Typology and Chronology

Standard typologies were established for the assemblage as a prelude to chronological reconstruction. Artefacts were then assigned dates based on use-popularity date ranges (merchant records, advertisements and manufacturers’ records) and on technological advancements (patents and manufacturers’ records). In this manner, nails and glass provided a wealth of chronological information and a review of the typological and chronological ramifications of these material classes is included below.

The following discussion summarises typologies and their linked chronologies for key artefacts. All dated artefacts in this study have a *terminus post quem* (TPQ) or a date when the item was first manufactured and/or a *terminus anti quem* (TAQ) or an end date for manufacture. This nomenclature is used throughout this discussion to clarify temporal information. Data represented in the following discussion is a combination of all archaeological investigations conducted in the Ablutions Block.

2.3.1 Ceramic

Ceramic artefacts (1,698) represent approximately 14 per cent of the site’s assemblage. Of this number 60 per cent are ball clay tobacco pipes discussed below. The remaining 40 per cent of ceramic artefacts, mostly representing vessel forms, that grouped into four basic categories: earthenware, stoneware and porcelain. Ceramic wares are defined by a number of factors, including firing technique and temperature, glaze, the type of clay and tempering agents. Generally, earthenware is made from naturally occurring clays that are fired at low temperatures, stoneware is a made from a high-temperature fired clay and porcelain is a highly fired vitrified composite of kaolin, silica and feldspar.

The value of this analytical approach lies partly in the use of ceramics to date deposits. Dates for ceramic artefacts are derived primarily from researched use-popularity patterns. Ceramic use-popularity patterns for tableware reflect times during which ceramic wares, types, and/or decorative designs accomplished peak popularity in the consumer market. These patterns are expressed as date ranges and are established through research of merchants’ and manufacturers’ records.

Identification/dating of 19th century ceramics is also based on identifying gradual changes in paste [the body material] and glaze to accommodate shifting trends in the ceramic market. The value of this analytical approach is the dating of ceramic artefacts, in particular refined white-bodied earthenware, in the absence of datable decorative design techniques. Gradual changes occurred in decorative designs and design techniques on differing 19th century ware types provide a chronology for dating decorated wares. Changes in ware type and decorative designs did not necessarily coincide. Therefore, separate chronologies for wares and decorative technologies were established for this study. During analysis, a combined date range was established that considered all of these variables.

Tobacco Pipes

Tobacco pipes represent the second largest type of artefacts in the collection. Using the convention to determine the MIC for tobacco pipes that was set forth by Brooks during analysis of tobacco pipes for the 2004 archaeological investigations of the ablutions area, it is determined that there is a total of 1,029 pipes from the 2003/2004 testing and 2016 excavations.⁸

Manufacturers' marks were the principal source of dating information for tobacco pipes (**Error! Reference source not found.**). Temporal information for tobacco pipes is derived from manufacturers' marks impressed on stems and an impressed distributors' marks often impressed on stems or back of bowls. Marked and documented tobacco pipes do, however, provide a distinct time frame for use. For unlike household items, the use-life of a tobacco pipe was limited – simply put, they wore out. Therefore date information for documented tobacco pipe manufacture can provide, in some instances a date range for the use of the pipe. There are 307 marked pipes from ablution deposits

Also used to date tobacco pipes from the 2016 excavations are the typologies of Aytos⁹ and Mallios.¹⁰ These two studies present chronologies of pipe shapes from the 16th century to the 20th century. The most common pipe shapes (Figure 3) have a common 1850s–1910 date range. A total of 56 pipe bowls are assigned temporal ranges by use of these references.

Decorations on pipes were also recorded. For comparative purposes a 1979 tobacco pipe study of tobacco pipes from the 1977 excavation of the Port Arthur prisoner barracks was used and catalogue numbers for pipe types in that collection were noted for pipes from the

⁸ Brooks, A. 2004 Port Arthur Archaeological Summer Season 2003/2004; Penitentiary Ablutions Block, p2.

⁹ Ayto, E.G. (1987) Clay tobacco pipes. Shire Publications Ltd.

¹⁰ Mallios, S 2005 "Back to the Bowl: Using English tobacco pipe bowls to calculate mean site-occupation dates" *Historical Archaeology* 39(2): 89-104.

2016 excavation.¹¹ The most common decoration on pipes is fluted (62) (Figure 4) and Floral (34) (Figure 5).

¹¹ Danes, Alexandra and Richard Morrison 1979 *Clay Pipes from Port Arthur 1830–1877*, Technical Bulletin No 2, Department of Prehistory, Australian National University.

Table 1: Chronological and Temporal Data for Tobacco Pipes.

Manufacturer	Location	Country	Date from	Date to
David Miller	Liverpool	England	1860s	1880
Duncan McDougall	Glasgow	Scotland	1846	1967
J. G. Jones	Liverpool	England		
Leonard Dobbin & Co	Cork	Ireland	1850s	
Thomas Davidson	Glasgow	Scotland	1862	1911
Thomas Whyte	Edinburgh	Scotland	1832	1864
William Murray	Glasgow	Scotland	1830	1861
William Bearnelts (Willem Barends)	Gouda	Netherlands	1850	1910
William C. Wood & Sons	Glasgow	Scotland	1830	1861
William White	Glasgow	Scotland	1806	1955



Figure 3: Tobacco pipe shapes common to the Penitentiary Ablutions Block collection.



Figure 4: Examples of Fluted Pipe Bowls.



Figure 5: Examples of Floral Pipe Bowls.

Amongst the collection of clay tobacco pipes from were a few commemorative pipes which also provide temporal placement. There are five commemorative pipes with the image of the Duke of Wellington on one side and Napoleon Bonaparte on the other. These pipes were issued for the fiftieth anniversary (1865) of the Battle of Waterloo (Figure 6). Eight pipes exhibit the British on one side and the American Flag on the other side (Figure 7). Neither flag depictions are historically accurate and therefore a historical association is vague. The American flag most closely represents the 15-star 'Star Spangled Banner' design (1795–1810) and the British flag most closely resembles the 'Kings Colours' of the Kingdom of Great Britain (1707–1801). It is therefore possible that these pipes represent 50th anniversary commemorative pipes for the War of 1812 – a conflict between the United States and the United Kingdom, its American colonies (later Canada) and its Native American allies.



Figure 6: 50th Anniversary of Battle of Waterloo Commemorative Pipe.



Figure 7: Old Glory and Union Jack Pipe.

2.3.2 Glass

Until the late 19th century Australia did not have a successful glassworks and Australia looked to Great Britain for its window glass and bottles.

Glass artefacts represent five per cent of the site's collection. Glass artefacts consist of window glass, commercial containers (bottles, jars, vials, ampules, flasks), marbles, bottle stoppers, tableware, beads, lamp shades and buttons. Since manufacturing techniques are different for many of these forms, technomorphological discussions for each will be discussed separately.

Bottles

For the purpose of this glass typology all commercial containers will be referred to as 'bottles'. A typology for glass bottles is not simple. The innumerable combinations of the many technological attributes must be considered during the identification of individual bottles. For the purpose of this study these attributes are grouped into four basic diagnostic categories: mould type, empontrilling method, finishing techniques and colour. These attributes represent process used in bottle manufacture from the mid 18th century.

Chronological data for bottle glass are based on advancements and/or changes in manufacturing technology over time. Recognised bottle shapes enable identification of products consumed by the occupants of a site. Patented shapes and documented manufacturer and/or bottler embossments contribute chronological data.

Window Glass

There were three types of window glass manufactured in England during colonial times. Unlike other imported commodities, consumer choice for window glass was not based on quality, but rather was influenced by the British weight-based excise duties placed on glass. In Sydney, the thinner crown glass was not well suited for the frequent hail storms in Sydney and surrounds and by the 1870s broad glass and the new and improved cylinder glass had gained preference over crown glass and by the 1880s crown glass had all but disappeared from the Sydney market.

In Tasmania, crown glass recovered from dated deposits during archaeological excavations suggests that the importation and predominant use of the thinner crown glass continued throughout the nineteenth 19th century.¹² Further research on the use-popularity patterns of window glass types in Tasmania needs to be conducted before a date range can be established for the use of crown window glass in Tasmania.

Prismatic glass was a common feature used to illuminate factory and workshop interiors from the early 1800s.¹³ Early prismatic glass was made by cutting parallel rows of grooves along one surface of the window glass pane. James Hartley's 1840s patented plate glass allowed for the grooves to be impressed into thinner cast-rolled plate glass.¹⁴ All prismatic window glass recovered during excavations of the penitentiary exhibited pressed parallel grooves.

2.3.3 *Metal*

Metal items represent 59.5 per cent of the project's artefact collection (7,086 MNI), with over 157 identified forms/types: most notably nails (6,027). Nails represent the majority of artefacts (50.6%) in the entire collection and are subject below to discussion of manufacturing technologies and datable use-popularity patterning.

¹² Harris, E. J. 2011a Goulburn, Barrack and Liverpool Streets, Hobart: Analysis of Artefacts, prepared for Austral Tasmania.

Harris, E. J. 2011b Sawpits Excavations (03/02) – 2009–2011, prepared for PAHSMA, Port Arthur.

¹³ Neumann, D. 1995 "Prismatic Glass", in *Twentieth Century Building Materials, History and Conservation*, ed. By T. C. Jester, National Park Service, McGraw Hill., p188

¹⁴ Boow, J. 1991 *Early Australian Commercial Glass: Manufacturing Processes*, The Heritage Council of NSW p108

Nails

Nails are one of the most commonly found artefacts on archaeological sites. The identification of various nail types is useful in both temporal and functional analyses and therefore, merits their own discussion. There are three basic technological stages apparent in nail typology: wrought nails, cut nails and wire-drawn nails. Hand-forged wrought nails were the primary construction fasteners in the seventeenth and eighteenth centuries. Their use effectively ended with the introduction of cut nails.¹⁵ Cut nails were introduced to the hardware market in the 1790s. While cut nails had very little impact in Australian construction practices before 1820, they have been found in dated Australian contexts from the late 1790s. Not until technological advancements around the 1840s produced a totally machine-made version did cut nails begin to replace wrought nails as primary construction fasteners.¹⁶ Wrought nails continued to be used by cabinet makers and for larger fastenings as spikes. Wire-drawn nails were first introduced from Europe c.1850 and use of wire nails for building construction occurs as early as the 1860s.¹⁷

There are three steps to identifying a nail: the material, the manufacturing technique and the type of nail. The identification of various nail types is useful in both temporal and functional analyses and since they represent the majority of artefacts recovered during excavations associated with this study, nails therefore merits an in depth discussion. There are 6,027 nails in the collection. Of this number 509 nails are too corroded for manufacture to be identified and, for 457 nails identification is limited to a square cross section (cut or wrought manufacture). Nails for which manufacture is determine consist of wrought (51), cut (3,819), Ewbanks type (47) and wire-drawn (31).

Iron Nails

There are three basic technological stages apparent in nail typology; wrought nails, cut nails and wire-drawn nails. The earliest nails were fashioned by blacksmiths cutting and shaping nails from square-section nail rod. While wrought nails are still manufactured today, they are used primarily for restoration and reproduction purposes. Hand-forged wrought nails

¹⁵ Nelson, L H 1963 'Nail Chronology as an Aid to Dating Old Buildings.' *American Association of State and Local History*. Technical Leaflet 15

¹⁶ Varman, RVJ 1993 Bricks and Nails: Building Materials as Criteria for Dating in Sydney and Environs from 1788 – A Documentary Survey and Assessment of Dating Potential. A thesis submitted in fulfilment of the requirements for a degree of Doctor of Philosophy, Department of Prehistoric and Historical Archaeology, University of Sydney, pp 143–144

¹⁷ Lewis, M. n.d. Australian Building: A Cultural Investigation, <http://www.mileslewis.net/australian-building/pdf/> 8.06.14

were the primary construction fasteners in the seventeenth and eighteenth centuries. Their use effectively ended with the introduction of cut nails.¹⁸

Cut nails were introduced to the hardware market in the 1790s. These nails initially had a machine-cut body with a hand-made head. While cut nails had very little impact in Australian construction practices before 1820, they have been found in dated Australian contexts from the late 1790s. Not until technological advancements around the 1840s produced a totally machine-made version did cut nails begin to replace wrought nails as primary construction fasteners.¹⁹ Wrought nails continue to be used by cabinet makers and for larger fastenings such as spikes.

