

ARCHAEOLOGICAL INVESTIGATION

710-722 George Street

Haymarket

VOLUME 1: Main Report



Report to
Inmark

June 2011

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Executive Summary

Thomas Ball's Pottery

The pottery

The archaeological site at 710-722 George Street, Haymarket, contained remains associated with Australia's oldest excavated pottery site and one of Australia's earliest potteries – Thomas Ball's Pottery (c1801-1823). It was located in the Haymarket, initially part of the early Brickfields, because of good clay sources and closeness to water, natural creeklines which emptied into Cockle Bay (later Darling Harbour). A series of pits containing pottery wasters from Thomas Ball's pottery were found and excavated. There was 650 kg of pottery, not including pottery saggars and kiln furniture. Among the 55,182 fragments of pottery, as well as 1220 fragments of pottery used as kiln furniture, were 2683 identified vessels. Most of the pottery was lead-glazed vessels (2625 Estimated Vessel Equivalent or 49,452 sherds) with some slipped (46 EVE or 567 sherds) and self-slipped (12 EVE or 60 sherds). The greater majority of the pottery was fine earthenware (95%) but also included coarse earthenware (4%) and most surprisingly stoneware (1%).

The majority of Ball's pottery was utilitarian (72%) in quality and function but also identified were some medium (27%) and finer quality vessels (1%). While sherds and parts of utilitarian vessels had previously been found on sites in Sydney only some of the medium and finer vessels were known. The utilitarian shapes included: pans (309 EVE), bowls (156), crocks (140), chamber pots (25), jars (105) and variations of these shapes. The medium quality vessels included bowls (159 EVE), dishes (336), lids (19), pans (59), and plates (14). Many of these involved some type of decoration. The finer vessels, typically with a thin bodied fabric, included: bowls (46), dishes (10) as well as a few cups and saucers.

The range of decorated pottery was astonishing, with 59 different slip-painted decorations on 433 EVE vessels (1246 sherds). Many were decorated with green and brown patterns of lines and dots on a yellow background. Other decorative techniques were 12 incised decorations (12) and three different rouletted or coggled bands (24 EVE) impressed into the vessels. Other decorative techniques included 14 vessels in agate or 'marbled' ware, where two differently coloured clays were worked together, and 17 green speckled vessels, possibly imitating green porphyry. The most likely influences on the decorative techniques, notably for the hollow vessels, are the British factory-made slip wares more typically found on creamware and pearlware. These were the cheapest decorated pottery made in Britain that were contemporary with Ball's period of manufacture in Sydney. Ball was a potter within the late eighteenth-century British traditions and was a better potter than a decorator and therefore probably worked within the more specialised workshops of Staffordshire, where he was born, where potters were trained in specific aspects of the potter's skills rather than developing expertise in all areas of manufacture.

The Kiln and its Furniture

The redeposited debris from Thomas Ball's Pottery shows that he fired his wares in a wood-fuelled updraught clamp or possibly Scotch-type kiln sunk into the ground surface. It had a (near) permanent lower sandstock brick wall bonded and lined with clay and at least one corbelled flue. The temporary domed or curved superstructure was made of hand-applied layers of clay containing fragments of previous walling, clay kiln furniture (bobs) and lined on the interior with pottery sherds to provide extra strength and better thermal retention.

Most of the bricks used by Ball to build the kiln were moulded and then fired in wood-fuelled clamp kilns by government gangs or small independent brick and tile manufacturers who operated at Brickfield Hill. The few denser bricks that had been shaped by Ball to create one or more corbelled flues as well as one of the specialised 'kiln bricks' were possibly imported from Britain. The

chamber floor was made using kiln bricks with cells and pierced holes to efficiently transfer heat up from the wood-fired flue(s). Ball would have reconstructed the upper part of the kiln after every firing and when the bricks had seriously deteriorated after a number of firings it would have been rebuilt from scratch, reusing whatever materials were viable.

To stack the pottery and other products in the firing chamber Ball used a wide range of kiln furniture. These fall into three categories: formal wheel, hand-shaped and pre-fired forms; informal clay forms, some of which were hand-shaped; and reused broken fired pottery and recycled sandstock clay roof tiles.

Results of the Archaeological Excavation

The site showed no evidence of Aboriginal occupation of the area. Pollen analysis of material from the site revealed that the 1788 landscape was characterised by open casuarina woodland with a grassy understorey. Erosion evidence suggested the land was cleared rapidly with subsequent water action carrying away much of the loosely compacted topsoil, and dynamic gullies were created on the slope of Brickfield Hill.

Thomas Ball's pottery made use of the site in the early 1800s (c1801-1823), when brickmaking and pottery manufacturers were concentrated in the area. Evidence of Thomas Ball's pottery was found in the form of large quantities of pottery wasters, small reservoirs and part of a large clay extraction pit.

By 1823 the haphazard and permissive property boundaries had been consolidated and three lots formed the study area. By the mid 1820s the Woolpack Inn was built in Lot 2 on the southern part of the site. Archaeological evidence of the Woolpack included foundations, underfloor deposits, a cesspit and drainage. The underfloor deposits yielded large quantities of alcohol bottles consistent with the use of the building as a public house. Some spatial interpretation was also possible from this material, with one room in particular being associated with food preparation. It was at the rear of the building and was probably the kitchen of the inn. Evidence of dining and drinking was apparent in all of the ground floor rooms. Also many clay pipes were found within the underfloor deposits. The hotel occupied the lot until 1881.

On Lot 3, in the centre of the site, a timber structure had been built by 1823, but no convincing archaeological evidence of this was found. The first evidence of structures in Lot 3 was from the early 1840s or very late 1830s. Remains of a timber structure and two brick structures were found from this period. Sandstone footings and a cesspit belonged to the brick structures but there was no evidence of occupation deposits. The timber building was represented by a fireplace and some occupation-related material that had been unfortunately contaminated by later historical events. The alignments of the buildings during this period suggested that some liberties had been taken with the street-front boundary, and the brick structures may have extended beyond it onto George Street.

In the northern part of the site (Lot 4) the earliest evidence came from the remains of a brick building constructed in the early 1840s or very late 1830s. This building was represented by sandstone foundations, an underfloor deposit, a well and two cesspits. The structure lasted until the early 1880s. The underfloor deposit was an accumulation covering 30 or 40 years in one ground-floor room. It largely represented domestic use, although the premises were used as a grocery store over much of this time.

In the early 1860s Lot 3 was redeveloped and three new two-storey structures were built on the lot. These buildings were represented in the archaeological record by sandstone footings and cesspits.

There was no occupation material associated with these buildings. The buildings were added to over their lifetimes so that by 1901 structures covered the whole lot. They were demolished in the early twentieth century.

Cesspits throughout the site reflected backfilling events only. Although littered with domestic artefacts, conjoins were found across lots and no deposit could be related directly to occupation of a single building. The cesspits were most likely backfilled in the 1870/80s with items of household rubbish such as broken crockery and bottles. Significantly there was very little organic material and faunal remains were rare in the fills.

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- 8.2 Trench Report – Area B – Abi Cryerhall & Beau Spry
- 8.3 Trench Report – Area C – Jill Miskella

9.0 Specialists Reports

- 9.1 Ceramics Report – Rowan Ward
- 9.2 Scientific Analysis of Thomas Ball Pottery – Nicholas Pitt
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**Archaeological Investigation
710-722 George Street
Haymarket**

1.0 Introduction

1.1 Background

Casey & Lowe were commissioned to undertake the archaeological excavation of the site at 710-722 George Street, Haymarket. The site is on the corner of Campbell Street and was therefore at the very edge of early British settlement and within the historic area called the Brickfields by late 1788. Casey & Lowe were commissioned by Parkview, the builders, on behalf of Inmark, the developers. We undertook an archaeological assessment of the site, as 710-718 George Street was identified in the City of Sydney Archaeological Zoning plan, while the whole of the development area covered 710-722 George Street. The eastern part of the site, 720-722, was identified in the zoning plan as having no archaeological potential.¹ The assessment, therefore, did not cover the historical background for 720-722 George Street. It was only because we thought that that the eastern area of the site was possibly part of the property on which Thomas Ball operated his pottery that we discussed with Iain Stuart at the Heritage Branch the need to do testing there to confirm the identified model of it having no archaeological potential. Testing on this area, however, indicated that the eastern part of the site had considerable archaeological potential, including remains of the Woolpack Inn and a series of waster pits containing many thousands of pottery sherds from vessels manufactured by Thomas Ball between c1801 and 1823.

The archaeological program was undertaken under S140 approval 2008/S140/05, issued on 1 August 2008. Archaeological fieldwork commenced at 710-722 George Street on 18 August 2008 when monitoring works started and was finalised on 16 October 2008.

Cataloguing of the artefacts recovered from the site commenced in mid-2009. The sheer quantity of pottery and other artefacts recovered from the activities of Thomas Ball's Pottery has necessitated an extensive and protracted cataloguing program. Its significance is unrivalled in Australian archaeology in terms of its date (c1801-1823) and the sheer quantity of the material. This is the earliest pottery site so far excavated in Australia, representing the beginnings of local manufacturing.

1.2 Excavation Methodology

The site was excavated from east to northwest following the street frontage and in line with the client's needs to provide access to certain areas of the site. Open area excavation was undertaken using an excavator with a flat edged bucket to open up the site. The site was relatively small and because of the need to backfill for the piling machines, at the completion of the archaeological program, the central area of the site beneath the spoil heap could only be excavated once the street frontages were completed and backfilled. The central area was basically monitored and identified features were excavated and recorded. Also we were not able to excavate in part of the eastern area until the site sheds were placed on the hoarding which occurred towards the end of the excavation program. The main series of waster pits were found beneath the site sheds area which involved some additional week or so of excavation.

The areas were cleaned and recorded, using 1:50 scale drawings, context sheets, digital, colour side and black & white print photography, as well as video recording. Detailed excavation of underfloor deposits involved setting out a 500x500mm grid and excavation in 50mm spits. Cesspits contents

¹ Casey & Lowe 2008 Archaeological Assessment, 710-722 George Street, Haymarket.

were excavated in 200mm spits. All artefacts were labelled with their context numbers, areas and dates.

1.3 Report Methodology

This report is intended to respond to the standard conditions set by the NSW Heritage Council to produce a report presenting the results of the archaeological program. The report includes:

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 Section 6: Response to the Research Design
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1.4 Research Questions

The archaeological research questions for the site were identified in: *Excavation Permit Application, 710-722 George Street, Haymarket, Sydney*, for Parkview, June 2008. They have been modified slightly where necessary to address issues arising out of the course of the excavation and from additional historical information that has become available regarding the study site. The relevant Research Questions addressed in this report relate to the changing use of the site over time:

1. Brickfields and Permissive Occupancy

This phase of occupation may contain archaeological evidence that will relate to the following questions:

- i How the early Europeans set about clearing the land for extensive brickfield production.
- ii What type of early clay products were being produced beside bricks? Did these include clay roofing tiles, general household ceramics and other items?

- iii What is the evidence for how these clay products were moulded, fired, and dried? General questions relating to the manufacturing process undertaken at the site. An area of interest is the manufacture of early lead-glazed ceramics in the Brickfields. Recent archaeological work and analysis at the Pitt & Campbell Streets site and in
- iv Parramatta has shown that this material was definitely being manufactured in the Brickfields. How does the archaeological information from this site expand on this new understanding? It is likely that people were living in the Brickfields from the earliest days of the Colony. Is there evidence to support this assertion? If there is evidence of the conditions they were living under? How limited was their material culture? How does it relate to other evidence for early occupation of Sydney found in the Rocks and Parramatta? What are the differences?
- v Other questions will relate to the evidence for early trading with other countries including England and China.
- vi

Section 4 addresses the relevant sections of the Brickfield and pottery-related questions.

2. Residential Occupation, Part of Town, from c.1823

This covers the period of Thomas Buckton's ownership and occupancy, the subsequent sale and sub-division of the estate into lots and early occupancy by George Richards, Michael Joyce and Thomas Ryan of the two properties on George Street. This phase of occupation coincides with the establishment of the Woolpack Inn and nearby buildings. Specific questions that address this phase of the site relate to:

- i The type and nature of early private housing and commercial premises in Sydney. This site may contain some remains associated with businesses, houses, gardens and other structures. What type of houses did they build in this part of the colony? Are there differences in layout, size, and orientation which illustrate the various site activities and the transformation of early Sydney by the processes of urbanisation.
- ii What can the artefacts, deposits and features associated with their houses tell us about the living standards of the residents of the early colony? What changes are happening by the mid-nineteenth century to domestic markets and their relationship to trade with overseas countries and how are they reflected by the occupants of this site?
- iii Comparison of the archaeological remains from these houses and later commercial/residential housing may provide a valuable insight into the variation between different people living in the one location in early Sydney.

We note that due to budgetary and timing constraints there will be no specific response to these questions. A number of the issues raised in these questions are addressed in Sections 3 and 5.

3. Nature of Slums and areas of 'Vice'

- i Is there evidence for the presence of a slum area on the site in the 1850s? Does it support or disagree with those perceptions stated by William Jevons in 1858 as this block being the worst in Sydney through its association with the surrounding pubs and Durand's Alley which connected to the site through a 'right of way'? Was it a haunt of vice and disreputable persons?
What type of archaeological evidence might support the statements made by Jevons:
 - The presence of large quantities of alcohol and drugs, such as opium.
 - Evidence for prostitution: contraceptives, costume jewellery, evidence for numerous women living at a residence rather than a family.
 - Poor living conditions: overcrowding, poor building standards, unsanitary conditions compared with other sites.
- ii How does the evidence from this site compare with other 'slum' areas in Sydney, such as the Quadrant site, the adjacent Cunningham Lane site and the Rocks, Pyrmont and Surry Hills?

We note that due to budgetary and timing constraints there will be no specific response to these questions. A number of the issues raised in these questions are addressed in Sections 3 and 5.

4. General questions addressed to all phases of the site relating to processes of Immigration, Urbanisation, the Economy and Consumerism, Gender, Ethnicity, Personal Identity and Material Culture.

- i What were the expectations of immigrants when they arrived in the early nineteenth century? Were the expectations of convicts and free settlers different? How do these aspirations represent themselves in the material culture of early nineteenth-century Sydney and late nineteenth-century Sydney? How were these artefacts used to construct and re-construct personal identity once people they arrived in the colony and experienced a different environment and social conditions?
- ii An examination of the archaeological material from all phases of the site's occupation should help us understand the process of urbanisation in this part of the city. The identified phases should relate to changes in the urbanisation of the city and the archaeological evidence of these phases should provide insight into how this process altered the material behaviour of the occupants of the site. This process includes changes in sanitary practices, access to markets, domestication of the topography and other areas of evidence.
- iii The processes of urbanisation are also closely connected to questions relating to the economy and consumerism. How and when people bought ceramics and other artefacts can help us begin to understand the behaviour of these early European occupants.
- iv A comparison of the remains from all phase of the occupation of the site should provide valuable information relating to questions of ethnicity and gender. How the material culture reflects changing occupation of the structures. Is the ethnicity of the occupants of the houses and shops, from all periods of occupation, identifiable in the archaeological record? What is the nature of the evidence: refuse patterns, type of objects used, type of food eaten, cooking methods and so on?
- v How does the evidence from this part of the city relate to or differ from other sites in the Haymarket, the Rocks and the Pyrmont-Ultimo peninsula?

5. Local-pottery manufacturing

Questions relating to local manufacture of pottery in the Brickfields were briefly mentioned in Question 1 iv. Due to the extensive material found associated with local pottery-manufacturing this question needs to be considerably expanded to further our understanding of this early pottery.

- What is the nature and range of the pottery manufactured by Thomas Ball at his pottery at the base of Brickfield Hill? Is it a mixture of utilitarian and finer table and teaware as indicated from the wasters found at Pitt and Campbell Streets?
- What does the pottery tell us about Ball's training, skills, materials, techniques and understanding of pottery manufacturing techniques and technology? In effect how did he manufacture pottery and other products in the Brickfields?
- Analysis of the pottery sherds was undertaken using the methodology established by Mary Casey in 1999 and further developed in subsequent years. This is based on a vessel shape type-series and typically quantified using minimum vessel counts but because of the sheer quantity of material we have adopted an Estimated Vessel Equivalent (EVE) based on rim counts with some specialised other sherds being counted.
- Analysis of evidence of manufacturing flaws, notably problems when firing the kiln, stacking, glazing and such.

1.5 Heritage Significance

The Statement of Heritage Significance from the *Archaeological Assessment 710-722 George Street, Haymarket, Sydney*, June 2008, is reproduced below.

1.5.1 Original Statement of Heritage Significance

This study area has the potential to contain archaeological remains that are historic, rare and representative of life in Sydney for more than two hundred years. These remains have the ability to address a range of research questions. The various phases of occupation the study area is associated with are:

- late eighteenth-century brick and pottery works and brickfield-period occupation.
- George Richards and Michael Joyce, both former convicts, and their occupation and ownership of these properties.
- mid-century commercial and residential housing and its association with the area's description as a 'slum' and associated with 'vice' during the 1850s.
- the evolution and urbanisation of Sydney from the early colony through to the early twentieth-century urban city. The pattern of urbanisation of the area shows that it reflects its economic connection with the markets and wider economic shifts.

This site has the ability to provide access to knowledge about a part of Sydney's history that is only beginning to be discovered.

The study area, through the excavation and analysis of its archaeological remains, has potential to illustrate the cultural differences, aspirations and values of an evolving European culture from the early 1800s as well as the social life and working and living conditions of colonial and convict society.

The deposits, relics, structures, features and artefacts associated with this site have the potential to reveal much about the urbanisation and industrialisation of Sydney, the evolving relationship between the living and working lives of the individuals and families who resided there, the transformation of the resources through dynamic changes in ethnicity of residents, the construction and reorganisation of gender relations and the interplay of cultural groups. The low to moderate archaeological potential of this site means that its ability to answer research questions is limited by what is likely to survive because of twentieth-century impacts and repeated nineteenth-century rebuilding. While there are clearly impacts on this site the nature of any surviving archaeological evidence is important and means that it has to be assessed as having State heritage significance.

1.5.2 Review of Statement of Significance

Other than the waster pits, the clay extraction pits and some general landscape changes to the site and its soil profile, little evidence of the Brickfield-period survived. In addition, the pre-1830s occupation did not survive to allow us to interpret it with any significant degree of confidence other than some post holes, mostly because the impacts from the post-1830s buildings. The remains of the Woolpack Inn were found in an area predicted by the Archaeological Zoning plan to have no archaeological potential. We tested in this area because of the likelihood that 720-722 George Street was associated with Thomas Ball through the later ownership by Thomas Buckton. This turned out to be a correct assumption, though the main site of the kilns was probably on the property immediately to the east and was excavated out for the existing basement carpark several years ago.

1.5.3 Revised Statement of Heritage Significance

This study area contained archaeological remains that are historic, rare and representative of life in Sydney for more than 200 years. These remains have the ability to address a range of research questions. The various phases of occupation the study area is associated with are:

- Late eighteenth-century brick and pottery works and brickfield-period occupation, and the nature of Thomas Ball's pottery dating from c1801-1823, Australia's earliest discovered pottery. Thomas Ball was an emancipated convict who trained as a potter in Staffordshire. The excavation of these remains has found many previously unknown pottery types and decorations. The detailed analysis of the pottery and the kiln remains and kiln furniture can help us significantly expand our understanding of locally-manufactured pottery during the early years of the settlement and the way it was probably used by the residents of early Sydney.
- The remains of the Woolpack Inn, including an underfloor deposit and cesspit deposit, help us to address questions relating to the nature of public houses and the people who used them.
- Mid-century commercial and residential housing and its association with the area's description as a 'slum' and associated with 'vice' during the 1850s.
- The evolution and urbanisation of Sydney from the early colony through to the early twentieth-century urban city. The pattern of urbanisation of the area shows that it reflects its economic connection with the markets and wider economic shifts.

This archaeology of this site has the ability to provide access to knowledge about a part of Sydney's history that is only beginning to be discovered.

The study area, through the excavation and analysis of its archaeological remains, has the ability to illustrate the cultural differences, aspirations and values of an evolving European culture from the early 1800s as well as the social life, and working and living conditions of colonial and convict society.

The deposits, relics, structures, features and artefacts associated with this site have the ability to reveal much about the urbanisation and industrialisation of Sydney, the evolving relationship between the living and working lives of the individuals and families who resided there, the transformation of the resources through dynamic changes in ethnicity of residents, the construction and reorganisation of gender relations and the interplay of cultural groups. While there were clearly impacts on this site the nature of the surviving archaeological evidence was important and means that the initial assessment of having State heritage significance is endorsed by the findings.

1.6 Artefacts and Samples

There are 260 boxes of artefacts and samples from this archaeological project.

Category	Number of boxes	Box numbers within each category
Architectural/ Building materials	14 boxes in total, of those -	1 to 14
– Bricks	12	1 to 12
– Mortar and plaster	1	13
– Slate and tile	1	14
Ceramics (non-Thomas Ball)	16 boxes in total of those -	40 to 49, 51 to 55 ² , and 116
– Stoneware	4	40 to 43
– Fine earthenware and Chinese ceramics	12	44 to 49, 51 to 55, 116 ³

² Note that all ceramics, both those associated with Thomas Ball and those not attributed to him, are contained in boxes which form part of a single numbering system.

³ Note that box 116 is larger than other boxes and contains bulky, glued ceramics.

Ceramics (Thomas Ball, including lead glaze, slipped and self-slipped)	131 boxes in total of those -	1 to 39, 50 56 to 115, and 117 to 147 ⁴
– Type series examples	2	130 and 141
– Decorated vessels	5	7, 8, 108, 118 and 147
– Examples of vessels showing re-use in stacking the kiln	2	115 and 129
– Returned samples from scientific analysis	1	141
– Examples of knobs and handles	1	141
– Examples of faux stoneware	1	28
– Example of 'dross' found in waster pits	1	146
Glass	47 boxes in total of those -	1 to 38, 40 to 45, 48 to 50 ⁵
– Special finds	1	50
Metal	6 boxes	1 to 6
Miscellaneous	7 boxes	1 to 7
Organic	6 boxes in total of those -	1 to 6
– Leather	2	2, 4
– Fibre, matting and hair	1	3
– Wood	3	1, 5 and 6
Animal bone	6 boxes	1 to 6
Shell	2 boxes	1 to 2
Kiln building materials and Kiln Furniture	22 boxes in total of those -	1 to 22
– Kiln Building Materials	15	1 to 15
– Kiln Furniture	7	16 to 22
Soil & Pollen samples	3 boxes	1 to 3
Brick samples	12 boxes	1 to 12 (of building materials series)
Mortar samples	1 box	13 (of building materials series)
Building material samples (slate & tile)	1 box	14 (of building materials series)

1.6.1 Stage 2 Re-cataloguing

The following boxes were reviewed as part of Stage 2 re-cataloguing:

1-5, 9, 10, 12, 14, 15, 17, 22, 24, 27, 29, 35, 36, 37, 56, 58, 60, 69, 71, 72, 75-78, 81, 83, 85, 86, 91, 92, 111, 114. These boxes, excepted for decorated ones, are being sent to the Inmark storage.

⁴ Note that box 128 is currently empty after stage 2 re-cataloguing, but has been retained in the ceramics box number for use in the stage 3 review.

⁵ Note that box numbers 39, 46 and 47 were not used in the glass box number sequence.

1.6.2 Stage 3 re-cataloguing

Boxes retained by Casey & Lowe for Stage 3 re-cataloguing:

Boxes to remain with Casey & Lowe for the time being:

Category of boxes	Number of Boxes
Bulk boxes of lead glaze ceramics (yellow dots)	36
Boxes of lead glaze ceramics retained for stage 3 reviewing (blue dots)	60
Kiln Furniture (rings & spurs)	1
Miscellaneous	7
Totals	104

Details of box number of lead-glazed ceramics boxes which have not been reviewed and which are being retained by Casey & Lowe for Stage 2 re-cataloguing (blue dots):

Box number	Brief description of box contents (where applicable)
6	
7	Handpainted vessels
8	Handpainted vessels
11	
16	
23	
25	
26	
28	Examples of 'Faux Stoneware'
30	
31	
32	
38	
39	
57	
59	
61	
67	
68	
70	
73	
74	
79	
82	
84	
90	
102	
104	
106	
107	
108	Incised vessels
109	
110	
112	
113	
115	Examples of vessels showing re-use in the kiln
117	
118	Handpainted vessels (HP Unid)

120	
121	
122	
125	
126	
127	
128	Currently empty –retained for use in stage 3 review
129	Examples of vessels showing re-use in the kiln
130	Type series examples
131	
132	
133	
134	
135	
136	
137	
138	
139	
140	
141	Type series examples, knob & handle examples, SEM samples
143	
147	Combined decoration vessels

A list of bulk boxes of lead glaze ceramics (yellow dots)

Box Number	Context number	Catalogue numbers
13	7645	85558
18	7645	85804-85806
19	7645	85806
20	7645	85806
21	7645	85806
22 ⁶	7645	85806-85827
33	7460	86403
34	7460	86403
50	7460	86638
62	7460	86800
63	7460	86800
64	7460	86800
65	7460	86800
66	7460	86800
80	7662	87417
87	7662	87700
88	7662	87700
89	7662	87700-87708
93	7662	87851
94	7662	87851
95	7662	87851
96	7662	87851
97	7662	87851
98	7662	87851
99	7662	87851

⁶ Note: this box was also reviewed, as it contained smaller catalogue items, but has been included in the count of bulk boxes given here.

100	7662	87851
101	7662	87851
103	7662	87899
105	7662	87957-87958
119	7662	88518-88526
123	7662	88547-88553
124	7662	88554
142	7645	85558
144	7662	87844
145	7662	87844
146	7645	"Example of dross"

Details of kiln furniture box retained by Casey & Lowe:

Box 16 of the Kiln furniture box sequence has been retained for the moment by Casey & Lowe. Its contents is comprised of placing rings and spurs.

1.6.3 Details of miscellaneous boxes retained by Casey & Lowe:

All seven boxes of miscellaneous artefacts have been retained for the moment by Casey & Lowe.

A key to coloured dots on lead-glaze pottery boxes:

- Red** = reviewed boxes of lead glaze ceramics (to be taken to on-site storage).
- Blue** = boxes of lead glaze ceramics to be retained for Stage 3 reviewing (to remain with Casey & Lowe for the moment).
- Yellow** = bulk boxes of lead glaze ceramics (to be retained for Stage 3 cataloguing).

1.6.4 Boxes to be taken to on-site storage at the new Inmark building on the site:

Category of boxes	Number of Boxes
Reviewed boxes of lead glaze ceramics (red dots)	35
Architectural/ Building Materials	14
Ceramics (non-Thomas Ball)	16
Glass	47
Metal	6
Organic	6
Animal Bone	6
Shell	2
Kiln Building Materials and Kiln Furniture	21
Soil & Pollen Samples	3
Totals	156

Lead-glazed boxes to be stored at Inmark building.

Ceramics (Thomas Ball, including lead glaze, slipped and self-slipped) – Reviewed boxes (red dots)	35 boxes in total	1-5, 9, 10, 12, 14, 15, 17, 24, 27, 29, 35, 36, 37, 56, 58, 60, 69, 71, 72, 75-78, 81, 83, 85, 86, 91, 92, 111, 114
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1.7 Limitations

As with any project it is hard to produce the ideal final report. In the case of this report the sheer quantity of locally-made pottery from Thomas Ball's Pottery overwhelmed any reasonable or considered budget. We would ideally have wanted to spend another 2 to 4 months cataloguing the unrevised 75 per cent of this pottery as Stage 3. The fact that we proceeded to Stage 2 re-cataloguing (review of 25% of all locally-made pottery contexts, all decorated sherds and all kiln furniture etc) means that we did not have confidence in our data. We now have considerable more confidence in our data and feel that we can adequately address the nature of the resource for the purposes of saying something considered.

The focus of this report and the reporting and cataloguing program has been on the locally-made pottery which means that while there are other periods of the site that warrant further research we are unable to address this as well as we would like, notably the Woolpack Inn and other contexts at the site. This relates to the significance of the Ball Pottery, which is Australia's earliest pottery site yet excavated and the only one for which a detailed excavation report has been produced.

We note that we hope to finalise the Stage 3 cataloguing and then proceed to publication of the results of this work.

1.8 Authorship

This report has been produced by the team of archaeologists at Casey & Lowe Pty Ltd. A number of people contributed to all phases of the project leading to its final production and are listed below. The archaeological program was co-directed by Abi Cryerhall and Dr Mary Casey. Abi was responsible for the day to day on site excavation and the management of the post-excavation work relating to the trench reports and plans. Dr Mary Casey, Director, Casey & Lowe, managed the artefact cataloguing and the excavation report. Members of the team contributed to various phases of the work.

Mary Casey	Overall carriage of this report. Wrote Sections 1, considerable portions of Section 2 and the first half of Section 4 on the Thomas Ball Pottery, Sections 4.1 to 4.7. Mary was responsible for the design of the report, the redesign of the lead-glaze pottery database and reviewed all trench reports as well as other sections of this report. Mary re-catalogued most of the decorated pottery.
Abi Cryerhall	Wrote Trench Report B with Beau Spry, supervised and reviewed Trench Reports A and C. Her interpretation of the site as Co-Director informed most of the interpretation in Section 3.
Mike Hincks	Was a senior archaeologist on the excavation project. He was responsible for writing the Synthesis of the Results (Section 3) and considerably added to our understanding of how the early landform was modified during this reporting. As part of this he reviewed and amended the trench reports and matrices for the three areas and resolved outstanding context issues.
Robyn Stocks	Cataloguing of pottery kiln flaws, kiln furniture and, saggars, and general kiln evidence as well as Miscellaneous and supervision of the cataloguing of the Seeds, Organics, Metals and Building Materials. Robyn participated in the redesign of the database interface for the lead-glaze

	pottery and kiln furniture. Robyn also managed the production of photos for her sections of the report. Robyn contributed text on pipes and small finds to Section 5.
Jenny Winnett	Undertook the Stage 1 cataloguing of the majority of the Thomas Ball Pottery. As part of this she managed a team of volunteers for part of the project. She did the first part of the decorative type series. Jenny also wrote some preliminary text for this report.
Bernadette McCall	Undertook most of the Stage 2 re-cataloguing of the 25 per cent sample of the lead-glazed pottery and compiled a glossary of manufacturing faults (Appendix 4.3). Bernadette also wrote and reviewed sections of the final report and undertook additional historical research which was incorporated into Sections 2 and 6.
Rowan Ward	Undertook the cataloguing of the ceramics and the last 25 per cent of the Thomas Ball Pottery Stage 1 cataloguing program. Rowan wrote the majority of Section 5 as well as the Ceramic Report (Section 9.1) and contributed to Section 2. Rowan also managed the production of photos for her sections of the report and the cataloguing program as well as some of the Ball pottery. In addition she reviewed and annotated the Type Series drawings.
Jill Miskella	Was the Supervisor of Areas A and C and wrote trench reports for Area A and C. Produced the computer plans for the site and reviewed aspects of all trench reports. Finalised and reviewed all lists in Appendix 5.1 and 5.2.
Jeanne Harris	Catalogued the glass artefacts and wrote the specialist report, Section 9.3.
Nicholas Pitt	Wrote his honours thesis on aspects of Thomas Ball's pottery part of which are presented in Section 9.2. Nick assisted with many aspects to help us finalise the report acting as Research Assistant to Mary Casey and Robyn Stocks. He was also involved in early stages of sorting the pottery and produced a first go at the bobs types series. Produced the type series illustrations in Appendix 4. He was responsible for final report production for Vols 2-5. Nick also contributed research to parts of Chapter 4 and wrote some parts of Chapter 4.
Franz Reidel	Undertook all site planning and inked the Site Plans and drew all type series drawings.
Caroline Plim	Caroline undertook historical research for the Archaeological Assessment and additional research for Lot 2 and the Woolpack Inn once we realised archaeology survived within this part of the site.
Mike Macphail	Mike Macphail Section 9.5.
Robert Maxwell	Archive of site photos and photo lists. He also undertook additional historical research and transcribed a number of Thomas Ball-related documents as well as cataloguing seeds and organic artefacts under the supervision of Robyn Stocks.
Beau Spry	Assistant archaeologists on site, he co-wrote the Area B trench report and catalogued the building materials and

	metals.
Sandra Kuiters	Worked as a volunteer for Jenny Winnett and once she started working as an intern at Casey & Lowe was involved in many stages of the post-excavation stage of the project and was responsible for a lot of the data entry, production of tables etc. Wrote Section 4.8 to 4.10
Russell Workman	Spent many hours taking photographs of artefacts from the site. All artefact photos in the report were taken by Russell.
Brian Robson	Redesigned our Access database to deal with the lead-glazed pottery component and set up the new type series forms with image attachments. Provided database advice generally.
Mary Semper	Mary was responsible for a lot of the data entry of the miscellaneous, organics, building materials and metals.

1.9 Acknowledgements

The sheer quantity of artefacts at the beginning of the project required the assistance of a number of volunteers, all of whom were students at the University of Sydney, we acknowledge their assistance on this project and are thankful for the time they gave to the project: Elizabeth McKinnon, Carly Todhunter, Francesca Augimeri, Francoise Secq, Simon Wyatt-Spratt, Heather Clarksen, Sandra Kuiters, Laressa Berehowyj, and Aynslee Rodger.

1.10 List of Illustrations

Section 1

No figures or tables

Section 2

Figures

Figure 2.1: Lesueur's 1802 plan of the satellite village at the head of Cockle Bay. The approximate location of the study area is shown with a red circle. North is at the top as is the main settlement of Sydney. We do not consider this plan to be an accurate survey but rather a sketch of the general locality. Detail from Charles Alexandre Lesueur's *Plan de la ville de Sydney: (Capitale des colonies Anglaises aux Terres Australes)*, NLA map raa2-s32.

Figure 2.2: Lesueur's complete 1802 plan showing the relationship of the Brickfield village to the main settlement. North is to the right. Charles Alexandre Lesueur's *Plan de la ville de Sydney: (Capitale des colonies Anglaises aux Terres Australes)*, NLA map raa2-s32.

Figure 2.3: Detail of Meehan's 1807 plan showing the approximate location of the study area (circled in red). The study area is in the vicinity of early buildings. North is to the top. Detail from *Plan of the town of Sydney in New South Wales* by Jas. Meehan, NLA map f105b.

Figure 2.4: Plan from 1831 showing buildings on the George Street frontage within the study area (arrowed). The Cattle Markets stretch between George and Elizabeth streets and between Campbell and Hay streets. *Hoddle, Larmer and Mitchell, Map of the Town of Sydney, 1831*. Kelly & Crocker 1978:15.

Figure 2.5: Brickfield Hill, George Street, near the corner of Liverpool and George Street, 1873, looking south. The study area is out of picture on the left. ML, SLNSW, SPF/535.

Figure 2.6: 1830-31 survey showing the lot divisions. These divisions remained constant throughout the nineteenth century. North is at the top of the image. Detail from City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.

- Figure 2.7: Harper's 1823 plan showing the two structures on the site. The site boundary is shown in red and the lines of the structures have been enhanced. The building that corresponds to the Woolpack Inn is in the lower left corner of the site. The red line indicates the present study area and the purple line is the likely footprint of Thomas Ball's Pottery. A building possibly associated with Ball's pottery is arrowed. Detail from Harper's *Map of Sydney*, 1823, Cat. No. S.2.1264.roll, SRNSW.
- Figure 2.8: Detail of Hallen's field book sketch c. 1830-1831. This was probably a tracing of Harper's plan as the noted angles do not correspond to the drawn lines. The angles were corrected by Hallen in the formal survey plan (Figure 2.6). Information about the owners of the lots was noted on this sketch. Purple outline indicates the land acquired by Thomas Buxton (Buckton) from John Johnston which was occupied by Thomas Ball from c. 1801 to 1823. Detail from *Field Books, Survey of the City of Sydney*, A. Hallen, c. 1831, SR Reel 2628 (2/5195), Item 347, p5.
- Figure 2.9: Detail of Dove's 1880 plan showing Lot 2 (outlined in red) and the Woolpack Inn shortly before its demise. Detail from *A new and complete wharf, street and building plan directory of the city of Sydney 1880*, H. Percy Dove licensed Surveyor. City of Sydney Archives: Historical Atlas of Sydney.
- Figure 2.10: 'Huge crowd in George Street at Mick Simmons's Sports Store to see Don Bradman, 1930'. The large three-storey building is on the site of the Woolpack Inn and was once the Mercantile Bank. To the left is the redeveloped Lot 3, shown here as the two-storey part of Mick Simmons' store. In the extreme left of the image, and barely visible, is the slightly taller building at No. 710. ML, SLNSW.
- Figure 2.11: Woolcott and Clark's 1854 map showing an unusual alignment of the boundaries in Lot 3. This may reflect inaccuracy in the survey rather than changing boundaries. Detail from 'Woolcott and Clark's Map of the City of Sydney, City of Sydney' Historical Atlas of Sydney.
- Figure 2.12: Plan showing some of the long standing shops that occupied the street-front of Lot 3 during the second half of the nineteenth century. Detail from the *Trigonometric Survey of Sydney, 1855-1865*, Section O2, City of Sydney Archives, Historical Atlas of Sydney.
- Figure 2.13: Hallen's 1830 field sketch of Lot 4 showing the partitioned area that was within the site boundary (Area C). Detail from *Field Books, Survey of the City of Sydney*, A. Hallen, c1831, SR Reel 2628 (2/5195), Item 347, p5.
- Figure 2.14: *1865 Trigonometric Survey of Sydney* showing the southern portion of Lot 4, by then heavily built upon. Thomas Grogan the grocer was in residence at the time. The additional buildings are likely to be stores. Detail from the *Trigonometric Survey of Sydney, 1855-1865*, Section O2, City of Sydney Archives, Historical Atlas of Sydney.
- Figure 2.15: The water closet at No. 710 George Street in 1900. From 'Views taken during Cleansing Operations, Quarantine Area, Sydney, 1900, 'Views taken during Cleansing Operations, Quarantine Area, Sydney, 1900, Vol. III', 172. W.C., rear of 710 George-street. SLNSW computer catalogue.
- Figure 2.16: This plan shows the extent of buildings by 1888 as well as 1895. The courtyard area to the north of 710 was the only part of the site not built on by the 1880s. *Sydney Metropolitan Detail Series*, 1895, on-line at ML, SLNSW.
- Figure 2.17: A plan showing the large building occupying the Lot 4, No. 710 in 1901. It is the same building shown on the 1917-1939 Insurance plan. It may have stood until 1918 but was demolished soon afterwards. Fire Underwriters Association of NSW, c1901: City of Sydney detail survey maps 'Ignis et Aqua' Series, Sheet II Vol. 1, ML MAV/FM4/10537.
- Figure 2.18: The buildings on this plan are the same ones shown in the Bradman photo (Figure 2.10). Detail from the *Fire Underwriters' Plans, ca 1917-1939* - Block177_181, on-line, City of Sydney, Historical Atlas of Sydney.

Section 3

Figures

- Figure 3.1: Site survey plan showing the archaeological areas. These areas correspond to the original subdivision of the block. North is at the top of the image.
- Figure 3.2: The site location is indicated by a red circle where the road to Parramatta forks on the north side of the creek. Detail from Plan of the town of Sydney in New South Wales by Jas. Meehan, NLA map f105b.
- Figure 3.3: Lot boundaries c.1830 showing the variations in street alignment as George Street approaches the corner of Campbell Street. City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.
- Figure 3.4: Hallen's field sketch c.1830 showing a boundary fence extending into the street. This would later correspond to the location of No. 712. Detail from Field Books, Survey of the City of Sydney, A. Hallen, SR Reel 2628 (2/5195), Item 347, p.5.
- Figure 3.5: Interpretive plan showing the changing street frontage at Lot 3. Original boundaries are taken from Hallen's 1830 survey. 1840s/50s projections are based on archaeological evidence discussed in Section 3.7.1.2 of this report. City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.
- Figure 3.6: B horizon clays (7668) exposed at the base of a large pit (7660) in Area A. The yellow-orange subsoil can be seen in section, here contaminated with darker material. View to the west. Scale 1m.
- Figure 3.7: The eroded A2 soils in Area B. The high iron content has resulted in red staining in the yellow soils (7456). The footing in the right of the image is the southern flank of No. 716 (7488). View to the west. Scale 1m.
- Figure 3.8: Detail of an 1802 plan showing Brickfield village, George Street (Route de Parramatta), and the creek feeding Cockle Bay. The red circle shows the approximate location of the site. North is at the top of the image. Detail from Charles Alexandre Lesueur's Plan de la ville de Sydney: Capitale des colonies Anglaises, aux terres Australes, NLA map f307.
- Figure 3.9: Interpretive plan showing the remains of erosion features across the site (Plan 19, Section 10).
- Figure 3.10: The exposed gully (7489) beneath the footings of No. 718 George Street (7341). The grey soil (7450) in the foreground has been introduced to replace the eroded ground but it also shows signs of erosion and waterlogged exposure. View to the northeast. Scale 1m.
- Figure 3.11: The base of the gully (7481) beneath the footings of No. 716 (7488) and No. 718 (7468). The trajectory to the southwest (the lowest point of the site) can be seen clearly in this image, as can a divergent depression in the lower left of the photo. View to the southwest. Scale 1m.
- Figure 3.12: Water-worn surfaces exposed at the southern perimeter of the site (Area A, context 7647). The subsoil is absent in the northeast, exposing the yellow B horizon clays. View to the northeast. Scale 1m.
- Figure 3.13: Detail of a later version of Lesueur's map shown in Fig. 3.8. Here the brick kilns are shown on the land closest to the creek. The approximate location of the site is marked with a red circle. North is to the right of the image. Detail from Charles Alexandre Lesueur's Plan de la ville de Sydney: (Capitale des colonies Anglaises aux Terres Australes), NLA map ref. raa2-s32.
- Figure 3.14: Detail of a c.1850 copy of an 1807 map showing scattered elements of the Brickfield Village. North is to the top of the image. Plan of the town of Sydney in New South Wales by Jas. Meehan, NLA map f105b.
- Figure 3.15: Plan of the posthole cluster (circled in red), Area B showing repeated attempts to secure a post within the same general area. The limit of excavation is at the left of the image, close to the George Street frontage. North is at the top of the image. (Extract from Plan 8, Section 10).

- Figure 3.16: Detail (with additions) from an 1823 plan showing the approximate locations of the two large pits associated with the Brickfield period (indicated by black circles). The Woolpack Inn was built over the location of the deepest pit by this time. The site boundary is shown in red. The pits are 30.8m apart. Detail taken from Harpers Map of Sydney, 1823, S.2.1264.roll., SRNSW.
- Figure 3.17: Test trench (TT10) through the large pit 7436 showing the grey clays at the base and the dark grey organic sediment in section. View to the northwest. Scale 1m.
- Figure 3.18: Test trench (TT11) showing the vertical cut (left) and timber pieces amongst the yellow clays and grey silty soils used to backfill the pit. The exposed part of the cut is on the western (shallower) side of the pit (7436). View to the south. Scale 1m.
- Figure 3.19: The shallower pit (7660) showing the eroded appearance of the cut. The straight sides at the left and right of the image are arbitrary creations to avoid contamination from modern disturbance - they do not reflect the original boundaries of the pit. View to the west. Scale 1m.
- Figure 3.20: An ambiguous water-worn feature (7647) associated with the Brickfield period. The straight sides in the lower right of the image are arbitrary creations for the purpose of recording during excavation and do not represent the original parameters of the feature. View to the west. Scale 1m.
- Figure 3.21: Section of Test Trench 17 showing the backfill of redeposited clays and subsoil. The amorphous cut of the gully can be seen at the base of the trench. View to the north. Scale 1m.
- Figure 3.22: Interpretive plan showing the archaeological features and projected building configurations (grey) during Phase 4 in Area A and Phases 4 to 5 in Areas B and C. (Plan 20, Section 10).
- Figure 3.23: Harper's 1823 plan showing the two structures on the site. The site boundary is shown in red and the lines of the structures have been enhanced. Detail taken from Harpers Map of Sydney, 1823, Cat. No. S.2.1264.roll, SRNSW.
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Tables

Table 3.1: Summary of all the test trenches excavated on site. Each of these test trenches was annotated on plan (see Volume 3, Section 10 of Excavation Report).

Table 3.2: Chronological phases developed for the archaeological remains from each site area. The development of Area A was different to the other areas of the site.

Table 3.3: Room dimensions on the ground floor of the Woolpack Inn.

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Table 3.5: Street numbers corresponding to No. 712, and their relevant years during Phase 5.

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Table 3.7: Street numbers corresponding to the location No. 718 /720 during Phase 5.

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Table 3.12: Configuration of No. 716 during Phase 6.

Table 3.13: Configuration of No. 716 during Phase 6.

Section 4

Figures

Figure 4.1: Preliminary sorting according to glaze colour and rims, bases and body sherds. Jenny Winnett, 26 October 2009, scale 500mm

Figure 4.2: Further sorting of sherds into vessel groups. Sue Hearn is working with a student volunteer. Jenny Winnett, 2 November 2009.

Figure 4.3: Detailed sorting of decorated pottery into vessels and decorative types. Jenny Winnett, 3 December 2009.

Figure 4.4: Screen capture of the Stage 2 lead-glazed pottery database direct entry form.

Figure 4.5: Matrix of contexts and waster pits in Area A. The four main fills contain 77 per cent of locally-made pottery vessels (EVE) or 74 per cent of locally-made sherds recovered from the site. See Appendix 4.1: Table 1.

Figure 4.6: Matrix of main Area B contexts with locally-made pottery. Context 7460 has 12,505 sherds, 19.9 per cent of all locally-made pottery found at the site. Context 7460 has most of the locally-made pottery in Area B. See Appendix 4.1: Table 1.

Figure 4.7: Two pans which are finer than typically found, 7662/#87663 and 7646/#85031. Russell Workman, 15/4/2010, scale 10cm.

Figure 4.8: Bowls or basins as they are also termed are Type 17 in the Casey & Lowe type series. Front row: 17.2.7 7460/86310(2), 17.6.6 7662/87375(1), 17.2.6 7662/87346(1), 17.1.2 7645/85913(1); Mid row: 17.1.8 7662/87389(1), 17.6.7 7663/86905(1), 17.1.3 7460/86511; Back row: 17.6.8 7662/87878(1), 17.1.9 7646/85071(1), 17.2.6 7460/86415(2). Russell Workman, 3/3/2011, scale 10cm.

Figure 4.9: Green speckled dish, Type 4.1. 7460/#86011. Russell Workman, 6/10/2010, scale 10cm.

Figure 4.10: Handled crocks. These are Type 14 in the Type Series. Left: front row: 14.6, 7646/85069(1), 14.3.1, 7646/85011(1); middle row: 14.3.2, 7646/85068(3); back row: 14.5, 7645/#85572(3). On the right is the near complete profile of a handled crock 7646/85010. Russell Workman, scale 10cm.

Figure 4.11: Yellow chamber pot (left), 7474/89613. This is now on display in the new development. It is a very typical shape which imitates that found in contemporary British creamware. On the right is a mulberry ware chamber pot (7662/88066) with incised decoration. The interior glaze on this chamber pot is a different colour (a greeny brown). Russell Workman, scale 10cm.

Figure 4.12: A range of different shapes were identified that had not been found previously: a black-glazed candlestick (7662/88501), a mug (7662/88083), a dish or saucer (7460/86643) used as a saggar with later glazes and breakage marks. Russell Workman, 8/3/2010, scale 10cm.

Figure 4.13: Three children's tea dolls set toys, lid, bowl and other vessel, made by Thomas Ball. Front left: 17.9 7662/89903; front right: 17.9 7648/89251 and back: 11.14 7460/86770. Russell Workman, 8/3/2010, scale 10cm.

Figure 4.14: HP 1, handpainted decoration was frequently found on the base of dishes or saucers. The decoration is thought to indicate that these were tablewares or at the least serving vessels. Russell Workman, 10cm scale.

Figure 4.15: Bichrome floral or insect motif consisting of a central irregularly ovoid shape with dashes or petals, of contrasting colour radiating out from it in a single direction. Petals are in groups of two, four or six. These shapes were mostly dishes with fragments of a bowl at the top. Decoration was on the rim as well as the base of the dish. Russell Workman, 10cm scale.

Figure 4.16: HP20, a green wavy line with red brown dots, above and below, around the rim of pale yellow dishes. Row 1: 7460/#86118(3), #86103(3), #86111(2); Row 2: 7460/#86109(2), #86108(4), #86115(6); Row 3: 7460/#86120, #86107(3), #86113(7), #86114(5). Russell Workman, 25/11/2010, Scale 10cm.

Figure 4.17: Rouletting wheel used at the Lue Pottery, Lue, near Mudgee, NSW.