Nelson 1968 identified five distinct phases of the evolution of cut nail technology:²⁰

- | | |
|--|------------------|
| 1. Cut from Common Sides, Hammered Heads | 1790s-1820s |
| 2. Cut from Opposite Sides, Hammered Heads | 1810-1820s |
| 3. Cut from Common Sides, Crude Machine-made Heads | 1815-1830s |
| 4. Cut from Opposite Sides, Crude Machine-made Heads | 1820s-1830s |
| 5. Cut from Opposite Sides, Perfected Machine-made Heads | 1830s to present |

Cost of manufacture was main reason for the increase popularity of cut nails over wrought nails. The saving cost of fuel was greater than 80 per cent. In 1810, Massachusetts nail manufactures estimated that 1,700 of the 2,000 tons nails produced nails were cut nails (85%).²¹

The most common manufacturing technique identified in the assemblage is the cut nail (3,819 MNI). Due to corrosion and fragmentation most cut nails can only be identified on general basis. A few nails in the collection are Ewbanks type nail (47 MNI), which contribute further temporal information. First patented in Britain by J J Cordes & Co of the Dos Works in Newport, Monmouthshire, Ewbanks nails are machine-wrought nails with a characteristic tapered shank and a chisel point (also referred to as flat or spade point) that was popular in Australia because it could cope with Australia's hard eucalypt hardwoods (eucalypt,

¹⁸ Nelson, L H 1963 'Nail Chronology as an Aid to Dating Old Buildings.' American Association of State and Local History. Technical Leaflet 15.

¹⁹ Varman, RVJ 1993 Bricks and Nails: Building Materials as Criteria for Dating in Sydney and Environs from 1788 – A Documentary Survey and Assessment of Dating Potential. A thesis submitted in fulfilment of the requirements for a degree of Doctor of Philosophy, Department of Prehistoric and Historical Archaeology, University of Sydney,, pp 143 – 144

²⁰ Nelson, L H 1963 'Nail Chronology as an Aid to Dating Old Buildings.' American Association of State and Local History. Technical Leaflet 15., pg 8

²¹ Bishop, J L, E T Feedley and E Young 1864 A History of American Manufactures, from 1608 to 1860. Sampson Low, Son & Co, London.p 154

Tasmanian Oak, Blackwood, Jarrah, etc.).²² Ewbanks patented nails were introduced into Australia by J J Cordes & Co about 1838.²³

Though described as ‘pressed’ or ‘wrought’, the Ewbank nails were made by machinery, and in the Australian market in particular they largely supplanted hand-forged nails.²⁴ The success of the Ewbanks nail was due to the fact it had resilient quality of a wrought nail that could be driven into hardwoods without splitting the timber or fracturing the nail, yet had the cost efficiency of a machine cut nail.²⁵

Wire-drawn nails were first introduced from Europe c.1850. These earlier wire nails were used primarily for box construction, such as those for tack, blankets, bibles or scientific equipment. Of the 31 wire-drawn nails in the collection all but one are smaller nails such those used in box construction. The use of wire nails for building construction occurs as early as the 1860s.²⁶ The first known importer of nails was Lasseter, at about this time. By the 1890s, the architectural use of wire nails in Australia had superseded all other nail types.²⁷ Unlike the British, Australians were not prejudiced against the wire nail, because it was a better fastener for native hardwoods than cut nails. Although some builders prefer cut nails today, they were replaced almost universally by the wire nail by the turn of the 20th century.

Copper Nails

Copper nails were introduced to ship building in the early 1500s and used on British ships from the early 1600s to attach lead sheathing to clad the underside of ships.²⁸ Whilst the

²² How, C & M Lewis 2009 “The Ewbanks Nail”, Proceedings of the Third International Congress on Construction History, Cottbus, May 2009, p 829

²³ Young, D. 1996 Making Crime Pay: The Evolution of Convict Tourism in Tasmania, Tasmanian Historical Research Association, Hobart, p138.

²⁴ Ball, Ephraim, 1866 “The Hand-made Nail Trade” published in the Birmingham and Midlands Hardware District, p 112

²⁵ How & Lewis 2009, pg 829

²⁶ Lewis n.d. p. 8.06.14

²⁷ Varman 1993, p. 162

²⁸ Ball, Ephraim, 1866 “The Hand-made Nail Trade” published in the Birmingham and Midlands Hardware District, p 103

general shape of cast copper nails have changed little from the 1600s,²⁹ the chemical formula for the copper alloy changed over time. Muntz metal was an alloy formed by bonding copper (60%) and zinc (40%) and by the 1850s was used for cast nails by both British and foreign shipping. The use of this metal represents a technological innovation that would clearly separate the artefacts by their chemical signature.³⁰ Most of the copper nails in this study are of cast copper alloy manufacture, but no chemical analysis was conducted to determine if they are indeed made of Muntz metal. Whilst information on moulds for casting copper nails was not obtained during this study, the classification of cast copper nails was achieved by the identification of mould seams. There are 13 cast copper nails in the collections.

Hoop Iron

Hoop iron is flattened iron in long thin strips. The name is derived from its use for binding together the staves of casks or tubs. However, in colonial time hoop iron had many other uses. Early nail-cutting machines were designed 4-penny nails from hoop iron³¹ and throughout the 19th century hoop iron was used for bonding in brickwork.³² In the 21st century hoop-iron strapping is defined as “thin strips of iron or steel used for diagonal bracing, for reinforcing masonry and brickwork, and as a connection between building elements.”³³

According to Miles Lewis the use of hoop iron in brickwork was fairly widespread in Australia.³⁴ During the second quarter of the 19th century onwards lengths of hoop iron as metal bonding were built into brick walls to fulfill the same purpose as earlier bond timbers. As a type of re-enforcement these flat bars of wrought iron were often dipped in tar and

²⁹ <http://finds.org.uk/database/artefacts/record/id/195109>

³⁰ Viduka, A and S Ness 2004 “Analysis of Some Copper-alloy items from HMAV Bounty wrecked at Pitcairn Island in 1790”, in *Proceeding of Metal 2004*, National Museum of Australia, Canberra,, p 161

³¹ <http://www.monticello.org/site/plantation-and-slavery/nailery>

³² Jenkins, M 2014 *Short Guide to Scottish Traditional Brickwork*, Historic Scotland, National Conservation Centre, Edinburgh, p 32.

³³ https://www.macquariedictionary.com.au/features/word/search/?word=hoop+iron&search_word_type=Dictionary (different size)

³⁴ Lewis n.d. 6.00.1 (different size)

sand and laid at regular intervals in a wall such as every 4th or 6th course.³⁵ It was also important in the evolution of ties for cavity walling.³⁶ From the mid-19th century a series of improved patents for structural hoop iron were registered. Patented hoop iron or “hoop iron bond” was far superior to ordinary hoop iron and though the cost was higher, was preferred and recommended by Australian government officials.³⁷ There are 36 fragments of strapping in the collections, ranging in width from 20–40mm.

2.3.4 Food Remains

There are 803 organic food remains retained in the collections. Bone (705) was identified using references designed for use in archaeological research.³⁸ Shell (98) was classified using references specific to Australia and Tasmania.³⁹

2.3.5 Buttons

A total of 305 buttons were recovered from the Ablutions Block. Approximately 15 per cent of buttons (44) were metal buttons that are too corroded to identify beyond basic form and 14 per cent (43) were identified only as metal sew-through type because corrosion prevented identification of hole count. George’s 1999 study of buttons from convict and whaling sites in Tasmania, which includes clothing from Port Arthur. The study provides information on use of various button types by material, as well as the temporal ranges for each.⁴⁰ Forty per cent (40%) are identified as 4-hole sew-through buttons (168) ranging in size between 16mm and 20 mm. The majority are bone buttons (122) in this size range are consistent with the type and size used on government-issue convict trousers and jackets at Port Arthur throughout

³⁵ Jenkins, M 2014 Short Guide to Scottish Traditional Brickwork, Historic Scotland, National Conservation Centre, Edinburgh.

³⁶ Lewis, n.d. 6.00.2

³⁷ Lewis, n.d. 6.00.2

³⁸ Hillson, Simon 1992 Mammal Bones and Teeth: An Introduction to Methods of Identification, Institute of Archaeology, University College, London; Green, R. H. 1983 Skulls of the Mammals in Tasmania, Queen Victoria Museum and Art Gallery, Launceston; Fillios, Melanie and Natalie Blake 2015 Animal Bones in Australian Archaeology, University of Sydney Press, Sydney.

³⁹ Wilson, Barry 2002 A Handbook to Australian Seashells, Reed New Holland; Grove, Simon and Rob de Little <http://www.mollussoftasmania.net/>

⁴⁰ George, Sam 1999 Unbuttoned: Archaeological Perspectives of Convicts and Whalers’ Clothing in Nineteenth Century Tasmania, Honours Thesis, La Trobe University, p 43

the Convict Era (1790–1900). Metal buttons (38) in this size range were also used on convict jackets (1700–1900).

In addition, there are:

- 15 3-hole sew-through bone buttons used on shirts and undergarments (1700–1900)
- 1 3-hole sew-through shell button used on shirts and undergarments (1827–1900)
- 5 4-hole sew-through Prosser porcelain buttons 10-12mm size (1849TPQ)
- 22 shanked metal buttons ranging in size from 17–20mm, but too corroded for further identification.

One bone button, recovered from Context 183, Day Room, has been modified with three X-shaped lines, which may represent convict efforts to decorate buttons or to mark them for use as gaming tokens (Figure 8).



Figure 8: Modified bone trouser/jacket button from convict clothing (Context 183, Day Room).

3 FUNCTION

Artefacts recovered from the Penitentiary Ablutions Block were also examined on the basis of function or original intended use. For the purpose of functional classification, artefacts are clustered into groups so that statistical analysis of these clusters provides interpretive data on the site.

Creating a classificatory system that will select for the variables of interest for the research design is an approach that historical archaeologists worldwide have employed for decades to assist in site interpretation and creating a system that will appropriately classify these variables of interest is a problem that has plagued historical archaeologists for decades. In 1977, Stanley South set forth one of the first attempt to classify artefacts according to functional taxonomic groups. His Carolina Pattern is designed to aid in the statistical interpretation of 18th century British Colonial sites.⁴¹ While South's classification was the first attempt to establish the signature of "normal" Euro-American artefact assemblages, it was found not to be applicable on sites that originated in other areas of the United States and 19th century and subsequent 20th century sites.

In the 1990s, Australian institutions, such as The University of Sydney's Archaeological Computing Laboratory, began to set the framework for artefact cataloguing of artefacts for Australia's historical sites, which included functional classification. More recently, there has been a call for standardisation of terminology and categories, but given the wide variety of type sites investigated, be it residential, commercial or industrial, the feasibility of creating one national classification system would be a daunting task.⁴²

The classification system used in this study is organised around data based upon behavioural activity groups identified for general cultural and social frameworks. It allowed for the subdivision of each group into subcategories, or functions, that further assist in use interpretation during the analysis and reporting phases of this study. This system does allow for statistical comparison of relative frequencies within the site and the results of other local, regional and national archaeological investigations.

Functional analysis classified approximately 64% of the collection into 20 identified groups. The remaining 36.3% were too fragmented and/or corroded for more than material to be determined. Figure 9 represents the nine groups with the highest relative frequencies and the relative frequency of functionally unidentifiable artefacts. The relative frequencies of 11 functional groups were below 0.1% and these groups are represented in Figure 9 as "Other".

⁴¹ Lindbergh, J. 1999 "Buttoning Down Archaeology," in *Australasian Historical Archaeology*, Vol. 17, p51

⁴² Crook, P, S. Lawrence, and M. Gibbs 2002 "The Role of Artefact Catalogues in Australian Historical Archaeology: a Framework for Discussion, *Australasian Historical Archaeology*, Vol. 20, pp. 26–38.

These groups are Armaments, Collectables, Currency, Domestic, Garden, Haberdashery, Human Remains, Industry, Non-cultural, Penal and Transport.

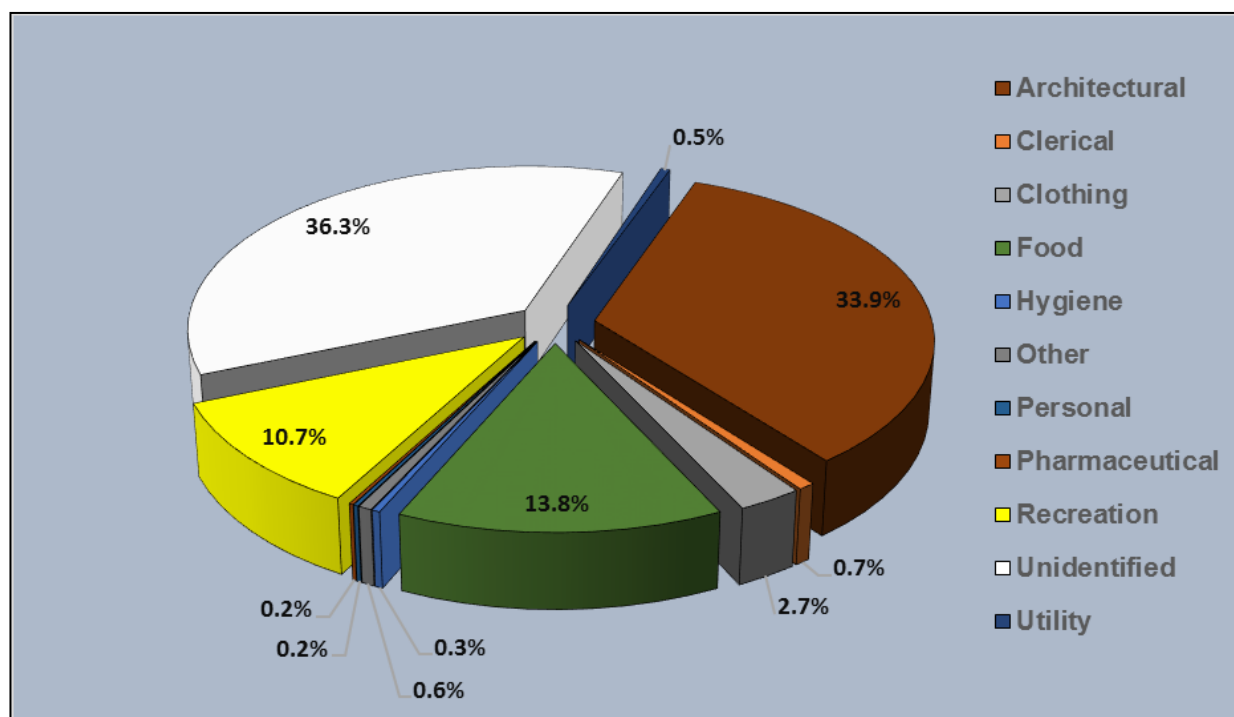


Figure 9: Relative Frequencies of Functional Groups from Ablution Block Excavations.

4 CHARACTERISATION OF COLLECTIONS

As previously noted, context analysis for the two archaeological investigations is discussed separately. The 2003/2004 testing excavation consisted of strategically placed trenches across the ablutions block while the 2016 investigation was a full data recovery of the block. For the following discussion all dated artefacts in this study have a *terminus post quem* (TPQ) or a date when the item was first manufactured and/or a *terminus anti quem* (TAQ) or an end date for manufacture. This nomenclature is used throughout this discussion to clarify temporal information.

Beyond context identification numbers, the analysis results presented below include several forms of statistical information (quantities, percentages, ratios) and various types of dates (artefact technomorphology, use-popularity, manufacturers and products). For clarity of reporting, the following standards will be used:

- all context numbers are presented in brackets [];
- all artefact quantities and MNI are represented in digital format;
- where applicable dates will be followed by TPQ or TAQ; and
- relative frequencies/percentages will be followed by the % symbol.

4.1 2003/2004 Ablutions Block Testing Excavation

There were two seasons of archaeological excavations in the summers of 2003 and 2004. Figure 10 shows the locations of the trenches. Trench 1 (laundry area), Trench 3 and Trench 5 were excavated in 2003, and a new Trench 1 and Trench 2 excavated in 2004. The re-use of the name Trench 1 created confusion when it came to the cataloguing of the artefacts which was completed 12 years after the excavations. Checking of dates and excavators' initials (where available) was conducted in order to distinguish the two Trench 1s. For the purpose of this study the 2004 Trench 1 is renamed as Trench 1A.

The initial artefact analysis of approximately 8% of the collection (1,170), recovered during the 2003/2004 trench excavations, was reported by Alasdair Brooks in 2004.⁴³ The exact number of artefacts considered in Brooks' analysis is unclear as at one point in the report they are noted as 1,170, whilst in other sections of the report the artefact total is noted as 1,187. Whilst this is not a great discrepancy, what was of concern is the fact that there were 4,241 artefacts recorded in the database that were catalogued in 2004 (no minimum item counts were recorded for catalogue entries prior to 2016).

For this report the 2003/2004 collection is considered anew, putting aside the 2004 artefact report. However, one analytical approach from Brooks' 2004 artefact report was retained for cataloguing the majority of the 2003/2004 collection (accomplished in 2016) and for the

⁴³ Brooks, A 2004 Penitentiary Ablutions Block Artefact Report.

cataloguing of artefacts from the 2016 Ablutions Block excavation. Brooks set forth a protocol for determining the MIC of pipes across the site, in which pipe bowls and/or marked pipe stems represented the number of MNI. Unmarked stems were recorded by fragment count only.

Reporting for the 2003/2004 excavation is organised by trench. Characterisation of each trench consists of key temporal indicators and functional analysis as it pertains to establishing activity areas within the Ablutions Block. Temporal analysis is limited to key temporal indicators. This approach was taken because the majority of artefacts were catalogued by UNE students who used unverified sources of temporal information (i.e. the Internet) in achieving date ranges for a wide range of artefact types for which there are no definitive date ranges or using an unreliable date range for a distinct artefact type and applying it to a wide range of similar artefact types. Where possible manufacturers marks were reanalysed using verifiable sources and wherever possible temporal information recorded by Brooks for ceramic wares was used. Functional characterisation was limited to key artefact types that have documented association with convict activities. These include tobacco pipes, buttons and gaming tokens.

Following the approach detailed above 14,379 artefacts and an estimated 3,601 MNI are considered below. The majority (97%) of artefacts (3,500 MNI) were recovered from trench excavations (Table 2). Figure 10 shows the locations of each trench and data for each trench are presented below.

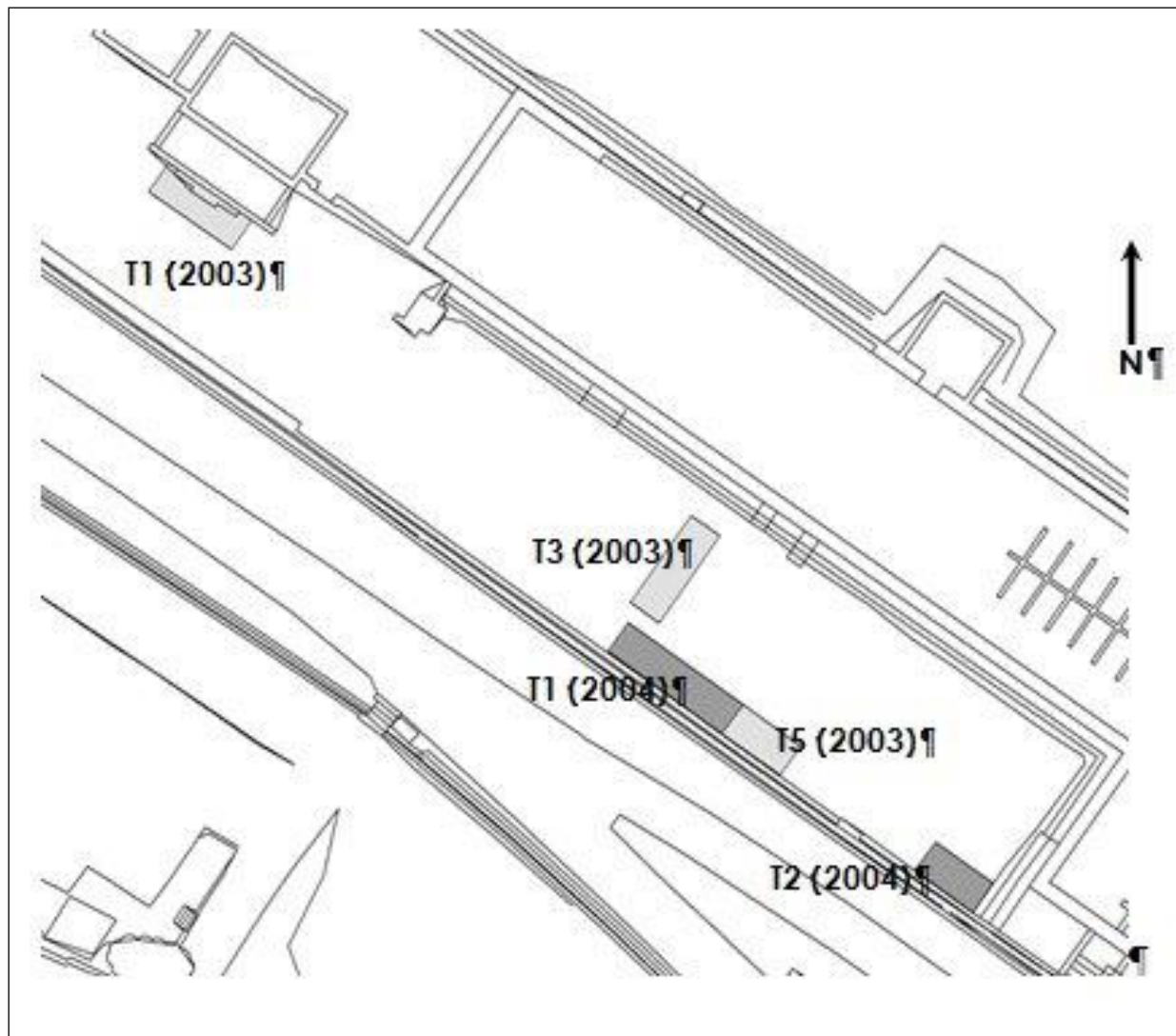


Figure 10: Trench locations.⁴⁴

⁴⁴ Tuffin, R. & Brooks, A., Port Arthur Archaeological Summer Season 2003/2004 Report, Port Arthur Historic Site Management Authority, Port Arthur 2005, p5.

Table 2: Summary Data for Test Trenches

Trench	Quantity	MNI
01	5,132	1,223
01A	5,340	1,073
01B	20	20
02	350	106
02A	392	121
03	1,484	525
05	1,436	430
13	13	2
Total	14,167	3,500

4.1.1 Trench 1 (2003)

Trench 1 (2003), which was placed near the Laundry at the western end of the ablutions area, produced 1,223 MNI. Artefacts from Contexts [02] and [03] represent a mix of late-19th century and 20th century artefacts. Key temporal indicators for [02] and [03] are:

- 1962 *TPQ* 1 pull ring tab can closure [02]
- 1860 *TPQ* 8 wire-drawn nails [03]
- 1869 *TPQ* 1 milk glass lid line for preserve jar [03]
- 1920–1930 1 bottle made by Australian Glass Manufacturers [03]

Context [03] overlays Context [05], a sandstone rubble layer that contained mostly animal bone and undiagnostic bottle glass. Beneath the sandstone rubble is a layer of grey sand [04] that contained mostly corroded nails and animal bone and no datable artefacts were identified from this deposit.