- Figure 4.18: Sprigged decoration in fine white fabric with yellow and green slip, probably a tree on the larger sherd, found on a brown vessel (#89195). The drawing of the smaller sherd suggests a different type of plant or animal. There was probably a band of sprigs around the vessel. Evidence of where another sprig was attached is visible on the larger sherd. Photo: Russell Workman, 10cm scale; Drawing: Franz Reidel.
- Figure 4.19: Moulded lids, mostly slipped with a couple of mulberry glaze. The smaller glazed lids were probably associated with tea wares or serving vessels. Left photo: Left row : 7662/#88405, #88403, #88406, #88402, #88407; Row 2: 7662/#88397; Row 3: 7662/#88398; Row 4: 7662/#88399, #88395, #88408, #88396. Right: mulberry-glazed knobs 7645/#85954, 7662/#88400. Russell Workman, 25/11/2010, Scale 10cm, 1cm divisions.
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- Figure 4.22: Range of incised vessels, mostly with a mulberry-glazed vessels with ID1 decoration on the right of the photo. Front row: 7662/#88132(1), 7662/#88111(4), 7662/#88104(2); middle row: 7662/#88101(1), 7662/#88106(11); Back row: 7663/#87043, 7645/#85912(3), 7662/#88103(2). Russell Workman, scale 10cm.
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- Figure 4.25: Decorated rim fragment HP36 (7460/#86366), showing brown dots visibly raised from the general glaze surface, and exhibiting a metallic sheen. Russell Workman, 1cm scale divisions.
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- Figure 4.31: Late seventeenth to early eighteenth-century slipware excavated on the Sadler Pottery Site, Burslem. Probably manufactured by Richard Parrot. A combed marbled slip decorated vessel is on the lower right shelf. Stoke-on-Trent Museum, Mary Casey 2005.
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- Figure 4.35: Variety of reeded lines (ID2) highlighted with green slip (HP6) which is similar to factory-made slipware on creamware. Remains of four lids are in the left column (front to back): 7662/#88461(1), 7663/#86827(1), 7645/#85354(1), 7645/#85258(1). In the middle column: 7460/#86383(2), 7645/#85256(2) - frags of a cup, 7662/#88460 - partial lid; right column: 7663/#86825(1) - bowl, 7645/#85499 - base, 7650/#89274 - base. Russell Workman, 3/2/2011, scale 10cm.
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Porcelain 'China alley linear' 96967, 'Clay m made paint' 96965, 'Stw alley (glazed)' 96964; Back row: 'Clay m made paint' 96850, 'Clay m made' 96886, 'Clay h made' 96911. Russell Workman, 10cm scale. Key: h=hand; m=machine.

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Section 5

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Figure 5.28 Spatial distribution of general artefacts (MIC) in underfloor deposit from all spits in Room 1 (7323) excluding bone and shell. Each square represents a 500mm x 500mm

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Figure 5.43: Ceramics in cesspit 7347 (fills 7342, 7387, 7401). Russell Workman, 10cm scale.

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Figure 5.45: Selection of toys, mostly from underfloor deposit 7444. Front row: limestone, glass and stoneware marbles (L-R): 7444/#98269, 7444/#98266, 7444/#98267, 7444/#98268, 7444/#98265, 7444/#98150, 7444/#98172. Back row: porcelain dolls: 7393/#97893, 7444/#98226; lead soldier 7444/#98124; dolls 7444/#98270, 7396/#97900. Russell Workman, 10cm scale.

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Figure 5.47: Ceramics in cesspit 7419 (fill 7445). The sprigged bone china saucer is on the left (#73895) and the green flow semi-vitreous fine earthenware toiletry box is on the right (#73896). Russell Workman, 10cm scale.

Figure 5.48: Ceramics in well fill 7465. Russell Workman, 10cm scale.

Figure 5.49: Selection of ceramics in well fill 7466. Fragments from the blue-transfer-printed “Willow” pattern plate (#73928), at front left, joined with fragments in well fill 7567. Fragments from the blue transfer-printed pearlware “Two Temples II” pattern small plate (#73930), at front centre, joined with fragments in well fills 7465 and 7568. Russell Workman, 10cm scale.

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Figure 5.54: Selection of ceramics from well fill 7568. Russell Workman, 10cm scale.

Figure 5.55: Cut fragments of woollen coat found in well fills 7568/#95571 and 7569/#95570. Russell Workman, 10cm scale.

Figure 5.56: Tobacco pipe manufactured for the Sydney tobacconist Hugh Dixon, steam engine on left side (7568/#98406). Russell Workman, 10cm scale.

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Figure 5.58: Selection of ceramics from well fill 7569. Russell Workman, 10cm scale.

Figure 5.59: Double-layered cut woollen coat fragments with hand-stitched buttonholes found in well fill 7569/#95570. Russell Workman, 10cm scale.

Tables

Table 5.1: Location of all plain Churchwarden pipes c1830-80 on the site. Note UF are underfloor deposits; (Ball) indicates redeposited wasters and kiln debris from Thomas Ball’s pottery.

Table 5.2: Positively identified plain Churchwarden pipes c1830-1880 in different rooms of Woolpack Hotel in Area A.

Table 5.3: Locations of Moreton and MPP marked pipes.

1.11 Abbreviations

C&LD	Casey & Lowe database
CALM	Department of Conservation and Land Management
CZ	Conservation Zone
LTO	Land Titles Office
ML, SLNSW	Mitchell Library, State Library of New South Wales
MIC	Minimum Item Count
MNI	Minimum Number of Items
MVC	Minimum Vessel Count
NLA	National Library of Australia
NSWSR	New South Wales State Records
TAQ	<i>terminus ante quem</i> (date before which)
TPQ	<i>terminus post quem</i> (date after which)
SG	<i>Sydney Gazette</i>

Abbreviations used in Specialist Reports and Artefact Tables

%	percentage
alch	alcohol
archi	architecture
bev	beverage
cond	condiment
cont	container
fd	food
g/s	gin/schnapps
h'hold	household
hyg	hygiene
indust	industry
jew	jewellery
MIC	Minimum Item Count
non-stru	non-structural
pers	personal
pharm	pharmaceutical
serv	serve
spts	spirits
stemwr	stemware
stru	structural
tblw	tableware
tumb	tumbler
unid	unidentified
Ceramic wares/decorations	
bl flow	blue flow
blktp	black transfer print
bltp	blue transfer print
brntp	brown transfer print
clobb	clobbered
few	fine earthenware
gild	gilded
gl	glazed
grntp	green transfer print
hp	hand painted
istch	ironstone china
lead gl	lead glaze
mou	moulded
pearl	pearlware
porc	porcelain
ppl tp	purple transfer print
provin w	provincial ware
redtp	red transfer print
rock gl	Rockingham glaze
tp	transfer print
w	ware
wgl	white glaze
ww	whiteware

Abbreviations used in Miscellaneous and Metals cataloguing and tables.

2pce	two-piece
Aes	copper alloy
Ag	Silver
Al	Aluminium
Au	Gold
bwtp	blue and white transfer print
cu	copper
d	diameter: inner seam to seam (pipe bowl)
D	diameter
dia	diameter
e	early
emb	embossed
encr	encrusted
FD	fabric decay
Fe	Iron
few	fine earthenware
FR	fragment
h	height of bowl
Inc.	incurse
LHS	left hand side
m/pce	mouth piece
MoP	Mother of Pearl
MW	machine wrought
Ni	Nickel
Nr comp	near complete
o'cut	offcut
Pb	Lead
Porc	Porcelain
Rect	rectangular
Rev.	reverse
RH	rose head
RHS	right hand side
sect.	section
sep	separate
Sn	Tin
Sq	square
SW	spiral wound
Synth	synthetic
T'Brush	toothbrush
TC	terracotta
tp	transfer print
UH	upset head
v. fine	very fine
w:	width
WP	wedge point
Zn	Zinc

2.0 Historical Background⁷

2.1 The Brickfields

The study area was on the lower side of what became known as Brickfield Hill in the early years of British settlement. To the south a stream which rose in Surry Hills flowed west into the head of Cockle Bay. Its path was later mimicked by the alignment of Hay Street. In the early years of the settlement the area to the south of Campbell Street was low and swampy. Aboriginal people would have made use of this area for freshwater and food. They are known to have been utilising coastal resources in the harbour area for at least 3000 years.⁸

The early plans show that the site was somewhat outside the town of Sydney. Nevertheless, it was subject to clearance from an early stage. Exploitation of the alluvial clays swiftly transformed the area into a Brickfield village. The head of Cockle Bay was in use as early as March 1788 for brickmaking and additional land was set aside for agriculture.⁹ A plan of Sydney published in July 1788 confirmed this location. A description of the Brickfields at that time noted that:

At somewhat less than a league from the camp (Sydney Cove) there is plenty of good clay, and capital brick-kilns are here established and this, tho' a scanty village, is, I assure you, a much frequented and pleasant walk.¹⁰

Another record on the same day in July remarked that:

His excellency the Governor has set on foot a brick manufactory, which succeeds to his wishes, having already burnt several thousands for his own house.¹¹

In August 1799 a case of murder was recorded in the Brickfields. A body was dumped in a clay pit leaving a trail of blood that led to a nearby house.¹² At this time the Brickfields was developing a reputation as the source of criminal elements in the colony.

The early Brickfields centred on the blocks between Campbell, Elizabeth, Goulburn and George Streets (incorporating the current study area). As the clay resources were used up, brickmaking activities spread out towards Darling Harbour and Surry Hills. In 1802 the study area was still well outside the town of Sydney (Figures 2.1, 2.2, 2.3). The built-up area had only stretched as far south as the burial ground (where the Sydney Town Hall now stands). Lesueur's *Plan of the Town of Sydney* depicted allotments and houses on both sides of the stream, in a satellite settlement labelled "Brickfield Village, where there are manufacturies of tiles, pottery, crockery, etc". The picturesque ideal of Lesueur's orderly village was tempered somewhat by a different depiction in 1807. Meehan's plan of that year showed the buildings in a much more haphazard layout, with the notation, "These Houses are irregularly Built - very few of them good" (Figure 2.3).

An early report on the work undertaken within the brickfields themselves, a decade after they were first begun, indicates that they were still a rather inefficient industry. Collins' observations concerning the work that went into making a soldiers' barracks:

⁷ The history in Section 2 of this report was developed from the history included in Casey & Lowe 2008 *Archaeological Assessment, 710-722 George Street, Haymarket, Sydney*, for Parkview, June 2008 which is based on other histories written by Mary Casey for nearby archaeological sites, i.e. cnr Pitt and Campbell Streets. Parts of this were used in Casey 1999. Site specific research and writing was also undertaken by Caroline Plim, specifically the land titles, publican licences and individual research. Additional work by Rowan Ward for Casey & Lowe 2009 has been incorporated, as well as additional historical research (notably digitised newspapers) and reporting by Bernadette McCall and Mick Hincks.

⁸ Attenbrow, V., T. Doelman, T. Corkhill 2008 'Organising the manufacture of Bondi points at Balmoral Beach, Middle Harbour, Sydney, NSW, Australia' *Archaeology in Oceania*, 43: 104-119, 105.

⁹ Kerr 1990, *The Haymarket and the Capitol*, p.2, quoting David Collins.

¹⁰ HRNSW Series 1, Volume 2:691.

¹¹ HRNSW Series 1, Volume 2:745.

¹² HRNSW Series 1, Volume 3:711.

Another barrack for officers was got up this month at Sydney; but, for want of tiles, was only partly covered in...

The great want of tiles that was occasionally felt, proceeded from their being only one person in the place who was capable of moulding tiles, and he could never burn more than thirty thousand tiles in six weeks, being obliged to burn a large quantity of bricks in the same kilns. It required near sixty-nine thousand bricks to complete the building of one barrack, and twenty-one thousand tiles to cover it in. The number of tiles rendered useless by carriage, and destroyed in the kilns, was estimated at about three thousand in each kiln, and fifteen thousand were generally burnt off at a time.

To furnish bricks for these barracks, and other buildings, three gangs were constantly at work, finding employment for three overseers and about eight convicts.

To convey these materials from the brickfield to the barrack-ground, a distance of about three-quarters of a mile, three brick-carts were employed, each drawn by twelve men, under the direction of one overseer. Seven hundred tiles, or three hundred and fifty bricks, were brought by each cart, and every cart in the day brought either five loads of bricks, or four of tiles.¹³

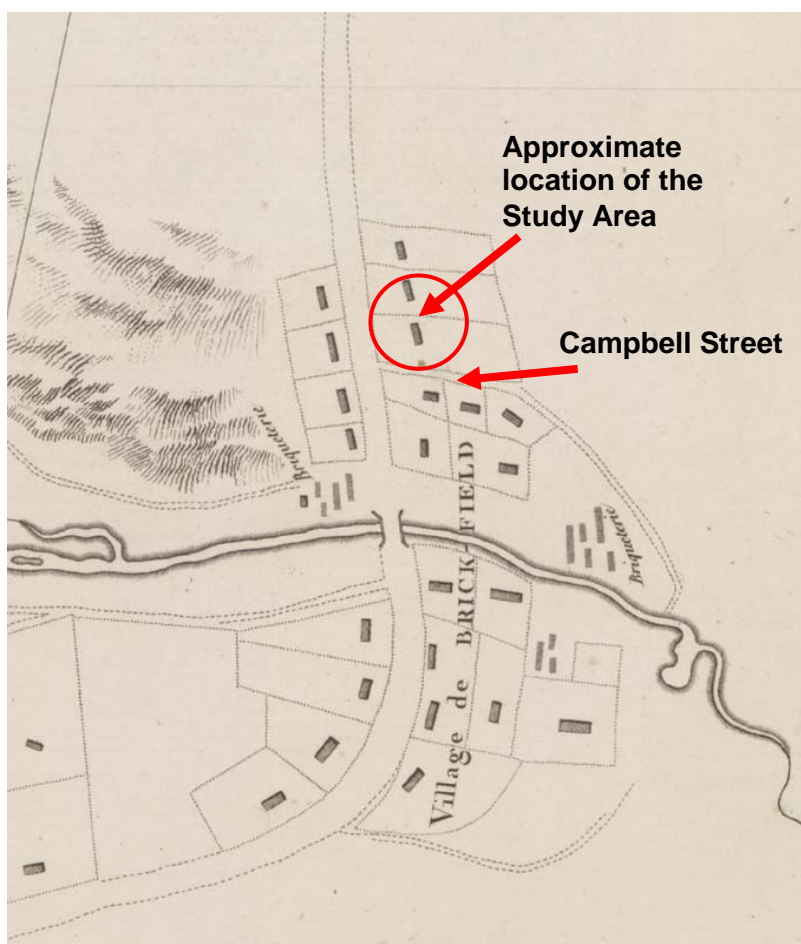


Figure 2.1: Lesueur's 1802 plan of the satellite village at the head of Cockle Bay. The approximate location of the study area is shown with a red circle. North is at the top as is the main settlement of Sydney. We do not consider this plan to be an accurate survey but rather a sketch of the general locality. Detail from Charles Alexandre Lesueur's *Plan de la ville de Sydney: (Capitale des colonies Anglaises aux Terres Australes)*, NLA map raa2-s32.

The above description indicates that skilled workmen were still lacking within the industry, with high demand outstripping supply. Kilns had to be juggled between firing tiles and firing bricks, and stock wastage was high due to both losses in the kiln during firing and also during transportation. By the 1820s brickmaking had moved from the area as the available clay was used up or as the encroaching town made the process objectionable or uncommercial.¹⁴

¹³ Collins 1798:277-78.

¹⁴ Casey & Lowe in prep

2.2 The Brickfields Potteries, c1801 to 1823

Although the area was called Brickfield Hill, after its main industry, the production of pottery also occurred from the earliest years of settlement, albeit in far lesser quantities than that of the brick production. Comparatively little is still known about Brickfield Hill and its inhabitants, with any rare early vignettes mainly concentrating on the brickmaking industry and its associated labour intensive activities. An 1822 “Constables’ Notebook” does include the names for inhabitants of the Brickfields and for Campbell Street, and in 1822 Thomas Ball, a potter, was identified as living with his wife and family in Campbell Street.¹⁵

Thomas Ball identified himself as the first to begin a pottery business in Sydney, apparently in the Brickfields and who, by 1823, had already been established for some 23 years when he requested the Colonial Secretary Goulburn to intercede in matters on his behalf.¹⁶ Ball had a kiln and was evidently using an adjacent garden to dry his pottery.¹⁷ Mention of Ball is also found in the account of an Obed West, born in Pitt Row in 1807, who described Sydney streets during the 1820s and 1830s, including the area of the Brickfields.¹⁸ Obed describes George Street as follows:

On the Haymarket corner was a potter named Ball who had a large block of ground, and there stood another wattle and daub house with a thatched roof. All around the Haymarket at that time were wattle and daub houses, thatched, with gardens about them, principally occupied by soldiers....On the square now known as the Haymarket Square, were the Government Brickyards where the bricks required for the various Government establishments were made....The first toll gate stood at the Haymarket, near the boundary of Jones’s property, and then came a large paddock up to Hay Street.¹⁹

Obed’s description places Ball on the corner of George and Campbell streets, and although Ball’s name is not found in the most recent lists of early Australian potters he was known about in the 1950s, when Brodsky suggested that he resided on the site of the ‘Woolpack Tavern’, on the corner of George and Campbell streets.²⁰

Another early potter was Samuel Skinner, who by the early 1800s was making domestic pottery. Skinner was a free settler, accompanying his convicted wife to the colony. Mary Skinner was transported after being found guilty of shop lifting, and although Samuel was charged with receiving stolen goods, he was acquitted.²¹ Skinner established his pottery in Pitt Row (Pitt Street), and recent research has indicated that it was located in the area between Hunter Street and Martin Place, around Angel Place, at what is now 115 Pitt Street.²² This places Skinner’s pottery at some distance to the north of the study area and outside the Brickfields.

During the early years of settlement the production of pottery was intermittent and because there were no apprentices or a skilled base to rely on its very survival depended on skilled potters arriving from England.²³ Governor Bligh evidently had little time for the potteries, calling them ‘trifling’, and in 1806 the only other known potter listed in the *Sydney Gazette* was the tobacco pipe maker William Cluer, and his wife Mary.²⁴

¹⁵ Casey 1999:7.

¹⁶ Casey 1999:7.

¹⁷ Casey 1999:7.

¹⁸ West 1988.

¹⁹ West 1988.

²⁰ Casey 1999:7.

²¹ Ford 1995:12.

²² Godden Mackay Pty Ltd 1997:Appendix E, Chain of Title.

²³ Casey 1999:8.

²⁴ Casey 1999:8.

The 1820s marks the move away from small pottery enterprises towards attempts to shift the production into more of an industrial-scaled trade, signified by the arrival in 1819 of two men, both skilled potters convicted of burglary and transported to the colony aboard the ship the *Recovery*, Jonathan Leak and John Moreton. Leak had worked with Enoch Wood in Burslem and Moreton had worked with Josiah Wedgwood, and it appears that both men were immediately put to work at Brickfield Hill, in the Government Pottery which was under the control of Major Druitt, the Colonial Engineer.²⁵ Both men eventually began their own pottery businesses at Brickfield Hill, within relative proximity to the study area – Leak within the block bordered by Elizabeth, Goulburn and Wentworth Streets and Moreton at the bottom of Elizabeth Street.²⁶

The location of the Government Pottery does not appear on any early historical maps, with its general location generally noted in secondary sources as just being at Brickfield Hill or ‘near’ the Carters’ Barracks (vicinity of Belmore Park and Central Station).²⁷ It is thought that the pottery was first established as early as 1819, by Governor Macquarie, and that once it was established its running was delegated to Major Druitt.²⁸ The Major’s department was already responsible for the Government brickmakers and the establishment of a pottery may have been seen as an effective means of employing the trained potters whose skills were at that stage being under-utilised making bricks and tiles.²⁹ However it was more likely the need for utilitarian pottery goods to supply the expanding colony, and especially the needs of government infrastructure, which led to its development. Jonathon Leak and John Moreton rented the pottery from the Government for an annual fee, payable in pottery, and in 1822 the pottery was home to both the Leak and Moreton families. Moreton had been put in charge of the pottery in 1820 and he continued as overseer until at least 1822, by which time he and Leak were renting it.³⁰ In September of that same year both Moreton and Leak were granted tickets-of-leave. In late 1822 Leak left to set up his own business nearby and by 1823 Moreton had established his own pottery.

It is unclear when, or even if, Moreton left the Government Pottery at this time or if he instead simply took it over, but it does seem that he was running his own pottery, located in Elizabeth Street, at the bottom of Brickfield Hill.³¹ In 1826 John Moreton was arrested once again while attempting a burglary and subsequently had his ticket-of-leave cancelled and was sentenced to six years of hard labour, serving in a chain gang in Bathurst.³² It is at this stage that evidence appears to suggest not only that Moreton’s business was at the Government Pottery but also more of an indication of where the pottery was situated. It appears that very soon after Moreton was arrested and sent to Bathurst the Government Pottery was put up for lease, in March 1827.³³ Two of Jonathon Leak’s sons, Lewis and Stephen, petitioned the Colonial Secretary to lease the pottery:

That Memorialists having been informed that the Government Pottery adjoining the Carters Barracks is about to be leased by Government... Memorialists begs leave to offer Government, an annual Rent of Thirty Five Pounds....³⁴

The two brothers were unsuccessful in their application, with the lease instead being granted to another potter, David Hayes, who had arrived aboard the ship *Asia* in 1820 to serve a seven year

²⁵ Casey 1999:8.

²⁶ Ford 2001:8 & 15.

²⁷ Casey 1999:8; Ford 1995:18; 1998:116; *Sydney Gazette* Friday 18th December, 1827: 1a; *The Monitor* Thursday, 20 Dec. 1827: 7c.

²⁸ Archaeological Heritage Management Solutions Pty Ltd 2007:11.

²⁹ Archaeological Heritage Management Solutions Pty Ltd 2007:11.

³⁰ Casey 1999:8.

³¹ Ford 2001:15.

³² Ford 2001:16.

³³ Ford 2001:10 & 17.

³⁴ Ford 2001:10.

sentence for stealing. The 1828 census has Hayes still leasing the Pottery.³⁵ This suggests the attempts to sell the Pottery in December 1827 were not successful. The Government Pottery contained a 'glaze mill, a LATHE, and other apparatus' for manufacturing pottery.³⁶ According to Ford, Moreton's sons continued to work within the pottery industry, on land near the Government Pottery, and after Moreton had served his sentence he returned to Sydney and joined his sons.³⁷ By 1829 Anson Moreton was listed as making tobacco pipes at a site located on Upper Pitt Street, near the Brickfields and in 1835 John Moreton and his sons set up a pottery in Surry Hills, on rented land east of Bourke Street, somewhere between Oxford and Fitzroy Streets.³⁸

If indeed the Government Pottery and Moreton's 1823 business are one and the same, with the Government Pottery identified as 'near' the Carters Barracks and Moreton's business being on Elizabeth Street, at the bottom of Brickfield Hill, then that would situate it in the vicinity of what is now Belmore Park, to the north of Central Railway Station.

2.2.1 Thomas Ball

We have not undertaken additional research for this report on the history of Thomas Ball as another archaeologist, Graham Wilson, generously provided his draft history of Ball. Graham has been researching early Sydney potters for more 20 years. While we have undertaken some basic research on Thomas Ball over the last few years (see above Section 2.2) the following section is based mostly on Graham Wilson's (2009) research 'Thomas Ball (1765?-1827) draft'. It should be noted that since Graham did this research more material has been digitised and is more easily available.

Thomas Ball was born in Staffordshire sometime between 1765 and 1785. In his Certificate of Freedom his age is stated as 59 years which would suggest c.1765. He was convicted at the Warwick Assizes on 27 March 1797 for a term of 7 years. Unfortunately these records were destroyed at a later date.³⁹ He was transported to New South Wales on the *Hillsborough* and arrived July 1799. Graham Wilson tends to see Ball's statement, given above, that he established his pottery in 1801, as reliable. Ball's self-employment is not certain until 1806 by which time he was free-by-servitude. Wilson suggests the lack of potters may have meant that Governor Bligh released Ball early so as to produce pottery for the colony.

Ball and Martha Wise began a de facto relationship in 1806 and they had three children: Anne (1809), Thomas jnr (1810) and Jacob (1812). Thomas and Martha appear to have separated by 1818 though this contradicts the evidence of the Constable's Notebooks indicated above which say that Ball was living with his wife and family on Campbell Street. By 1818 Ball was apparently living with Hannah Field, a currency lass. Two court cases indicate that Ball assaulted Hannah Field twice, quite badly, firstly in 1818 and then again in 1820. Ball received his pardon in 1810 and his Certificate of Freedom in 1824. He was described in 1824 as 5 feet 9 ¼ inches tall, with grey hair, sallow complexion and blue eyes. He was admitted to the Benevolent Asylum (near the tollgates) in May 1825, again in February 1826. He discharged himself in May 1826 but was readmitted in June again discharging himself in November 1826. He died at the General Hospital on 26 February 1827.

Ball had taken out a loan on his land containing his pottery works in 1805 from Rosetta Marsh neé Maddern and had failed to pay back these loans. Ball serviced this debt for 15 years but ran into trouble in 1822 when the Samuel Terry, who married Rosetta Marsh and administered her assets, sold Ball's debt to John Johnston (aka John Johnson), also a potter. Under the conditions of the sale

³⁵ Ford 2001:17.

³⁶ *Sydney Gazette* Friday 18th December, 1827: 1a; *The Monitor* Thursday, 20 Dec. 1827: 7c.

³⁷ Ford 2001:17.

³⁸ Ford 2001:17.

³⁹ Public Records Office, HO 11/1 pg. 12, Australian Convict Transportation Registers – Other Fleets & Ships 1791-1868.

Ball was to retain the use of his kiln, workshop and the garden where he dried his pottery. Johnson was in financial straits and was forced to sell this land to Thomas Buxton in 1823. Buxton stopped Ball's access to the site and built a house. By December 1823 Ball was no longer able to operate his pottery.

2.2.2 Location of Thomas Ball's Pottery

The historical resources associating the study area with Thomas Ball are quite limited. The only reason we know that the eastern part of the study area was part of Thomas Ball's pottery was the annotation of Thomas Buxton's (Buckton) name on Hallen's 1830-31 Field Book sketch (Figure 2.8). We also know from the 1822 Constable's Notebooks that Ball lived on Campbell Street; in addition Obed West has said Ball's Pottery was on the site of the Woolpack Inn where which is the western part of the two properties annotated with Buxton's name. These three sets of information provided the clues to locate Ball's Pottery. It is difficult to determine if any of the structures shown on the 1830-31 sketch belonged to Ball's Pottery or were constructed after the land was transferred. Comparison of the 1823 plans with Hallan's 1830-31 sketch suggests that the eastern block of Ball's land, outside the current study area, may have retained one of the buildings set back from George Street (Figures 2.7, 2.8). It is likely that the new building on the street frontage of the eastern block was the expensive new house supposedly built by Thomas Buxton (Buckton).

2.3 Redevelopment and Slums, 1820s to 1900

2.3.1 Sydney 1830–1851

The 1830s in Sydney saw the predominance of the wool industry over other primary industries and a burgeoning of secondary industries and of the professional and merchant classes.⁴⁰ The population of Sydney in 1836 was 21,361. In 1842 the City of Sydney was incorporated.⁴¹ At this time the city's population was about 30,000 but by 1851 it increased by nearly 50 per cent when it increased to 44,240.⁴² It was only by 1851 that the urban population reached a balance with adult males constituting 31.8 per cent rather than as much as 50 per cent of the population as they did in 1836.⁴³ The city area contained the largest concentration of Sydney's population.

The urbanisation processes were reinforced by the economic successes of the pastoral industry and were evidenced by a building boom in the late 1830s.⁴⁴ In 1845 there were about 5,500 houses in the central area which increased to 8,500 by 1851.⁴⁵ Many of these new buildings were workers' cottages erected in close proximity to their workplace.⁴⁶ The construction of small houses often ensured a return on the investment after three years.⁴⁷ Therefore the boom in jerry-built tenant housing in the 1830s was partly responsible for the development of Sydney's urban slums in the late 1800s.

There was an economic depression in the 1840s. The general picture was one of depressed trading conditions, high wages and a shortage of skilled labour, following the cessation of convict transportation in 1841 and drought. Yet business successes were still happening with the establishment and growth of the Australian Gas Light Company which supplied 49 customers when it began in May 1841.⁴⁸

⁴⁰ Edwards 1978:43.

⁴¹ Fitzgerald 1992:25.

⁴² Fitzgerald 1992:28.

⁴³ Linge 1979, Table 3.8, p.68.

⁴⁴ Edwards 1978:49; Fitzgerald 1992:34.

⁴⁵ Fitzgerald 1992:33.

⁴⁶ Fitzgerald 1992:36.

⁴⁷ Fitzgerald 1992:33-37.

⁴⁸ Linge 1979:94.

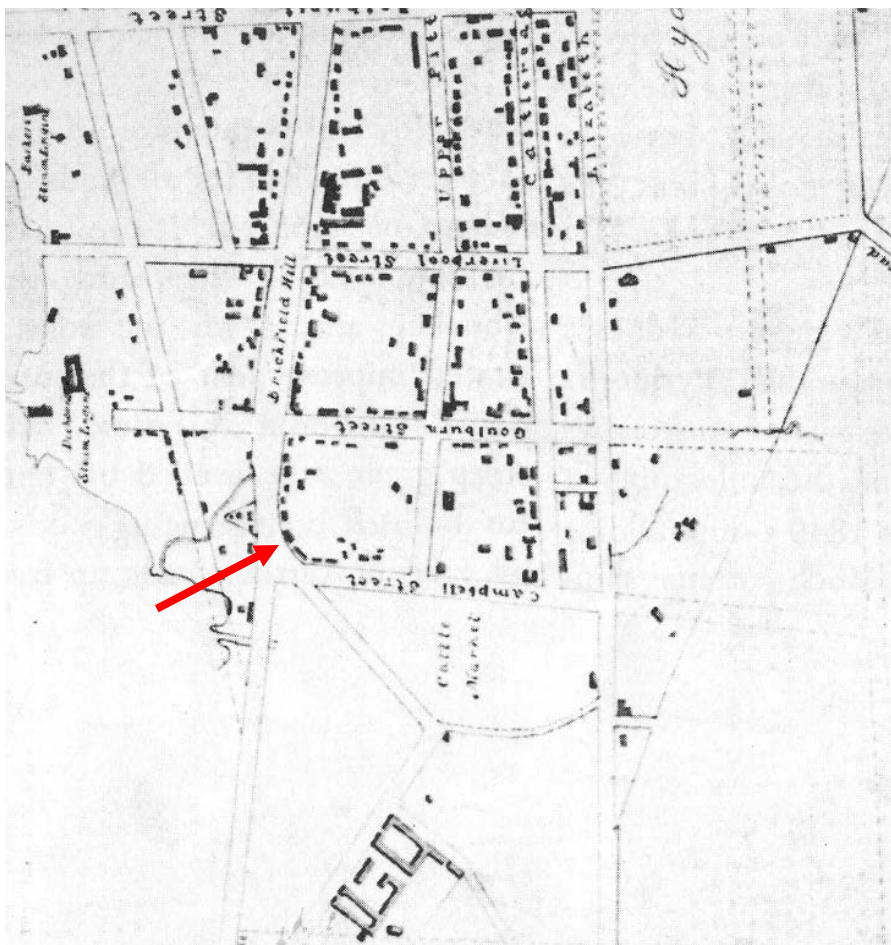


Figure 2.4: Plan from 1831 showing buildings on the George Street frontage within the study area (arrowed). The Cattle Markets stretch between George and Elizabeth streets and between Campbell and Hay streets. Hoddle, Larmer and Mitchell, *Map of the Town of Sydney, 1831*. Kelly & Crocker 1978:15.

2.3.2 Haymarket in the 1830s

The modern street layout that defined the block containing the study area was settled in the 1820s. Castlereagh Street and Pitt Street were extended southwards of Goulburn, to Campbell Street which now formed as the southern limit of the town. By June 1829 a cattle market was opened in the area between Hay and Campbell Streets (Figure 2.4).⁴⁹ The cattle market had previously been situated near Market Street and the relocation was a response to the inconvenience of herding large volumes of stock into what had become the centre of the town.⁵⁰

In 1833 hay and corn markets were also opened on the other side of Pitt Street.⁵¹ These markets remained an important part of the locality for the next 50 years and their commercial pull would have exerted a powerful influence on the use of the buildings in the area, particularly along Campbell Street and nearby George Street. From 1831 the plans of Sydney show how the study area had become part of the town proper (Figure 2.4). The frontages of the new streets were already dotted with buildings.

By the 1830s the southern part of Pitt Street had managed to charm at least one observer. It was noted that:

although less occupied by expensive buildings, [it] is remarkable for the neatness and cheerful appearance displayed by most of the cottages with which it is lined on either side; the small

⁴⁹ *Sydney Gazette*, 18th June 1829.

⁵⁰ Casey & Lowe 1995a:9.

⁵¹ Fitzgerald 1990 p.34.

garden plots before them, their shaded verandahs, and the regularity of design which many of them display, taken altogether, not only please the eye and gratify the taste, but also have a direct tendency to recall the rustic beauties of Old England to the memory of every one who can think of the land he has left, and rejoice in the land now his home.⁵²

In 1838 a major piece of public works saw Brickfield Hill (George Street) reduced in height and made more gradual in gradient. The spoil was used to reclaim the southern end of Cockle Bay and to elevate the southern part of George Street.⁵³ This bulk removal of soils is not likely to have affected the study area although it was known to have changed the landform to the south of Hay Street, in the area of Parker Street.⁵⁴ Material from this cutting down was used to backfill the creek in Hay Street and raise it to current ground levels.

2.3.3 Sydney 1851–1870s

The period following 1851 saw the beginning of the gold rush and a long period of economic boom. It is during this period that urbanisation became more pronounced with the undertaking of various public maintenance programs by the new municipal council. Among the duties of the municipal government was the maintenance of roads. Most time and money was spent on looking after George Street and other major through roads. But general road conditions were poor, with Liverpool Street having only 'rough guttering' in 1855.⁵⁵ The boom resulted in high rental prices due to the influx of gold seekers. From this period onwards city land became scarcer. The quality and type of speculative and rental houses being built was not constrained by any sort of legislative control.

...the Sydney Municipal Council was plagued by administrative inexperience, inefficiency and, most importantly, a chronic lack of finance. With inadequate powers granted to it by the colonial legislature, the Council was unable to force landlords and speculative builders to connect even new houses to the water supplies, and, given the limited funds available, the provision of formed roads, sewerage and drainage was exasperatingly slow.⁵⁶

Another economic depression hit in 1859 and led to mass unemployment. As conditions worsened, the Legislative Assembly established a select committee to investigate the conditions of working-class housing. The select committee noted that much of the housing stock around Goulburn Street, and particularly in the laneways, was poorly built. South of Goulburn Street, on George Street were:

Densely settled rows of buildings packed between narrow lanes...the dwellings were poky and deficient in ventilation, and many of them were already falling into ruins... In the absence of a full system of underground sewers and proper surface drains, sewage and house slops festered in street gutters, draining eventually into stagnant pools on low lying ground.⁵⁷

Between 1851 and 1871 Sydney's population more than doubled from 30,000 to c74,000 people.⁵⁸ The burgeoning population placed more pressure on accommodation requirements. From 1861 to 1891 Phillip Ward (which includes the study area) grew by more than 109 per cent from 5,915 inhabitants to 12,347.⁵⁹ This further doubling of the population increased the stress on the available accommodation resource. During this same period, the average amount of people per dwelling was between 5.44 and 5.99.⁶⁰ This quite small change relative to population growth

⁵² Macle hose 1839 *Picture of Sydney and Strangers' Guide in New South Wales for 1839*, pg. 72.

⁵³ Macle hose, 1839:69-70.

⁵⁴ Mider, excavation director, pers. comm.

⁵⁵ Fitzgerald 1992:53.

⁵⁶ Keating 1991:32.

⁵⁷ Mayne 1982, Appendix 1, Table 1.2.

⁵⁸ Mayne 1982: Appendix 1.

⁵⁹ Mayne 1982.

⁶⁰ Mayne 1982 Appendix 1, Table 1.2.

suggests that as population more than doubled, an increasing number of dwellings were being squeezed into an already overcrowded setting.

2.3.4 Slum Development

When William Jevons visited the colony in 1858 and carried out his *Remarks upon the Social Map of Sydney*, his attention was often drawn to the more depressed parts of the places he visited. He mentions 'Durands Alley', which was at the rear of the properties in the study area, on Cunningham Street.⁶¹ He observed that:

Third class residences collect about a few distinct centres, or form part of the town peculiar to themselves, generally in the lowest or least desirable localities. In general, third class residences appear of considerable age showing that the land has been long located. Durands Alley, the Rocks, the lower end of Sussex Street, the north part of Chippendale, & Market land are the chief and worst third class quarters.⁶²

He further stated:

That part of Sydney where the lowest & vicious classes most predominate & where the abodes are of the worst possible description is the square block of land between George, Goulburn, Pitt, & Campbell Streets. Towards the first & last of these streets it is occupied by shops or business premises, and among which are no less than seven public houses or inns & two or three livery stables, a stable yard of large size. It is however within this block of land that the bad features appear. Several lanes of irregular angular shape proceed into it burdened by very closely packed & chiefly brick cottages, the dirty low appearance of which defies description. Such is Durands Alley, some female inmate inhabitant of which is punished almost every day at the Police Court for offences chiefly connected with prostitution. I walked through these miserable alleys which are quite shut out from common view & form almost blind alleys. No more secure & private retreat for vice is afforded in Sydney.⁶³

This block of land included the study area and one of the public houses referred to is the Woolpack Inn in the eastern part of the study area. At the time it featured hotels and inns on its northern and southern perimeters. The description of the housing within the block, specifically within Durands Alley, does situate the study area within a place renowned for its more dubious qualities in the middle of the nineteenth century. This suggests that the commercial enterprises in the area were directed towards a customer base of lower working-class people (Jevon's 'third class'). None of the properties within the study area were resumed by Council which suggests that the George Street frontage was not in such bad circumstances. They may have been spared by redevelopment. In the early 1860s the 1840s buildings at 712-718 were replaced by four two-storey shops with residences.

2.3.5 Markets

In the second half of the nineteenth century the markets on the southern side of Campbell Street continued selling fruit and vegetables. The cattle market was relocated to Glebe Island, and in 1869 the produce markets were housed in a new building called the Belmore Markets. By 1872 they were the main outlet in Sydney for fruit and vegetables.⁶⁴ During this time George Street was considerably developed with many two-storey shops with verandahs and canvas awnings (Figure 2.5). The markets were replaced in 1893 by the New Belmore markets on the site of the old Haymarket.⁶⁵ The Old Belmore Market was demolished in 1910 and replaced on the Castlereagh Street frontage by the Adelphi Theatre, later the Tivoli.

⁶¹ Part of this area was the subject of an archaeological project by Austral Archaeology for which no final report is available.

⁶² Jevons 1858:3.

⁶³ Jevons 1858:18.

⁶⁴ Kerr 1990:5.

⁶⁵ Kerr 1990:9.

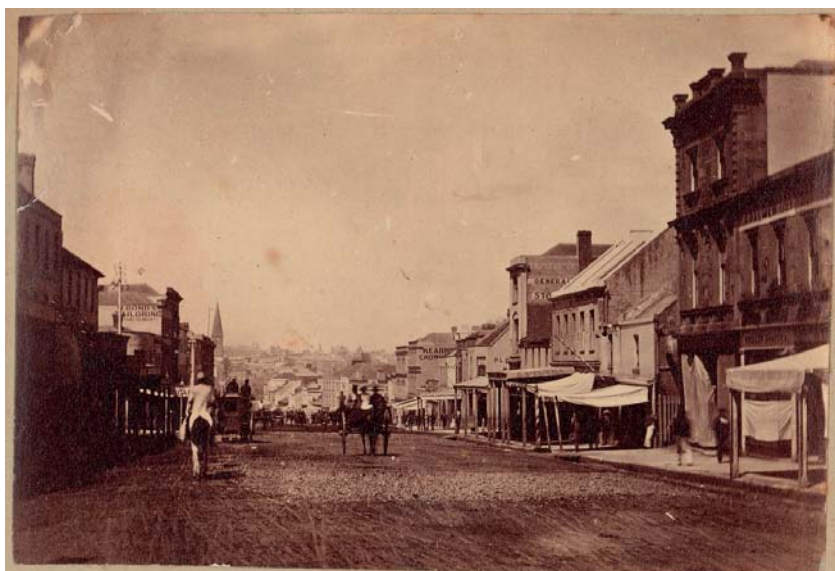


Figure 2.5: Brickfield Hill, George Street, near the corner of Liverpool and George Street, 1873, looking south. The study area is out of picture on the left. ML, SLNSW, SPF/535.

2.3.6 Sydney 1870s to 1890

The period from 1870 to 1890 was one of economic growth. It has been suggested that this growth, both of population and economics, was not accompanied by the provision of public amenities.⁶⁶ Rather, the privately-funded growth far outstripped the amenities such as sewerage, water, public housing and transport. It has been proposed that the lack of urban planning and legislation was responsible for many of the social problems that existed throughout the latter part of the nineteenth century. These social problems of sub-standard living conditions were visible through poor housing, poor health standards, high infant mortality rates, lack of public services and trade union upheavals.

There are numerous examples of the poor public amenity in the area of the site during this period. In 1875, in the central city blocks on either side of Goulburn Street (including that of the study area), committee members found a densely settled working-class population living along a maze of courts and alleys. Tenement blocks that were closely packed together were built without sanitary foresight, were poorly ventilated and still relied on stinking common cesspools.⁶⁷ Sydney's population, including municipalities, increased markedly with more than half the population residing within the city in 1871 and this population trebled by 1891.⁶⁸

Access to work was the factor that kept working-class people living in such squalor. Committee men observed in 1876 that:

Residents along one narrow passageway off Campbell Street, near the Haymarket, pointed to their sickly children, and then lamented that they must remain where they were since better accommodation could be had only at an impossibly long distance out in the suburbs.⁶⁹

This debate over access and amenity is a re-occurring theme in the urbanisation of Sydney. Inspections of working-class housing by health inspectors of the City Corporation continued from 1880 into the 1890s. Mayne noted that these inspections:

repeatedly demonstrated the emphasis placed by many working people upon domestic neatness and household ornamentation, which together served as the foundation of bourgeois respectability. The signs were there to be seen and their significance appreciated. That they

⁶⁶ Fitzgerald 1987:1-10.

⁶⁷ Mayne 1982:93.

⁶⁸ Fitzgerald 1987:18f.

⁶⁹ Mayne 1982: 113.

generally were not appreciated underlined the distorting influence of the unconscious cultural arrogance with which middle-class visitors observed the unfamiliar environment of the City slums.⁷⁰

And further that:

[committee members] Chapman and Read remarked that among districts of the lowest repute, in places like Robin Hood Lane and even in Durand's Alley, there were respectable working people who complained at the coarse language and the drunken rowdiness of their neighbours, and who lamented at having to live alongside prostitutes and vagrants.⁷¹

2.3.7 1890 to 1920

During the early 1890s a major economic depression hit Australia, one of the three worst depressions in Australian history. 'Between 1890 and 1895 a number of major banks crashed, national output fell by about 30 per cent, and employment and income dropped disastrously as a result'.⁷² By 1891 the population of Phillip Ward had increased to 12,347. During the depression, Sydney suffered high levels of unemployment, especially in the building trades.⁷³ Following the First World War attention again turned to the identification of *congested or slum areas*. Much of this work was undertaken in 1919 and 1920 by the City Surveyor. He defined the context and use of the term slum:

Whilst recognising that the term slum area as generally understood in older countries and defined as "A foul back street of a City, especially one filled with a poor, dirty, degraded and often vicious population; any low neighbourhood or dark retreat" is practically non-existent as far as the City of Sydney is concerned, we yet are of the opinion that certain areas are so congested and so devoid of adequate means of ingress and egress, and the usual amenities of modernly planned areas, that it is advisable in the interests of public health and generally in the public interest that such areas be resumed or acquired with a view to improving or re-modelling.⁷⁴

It seems obvious that by the 1920s Council saw some of the city's older and smaller housing as incompatible with the commercial centre that had emerged in the previous thirty years. Grand emporiums could stand only streets away from crowded residential precincts, with houses left dilapidated by constantly changing tenants and landlords not willing to provide regular maintenance.

Increasing road traffic saw the need to widen older narrow streets. The attribution of 'slum' had less to do with sub-standard living conditions than social engineering and the decision by Council to act as the arbiters of respectability. Regularity could be enforced by resuming whole blocks of housing, demolishing the lot, widening the roads and providing space for the new commercial buildings that inevitably filled the gap. The Council was not at any point concerned with retaining the inhabitants within the city area and did not attempt to provide alternate housing.

2.4 Post –Brickfield Occupation and Land Use of the Study Area

There are a number of sources that helped construct the history of the study area's occupation and land-use. These included *Sands Directory* which was kept from 1858–1933 and which listed the names and sometimes the occupations of the principal residents; the Council Rate Assessment books from 1845 which gave the names of residents, owners, and descriptions of buildings; pictorial material including plans of the city and of the site and photographs showing buildings on the site;

⁷⁰ Mayne 1982:117.

⁷¹ Mayne 1982:117.

⁷² Buckley & Wheelwright 1988:190.

⁷³ Keating 1991:55ff.

⁷⁴ City Surveyor's Office, Minute Paper, 17th March, 1919, CRS 34/149/19:1.

and land title material which detailed the history of the subdivision and ownership of the site (Vol. 5, Appendix 5.2). Combined, these resources gave a good overall picture of the site's development during the late eighteenth century and the nineteenth century.⁷⁵ These are discussed in more detail in Section 3, overview of results in relation to each of the houses.

Around 1823 the land within the study area was subdivided into part of three separate properties, Lots 2, 3, and 4. The lots corresponded to the archaeological Areas A, B, and C respectively (Figure 2.6).

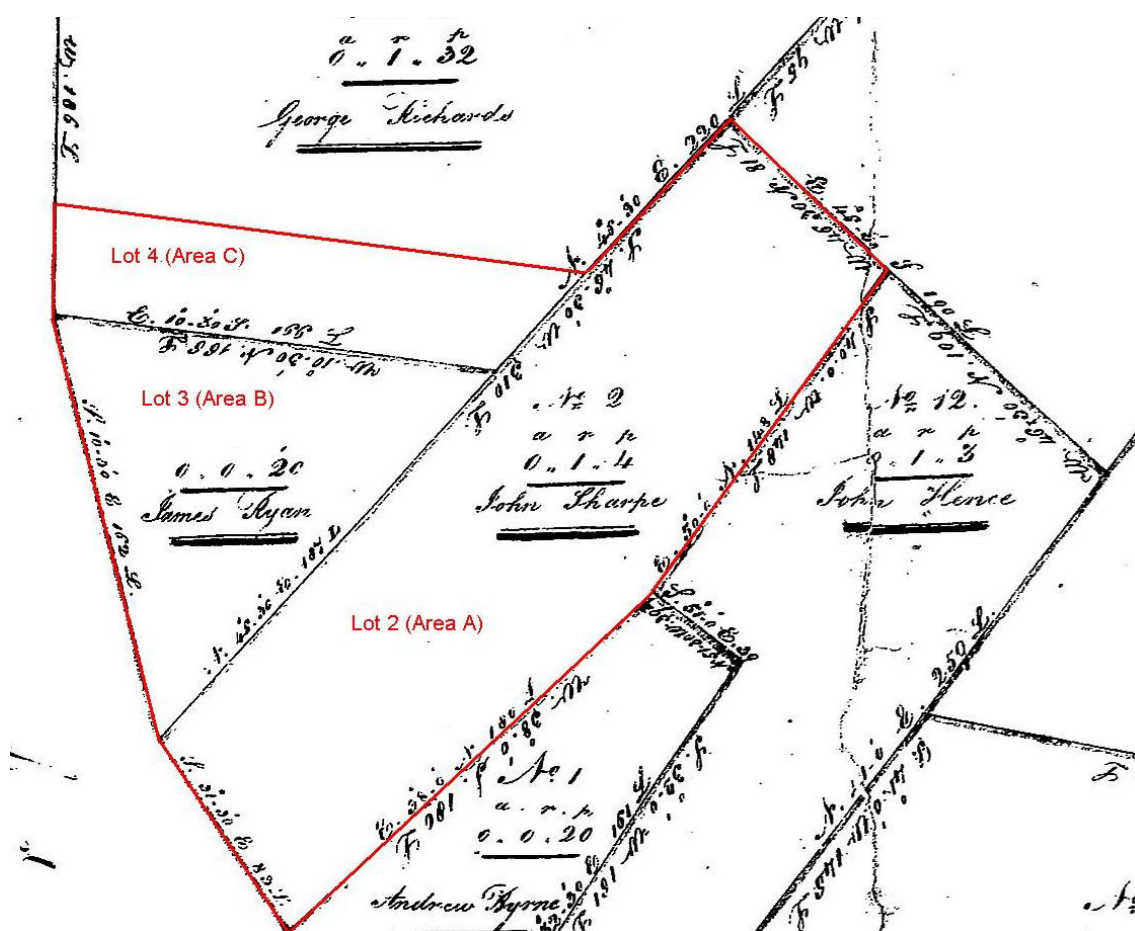


Figure 2.6: 1830-31 survey showing the lot divisions. These divisions remained constant throughout the nineteenth century. North is at the top of the image. Detail from City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.