4.1.2 Trench 3 (2003)

In Trench 3 a series of deposits were identified that were overlying foundations of the eastern wall of one of the western yard shed and the surrounding yard area. Trench 3 produced 525 MNI. Top soil deposits consist of Contexts [02], [03] and [04]. Results of temporal analysis suggest that deposits [02]–[05] are a mix of mid-19th to 20th century artefacts. Key temporal indicators are:

- 1809–1831 Shell-edged pearlware vessel [03]
- 1846–1967 2 clay tobacco pipes made by Duncan McDougall of Glasgow [03]
- 1887–1920 1 Abbotts Crown Seal (Codd type bottle) of Launceston [03]
- 1870–1910 1 Lamont patent aerated water bottle [05]
- 1895 *TPQ* 1 crown finish on bottle [05]

- 1806–1955 1 clay tobacco pipe made by William White, Glasgow [05]
- 1934TPQ 1 machine-made Cascade Brewery beer bottle [03]
- 1834–1869 1 Ewbanks type nail [09]
- 1840s TPQ 2 Hartley Patent prismatic window glass [03], [09], [11]
- 1914–1930 1 solarised selenium glass bottle [03]

Approximately 52 per cent of artefacts recovered from Trench 3 are architectural debris (277). Food-related (97), which represents the next largest activity, is comprised mostly of bottles (53) (alcohol and aerated water), tableware (19) and animal bone (15). Of note are 14 fragmented lead-glazed lavatory basin/chamber pots were recovered from [03] and [05]. Their presence in these deposits is consistent with Trench 3's proximity to urinals.

4.1.3 Trench 5 (2003)

Trench 5, which extended over part of the day room and urinal area, yielded 430 MNI. Key temporal indicators are:

- 1830–1861 5 tobacco pipes made by William Murray, Glasgow [07],m [23]
- 1867–1870 1 tobacco pipes made for Theophilus Milo, London [05]
- 1920TPQ 1 machine-made bottle [12]
- 1962 TPQ 1 pull ring tab can closure [05]
- 1950s TPQ 1 plastic straw [03]
- 1960 TPQ 1 plastic toy camel from cereal box [02]

Contexts [02], [03] and [05] contained a mix of 19th century artefacts with modern glass and plastic items. Similarly context [12] contained a machine-made bottle.

Approximately 60 per cent of the artefacts recovered from Trench 5 are architectural debris (254) and consist mostly of nails (243). Food-related artefacts (70) are the second highest frequency (16.2%) of functionally classified artefacts and 64 per cent of food-related artefacts are bottles (45) (alcohol and aerated water). Tobacco pipes, classified as recreational items, represent 8 per cent of the artefacts from this trench

4.1.4 Trench 1A (2004)

Trench 1A (2004) was an extension to the Trench 5 excavation that covered the day room, from its already excavated eastern wall to its western wall and the adjacent bank of lavatories. A total of 1,073 MNI were recovered. Contexts [02]–[05], [08] and [11] are temporally mixed deposits with a temporal range of Convict Era to late 20th century. Contexts [06] and [07] contained only 19th century artefacts. Key temporal indicators are:

- 1830–1861 3 tobacco pipes made by William Murray, Glasgow [04], [07]
- 1860–1880 1 clay tobacco pipe made by David Miller of Liverpool [05]

- 1886–1912 1 Price’s pottery vessel [03] (Figure 11 and Figure 12)
- 1916–1923 1 bottle made by Australian Glass Manufacturers (AGM on base) [03]
- 1920 *TPQ* 2 machine-made glass bottle [05], [11]
- 1934 *TPQ* 1 Beer/wine bottle made by The Australian Glass Manufacturing Company (logo) [03]
- 1965 *TPQ* 1 label from a camera flash cube [02]
- 1950 *TPQ* 1 plastic drinking straw [03]
- 1960s *TPQ* 1 toy camel made by R & L Plastics [08]
- 1980 *TPQ* 1 Duracell AA battery [02]

Approximately 53 per cent of the artefacts from Trench 1A are architectural debris (567): most of which are nails. Food-related artefacts (200) consist mostly of bottles (95) and tableware (76). Of note are three possibly unfinished gaming pieces from the convict era yard surface [6].

4.1.5 Trench 2 (2004)

Trench 2 (2004) was located at the south eastern base of the wall along Champ Street, in the area of the urinal bank as shown on the 1864 plans and it yielded 227 MNI. Context [02] and [03] are temporally mixed deposits, containing Convict Era and modern artefacts. Artefacts from Contexts [04]–[09] have date ranges that are consistent with the Convict Era. Key temporal indicators are:

- 1830–1861 1 tobacco pipe made by William Murray [07]
- 1846–1967 2 tobacco pipes made by Duncan McDougall [08],[09]
- 1962 *TPQ* 1 can with pull ring tab type closure [02]

Of specific note are gaming tokens recovered from disturbed contexts in Trench 2. From Context [07] there are 21 lead gaming token and from Context [03] there are 6 broken or unfinished tokens (Figure 13).



Figure 11: Port Arthur Pottery Fragment from Trench 1A, Context 3. (Source Leah Byrnes).

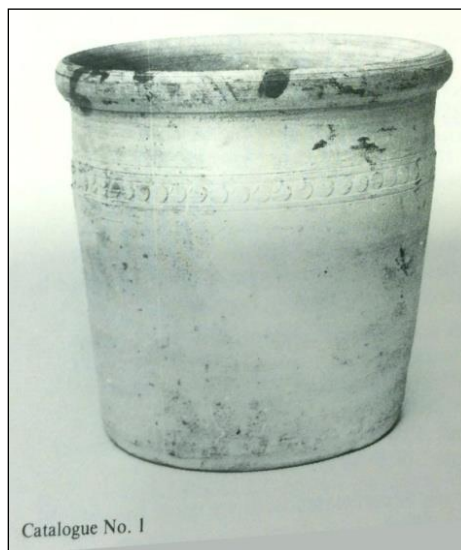


Figure 12: Flowerpot with roulette decoration. Source: Port Arthur Pottery: Queen Victoria Museum and Art Gallery, Launceston, 20 December 1982-31 January 1983, (Catalogue of Works) Port Arthur Historic Site, 25 February-17 April 1983.



Figure 13: Tokens from Trench 2. Source: Tuffin, R & Brooks, A. Port Arthur Archaeological Summer Season 2003/2004 Report, Port Arthur Historic Site Management Authority, Port Arthur 2005, p70.

4.1.6 Discussion of Artefacts for 2003/2004 Trench Excavations

As demonstrated above many of the trench deposits were a mix of 19th and 20th century artefacts. In part this is due to the fact that many deposits represent top soil layers subject to continual use from the late-19th century until the 2003/2004 excavations and in part to periodic disturbances across the Ablutions Block. Therefore the approach of this analysis is to identify activities related to the Convict Era and to delineate activity areas with the block. Three artefact types are used here to further the interpretation of site use: buttons, tobacco pipes and gaming tokens.

Ninety (90) buttons were recovered from deposits of every trench excavation. Buttons were a valuable commodity; convicts could be punished for losing a button. The recovery of buttons from an ablutions block is not unexpected, since activities in this area included washing clothes, bathing and toileting. Depending on the washing method, buttons may have been removed from clothing prior to washing, which would increase the potential for loss. Whilst buttons were recovered from trenches near the lavatories (Trench 5) and urinals (Trench 3), the majority (46) were recovered from Trench 1 near the laundry space.

Tobacco pipes are an artefact type that are readily breakable but tend to last a very long time in archaeological deposits.⁴⁵ There are an estimated 197 clay tobacco pipes recovered during trench excavations. The presence of pipes in the ablutions area is consistent with documentation that states productive convicts were allowed the privilege of smoking in the day room.⁴⁶ However, tobacco pipes were found in trenches near the lavatories, urinal and the highest relative frequency of pipes is from Trench 1 near the laundry area.

Gaming tokens are an artefact type of interest because these small simple hand-made tokens may have been used for trade or illicit gaming. These were illegal possessions for convicts, however, clearly the convicts managed to create and potentially use these items. There were 29 lead gaming pieces recovered from two trenches: Trench 1 (3) and Trench 2 (26). Their presence in these locations, particularly Trench 2, indicate that there may have been an opportunity for their use in this area of the yards (and former location of the urinals) for their gaming activities, as it was possibly one of the few places within the Ablutions Block that afforded convicts an element of privacy in an otherwise highly scrutinised environment.

4.2 2016 Ablutions Block Excavation

The 2016 excavation of the Penitentiary Ablutions Block is considered as three areas: East Yard, Day Room and West Yard (Figure 14). For the purpose of this study the analysis

⁴⁵ Gojak, 1999

⁴⁶ PAHSMA, 1991, reprint of: Convict Department 1868, Rules and Regulations for the Penal Settlement on Tasman's Peninsula, Convict Department, Tasmania, p. 46.

results are organised by these areas of the block. A total of 272 discrete contexts were identified and a summary of quantitative, chronological and functional information for each are presented in table format in Appendix A. Since the majority of functional categorised artefacts are architectural debris (nails), Appendix A includes a secondary function when Architecture is not the only category represented in a context's assemblage.

The number of contexts precludes in depth analysis for each context, therefore analysis focuses on identification of temporal and functional patterns, in particular within four categories of artefacts: Architectural remains, Food-related artefacts, Recreation-related artefacts and Clothing related artefacts.

The architectural remains are subject to temporal analysis to determine the date range for associated construction periods of associated structures. There are two artefact types which contribute to temporal placement for building construction – window glass and nails; General observations on these artefact types are:

- The majority of window glass (79%) is crown type, 19% is prismatic glass and 2% is broad type. Whilst crown type window glass was used in Tasmania throughout the 19th century, Hartley patented prismatic glass was developed the 1840s.
- Manufacturing technology was identified for 85.3% of nails (3811). The majority of identified nails (95%) are cut manufacture. Also identified are wrought nails (31) and cast copper nails (6); the latter is unlikely to be associated with building construction.

Architectural debris represents the highest relative frequency of functionally classified artefacts for the whole Ablution Block area and for each area/yard within the Block. These artefacts will be discussed in regards to their temporal placement within the site, but will not be discussed during site-use interpretation.

Approximately 59% of food-related artefacts (523) are food remains, the majority of which are bone (90%). Preliminary catalogue of bone indicate the majority of bone represents medium mammal, which could be sheep, goat or pig. Approximately 11 per cent are specifically identified as sheep and 6 per cent are cow.

Recreation-related artefacts are also subject to both temporal and functional analyses. Tobacco pipes are one of the main dating tools used in this analysis. Clothing items are subject to functional analysis with particular emphasis on identification of convict verses non-convict button types.

Analysis of recreation (tobacco pipes and gaming tokens) and clothing artefacts is undertaken to assist in site interpretation and a better understanding of convict life. The aim of this study is to identify convict activities and specific activity areas within the Ablutions Block for different phases of site occupation. These phases include:

- **Pre-penitentiary: 1830–1856** – From early settlement until the penitentiary was constructed workshops, a granary and a bakehouse were located on the western portion of what was later to be the Ablutions Block.

- **Phase 1: 1856 - c.1862** – The renovation of the old granary and flour mill to make way for more convict housing. At that time the eastern portion of the Ablutions block was designated at lavatories, and the western portion was washing.
- **Phase 2: c.1862 - Settlement Close (1877)** – Major overhaul of the Ablutions Block yards and central penitentiary building. Created were four activity areas (from east to west): the East Yard, the Day Room, the West Yard and the Laundry.
- **Post-Convict** – Shortly after the closure of the penal colony there was a land sale of various building associated with the site, however, no one bought the penitentiary. Disuse and neglect resulted in the gradual deterioration of the penitentiary and associated structures and the 1897 bush fire gutted the structure. With the sale of properties on the site at the time of closure the post-convict community of Carnarvon and from soon after closure the site became a thriving community as well as a tourist destination.

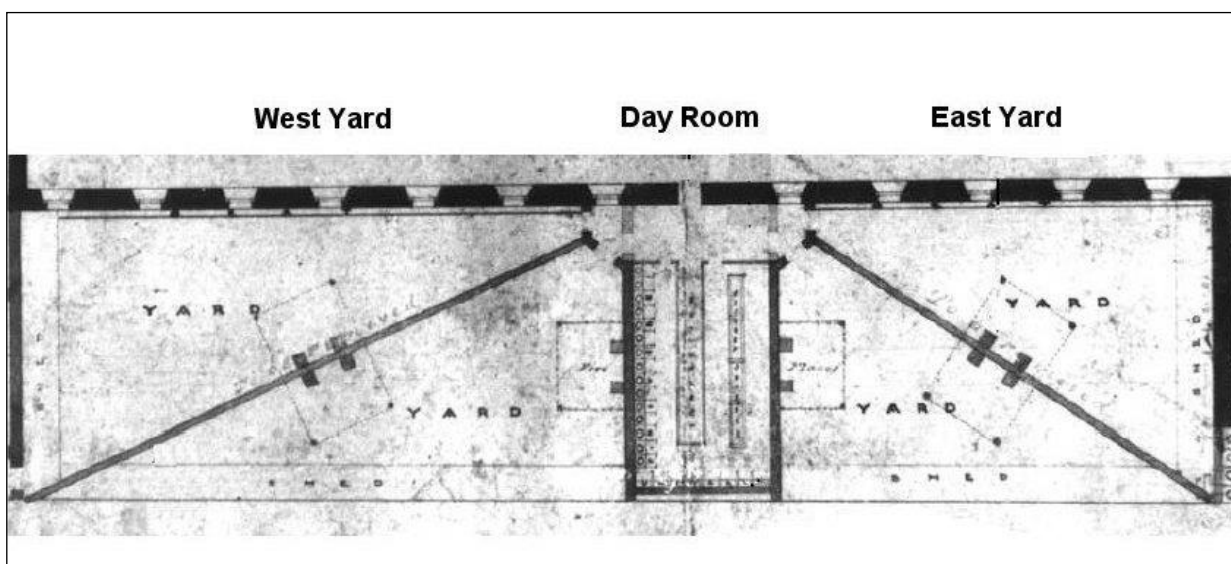


Figure 14: 1856 Plan of the Ablutions Block

Furthermore, spatial analysis of tobacco pipes (recreation), gaming tokens (recreation) and buttons will be undertaken to identify activity areas within the Ablutions Block. Locational data for these artefact types were acquired during a systematic spot find recordation across the site and were then uploaded into a GIS program that allows the production of digital maps of the excavation area and showing the locations and distribution of the three artefact types.

4.2.1 East Yard

Recovered from the East yard are 3,362 artefacts representing 1,475 MNI from 95 contexts. Approximately 37 per cent (550) of artefacts provided temporal information and 58.6 per cent provided functional information (Figure 15).

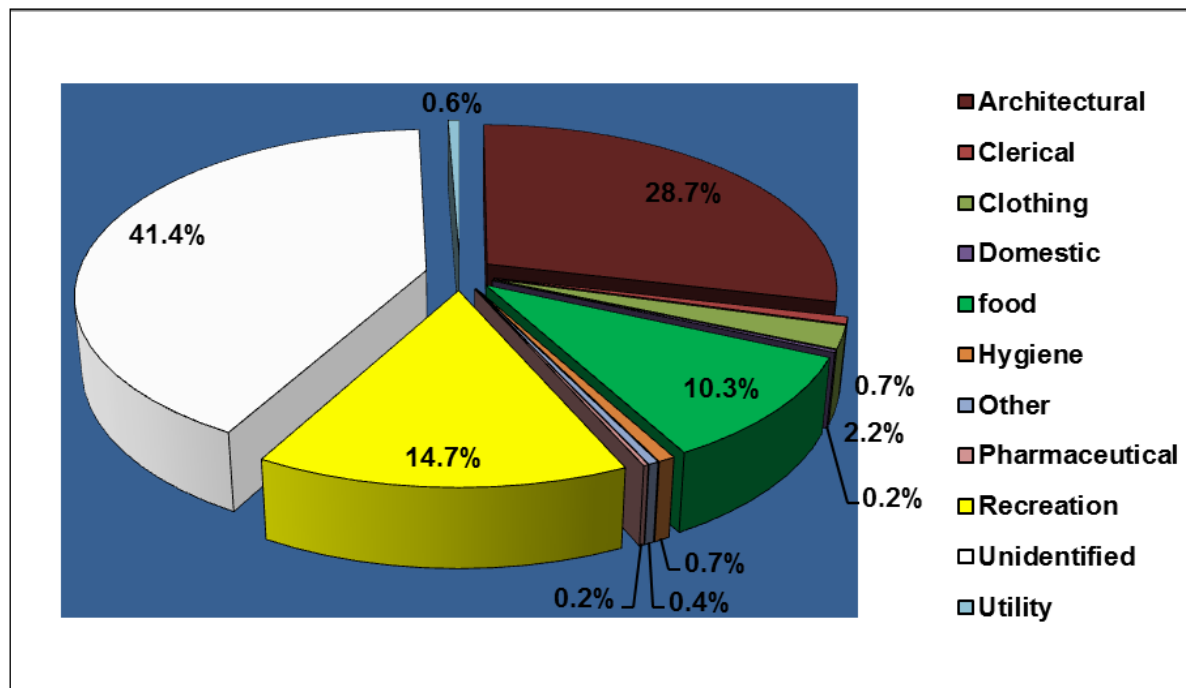


Figure 15: Relative Frequency of Functional Groups for East Yard.

The majority of datable artefacts from the East Yard area are nails (431) and the majority of datable nails (391) are cut manufacture (1820–1890). Drain slot 2 contained a small cache of wrought nails (6), which date from the first quarter of the 19th century. Prismatic window glass (1840 *TPQ*) was recovered from 22 contexts. Dates for architectural debris from the East Yard are consistent with Convict Era site use with the probability that artefacts from the drain slots are associated with pre-penitentiary use of the area.

Documented dates for marked artefacts (manufacturer and product manufacturer) provide the best source of temporal information. In the East Yard these marked artefacts included coins, bottles and tobacco pipes. An 1841–1858 British half-penny coin, recovered from demolition debris [042] associated with a shed structure, is potentially associated with pre-penitentiary activities. However, the shortage of currency meant coins were in circulation a lot longer than one would expect in the 21st century. Furthermore, coins were used by convicts to make love tokens. A one-penny William Andrew Jarvey advertising token (1860–1865) was recovered from topsoil [0001].

The wide-ranging 19th century dates for ceramic and glass tableware items are consistent with both Phases 1 & 2 of the penitentiary. Similarly, most of the bottles from this area of the block have wide 19th century manufacturing dates. Two post-convict era bottles were recovered from the East yard; a 1923–1930 *Morse's Indian Root Pills* bottle (made by Australian Glass Manufacturers) was recovered from topsoil [0001] and an 1875 Codd-patent aerated water bottle was recovered from yard surfacing [095].

Fifty-one (51) tobacco pipe stems exhibited datable manufacturers' marks (Table 3). Dates for manufacturers are consistent with both Phases 1 & 2 of the penitentiary, and whilst almost half have date ranges that suggest a Phase 1 association, these earlier dated pipes were almost always recovered from the same contexts as the later dated pipes. Exceptions are the gravelled Phase 1 yard surfacing [0043] and the fill of a possible construction cut [0774].

Table 3: Date-specific Information for Tobacco Pipes from East Yard Deposits

Manufacturer	MNI	Date from	Date to
David Miller, Liverpool	8	1860s	1880
Duncan McDougall, Glasgow	14	1846	1967
Leonard Dobbin & Co, Cork	3	1850s	
Thomas Whyte, Edinburgh	2	1832	1864
William Murray, Glasgow	23	1830	1861
William White, Glasgow	1	1806	1955

Of note in the East yard was high quality stoneware items with distinct green/brown alkaline glaze. The item is a unique and unidentified form with vertical sides with wide band/collar around body below rim. The collar has two glazed holes. Sherds of this item were recovered from fill in the cut for a drain [0707] and from Drain Slot 2 (Spot Find #1449).

4.2.2 Day Room/Portal

Recovered from the Day Room/Portal are 9,168 artefacts, representing 3,848 MNI, from 50 contexts. Approximately 59 per cent of artefacts provided temporal information (2256) and approximately 57 per cent provided functional information (Figure 16).

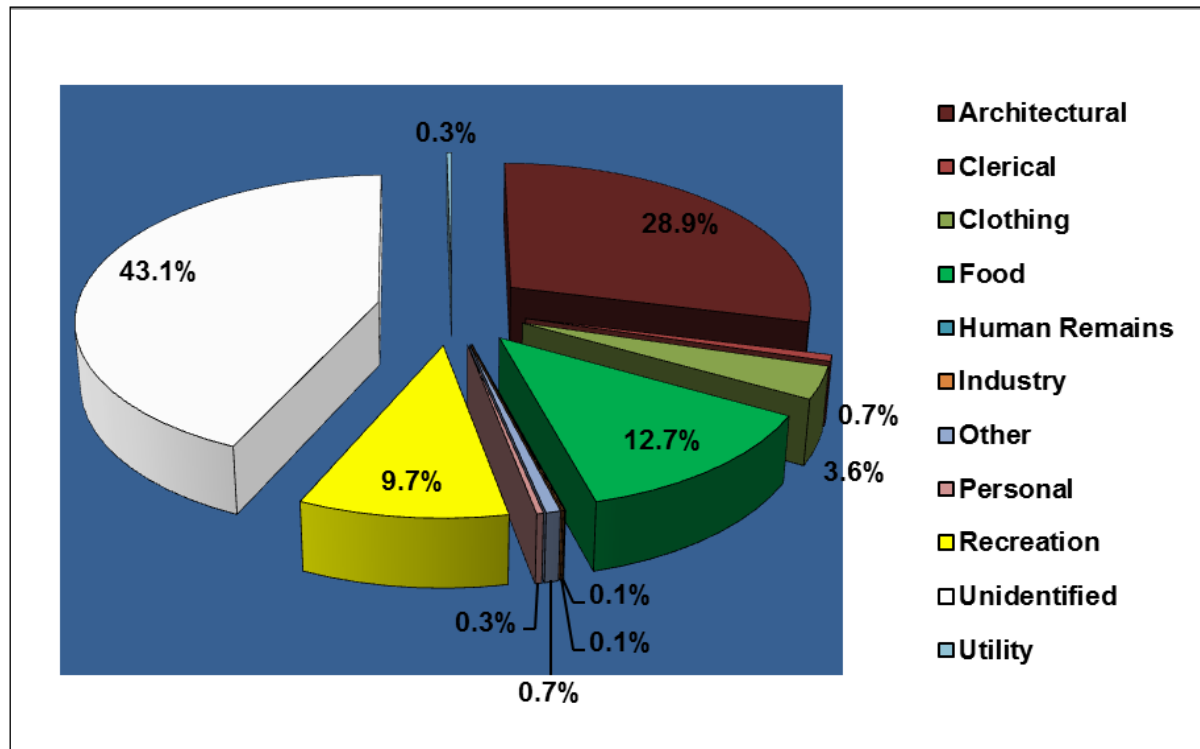


Figure 16: Relative Frequencies of Functional Groups from Day Room.

The majority of datable artefacts are nails (2,061) and the majority of datable nails (1970) are cut manufacture (1820–1890). Wrought nails (2) were also recovered from two deposits and whilst they can indicate an early 19th century construction episode(s), one deposit that contained wrought nails also contained substantial number of cut nails ([0176] and the other [0183] contain tobacco pipes dating from the third quarter of the 19th century. Prismatic window glass (1840 *TPQ*) was recovered from 12 contexts.

Wide-ranging 19th century dates for ceramic and glass tableware items recovered from Day Room deposits are consistent with both Phases 1 & 2 of the penitentiary. One exception is a pearlware child's plate recovered from Contexts [0287], [0372] and [0509], which reportedly are Phase 2 fill deposits in cuts.

Documented dates for marked artefacts (manufacturer and product manufacturer) provide the best source of the best source of temporal information. In the Day Room these marked artefacts included coins, bottles and coins, bottles and tobacco pipes. A total of 103 artefacts are dated using document manufacturers' date ranges. The majority of these datable artefacts (99) are tobacco pipes (91%) (

(91%) (

Table 4). Most bottles from deposits in this area have wide-ranging 19th century manufacturing dates based on advancements in technology. Three bottles that have documented manufacturers' marks were recovered from disturbed post-convict era deposits (Figure 5). A one-penny token (1854 *TPQ*) from Hobart's Alfred Nicholas tea warehouse was recovered from post-convict accumulation above demolition.