2.4.1 Lot 2 – Area A

Lot 2 was the southeastern part of the study area. Its large, gently sloping and elongated yard was used for stabling throughout much of the nineteenth century, when the street frontage was occupied by the Woolpack Inn.

Early Years

In 1823, Thomas Buckton (Buxton) was the owner of the land, having acquired it from John Johnston who obtained it through Samuel Terry from Thomas Ball who had operated his pottery on

⁷⁵ Research for this section was undertaken by historian Caroline Plim, with additional interpretation by Mike Hincks, with later additions by Bernadette McCall and Mary Casey.

the site. Thomas Buckton fenced off the area, effectively excluding Thomas Ball from access to any of his remaining holdings, and built on the property and then sold it to William Cuthbert with 'buildings consisting of four dwellings'.⁷⁶ One of these buildings was recorded on plan by William Harper in 1823 (Figure 2.7). Its pictorial representation was similar in dimensions and position to the Woolpack Inn and it may have been the same building.



Figure 2.7: Harper's 1823 plan showing the two structures on the site. The site boundary is shown in red and the lines of the structures have been enhanced. The building that corresponds to the Woolpack Inn is in the lower left corner of the site. The red line indicates the present study area and the purple line is the likely footprint of Thomas Ball's Pottery. A building possibly associated with Ball's pottery is arrowed. Detail from Harper's *Map of Sydney*, 1823, Cat. No. S.2.1264.roll, SRNSW.

This may have been purchased as part of a forced sale that was ordered by the Sheriff in 1829, as prior to 1830 Cuthbert had sold a subdivision (Lot 2) to G. Porter who sold it on to John Sharpe. Between the end of the Brickfield period and 1830, the history of the lot is vague apart from the references to several publicans and tenants that are listed on the property. Harper's 1823 plan appears to show the same building that is depicted on Hallen's 1830 plan, and so it is probable that this was the location of the Woolpack Inn that was known in 1824, and was possibly operating as

⁷⁶ Field Books, Survey of the City of Sydney, A. Hallen, c1831, SR Reel 2628 (2/5195), Item 347, p5. SRNSW. Hallen's 1831 sketch plan of shows fencelines at the rear of Lot 2 which have been marked in and then crossed out which connected with George Street via a gate to the south of the Woolpack. These may correspond to Ball's work areas but there is no indication as to where the kiln may have been located.

early as 1823, although a licensee was not recorded until 1830. By 1830, the value of the building was recorded in Hallen's field book as £500, suggesting it was a substantial structure of relative high quality. In 1830 a 'well built house' is listed on Lot 2 leased to Alexander McCabe for fifteen shillings a week, but it is unclear whether this was in addition to the Woolpack Inn. A further advertisement of the houses that were let to tenants on the site describes:

...that substantial stone-built House, adjoining the Woolpack Inn, formerly the Property of Thomas Buckton, in George-street, containing eight rooms'. This house can be let to two tenants, having two kitchens, the back yard divided, and sufficient stabling for both, with an excellent well of water, and every convenience requisite for two respectable families. There is also a skilling attached to the house, which will be included along with the above.⁷⁷

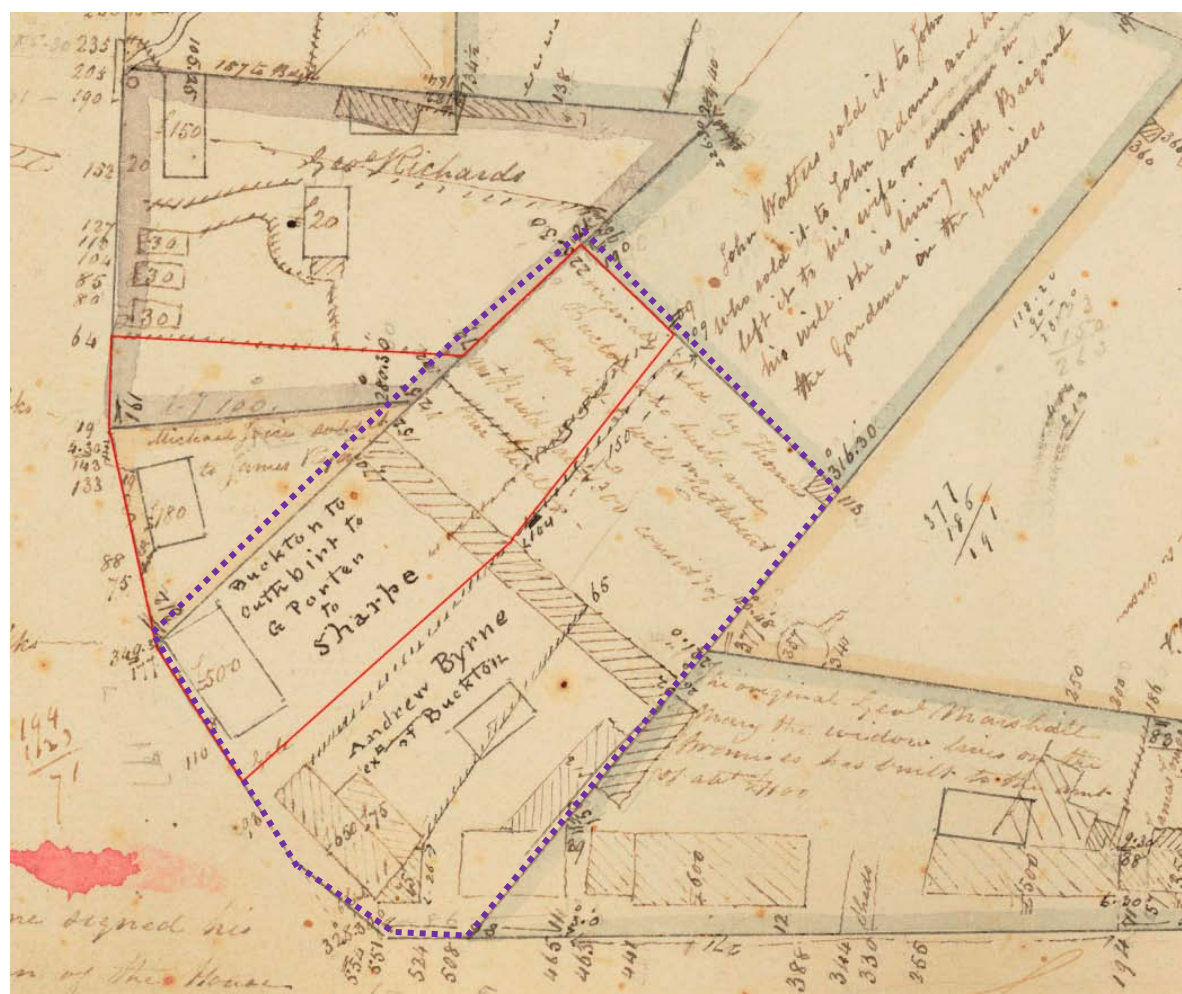


Figure 2.8: Detail of Hallen's field book sketch c. 1830-1831. This was probably a tracing of Harper's plan as the noted angles do not correspond to the drawn lines. The angles were corrected by Hallen in the formal survey plan (Figure 2.6). Information about the owners of the lots was noted on this sketch. Purple outline indicates the land acquired by Thomas Buxton (Buckton) from John Johnston which was occupied by Thomas Ball from c. 1801 to 1823. Detail from *Field Books, Survey of the City of Sydney*, A. Hallen, c. 1831, SR Reel 2628 (2/5195), Item 347, p5.

⁷⁷ Sydney Gazette 18 December 1830.

The uncertain history of early occupation and ownership coupled with the large extent of the block make it unsurprising that different parts of Lot 2 may have been used initially for a variety of purposes.

A licensee was not recorded for the Woolpack until 1830 although other sources indicate that a public house may have been operating as early as 1824.⁷⁸ In the years between 1823 and 1830, Cuthbert had sold Lot 2 to G. Porter. An 1822 Muster Record lists a 17 year old George Porter who was born in the colony and he may have been the one-time owner of the lot. He was probably in his early twenties by the time he acquired the land at Lot 2. Porter sold it on to John Sharpe, about whom we know very little. Just two men of the name John Sharpe have survived in the records from this period. The paucity of the records meant that neither could be linked to the site. The first Sharpe arrived in 1819 on board the *Baring*. In 1822 he was on a list of prisoners sent to Port Macquarie where he was to serve 14 years. Muster records show him there in the mid-1820s. The second arrived in 1821 on board the *Dick*. In 1822 he was serving on an invalid gang. Between the end of the Brickfield period (c.1823) and 1830, the history of the lot is somewhat vague but several newspaper references allow some reconstruction of the early days of the Woolpack Inn and suggest that the sale of Buckton's property was forced upon him.

The Woolpack Inn

By 1824 a Woolpack 'public-house' is recorded 'just at the entrance of Sydney'. It is mentioned in connection with a murder trial and presumably is the same establishment that was operated by one of the trial witnesses, 'an innkeeper in George-street, Sydney, on the Brickfield-hill'.⁷⁹ From 1827 to 1830 there are various references to a hotel known as the Sign of the Woolpack at the bottom of the Brickfield Hill with several early proprietors. One of the first publicans perhaps was a Mrs Nightingale whose name appears in connection with a sale of contents from the property in 1827.⁸⁰ She was followed at some stage by Thomas Buckton who is listed as proprietor, in sale notices in 1829 and 1830.⁸¹ Buckton's attempt to sell in July of 1829 was unsuccessful and may have arisen from financial problems. Another sale was advertised in December of the same year, ordered by the Sheriff, and by January 1830 there were three different tenants listed on Lots 1, 2 and 3 when it appears the entire holding was offered for sale.⁸² By February 1830 Buckton had died in police custody and the property was again advertised for sale in the following December (Appendix 5.2).⁸³

Early records to confirm the identity of license holders are not readily available and are probably a consequence of continued debate and amendments to legislation between 1825 and 1830 regarding the types of premises that could be licensed to sell alcohol.⁸⁴ The Legislative Council passed a law Feb 15 1825 prohibiting mixed businesses selling alcohol as it encouraged persons to visit such places on the pretext of buying other goods but this may have been amended/repealed on 20 February, 1826.⁸⁵ Again this Act was amended/repealed in February 1827, indicating that some degree of uncertainty and instability existed regarding the granting of licenses to sell alcohol.⁸⁶ A bill was re-introduced in 1830 to re-address the issues of licenses for public houses. After agreeing to a second reading, the matter was referred to a sub-committee for their recommendations.⁸⁷ The report was tabled April 19, 1830 and the revised Bill printed for future

⁷⁸ *Sydney Gazette*, 17 June 1824.

⁷⁹ *Sydney Gazette*, 17 June 1824.

⁸⁰ *Sydney Gazette*, 16 February 1827.

⁸¹ *Sydney Gazette*, 30 July 1829.

⁸² *Sydney Gazette*, 9 December 1829.

⁸³ *Sydney Gazette*, 16 February, 18 December 1830.

⁸⁴ *Legislative Council Votes and Proceedings* (LC V&P), 1824-25, 1825-26, 1827, 1830. Appendix 5.2.1 for list of licenses.

⁸⁵ LC V&P 1824-1825, Item 13, pp6-7; LC V&P 1825-26, Item 4, p31.

⁸⁶ LC V&P 1827, Item 1, p37.

⁸⁷ LC V&P April 2, 1830, Minute No. 11, p77.

discussion.⁸⁸ Discussions ensued.⁸⁹ After approval from the Governor the amended Bill was read a third time and passed unanimously.⁹⁰ This situation may account for the lack of records relating to the issuing of licenses before 1830.

The first officially recognised licensee for the Woolpack Inn was Edward McCabe (Vol. 2, Appendix 5.2).⁹¹ The records of two convicts appearing in the musters of the mid-1820s share the name Edward McCabe, and either may be the man listed as the publican. Both arrived in 1816 and were likely free men by 1830 (one served a seven-year sentence beginning in 1816, the other received a conditional pardon in the mid-1820s), but neither could be linked directly to the site.⁹² It would appear that licensees may have changed several times during the 1830s. The Woolpack was offered for lease in 1832 by a Mr William Sharpe, a butcher, resident of Hunter Street.⁹³ By 1833 James Bryan had taken up the mantle of licensee but his tenure was short-lived. He surrendered it to William Stevenson the following year. Stevenson was at the helm until 1840.

The 1840s saw just two licensees at the Woolpack. William Joshua Ballard took over from Stevenson but he did not last long and was gone by 1842. James Stewart had a longer residency. He was there throughout the rest of the decade and into the early 1850s.⁹⁴ An early description of the premises comes from the period in which Stewart was licensee. The Woolpack was described in the Assessment books for 1845 as a two-storey, 12-roomed brick building with a shingled roof. The notes also record a detached wooden structure, stabling and sheds. In 1848, a separate kitchen and store was noted. Stewart ended his tenancy as licensee in 1854 and appears to have bought the lot from Sharpe, although 1855 and 1856 are the only years in which he is recorded as owner. This may be an error in the records as William Sharpe was once again the holder of that title in 1858. Charles Enderby was licensee for a year after Stewart, but was then replaced by John Boyd. In 1855, the building had 14 rooms and a rated value of £475. Boyd was absent for the next two years, when Michael Leacey was licensee and large sheds and stables were recorded in the assessment of the Woolpack's value. Boyd returned to the role in 1860 (Vol. 2, Appendix 5.2).

Boyd was still operating at the hotel in 1861 but by 1863 both he and owner Sharpe had surrendered their roles to new faces. In that year, William Douglas was listed as owner and John Hall as licensee. By 1866, William Blunt was running the Woolpack and he saw out the decade there, as did owner Douglas. By 1871 the property had changed hands again, and a new licensee in the shape of Morgan Darcy graced the Woolpack. Ownership was now in the hands of George Moore.

The Ryan family that had owned Lot 3 since 1830 had extended their acquisitions to include the Woolpack property by 1877. At that time John Pries had been the licensee for five years and he remained in that position until the early 1880s when the Woolpack ceased trading and was demolished. By that time J. Barrett owned Lot 2, and the Ryan estate had retreated to its former borders.

⁸⁸ LC V&P Minute No. 16, p80.

⁸⁹ LC V&P May 4, 1830, Minute No.19.

⁹⁰ LC V&P May 19, 1830 Minute No. 22.

⁹¹ *Sydney Gazette*, 1 July 1830.

⁹² In the January 1830 sale notice a Mr Alexander McCabe is listed as the tenant of Lot 2 and it would appear that he was a relative of Thomas McCabe, *Sydney Gazette*, 26 January 1830.

⁹³ *Sydney Gazette*, 5 June 1832.

⁹⁴ Stewart's wife is recorded as giving birth to a son in 1848 at the Woolpack Inn indicating he resided there with his family, *Sydney Morning Herald*, 14 March 1848. A death notice in 1851 for James Stewart, aged 17, son of Mr James Stewart of the Woolpack, suggests they may have had more children in the years between. *SMH* 18 November 1851.



Figure 2.10: ‘Huge crowd in George Street at Mick Simmons’s Sports Store to see Don Bradman, 1930’. The large three-storey building is on the site of the Woolpack Inn and was once the Mercantile Bank. To the left is the redeveloped Lot 3, shown here as the two-storey part of Mick Simmons’ store. In the extreme left of the image, and barely visible, is the slightly taller building at No. 710. ML, SLNSW.

2.4.2 Lot 3

Lot 3 occupied the central portion of the site. It was a triangular-shaped lot that witnessed creative building throughout the nineteenth century (Figure 2.6).

Early Years

In 1823 Michael Joyce owned Lot 3. Michael Joyce appeared in several records pertaining to the early years of the colony. He was referred to as residing on George Street, although there was nothing more to connect him with the site. This man was a baker who arrived on board the *Providence* in 1811 as a convict and received a conditional pardon in 1816 or 1818 (records differ). He received three convict labourers in 1823. In the 1840s several petitions were made by him regarding the confirmation of the granting of 40 acres of land, promised him some ten or 20 years previous. The land at Lot 3 consisted of 20 perches only, which complicates this man’s already loose connection with the site.

Joyce sold Lot 3 to James Ryan sometime before 1830. Ryan was already renting the land from Joyce at the time, and he continued living there after the sale. The building Ryan lived in was recorded on a plan by William Harper in 1823 (Figure 2.7), and the building was still standing in 1830 when Hallen completed his survey of the block (Figure 2.8). It was large and rectangular and was located in the eastern part of the lot with open ground on all sides. Hoddle, Larmer and Mitchell’s plan of the same period shows a similar building on Lot 3 but the plan appears more stylised and less accurate (Figure 2.4).

Between 1830 and 1835 there was a dispute over ownership of the land. Mr Sydney Stephen claimed that he bought the land from Joyce on 16 January, 1830 and was guaranteed title by the Under Sheriff at the time. At the time of the sale there had been some confusion over whether the sheriff had the authority to sell the property on behalf of Joyce. It was later settled that he did not, and in fact Joyce had already sold the property to Ryan by the time the transaction took place. In 1835, Thomas Ryan was recognised as the rightful owner of the land.⁹⁵

Thomas Ryan was born in County Tipperary in c.1795. He was sentenced to 14 years in 1816 for the possession of forged notes and arrived on board the *Pilot* in 1817. In 1823 he was working at the Colonial Secretary's office as a clerk on a conditional pardon. He was granted the land at Lot 3 in 1831. By 1838, he had achieved the position of chief clerk and received an absolute pardon. He remained owner of lot 3 until his death in 1866. The lot remained in the family until the mid-1880s.

Subdivision and construction

In the late 1830s or early 1840s the lot was subdivided and several structures were built on the property. By 1845 two brick buildings stood in the north of the lot and three wooden premises in the south (Vol. 2, Appendix 5.2). All were listed as shops. Andrew Miller occupied the most northern building. It had two storeys, four rooms and there was a bakehouse at the rear. John Morris was his southern neighbour in a two-roomed, one-storey building and the three wooden premises were occupied by Solomon Davis, Francis Timmings and Joseph Wade. Davis had a one-roomed shop in the middle of the row. His two southern neighbours had two rooms each, and probably shared the same building.⁹⁶

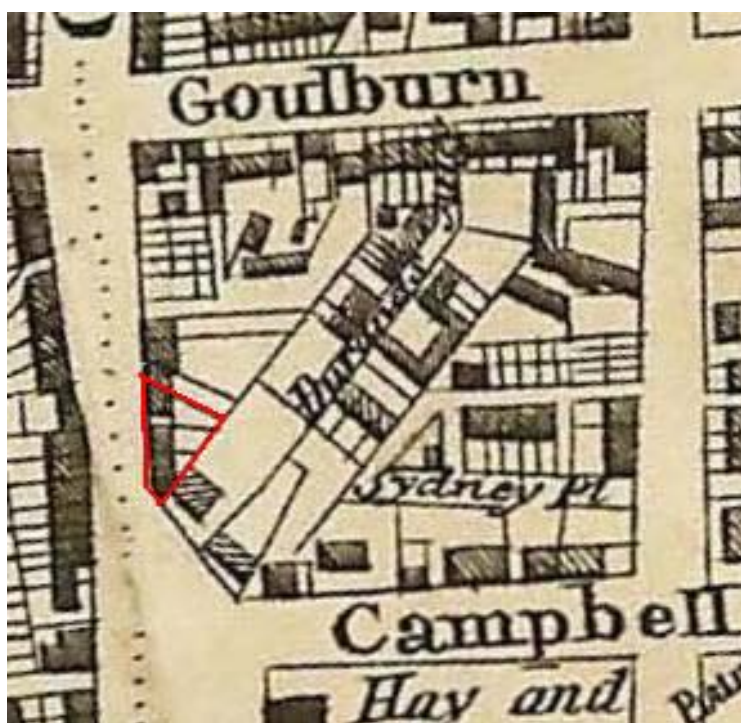


Figure 2.11: Woolcott and Clark's 1854 map showing an unusual alignment of the boundaries in Lot 3. This may reflect inaccuracy in the survey rather than changing boundaries. Detail from 'Woolcott and Clark's Map of the City of Sydney, City of Sydney' Historical Atlas of Sydney.

⁹⁵ *The Sydney Herald*, Thursday 24 September 1835, p2. National Library of Australia, Item No. 12853120 (news article).

⁹⁶ The street numbers on George Street altered considerably over the years, with the assigning of particular numbers changing on individual lots. The current 710 George Street was listed in *Sands* as being number 722 for the years 1858/1859 to 1880. Within this same time frame number 712 was 724, 714 was 726, 716 was 728, 718 was 730, 720 was 732, and 722 was 734. By 1883 the street numbering was as it is today, with 710 at the northern end of the study area and 720 at the southern end. In the 1840s and early 1850s the numbers were even more confusing, ranging from 164-176, then changing direction to 649-653a. A separate table of previous street numbering for each property is provided in Section 3.

Three years later, Miller was still in the northern building, now numbered as 653a George Street, and Wade still occupied the southernmost at No. 649, where he would remain until 1858. Francis Timmings had moved next door into the other brick structure at No. 652/653 which now boasted five rooms in total. Samuel Phillips and Noble Irwin had a two-roomed wooden structure each at Nos. 651 and 650 respectively.

By 1856, Humphrey Richardson had moved into the bakehouse and Nathaniel Douglas occupied a three-roomed place that appeared to be an amalgamation of Phillips' and Irwin's old residences. Otherwise the lot remained the same.

The northernmost building (now numbered 724 George Street) had become a well-established bakery by this time, and between 1858 and 1865 James Byrnes, Henry Hough and Edward Fitzgerald (a pastry cook and confectioner) continued that tradition. During Hough's residency, tenders were advertised for additions and alterations to the premises. This coincided with redevelopment on the rest of the lot in 1861-63.

The buildings to the south were pulled down in 1861, after advertising for tenders for the construction of four houses between May and December. The last shopkeepers to trade from them were a fruiterer (Thomas O'Connell), a carrier's agent (Robert Allen), a saddler (Lewis Smith) and a plate worker (Edward Voss).

Redevelopment

By 1863, three new two-storey brick shops and residences had been built to the south of the 1840s bakehouse.⁹⁷ The *Sands* lists indicate that the tenants within the study area were all operating commercial businesses, enterprises wholly suited to the general mercantile nature of the Haymarket area as a whole. The range of business conducted within the study area between 1858/59 to 1933 reflected the general commercial tone of the neighbourhood and includes such things as grocers, bakers, tobacconists, jewellers, hairdressing, millinery, confectioners, saddlers, boot making, boot importing, a music seller, and a refreshment room. Tailors and a draper occupied the middle of the row in 1863 (Willis & Baynes at No. 714 and George Jones at No. 716) and the saddlers Smith and Johnson were next door to the Woolpack Inn at No. 718.

No. 718 remained a saddlers until 1883, with Smith and Johnson in residence until the mid-1870s and William Adams (also a harness-maker) in the intervening years. Arthur Lestone, a hairdresser, shared the building with them from 1873 until 1883. After that the New York Novelty Company took over from the saddlers and stayed until the turn of the century.

⁹⁷ These new buildings occupied the locations that would be numbered 710-718 from 1880 onwards. They were originally numbered 724-730. The twentieth-century street numbers have been used here to avoid confusion.

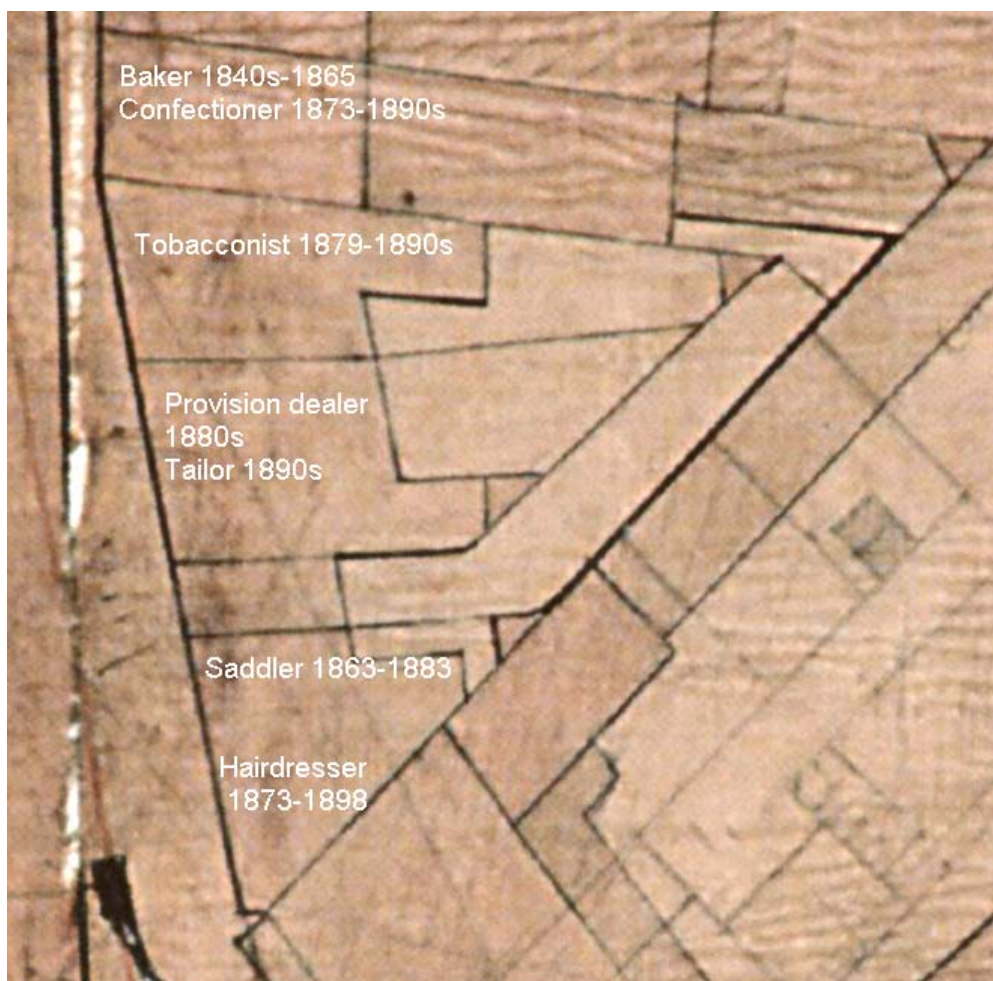


Figure 2.12: Plan showing some of the long standing shops that occupied the street-front of Lot 3 during the second half of the nineteenth century. Detail from the *Trigonometric Survey of Sydney, 1855-1865*, Section O2, City of Sydney Archives, Historical Atlas of Sydney.

Mrs L. Kennedy, a milliner, had a brief residence at No. 716 in the late 1860s, and after a short period of vacancy, Samuel Kerr's boot warehouse was established at the location in the following decade. The provisions dealer Lewis Halvorsen saw the 1880s go by there, and Webb's tailoring stitched their way through the last ten years of the century at No. 716.

In the mid-1860s, the Ryalls (a draper and a professor of music) occupied the store at No. 714, and Samuel Phillips, an auctioneer, was also to have a short stay there before the 1870s arrived. In 1873 John Fitzjohn Hall (a writing master) and George Stone (a saddler) were sharing No. 714 but by 1879 the tobacconist Cornelius Loughlan had become comfortable there. He would remain there until the 1890s.

At No. 712 in 1868, Aaron Bauman, a hatter, broke the long line of bakers at the residence. By 1873 he had been replaced by a confectioner, Jeremiah Callaghan. The Cahill Brothers and George Adams continued the confectionery trade there until the late 1890s.

The twentieth century

At the turn of the twentieth century the 1860s buildings were described as 'very dilapidated'. It is possible that they survived until c.1930 when the lot was amalgamated into Mick Simmons property to the south. At No. 718, Pattinson's chemist saw in the early part of the century. At No. 716, a bootmaker and importer shared the first three decades. No. 714 was occupied by Fred Salier, a

music seller, and No. 712 saw a variety of shops including a fruiterer, jewellers, a bag store, a tailor and a milliner.

2.4.3 Lot 4

Only the southern part of lot 4 was within the study area. This part of the lot had become a semi-autonomous entity by the early 1840s when subdivision occurred in many lots on this city block.

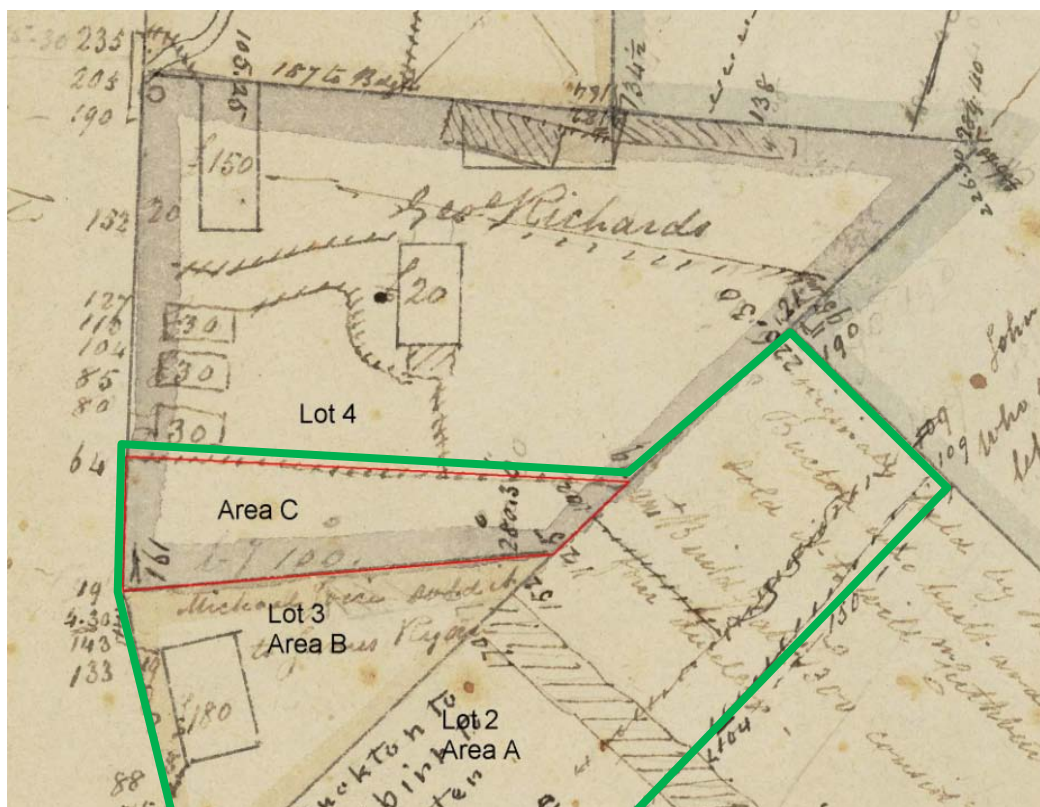


Figure 2.13: Hallen's 1830 field sketch of Lot 4 showing the partitioned area that was within the site boundary (Area C). Detail from *Field Books, Survey of the City of Sydney*, A. Hallen, c1831, SR Reel 2628 (2/5195), Item 347, p5.

Early Years

The lot was granted on 8 March 1831 to George Richards, who was by then a shopkeeper. This was a confirmation of title as Richards had already sold it to Thomas Etchells, a hatter, of Sydney in May 1828. Richards was originally a labourer from Derbyshire with a 'dark and sallow' complexion, black hair and hazel eyes. He was sentenced to life in Southampton in 1795 and arrived on board the *Glatton* in 1803. He was pardoned in 1818, granted land in 1821 and by 1823 was resident at the Brickfields and had received an assigned convict. He was still there when the 1828 Census was taken, with his two sons, George (junior) and William. Also residing there were Charlotte Lamb who came free and Mary Perry who may have been an assigned convict working for George Richards. He was 50 in 1828.⁹⁸ When Richards sold the land there were five structures on the lot (Figure 2.12; Appendix 5.2).

⁹⁸ '1828 Census database', Library of Australian History, R0638.

Subdivision and development

By 1845 the portion of land described as Area C had been sold to Samuel Powers and a two-storey brick structure had been built at the street-front. More than one Samuel Powers appeared in the records of the time and none could be conclusively linked to the site. The most likely candidate was a convict pardoned in 1821. He was a 5ft 9¼in (175cm) groom from Birmingham with a 'ruddy pock-marked complexion', brown hair and grey eyes. He had been sentenced to life in Warwick in 1817. Little more could be found concerning his life in the colony.

Powers was residing on a separate portion of land at the 'rear' in 1845 in a two-storey, four-roomed brick house, but no evidence of this structure could be found on plans or in the archaeological record. It may have been located north of the site. Thomas Daly was in residence at the street-front shop. By 1848, Terrance Daly was the owner of the land and was also in residence. Thomas and Terrance almost certainly represent the same family if not the same person. Three other structures were listed at the address at this date: a store, stable and 'co-house kitchen'. Each was listed with five rooms on a single level, with Daly as owner and occupant. There was no archaeological evidence for these additional buildings.

By 1855 the grocers Harris and Grogan were in residence. Within three years, Thomas Grogan was the sole operator of the business, and he remained there until 1867. The Lenehan brothers continued the grocery trade at the address until the early 1870s by which time ownership of the land had passed to T. J. McDonnagh, and then onto Mrs Fraser. By this time stores covered much of the property at the rear (Figure 2.14).

In 1873 Edward Lidbury set up his Berlin wool and fancy warehouse and was still there in 1877 when the land had been bought by the Ryan family of Lot 3. John Henry Mulholland had taken up residence by 1879. His 'fancy toy bazaar' was however gone by 1882. The land was now the property of the Linden estate. Henry Linden (also referred to as Lindon) arrived in the colony from Madras in 1814. In 1824 he had been free for five years and had a wife and family, all born in the colony. He was granted 50 acres of land in 1825 but the location was not specified in the records. He died in Burwood in 1866. He had four children (John, James, Ann and Sarah) by his wife Ann who died in 1869. In 1883 Grigor & Hutchinson's fancy depot occupied the premises. They were the last company to operate out of the 1840s building.

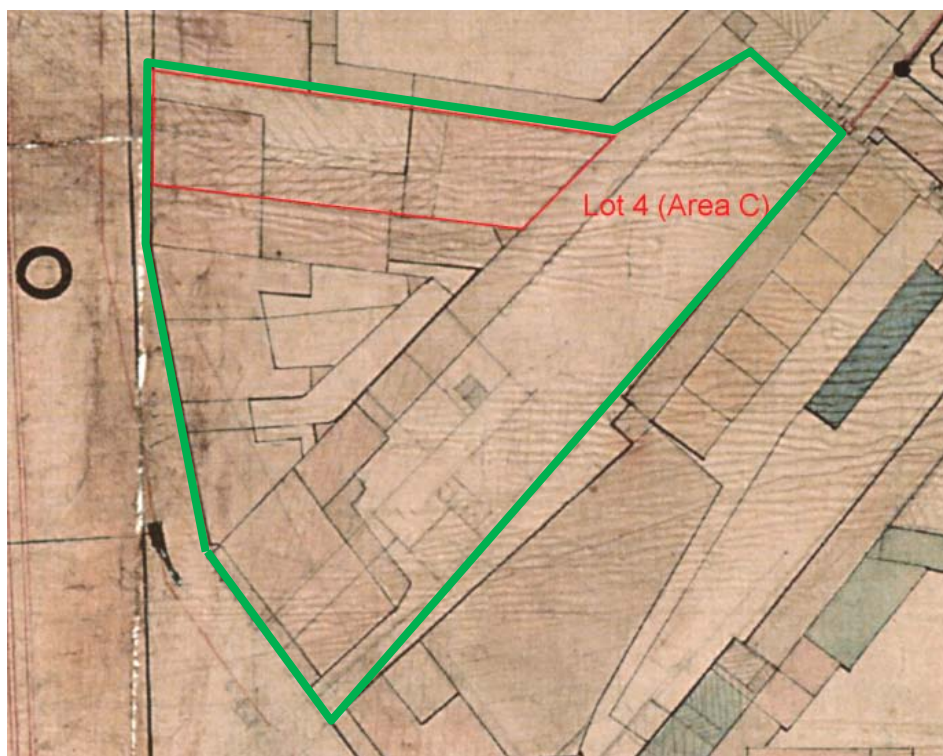


Figure 2.14: 1865 *Trigonometric Survey of Sydney* showing the southern portion of Lot 4, by then heavily built upon. Thomas Grogan the grocer was in residence at the time. The additional buildings are likely to be stores. Detail from the *Trigonometric Survey of Sydney, 1855-1865, Section O2*, City of Sydney Archives, Historical Atlas of Sydney.



Figure 2.15: The water closet at No. 710 George Street in 1900. From 'Views taken during Cleansing Operations, Quarantine Area, Sydney, 1900, 'Views taken during Cleansing Operations, Quarantine Area, Sydney, 1900, Vol. III', 172. W.C., rear of 710 George-street. SLNSW computer catalogue.

Twentieth-century Redevelopment

By 1888 the 1840s structure and its 1860s add-ons had been demolished and a large structure occupied over two thirds of the lot. It housed The New York & American Novelty Co. The following decade would see them share the premises with an oyster saloon, a clothier, a restaurant and a fancy goods store, and the building would expand further to the back of the property. In 1903 it was noted that the building was dilapidated and the stock that it housed hazardous (Figure 2.17). However, the New York Novelty Company continued to occupy the premises until 1918 (Figure 2.18). The building may not have survived much longer. Subsequent construction on the lot was not the focus of the excavation.

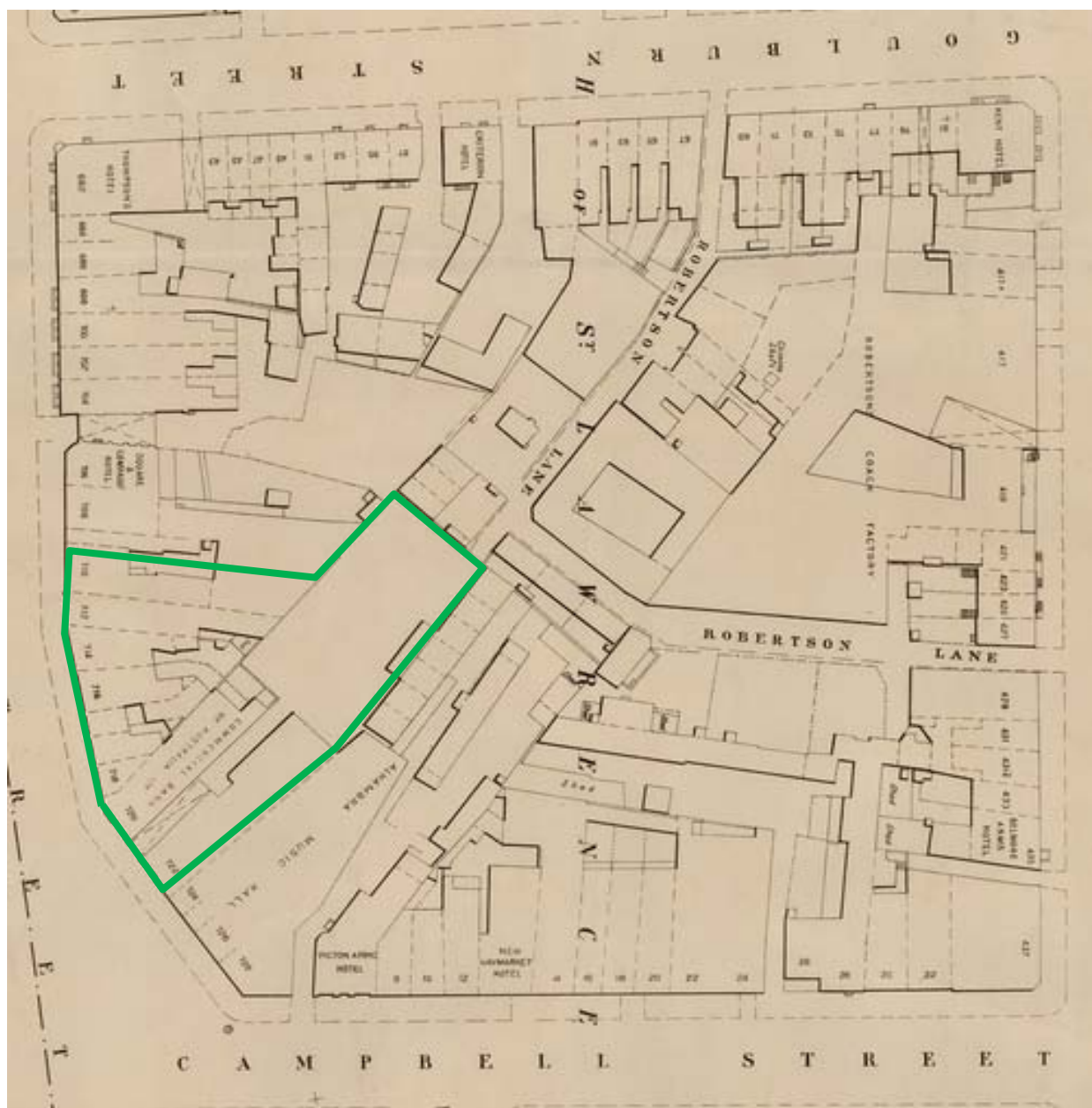


Figure 2.16: This plan shows the extent of buildings by 1888 as well as 1895. The courtyard area to the north of 710 was the only part of the site not built on by the 1880s. *Sydney Metropolitan Detail Series, 1895*, on-line at ML, SLNSW.

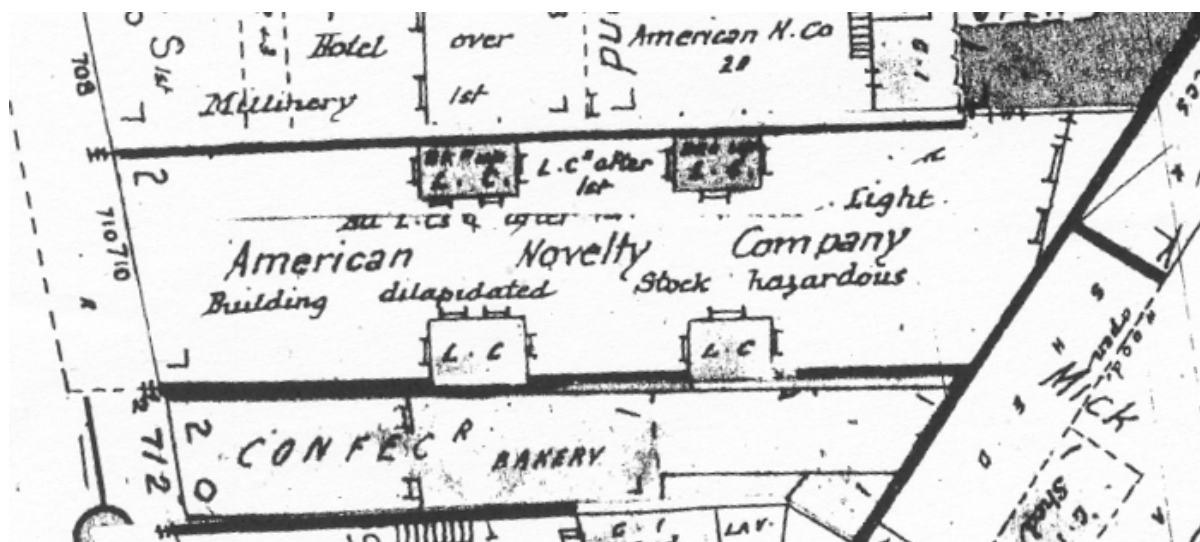


Figure 2.17: A plan showing the large building occupying the Lot 4, No. 710 in 1901. It is the same building shown on the 1917-1939 Insurance plan. It may have stood until 1918 but was demolished soon afterwards. Fire Underwriters Association of NSW, c1901: City of Sydney detail survey maps 'Ignis et Aqua' Series, Sheet II Vol. 1, ML MAV/FM4/10537.

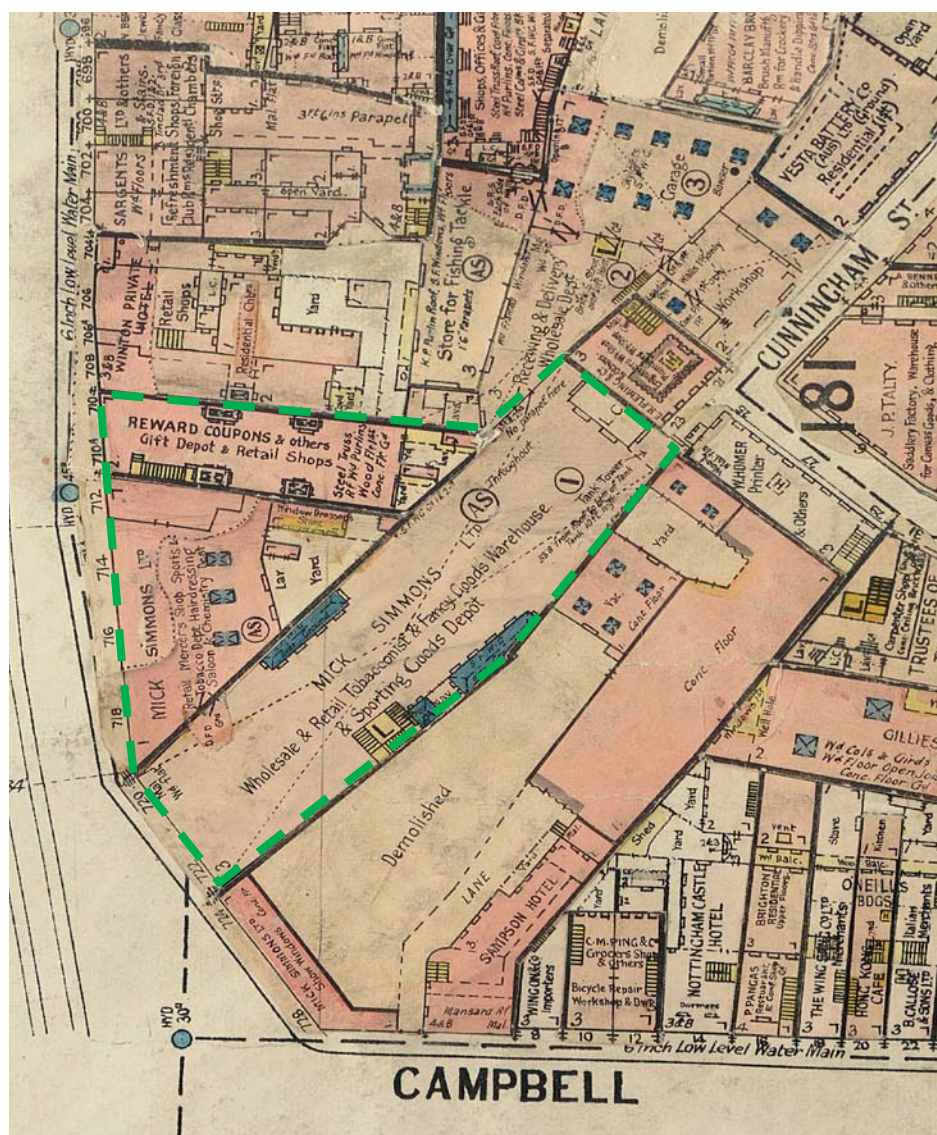


Figure 2.18: The buildings on this plan are the same ones shown in the Bradman photo (Figure 2.10). Detail from the Fire Underwriters' Plans, ca 1917-1939 - Block177_181, on-line, City of Sydney, Historical Atlas of Sydney.

3.0 Results of the Archaeological Investigation

3.1 Methodology

The site was excavated using an open area stratigraphic methodology. This approach maximises the identification of temporal relationships in the archaeological record during excavation. Initial clearance of the site was expedited by the use of a 20-tonne and 7-tonne excavator to remove twentieth-century levelling fills and demolition material. The site was then divided into three archaeological areas before intensive hand excavation and recording. The three archaeological areas corresponded to the initial subdivision of the block and represented boundaries that were respected by development until recently (Figure 3.1). Test trenches were used in several locations to better understand localised stratigraphy. A total of 18 test trenches were excavated throughout the site. Table 3.1 summarises the location and purpose of each of these test trenches. Context numbers were allocated with reference to each archaeological area and individual features. Interpretive relationships between the features in each area were established and recorded during excavation. These associations form the basis of the archaeological analysis. The relationships are displayed schematically in the Harris Matrix for the site (Section 11).