Table 4: Date-specific Information for Tobacco Pipes from Day Room Deposits

Manufacturer	MNI	Date from	Date to
David Miller, Liverpool	26	1860s	1880
Duncan McDougall, Glasgow	55	1846	1967
Leonard Dobbin & Co, Cork	5	1850s	
William Bearnelts , Gouda	1	1850	1910
William C. Wood & Sons, Glasgow	1	1856	1875
William Murray, Glasgow	11	1830	1861

Table 5: Post-convict Era Artefacts from Disturbed Day Room Deposits.

Context	Date Range	Description
[0378]	1880–1915	Cannington Shaw bottle
[0093]	1920–1959	Tasmanian Bottle Company beer bottle
[0001]	1930TPQ	Australian Glass Manufacturer’s bottle

Relative frequencies of functional groups are shown in Figure 16. Functional analysis classified 9.7% of the Day Room artefacts as recreational items (373). The majority of these items are tobacco pipes (359), including 34 partial pipes, 139 bowls and 176 stems. One bone mouthpiece may have been a convict-made item. The remaining tobacco pipes are the ubiquitous ball clay type. The Day Room had the highest density of tobacco pipes and whilst deposits in the West Yard produced more pipes, that yard is at least twice the size of Day Room. Decorated pipes include three bowls embossed with British and American flags and two commemorative Waterloo pipes depicting Wellington and Napoleon.

Seven gaming tokens were recovered from Day Room deposits. Four tokens are circular lead type and one lead token is triangular. There are two tokens made from the rims of whiteware plates. These are both circular in shape and probably ground/smoothed manufacture. Found in deposits [0139] and [0315] are rolled strips of lead sheeting, which possibly were off-cuts secreted by convicts to make the lead tokens.

There are 129 buttons and the majority of buttons are bone and metal 4-hole sew-through type (71%) used on convict trousers and jackets. In addition, there are 18 shanked buttons and while corrosion prevented specific type identification, the size is consistent with plain military uniform buttons.

Observations on other artefact types from the Day Room include:

- Six eye glass lenses were recovered from deposits [0018], [0057], [0064], [0139], [0315] and [372]. In two instances cross-context mends were achieved for lens: one between two subfloor deposits ([0064] and [0372]) and another between subfloor deposit [0372] and demolition deposit [0139].

- The rim of a fire bucket was recovered in post-convict deposit [0166] (Figure 17). This rim is to a leather bucket that would have sat next to the fire place, filled with sand. A whole example of such a bucket is currently part of PAHSMA's Radcliffe Collection (Figure 18).
- Potentially convict-made worked bone artefacts were recovered from [0139] and [0249] (Figure 19).
- A human phalange was found in post-1877 accumulation [0176] and a human tooth was found in demolition deposit [0093].



Figure 17: Riveted Iron Rim from Leather Fire Bucket Recovered From Post-convict Era Demolition Debris [0166] in Northern Portion of Day Room.



Figure 18: Example of Whole Fire Bucket [in PAHSMA Radcliff Collection].



Figure 19: Worked Bone Artefacts from Day Room.

4.2.3 West Yard

Recovered from the West Yard are 5,631 representing 2,868 MNI from 127 contexts. Approximately 48 per cent (1382) of artefacts provided temporal information and 50.4 per cent provided functional information (Figure 20).

The majority of nails (10,390) recovered from West Yard deposits are cut manufacture (1820–1890). Wrought nails (37) were recovered from 12 deposits. For one deposit [597] the recovery of only wrought nails and tobacco pipes dating from 1830–1861 suggest this deposit might be associated with the Phase 1 of the site development. Prismatic window glass (1840 *TPQ*) was recovered from 14 deposits across the yard.

The earliest documented datable artefact from any deposit in the Ablution Block is a 1797 British ‘cartwheel’ two-pence recovered from top dressing gravel in [0117], a deposit located in the southeast portion of the West Yard. The coin is severely worn and the only visible markings are D. G. REX and the vague outline of George III. The coin was identified by raised rim band and distinct measurements and weight. The significance of this coin is the fact that 1797 cartwheel two-pence were the first currency in the colony and this coin is most likely one of the 4 tons of coins shipped out in 1800 when the need for hard currency necessitate the importation of the coins from Britain.

The wide-ranging 19th century dates for most ceramic and glass tableware items are consistent with both Phases 1 & 2 of the Penitentiary. Exceptions are pearlware (1780–1830) and creamware (1760–1830) tableware from Phase 1 deposits [0079] and [332]. Another pearlware vessel was recovered from a mixed deposit around the fireplace [0081], which also contained a machine-made beer bottle (1930 *TPQ*).

Documented dates for marked artefacts (manufacturer and product manufacturer) provide the best source of temporal information. In the East Yard these marked artefacts included coins, bottles and tobacco pipes. Five coins were recovered from West Yard deposits. Three coins are from post-convict deposits (Table 6). An 1860–1890 British half-penny was recovered from Phase 2 cut fill [0351]. The majority of bottles (75%) from this yard have wide ranging 19th century manufacturing dates. Five bottles date to the post-convict occupation of the site ([0081], [0091], [0110], [0199] and [0240]) (Table 6

Table 6: Post-convict Era Artefacts from Disturbed West Yard Deposits.

Context	Date Range	Description
[0176]	1876–1900	John Lamont patent bottle stopper
[0380]	1887–1912	Abbott’s cordial bottle
[0110]	1913 <i>TPQ</i>	British half penny
[0137]	1897–1920	Winchester New Rival 12 gauge shotgun shell
[0240]	1920–1959	Tasmanian Bottle Company beer bottle
[0081]	1930 <i>TPQ</i>	Australian Glass Manufacturers’ bottle
[0001]	1929 <i>TPQ</i>	Australian penny

[0051]	1943TPQ	Australian half penny
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One hundred and twenty-four (124) tobacco pipe stems exhibited database manufacturers' marks (Table 7). Dates for manufacturers are consistent with both Phases 1 & 2 of the penitentiary.

Table 7: Date-specific Information for Tobacco Pipes from West Yard Deposits.

Manufacturer	MNI	Date from	Date to
David Miller, Liverpool	3	1860s	1880
Duncan McDougall, Glasgow	39	1846	1967
Leonard Dobbin & Co, Cork	1	1850s	
Thomas Davidson, Glasgow	1	1862	1911
William Murray, Glasgow	78	1830	1861
William White, Glasgow	2	1806	1955

Relative frequencies of functional groups are shown in Figure 20. Functional analysis classified 14.6% of West Yard artefacts as recreational items (418). The majority of these items are tobacco pipes (394) including 19 partial pipes, 147 bowls and 222 stems. Decorated pipes include four bowls embossed with British and American flags and one commemorative Waterloo pipe depicting Wellington and Napoleon.

There are 40 gaming tokens from West Yard deposits. Twenty-three (23) tokens are made from ceramic tableware, including a cache of 18 whiteware tokens from the topsoil layer in the western portion of the yard (Figure 21). Sixteen (16) tokens are cut from lead sheeting and two tokens are cut slate with incised starburst on one side (Figure 22).

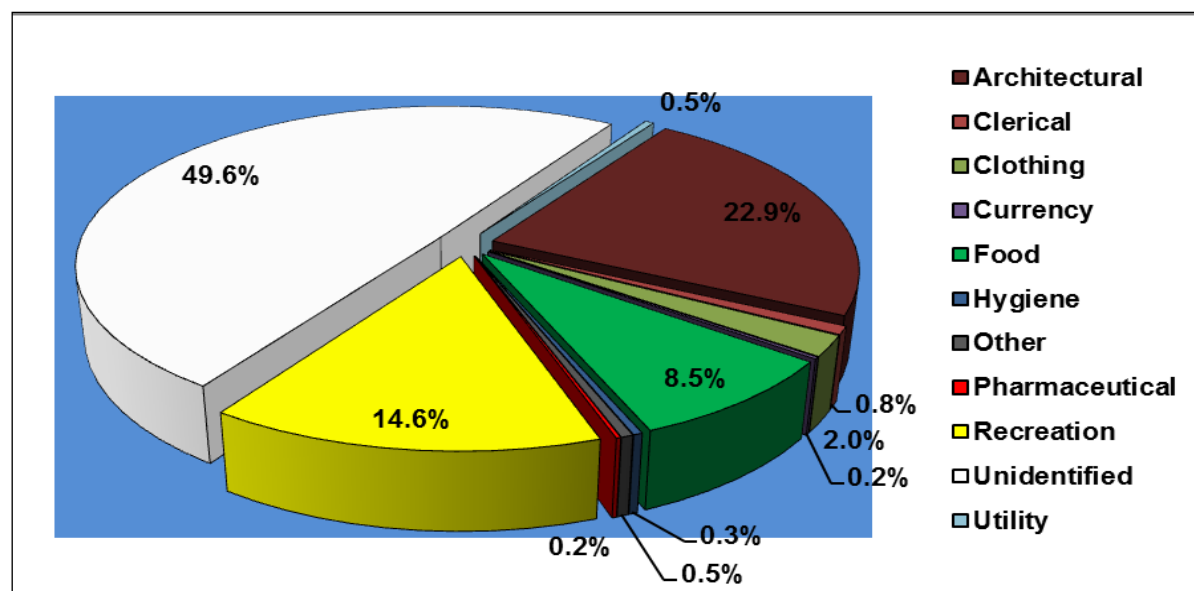


Figure 20: West Yard Relative Frequency of Functional Groups.



Figure 21: Cache of Convict-made Ceramic Gaming Tokens from West Yard Topsoil [0001].



Figure 22: Slate Token from Fireplace Demolition Debris [0600] in West Yard.

5 DISCUSSION

A wealth of data was recorded for over 1,400 individual artefacts during the 2016 excavation, in that their exact location across the Ablution Block was digitally recorded. These data are termed 'spot finds'. The data included artefact identity (shape/form). For key artefact types, spatial distribution was achieved through placement of data on plans of the Block.

For this study three artefact types have been emphasised: buttons, tobacco pipes and gaming tokens, because these types represent artefacts most closely associated with convicts, their personal effects and clothing, and their activities within the confines of the Ablutions Block.

Limitations to the use of this data consist of the discrepancies between in-field identification of spot finds and the identification made in the laboratory for the same artefacts. The most notable of these discrepancies is the field identification of highly corroded circular metal disks as buttons when often these disks were roofing nail heads or where distinction between nail head and button could not be made.

Since this study focuses on convict activities, it was decided to only use bone/wooden buttons for the spatial distribution analysis. As Figure 23 shows, the majority of bone/wooden buttons were recovered from the Day Room, with buttons found less frequently from lavatories along the south wall. Whilst the Day Room was originally the location of urinals and washing basins, it was remodelled in 1864 to become a day room for convicts with bench seating lining the walls with a new fireplace built at the southern end. With either use of the structure, the loss of buttons in a high trafficked area is not uncommon.

Generally, ball clay tobacco pipes are not luxury item. Everyone and anyone during the 18th and 19th century had access to them. For convicts, smoking was a privilege for only the productive labour, and then only in the Ablutions Block. The density of tobacco pipes in the yards and Day Room is consistent with privileges that allowed smoking in these sections of the Ablutions Block, as it was not allowed elsewhere in the Penitentiary (Figure 24).⁴⁷

During cataloguing and analysis the issue of supply from the commissariat arose, when two groups of commemorative pipes were identified within the collection – commemorative pipes for which commemoration had long since passed. This begs the question "Did the commissariat buy up lots of discontinued tobacco pipe stock to supply tobacco pipes for convicts?" One of the main sources of tobacco pipes found in the Ablutions Block was William Murray, a Glasgow manufacturer who went out of business in 1861. If research into commissariat purchase practices serves to verify the purchase of discontinued stock, it could affect dating of deposits within the Ablutions Block and the entire Port Arthur penal colony.

⁴⁷ PAHSMA, 1991, reprint of: Convict Department 1868, Rules and Regulations for the Penal Settlement on Tasman's Peninsula, Convict Department, Tasmania, p. 46.