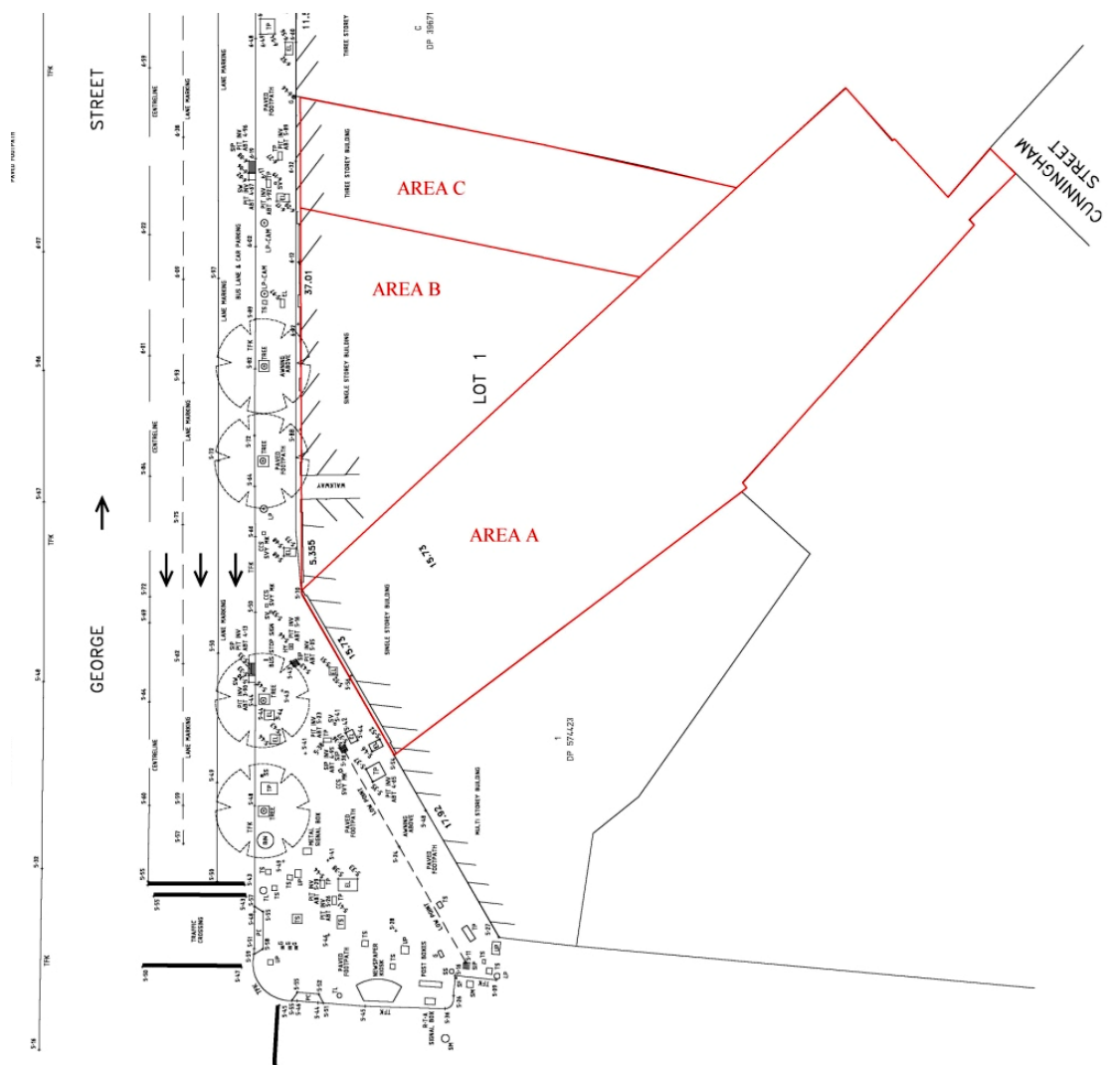


Figure 3.1: Site survey plan showing the archaeological areas. These areas correspond to the original subdivision of the block. North is at the top of the image.

Test Trench	Area	Description	Plan No.
1	A	Room 1, Woolpack Inn, east end through mixed fill.	3
2	A	Room 4, Woolpack Inn, through grey subsoil, 7354.	3
3	A	Room 5, Woolpack Inn, through grey fill, 7353.	
4	A	Room 2, Woolpack Inn, southeast corner, showing depth of footings, 7309.	3
5	A	Room 5, Woolpack Inn, southwest corner, showing depth of footings, 7309.	3
6	A	Room 1, Woolpack Inn, southwest corner to show depth of footings, 7309.	3
7	A	Southwest corner of Area A, close to George Street, through early fill 7385. (Renamed TT 9).	3
8	A	Southwest corner, showing deep cut through the natural clay. (Renamed TT 9).	3
9	A	Southwest corner of site, long trench running east-west joining up TT 7 and TT 8, showing large cut 7436.	3
10	A	Long trench running north-south showing early fills. Perpendicular to and joining TT 9.	3
11	A	Cut through the natural clay showing large brickfields era cut 7436.	3
12	B	T-shaped test trench through fills within area of No. 716 George Street showing large circular cut 7600.	8
13	B	Trench running east-west through fills, 7529 and showing wall footings, 7402 at No. 716 George Street.	10
14	B	Trench running east-west through fills, 7529 and showing wall footings, 7402 at No. 716 George Street, west of TT 13.	10
15	B	Southeast of TT 14 within No. 716 George Street, showing fills and postholes.	8
16	B	Test trench through early cut/gully (7601) and its fills at rear of No. 714 George Street.	8
17	B	East of TT 16, test trench through early cut/gully (7602) and its fills at rear of No. 714 George Street.	8
18	C	1m x 1m test pit butting wall 7443, showing tree bole and burnt soil.	15

Table 3.1: Summary of all the test trenches excavated on site. Each of these test trenches was annotated on plan (see Volume 3, Section 10 of Excavation Report).

3.1.1 Archaeological phases

The archaeology of the site was divided into several phases (Table 3.2). The phases used were area-specific in response to the historical idiosyncrasies of lot development across the study area. Historical information including plans, Rates Assessments and other primary records were used to determine appropriate phasing of the archaeological remains. The phases were used in conjunction with stratigraphic information to interpret the relationships between contexts during excavation.¹

Phase	Area A	Phase	Area B	Area C
1	Natural Landscape	1	Natural Landscape	Natural Landscape
2	Aboriginal Occupation	2	Aboriginal Occupation	Aboriginal Occupation
3	1788–c.1823: Brickfields and pottery manufacture and early village	3	1788–c.1823: Brickfields and pottery manufacture and early village	1788–c.1823: Brickfields and pottery manufacture and early village
4	c.1823–c.1880s: The Woolpack Inn with numerous licensees	4	c.1823–c.1840: Post-Brickfield occupation by former convicts and families	c.1823–c.1840: Vacant land
		5	c.1840–1860s: Redevelopment of the lot	c.1840–1860s: Commercial development
		6	1860s–c.1890: Rebuilding phase associated with general cleansing of the block	1860s–c.1890: Rebuilding phase associated with general cleansing of the block
5	c.1882–c.1902: Bank building – the Mercantile and later Commercial Bank and warehouses	7	c.1890 onwards: Rebuilding replaces shops with buildings that survive into twentieth century	c.1890 onwards: Rebuilding replaces shops with buildings that survive into twentieth century
6	c.1903–onwards: Mick Simmons buildings, alterations			

Table 3.2: Chronological phases developed for the archaeological remains from each site area. The development of Area A was different to the other areas of the site.

¹ For a more detailed description of the excavation results from each area refer to the Trench Reports in Volume 2.

A note on the changing street frontage

Although beyond the limit of excavation, information about the changing nature of the street frontage was provided by historic maps and archaeological remains on the site. Throughout the historic period, the northeast corner of Campbell and George Streets was not a right angle, despite the fact that these roads run perpendicular to each other. The odd alignment at the corner had its origins in the Brickfield period where the road to Parramatta forked, running briefly along the northern side of the creek to meet two tracks from the west (Figure 3.2).

During Phase 4 lot boundaries were set and Campbell Street was established running west at the location of the fork in the road. The gentle curve of the road to the southwest was kept, despite the sharp angle of Campbell Street to George Street, and the lot boundaries at the street frontage reflected this (Figure 3.3).

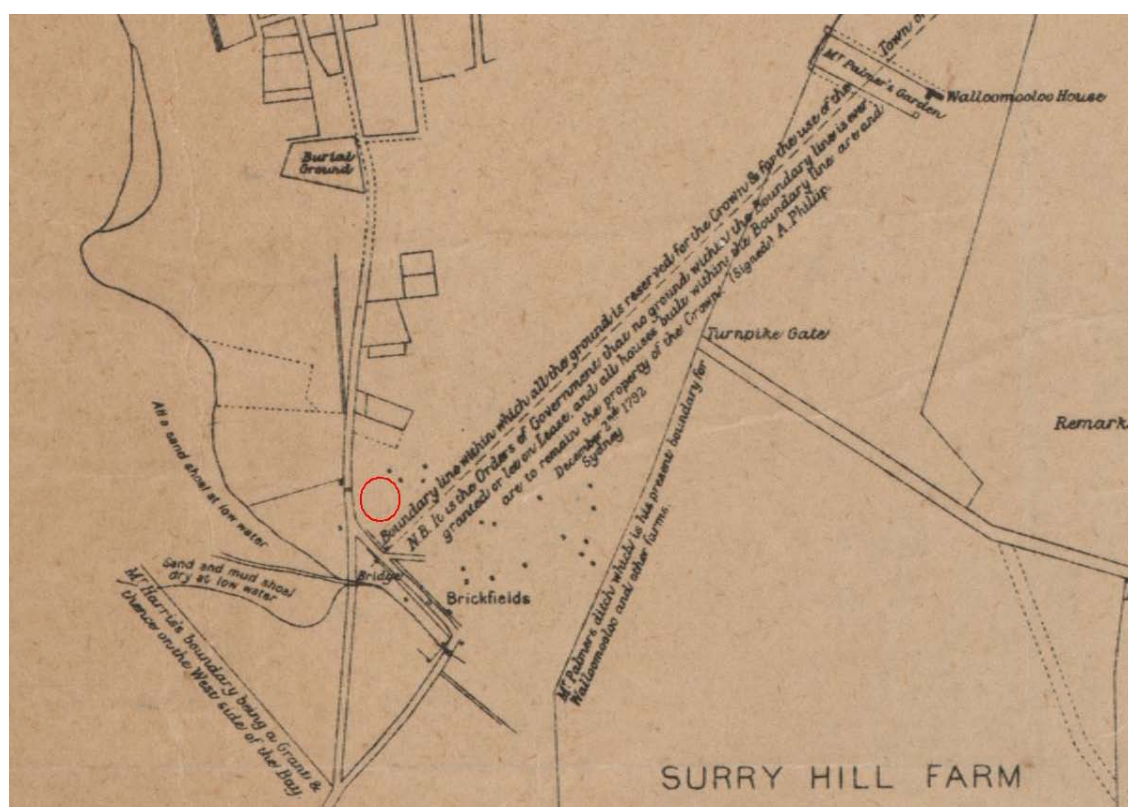


Figure 3.2: The site location is indicated by a red circle where the road to Parramatta forks on the north side of the creek. Detail from *Plan of the town of Sydney in New South Wales* by Jas. Meehan, NLA map f105b.

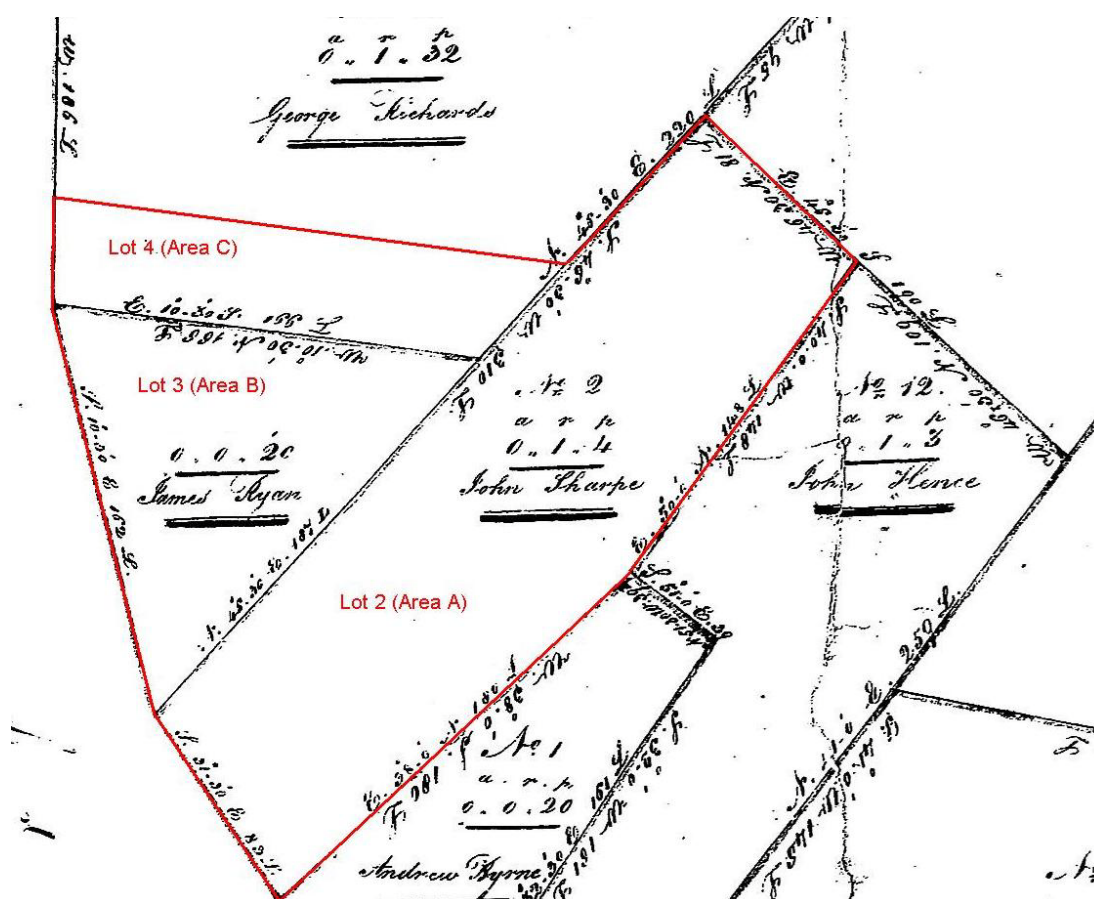


Figure 3.3: Lot boundaries c.1830 showing the variations in street alignment as George Street approaches the corner of Campbell Street. City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.

As early as 1830, Hallen recorded a fence extending from the north of Lot 3 into the street, annexing a small portion of land from the road (Figure 3.4). This would later correspond to the corridor of land occupied by No. 712 and was probably instrumental in determining the size of the subdivision. This is discussed in more detail in Section 3.7.1 below. By the 1840s the road had widened in the north, and both Lots 3 and 4 lost some land to it. However, the alignment of the building at No. 714/716 and the Woolcott and Clark plan of 1854 suggest that Lot 3 was once again reclaiming land from the street. This is discussed in greater detail in Section 3.7.1.2 below. This was in a period of general permissive occupancy and was when parts of the block were considered among the worst slums in Sydney. In the 1860s, the street frontage was restored to its 1830 alignment, excepting the concessions made to the road in the 1840s. It remained that way until the early twentieth century (Figure 3.5).



Figure 3.4: Hallen's field sketch c.1830 showing a boundary fence extending into the street. This would later correspond to the location of No. 712. Detail from *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p.5.

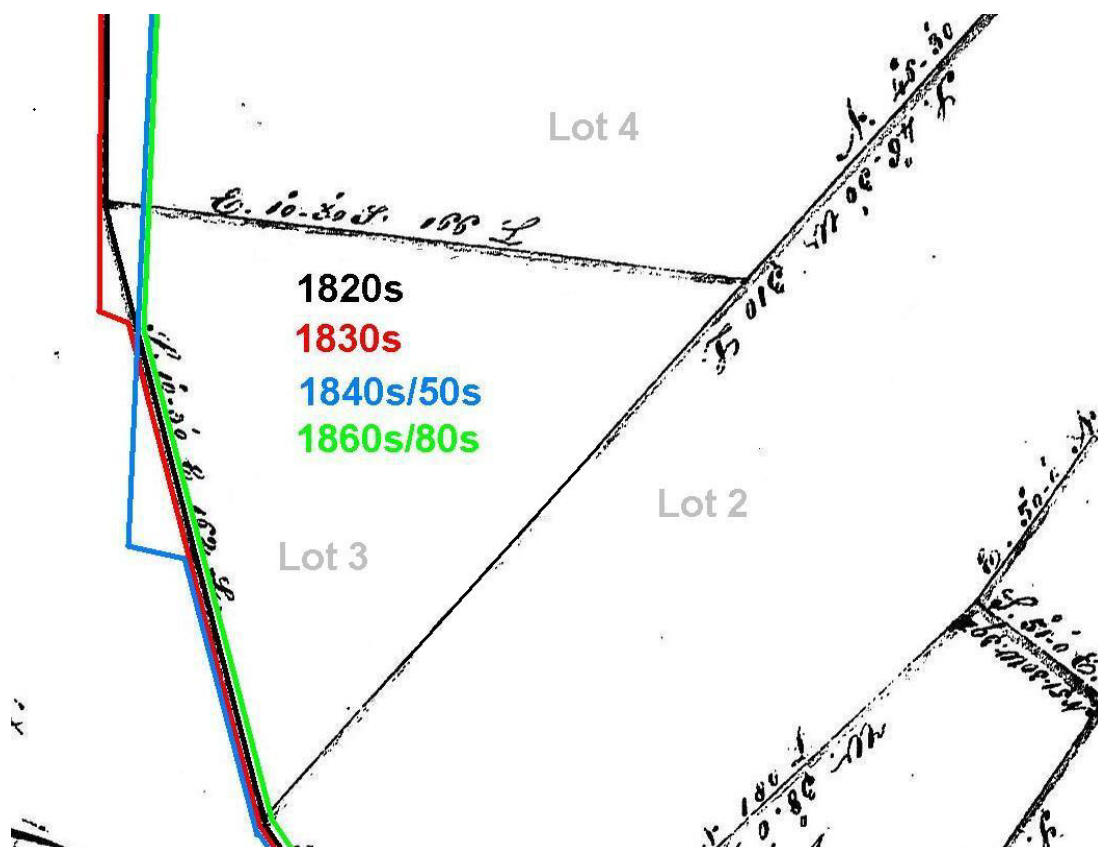


Figure 3.5: Interpretive plan showing the changing street frontage at Lot 3. Original boundaries are taken from Hallen's 1830 survey. 1840s/50s projections are based on archaeological evidence discussed in Section 3.7.1.2 of this report. City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.

3.2 Phase 1: Natural Landscape

The site at 710-722 George Street was situated on the cusp of a change in the underlying geology.² Beyond the hill to the north, the clayey soils and open woodland associated with the Wianamatta group shales once gave way to the shallow, sandy soils and dense and tenacious vegetation characteristic of the underlying Hawkesbury sandstone.³

The soil landscapes of the area included Blacktown and Lucas Heights on the Wianamatta shales, and the GyMEA soil landscape on the surrounding sandstone to the north and northwest.⁴ The site was close to the border of the two shale soils and represented a transition to a more open landscape, with the Lucas Heights soils giving way to those of the Blacktown landscape to the south. In addition, deep creek fluvial deposits flanked the nearby streams that fed Cockle Bay.

The Lucas Heights soil landscape is common on landforms that mimic those of the study area: gently undulating slopes, crests, ridges and plateau surfaces. The soil landscape consists of silty sands in the upper layers and sandy clays at the base of the soil layers. These are soils that are moderately to highly erodible.⁵ The soil landscape suggested that prior to 1788, Brickfield hill was likely to have been graced with alluvial terraces at the base and Lucas Heights soils on the slopes, supporting sclerophyll open forest and low eucalypt woodland with a sclerophyll shrub understorey.⁶ In fact, pollen analysis of the topsoil indicated a landscape characterised by *Allocasuarina/Casuarina-Eucalyptus* forest or woodland with a grassy rather than shrub-rich understorey.⁷ When approached from Sydney Cove this change in vegetation from sandstone forest and scrub to relatively open and seemingly grassy woodland no doubt aided the early detection of appropriate clays for brickmaking, which were exposed at the surface and discovered by a working party shortly after establishment of the British settlement.⁸

Remnants of the soils and clays characteristic of the Lucas Heights landscape were present across the site in varied states of truncation and preservation. The natural landscape will be discussed in terms of Areas A, B, and C, as lot-specific activity was a major factor in determining the preservation or modification of the soil landscape.

3.2.1 Area A

In Area A, there was no evidence of the original topsoil, and the remnants of a modified A2 horizon were only present on the highest ground in the east. This part of area A was spared the disturbance created by the construction of the Woolpack Inn and its outbuildings during the mid to late 1820s. The remaining A2 horizon was a grey-brown, tightly compacted mix of fine sands and clay particles. It exhibited signs of contamination and disturbance in the form of fragments of sandstone, sandstock brick and other highly fragmented items of historic material.

The rest of Area A had been reduced to B1 horizon natural yellow clay (7355/7667) by the time the first buildings were constructed. This may have been due to erosion after land clearance, and was almost certainly exacerbated by the brickmaking and pottery manufacturing activity in the area. The proximity to the road and the presence of a large and deep pit (7436) suggested that during the Brickfield period this part of the site witnessed considerable activity. The erodible nature of the soils meant that they were highly susceptible to movement on the slope after clearance, and activities further up the hill would have no doubt impacted particularly on the land immediately

² Herbert 1983.

³ Benson and Howell 1990:7-11.

⁴ Broadbent 2010:43-46.

⁵ Connell Wagner Pty Ltd 2002:7-10.

⁶ Broadbent 2010:46.

⁷ Section 9.6

⁸ Worgan 1788.

adjacent to the road. The B horizon that remained was a compact yellow clay with grey mottling. It had few inclusions, excepting some decayed stone fragments. The soil profile was observed in excavated features and wall trenches. Soil and pollen samples were taken of this B1 horizon (Figure 3.6, samples #19, 20 and 88).



Figure 3.6: B horizon clays (7668) exposed at the base of a large pit (7660) in Area A. The yellow-orange subsoil can be seen in section, here contaminated with darker material. View to the west. Scale 1m.

The underlying C horizon clays had been exposed during the Brickfield period through the excavation of two large pits along the southern boundary of the site (7436, 7660). The C1 horizon consisted of compact red (orange) and grey mottled clay with no inclusions (7446/7668). Soil samples were taken of the natural C1 horizon clay (samples # 31, 32 and 87).

3.2.2 Area B

In Area B the natural soil horizons on the street frontage were still largely intact but showed signs of erosion and displacement during wet conditions. In the east of Area B the natural deposits were truncated to the B horizon clays, similar to those observed in Area A (Figure 3.6). Levelling of the site after the Brickfield period was probably responsible for the truncation of the soils in the east. Gullies that ran downslope in the west were filled in with largely A horizon material prior to subdivision. The cheapest and most efficient method for this infilling would be the redistribution of soils from the east of the lot. This would have also served to level the gentle slope from northeast to southwest in Area B.

The surviving topsoil (7472/7450/7458) consisted of mid- to grey-brown fine silty clay and sand with some charcoal flecking. Historic artefacts such as fragments of brick and lead-glaze pottery littered the deposit which would have been highly mobile when wet. Within the topsoil layer (7472) was a tree bole (7473). This was slightly irregular in plan and measured 1.4m by 800mm and was 140mm in maximum depth. It contained a dark humic loam with fine roots. It also contained some intrusive items as the fill was soft. Pollen sample No. 47 was taken of topsoil context 7472 and submitted for palynological analysis by Mike Macphail. The results showed a pollen assemblage dominated by casuarina. Miospores of non-local native plants such as Old Man Banksia and

frequent numbers of fern spores were also present. These species would be unexpected on a relatively dry site. The overwhelming dominance of casuarina suggested *Allocasuarina/Casuarina* - *Eucalyptus* forest or woodland with a grassy understorey.⁹

An A2 subsoil (7621/7527/7404) was represented in several locations by a compact and very pale yellow-brown silty clay loam with flecks of charcoal and occasional iron-oxide staining. This layer was pale and largely devoid of mineral colouring, except for a single patch of localised iron concentration (7456). The soil in this location displayed orange-brown swirling patterns that may have been produced by the movement of iron-oxide by water through the soil profile. The 'swirling' was probably produced by the settling of concentrated iron particles after individual deluge events. This process would have occurred sub-surface and was not an indicator of exposure.



Figure 3.7: The eroded A2 soils in Area B. The high iron content has resulted in red staining in the yellow soils (7456). The footing in the right of the image is the southern flank of No. 716 (7488). View to the west. Scale 1m.

Further mobility of the soil profile was indicated by undulating and rutted remnants of subsoil towards the street frontage. Where observed, the subsoil averaged 250mm in depth. B horizon deposits were represented by medium to heavy yellow-orange clays with infrequent ironstone inclusions (7610). They were exposed at the east and in the south of Area B. The B horizon was numbered 7622, 7623, 7610 and 7514 respective to location and was sampled by Roy Lawrie, soil scientist.

3.2.3 Area C

In Area C, a diluted pattern of the Area B truncation extended northward, leaving remnants of topsoil localised at the street frontage, and only A2 horizons exposed in the east. The cause of this action was less clear in Area C, although the motivation may have been one of levelling the surface through truncation in the east only, as there was little evidence of re-deposition.

At the street frontage, the intact A1 horizon was a mid-brown sandy clay loam (7386). This one-time surface material contained charcoal, tiny brick and stone fragments and some small artefacts

⁹ Section 9.6

(including lead-glaze pottery). Soil and pollen samples were taken of the topsoil (samples 49, 50, 55, 56, 61 and 62) which varied in depth from 80-170mm. Sample No. 49 was submitted for palynological analysis by Mike Macphail. The pollen assemblage closely resembled that of context 7472 in Area A but, unlike that sample, it displayed unequivocal evidence for introduced vegetation in the form of pine and dandelion pollen. It suggests that the overlying wall (context 7441, the foundation of 710 George Street) was built on weed-infested ground. Fern spores, including those of the rainbow fern were frequent, suggesting the site was occasionally flooded or the soil or stonework was sufficiently damp to support ferns.

The A2 horizon represented the last natural surface across most of the site. It consisted of two deposits (7535, 7549). The upper deposit (7535) was a pale yellow-brown fine sand and silt composite, becoming more compacted and clayey with depth (7549). This deposit had a maximum depth of 250mm. The only inclusions were small ironstone gravels (<2mm). Soil samples 51 and 52 were taken for pollen and soil analysis. The lower subsoil (7549) was compact, yellow-brown clayey silt with a small sand content. This deposit was culturally sterile with occasional ironstone gravels (<3mm) and was mostly evident at the eastern end of Area C. Soil samples 57 and 58 were taken. The remains of a burnt out tree root/bole (7559/7560) were evident cutting through the A2 horizon.

The B horizon in Area C was represented by very compact yellow clay (7536). It was exposed in construction cuts only. Soil samples #53 and 54 were taken of the clay.

3.3 Phase 2: Aboriginal occupation

Prior to 1788, the site was part of the Eora territory. The Eora people comprised several clans that shared a common language and a saltwater economy. They inhabited a varied landscape that stretched from the Georges River in the south to Pittwater in the north, and inland along the drowned river valley mouth to Parramatta.¹⁰

The Cadi clan occupied the southern side of Port Jackson, extending from South Head to Long Cove, and incorporating the study area. The antiquity of the Cadi people remains unknown, but archaeological evidence has confirmed a continued presence of Australian indigenous stone technologies and exploitation of the resources around the harbour over several thousand years.¹¹

There was no stone evidence of Aboriginal occupation of the site at 710-722 George Street, although palynological analysis of the 1788 topsoil suggested open grassy woodland characteristic of the frequent/cool fire regimes practised by indigenous groups.¹² While local erosion events may have been partially responsible for the lack of stone evidence, larger-scale geographical factors are also known to have played a significant role in the use and discard of stone tools, and may explain the absence of artefacts at the site.¹³

The underlying geology of the area would have been largely unhelpful in providing the raw material for stone tools. Larger pieces of the Indigenous tool kit (such as ground-edge hatchets) were manufactured from stone quarried over at least 20km away, and mainly more than 50km from the

¹⁰ Willsteed, Smith & Bourke 2006, *Eora : Mapping Aboriginal Sydney, 1770-1850*, State Library of New South Wales, Sydney, N.S.W.

¹¹ Willsteed, Smith & Bourke 2006.

¹² Section 9.6

¹³ See Brown & Hincks 2009. Disturbance alone cannot always be used to explain the absence of Aboriginal artefacts. Recent work at Oppy Reserve in Western Sydney has shown that on a wide and highly eroded dirt track, signatures of spatial patterning in artefacts collected from the surface were still identifiable despite heavy disturbance and water erosion over a 40 year period.

site.¹⁴ In 1788 this was beyond the land of other clans and beyond that of the Eora people, suggesting that there was some degree of effort (if not difficulty) in obtaining them. The smaller elements such as barbs and cutting tools were manufactured from stones sourced in the western Cumberland Basin, which were also between 35km and 60km from the area.¹⁵

Archaeological evidence suggests that even without considering cultural boundaries, increasing the distance from source to use often results in conservative approaches to material and manufacturing techniques. Evidence of this type of material conservation was observed at a rockshelter site in Balmoral¹⁶ (within the 1788 Eora territory). Aboriginal activity may be poorly represented in the area if these material conservation practices remained constant over time. Because the site at 710-722 George Street occupied a landform type classified as a 'sparse' zone¹⁷ (where only low-density scatters of artefacts are typical even in areas rich with resources), archaeological evidence would be minimal or non-existent if conservative attitudes to the resource prevailed. The lack of evidence for Aboriginal occupation at the site satisfies this interpretive model.

3.4 Phase 3: Brickfield and pottery manufacturing (1788-c.1823)

This phase witnessed the initial clearance of the site, and the use of the general area as a clay quarry for brick and pottery manufacture. A village was established shortly after clearance, and grew around the sites of clay extraction and processing. Lesueur's 1802 plan suggests that the site was once within the Brickfield Village. The village was about a mile south from the settlement, and reached by the road that later led to the more fertile plains of Parramatta. The village straddled a substantial creek that flowed into the mudflats at the head of Cockle Bay. Water was vital for the processing of clay for the Brickfields, and kilns and processing sites occupied the positions closest to the creek (Figure 3.8).



Figure 3.8: Detail of an 1802 plan showing Brickfield village, George Street (Route de Parramatta), and the creek feeding Cockle Bay. The red circle shows the approximate location of the site. North is at

¹⁴ Corkill 2005: 41-50.

¹⁵ Attenbrow, Doelman & Corkill 2008:104-119.

¹⁶ Attenbrow, Doelman & Corkill 2008:104-119.

¹⁷ Jo McDonald CHM 2005:141.

the top of the image. Detail from Charles Alexandre Lesueur's *Plan de la ville de Sydney: Capitale des colonies Anglaises, aux terres Australes*, NLA map f307.

3.4.1 Land clearance and erosion

Archaeological evidence relating to this period suggested that land clearance in the area, and particularly upslope to the north, had a detrimental impact on the newly exposed surface (Figure 3.9). Runoff travelling down the slope of Brickfield Hill created wide gullies and depressions in the highly erodible soils of the Lucas Heights landscape. The change in runoff dynamics seemed to affect the southwest of the site the most, with wide and relatively deep gullies in the vicinity of 718 George Street and ruts and depressions in the (once waterlogged) B horizon clays beneath the Woolpack Inn. Evidence of erosion in Area B suggested that that part of the site had remained vacant during the Brickfield phase. Topsoils were largely absent from Area B, and surfaces appeared smoothly weathered, with little evidence of cultural activity beyond land clearance.

Gullies and depressions were partially exposed in several locations across the site, suggesting that water moved freely and frequently down the slope during this phase (Figure 3.10, Figure 3.11, Figure 3.12). In all instances the gullies had been filled in with either local topsoil and clays or pottery wasters. This may not have occurred until the end of the Brickfield phase, to prepare the ground for street-front building and subdivision. Typically, the eroded banks of the gullies and depressions were smooth and gently sloping, with anomalous undulations and turns that implied a certain amount of dynamism to the actions of water on the slope. The pattern of erosion also suggested a discontinuous flow, with successive deluge events creating new paths and variations in the channels. It is likely that development (or the lack of) upslope had an effect on the erosion of the soils at the site. The gullies and depressions were probably not filled in successfully until the dynamics of the water movement had settled somewhat. There was evidence of an early attempt at backfilling in the southwest corner of the site in the vicinity of No. 718. In this instance, the imported topsoil (7450) had continued eroding and the gully was not successfully plugged until a fill of tightly compacted pottery wasters was dumped into the cavity.

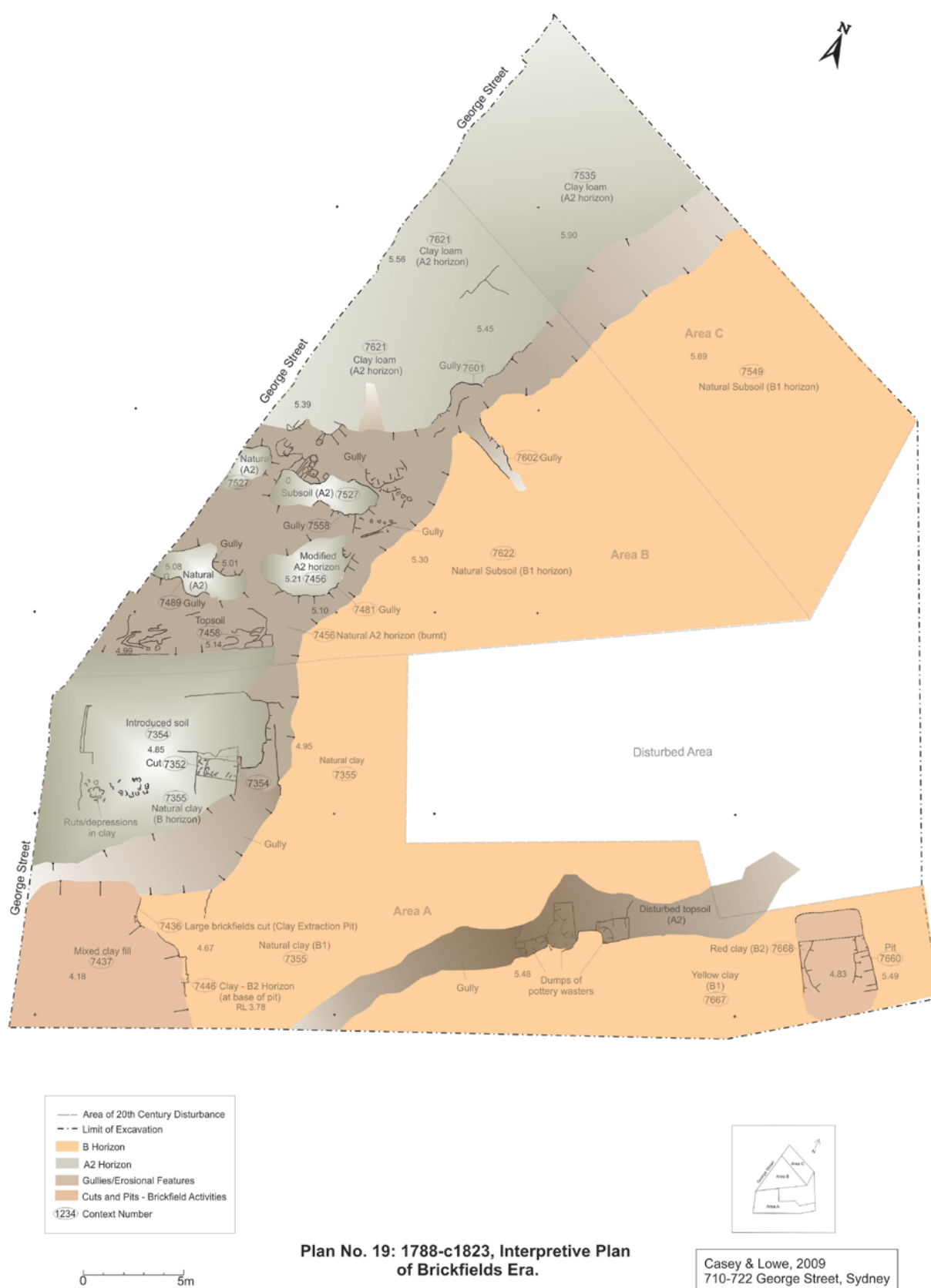


Figure 3.9: Interpretive plan showing the remains of erosion features across the site (Plan 19, Section 10).



Figure 3.10: The exposed gully (7489) beneath the footings of No. 718 George Street (7341). The grey soil (7450) in the foreground has been introduced to replace the eroded ground but it also shows signs of erosion and waterlogged exposure. View to the northeast. Scale 1m.



Figure 3.11: The base of the gully (7481) beneath the footings of No. 716 (7488) and No. 718 (7468). The trajectory to the southwest (the lowest point of the site) can be seen clearly in this image, as can a divergent depression in the lower left of the photo. View to the southwest. Scale 1m.



Figure 3.12: Water-worn surfaces exposed at the southern perimeter of the site (Area A, context 7647). The subsoil is absent in the northeast, exposing the yellow B horizon clays. View to the northeast. Scale 1m.

Restrictions caused by subsequent development on the site meant that large, uninterrupted sections of the gullies were almost impossible to expose, and in some locations, small areas of water-worn subsoils were the only indicators of dynamic water movement on the site. However, some trends were noticeable. The gullies headed west and southwest across the site, following the slope to the corner of Campbell and George Street. Notably, two later drains (7339 and 7636) mimicked these natural flows.

3.4.2 Brickfield village and early structural evidence

Lesueur's plan of Sydney shows buildings in the village set well back from the street frontage. Unfortunately, the degree to which the map is accurate is unknown (Figure 3.13). However, the topography of the site (sloping down from the northeast to the southwest) would place the mapped structures on higher ground, away from the eroding surfaces at the roadside. The higher parts of the site were mostly reduced to B horizon clay, or inaccessible due to modern construction, and so the location of these structures could not be confirmed or challenged by the archaeological evidence.

A map from 1807, with subsequent tracing in 1850 (Figure 3.14), suggests a much more haphazard layout of the Brickfield village, over a much wider area. It also carries the comment: "These houses are irregularly built – with few of them good". Perhaps in support of this, a cluster of postholes dating to the Brickfield phase was found near the street frontage in the central portion of Area B (contexts 7551, 7552, 7554, 7556, 7606, Figure 3.15). Their relative locations suggested repeated attempts to mark a single point in the landscape and may have been part of a fenceline or the corner of a building. But as no other postholes could be confirmed from this period, these features are difficult to interpret spatially. The repeated installation in the same location would suggest poor building or constant repair, in keeping with the remarks attached to the 1807 map.



Figure 3.13: Detail of a later version of Lesueur's map shown in Fig. 3.8. Here the brick kilns are shown on the land closest to the creek. The approximate location of the site is marked with a red circle. North is to the right of the image. Detail from Charles Alexandre Lesueur's *Plan de la ville de Sydney: (Capitale des colonies Anglaises aux Terres Australes)*, NLA map ref. raa2-s32.

However, an alternative interpretation may be that the postholes were for structures associated with brick or pottery manufacture, such as a workshop, drying sheds, or shelters. Ball's letters to the Colonial Secretary regarding the use of his land refer to a workshop and garden he used for drying his wares. Although there is no reference to the exact location of the garden, or to drying structures within it, the climate and local site conditions may have made it necessary to occasionally erect temporary shelters to protect the wares from excessive heat, rain or ground moisture. The even drying of green pottery is crucial to ensure successful firing and it is unlikely that unfired vessels could be dried outdoors throughout the year.¹⁸ Historical accounts of brickmaking often describe drying shelters and mobile forming emplacements close to kilns and other pottery manufacturing areas but archaeological traces for such temporary structures have proved difficult to locate on similar historic sites.¹⁹ The postholes could represent a recurring activity associated with pottery production that required temporary structures to be erected in this area. Also if the houses were considered to be poorly made, then any impermanent structures would leave little trace apart from irregular post-holes.²⁰

¹⁸ Pearce 2007:152; Appendix 4.3.

¹⁹ Pearce 2007:152.

²⁰ Also refer to Section 4.2 and Stocks, App. 3 'Brickmaking techniques' in Casey & Lowe, in prep, *Archaeological Investigation 19-41 Reservoir Street, Surry Hills*, for discussion of working areas.

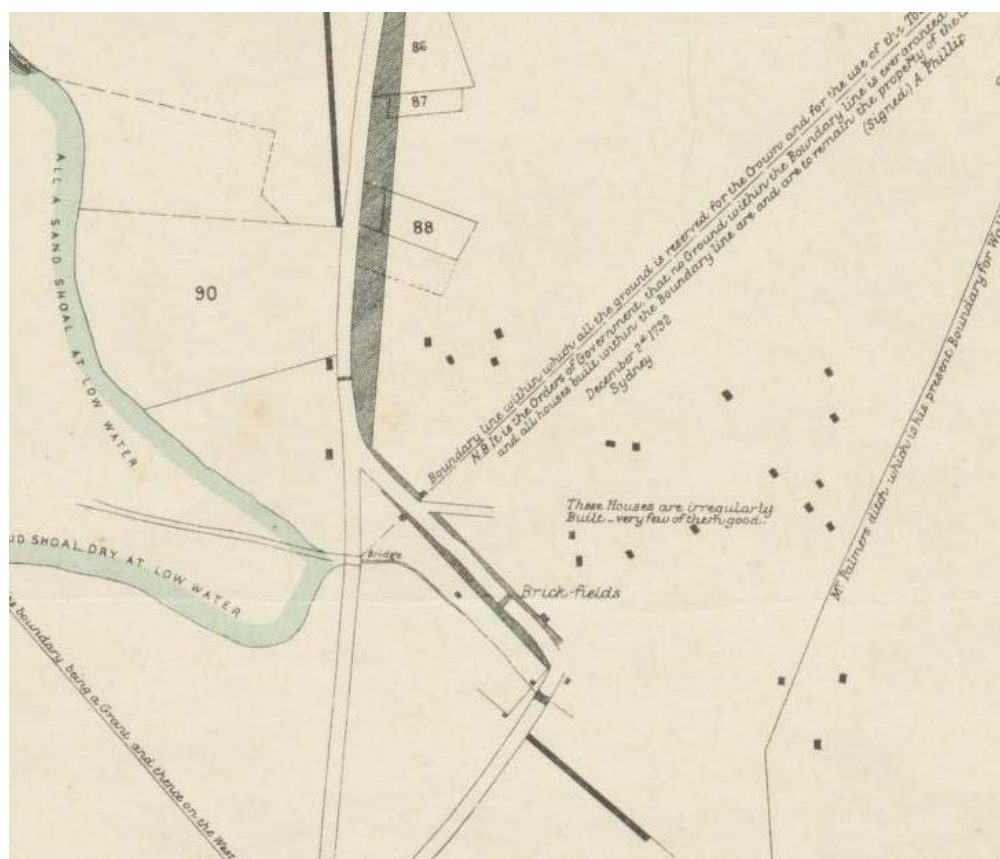


Figure 3.14: Detail of a c.1850 copy of an 1807 map showing scattered elements of the Brickfield Village. North is to the top of the image. *Plan of the town of Sydney in New South Wales* by Jas. Meehan, NLA map f105b.

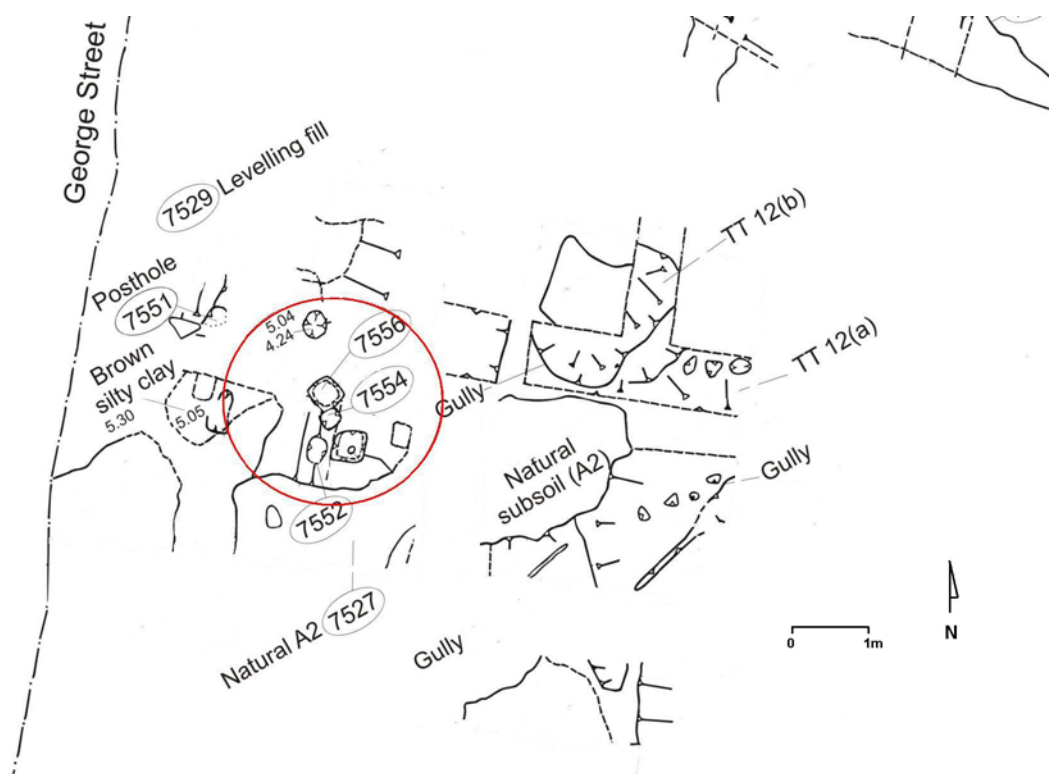


Figure 3.15: Plan of the posthole cluster (circled in red), Area B showing repeated attempts to secure a post within the same general area. The limit of excavation is at the left of the image, close to the George Street frontage. North is at the top of the image. (Extract from Plan 8, Section 10).

3.4.3 Evidence of early industry

Two large pits were dug along the southern boundary of the site in Area A during this phase (7436, 7660). Both pits continued beyond the southern limit of the archaeological excavation. The largest pit (7436) was up to 750mm deep. It was located in the southwest corner of the site, close to George Street and in the future location of the Woolpack Inn (Figure 3.16).

This large pit was at least 5m wide and 5m long but its full extent was beyond the limits of excavation to the west and south. It appeared loosely rectangular, with its eastern edge running parallel to the angled corner of the road (on a northwest-southeast alignment). The pit cut through the subsoils and B horizon, bottoming on grey and red C horizon clays (Figure 3.17, Figure 3.18). That the pit stopped at the change in clays may betray its purpose as a clay extraction pit for the manufacture of bricks or pottery, although the poor drainage properties of grey clays would have also made a suitable base for a reservoir. It is quite possible that the pit served both functions, as ready access to water was important for processing clays before moulding and firing. In any case, it appeared that the pit was left open for some time, as a fine, dark and organic sediment had accumulated to a depth of 400mm in the lowest parts of the pit (7449/7399/7385).

Contained within this sediment was a George II Britannia coin (dated 1799) and a rim sherd from a green shell-edged pearlware plate (dating between c.1780 to c.1840), the only ceramic found in the pit that was not of local manufacture. Sample No. 29 was taken of this material and submitted for palynological analysis by Mike Macphail. The pollen assemblage included microfossil evidence of raw sewage but not in sufficient numbers to confirm that this was the primary function of the pit. Other pollen in the accumulation suggested that the material incorporates sediment that had accumulated within *Allocasuarina/Casuarina* forest or woodland. Possible sources are forest or woodland growing on Brickfield Hill or around the head of Cockle Bay during this phase. *Casuarina* wood or local detritus from any of these sources may have been used to cover over human sewage deposited in the pit.²¹



Figure 3.16: Detail (with additions) from an 1823 plan showing the approximate locations of the two large pits associated with the Brickfield period (indicated by black circles). The Woolpack Inn was built over the location of the deepest pit by this time. The site boundary is shown in red. The pits are 30.8m apart. Detail taken from *Harpers Map of Sydney, 1823, S.2.1264.roll., SRNSW.*

²¹ Section 9.6

Cartographic information and patterns of spatial organisation that have been observed at other nineteenth-century archaeological sites suggest that a cesspit is unlikely to be located at the street-frontage on such a significant thoroughfare. In support of this, the representation in the palynological analysis suggests that the sewage may represent opportunistic use (i.e. dumping of chamber pots) prior to backfilling. Small-scale clay extraction remains the most probable motivation for the excavation of this large pit in the B horizon. It is unlikely that it was associated with the large-scale brickmaking operation in the early years of the village, as the volumes required for that undertaking do not suggest the extraction of isolated pockets of clay in the area of the village. This pit may have been part of a smaller clay extraction or clay processing area for an independent brick or pottery industry such as that of Thomas Ball. Dumps of pottery wasters on the site (see below, section 3.4.4) support this interpretation.

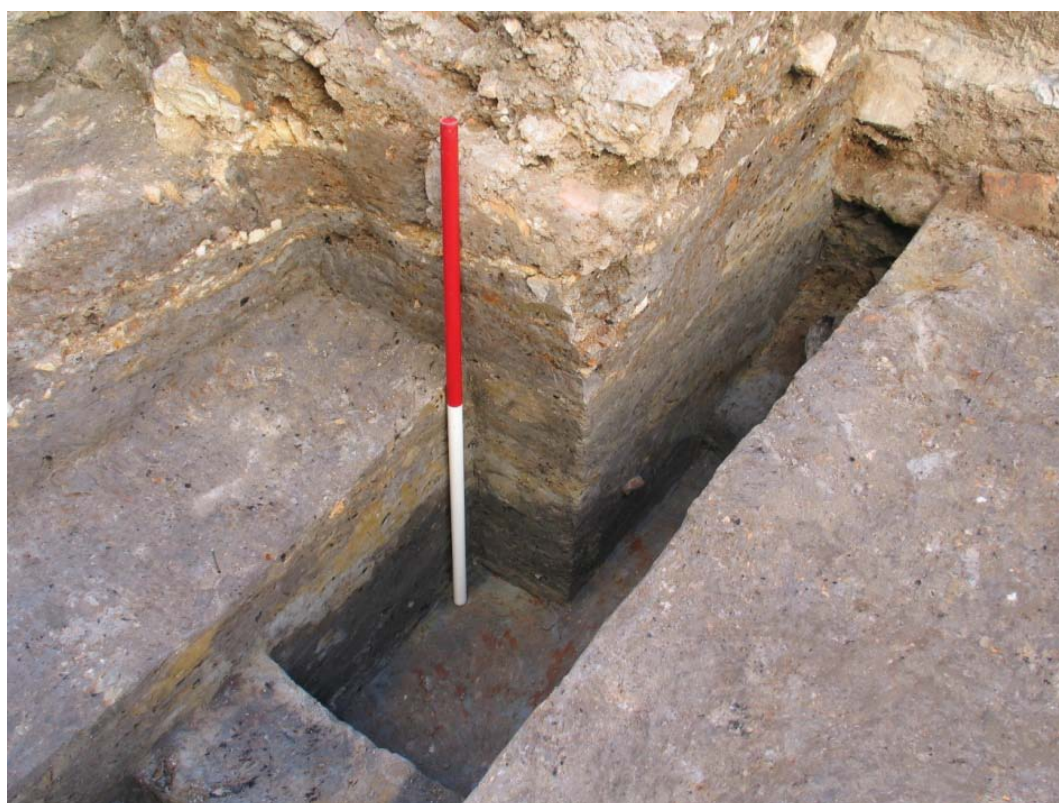


Figure 3.17: Test trench (TT10) through the large pit 7436 showing the grey clays at the base and the dark grey organic sediment in section. View to the northwest. Scale 1m.



Figure 3.18: Test trench (TT11) showing the vertical cut (left) and timber pieces amongst the yellow clays and grey silty soils used to backfill the pit. The exposed part of the cut is on the western (shallower) side of the pit (7436). View to the south. Scale 1m.

The second pit (context 7660) located 30m upslope to the northeast, was shallower at 660mm. It was loosely rectangular at the initiation of the cut but had somewhat irregular and unevenly sloping sides. It measured at least 4m x 3.2m, with its longest side parallel to the angled corner of the road (on a northwest-southeast alignment) but the full extent of the pit was not determined (Figure 3.19). This pit cut the B horizon shallowly and was largely excavated through the fine yellow subsoils. If this pit had been intended as a clay extraction pit, it was soon abandoned, with little of the appropriate clay excavated. Its sides had the irregular characteristics of soils subject to sustained changes in water depth and localised erosive collapses. It may have been dug as a small reservoir, or water erosion may have occurred after the pit was abandoned.



Figure 3.19: The shallower pit (7660) showing the eroded appearance of the cut. The straight sides at the left and right of the image are arbitrary creations to avoid contamination from modern disturbance - they do not reflect the original boundaries of the pit. View to the west. Scale 1m.

A third and ambiguous feature (7647/7649/7651) was located mid-way between the two pits. It possessed both natural and cultural characteristics and was initially recorded as three separate contexts (Figure 3.20). A convincing cut was not present, in that the shape and slope often suggested patterns of erosion. However, the alignment with the other pits and the depth and size of the feature (300-400mm deep and covering a wide area of 5m x 2.5m) suggested something of a deliberate action. It may have once been a shallow pit or dam subjected to heavy overflow and erosion or it may simply represent a deeply eroded cavity. Despite its ambiguity, it suggests that water management and retention was an issue on this part of the site. The alignment and shared characteristics of the pits suggest that all three features may have once been associated with that issue.



Figure 3.20: An ambiguous water-worn feature (7647) associated with the Brickfield period. The straight sides in the lower right of the image are arbitrary creations for the purpose of recording during excavation and do not represent the original parameters of the feature. View to the west. Scale 1m.

3.4.4 Levelling and backfilling prior to subdivision

Several levelling events occurred at the end of the Brickfield phase. The large clay extraction pit (7436) was completely filled in, the gullies were plugged and redistributed topsoils were spread across exposed clays and uneven surfaces. It appeared that the block was being prepared for subdivision and sale. The remains of Thomas Ball's local pottery industry were represented by tightly compacted fills that were almost exclusively composed of lead-glazed pottery wasters and kiln furniture. The fragments of pottery may have been present on the site in large discard dumps or piles that were re-used as required for kiln furniture in subsequent firings before later opportunistic use to fill disused pits and gullies. In Area A there was some evidence to suggest that the material had remained on site as surface dumps for ten years or more before it was used to fill the water-worn cavity, even though the main components of the fills were pottery waste associated with Thomas Ball's pottery operation (7647/7649/7651 and 7660 discussed in 3.5.1.1). Fragments of pottery ranged from 5mm to over 150mm in size with many larger exceptions.²² They were well-mixed within a matrix of soft clays, sandy subsoils and silts.

3.4.4.1 Backfilling

In the wide mouth of the gully (7489) at the southwest corner of Area B, the fill (7460) consisted of mostly lead-glaze pottery and baked clay fragments within a silty clay topsoil-like matrix. Analysis of the pottery indicates that these were wasters and were discarded due to vessel failure during manufacture (Section 4). Burnt clay fragments were also present, though in lesser numbers. Several items of kiln furniture were also found. This fill contained the majority of ceramics recovered in Area B, with the 958 items (13641 sherds) representing 65.4 per cent of the assemblage.²³ All but two of these ceramics were locally manufactured. One item was blue

²² Refer to Section 4.

²³ Some variation in the exact percentages of pottery items recorded in this section may occur as the lead-glaze assemblage was still being studied while parts of this report were being prepared.

transfer-printed pearlware manufactured in the United Kingdom and dating between c.1800 to c.1870; the other was blue handpainted porcelain manufactured in China dating from c.1790 onwards.²⁴

Elsewhere the gully was backfilled with redeposited topsoil, subsoil and clays. A typical example was revealed in section within Test Trench 17 (Figure 3.21). At the base was a layer of dark greyish-brown silty clay with charcoal flecking. This fill was 80mm in depth, and may represent an accumulation of sediment in the gully prior to backfilling. Above this was a pale grey silty clay layer with charcoal flecking (7545). The only visible artefact in this fill was a fragment of glass bottle neck of unknown date. This fill was only 40mm in depth. Capping the depression were two additional imported fills (7629, 7628). Context 7629 was the lowest, a mottled orange clay and pale grey silty clay fill 30mm in depth. This was followed by a dark reddish-orange clay with dark red decaying ironstone nodules (7628). This fill extended beyond the limit of the eroded gully. The final fill recorded in the test trench was context 7575. This consisted of dark reddish-brown clay with decaying ironstone nodules with a moderate amount of charcoal inclusions throughout. Also within this fill were ceramic and burnt clay fragments. This fill was 130mm in depth and extended beyond the limit of the eroded gully. These fills all appeared to be redeposited natural subsoils and clays. As the east of the site was largely truncated, and in some locations beyond the upper limit of the B horizon, it is highly likely that the undulations in the west of the site were levelled with material from the higher ground in the east.



Figure 3.21: Section of Test Trench 17 showing the backfill of redeposited clays and subsoil. The amorphous cut of the gully can be seen at the base of the trench. View to the north. Scale 1m.

The large pit associated with the pottery industry in Area A (7436) was backfilled with at least two introduced fills identified above the shallow deposit (7449/7399/7385) that accumulated when the pit was left exposed at the end of the Brickfield period (section 3.4.3). At the base of Test Trench 11 was a localised fill of 'green' brick fragments, brick wasters and lead-glaze fragments (context 7400). It was between 60mm and 220mm deep and was similar to pottery waster fills found in other cavities on site (see above: contexts 7660, 7651, 7649, 7647 and 7489). Capping this, and

²⁴ Ward, R. 2010 *Ceramics Report: 710-722 George Street, Haymarket, Sydney City*, prepared for Casey & Lowe Pty Ltd 2010 (Section 9.1 of this report).

dominating the backfill of the pit was a compact yellow and grey redeposited clay containing occasional sandstock brick and sandstone fragments, some charcoal and burnt wood (contexts 7391/7430/7439). Lying prostrate within this fill were two timber posts, partially exposed in Test Trench 11 (Figure 3.18). Fragments of lead-glaze pottery were also littered throughout. A total of 49 ceramics were recovered from the fills contained in the cut. Forty-eight of these items were locally manufactured lead-glazed, slipped and self-slipped earthenwares. Although this fill was dominated by clays and contained very little A horizon material, it remains consistent with the backfilling of the gullies and other features. The combination of lead-glaze pottery wasters and bulk clay fills connects the other fill events on site that were of exclusively natural material or wasters, and ties the varied backfilling actions to a single event.

3.4.4.2 Levelling

A series of introduced topsoils acted as shallow levelling fills and may have supported pasture grasses or something of a garden during the 1820s and 1830s when much of the site was largely undeveloped. Although some areas of topsoils may have related to Thomas Ball's garden that is known from documentary sources,²⁵ the introduction of these soils probably occupies a transitional phase between the end of the Brickfield period and the subdivision and consolidation of ownership for various properties on the block. As the soils were undoubtedly modified by lot-specific activities during Phase 4, they will be discussed relative to the archaeological areas that corresponded to the Phase 4 boundaries. There was no evidence of imported material in Area C, which concurs with the absence of brick or pottery manufacturing on the lot.

Area A

In the area beneath the Woolpack Inn was a mid-grey, fine, compact clayey silt with charcoal flecks and decayed stone flecking (7354). The soil capped the B horizon compact yellow clay (7355) that had been exposed during the Brickfield period. Soil samples were taken of the imported material (samples #15, 16, 17 and 18). Three other shallow topsoil fills skirted the perimeter of the Woolpack in localised patches above the initial fill (7354). All had the same particle characteristics as context 7354. There were slight variations in the density of charcoal and sandstone inclusions, but otherwise these imported soils appear to have been from the same source.

Area B

A layer of introduced topsoil (context 7305) capped the backfilled gullies in Area B. It was dark brown, sandy clay loam with inclusions of charcoal, sandstock brick/burnt clay fragments, some sandstone, lead-glaze and pearlware pottery. It appeared throughout Area B, though it mostly survived in the southern part of the area and towards the street frontage.

The remaining discussion of the archaeological results is presented by area according to the different development phases that were identified on each part of the site. Area A is discussed separately, divided into three main phases of occupancy that followed the cessation of Brickfield activity up to the twentieth century (Section 3.5). Areas B and C shared a similar development history with up to four separate occupation phases identified and are discussed together in Sections 3.6 to 3.9. A final summary of results completes the chapter.

²⁵ Casey 1999:7.

3.5 Area A: Phases 4-6 - Post-Brickfield occupation

After the Brickfield period had ended, the newly created lots began to form their own archaeological signatures, with lot-specific developments and activities that required separate interpretations. The following phases of activity identified on the site are discussed in terms of archaeological areas with Area A corresponding to Lot 2, Area B refers to Lot 3 and Area C is the southern portion of Lot 4 (Figure 3.22).

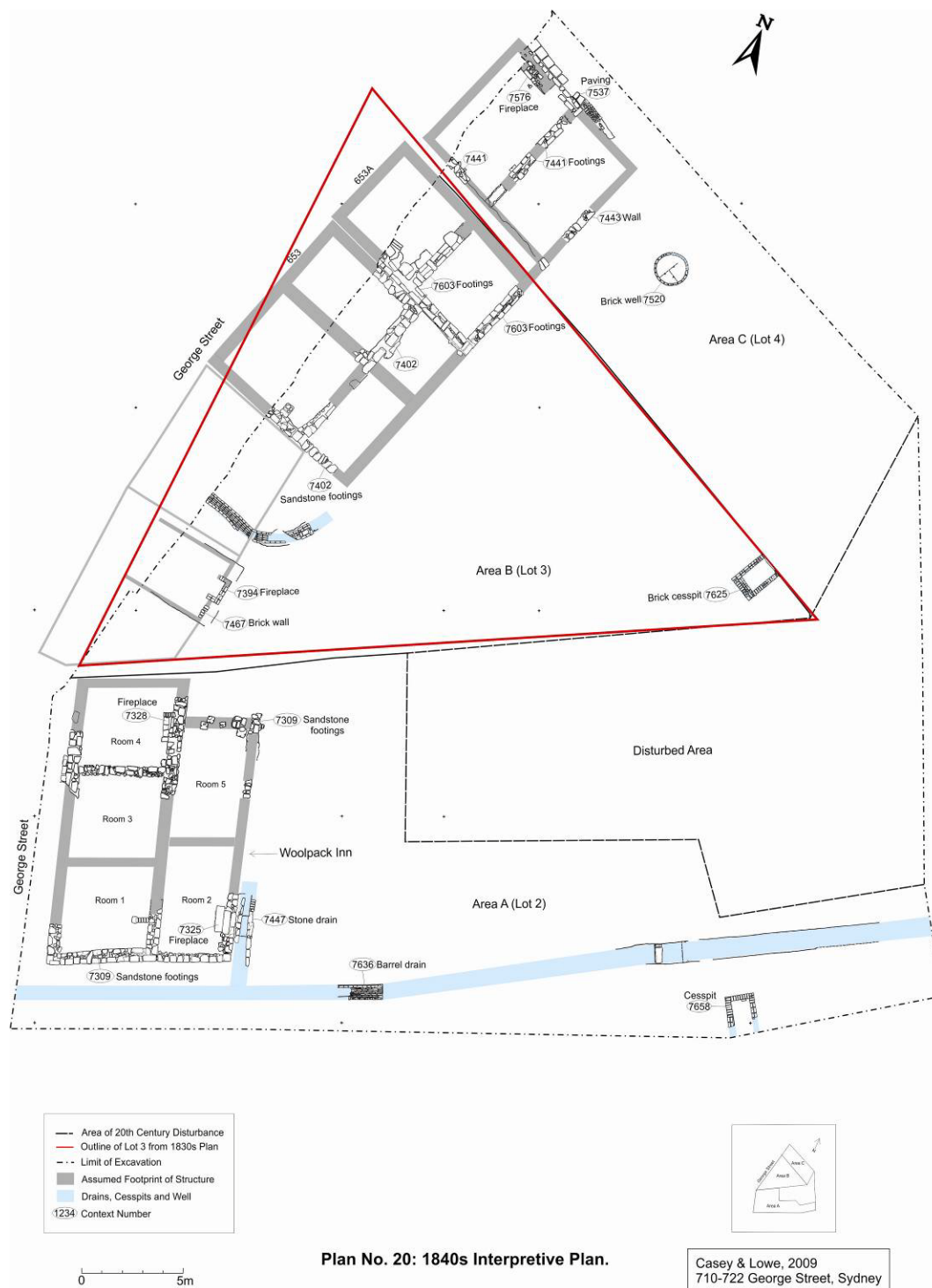


Figure 3.22: Interpretive plan showing the archaeological features and projected building configurations (grey) during Phase 4 in Area A and Phases 4 to 5 in Areas B and C. (Plan 20, Section 10).

3.5.1 Phase 4 Area A: c.1823 – c.1880s

Area A was part of the larger property acquired by Thomas Buckton in 1823 from Johnson. By the time William Harper made his 1823 survey of Sydney, lot boundaries had been established and there were at least two buildings recorded on the study site, including a large rectangular structure on the street-front at the corner of Campbell and George Streets. This is probably an early incarnation of the Woolpack Inn (that was already known in 1824) built by Thomas Buckton as a similar building in this location appears on Hallen's c.1830 plan (Figure 3.23). It is unlikely to be a remnant of the Pottery as according to Ball's sale arrangement entered into with Johnson in 1822, he was to retain access to, and use of, his kiln, workshop and the garden where he dried his wares. These were probably located to the rear of the block. This agreement suggests that for a short period at least the site was used for multiple activities.

Although pottery activity had ceased by this time there were still large accumulations of material from the earlier phase located on the site. It appears that during the early stages of the post-Brickfield phase the area remained divided. The northeastern portion of Lot 2 may have remained largely unoccupied throughout the later 1820s until final backfilling and levelling was completed in the 1830s. In the southwestern portion of the block facing George Street, construction of the stone Woolpack Inn and brewing activity commenced in the early or mid 1820s. The Woolpack Inn continued to operate on the site until it was sold and demolished for new commercial buildings in the early 1880s. This section discusses the final levelling activity first followed by the archaeological evidence for construction and occupation of the Woolpack Inn.



Figure 3.23: Harper's 1823 plan showing the two structures on the site. The site boundary is shown in red and the lines of the structures have been enhanced. Detail taken from *Harpers Map of Sydney*, 1823, Cat. No. S.2.1264.roll, SRNSW.

3.5.1.1 Backfilling and Levelling

The large and amorphous water-worn cavity (Phase 3, contexts 7647/7649/7651) was finally backfilled sometime after 1834 (Figure 3.9).²⁶ The cavity comprised several depressions/pits which together contained six fills allocated different context numbers on the basis of the particular pit or feature they came from (7647 contained fills 7661, 7648, 7645; 7651 contained fills 7652, 7646; and 7649 contained fill 7650). The fills were all littered heavily with pottery fragments (Figure 3.24). Although the lot had passed through several owners' hands since the pottery period, it appears that much of the waste from pottery activity remained on the property until it was used as backfill in the 1830s or 1840s. This material may have been present on the lot in discard dumps or piles that had not been moved since the end of the pottery period. It is feasible that the quantity of material represented in the fills may have remained unobtrusively at the peripheries of a lot of this size for several years during this relatively undeveloped phase. Its use as fill is likely to have been an opportunistic action to level ground pocked with water-worn cavities and disused pits, such as occurred in Lot 3 (Area B).

The filling of the water-worn cavities may have coincided with the installation of drainage on this part of the site (see section 3.5.1.5 below). The cavities highlighted water management issues on the site. A brick drain (7636) was built along the line of these three features suggesting that it may have been built to address the same water management issues that created the cavities, or control water drainage/waste removal as use of this part of the site changed.



Figure 3.24: Fill 7648 within cavity 7647 mid-excavation, showing the dense concentration of pottery fragments within the fill. View to the north. Scale 1m.

The westernmost fill (7650) was in a gully-like cut extending towards the street-front. It consisted of a 230mm deep mix of yellow clays combined with a large concentration of broken lead-glaze ceramics and sandstock brick or baked clay fragments. It filled a small and smooth sided extension of the depression (7649). In the east were two fills (7652 and 7646). The lower fill (7652) contained

²⁶ This date is based on the latest imported ceramics found in the fills, in Ward 2010, Ceramics Report, volume 2, section 9.1 of this report.

about 20 per cent lead-glaze pottery wasters while the upper fill (7646) contained at least 50 per cent lead-glaze ceramics along with small inclusions of charcoal and sandstone, and little brick. In both of the eastern fills, the combinations of broken objects were within a matrix of mid grey-brown silty clay. The central and deepest part of the cavity contained three fills (7645, 7648 and 7661).

Fill 7645 was the uppermost fill. It consisted of 90 per cent broken ceramics, mostly local lead-glazed wares, with occasional bone and brick fragments, shells and frequent charcoal to a depth of 500mm. Of a total of 16199 sherds, only ten ceramics (15 sherds) were imported. All but one of the items were manufactured in the United Kingdom, the exception being a sherd of a blue handpainted Chinese porcelain plate. The date range of the ten ceramics is generally very broad although the presence of transfer prints in brown and green indicates that all or part of the fill was deposited post-1830s, and a plate with a transfer-printed “Burmese” pattern indicates that the final backfilling event occurred at least later than 1834.²⁷ Fill 7648 was the middle fill. It was similar to fill 7645 but was dominated by redeposited yellow clay. It too was littered heavily with ceramic and brick fragments, oyster shell and charcoal. Fill 7648 contained a total of 118 sherds, of which just one item (consisting of nine sherds) was imported. This was a handpainted pearlware plate made in the United Kingdom and had a broad date range of c.1780 to c.1870 (Figure 3.28).²⁸ The lower fill (7661) was made up of grey/yellow mottled clay with only occasional lead-glaze ceramic fragments.



Figure 3.25: Hand-painted pearlware plate from the fill 7648. This item was produced in the UK after 1780. Russell Workman, scale 10cm.

Within pit 7660 were six closely-knit fills (7659, 7662, 7663, 7664, 7665 and 7666). The upper layer 7659 was cleaned back to reveal the extent of the cut 7660. Lead-glaze ceramics (69) were found in the surface layer of the pit but it was the upper fills (7662 and 7663) that contained the majority of the lead-glaze ceramics and burnt clay fragments. Each of these backfills represented a series of dumps that were difficult to differentiate because of the large, overlapping fragments straddling the interfaces. Fill 7662 was the only one of the five fills to feature any imported ceramics. It contained 17003 sherds, of which just nine sherds (five items) were imported, all identified from very small sherds. The date range of the imported ceramics was very broad, however the presence of a brown

²⁷ Section 9.1

²⁸ Section 9.1

transfer print sherd indicates that the final backfill occurred post-1830. The lower fills (7664, 7665 and 7666) contained few ceramic and brick inclusions and mostly consisted of redeposited silt and clays which may have accumulated within the reservoir before the backfilling process. Soil samples #89 and #90 were taken from these lower fills.

The presence of conjoining sherds among the lead-glaze ceramics in different pit fills in this area confirms that the accumulation of vessel wasters relates to the same phase. Joining sherds from fills 7645 and 7662, the latter the fill of the large pit east of the water-worn cavity 7649/7647/7651 (#85255, #88460), establish a clear relationship between these deposits. Conjoins were also noted from sherds found in fills 7646 and 7662 (#85225, #88498). Although limited in number this indicates that these fills came from same source (a pottery discard pile or dump) before being redistributed within the surface depressions. The latest dated items within these fills indicate that additional rubbish was starting to accumulate on the site, possibly during the construction and early occupancy of the Woolpack Inn, if not from other houses in the vicinity. A George IV penny dated from 1827 in fill 7646, and the few examples of imported ceramics from post-1830 fills 7645 and 7662 indicate that these levelling fills were not sealed until at least the early 1830s.

Several levelling fills were also recorded on the part of the Lot where the Woolpack Inn would be built. In the southern corner of the Lot two fill layers (7326, 7390) were recorded either side of the Woolpack Inn's southern wall, overlying the large cut (7436) from the Brickfield phase. Excavation revealed them to be stratigraphically identical, and cut by the wall footings. The fills therefore pre-dated the Inn, effectively capping the remains of pottery manufacture in this area. In what would later become the interior of Room 1 a further layer of material were recorded (7351). Identified as a sandy fill it may have helped support the footings in this damp corner of the site.

In the northern Woolpack area were two shallow deposits, identified as introduced topsoils (7333, 7354).²⁹ Context 7354 was found throughout the area of the Woolpack sitting above the remains of the surviving natural yellow clay (7355). This lowest fill was a charcoal-flecked, grey clayey silt above which was 7333, a grey-brown sandy silt. They were introduced after the Brickfield period but before the construction of the Inn as the wall footings (7309) cut through both. Also cutting these deposits, in the area that would become Room 5, was the remains of a shallow rectangular feature measuring 2m x 2m that was cut into the natural clay (7352). The purpose of the cut is unknown but it shows that this part of the site was likely to have been associated with Brickfield-phase activity. The few artefacts found in the fill (7353) may have been intrusive from later underfloor deposits and yielded little information on its original function.

3.5.1.2 The Woolpack Inn

On acquiring the property Buckton erected fences which can be seen on the c.1830 sketch plans and built several substantial structures on the property which he later sold to William Cuthbert with 'buildings consisting of four dwellings' (Figure 3.26).³⁰ The property may have been purchased as part of a forced sale that was ordered by the Sheriff in 1829, as prior to 1830 Cuthbert had sold a subdivision (Lot 2) to G. Porter who sold it on to John Sharpe. Between the end of the Brickfield period and the late 1820s the history of the lot is somewhat vague apart from occasional references to publicans or tenants listed as residing on the property. By 1830, the value of the building was recorded in Hallen's fieldbook as £500, suggesting it was a substantial structure of relatively high-quality which agrees with contemporary descriptions (Section 2.3.1). The uncertain history of early

²⁹ Roy Lawrie, soil scientist consulted on the site during the excavation.

³⁰ Field Books, Survey of the City of Sydney, A. Hallen, c1831, SR Reel 2628 (2/5195), Item 347, p5. SRNSW. Refer to Section 2.3.1. Hallen's c.1831 sketch plan of shows fencelines at the rear of Lot 2 which have been marked in and then crossed out which connected with George Street via a gate to the south of the Woolpack. These may correspond to Ball's work areas but there is no indication as to where the kiln may have been located.

occupation and ownership coupled with the large extent of the block make it unsurprising that different parts of Lot 2 may have been used for a variety of purposes.

Archaeological evidence of the Woolpack Inn during the earliest stage of this phase was restricted to sandstone footings, construction cuts and debris. Although underfloor deposits were found in the ground floor rooms, these accumulations were not exclusively representative of the early period. Unfortunately, the occupation deposits themselves are temporally indivisible. Artefacts that may have been deposited during this phase have been designated as such by their manufacture dates. Palynological analysis of the underfloor deposit provided environmental information related to this phase.

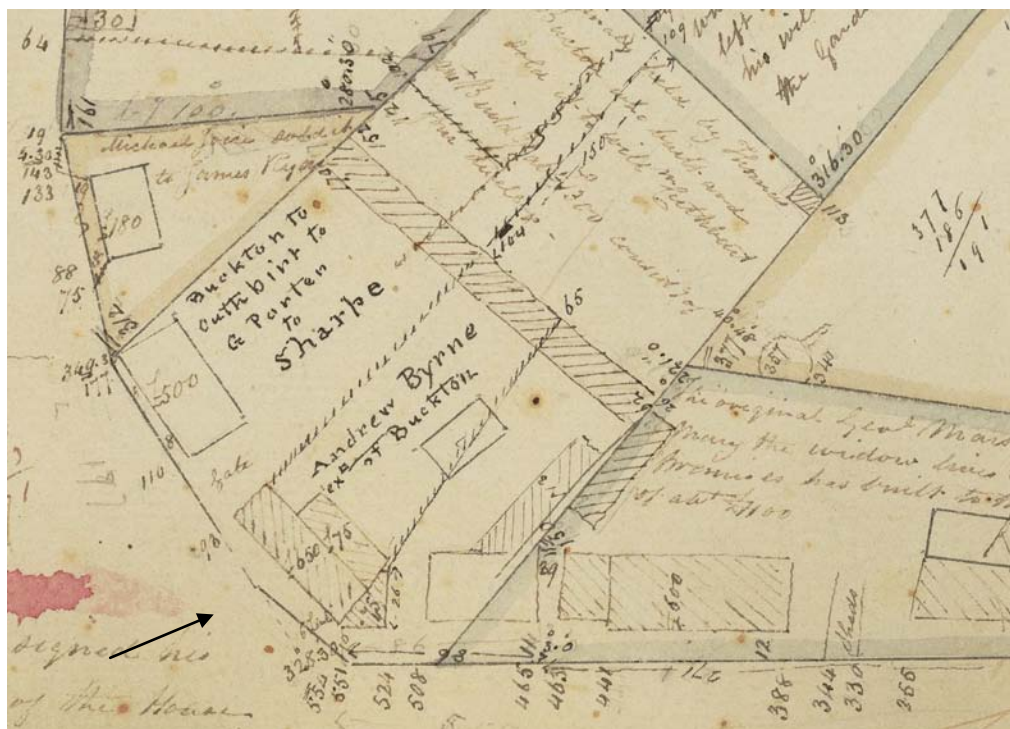


Figure 3.26: Field drawing made by Hallen c.1831 show several fences within the study area and a gate on the southern George Street side of the Woolpack building. *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p5.

Construction environment

Some clues about the construction environment were able to be extrapolated from the deposits underneath the Woolpack Inn. The underfloor deposits of the Woolpack were largely accumulations of artefactual material mixed within the underlying imported soils. An independent soil matrix that is usually associated with long-term accumulations was for the most part absent from the artefactual build-up beneath the inn. The pollen analysis of these deposits therefore is thought to represent the underlying soils rather than an independent accumulation of sediment associated exclusively with occupation.

Palynological analysis of samples from underfloor deposits suggested that the imported soils used for levelling beneath the inn were from an area with an abundance of casuarinas. That casuarinas were still in any great number on the site is unlikely given the dramatic effects of water erosion during the early period. Analysis suggested that the levelling soils that were introduced before construction (context 7354) and upon which the underfloor material was deposited were imported

from swampy land near Cockle Bay, where the appropriate species would have been represented.³¹ This is a likely scenario, as the grey soils beneath the Woolpack Inn were different in colour, and had a finer grain size on average than those naturally occurring on the site. The implication is that the site was quite open, and by this time casuarinas were only in any abundance near the creek. A painting from 1796 shows large amounts of vegetation had been cleared from the area in the early years of occupation (Figure 3.27).



Figure 3.27: A painting depicting the Brickfield Hill in 1796. The extensive land clearance shown in the area suggests it is unlikely that remnants of forest survived on the site until 1823. Source: McCormick 1987:Pl. 36; painting by Edward Dayes, c.1796, from the Petherick Collection, NLA, Accn No. R.282.

Species analysis of fragments of insect exoskeleton in the underfloor deposits suggested consistently damp conditions. This information combined with the depth of the footings suggested that the site was still heavily waterlogged in this area. On the cleared slope, water would have travelled rapidly to the lowest points in the landscape during deluge events. The location of the Woolpack Inn was the lowest point on site, and was also very close to the lowest point in the wider landscape, marked by the creek around 100m to the south.

³¹ Section 9.6

3.5.1.3 Footings and construction

The sandstone rubble footings of the street front structure in Lot 2 described a rectangular building 14m (45feet) long and 9m (30 feet) wide. It had up to five ground floor rooms featuring three fireplaces between them. The longest side of the building was oriented along the angled corner of George and Campbell Streets (Figure 3.26). The foundation (7309) was constructed with sandstone rubble and roughly cut blocks laid in one or two rows to produce a footing of around 600mm width throughout. Where a piece of sandstone had only one straight face, that face was presented to the exterior. Smaller pieces of rubble packing and grey-brown sandy loam filled the cavities left by the ill-fitting elements of the footing. Internal room divisions were represented by the same substantial footings, suggesting that the building was two-storey from the outset, utilising the internal walls of the ground floor to support the upper level. A two-storey house containing 10 rooms had been built by on the site by 1830 which is referred to along with a 'brewery', suggesting that both relate to the Woolpack Inn.³²

A test trench in the southwest corner of Room 1 (TT6) revealed that the foundation was at least 800mm deep (five substantial courses). Construction debris composed of sandstock brick fragments, crushed sandstone, yellow mortar and white plaster (7320, 7336) was recorded in this room, probably left inside the building before a floor was put in and would have helped support the footings in this damp area of the site. A coin found within the fill layer 7320 dates from 1826. This suggests that the final building phase was not completed before 1826, or it represents an early intrusive artefact from the underfloor deposit.

In other areas, the footings were considerably shallower, with only two thin courses in the north (Room 4) and three stepped and rubble-plagued courses in the southeast corner of Room 2. The depths that were dug to in order to achieve stability in the southwest corner below Room 1 suggest that this area (previously occupied by the large pit 7436) was still heavily waterlogged and somewhat mobile at the time of construction, therefore requiring the additional fill layers discussed in section 3.5.1.1.

Additional construction material

In the interior of Room 1 further layers of material were recorded (7351, 7320). Identified as sandy fill and construction debris, they were left inside the building before a floor was put in. Both fills would have helped support the footings in this damp corner of the site. Further deposits identified as construction debris were found under the Woolpack underfloor deposits and footings in Room 2, and extending to the east and south outside the building footprint (7379, 7423). These deposits were made up of crushed sandstone, sandstock brick fragments, mortar and occasional artefacts such as lead-glaze pottery and appear to have settled into shallows or depressions in the landscape.

In the southern half of Room 2 beneath the underfloor accumulation and partially covered by 7379 was a layer of crushed shell mortar (context 7384). The shells were burnt and the fragments were quite large (up to 20mm in length). This shell layer appeared to be evidence of an early mortar mix. Notably, the mortar used in the construction of the sandstone footings consisted largely of a grey-brown sandy clay loam, and contained only rare fragments of shell. The large shell-to-sand ratio in context 7384 was incommensurate with the mortar used in the footings, and was probably used exclusively to bond the brick superstructure, which was recorded in the Assessment Books but not represented in the archaeological record.

Layout

³² *Sydney Gazette* 26 January 1830.

The internal corners of the rooms were either obtuse (in the northwest and southeast) or acute (in the southwest and northeast). The lack of right angles in the layout can be explained by the use of the northwest corner of the lot as a point of reference for construction. The northern wall was aligned with the northern boundary of the lot and the western wall with the alignment of George Street. This was common where maximisation of internal space was a priority on an oddly shaped, small lot. However, as space was not restricted on the lot at this point, the alignment in this case may signify a very relativist method of laying out the plan of the foundation. The alignment indicates that construction was initiated in the northwest corner of the lot, using only the boundary markers as guides. The northern and western walls were laid out first, and all others were constructed using measurements in such a way as to check parallel relationships only. This is a very simple method that requires no triangulation, and may be a reflection of the inexperience of the builder. The result of this method would be the alignment shown in the archaeological record (Figure 3.28).

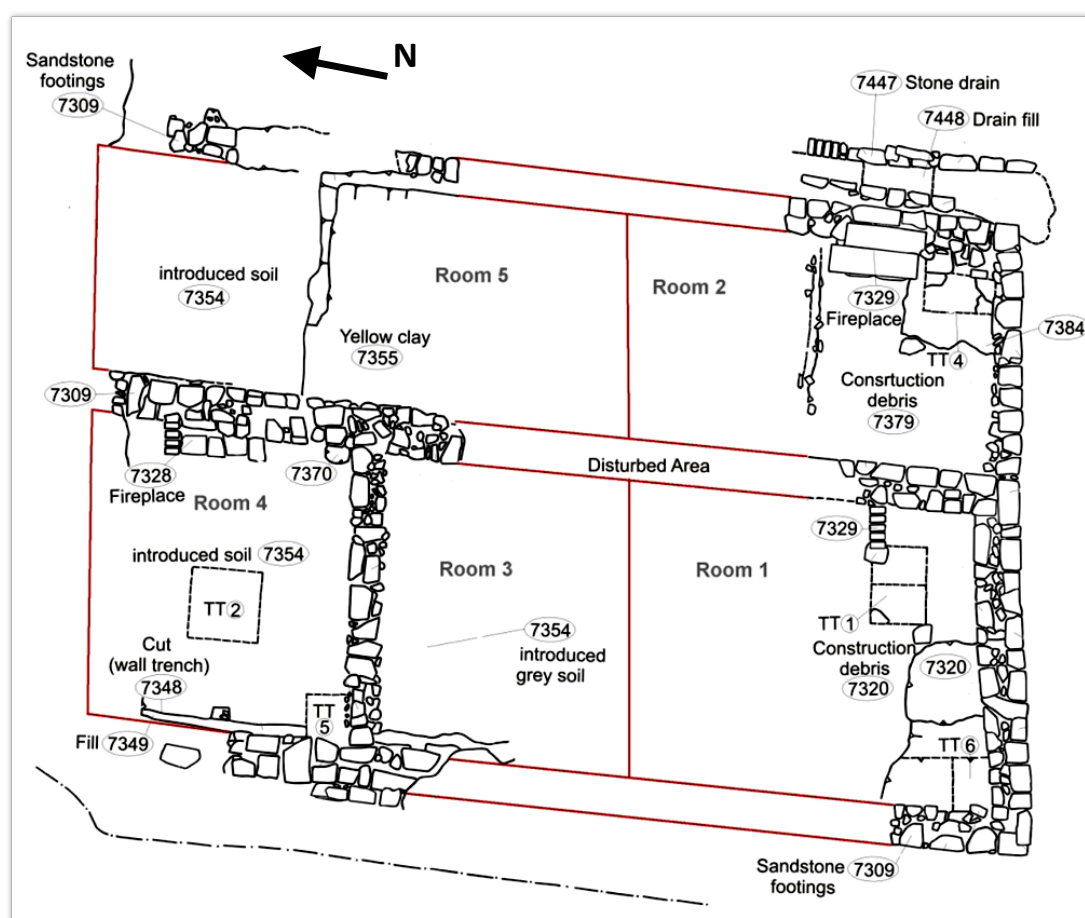


Figure 3.28: Archaeological plan of footings of the Woolpack Inn. The red lines show probable room divisions in locations where the foundation was disturbed by twentieth-century activity. Rooms 5 and 2 may be part of the same large space, as may be rooms 1 and 3. The corner of Campbell and George Streets is to the right. The remains are drawn to scale and the southern wall (at the right of the image) is 9m long. (Extract from Plan 4, Section 10).

Spatial analysis of window glass in the underfloor deposits revealed few clues about the configuration of windows in the lower storey (Figure 3.29). Considerably greater amounts were found in the rear rooms (Rooms 2 and 5), both of which were thought to be concerned with food preparation (see discussion of underfloor deposits below). Within the rooms, fragments were



Figure 3.30: The remains of the footings of the Woolpack Inn, showing extensive twentieth-century disturbance in the centre. The sandstone rubble footing is here overshadowed by the much larger concrete and sandstone footing of the later Mercantile Bank. View to the northeast.

In the case of all rooms, later construction had damaged a great deal of the Woolpack footings, and so their original dimensions were lost (Figure 3.30). The rooms at the front of the building (Rooms 1, 3 and 4) were 4m (13 feet) wide. Those at the rear were smaller with a width of 3m (10 feet). Room 4 may have represented the average room size on the ground floor, with estimated dimensions of 4m x 4m (13ft x 13ft).

Room Number	Length (m)	Length (ft)	Width (m)	Width (ft)
1 and 3 combined	8.3	approx. 27	4	approx. 13
2 and 5 combined	10.1	approx. 33	3	approx. 10
4	approx. 4	approx. 13	4	approx. 13

Table 3.3: Room dimensions on the ground floor of the Woolpack Inn.

Several postholes (7356, 7360, 7364, 7366, 7373, 7377, 7380, 7382) were also identified north of Room 5 and to the east of Room 4 most of which cut the imported topsoil 7354 (Figure 3.32). A further posthole was situated just inside the eastern wall of Room 4 which was in the same rough alignment as several of those in Room 5, which were adjacent to northern wall of the room.³³ No artefacts of any note were found within the shallow fills excavated from the postholes that could help establish their temporal position. They appear to have been outside of the building and may relate to external structures associated with the early Woolpack occupancy phase or its construction, as they suggest a rectangular wooden structure alongside the walls. As for the cluster of postholes in Area B they do not show clear spatial patterning and are difficult to interpret. But like the postholes in Area B several could date from a slightly earlier phase. One posthole cut through the introduced exterior soil that stopped at the building's outer wall (7333) but the

³³ The postholes are fully described in Section 8.1, Trench Report A, Table 3.1.

remainder cut through the same introduced fill (7354) as the construction footings. They could either date from the Woolpack's construction, or an earlier Brickfield phase structure.

If they relate to the earliest occupancy of the building they could also be evidence of room division, repair or addition incorporating the area into Room 5. Two lines of the postholes cut this part of the building into three sections of around 3m x 1.8m. Not all had post-pipes but those that did indicated that cylindrical posts of around 150mm diameter had stood in these locations. The postholes were between 350mm and 500mm long and 270mm and 400mm wide and loosely rectangular.



Figure 3.31: Room 5 of the Woolpack Inn showing various postholes cutting the imported topsoil beneath. View to the east. Scale 1m.

Fireplaces

The remains of fireplaces were found in Room 1, Room 2 and Room 4. Room 2 contained the only fireplace with a hearthstone still in its original position (7325). The hearth consisted of two large, flat, well-cut blocks of stone (1230mm x 700mm x 80mm). The stones were supported with sandstone rubble and a bedding layer of buff-coloured sand (40mm deep). Black charcoal and ash (7334) skirted the structure and coated the upper surface of the stones (Figure 3.32). Given the location of Room 2 (at the rear of the building) and the evidence of extensive use, it is likely that this room was the kitchen. Other fireplaces were only represented by the footings that supported the hearths. These were constructed from the same rough-cut stone as the rest of the foundation and were finished with a single row of sandstock brick that sat immediately beneath the hearthstone. The fireplaces were built into the western wall of each room.



Figure 3.32: The fireplace (context 7325) in Room 2 at the rear of the building. View to the east. Scale 1m.

Underfloor Deposits

Because of the wide date ranges, and the conflated stratigraphic nature of an underfloor deposit, no artefacts could be securely tied to this or any other phase. This deposit therefore represents a gradual but temporally indivisible accumulation. The discussion of the underfloor material has been included in this phase as it is the earliest possible date for deposition, and almost certainly includes among its fragments artefacts from this period. However, this material is by no means as exclusive to this phase as other features discussed in this section. In all cases the underfloor accumulations were excavated with reference to a 500mm x 500mm grid, in 50mm spits with stratigraphic constraints (Figure 3.33). Most of the rooms contained lead-glaze pottery sherds from items that were not manufactured after 1823. Given that these sherds were present in many fills across the site, it is likely that these items protruded into the underfloor deposits from the levelling fills below.



Figure 3.33: The remains of the Woolpack Inn showing underfloor deposits (shaded) and grid excavation squares. (Plan 23, Section 10).

Room 1

The underfloor deposit within Room 1 (context 7323) was mid-brown, fine clayey sand with occasional brick, stone and charcoal fragments. The deposit was most evident in the northern half of the room and became increasingly rubble-strewn and disturbed further south (Figure 3.34). The underfloor deposit was only 30-100mm deep and most squares only contained one spit (less than or equal to 50mm). Soil samples 1 and 2 were taken from the underfloor deposit. The decayed remains of wooden joists were evident running east-west through Room 1. The rotten wood had a width of around 100mm and appeared in inconsistent lengths at locations where the underfloor deposit had risen to the level of the joists. The remains were roughly 460mm (1.5 feet) apart. No evidence of bearers survived.



Figure 3.34: Room 1 of the Woolpack Inn showing the somewhat rubble underfloor deposit. View to the east. Scale 1m.

The accumulation in Room 1 contained 34 ceramic items. Eighteen were locally manufactured slipped and lead-glazed earthenware, although some contamination from levelling and backfills beneath the inn may be responsible for these items. Other items had broad date ranges that covered the lifetime of the inn, and none could be secured to this phase. The 34 ceramics were all represented by very small sherds originating in Australia, the UK and China. Twenty-seven items were of unidentified function, with the remainder consisting of ginger beer bottles, plates and saucers.³⁴ Similarly, food and beverage items comprised the majority of glass items (61.7%) from the underfloor deposit in Room 1. Beverage bottles were all for alcohol, including beer/wine, champagne and gin/schnapps. Food-related items were mostly glass tableware items (26) and also included two oil bottles. Date ranges for these items covered this early phase, but were also quite broad. Most glass tableware was press-moulded (post 1820) with some items either with panelled

³⁴ Section 9.1

sides (1830 *TPQ*) or ground and polished pontil scars (1835 *TPQ*). One stemware foot was of earlier fold-over manufacture (1840 *TAQ*).³⁵

There were 603 fragments of animal bone in the underfloor deposit of Room 1.³⁶ Elements of sheep, pig, cow, fish and scavenging rodents were present in the deposit. The number of fragments in the underfloor of Room 1 was consistent with the other rooms at the front of the structure. These rooms were considered to be public places for eating and drinking. However, Rooms 1 and 2 (Room 2 was at the rear) also shared some notable characteristics. Significantly for the assemblage, the rooms were thought to be of different function (Room 2 was interpreted as the kitchen). Room 2 also contained more than double the amount of bone fragments found in Room 1. Despite these differences, similar high frequencies of bone fragments from sheep feet and pig's teeth were found in both of these rooms. The high percentage of these parts of the animal is not in itself remarkable, as objects must generally be small enough to pass through the gaps between floorboards, and does not necessarily indicate a dietary preference for these parts of the animal.

The similar percentages of these elements in the two rooms is however more anomalous, as the two rooms are thought to have quite different functions (food preparation and dining). The elements that are discarded during preparation should be different to those discarded during dining. This may be explained by exploring a non-function-specific relationship between the rooms. For instance a doorway between Rooms 1 and 2 might encourage a single sweep of the two rooms during cleaning, spreading refuse from one into the other and between the floorboards of both. Room 1 and Room 2 also contained a similar number of sheep bone fragments (153 and 166 respectively) with similar percentages of elements represented, despite the disparity in the overall counts for each room. As sweeping would not necessarily select for species in this way, excepting species characteristics that are related directly to size, this may be an indication of preferential selection and movement of the sheep bone fragments by rodents.³⁷ Rats and rodents account for a large proportion of the recovered bones in Area A (31%). The highest frequency of rodent bones are from the underfloor deposits and ninety per cent of all bones in Area A with evidence for rodent gnawing come from the underfloor deposits.³⁸ Despite a dividing footing, gaps created by the rubble construction may have enabled rodents to move freely between the underfloor cavities of the two rooms.

Room 2

The underfloor deposit in Room 2 (context 7324) was more extensive than in Room 1. The deposit was mid grey-brown fine sandy fill containing large quantities of charcoal particularly around the fireplace and some small fragments of sandstock brick, stone and mortar. Soil samples were taken (samples 11 and 12). Most of the grid squares yielded less than 50mm of deposit and the accumulation was only over 50mm deep in the vicinity of the fireplace. The decayed wood remains of joists and bearers were manifested as shadowy organic pockets within the underfloor deposit (Figure 3.35). The joists were running east-west and were around 460mm (1.5 feet) apart. The bearers were wider and running north-south at intervals of 1.54m (5 feet). The rotten wood remains were inconsistent in length with widths of no more than 100mm. The remains of sandstock bricks on their sides along the same orientation as the joists indicate that these bricks were probably used as support for the floor boards or bearers.

³⁵ Harris 2010, Glass Report, volume 2, section 9.3 of this report.

³⁶ Fillios 2010, Faunal Material Report, volume 2, section 9.4 of this report.

³⁷ Rats will either eat food on the spot, or hide it or carry it to a preferred location based on the estimated time it will take to consume. See Suckow, Weisbroth & Franklin 2006:207.

³⁸ Section 9.4



Figure 3.35: The underfloor deposit in Room 2 showing the remains of joists in the foreground. View to the west. Scale 1m.

The underfloor accumulation in Room 2 had a higher relative frequency of glass tableware items, some of which may have dated from this phase, as some items were known to have been in production in the 1820s and 1830s. There were a variety of datable attributes exhibited on the glass tableware, including ground and polished pontil scars (1835 *TPQ*), gilding and apple green coloured glass (1820 *TPQ*), press-moulded (1820 *TPQ*) and panelled glass (1830 *TPQ*).³⁹ Ceramics from the underfloor deposit in Room 2 were also indicative of food consumption (tableware and teaware-related items). Tableware was identified by four plates, and teaware by cups (13), breakfast cups (2), saucers (16), and a small plate. Most of these items had broad date ranges. Of the 124 ceramics, 107 items belonged to types that were produced in the period up to 1830, and 119 of them in the period up to 1860. Fifty-eight items were of specifically local Australian manufacture. These items were self-slipped (2) and lead-glazed (56) earthenwares represented by unidentified body and base sherds.⁴⁰ These items were not produced after 1823 and are likely to be contaminations from the soils below.

There were 1476 fragments of bone in the underfloor deposit in Room 2. The high number is thought to represent food preparation and waste associated with the kitchen. Similar numbers of fragments were present in the underfloor deposit of Room 5, also at the rear of the structure, and adjacent to Room 2. Bones from fish, cow, pig, sheep and rodents made up the assemblage. Rooms 2 and 1 contained most of the pig remains found beneath the floorboards of the inn. Further characteristics of this assemblage have already been discussed with reference to Room 1 above.

Room 3

Activities in Room 3 were represented by the northern portion of the room only, as twentieth-century construction had destroyed the remainder (Figure 3.36). An area of 4m x 1.5m of

³⁹ Section 9.3

⁴⁰ Section 9.1

underfloor accumulation (7335) was excavated, yielding 58 ceramics, 451 bone fragments and 99 glass items. The deposit was mid grey-brown, fine clayey sand with some lighter grey sandy pockets. It contained small stone, sandstock brick and charcoal inclusions. Soil samples 5, 6 and 7 were taken from this deposit. Shadowy organic remains of joists no more than 100mm wide and at intervals of 450mm were excavated within this deposit.



Figure 3.36: The underfloor deposits in Rooms 3 and 4, showing the rotten remains of joists (Room 3) and bearers (Room 4). View to the east. Scale 1m.