Gaming tokens recovered during the 2016 excavations were assigned a spot find number, which enabled the production of an accurate spatial distribution plan map of tokens across the entire block (Figure 25). A total of 69 gaming tokens were recovered across the block. There are three basic types: ceramic (28), lead (39) and slate (2). Ceramic tokens are all made from transfer-printed whiteware plate rims in square and circular shapes (Figure 26). Ceramic tokens were recovered from deposits in the Day Room and West Yard. Lead tokens are cut from lead sheeting in circular and square shapes. Some tokens in both shapes have an X incised on one side and five square tokens have an incised broad arrow (Figure 27). Evidence of lead token manufacturing was also recovered from across the block. As Figure 28 shows (L to R), there are preform circles, triangles and squares, as well as rolls of lead sheeting strips, which was the raw material from which tokens were made. There were only two slate tokens, both of which were recovered from West Yard deposits and both have an incised starburst or asterisk design.

Whilst gaming with such tokens is evident on both convict⁴⁸ and non-convict sites⁴⁹ across Australia during the 19th century, it is not certain what games of chance the tokens were used for. Furthermore, there is speculation that ceramic tokens were used for different game(s) than lead tokens. There is some support for this theory in that ceramic gaming pieces were recovered from the Day Room and West Yard deposits, while lead gaming tokens were recovered from deposits in the East and West yards, suggesting that games associated with lead tokens were not conducted within the walls of the Day Room.

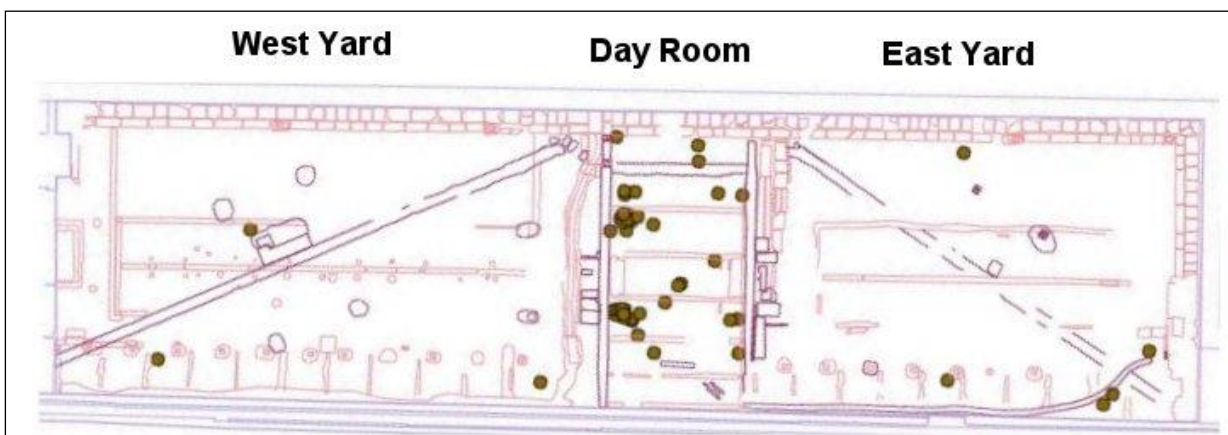


Figure 23: Distribution of Bone/wooden Buttons from Spot Finds Across Ablutions Block.

⁴⁸ Davis, Peter, Penny Crook and Tim Murray 2013 *An Archaeology of Institutional Confinement: The Hyde Park Barracks, 1848–1886*, *Studies in Australasian Historical Archaeology* 4, p 17.

⁴⁹ Harris, E Jeanne 2016 161–165 Clarence Street, Sydney: *Analysis of Artefacts–Well 2*, prepared for Edward Higginbotham & Associates, p23.

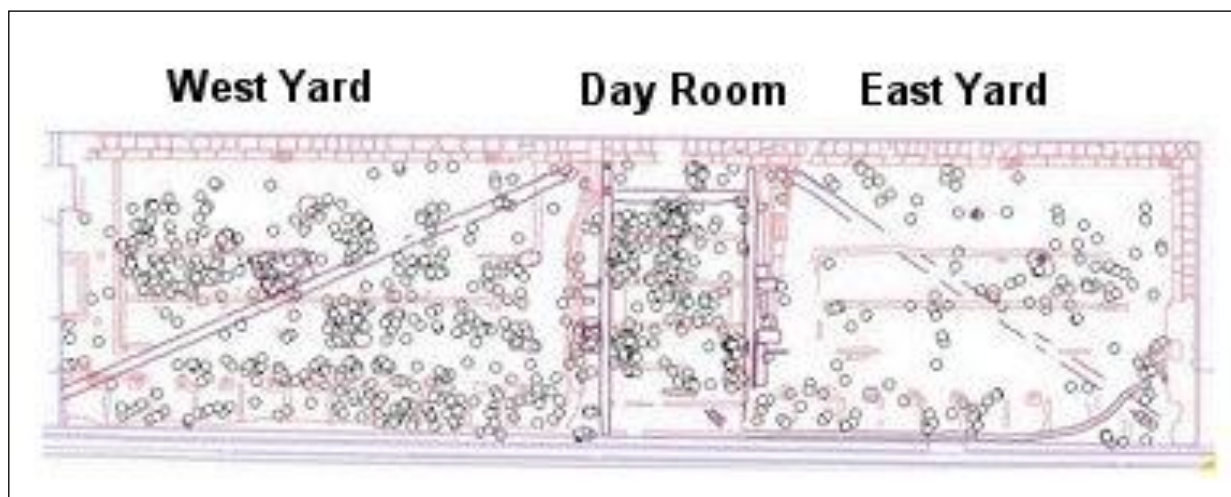


Figure 24: Distribution of Tobacco Pipes from Spot Finds Across Ablutions Block.

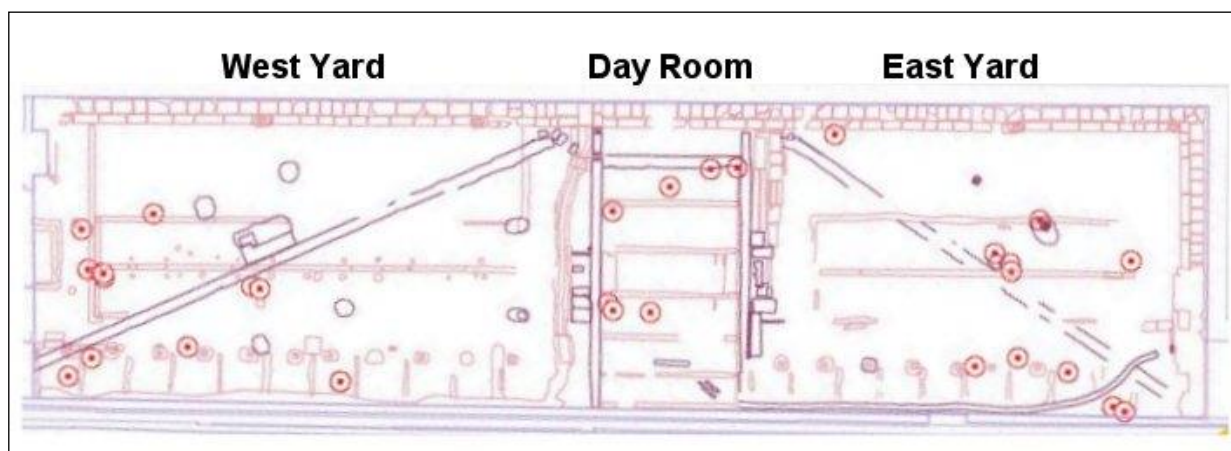


Figure 25: Distribution of Gaming Tokens from Spot Finds Across Ablutions Block.



Figure 26: Ceramic tokens from topsoil deposit [0001] in West Yard.



Figure 27: Examples of Lead Tokens from Ablutions Block.



Figure 28: Artefacts Associated with Lead Token Manufacture.



Figure 29: Slate Token from Fireplace Demolition Debris [0600] in West Yard.

6 APPENDIX A

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
Day room	0001	5	4	Clothing	2	1930	
Day room	0018	76	29	Clothing/Food	8	1860	1880
Day room	0057	76	59	Recreation	52	1850	1880
Day room	0064	789	391	Recreation/Food	198	1850	1880
Day room	0066	1	1	Recreation	0		
Day room	0093	523	212	Food/Architecture	59	1880	1890
Day room	0117	1	1	Currency	1	1797	
Day room	0137	1113	222	Architecture/Recreation	146	1850	1880
Day room	0139	614	265	Architecture/Food	169	1846	1890
Day room	0149	154	76	Food/Architecture	36	1846	1890
Day room	0150	87	28	Architecture	18	1850	1890
Day room	0166	131	97	Architecture	86	1850	1890
Day room	0171	2	1	Architecture	0		
Day room	0176	639	199	Architecture	152	1850	1890
Day room	0177	94	62	Architecture	56	1820	1890
Day room	0178	88	62	Architecture	60	1850	1890
Day room	0179	43	27	Architecture/Recreation	19	1846	1861
Day room	0180	43	27	Architecture/Food	16	1860	
Day room	0181	57	49	Architecture/Food	40	1835	1890
Day room	0182	65	41	Architecture	35	1820	1890
Day room	0183	112	47	Architecture/Food	10	1860	1880
Day room	0184	4	4	Architecture	4	1820	1890
Day room	0195	98	11	Architecture	7	1820	1890
Day room	0249	764	325	Recreation/Food	140	1860	1861
Day room	025	67	8	Architecture/Utility	4	1860	1890
Day room	0250	480	225	Architecture/Food	120	1860	1880
Day room	0253	996	275	Food	83	1850	1860
Day room	0273	3	3	Architecture	2	1820	1890
Day room	0274	86	40	Architecture/Food	2	1860	1880
Day room	0278	1	1	Architecture	0		
Day room	0283	29	18	Recreation/Architecture	8	1820	1890
Day room	0285	131	57	Architecture/Food	33	1850	1890
Day room	0287	115	67	Architecture/Recreation	35	1860	1880
Day room	0289	49	27	Architecture	13	1820	1890
Day room	0311	15	15	Architecture	14	1834	1890
Day room	0312	11	8	Architecture/Food	2	1820	1890
Day room	0315	125	80	Recreation/Clothing	31	1860	1880
Day room	0372	795	328	Recreation/Food	112	1830	1890
Day room	0378	112	45	Architecture/Recreation	26	1880	1915
Day room	0392	17	10	Architecture/Recreation	6	1820	1890

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
Day room	0402	5	2	Architecture	1	1820	1890
Day room	0404	3	1	Architecture	0		
Day room	0408	1	1	Unidentified	0		
Day room	0487	27	24	Architecture/Food	13	1820	1890
Day room	0509	1	1	Food	1	1780	1830
Day room	0559	1	1	Unidentified	0		
Day room/East Yard	0018	183	164	Architecture	143	1846	1861
Day room/portal	0250	6	5	Architecture/Food	2	1820	1890
Day room/portal	0311	49	31	Architecture	26	1834	1890
Day room/West yard	0057	281	171	Architecture	145	1846	1890
East yard	0001	51	25	Recreation	11	1923	1930
East yard	0040	18	17	Architecture/Food	13	1820	1890
East yard	0041	45	20	Architecture/Food	9	1845	1890
East yard	0042	299	86	Recreation/Architecture	16	1846	1861
East yard	0043	100	48	Architecture/Recreation	14	1845	1864
East yard	0044	207	79	Recreation/Architecture	34	1850	1861
East yard	0047	65	31	Recreation/Architecture	9	1820	1890
East yard	0049	24	15	Recreation/Architecture	7	1830	1861
East Yard	0050	5	5	Recreation/Architecture	1	1820	1890
East yard	0051	571	218	Architecture/Recreation	10	1860	1861
East yard	0052	8	8	Recreation	7	1860	1861
East yard	0053	36	17	Recreation/Architecture	4	1860	1880
East yard	0054	3	3	Recreation/Architecture	0		
East yard	0075	2	2	Recreation/Architecture	1	1820	1890
East yard	0095	64	24	Architecture/Recreation	13	1875	1890
East yard	0099	6	6	Recreation/Clothing	0		
East yard	0122	24	24	Architecture/Recreation	12	1820	1890
East yard	0124	39	14	Architecture	12	1840	1890
East yard	0126	88	50	Architecture	46	1820	1890
East yard	0128	76	15	Architecture/Recreation	8	1820	1890
East yard	0130	11	7	Architecture	6	1820	1890
East yard	0131	117	49	Recreation	6	1846	1861
East yard	0163	3	3	Architecture	0		
East yard	0165	7	6	Architecture	0		
East yard	0178	13	6	Architecture/Recreation	4	1850	1890
East yard	0198	74	33	Architecture/Food	15	1820	1890
East yard	0199	40	14	Food	1	1883	1920
East yard	0261	1	1	Architecture	0		
East yard	0266	14	12	Recreation/Food	2	1820	1890
East yard	0269	59	43	Architecture/Recreation	17	1849	1861
East yard	0270	2	1	Recreation	0		