Locally manufactured and imported ceramics were identified in the accumulation, with 23 items from the United Kingdom and 34 from Australia. A salt-glazed stoneware bottle that had no identifying manufacturer's mark to indicate definite country of origin may have been manufactured in the UK or Australia. The 34 Australian manufactured items were lead-glazed coarse and fine earthenwares, all represented by unidentified body sherds. These items may represent contamination from the levelling fills below. The other ceramic items in the assemblage had broad date ranges, but all were in production by 1840, and may have been in use during this early phase.⁴¹ Food and beverage items comprised the majority of glass items from the underfloor deposit in Room 3. They included 20 items of glass tableware (stemware, tumblers, and other items too fragmented for form to be determined). Beverage items were represented by alcohol bottles, including beer/wine, champagne and gin/schnapps. All items had broad date ranges roughly correlating to the lifetime of the inn, and all were in production by 1820. A single item (a plain blown tumbler) had a production date range within this phase (1820-1830).⁴²

There were 451 bone fragments present in the underfloor deposit in Room 3, 57 of which were sheep bones and almost half of those were toe bones.⁴³ This was the lowest percentage of sheep bones from the front rooms, and was similar to that of the kitchen at the rear (Room 2). However, Room 3 was heavily truncated and spatial distribution of furniture or apertures in the room may

⁴¹ Section 9.1

⁴² Section 9.3

⁴³ Section 9.4

have influenced what appeared within the only archaeologically accessible part. It is therefore difficult to compare with the other rooms of similar function at the inn.

Room 4

Room 4 contained a mid-brown silty underfloor deposit (context 7331). This deposit was between 30mm and 75mm deep and almost non-existent at the western end of the room. Soil samples 3 and 4 were taken from the accumulation. Within the underfloor deposit were the decayed wood remains and impressions of three floor bearers running in a north-south direction (Figure 3.36). The bearers were 100mm wide and roughly 1.2m apart.

The underfloor deposit in Room 4 yielded 82 glass items, 337 bone fragments, and 64 ceramics. The ceramics were dominated by lead-glaze sherds from unidentified items. As in the other rooms of the inn, it is possible that these items may have protruded into the underfloor deposit from the levelling fill below as they were not manufactured after 1823. Other ceramics in the deposit also remained largely unidentifiable, with the exception of the remains of two plates, three cups and two stoneware bottles. The date ranges for these items corresponded loosely with the lifetime of the inn, with no specific relation to this phase.⁴⁴ Some temporal information was gleaned from the glass in Room 4, with most bottles being of types manufactured with technologies that had been phased out by the 1850s. The glass in Room 4 was dominated by alcohol bottles (beer/wine, champagne and gin/schnapps). Six food-related items were identified, including three condiment bottles and three items of glass tableware. Other functionally identified items included a watch crystal and a snuff bottle. The tableware had date ranges from the late eighteenth to the late nineteenth century.⁴⁵

Of the 337 bone fragments in the underfloor deposit, 75 were sheep, with the largest percentages representing ribs (29%), vertebrae (28%) and toe bones (25%). Room 4 had the highest percentage of ribs (at least double those of the other front rooms and rivalled only by Room 5 at 25%). The remaining assemblage was made up of fish, cow, pig and rodent bones. As in the rest of the underfloor deposits, cattle bones were uncommon, and when present, severely fragmented.⁴⁶

Room 5

The underfloor deposit within Room 5 (context 7337) was mid-dark brown, sandy clay loam containing shell, organic material, small brick fragments and artefacts. It was generally no more than 30mm deep. Soil samples 9 and 10 were taken from the accumulation. It contained 102 glass items, 1793 bone fragments, and 49 ceramics. The underfloor deposit in Room 5 suggested that it may have been part of the kitchen, along with Room 2.

The ceramics were of local and imported origin, with the identified items representing tablewares of broad date range that were all in production by 1840. These items included two bottles, two jars, two plates, six cups, six saucers, three egg-cups, a platter and two plates. Six lead-glaze items represented (unidentified) objects that were out of production by 1823, but no other items could be specifically related to this phase.⁴⁷ The underfloor deposit in Room 5 had a high relative frequency of window glass (23.5%). Food-related items consisted of condiment bottles (pickle bottles and club sauce type stoppers) and glass tableware (stemware, tumblers and other tableware items too fragmentary to identify). Beer or wine and champagne bottles and two Codd bottle openers for aerated waters were present. Personal items included a perfume bottle stopper and a non-prescription eye glass lens similar to one found in Room 1. Except for the Codd bottle

⁴⁴ Section 9.1

⁴⁵ Section 9.3

⁴⁶ Section 9.4

⁴⁷ Section 9.1

stoppers (produced after 1875), all of the glass items had broad date ranges that corresponded to the lifetime of the inn, and none were identified as being specific to this phase. Notably, there were no gin or schnapps bottles in Room 5, despite the fact that these items had a relative high frequency in other rooms. The high frequency of these items may however be misleading with regard to the drinking habits of customers, as the Woolpack Inn would also have served beer and wine from casks, whereas gin and schnapps were frequently imported in bottles until the 1870s and champagne would have been imported and sold in bottles only.⁴⁸

Room 5 contained the most bone fragments but contained the lowest percentage of sheep bones, half of which were vertebrae, and only 17% of which were toe bones. This combination was somewhat distinctive among the underfloor deposits and was a direct inversion of the sheep bone statistics in Room 2 (also at the rear). The remainder of the bone fragments represented fish, cow, pig and rodents.⁴⁹

3.5.1.4 Cesspit

A rectangular sandstock brick cesspit (context 7658) served the Woolpack Inn. It was 23m from the rear of the building (Figure 3.38, 3.39; Plan 3, Section 10). It was built along the southern boundary of the lot, which is known to have been established before 1830. The cesspit first appeared on plan in 1865, but the bricks suggest a much earlier date, placing its construction within this phase (Figure 3.57). Three walls of the cesspit survived; the southern end had been damaged by modern concrete footings and no traces of the southern wall remained (Figure 3.38). The surviving cesspit area was 460mm deep, 1.6m long and 1.4m wide, with a natural clay base. The walls were five courses deep, built of sandstock bricks laid in two rows with one course headers and the next stretchers. The upper course consisted of a row of headers laid on edge. The bricks were pale orange in colour measuring 240mm x 106mm x 62mm. The mortar was fine yellow-buff clay with charcoal and shell flecks. The bricks displayed a rectangular, shallow, hand-pecked frog thought to have been used between 1830 and 1850, although this has not been well established and these bricks are currently difficult to date accurately. The dimensions and mixed characteristics of the bricks also place them within this early phase. Samples of the bricks were kept (samples 68 and 69).

⁴⁸ Section 9.3

⁴⁹ Section 9.4



Figure 3.37: The cesspit at the rear of the Woolpack Inn (context 7658). View to the west. Scale 1m.

3.5.1.5 Drainage

A sandstone drain (context 7447) was located at the rear of the building, against the exterior of Room 2 (Figure 3.38). It had a clay base with rubble sides that are likely to have once supported capping. The drain lends further ammunition to the interpretation of Room 2 as the kitchen of the building, where most of the refuse would have been produced. No artefacts were found within the fill removed from the drain (7448).

A brick drain (context 7636) was located at the rear of the building (Figure 3.38, Figure 3.39). It ran along the southern periphery of the site which was an established lot boundary by 1830. Only 1.8m of the drain was uncovered, a small segment of the original extent suggested by a robbed out trench which indicated that the drain was initially over 25m long. The drain was constructed from sandstock bricks laid on their sides in rows to create a concave base and sides. The bricks were marginally smaller than average (230mm x 100mm x 65mm) with a rectangular frog measuring 130mm x 45mm x 10mm. The clay bricks were well mixed and were manufactured between 1800 and 1850.



Figure 3.38: Remains of the brick drain (context 7636) that ran along the southern boundary of Lot 2. Scale 500mm.

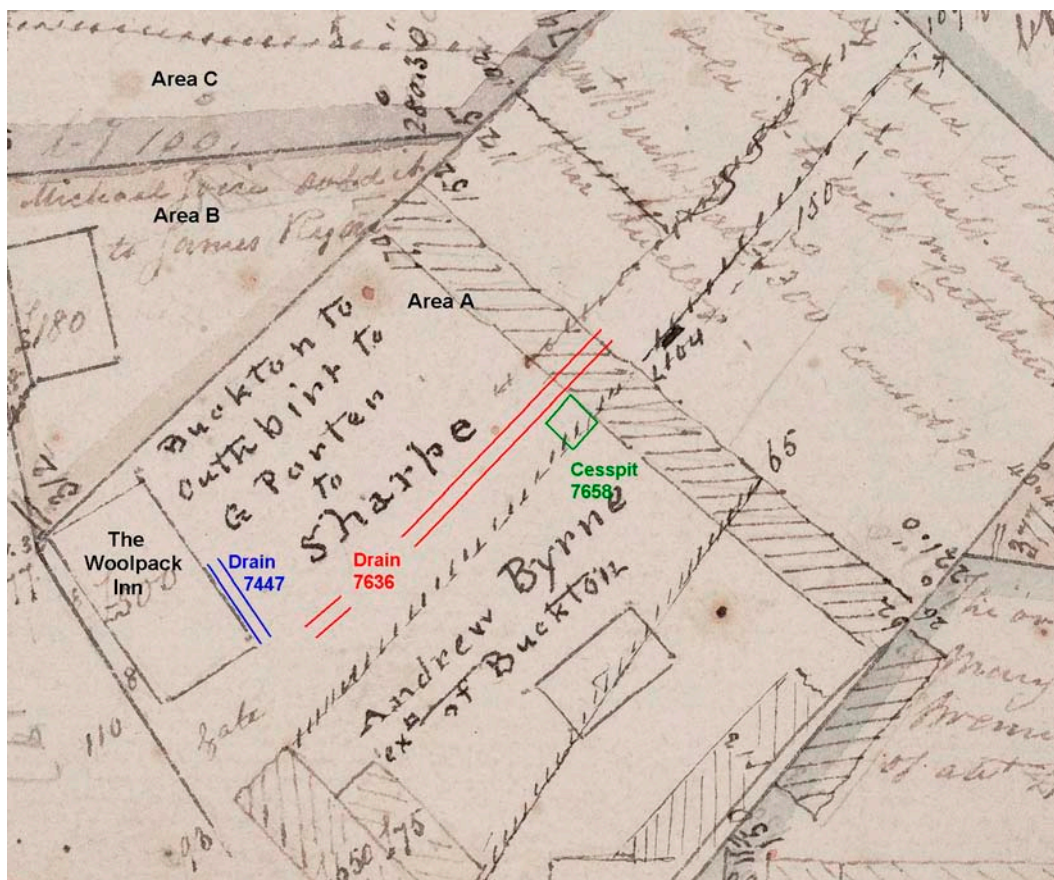


Figure 3.39: Image showing the approximate location of yard features with reference to Hallen's 1830 field sketch. *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p5.

3.5.1.6 Later occupancy, 1840s – 1880

By 1845, the Woolpack Inn was a two-storey, twelve-roomed brick building with a shingled roof and a detached wooden structure in addition to stabling and sheds. It was valued at £140 and occupied by James Stewart who had been the licensee there since June 1842. The land was still owned by William Sharpe. The value had risen to £475 by 1855 and the number of rooms went up to 14. In the late 1850s and early 1860s there were between 13 and 14 rooms at any one time, illustrating some flexibility in the fabric of the dividing walls.

Archaeological remains from the underfloor deposits could not be confidently secured to this phase. The underfloor deposits of the downstairs rooms were littered with glass bottles and ceramic and glass tablewares that had broad date ranges. However it is possible that many of them were deposited during this busy phase of development in the southern part of town.

The archaeological remains for the last phase of the Woolpack relate to the backfilling of the cesspit and its demolition. The backfilling of the cesspit may have occurred before the demolition of the hotel, as plumbed toilets may have been installed as early as the 1870s.

3.5.1.7 Cesspit backfill

The cesspit contained three distinct sand fills, representing one backfill event. At the base was a grey yellow sandy mortar mixed with brown humic sand (7655). It was 210mm deep and capped with dark brown to black humic sand with some yellow and grey mortar mix (7654). This fill was up to 160mm deep and contained a range of artefacts (bone, shell, ceramic and bottle glass fragments). Finally the uppermost fill (7653) was brown sand with some coal inclusions. It was 120mm deep and included bone, bottle glass, rusted metal and ceramic fragments. Artefacts with similar date ranges from the deposits supported the proposition that backfilling occurred as a single event, sometime after 1860 and probably around 1870.

The cesspit contained 24 ceramics and overall the decorative types represented were generally indicative of the range available from at least the mid nineteenth century onwards (Figure 3.40). The identified shapes were predominantly associated with food - its serving, storage and consumption, with consumption the most commonly recognised. The items represented a breakfast cup, three ginger beer bottles, a child's mug, a dish, an egg-cup, two ewers, a ginger jar, a jug, three plates, a platter, a poe, a saucer and a tureen. Decorative types were generally indicative of the mid nineteenth century onwards, two of the patterns in particular also supported this – “Albion” (1858-1937) and “Costumbres Espanoles” (c.1861-1873). Three basemarked items indicated that the backfill occurred in the second half of the nineteenth century, post-1861.⁵⁰

Sheep bones dominated the faunal assemblage, and almost all of these were from the legs and feet (the only exceptions being fragments of pelvis and scapula, where the legs joined the body). Two leg bones from unidentified birds and fragments of pig and cow bones were also present. Cow bones represented ribs, pelvis and vertebra. The only pig bone was from the jaw.⁵¹

⁵⁰ Section 9.1

⁵¹ Section 9.4



Figure 3.40: Ceramics recovered from the cesspit backfill at the Woolpack Inn. Russell Workman, scale 10cm.

Almost all of the glass artefacts in the backfill came from the middle sand deposit (context 7654). Datable artefacts included twenty-four bottles, seven items of tableware and a piece of crown window glass. All bottles were made after 1820 and before 1920 and one third of the bottles had an 1850s *TPQ*. Beer and wine bottles mostly had an 1820s to 1850s/1870 date range. All datable items were consistent with the occupation of the Woolpack Inn. Representation of food and beverage items was consistent with a household or an establishment such as the Woolpack Inn (over sixty-one per cent). Beverage bottles were exclusively alcohol with the majority being beer/wine and most of the tableware was tumblers or stemware. The relative frequency of medicine bottles (25 per cent) was generally not expected in the assemblage of a public establishment, such as an inn, however, it could be indicative of health concerns of the publican or his/her family. Most of the medicine bottles were generic forms that were used by chemists and patent medicine manufacturers. The content was identified for only two bottles, a castor oil bottle and a cough remedy bottle. The perfume bottle could easily have been from the publican's family or a guest at the inn. The bottle's shape was much the same as those used by Germany's Farina perfumery, which was popular throughout the nineteenth century.⁵²

3.5.1.8 Demolition evidence

The Woolpack Inn survived at least until 1880, when John Pries was in his eighth year as licensee, and the public house had been known for seven years as the Woolpack Hotel. There was no listing in the Sands directory for the hotel in 1881 or the Assessment Books for 1882, and by that time Pries was licensee at another hotel (the Pries Family Hotel, George Street North). This suggests that the hotel had already been pulled down and construction of the new building was under way. By 1883 The Mercantile Bank had adopted the place in the Sands Directory at No. 722, and its imposing shape dominated plans at the corner of George and Campbell Streets by 1888. The craftsmanship and materials used to build the footings for the bank were far superior to any that the lot had so far witnessed, and this building ushered in a new period, reflecting the increased value of the land in this part of town, and the changes in function and status that were to dominate the block for a hundred or so years to come.

The demolition debris from the Woolpack Inn was mostly yellow-beige sandy material with fragments of white plaster, sandstock bricks, grey sand shell mortar and buff sandy mortar. This

⁵² Section 9.3

material was the only evidence pertaining to the superstructure. Some of this demolition material also had some of the occupation deposit mixed through it with occasional finds of pins, slate pencils and kaolin pipe stems. These were possibly from the first floor space.

Some of the rooms within this structure were given separate context numbers, in the hope that room-specific information about the fabric or finishes would be present. The demolition debris in Room 2 consisted of whole and broken sandstock bricks, charcoal inclusions, buff sand mortar/render, lumps of painted render and set mixed with grey-brown sand and clay. This deposit was deepest around the fireplace and covering parts of the fireplace within Room 2. The whole bricks measured 220mm x 105mm x 60mm. They were flat with no frog and had manufacturing dates of between 1800 and 1850. They were poorly mixed and dark orange in colour. The fireplace in Room 4 was also covered with demolition material around the hearthstone and back wall of the fireplace. A thin layer of demolition debris (7330) only 90mm deep was carefully removed by hand from the rest of the room as it was pressed tightly into the underfloor deposit and was sitting directly above the joists and bearers which survived in Room 4. There was little information to be gained from the demolition material other than the brick and mortar construction. There was no room-specific information within the demolition material that might have told us about the nature or function of the interior spaces.

3.5.2 Phase 5 Area A: c.1880-1902

Following the demolition of the Woolpack Inn the site underwent a major change in occupancy from a public hotel to separate commercial ventures. This was also the first major change to the building footprint for many decades as well as to the way in which the rear areas of the site were accessed.

3.5.2.1 The Mercantile Bank

The Mercantile Bank was built between 1881 and 1883 and occupied the northern side of Lot 2, as far east as the boundary with the yard of No. 712 (Figure 3.41). Mirroring the building on the southern side of the lot was a structure of similar dimensions, also occupied by the bank and connected by a covered entryway. By 1888, this southern building was occupied by the Australian Widows Fund Life Assurance. The two buildings shared identical footings and are considered here as one structure.

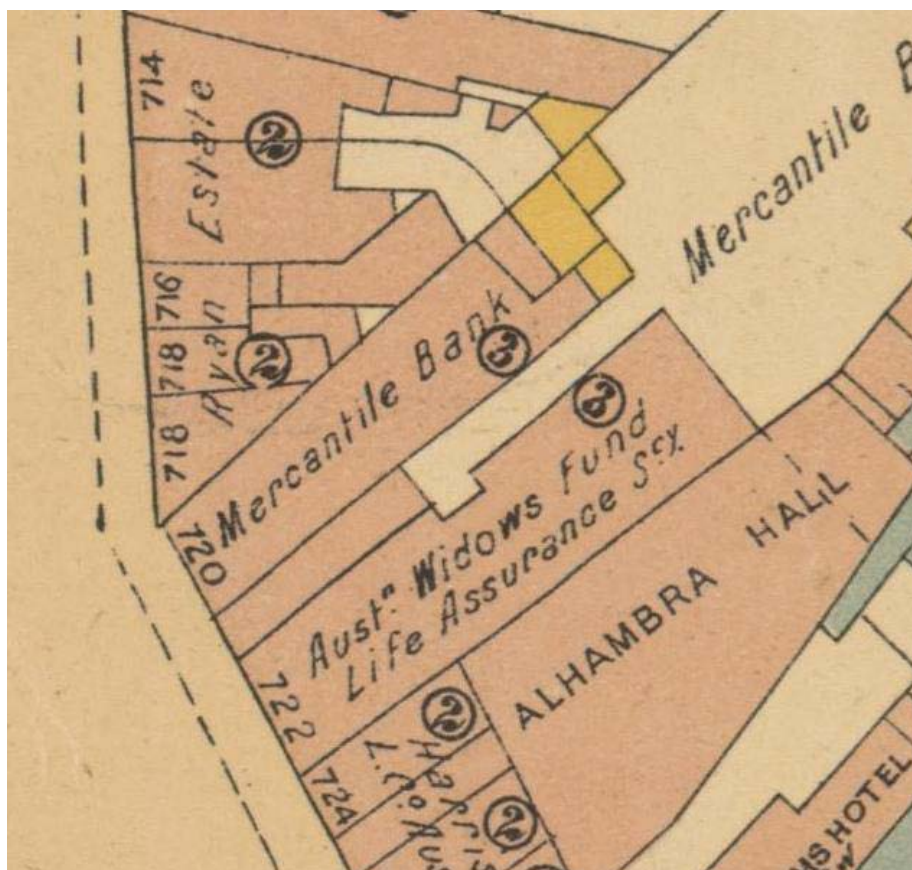


Figure 3.41: A detail of an 1888 plan showing the large buildings that replaced the Woolpack Inn on Lot 2 (here labelled 720 and 722). Detail from *City of Sydney 1888 / W.F.P. & A.W.M. Sydney & Suburban Map Publishing Co., 1888* NLA ref: MAP RM 722. Tile b1.

The site had been levelled after the demolition of the Woolpack Inn, which was reduced to its rubble footings (Figure 3.50). The new foundation was up to 1.24m deep and destroyed a significant portion of the Woolpack footings. The footings of the Mercantile Bank (7307, Figure 3.43) were of large well-dressed sandstone blocks laid header-to-header up to five courses deep. The external walls (north, south and west) consisted of a single row of large well-cut blocks measuring approximately 850mm x 650mm x 280mm. Some of the blocks were as long as 1150mm and although mostly 650mm wide some were as wide as 760 mm. Pick/cut marks were visible running diagonally on the surface and face of the stone. The external walls were four to five courses deep. The stones were tightly packed together with compact buff sandy lime mortar (mortar samples 13, 14 and 15).

The two buildings occupied by the bank utilised the entire street frontage of Lot 2, with footings stretching from boundary to boundary in the southwest half of the lot (Figure 3.44). Overall, the footings described a building 17.5m wide and at least 18m long, including the 2.3m wide interval of the covered entryway that ran down the centre of the building from the street frontage.



Figure 3.42: The footings of the Mercantile Bank at the southwest corner of the lot. The rubble foundation of the Woolpack Inn can be seen within these footings. View to the southeast. Scale 1m.



Figure 3.43: Large and well-cut sandstone blocks used in the foundation for the Mercantile Bank. View to the northwest. Scale 1m.

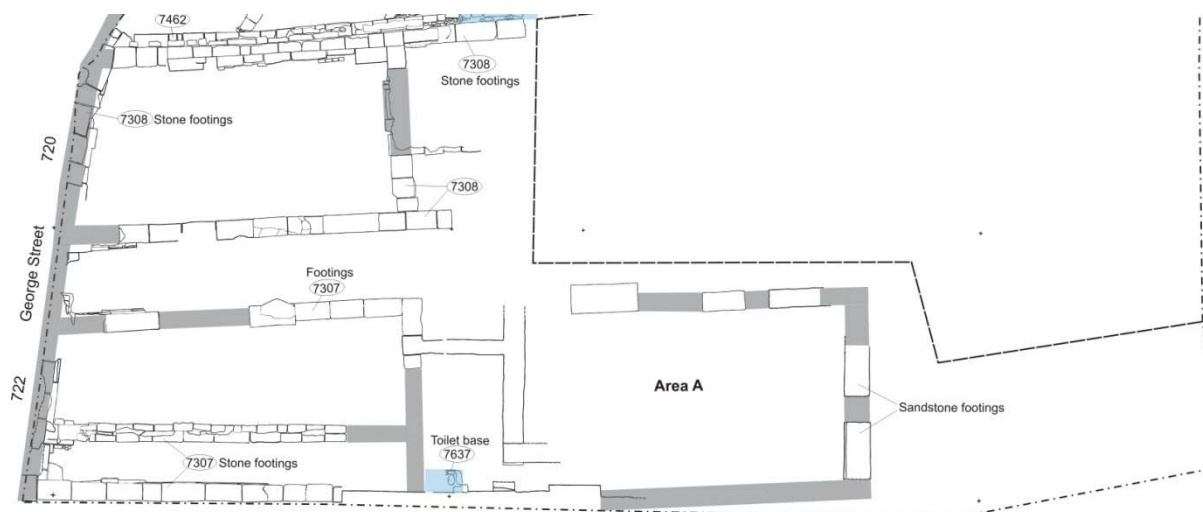


Figure 3.44: Interpretive plan showing archaeological remains and projected relationships based on the 1888 Survey (*City of Sydney 1888 / W.F.P. & A.W.M. Sydney & Suburban Map Publishing Co., 1888* NLA ref: MAP RM 722. Tile b1). The archaeological remains have a strong correlation with the 1888 plan. (Extract from Plan 22, Section 10).

3.5.2.2 Drainage

A stone-lined trench (7657, Figure 3.45) travelled from the boundary of 722 in a northwest direction then turned north towards 720 George Street. The sandstone was in the form of small irregular-shaped rubble pieces that acted as a packing fill around a brown salt-glazed stoneware pipe.



Figure 3.45: The damaged drain in the yard at the rear of the bank building. View to the north. Scale 1m.

3.5.3 Phase 6 Area A: c.1903 onwards – twentieth-century development

In 1903 both 720 and 722 George Street were occupied by the large and expanding business of Mick Simmons. According to the *Sands Directory* in 1903 Mick Simmons Ltd operated as tobacco merchants, importers of hairdressers' requisites and all sporting materials. By 1928 the business went on to have the Head Office located on this site at George Street along with the manufacture and importing of sporting goods, fishing tackle, toilet and hairdresser requisites, radio equipment, talking machines and records, men's mercery, wholesale and retail sole agents for Pain's Imperial Fireworks. By 1932 Mick Simmons Ltd had also acquired 718 George Street (Figure 3.46).

The archaeological evidence from this phase was limited to concrete and steel reinforcement and additions of concrete and dry-pressed brick walls to the rear of the buildings. The large concrete footings caused considerable disturbance at the rear of the property, especially in the area of the pottery waster pits. Mick Simmons Ltd remained at this address until 2000 when the buildings were demolished and the site was temporarily used as a car park until construction commenced in 2008.



Figure 3.46: An image from the 1930s showing the large commercial structures adorning the lots of the study area. View to the northwest from the southwest corner of George and Campbell streets with a crows outside the Mick Simmons store waiting to see Don Bradman. ML, SLNSW

3.6 Areas B and C: Phase 4 - Post-Brickfield occupation

By the time William Harper made his 1823 survey of Sydney, and lot boundaries had been established there appears to have been a large rectangular structure recorded on Lot 3, on the property of Thomas Ryan. This lot corresponds to Area B in the excavation records (Figure 3.23). According to this plan, the part of the site represented by Area C had not yet been built on. This part of the site was the southern portion of a large lot extending beyond the limits of excavation to

the north. Areas B and C were found to have followed a similar developmental path and share the same archaeological phasing (Table 3.2).

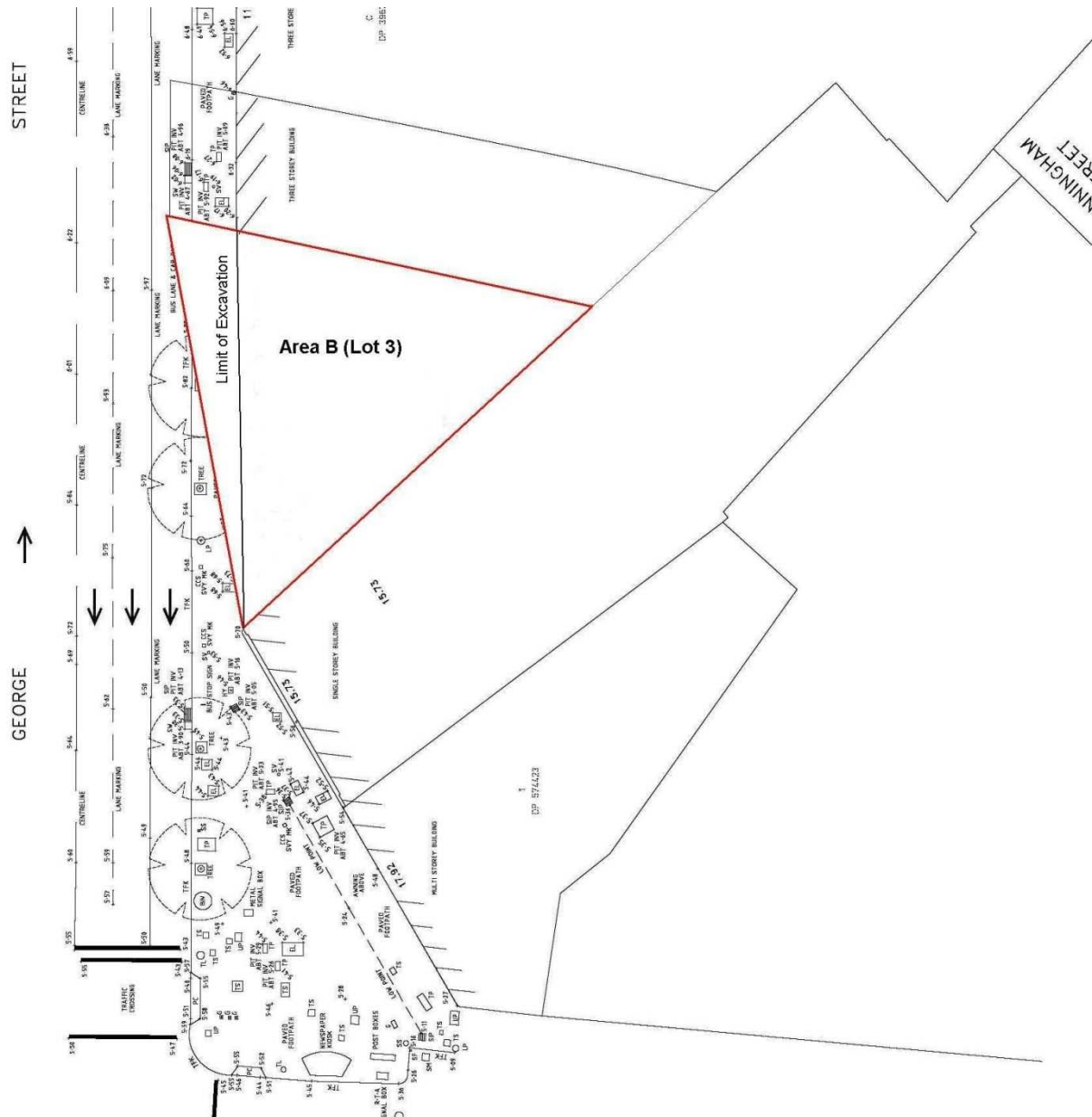


Figure 3.47: Site survey showing the original boundaries of Lot 3 in red. The original boundaries were taken from the angles shown in Hallen's 1830 survey, which appear accurate with reference to the modern boundaries of Area A and other known angles on the site. This image shows that the street-front during this phase was beyond the limits of excavation. North is at the top of the image. Original boundaries from City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.

3.6.1 Phase 4: Area B (Lot 3), c.1823 –c.1840

Between 1823 and 1840, Lot 3 was the subject of some dispute. Michael Joyce was the original owner, who leased the land to James Ryan sometime before 1830. However, it was not until 1835 that the land was securely in the hands of the Ryan family. In the intervening years a third party had claimed that the land had been sold to him some years previous, and the dispute had taken some time to settle.⁵³ It appears that Michael Joyce had built the first known building on the land, recorded by Hallen in 1823 (Figure 3.48). It was a rectangular building, slightly smaller than those on Lot 2 with its longest side oriented to George Street, but set a little way back from the road. Fences ran from the sides of the house to the adjoining boundaries of Lot 2 and Lot 4. A sale advertisement of Buckton's estate in 1830 refers to a tenant on Lot 3, a Mr James, who leased a 'skilling' at 6 shillings per week, considerably less than the rent paid for the adjoining buildings on Lots 1 and 2.⁵⁴ By 1830 Hallen's field sketch records the building as valued at £180.

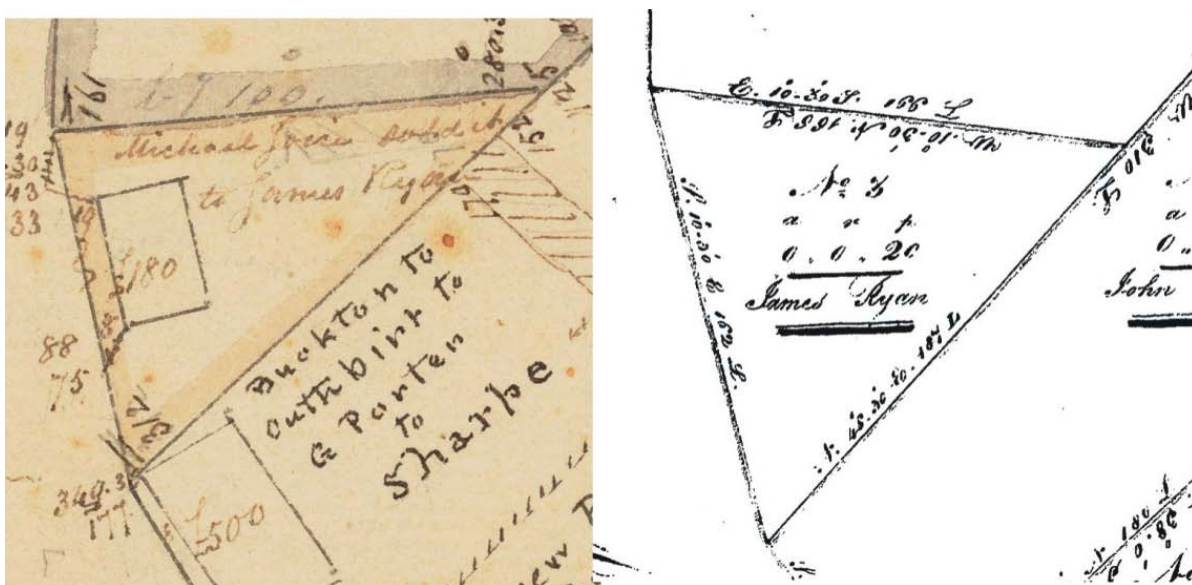


Figure 3.48: Two plans by Hallen dated to 1830 showing Lot 3. The image on the left is a field sketch, while the formal plan is shown at the right. The angles of the property are considerably different in the two images, but the noted angles on the sketch correspond to that of the formal plan. It is likely that Hallen traced Harper's plan for his notes and then corrected the angles in his formal survey. *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p5 (left image); detail from City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney (right image).

It appears that by 1830, some liberty had been taken with the lot boundary in the northwest corner, as a short fence extended the property a little way into the road (Figure 3.48). This was to set a precedent for further encroachments in the following decades (see Phase 5 below).

The archaeological evidence from this phase was limited to scattered postholes, an attempt at well-digging, a rubbish pit and a sandstock brick box drain. The postholes could not be identified with any known structures, and no structure could be convincingly extrapolated from the arrangement of the postholes. The reconfiguration of George Street meant that the potential remains of fencelines and the front of the rectangular building depicted on Hallen's field sketch were beyond the limits of excavation beneath the modern footpath (Figure 3.47). Because archaeological evidence for this phase was relatively poor, this street front area would have been significant for

⁵³ *Sydney Herald* 24 September 1835, p2.

⁵⁴ *Sydney Gazette*, 26 January 1830.

the interpretation of the archaeology in the rest of the lot. Overall, 110 sq metres of the original 505 sq metres (20 perches) appears to have been beyond the limit of the site if Hallen's 1830 survey is accurate.

3.6.1.1 Postholes

The postholes were located in two loose clusters at the north and centre-west of Area B (Plan 9, Section 10). In all cases the packing fills resembled subsoil and topsoils known to be on the site during this phase. There were few inclusions and no evidence of later material, helping to place them within this period.

The postholes in the northern cluster appeared to represent repeated attempts to mark a location with a post. Three postholes in this cluster cut and recut each other, with two outlying at a short distance. They were of similar dimensions and were sub-rectangular, at around 320mm x 370mm. Post-pipes for these features were slightly less consistent, with maximum dimensions for each post falling between 80mm and 130mm. These features are likely to represent a fence. The dimensions of the pipes indicated that the posts were relatively insubstantial, suggesting simple markers rather than a fence that was actively employed to keep out livestock or intruders. The insubstantial posts may also represent part of a skillion as is referred to in an 1830 advertisement⁵⁵, although this could not be established from the archaeological evidence.

The central-western cluster of postholes and its outliers showed no clear patterning or inter-relationship. Any attempts to recreate the shape of a structure according to posthole alignments were frustrated by absences in the projected series or else demanded the creation of unlikely engineering solutions to explain the suggested configuration. The absence of post-pipes in all but one of these postholes also frustrated attempts at interpretation. Six rectangular postholes were identified containing fills with subsoil characteristics. The postholes shared similar dimensions deviating only marginally from 270mm x 250mm in plan. The only post-pipe (context 7486 within posthole 7484) had dimensions of 170mm x 100mm. These postholes were in a location that loosely corresponded to the estimated location of the southern wall of the structure depicted on Hallen's field sketch, but such a structure could not be envisaged from this evidence (Figure 3.48).

3.6.1.2 Rubbish pit

A loosely rectangular pit dating (7508) from this phase contained a number of artefacts in a matrix of dark grey sandy loam (7509). The pit was 4.5m long and at least 810mm wide. Its original dimensions had been disguised by building activity in subsequent phases. The pit contained brick fragments, oyster shells, bottle glass, pottery and bone. A pearl-edged plate loosely dated the fill of the pit from between 1780 to 1860. The stratigraphy of the site placed the rubbish pit more specifically within this phase. The depth of the fill was 160mm.

3.6.1.3 Box drain

A drain and sump (Figure 3.49, Figure 3.50) ran down the slope from the estimated location of the structure on Hallen's field sketch. The drain (context 7339) was covered except for a 500mm x 300mm aperture at the location of the sump (7339). It was most likely constructed to collect roof runoff and channel it beneath the road, thereby preventing waterlogging of the area southwest of the structure.

The box base was constructed of complete sandstock bricks (c.230mm x 110mm x 70mm) with a 'hand pecked' and very shallow rectangular frog. These bricks may have been made as early as 1830, and although a secure date has yet to be established for these types of bricks, their other

⁵⁵ *Sydney Gazette*, 26 January 1830.

characteristics (fabric and dimensions) suggest they were manufactured in the early decades of the century. The bricks were laid header-to-header as a 'running bond'. This bond was altered at the eastern end of the drain where it curved to the north. The bricks were laid diagonally stretcher-to-stretcher. The arched cover was constructed of sandstock bricks laid horizontally face-to-face with a gap of c.15-20mm between each brick to help make the 'arch' shape. The bricks of each section of the arch were bonded with a fine silty clay shell mortar. The overall surviving length of the drain was 5.5m from the sump to where it exited towards George Street and the limit of excavation. The drain had a minimum internal width of 290mm, and a minimum outside width of 520mm. This drain exhibited the same type of construction method used in one of the early drains excavated at the Government Stables.⁵⁶ The stables drain was built between 1817 and 1821, but with flat sandstock bricks. The fill of this drain (7431, 7432) contained bottle and window glass with broad date ranges from around 1810 to 1870-1880.



Figure 3.49: The sump at the northern end of the box drain (context 7339). Scale 500mm.

⁵⁶ Casey & Lowe 1998 *Archaeological Investigation: Conservatorium Site, Macquarie Street Sydney* Ch.15; <http://www.caseyandlowe.com.au/sitecon.htm>.



Figure 3.50: The drain mid-excavation showing the collapsed arched capping and the curve to the north. The grey-brown fill (7431, 7432) within the drain is visible where the brick capping is missing. View to the west. Scale 1m.

3.6.1.4 Cylindrical cut

A large, cylindrical cut (7600, Figure 3.51) was found near the centre of the lot (Fig. 3.43). It had a diameter of 1.6m. It was cut through the post-Brickfield levelling fills and the subsoil. The full depth of the cut was approximately 1.3m. It was backfilled with dumps of heavy orange/red clays and grey silty subsoil-type fills. There was no evidence to suggest that the vertical sides of the cut had ever been lined. It is likely to have been quite close to the back of the structure sketched on Hallen's plan. A well in Area C (Lot 4) was sunk 4m deep to reach water, so had this been a well-digging attempt, it was abandoned at an early stage of excavation. Notably the diameter of the cut was almost identical to that of the (Phase 5) well in Lot 4 (Area C) which had a cut diameter of 1.68m.



Figure 3.51: The circular cut (7600) revealed against the yellow subsoil. View to the east. Scale 1m.

3.6.2 Phase 4: Area C (southern part of Lot 4), c.1823 –c.1840

Area C describes an east-west oriented corridor of land. This part of the site was the southern portion of a large lot extending beyond the limits of excavation to the north. By 1823 it formed at least part of the southern portion of Lot 4. If Harper's plan was accurate in 1823, then Area C was not originally at the boundary with Lot 3. However, it appeared to occupy an equally vacant stretch of land, and there was no archaeological evidence to determine whether Harper was accurate (Figure 3.52, Figure 3.53). According to the 1823 plan the part of the site represented by Area C had not yet been built on.

The lot was formally granted to George Richards in 1831, and the limited information available suggests that he was the original occupant of the lot after the block was subdivided. Although Lot 4 contained a number of buildings by 1830, none occupied the land described by Area C. This portion of the lot was fenced off from the rest.

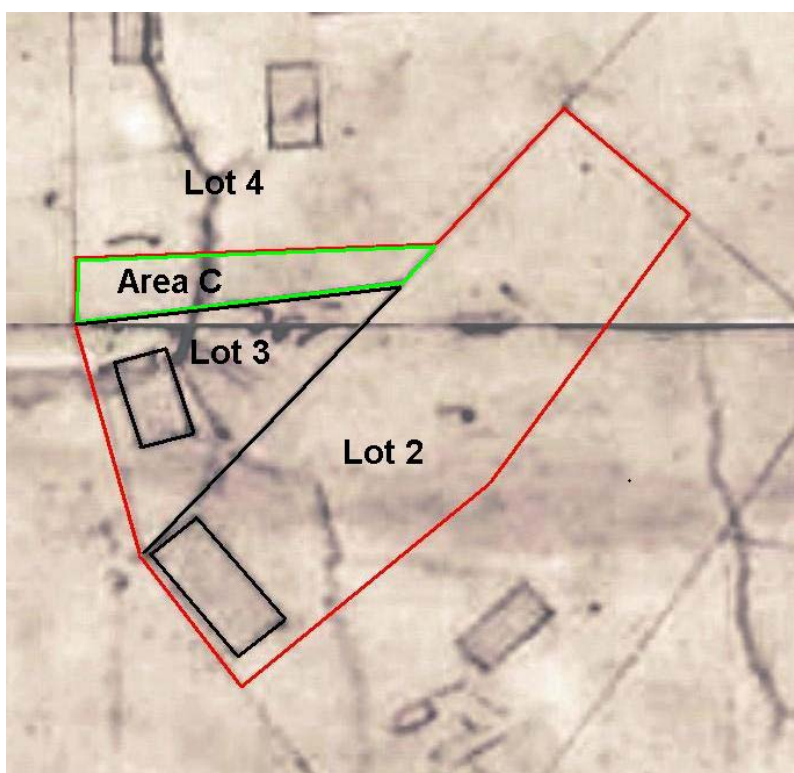


Figure 3.52: Harper's 1823 plan showing that Area C occupies a vacant part of Lot 4. The site boundary is indicated by a red line.

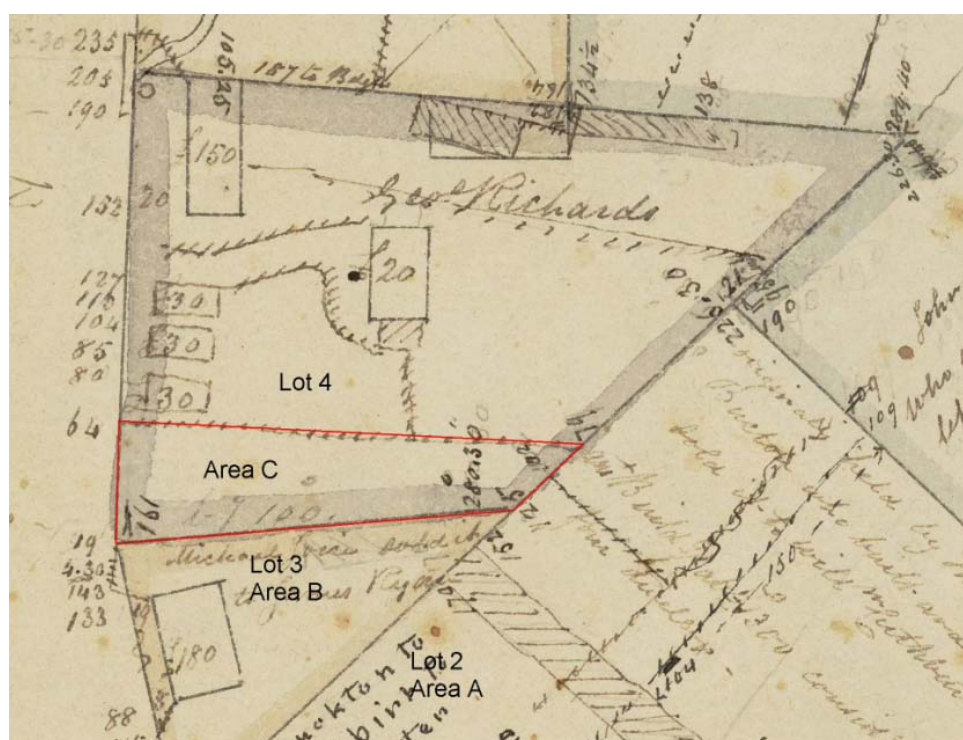


Figure 3.53: Hallen's 1830 field sketch showing the structures on Lot 4 outside the excavation area. Area C occupied the vacant southern part of the lot. Although this sketch shows what appears to be the incorrect Lot 3/4 boundary for 1830 (see section 3.5.2 above), Hallen's angle measurements do correspond to the later survey, and so we can confidently assume that the fenced portion of land corresponds to that of Area C. *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p5.

There was no archaeological evidence within Area C that was attributable to this phase. However, because of the discrepancies concerning the 1823/1830 lot boundary, it was considered possible that some of the postholes in the north of Area B corresponded to activities in Lot 4. The lack of evidence in Area C makes it likely that these features occurred after the boundary change and belonged to Lot 3 or else are related directly to boundary-marking activities (see section 3.5.2.1 above).

3.7 Phase 5 Areas B and C: Residential and commercial development c.1840 - c.1860

During this phase, activity intensified on the block, with Lots 3 and 4 becoming crowded with brick and timber buildings on the street front. On Lot 2, the Woolpack Inn continued trading as its neighbours (and potential customers) multiplied on the adjoining lots. As the sandstone footings of boundary-hugging structures were laid down, the Phase 4 inter-lot divisions became solidly established, and on the street front new liberties were being taken as buildings encroached onto George Street. It appears that some of these changes had begun as early as 1837, as the *General Post Office Plan* for that year (Figure 3.54) shows more than the isolated structures of 1830 adorning the corner of Campbell and George Streets. However, the representations appear somewhat stylised for this part of the block, and attempting to attribute the archaeological remains to these structures has questionable merit. It is however possible that the archaeological remains of the timber structure at No. 718 (in 1845 known as No. 164 George Street) represents one of these early buildings, as its orientation hugs the curve of the street in contrast to its northern neighbours.



Figure 3.54: General Post Office Plan of 1837. The site indicated by the curved corner of Campbell and George Streets can be seen near the centre-left of the image.

3.7.1 Phase 5: Area B (Lot 3), 1840 - c.1860

Lot 3 witnessed the most activity during this phase, with up to seven separate structures gracing the street front during its most congested period. Two brick buildings dominated the northern part of the lot, while wooden structures vied for the remaining space in the south. All of the buildings were

Location	1845	1848	1855	1856	1858	1861
712	2 storey, 4 room, brick	2 storey, 4 room, brick	2 storey, 5 room, brick	2 storey, 5 room, brick	Merged with 710	2 storey, 4 room, brick
714/716	1 storey, 2 room, brick	1 storey, 4 room, brick 1 storey, 1 room, brick	1 storey, 5 room, brick	1 storey, 5 room, brick	1 storey, 3 room, brick 1 storey, 1 room, brick	1 storey, 1 room, brick
Right of way	1 storey, 1 room, wood	1 storey, 2 room, wood	Yard and stables	Yard and stables	1 storey, 1 room, wood	1 storey, 2 room, wood 1 storey, 1 room, wood
718/720	1 storey, 2 room, wood 1 storey, 2 room, wood	1 storey, 2 room, wood 1 storey, 2 room, brick	1 storey, 3 room, wood 1 storey, 1 room, wood	1 storey, 3 room, wood 1 storey, 1 room, wood	1 storey, 1 room, wood 1 storey, 2 room, wood 1 storey, 1 room, wood	1 storey, 1 room, wood 1 storey, 2 room, wood 1 storey, 1 room, wood

Table 3.4: This interpretation of the continuity of structures in Lot 3 is based on the archaeological evidence and on information in the Assessment Rates Books for the period. Coloured shading may represent a single structure (as in the brick building at 712) or a location within the lot (right of way). The building at 718/720 may have originally been a four-roomed, single-storey wooden structure that was split several ways during this phase.

3.7.1.1 No. 712 George Street

During Phase 5 this location was referred to by four different street numbers (Table 3.5). It was not known as No. 712 until after 1880.

1845	1848	1855	1856	1858	1861
No. 176	No. 653a	No. 535	No. 535	No. 724	No. 724

Table 3.5: Street numbers corresponding to No. 712, and their relevant years during Phase 5.

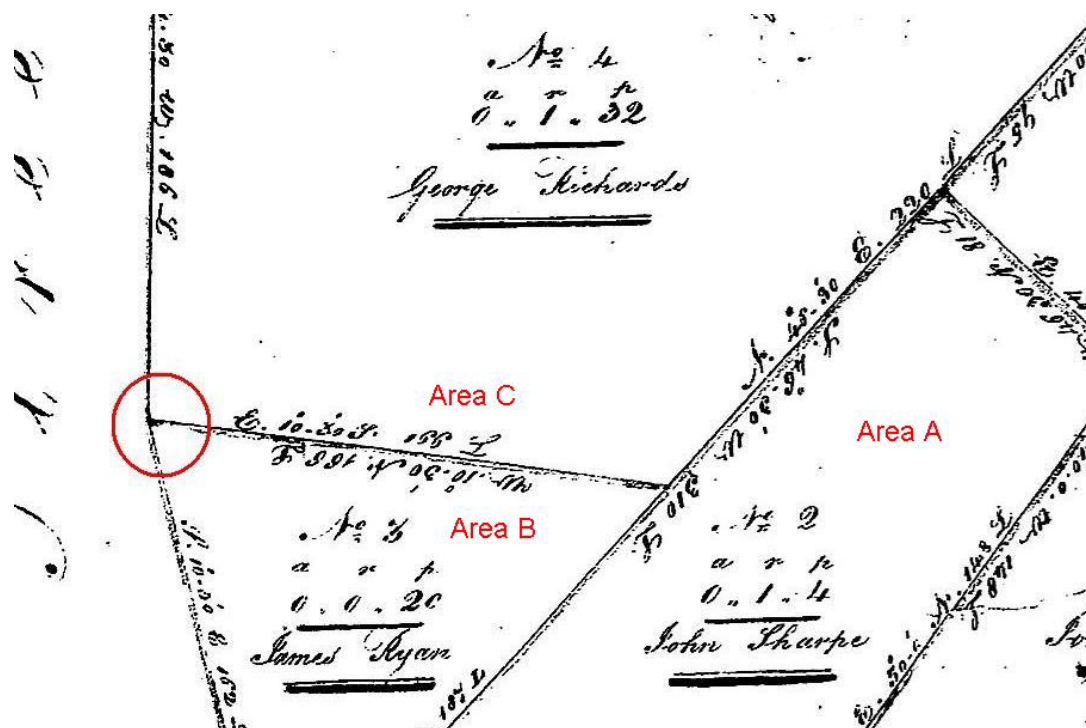


Figure 3.56: The lot boundary between Lots 3 and 4 where the alignment of George Street changes (indicated with a red circle). No. 712 was built against the southern side of this boundary, in the northwest corner of the lot. North is at the top of the image. City Section Survey Plans, 1833, Section 02, City of Sydney Archives: Historical Atlas of Sydney.

The building at No. 712 was built before 1845 (at an unknown date), on an alignment with the brick building at No. 710 to the north (Lot 4, Area C). This junction of the two lot boundaries once marked the point at which the north-south line of George Street turned sharply to the southeast, to create the angled corner at the junction of Campbell Street (Figure 3.56).

It appears that by the time the structure at No. 712 was built, the road had been widened at this northern part of the lot, truncating the northwest corner of the lot and creating a north-south street frontage at the location of No. 712. Although there is no detailed plan of the site during this phase, it is likely that the building at No. 712 was built up against the new boundary, and that the 1840s frontage was similar to that shown on the 1865 *Trigonometric Survey of Sydney* (Figure 3.57).

In 1845, the structure at No. 176 (712) George Street was a baker's shop. It had an attached bakehouse and shed, and was two storeys high with four rooms. It was built with brick, had a shingled roof, and was valued at £65. It was probably built during the late 1830s/early 1840s. The Assessment Books show that it had similar characteristics and a similar value to its northern neighbour at No. 178 (710). Its comparative value and configuration suggests that it had similar dimensions, and makes it highly likely that the structure at No. 176 (712) shared the street-front alignment of its Lot 4 neighbours.

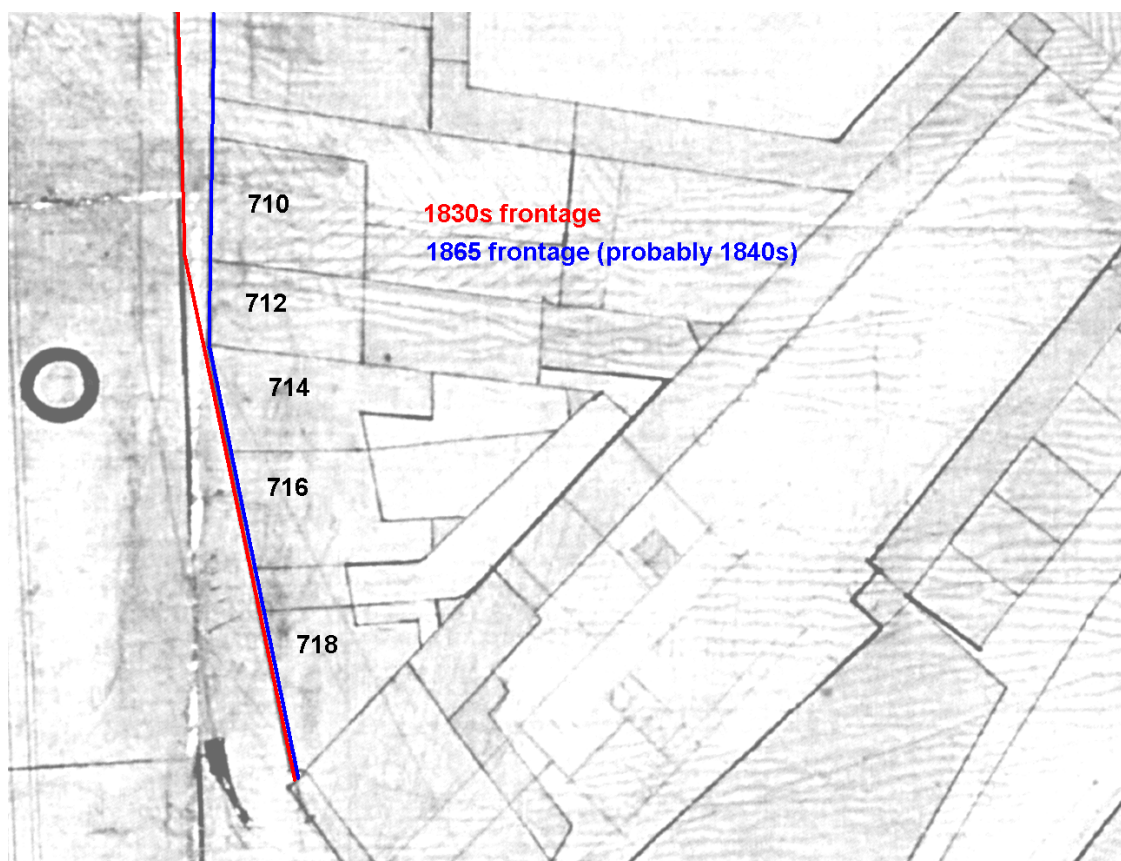


Figure 3.57: Detail from 1865 *Trigonometrical survey of Sydney* plan showing the change in street frontage that is likely to have occurred before the structure at No. 712 was built. *CSA-HAS Trigonometrical survey of Sydney, Sheet O2.*

Archaeological evidence of the structure at No. 712 included sandstone footings (7603, Figure 3.58) and a sandstock brick cesspit (7625, Figure 3.59). The building extended at least 6m from the street front and was up to 5m wide. Although the remains of the front of the building were beyond the limit of excavation, all indications are that it was as long as 9m, echoing its neighbour to the north. Certainly by 1865 (Phase 6) the building was a little over twice as long as it was wide, supporting this proposition. The footings were of roughly cut sandstone blocks, aligned as a double row, bonded with small stones and a sandy/pale brown mud mortar. The average block size was around 400mm x 200mm x 200mm but sizes varied greatly in the eastern (rear) wall. A construction trench had been dug that exceeded the footing width by 500mm (context 7619). A foundation for a dividing wall split the structure on a north-south axis, creating a rear room with a width of 3.5m and a length of around 4m (the northern footing had been destroyed by later activity). This room was the most archaeologically complete space in the house. It was loosely rectangular with corners of 95° and 85° in the southwest and southeast respectively. At the front of the house, the limit of excavation constrained the space to around 1.8m x 4m, although the projected dimensions were around 3m x 4m. The footings averaged 500mm in width and were 200mm (or one course) deep, except the southern wall which was 400mm (or two courses) deep.

Throughout this phase, the historical record indicated that the building changed its configuration only marginally, alternating between an arrangement of four and five rooms. This suggests that at least one division in the house was of a somewhat insubstantial fabric, and that there may have been three rooms on the lower storey. In 1858, there was no value or configuration record of the structure in the Assessment Books, and the property was listed as unoccupied, but its immediate neighbour in Lot 4 to the north was recorded as doubling in value and rooms from the previous entry. This may indicate that the property had been temporarily annexed by Harris and Grogan's

business at No. 722 (710) next door. Between 1858 and 1861 the timber shingled roof was replaced with slate, and the relatively low value of the building (£50) was raised to £91.



Figure 3.58: The rear room of the structure at No.712 George Street. Concrete has been added to the southern wall and the northern wall has been replaced by a later footing. The internal space showed no evidence of flooring or occupation debris. The partially exposed remains of the front room can be seen beyond. View to the west. Scale 1m.



Figure 3.59: The cesspit (7625) at the rear of No. 712. The sandstone and machine-made brick wall at the left belongs to a later, unrelated structure. View to the east. Scale 1m

There was no evidence of occupation from Phase 5 in the structure at No. 712. A cesspit (7625) at the rear of the property contained only material relating to its backfilling in Phase 6 (Figure 3.59). The cesspit was located 17m from the rear of the house, in the easternmost corner of Lot 3. It was built with mostly complete sandstock bricks, though some were broken (and possibly re-used). The bricks had varied characteristics, with some flat and others bearing a rectangular frog. The bricks were dated to between 1830 and 1860. The coursing method was random and the bonding material was a sandy shell mortar. The base was of exposed B horizon clays. There was an internal skim wall against the southern wall, suggesting a repair. The skim wall was constructed using the same bricks as those throughout and may have been an early alteration. All walls were 220-230mm wide, accommodating coursing in either two rows header-to-header or a single row stretcher-to-stretcher. The cesspit had internal dimensions of 1.5m x 900mm (with the addition of the skim wall) and had a depth of 800mm.

3.7.1.2 No. 714/716 George Street

This location refers to several street numbers during Phase 5 (Table 3.6). It is a spatial reference only. The structure was never known by these numbers, nor did it correspond directly to the positions occupied by the later buildings. It has been used here so that general comparisons can be made between this and later phases.

1845	1848	1855	1856	1858	1861
No number recorded	653	537	537	726	726
	652			728	

Table 3.6: Street numbers corresponding to the location No. 714 /716 during Phase 5.

The building at this location was built after 1830 and before 1845 and probably after the structure at No. 712, as it continued the north-south street-front alignment adopted by its northern neighbour. Plans from 1843 and 1854 suggest that this north-south alignment (and associated extension of the lot into the street) was extended all the way to the Woolpack Inn, although inaccuracies in some parts of these plans suggest that some caution should be applied to this interpretation (Figure 3.60). The inconsistencies with these plans and those that came before and after could also reflect other transgressions and liberties that were being taken across the block as this part of town grew ever more slum-like in the mid-nineteenth century.

There was a precedent for this kind of transgression. Annexing parts of the street at the Lot 3 street frontage had begun as early as 1830, when Hallen recorded a fence extending from the north of the lot into the road (Figure 3.61). Although the road had since claimed this and more back from the front of the lots (Figure 3.57), it appears that in the south of the lot, new liberties were being taken.



Figure 3.60: Woolcott and Clark's 1854 plan showing the changed alignment. The 1830 Lot 3 boundary is shown in red. However, inconsistencies with the lot shapes and sizes across the block may indicate that this map contains some inaccuracies. City of Sydney Archives - Historical Atlas of Sydney.



Figure 3.61: This image is a detail of Hallen's field book sketch from 1830. His sketch shows a transgression of the lot boundaries, where a property fence has extended into the street at the point where the alignment changes. The figure 161 indicates that the alignment shifts by 19° at this point, but the fence is shown at odds with the change. *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p5.

The archaeological remains at the location of No. 714/716 substantiate some of the claims made by the plans (Figure 3.62). The footings suggest that the lot had annexed another few square metres of George Street as the building of this structure was at right angles to the one at No. 712, rather than at the 19° offset that the 1823 structure adopted. The footings were 9m wide and may have

Only two post-pipes were detected. They indicated that the posts were cylindrical with diameters of about 100mm.



Figure 3.63: The southern wall footing of the structure at No. 714/716 (right of image). The fireplace support can be seen in the foreground and a dividing wall in the centre. Test trenches reveal that the structure was cut into imported topsoils. The naturally occurring subsoils can be seen at the base. View to the east. Scale 1m.



Figure 3.64: The northern wall of the structure at No. 714/716. The southern footing of No. 712 can be seen in the right of the image. View to the west. Scale 1m.

The footings were cut directly into the imported topsoil and subsoil. A wall trench (context 7438) was clearly seen along the inside and outside of the eastern wall. The wall trench was 600-770mm wide with vertical sides and a flat base to a maximum depth of 280mm. An interior extension of the footing into the front room on the southern side may have been a partial support for a fireplace however the projected location for the corresponding side was beyond the limit of excavation. Evidence for flooring support did exist in the room to the rear of this. Two groups of two sandstock bricks were set in to the levelling fill 7528 just 200mm off the footing for the southern side wall and c.1m apart from each other. These bricks may have acted as supports for a wooden floor for this room. There was no remaining evidence for the occupation of this building such as underfloor deposits or a cesspit associated with this phase.

3.7.1.3 Right-of-way

This location represented an access point to the rear of the properties on Lot 3 as well as occasionally being occupied by a yard and stables or a street-front office, or stores (which may have been at the rear). These structures were always of timber and were never described as residential. The different uses for this piece of land suggest that structures were either transient or very simple and open constructions which allowed a variety of uses. The archaeological remains of these structures are likely to have been restricted to postholes. As part of this area was later built on by the structure at No. 716, considerable disturbance was caused by the digging of footing trenches in the probable location of these structures. As a result, no evidence could be found for the occupation of this space during Phase 5. It is possible that the drain (7339) was still in use during this phase, although there was no archaeological evidence of this.

3.7.1.4 No. 718/720 George Street

This location refers to several street numbers during Phase 5 (Table 3.7). It did not represent the street numbers 718 and 720 until 1880.

1845	1848	1855	1856	1858	1861
164	650	543	543	736	736
No number recorded	649	541	541	734	734
				732	732

Table 3.7: Street numbers corresponding to the location No. 718 /720 during Phase 5.

A structure was built between 1830 and 1845, and may be the first among the Phase 5 structures to have been built on this part of the Lot. This building adheres to the 19° change in street alignment, echoing the early structure that appeared on the 1823 and 1830 surveys. Between 1845 and 1861, this building never represented less than two houses or shops. It appears to have been a four-room timber structure that was adaptable to use by up to three separate businesses and residents, as the four rooms are split several ways in the Assessment Books of the Phase 5 period (Table 3.8).

	1845	1848	1855	1856	1858	1861
Configuration	1 storey, 2 room, wood	1 storey, 2 room, wood	1 storey, 3 room, wood	1 storey, 3 room, wood	1 storey, 1 room, wood	1 storey, 1 room, wood
	1 storey, 2 room, wood	1 storey, 2 room, brick	1 storey, 1 room, wood	1 storey, 1 room, wood	1 storey, 2 room, wood	1 storey, 2 room, wood
					1 storey, 1 room, wood	1 storey, 1 room, wood
Use	2 shops	2 shops	2 shops	2 shops	2 shops, 1 shop/ house combination	3 shop/house combinations

Table 3.8: Configuration and use of the timber structure at No. 718/720 George Street.

The archaeological evidence relating to this location was limited to a fireplace support and suggestions of a wall. Some (archaeologically compromised) occupation material relating to this phase was recovered from the area in front of the fireplace, but evidence for the rest of the structure was destroyed in the early 1860s (Phase 6) when the structures on the Lot 3 frontage were redeveloped.

Structural evidence

Evidence for the structure consisted of the base of a brick fireplace, a posthole and a brick base for walling. The brick fireplace footings (context 7394) were built using flat sandstock bricks that may have dated to the 1820s but were likely re-used, as broken bricks were included (Figure 3.65). The support was two bricks wide and bonded with silty clay and a sandy clay mud mortar. Two courses survived and in total the fireplace was 1.3m in length and 700mm deep. The bricks were mostly complete, though occasional broken bricks were included. Associated with the fireplace was a possible occupation-related deposit (7397). This consisted of orange brown sandy clay with moderate charcoal flecking and small fragments of sandstone. This was a maximum of 100mm in depth. This material is likely to be a mix of fill and occupation-related material. It contained fragments of seven ceramic items, including some early lead-glaze pottery sherds, a plate fragment from an object not manufactured after 1840 and two unidentified items with wide date ranges that transcend the archaeological phases for the site.

Located to the south of the fireplace and on a north-south alignment was a line of sandstock bricks (context 7467) occupying a short distance (1.1m) between the fireplace and a posthole (Figure 3.66). It was built with incomplete bricks in a single line with some ill-fitting sandstone pieces. It was 190mm in width. It partially covered the posthole fill (7521), suggesting it would have abutted the post (located roughly in the centre of the posthole). The posthole was ovoid, with a maximum length of 600mm, a maximum width of 400mm, and a depth ranging from 280mm to 380mm. It contained a sub-rectangular post-pipe (7525) measuring 120mm x 60mm and 80mm deep.



Figure 3.65: The fireplace support within the timber structure at No. 718/720. View to the east. Scale 1m.



Figure 3.66: The southern edge of the brick alignment (7467) and the posthole (7521) after excavation. North is to the left of the image. Scale 500mm.

The brick arrangement is likely to have been the base or skirting for a wooden slab wall, supported by the post in posthole 7521. The line of a southern wall was suggested by a second posthole 3.5m west of context 7521 (posthole 7495). This was found below the gully fill of pottery wasters (context 7460). It was likely to have been later than the levelling event, but undetectable in the large pottery fragments of the matrix. This second posthole was circular in plan with a diameter of 300mm and a depth of 180mm below the base of the pit, giving it an approximate depth of 380mm.

Occupation deposit

A 70mm deep occupation-related deposit (context 7395) was spread over an area of 5.5m x 6.5m on the western side of the fireplace (the inside of the structure). This material was disturbed by later activity and was also contaminated by the pottery waster fills below; however it did contain artefacts that loosely fitted within the period associated with the occupation of the structure. The remaining deposit was excavated within a 500mm x 500mm grid and in 50mm spits, and sample sieved. From the sieving it was clear that the deposit was quite disturbed. The deposit consisted of dark greyish brown sandy silt with some organic content. It contained brick and sandstone fragments throughout, along with charcoal, bone, ceramic, shell, glass and a coin. The ceramics were largely lead-glazed pottery, signifying contamination from the fills below. However, nine imported items including a pepper shaker, two plates, two saucers, and a serving dish were represented (Figure 3.67). These items had broad date ranges, excepting one of the plates which was not manufactured after 1840. Although this deposit lacked stratigraphic integrity, this item does add some ammunition to the interpretation of this structure as the earliest of this phase.



Figure 3.67: The imported ceramics represented in the occupation deposit 7395. Russell Workman, scale 10cm.

3.7.2 Phase 5: Area C (southern part of Lot 4), 1840 - c.1860

Area C also witnessed building in this phase. The block became increasingly congested as all of the Lot 4 frontage was occupied with shops and dwellings. A single, large building and a northern laneway were the structural characteristics of this phase in Area C. It was built before 1845, although as the building illustrations on the 1837 *General Post Office Plan* are somewhat stylised (Figure 3.54), it is difficult to determine whether the structure was standing at this early date. The plan does however show that construction was increasing along George Street prior to 1840, and by the time the building in Area C was constructed it was likely part of an already crowded lot. The location of the building in Area C is represented as No. 710 George Street, although it was not

known as this number until 1880, and this location represented several street numbers during Phase 5 (Table 3.9).

1845	1848	1855	1856	1858	1861
178	654	533	533	722	722

Table 3.9: Street numbers corresponding to the location No. 710, and their relevant years during Phase 5.

3.7.2.1 No. 710 George Street

Although the date of construction is unknown, the structure's footings (7441) were very similar in style and material to those of its southern neighbours at No. 712 and No. 714/716. In 1845 it was represented in the Assessment Books as a two-storey, six-roomed brick shop with a shingled roof. Its value was £5 more than its neighbour at No. 712 but it was a considerably larger structure. Thomas Daly was in residence and Samuel Power was the owner but by 1848 the Daly family were in residence and ownership, and they owned the property throughout the remainder of Phase 5. Its configuration changed a little over Phase 5, with the most notable increase in rooms probably reflecting the use of No. 712 as an extension of the premises in 1858 (Table 3.10: see section 3.6.2 above). The Grogan grocery business occupied the premises from at least as early as 1855, and continued to make use of it as a shop and finally a house and store in 1861. The Phase 5 archaeological remains of the structure at No. 710 were restricted to a well, some sandstone and brick paving, an underfloor deposit and the footings of the shop/dwelling.

1845	1848	1855	1856	1858	1861
6 rooms	5 rooms	4 rooms	4 rooms	8 rooms	6 rooms

Table 3.10: Configuration of the structure at No. 710 throughout Phase 5.

Footings

The foundation of the building (7441) described a structure 8m wide and up to 11m long (by projection based on plans and the limits of the lot boundary). The exposed remains were 8m x 8m and included a dividing footing that split the structure into a front and a rear room (Figure 3.68). The rear room was 6.5m x 3.2m with angles of 100° and 80° in the northeast and southeast corners respectively. The front room was exposed to an area of 6.5m x 3.5m, but it may have been as large as 6.5m x 5.5m. The footings were of roughly cut, rectangular blocks of sandstone laid in two rows with smaller packing stones and buff shell sand mortar between the blocks. The footings were 460-500mm wide throughout, and up to three courses deep. Sand/shell mortar had been liberally applied to the top of the stones in the southeast corner to create a level surface, suggesting that this may have been the point at which the footing met the superstructure. The lower courses of stone only contained a mud mortar. A 350-500mm wide wall trench cut the remnant topsoil, and the footings were sitting directly on the natural yellow clay (7536).

To the east of these footings the partial remains of a wall (7443) running roughly parallel to the main structure were recorded (Plan 15). This wall was constructed of rubble stone with no evidence of mortar and only a 4.1m length of a single course remained. The wall and shallow footing were slightly narrower than the main building (440mm) and presumably supported only a single-storey building, such as shed or other additions that appear on the 1865 survey plan (Figure 3.57). The projected wall was on the same alignment as the rear footings and wall (7603) of 712 George Street in Area B (Figure 3.62) but without evidence of any underfloor deposit it was not possible to further date this feature.

The front room contained a fireplace support (7576, Figure 3.69) built into the interior of the north wall. It was rectangular in shape, constructed with a neat row of roughly cut but neatly fitting rectangular blocks in two courses. The central cavity was filled with irregularly-shaped stone rubble. The entire support was 580 x 600 x 300mm. There was no hearthstone.

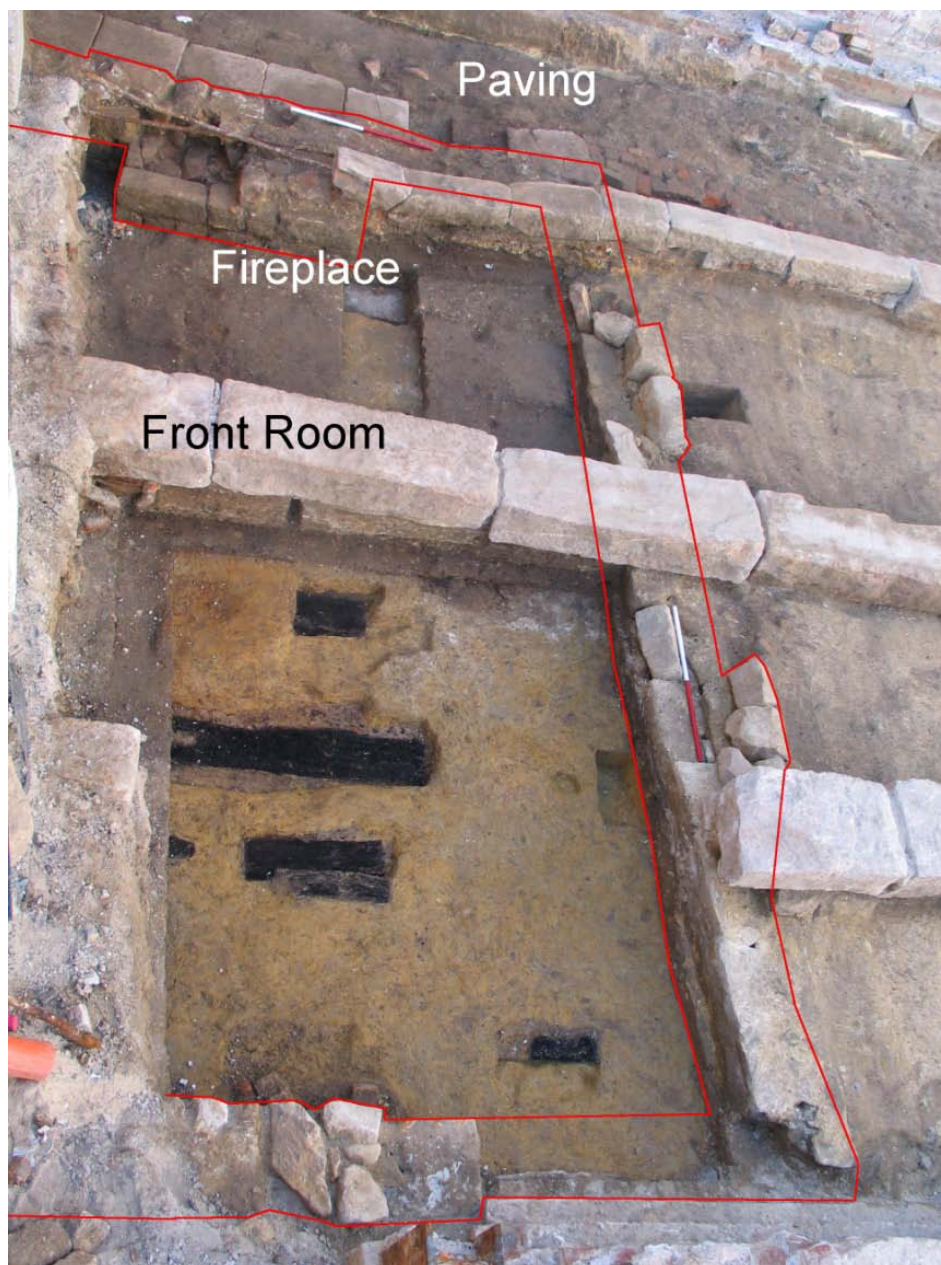


Figure 3.68: The large front room of the structure at No. 710 George Street. The remains of the footings have been outlined in red. The fireplace and the paving can be seen near the top of the image. View to the north. The dark remains of cuts containing timber planks and associated fill (7543, 7544) were visible following excavation of the underfloor deposit (7444) and construction fill (7519). Scale 1m



Figure 3.69: The sandstone fireplace support against the north wall of the front room. The sandstone paving can be seen beyond. A later footing has been built over the fireplace. View to the north. Scale 1m.

Construction debris

Patches of material associated with the construction of the building (7519) yielded glass artefacts that supported an 1840s construction date. Datable beer/wine bottles were manufactured before 1850. Window glass was very thin crown glass (1.0-1.4 mm) that was not imported after the mid-nineteenth century. In addition, glass stemware had a central knob that was in fashion between 1780 and the 1840s.⁵⁷ Of the few ceramics found in the fill, the latest TPQ dates were c.1830 or just later, with dates for final manufacture extending to c.1860s/1870s.⁵⁸

Underneath the construction debris several shallow cuts (7540, 7453) were revealed cutting into the natural clay (7536). These cuts were located within the bounds of the room footings (7441) and contained planks of wood of varying sizes (Figure 3.68). The fills (7541 and 7544) around the wooden planks were similar to 7519 and there was no evidence of cuts through 7519. It is likely that when the interior changes took place to this building post-1860, the old floor surface was removed from Room 1 and all fills and deposits were cleared back to the natural clay (7536). When the internal renovations took place the timbers may have been used to support scaffolding and the traces of this then covered by associated construction debris (7519).

Underfloor deposit

The front room of the building at No. 710 contained an underfloor deposit (7444) that was littered with ceramic and glass artefacts, with date ranges spanning the nineteenth century (Figure 3.70).

⁵⁷ Section 9.3

⁵⁸ See Appendix 5.4 for Ceramic catalogue.

Because of the wide date ranges, and the conflated stratigraphic nature of an underfloor deposit, no artefacts could be securely tied to this or any other phase, but the underfloor deposit consistently overlay the construction fill (7519). This deposit therefore represents a gradual but temporally indivisible accumulation. The discussion of the underfloor material has been included in this phase as it is the earliest possible date for deposition, and almost certainly includes among its fragments artefacts from this period. However, this material is by no means as exclusive to this phase as other features are discussed in this section.



Figure 3.70: The underfloor deposit at No. 710 George Street. View to the east. Scale 1m.

The underfloor deposit (7444) consisted of mid- to dark brown coarse grained clayey sand with inclusions of sandstock brick, sandstone and shell fragments and frequent charcoal flecking. The deposit was inconsistent in depth (between 20mm and 110mm), and often amounted to less than 50mm. It was excavated in a 500mm x 500mm grid, in 50mm spits as stratigraphic constraints. The excavated underfloor deposit covered an area of approximately 6m x 3m, although an unknown quantity existed beyond the limit of excavation to the west.

Imported ceramics manufactured in the United Kingdom dominated the ceramic assemblage in this underfloor deposit. The appearance of lead-glaze ceramic fragments in the underfloor deposit was probably the result of contamination from levelling fills below. The 61 imported items, representing 78.2 per cent of the ceramics, were indicative of the overall domination that the United Kingdom had achieved within the worldwide ceramic marketplace as a whole by the mid nineteenth century.⁵⁹ A total of 15 decorative ceramic types were represented in the underfloor deposit and these generally indicate some of the variety of ceramics that were available to the consumer within the Sydney marketplace as the nineteenth century progressed. The items had long periods of manufacture and were certainly available for the lifetime of the structure. Thirty-five items had identifiable characteristics, representing a breakfast cup, three bottles, nine teacups, a dish, seven plates, 12 saucers and a single teapot. Forty-three items remained unidentified. The assemblage

⁵⁹ Section 9.1

indicates domestic use, suggesting that a second room (beyond the limit of excavation) was the street-front representative of Grogan's grocery business.⁶⁰

Glass from the underfloor deposit yielded much the same information as the ceramics. Items with wide date ranges dominated the deposit, although over half of the bottles represented were manufactured after 1850. The underfloor deposit had a high relative frequency of window glass (see Figure 3.29). Food and beverage items comprised just over forty-three per cent of the room's underfloor deposit. Food-related items consist of condiment bottles such as oil, vinegar pickles and chutney, as well as club sauce type stopper used in sauce, oil and vinegar bottles. Beverages were represented exclusively by alcohol bottles, including beer/wine, champagne, gin and gin/schnapps. There were a variety of pharmacy-related items, including five castor oil bottles, a vial, a 4mm hexagonal tube and seven generic patent medicine/chemist bottles.⁶¹ The artefacts in the glass assemblage again suggest domestic consumption over grocery stock, but paint a more general use of the ground floor space than the exclusively food and beverage items represented by the ceramics.

There were 1380 fragments of bone in the underfloor deposit, representing sheep, cow, pig, bird, rodent and fish. Sheep bones were in the greatest quantity, with most coming from the trunk of the animal.⁶²

Paving

On the northern side of the building was an area of sandstone and brick paving (context 7537; Figure 3.71). The sandstone elements were well-cut flagstones 70-80mm in height arranged in a neat row up to 600mm wide and at least 4m long against the northern side of the footing. 1.3m of broken and whole sandstock bricks laid in up to four haphazard rows continued the path eastwards. The paving was laid on modified loamy topsoil. This aperture between buildings may be the one represented on Woolcott and Clark's 1854 survey (Figure 3.72), although the incoherence of the represented properties with established lot boundaries makes this interpretation somewhat insecure.

⁶⁰ Section 9.1

⁶¹ Section 9.3

⁶² Section 9.4



Figure 3.71: The paving on the northern side of the structure at No. 710. The paving continued beyond the limit of excavation. View to the west. Scale 1m.

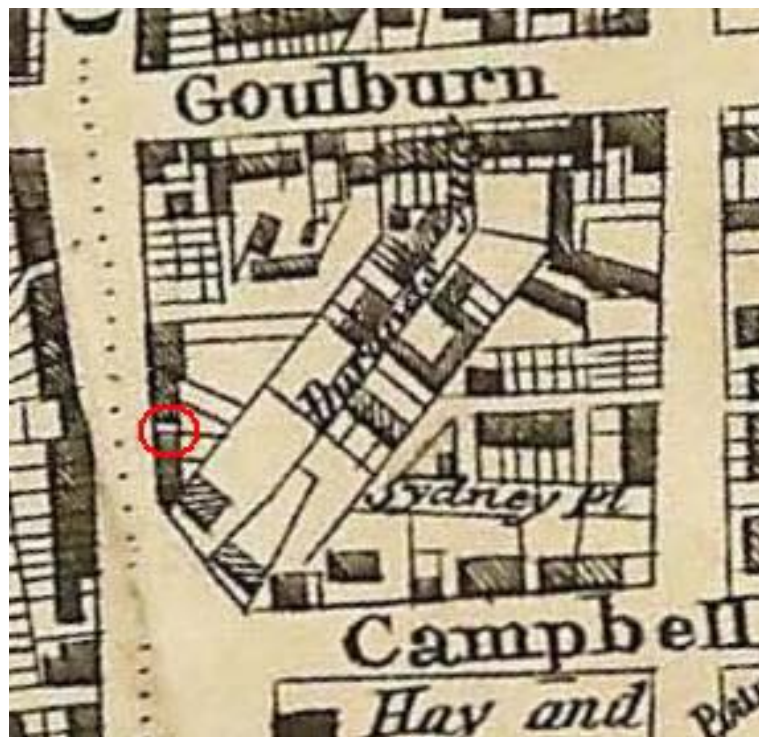


Figure 3.72: Detail of Woolcott and Clark's 1854 survey showing the possible location of the alley on the northern side of No. 710 (circled). North is to the top of the image.

Well

A sandstock brick well (7520, Figure 3.73, Figure 3.74) was located 3.8m from the rear of the building. The well was cylindrical to a depth of 4m with an internal diameter of 1.46m. The bricks were all flat sandstock bricks bonded with mud mortar in a stretcher bond. There were small gaps between the bricks in the well known as “putlog holes”. These small gaps were used to insert a short plank of wood for getting in and out of the well during its construction. The bricks measured 240 x 115 x 70mm. As the bricks were all flat sandstock bricks it is likely that this well was constructed around the 1840s and would be contemporary with the structure at No. 710. The well contained five fills. Artefactual and palynological analyses suggested however that none corresponded to this phase (see Phase 6 below).



Figure 3.73: The well during excavation, showing later disturbance in the form of a concrete footing. View to the east. Scale 1m.



Figure 3.74: The interior of the well after machine excavation removed the eastern side. The well was 4m deep. View to the west.

3.8 Phase 6 Areas B and C: 1860s to c.1890 – Commercial and residential redevelopment

During this phase several major changes took place that indicated a positive move from the slum-like conditions of the mid-nineteenth century. For the most part, these changes took place in Lot 3 (Area B). Rebuilding in Lot 3 saw the construction of three new two-storey buildings and a reinstatement of the original Lot 3 boundary south of No. 712. In the southern part of Lot 4, the yard of the two-storey building at No. 710 was filled with stores and commercial activity continued throughout Phase 6 (Figure 3.75).

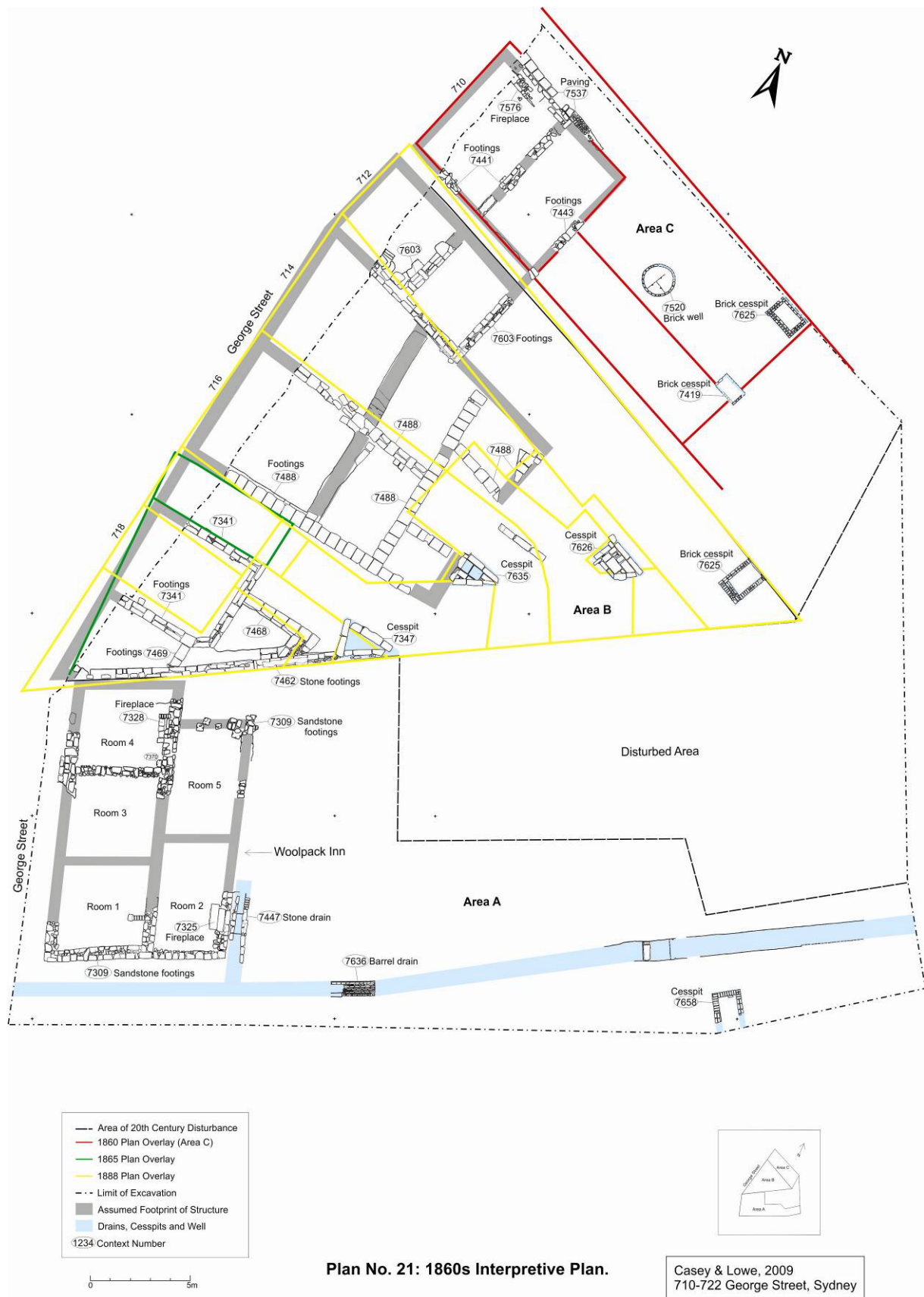


Figure 3.75: Interpretive plan showing the archaeological remains and projected configurations of buildings in Phase 6. (Plan 21, Section 10).

3.8.1 Phase 6: Area B (Lot 3), 1860s-c.1890

Area B (Lot 3) underwent significant change at the start of Phase 6. All but one of the shops and dwellings that had characterised the street-front during Phase 5 were pulled down between 1861 and 1863. Only the structure at No. 712 (then known as No. 724) remained. By 1863, three new two-storey buildings had been constructed (Figure 3.76). The new buildings had between six and seven rooms each and included shops fronting George Street. The buildings remained throughout Phase 6 and were still standing at the turn of the century. During Phase 6, bakers, milliners, confectioners, saddlers, a tobacconist, a boot manufacturer and a hairdresser were among those who sold from the shops lining the street frontage of Lot 3 (Figure 3.77).

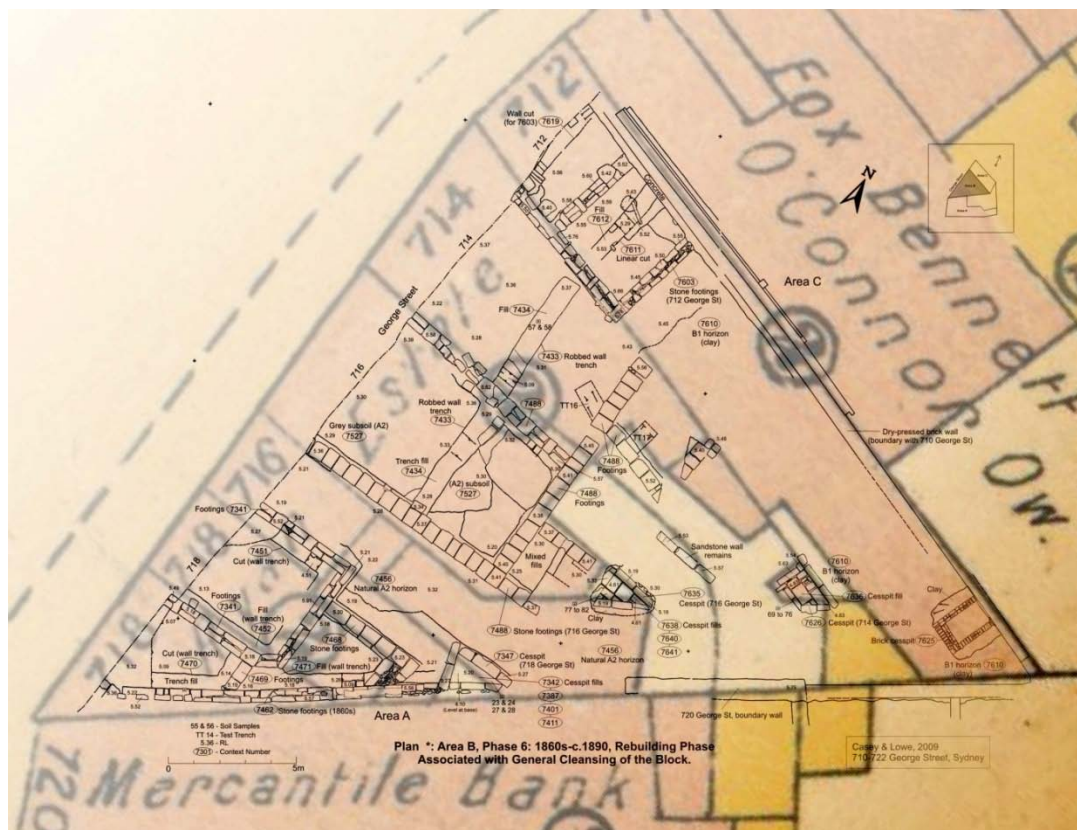


Figure 3.76: Overlay of the archaeological plan with the 1888 survey showing the correlation between the Phase 6 remains and the historical plan. This overlay gives some indication of the extent of the remains beyond the limit of excavation. Detail taken from *City of Sydney 1888 / W.F.P. & A.W.M. Sydney & Suburban Map Publishing Co., 1888* NLA ref: MAP RM 722, Tile b1.

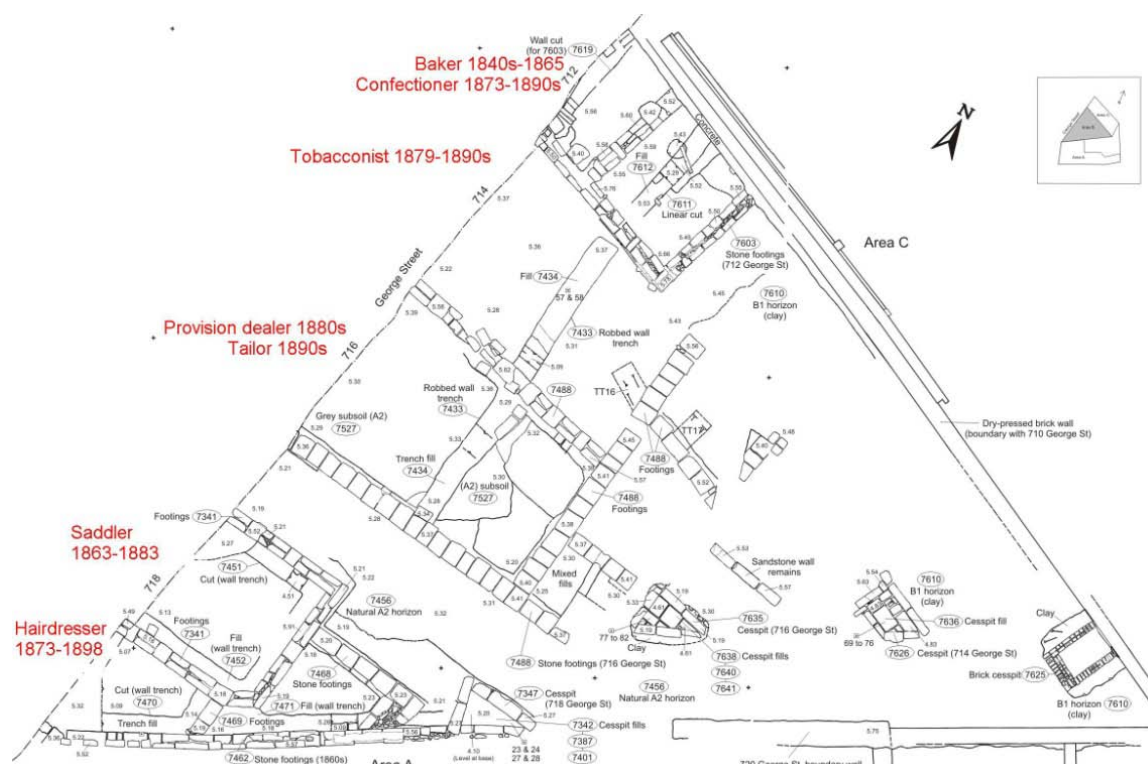


Figure 3.77: Plan showing some of the long-standing retailers that occupied the street-front of Lot 3 during the second half of the nineteenth century (Extract from Plan 11, Section 10).

3.8.1.1 No. 712 (No. 724 until 1880)

The building at No. 712 remained standing throughout this phase, although in 1863 it appeared to be in quite a poor state compared to its new southern neighbours. Its value stood at less than half of those it shared the lot with. By 1867, however, either the new buildings had deteriorated rapidly or improvements had been made at No. 712, as all properties shared the same value of £130.

The building was occupied by a confectioner for most of this phase (Edward Fitzgerald in 1865, Jeremiah Callaghan for at least 10 years including the period 1873-1883, and the Cahill brothers in 1888). A baker and a hatter utilised the premises in the intervening years. By 1888 buildings occupied most of the land, and at the end of this phase in 1891, the premises are described as a shop and bakehouse. The archaeological evidence that could be securely dated to this phase was limited to the backfill within the cesspit (7625). This may have occurred sometime in the 1870s when plumbing was installed.

Cesspit backfill

Within the cesspit (7625) was a dark brown silty material with a high organic content that may represent cess material from the last use of the pit (7630). It was less than 100mm deep and contained only glass artefacts. The artefacts consisted of three beverage bottles, including gin/schnapps bottles, a beer/wine bottle and an aerated water bottle. The gin/schnapps bottles date from the turn-of-the nineteenth century, the aerated water bottle had an 1820–1920 date range and the beer/wine bottle had an 1850–1920 date range.⁶³

The main backfill was context 7627, a fill of building rubble and sand. Only eight ceramics were recovered from the cesspit backfill, all manufactured in the United Kingdom. Two identified

⁶³ Section 9.3

transfer-printed patterns were recognized and two items had conjoins with another context (a cesspit backfill, context 7632, associated with No. 714 George Street; Figure 3.78). This suggests that material from the same source such as a rubbish dump was used to fill all of the cesspits on the lot at the same time, prior to the plumbing installation.⁶⁴

The glass from the backfill of the cesspit represented 36 items. Like the ceramics, they had wide date ranges, and the majority of artefacts represented food and beverage items. Food-related items were condiment bottles, a stopper and tableware. Condiments included pickles and oil. The stopper was a club sauce type used as closure for sauce, oil and vinegar bottles. Tableware consisted of tumblers, one stemware piece and an open dish. Beverage items were mostly alcohol bottles (beer/wine, champagne and gin/schnapps) and one aerated water bottle. Household items were ornamental (a vase and a lid). Service items were a lamp chimney and shade from a vertical wick lamp. There was also a perfume bottle that imitated a scroll flask. The high relative frequencies of glass food and beverage items were consistent with refuse from a residential setting.⁶⁵

The backfill contained no bone or shell. Context 7630 which may have been related to the last use of the cesspit contained only one shell fragment (*Ostrea angasi*, or mud oyster).