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
East yard	0274	59	20	Architecture/Recreation	10	1840	1890
East yard	0280	4	4	Recreation/Architecture	0		
East yard	0281	1	1	Recreation	1	1850	1910
East yard	0305	1	1	Unidentified	0		
East yard	0322	35	17	Food/Recreation	4	1820	1890
East yard	0355	7	7	Architecture	4	1820	1890
East yard	0356	21	12	Architecture	5	1840	1870
East yard	0358	1	1	Recreation	0		
East yard	0364	1	1	Recreation	0		
East yard	0365	25	19	Architecture/Food	12	1820	1890
East yard	0381	37	28	Architecture	13	1820	1890
East yard	0387	1	1	Unidentified	1	1820	1890
East yard	0388	10	9	Architecture	5	1820	1890
East yard	0391	10	9	Recreation	0		
East yard	0403	1	1	Recreation	0		
East yard	0410	7	6	Architecture	1	1820	1890
East yard	0414	8	8	Architecture/Food	0		
East yard	0415	8	8	Recreation/Haberdashery	1	1820	1890
East yard	0415/0304	3	2	Recreation	0		
East yard	0420	13	9	Architecture/Hygiene	1	1820	1890
East yard	0426	13	10	Recreation/Architecture	3	1840	1890
East yard	0428	5	5	Recreation	1	1850	1910
East yard	0431	93	35	Architecture	6	1840	1861
East yard	0433	11	7	Recreation	1	1846	1967
East yard	0436	12	10	Food/recreation	0		
East yard	044	11	2	Recreation	1	1830	1861
East yard	0486	3	3	Food/Architecture	1	1845	1890
East yard	0505	42	16	Architecture/Food	1	1840	
East yard	0514	1	1	Architecture	1	1820	1890
East yard	0548	1	1	Recreation	0		
East yard	0567	1	1	Food	0		
East yard	0582	6	4	Recreation/Architecture	1	1846	1967
East yard	0583	3	2	Recreation	1	1820	1890
East yard	0584	58	35	Recreation/Architecture	14	1846	1861
East yard	0586	13	10	Architecture/Recreation	5	1830	1861
East yard	0587	18	17	Architecture/Recreation	3	1820	1890
East yard	0588	1	1	Architecture	0		
East yard	0589	49	8	Architecture/Food	0		
East yard	0590	11	8	Food	2	1820	1890
East yard	0681	25	18	Architecture/Food	3	1840	1890
East yard	0682	1	1	Recreation	0		
East yard	0689	2	2	Architecture/Food	0		

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
East yard	0690	2	2	Architecture	0		
East yard	0707	43	13	Architecture	1	1840	
East yard	0708	3	1	Architecture	0		
East yard	0751	11	5	Architecture/Hygiene	0		
East yard	0753	159	44	Architecture/Food	0		
East yard	0754	1	1	Architecture	0		
East yard	0774	94	32	Recreation/Food	7	1850	1861
East yard	0778	1	1	Recreation	0		
East yard	0781	13	10	Food	2	1846	1870
East yard	0782	43	22	Recreation/Food	3	1846	1890
East yard	0789	2	1	Recreation	0		
East yard - bearer cut 0258	0259	3	3	Architecture	2	1820	1890
East yard - Drain Slot 2		144	45	Architecture/Hygiene	11	1820	1890
East yard - Drain Slot 2	0707	1	1	Unidentified	0		
East yard - Drain Slot 3		52	8	Architecture	4	1840	1890
East yard - Drain Slot 3	0754	33	13	Architecture/Food	4	1840	1890
East yard - drain slot 4	0505	1	1	Unidentified	0		
East yard - Drain Slot 4	0754	19	12	Architecture/Food	1	1820	
East yard - Wall slot 3	0415	10	2	Unidentified	0		
East yard Drain Slot 5	0797	4	3	Architecture	4	1834	1890
East yard Extension	0042	2	2	Architecture	2	1834	
East yard/portal	0274	16	13	Architecture	9	1820	1890
In close association 0124	0001	1	1	Architecture	0		
portal	0001	4	4	Clothing/Food	1	1820	
Prismatic glass collection	0001	216	2	Architecture	2	1840	
spoil heap	0001	2	2	Clothing			
VOID	0088	51	14	Recreation/Hygiene	2	1830	1861
VOID	0215	5	2	Currency	1	1826	
VOID	0409	18	39	Architecture	1	1820	1890
VOID	0416	1	1	Recreation	0		
w/closets/urinals	0001	23	7	Architecture/Hygiene	1	1820	1890

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
West yard	0001	16	12	Recreation/Architecture	4	1929	
West yard	0041	33	24	Architecture	20	1820	1890
West yard	0051	2	2	Recreation/Currency	1	1843	
West yard	0057	313	78	Recreation/Architecture	53	1846	1890
West yard	0071	15	14	Architecture	12	1820	1890
West yard	0072	45	19	Architecture/recreation	9	1850	1861
West yard	0076	10	5	Architecture	3	1820	1890
West yard	0079	14	3	Architecture/Food	1	1760	1830
West yard	0081	806	376	Recreation/Architecture	148	1930	
West yard	0087	7	3	Recreation/Clothing	2	1846	1967
West yard	0089	20	14	Architecture/Food	4	1820	1890
West yard	0091	304	156	Recreation/Architecture	99	1860	1861
West yard	0102	14	8	Architecture/Clerical	0		
West yard	0103	2	0	Recreation	0		
West yard	0104	17	8	Recreation/Food/Architecture	4	1840	1890
West yard	0105	20	17	Architecture	0		
West yard	0106	6	2	Food	1	1884	
West yard	0107	3	1	Hygiene	0		
West yard	0109	257	145	Architecture/recreation	83	1850	1860
West yard	0110	438	222	Architecture/recreation	157	1913	
West yard	0112	5	5	Architecture	0		
West yard	0114	210	66	Food/Architecture	24	1850	1890
West yard	0115	2	1	Recreation	0		
West yard	0116	27	13	Architecture	7	1820	1890
West yard	0118	3	3	Unidentified	0		
West yard	0132	118	79	Architecture/recreation	48	1830	1861
West yard	0135	34	25	Architecture/recreation	16	1820	1890
West yard	0151	219	124	Recreation/Architecture	44	1846	1861
West yard	0157	32	16	Food	9	1850	1890
West yard	0158	17	13	Recreation	10	1840	1861
West yard	0173	23	12	Architecture	6	1820	1890
West yard	0174	116	40	Architecture	28	1850	1890
West yard	0176	3	3	Currency	2	1876	1910
West yard	0201	9	9	Clothing/Recreation	0		
West yard	0219	7	6	Recreation	1	1820	1890
West yard	0223	2	1	Recreation	1	1806	1955
West yard	0225	27	17	Food/recreation	6	1820	1890
West yard	0229	2	1	Recreation	0		
West yard	0231	233	123	Architecture/recreation	38	1850	1861
West yard	0240	10	5	Food/recreation	2	1920	1959
West yard	0263	20	17	Food	4	1860	
West yard	0265	1	1	Food	0		
West yard	0277	1	1	Recreation	0		

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
West yard	0315	1	1	Recreation	0		
West yard	0319	3	3	Architecture	1	1820	1890
West yard	0322	14	6	Architecture	2		1830
West yard	0323	247	80	Food	43	1860	1890
West yard	0332	157	67	Recreation	20	1860	1860
West yard	0334	3	1	Recreation	1	1830	1861
West yard	0336	1	1	Unidentified	1	1820	1890
West yard	0339	1	1	Architecture	1	1820	1890
West yard	0343	3	2	Architecture	1	1820	1890
West yard	0345	6	5	Architecture	2	1820	1890
West yard	0351	24	11	Architecture	5	1860	1890
West yard	0367	108	32	Architecture	23	1850	1890
West yard	0368	48	39	Architecture/recreation	21	1820	1890
West yard	0369	18	15	Architecture	9	1820	1890
West yard	0370	30	15	Architecture	9	1820	1890
West yard	0371	34	31	Architecture	11	1846	1890
West yard	0373	12	8	Recreation	3	1820	1890
West yard	0375	1	1	Unidentified	0		
West yard	0378	6	4	Architecture	2	1820	1890
West yard	0379	208	96	Architecture/recreation	12	1846	1890
West yard	0380	8	4	Recreation/Architecture	0		
West yard	0407	153	65	Recreation/Architecture	35	1845	1890
West yard	0419	312	196	Architecture	123	1850	1860
West yard	0422	1	1	Recreation	1	1850	1910
West yard	0423	30	28	Architecture	0		
West yard	0424	24	21	Architecture/recreation	16	1846	1861
West yard	0430	131	61	Architecture/recreation	39	1850	1860
West yard	0435	13	9	Architecture/recreation	4	1820	1890
West yard	0441	60	30	Architecture/recreation	10	1846	1890
West yard	0442	13	8	Architecture/recreation	1	1860	
West yard	0489	108	72	Architecture	57	1846	1861
West yard	0491	4	3	Architecture	3	1820	1890
West yard	0499	19	14	Architecture/Food	1	1820	1890
West yard	0510	2	1	Recreation	0		
West yard	0511	7	7	Architecture/recreation	2	1820	1890
West yard	0553	5	2	Food	0		
West yard	0557	31	19	Recreation/Architecture	1	1830	1861
West yard	0566	1	1	Architecture	0		
West yard	0574	17	12	Recreation/Architecture	11	1850	1860
West yard	0576	18	7	Recreation	3	1846	1861
West yard	0577	5	2	Architecture	2	1820	1890
West yard	0594	13	10	Recreation/Architecture	7	1850	1860
West yard	0595	2	2	Architecture	0		

Context Description	Context	Quantity	MNI	Function	Datable MNI	Date From	Date to
West yard	0596	6	3	Architecture	1	1820	1890
West yard	0597	22	14	Recreation	4	1830	1861
West yard	0600	4	4	Architecture/Clerical	1	1820	1890
West yard	0601	11	11	Recreation	2	1820	1890
West yard	0602	13	12	Architecture	3	1820	1890
West yard	0613	3	3	Recreation	0		
West yard	0615	9	9	Recreation	0		
West yard	0620	6	5	Architecture	0		
West yard	0621	3	3	Architecture	0		
West yard	0627	2	1	Food	1	1820	1870
West yard	0635	25	16	Architecture	4	1820	1890
West yard	0639	11	8	Architecture/recreation	3	1830	1861
West yard	0640	19	12	Food/Architecture	1	1820	1870
West yard	0641	3	3	Architecture	0		
West yard	0642	2	2	Unidentified	1	1820	1890
West yard	0643	5	5	Architecture	3	1820	1890
West yard	0644	3	1	Recreation	1	1830	1861
West yard	0646	10	5	Food/Architecture	2	1820	1890
West yard	0650	13	2	Architecture	0		
West yard	0653	12	9	Architecture	7	1820	1890
West yard	0669	19	17	Recreation/Clothing	1	1820	1890
West yard	0684	2	2	Recreation/Food	1	1846	1967
West yard	0732	2	1	Architecture	1	1840	
West yard	0747	1	1	Recreation	0		
West yard	0749	1	1	Hygiene	0		
West yard	0763	1	1	Unidentified	1	1820	1890
West yard	0812	1	1	Clothing	0		
West yard - bearer fill	0217	5	5	Architecture	1	1820	1890
West yard - bearer fill	0221	15	14	Food	9	1820	1890
West yard - bearer fill	0227	29	12	Architecture	0		
West yard - Wall slot 1	0500	1	1	Unidentified	0		
West yard - Wall slot 1	0720	1	1	Architecture	1	1820	1890