Figure 3.78: The two items with conjoining sherds between cesspit fills 7627 and 7632 (cesspits 7625 and 7626 respectively). Russell Workman, scale 10cm.

3.8.1.2 No. 714 (No. 726 until 1880) and No. 716 (No. 728 until 1880)

The buildings constructed at Nos. 714 and 716 at the start of this phase were brick structures with slated roofs. The archaeological remains consisted of sandstone footings and cesspits at the rear of the yards. The two-storey buildings at Nos. 714 and 716 were constructed together with continuous footings and a party wall. The footings that survived consisted of a single course of sandstone blocks within a wide construction trench. The front of the buildings followed the 19° offset of the lot boundary, and an attempt to avoid acute angles in the corners of the rooms

⁶⁴ Section 9.1

⁶⁵ Section 9.3

resulted in wedge-shaped structures and yards. The main footing for No. 714 and No. 716 (7488) consisted of comparatively well-hewn and substantial blocks of sandstone in one row 700mm wide. The main rear and southern side wall footings survived as well as the party wall footing which was slightly less substantial.

Two internal spaces were clearly described on the ground floor of each building, although the footing for the interior wall had been removed in both cases, and only a robber trench remained (Figure 3.79). The rear rooms at Nos. 714 and 716 were 3.2m x 4.7m and 3m x 4.7m respectively. Given the relatively narrow width, angles close to 90° were able to be maintained in the corners of the rear rooms, although some compromise was made to keep the east and west walls as close to parallel as possible. Manipulating the two geometric components helped the rooms maintain some illusion of rectilinearity. At No. 716, angles of 83° and 97° were measured in the northwest and northeast corners, and at No. 714, where the wedge was more exaggerated, angles of 74° and 106° were suffered to keep the walls parallel.

No. 714 utilised the southern wall of No. 712 to the north. It had no northern footing of its own. An extension at the rear was laid with the same foundation stones, indicating that it was part of the original layout. The extension had internal dimensions of around 2.8m x 2m.



Figure 3.79: The rear room at No. 714. The robbed-out dividing wall can be seen as a strip of darker soil in the centre, parallel to the back wall in the foreground. View to the west. Scale 1m.

Exposure of the entire footing was restricted by the limits of excavation and at the front of the buildings the rooms were only partially uncovered. The excavated internal space at the front of No. 714 was 5m x 4m. The plans dating to this phase indicate that there may have been a further 2-3m x 5m beyond the limit of excavation towards the street-front (Figure 3.76). The implications of this are that there was an additional ground floor room beyond the site boundary. During this phase the building contained up to seven rooms, and as No. 714 was sharing its northern and southern

walls, an additional dividing wall would have helped support the upper storey over such a large space (Table 3.11).

Year	1863	1867	1871	1877	1880	1882
Configuration	6 rooms	6 rooms	6 rooms	6 rooms	7 rooms	4 rooms

Table 3.11: Configuration of No. 714 during Phase 6.

The excavated internal space at the front of No. 716 was also 4m x 5m (Figure 3.80). An additional 2-3m x 5m may have once been part of the ground floor but was beyond the limits of the site. Again, this space may have represented an additional ground floor room. No. 716 contained up to eight rooms during this phase (Table 3.12).

Year	1863	1867	1871	1877	1880	1882
Configuration	7 rooms	6 rooms	7 rooms	6 rooms	8 rooms	5 rooms

Table 3.12: Configuration of No. 716 during Phase 6.

The internal space of both buildings was at its most divided between 1877 and 1882. At this time, No. 714 was occupied by William Dunlop (a chiropodist) and Loughnan Cornelius (a tobacconist), and No. 716 was being put to good use by Samuel Joseph Kerr and his boot warehouse, with writing master J.C. Hall Fitz-John also in residence.



Figure 3.80: The footings at No. 716. The party wall with No. 714 can be seen at the right, while the rear wall is in the foreground. View to the west. Scale 1m.

Cesspit at No. 714

The cesspit (7626), at No. 714 was located just 5m from the rear of the building. Its shape described three sides of a rectangle, with the fourth dictated by the boundary alignment at the rear of the lot. As in the rest of the construction at No. 714, this showed a desire to maximise the available space, a stark contrast to just 30 years previous when a single structure stood in open grounds within the same lot. The cesspit was constructed from neatly cut but not dressed rectangular sandstone blocks (Figure 3.81). The sandstone blocks of the cesspit appeared to have been laid directly against the walls of the construction cut, as no packing for the stone blocks was visible at the surface, and the cut through the yellow B horizon clays (7610) was undetectable. The cesspit was a minimum of three courses deep and measured 2080mm x 1420mm x 280mm overall. Both whole and partial rectangular sandstone blocks were used in its construction. The blocks were 300mm wide with varying lengths (420mm-960mm). The walls of the cesspit were one course wide with the courses laid header-to-header alternating to the one below, creating a 'running bond'. Evidence of a buff/yellow coloured sandy mortar was found between the blocks. The cesspit had a sandstone flagged base. It was similar to the cesspit construction at Nos. 716 and 718.



Figure 3.81: The cesspit at the rear of No. 714. The angled wall at the back reflects the line of the alley that ran along this side of the lot boundary. View to the east. Scale 1m.

The cesspit contained four sandy fills (7634, 7633, 7632, 7631), although conjoins during artefact analysis revealed that all belonged to the same backfilling event. In addition, fragments of artefacts were found that conjoined with those found in the cesspit at No. 712 to the north (Section 3.8.1.1: No. 712). The implication is that all cesspits in the lot were backfilled at the same time, coinciding with the installation of plumbing on the block.

The ceramics recovered from this cesspit were predominantly associated with food – its serving and consumption – and appear to indicate that these items were perhaps put here as part of a final dumping and clearing out of household materials when the cesspits were connected to the main sewer line and then backfilled with domestic refuse. The five “Willow” pattern items, a tureen and four plates (Figure 3.82), suggest that matching dinnerware had been in use, and the presence of another decorative ware, sprigged bone china in a recurring design (Figure 3.83), supports this. All

items had date ranges comfortably covering the mid-nineteenth century, with some items not manufactured after 1870, supporting a c.1870s date for the backfilling events.⁶⁶

The glass within the cesspit supported the proposed date of backfilling, with temporal information gleaned from the artefacts suggesting a probable deposition in the late nineteenth century and most likely c.1870. The 37 items included bottles for personal grooming products, medicine, condiments and alcohol, as well as glass tableware and lamp chimneys and a shade.⁶⁷ Only one of the fills (7632) contained any bone. Sheep were represented by two fragments of femur, one rib and metacarpal. Cow was represented by a fragment of rib and scapula. There was no shell within the cesspit.



Figure 3.82: Items from the cesspit at No. 714 (fill 7632) including four willow pattern plates. Russell Workman, scale 10cm.



Figure 3.83: The sprigged bone china ware recovered from the cesspit at No. 714 (context 7632). Russell Workman, scale 10cm

Cesspit at No. 716

The cesspit at No. 716 (7635) was located against the rear of the building. As in the case of No. 714, maximising space was a primary concern; the cesspit was constructed in a triangular form between

⁶⁶ Section 9.1

⁶⁷ Section 9.3

the alley and the back of the building (Figure 3.84). Like its northern neighbour, it was constructed from rectangular sandstone blocks. It was a minimum of two courses deep and measured 2300mm x 2000mm x 600mm. Mostly whole rectangular sandstone blocks were used in its construction. On average they measured 250mm x 250mm with lengths varying between 150mm and 900mm. The walls of the cesspit were one course wide with the courses laid header-to-header alternating to the one below, creating an off-centre 'running bond'. Evidence of a greyish/beige sand, shell, charcoal, and clay mortar was found between the blocks. The cesspit had a sandstone-flagged base made up of mostly rectangular well-cut, smoothly faced sandstone blocks, at times cut to fit the triangular shape of the structure. There was no evidence of cess material in this pit.



Figure 3.84: The sandstone cesspit at No. 716. The longest side describes the boundary of the alley at the rear of the lot. View to the east. Scale 1m.

The backfill of this cesspit (7640, 7641, 7642) contained only seven ceramics (a pudding bowl, two cups, two saucers, a child's mug and a pot). All possessed broad date ranges spanning most of the nineteenth and the early twentieth century. None of the seven ceramics featured basemarks, identifiable patterns or had conjoins with any other context.⁶⁸ The cesspit backfills also contained 21 glass artefacts, representing 10 individual items. The uppermost fill layer (7642) contained the most glass items (eight), including window glass from after 1870, plate mirror glass, and a bottle for one of the many Ayer's famous patent medicines (with date ranges of 1838-1939). In the fill layers below there were remnants of schnapps bottles that were manufactured between 1800 and 1850.⁶⁹

3.8.1.3 No. 718/720 (No. 730 until 1880)

The new structure at No. 718 resembled its northern neighbours in many ways (Figure 3.85). It had sandstone footings utilising large and well-cut stones that hugged the boundaries in its small corner of the lot. Room shape was unconventional to maximise interior space, and only one room could claim to be close to rectangular. During this phase the structure at No. 718 was split into two

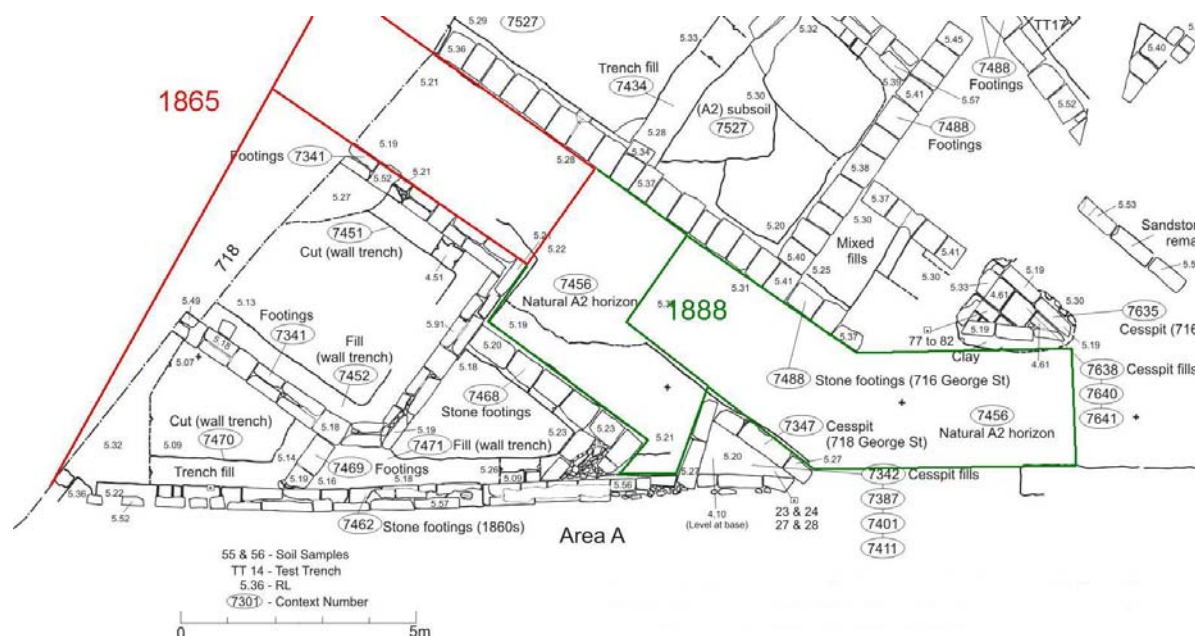
⁶⁸ Section 9.1

⁶⁹ Section 9.3

premises, and the property annexed areas of the laneway to the west and above the covered entry between itself and No. 716, allowing it to boast of ten rooms in 1880.

Year	1863	1867	1871	1877	1880	1882
Configuration	6 rooms	6 rooms	6 rooms	5 rooms	6 rooms	3 rooms
				2 rooms	4 rooms	2 rooms

Table 3.13: Configuration of No. 716 during Phase 6.



Cesspit

The cesspit (7347) was similar in construction to its northern neighbours and almost identical in shape to that of No. 716 (Figure 3.86). It was located just 1.2m from the rear of the building. Its construction utilised rectangular sandstone blocks, although these were much more roughly cut than those used in other cesspits on Lot 3. It was four courses deep and measured 2m x 1.25m x 1.17m overall. Mostly whole rectangular sandstone blocks were used in its construction. All of the blocks were well-cut but poorly dressed, with visible tooling marks (i.e. vertical and diagonal notches) and measured 200mm wide x 250mm high with lengths varying between 950mm and 400mm. The walls of the cesspit were one course wide with the courses laid header-to-header alternating to the one below, creating a 'running bond'. Evidence of a dark grey coloured clayey sand mortar was found between the blocks. The cesspit had a sandstone-flagged base made up of mostly rectangular well-cut yet poorly-faced sandstone blocks, at times cut to fit the triangular shape of the surrounding structure.



Figure 3.86: The cesspit at No. 718. At the right of the image is the boundary with Lot 2 (Area A). View to the east. Scale 1m.

The cesspit contained no deposits pertaining to its use. The backfills of the cesspit yielded 570 glass artefacts, representing a minimum of 88 items. Two very sandy fills, dumped in succession (contexts 7342 and 7387), surrendered all of the glass artefacts. The upper deposit (7342) contained seven glass bottles dating to between 1850 and 1920. Identified bottle forms included two champagne type bottles and one generic medicine bottle. The next fill layer (7387) contained 63 glass items. With the exception of one piece of plate glass, they were all bottles. The plate glass artefact was a single piece of glass measuring 125mm x 63.5mm x 6.3mm with all four edges finished. The bottles included five of beer or wine, 22 of champagne and 28 of gin/schnapps. It is worth noting that the beer/wine bottles could be refilled at the pub or hotels from casks, whereas gin/schnapps and champagne would have been imported and sold in bottles only during this period. Five of the gin/schnapps bottles had date ranges of 1800–1850, 11 were from 1820–1870 and seven were

manufactured between 1850–1900. Dates for the beer, wine and champagne bottles all fell within these ranges, with the champagne bottles appearing only after 1850.⁷⁰

The 23 ceramics that were found in the cesspit backfills were predominately associated with food, in particular its consumption (tableware and teaware). They included a tureen, five plates, a cup, and three saucers (Figure 3.87). The 15 food-related items represent 65.2 per cent of the cesspit's ceramic assemblage, with the one other identified item associated with personal hygiene (a ewer). The remaining seven items were all catalogued as unidentified, both in function and shape, reflecting the overall small size of the ceramic sherds found in the three fills. The ceramics were generally indicative of domestic household refuse.⁷¹



Figure 3.87: The 23 ceramics from the cesspit at No. 718 (7342, 7387, 7401). Two locally-made lead-glazed earthenware sherds are at the top right. Russell Workman, scale 10cm.

Bone within the fills was largely restricted to context 7401, excepting a fragment of pig humerus from context 7387. The faunal assemblage included 11 rat bones, 3 cow ribs, a chicken vertebra and fragments of pig astragalus (foot bone) and femur. Sheep bones dominated the assemblage, and all were foot or shin bones excepting two fragments of rib and a femur (thigh bone) fragment.

3.8.2 Phase 6: Area C (southern part of Lot 4), 1860s-c.1890

The Phase 5 building at No. 710 continued to be in use throughout most of Phase 6, although by 1888 it had been pulled down and replaced by a large elongated structure that may have been split to accommodate two or three businesses (Figure 3.88). It appears that the Phase 5 building was demolished sometime in 1882 or 1883 as suggested by the notes of the Assessment Books and the occupants listed in the Sands Directory. The archaeological remains pertaining to the original Phase 5 building were limited to the backfilling of the well and the construction and then backfilling of two cesspits after they became redundant when plumbing was installed.

⁷⁰ Section 9.3

⁷¹ Section 9.1

No. 710 was occupied by grocers (first Thomas Grogan and then in the late 1860s the Lenehan Brothers) until the early 1870s. That decade saw Edward Lidbury's Berlin wool and fancy warehouse and John Mulholland's fancy toy bazaar take up residence. In the early 1880s, shortly before the Phase 5 building was demolished, it was occupied by a tobacconist as well as the fancy bazaar. By 1865 there were at least two large structures at the back of the premises that were accessed by a lane from the street-front. The construction of these two buildings may have prompted the relocation of the cesspit, and the building of a second, as the lot witnessed increasing activity during the 1860s.

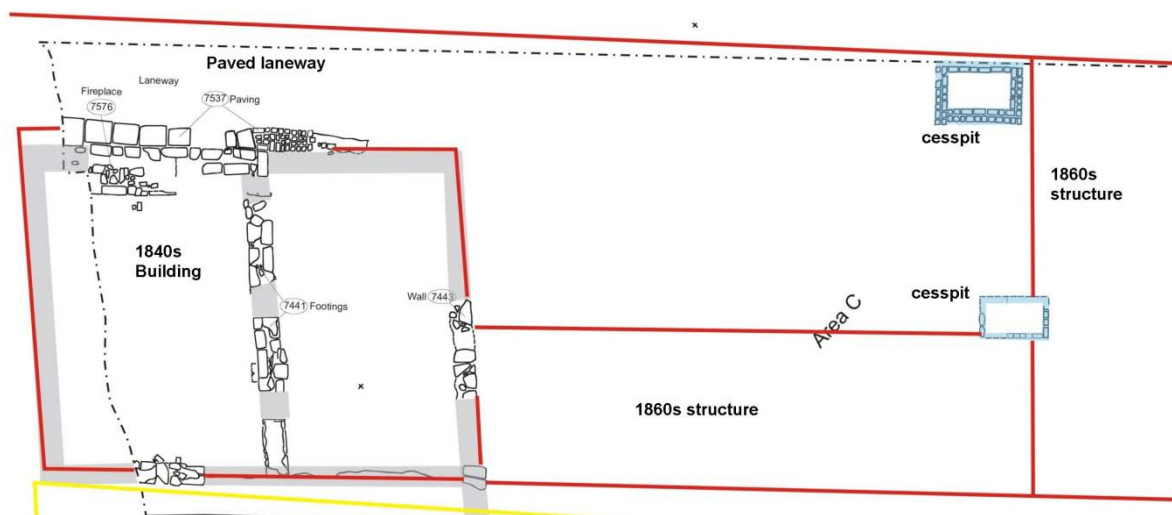


Figure 3.88: An overlay of the archaeological plan and the 1865 Trigonometric Survey of Sydney (represented by red lines) showing the relationship between the archaeological remains and the historical plan. The cesspits are shown at the eastern end of the yard against two Phase 6 structures. (Extract from Plan 21, Section 10).

Cesspits

Two cesspits (7418, 7419) were found in Area C. Both were constructed from sandstock bricks manufactured in the 1850s, although the bricks appeared to be recycled. The cesspits probably date to the early part of this phase when activity in this part of the lot intensified and much of the land at No. 710 was occupied by buildings. The construction of the cesspits probably coincides with the building of the large structures in the yard. Relocating them to a place accessible from the street-front would have been the only way to get them emptied on this part of the lot.

The cesspits were located 8m from the rear of the 1840s building, at what were then the northeast and southeast corners of the yards. The northern cesspit (7418) was constructed from sandstock bricks and was a minimum of eleven courses deep (Figure 3.89). It measured 1.7m x 1.35m x 820mm. Both whole and broken sandstock bricks were used in its construction. Some of the bricks were flat while others had shallow rectangular frogs (110mm x 30mm x 10mm) and measured 230 x 115 x 70mm. The bricks with the frogs can be dated to c.1850s but all appear to have been either reused bricks or seconds. The flat bricks had a date range of 1800-1850. The walls of the cesspit were two courses wide with the bricks laid header to header forming a stretcher bond. Only one course of the north wall was visible. Evidence of a buff coloured sandy shell mortar was found between the bricks. The cesspit had a natural clay base.

The backfill of this cesspit (7459) was all late nineteenth-century fill. The fill was mostly brownish-grey sand with large brick, sandstone, render and plaster inclusions. There was no artefact rich cess

deposit which suggests that these cesspits were completely cleaned out before they were backfilled. Only 15 ceramics were recovered from the cesspit backfill, six of which were whole salt-glazed stoneware penny ink bottles. In addition were fragments of two plates, a platter and three saucers (Figure 3.90). None of the ceramics featured basemarks or had conjoins with any other context.



Figure 3.89: The northern cesspit at No. 710 (context 7418). View to the northeast. Scale 1m.



Figure 3.90: Ceramics within the northern cesspit backfill at No. 710 (7418). Russell Workman, scale 10cm.

The southern cesspit (7419) was also constructed from re-used or sub-standard sandstock bricks in a stretcher bond. This cesspit was less substantial, however, with walls just one row wide. Only five courses of this structure remained. The bricks were again a mix of broken sandstock bricks. Some

had rectangular frogs and there were also some diamond-shaped frogs. A sandy bedding (mud mortar) was between the bricks. It contained occasional shell specks. This pit also had a natural clay base. Only the eastern end of the structure survived.

The backfill (7445) was similar to that found in 7418, a yellow-grey clay loam with brick and charcoal inclusions, few artefacts and no evidence of any cess-like fill. Only three ceramics (10 sherds) were found in the cesspit backfill, none of which featured basemarks, identifiable patterns or had conjoins with any other context. The fragments were from a toiletry box, a saucer, and an unidentified lead-glazed item (Figure 3.91).



Figure 3.91: Ceramics from the backfill of the southern cesspit (7419) at No. 710. Russell Workman, scale 10cm.

Well backfill

The Phase 5 well (7520) at No. 710 was backfilled prior to the construction of the large building in the 1880s. During the 1860s and 1870s it occupied a place in the centre of the yard, and may explain why the yard structures during this time were built in such a way as to leave the area around the centre of the lot empty. Although conjoins were found between two ceramic items in well fills 7645, 7466, 7657, 7568 (the upper four fills) and between one glass item in the lower four fills, the overall nature of the deposits within the well suggest that it was not filled in a single event. The upper two deposits (7465, 7466) contained a mixture of demolition debris to a depth of c.1.5m which was removed by hand.⁷² The remaining fills, which were removed by machine and sieved (7567, 7568, 7569), were noted to represent a change in the nature of the deposit. These deposits consisted of dark brown loamy sand which became darker and wetter with increasing depth. The lower levels contained higher concentrations of artefacts and less demolition debris. It is noted that the dates of a few items in the main well fill suggest an early twentieth-century date but it is considered likely these artefacts were disturbed into the material due to the machine excavation of the well deposits.

⁷² Excavation records assign the upper fills to later phases associated with demolition.

The base fill (7569) consisted of waterlogged and coarse-grained dark grey sands and some organic material. Brick and stone fragments and an abundance of artefacts littered the deposit. Palynological analysis of this material revealed trace numbers of the sewage indicator *Cloacasporites*, and it was noted that the pollen assemblage strongly resembled those recovered from nineteenth-century cesspits in Sydney and Parramatta.⁷³ This material probably represents a period during which the well remained open but was not in use. This may have been a short time before backfilling, when refuse was dumped into the hole for reasons of convenience. If the well was not in use when the cesspits were backfilled, then it is possible that the remaining material from those structures was cleaned out and dumped in the much deeper hole in order to expedite their backfilling and modification. The remaining fills were of demolition material and rubble, with the top metre containing some concrete and machine-made bricks. The location of the well was covered over by a building in the 1880s.

Analysis of the five fills (7569, 7568, 7567, 7466, 7465) in the well identified that the backfilling occurred as one event. This was confirmed by the presence of ceramic conjoins identified between the fills.⁷⁴ Twenty-six identified ceramic shapes were recovered from the well, represented by 175 items, with the remaining 33 items being unidentified (unidentified body and base sherds). The shapes within the well reflect a backfill of household domestic rubbish. Items associated with food – its serving, storage and consumption – dominate the assemblage, with 123 items representing 70.3 per cent of the identified shapes found (Figure 3.92, Figure 3.93). This domination of artefacts associated with the consumption of food reflects the greater risk of breakages for items that were commonly used every day, and often more than once a day. Teaware items in particular feature in high numbers here, with 28 cups, 18 saucers, nine breakfast cups, three slop bowls, two teapot lids, three eggcups, 13 small plates and one milk or cream jug. Tablewares also features highly, with 23 plates being the second-most commonly identified shape after the 28 cups. The serving of food was represented by the shapes of five jugs, four platters, two tureens, a dish and a ladle; food storage by seven jars and a bung jar; personal hygiene by four ewers, two chamber pots and an ointment/toothpaste jar; medicinal by two ointment jars; household maintenance by 13 blacking bottles, household ornamentation by a figurine; and writing by nine ink bottles and a penny ink bottle. There were 19 stoneware bottles, identified only with the function of container as they were represented by body or base sherds and their specific shape/function remained unknown.

⁷³ Macphail 2010, Pollen Report, volume 2, section 9.6 of this report

⁷⁴ Ward 2010, Table 2.38.



Figure 3.92: An example of ceramic artefacts from the well backfill (7567) at No. 710. Russell Workman, scale 10cm.



Figure 3.93: An example of ceramic artefacts from the well backfill (7569) at No. 710. Russell Workman, scale 10cm.

Dates for glass artefacts from the upper most layer of the well were consistent with the modern building material that was found near the top.⁷⁵ Glass from the next three underlying layers all appear to date from the 1850s. All fill layers were similar in their representation of item function.

⁷⁵ Section 9.3

Glass from the uppermost layer was limited to a few bottles, but their food and beverage function was consistent with underlying layers. The consumption pattern, exhibited by the bottles and tableware was consistent with a household. There were a few items that were most characteristic of a residential setting, including perfume bottles, a mirror, hair restorative and castor oil bottles.

3.8.2.1 1880s structure

After the 1840s building was demolished, the large sandstone footings of the new structure were laid directly on the surface of demolition material and exposed topsoils (Figure 3.94). Additional, less substantial footings were present within the larger foundation (Figure 3.95). Maps from later periods suggest that the footings belonged in this phase, and may have formed the foundation of internal walls. The 1888 survey notes the building as that of Fox Bennett & O'Connor and the Sands Directory listing for the same year shows the New York & American Novelty Co. and a 'clothiers and tent makers' in residence (Figure 3.96). The building is split into 710 and 710½ by the end of this phase.

The footings describe a large rectangular structure 9m wide and at least 21m long (overlays of historic plans suggest that it was around 23m long). The exterior wall footings and a central interior divider were constructed from large sandstone blocks laid header-to-header in a single row. In some places two courses remained, but for the most part, the footing was represented by a single course of stone. The blocks were between 500mm and 600mm wide and stood around 330mm high. They were cut to varied lengths but averaged around 1560mm. The internal footings described parallel lines that ran the length of the interior at an interval of 4.4m. They were constructed from roughly-cut sandstone blocks that were only loosely rectangular and bonded with a mud mortar. An early cement adhered to the top of the footings and was used to bond the machine-made shale bricks that formed the superstructure.

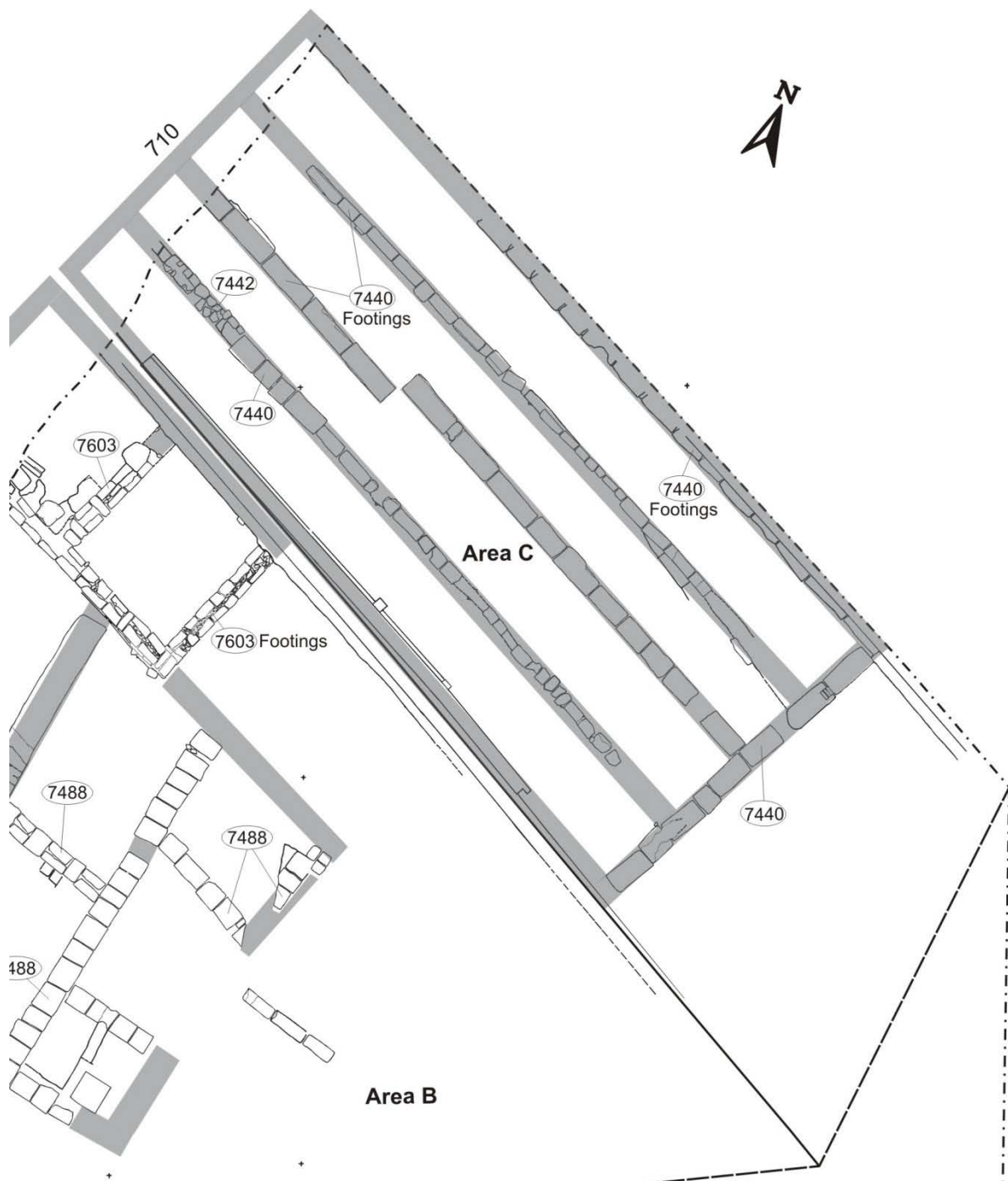


Figure 3.94: Interpretive plan showing the remains of the 1880s footings in Area C. Projected connections have been suggested with shaded grey areas. (Extract from Plan 22, Section 10).



Figure 3.95: The footings of the 1880s building at 710 George Street. The large blocks of the central divider are flanked by the rougher-cut stones that formed the foundation of internal dividing walls. View to the west. Scale 1m.

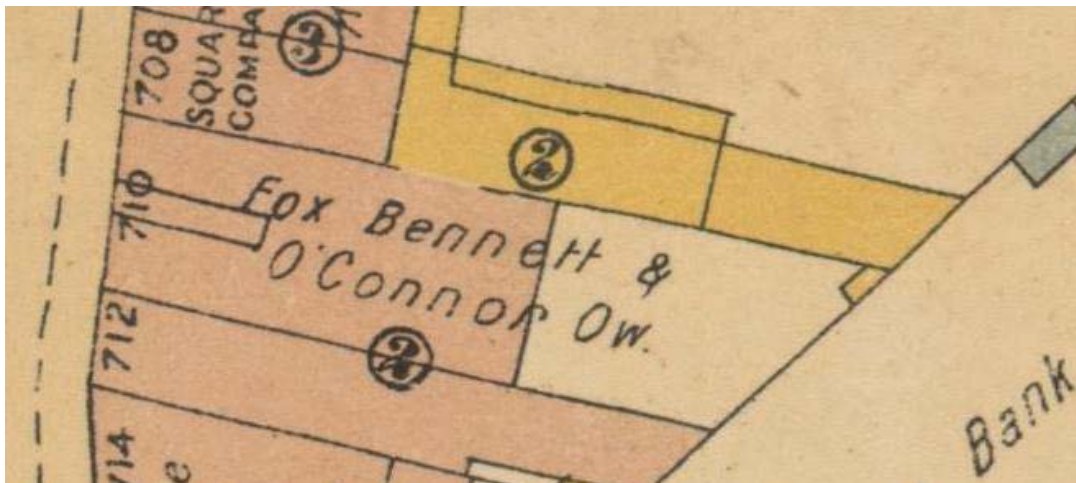


Figure 3.96: 1888 survey showing the building of Fox, Bennett and O'Connor at No. 710. Detail taken from *City of Sydney 1888 / W.F.P. & A.W.M. Sydney & Suburban Map Publishing Co., 1888* NLA ref: MAP RM 722. Tile b1.

3.9 Phase 7 Areas B and C: 1890 onwards – twentieth-century development

During this phase commercial activity on the block intensified and the block was no longer characterised by the semi-residential buildings that had once dominated the site (Figure 3.97).

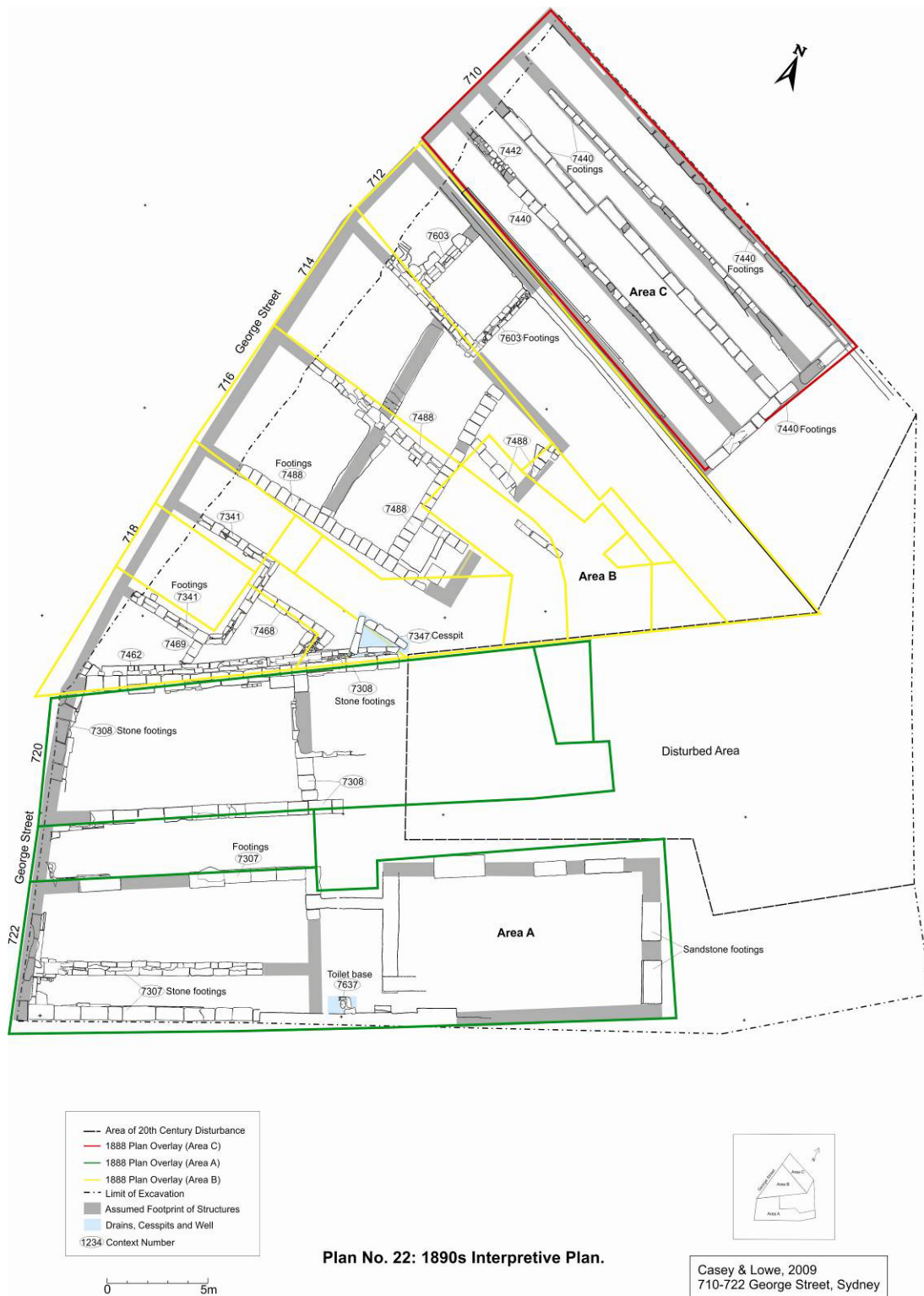


Figure 3.97: Interpretive plan of the site showing remains and projected relationships relevant to this phase.

3.9.1 Phase 7: Area B (Lot 3)

The 1860s buildings remained standing into the early twentieth century. By 1901, the yards had all but disappeared as the buildings annexed more space to the rear. There was no archaeological evidence of these modifications. The buildings appear to have been demolished in the early to mid-twentieth century. Comments on the 1901 plan read “all very dilapidated”. Subsequent building phases were not the focus of this excavation (Figure 3.98).

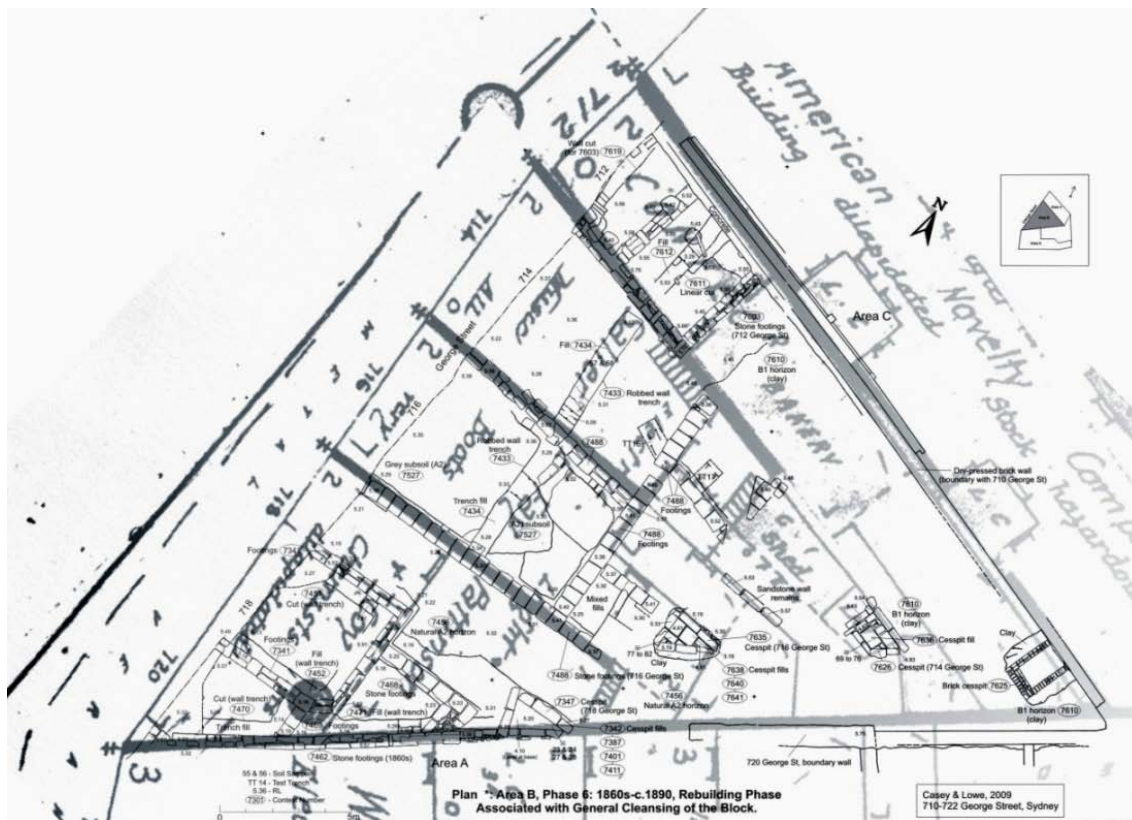


Figure 3.98: Image showing the correlation between the archaeological remains and the plan of 1901. The 1860s footings still describe the structures accurately at the start of the twentieth century. Detail from *Fire Underwriters Association of NSW, c1901: City of Sydney detail survey maps 'Ignis et Aqua' Series, Sheet II Vol. 1, ML MAV/FM4/10537*.

3.9.2 Phase 7: Area C (southern part of Lot 4)

The 1888 building was in a state of disrepair by the early twentieth century. Comments on the 1901 plan read “Building dilapidated, Stock hazardous” (Figure 3.99). However, the New York Novelty Company continued to occupy the premises until 1918. The building may not have survived much longer. Subsequent construction on the lot was not the focus of the excavation. It is noted that the two-storey shop-front which replaced the 1888 building was demolished just prior to commencement of archaeological work.

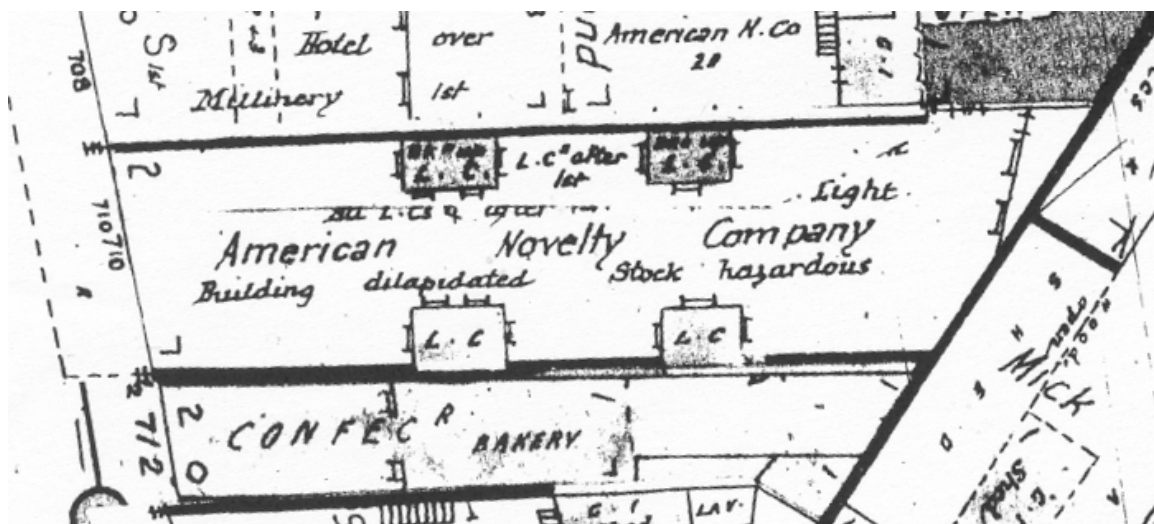


Figure 3.99: Detail from a 1901 plan showing the building at No 710. Detail from *Fire Underwriters Association of NSW, c1901: City of Sydney detail survey maps 'Ignis et Aqua' Series, Sheet II Vol. 1, ML MAV/FM4/10537.*

3.10 Overview of Findings

The site showed no evidence of Aboriginal occupation of the area. Pollen analysis of material from the site revealed that the 1788 landscape was characterised by open casuarina woodland with a grassy understorey. Erosion evidence suggested the land was cleared rapidly with subsequent water action carrying away much of the loosely compacted topsoil, and dynamic gullies were created on the slope of Brickfield Hill.

Thomas Ball's pottery made use of the site in the early 1800s, when brickmaking and pottery manufacturers were concentrated in the area. Evidence of Thomas Ball's pottery was found in the form of large quantities of pottery wasters, small reservoirs and part of a large clay extraction pit.

By 1823 the haphazard and permissive property boundaries had been consolidated and three lots formed the study area. By the mid 1820s the Woolpack Inn was built in Lot 2 on the southern part of the site. Archaeological evidence of the Woolpack included foundations, underfloor deposits, a cesspit and drainage. The underfloor deposits yielded large quantities of alcohol bottles consistent with the use of the building as a public house. Some spatial interpretation was also possible from this material, with one room in particular being associated with food preparation. It was at the rear of the building and was probably the kitchen of the inn. Evidence of dining and drinking was apparent in all of the ground floor rooms. The hotel occupied the lot until 1881.

On Lot 3, in the centre of the site, a timber structure had been built by 1823, but no convincing archaeological evidence of this was found. The first evidence of structures in Lot 3 was from the early 1840s or very late 1830s. Remains of a timber structure and two brick structures were found

from this period. Sandstone footings and a cesspit belonged to the brick structures, but there was no evidence of occupation deposits. The timber building was represented by a fireplace and some occupation-related material that had been unfortunately contaminated by other historical events. The alignments of the buildings during this period suggested that some liberties had been taken with the street-front boundary, and the brick structures may have extended beyond it into George Street.

In the northern part of the site (Lot 4) the earliest evidence came from the remains of a brick building constructed in the early 1840s or very late 1830s. This building was represented by sandstone foundations, an underfloor deposit, a well and two cesspits. The structure lasted until the early 1880s. The underfloor deposit was an accumulation covering 30 or 40 years in one ground-floor room. It largely represented domestic use, although the premises were used as a grocery store over much of this time.

In the early 1860s Lot 3 was redeveloped and three new two-storey structures were built on the lot. These buildings were represented in the archaeological record by sandstone footings and cesspits. There was no occupation material from these buildings. The buildings were added to over their lifetimes so that by 1901 structures covered the whole lot. They were demolished in the early twentieth century.

Cesspits throughout the site reflected backfilling events only. Although littered with domestic artefacts, conjoins were found across lots and no deposit could be related directly to occupation of a single building. The cesspits were most likely backfilled in the 1870s with items of household rubbish such as broken crockery and bottles. Significantly there was very little organic material and faunal remains were rare in the fills.

On Lot 2 and Lot 4, large commercial buildings took the place of the earlier structures in the 1880s. The archaeological remains from these buildings consisted of large sandstone footings only. These structures remained until the twentieth century. In the late twentieth century, the remaining buildings were demolished and a car park occupied the site.

4.0 Thomas Ball Pottery

4.1 Overview of the Ceramics

4.1.1 Research Questions

The aim of this section is to address the list of research questions below as well as provide detailed analysis of Thomas Ball's Pottery. We are not writing a separate section as a response to the research design due to budgetary and timing constraints. The following issues identified in the research questions (Section 1.4) are addressed in various sections of Chapter 4.

This phase of occupation may contain archaeological evidence that will relate to the following questions:

- ii What type of early clay products were being produced beside bricks? Did these include clay roofing tiles, general household ceramics and other items?
- iii What is the evidence for how these clay products were moulded, fired, and dried?
- iv An area of interest is the manufacture of early lead-glazed ceramics in the Brickfields. Recent archaeological work and analysis at the Pitt & Campbell Streets site and in Parramatta has shown that this material was definitely being manufactured in the Brickfields. How does the archaeological information from this site expand on this new understanding?

An additional set of research questions were identified at the completion of the excavation program (Section 1.4).

Questions relating to local manufacture of pottery in the Brickfields were briefly mentioned in Question iv (above). Due to the extensive material found associated with local pottery manufacturing this question needs to be considerably expanded to further our understanding of this early pottery.

- What is the nature and range of the pottery manufactured by Thomas Ball at his pottery at the base of Brickfield Hill? Is it a mixture of utilitarian and finer table and teaware as indicated from the wasters found at Pitt and Campbell Streets?
- What does the pottery tell us about Ball's training, skills, materials, techniques and understanding of pottery manufacturing techniques and technology? In effect, how did he manufacture pottery and other products in the Brickfields?
- Analysis of evidence of manufacturing flaws, notably problems when firing the kiln, stacking, glazing and such.

These questions assisted with our approach to the redesign of the catalogue between Stages 1 and 2. These questions underlie our approach to the cataloguing and following analysis.

4.1.2 Pottery Taphonomy and Cataloguing

Describing and quantifying the pottery and other artefacts made within Thomas Ball's Pottery is not an easy task. We are dealing with the material that was thrown away - it was never used for the purpose for which it was designed or manufactured. Initially it was made and placed in the kiln to be fired. Somewhere during the process the firing failed and the vessel was thrown into the waster heap and eventually put into the waster pits, most probably after the cessation of the Pottery in c.1823 or slightly later. After the whole or part of the kiln firing failed, the ruined pottery was broken up and probably stored in waster heaps to be reused as saggars or setters or other similar

kiln furniture. It may have been broken up to be used as 'grog' in the manufacture of more clay for further pottery making or used in the domed roof of the wood-fired kiln which was reformed each time the kiln was fired. Occasionally it would then be disposed of and/or reused again as a saggar. Therefore we rarely have near complete vessels or even many sherds that we would say belonged to the one vessel.

Because of this, our typical cataloguing process had to be reinvented for this project. At the beginning of the process we did not have a lot of confidence in the use of minimum vessel (item) counts, so used Estimated Vessel Equivalent (EVE) counts with the focus of counting on rims or diagnostic elements, such as decoration and vessel shape. In the end the EVE count is probably close to a minimum vessel count. Within each context we began by sorting the pottery into glaze colour, thickness, rims, bases and body sherds, then onto vessel shape, differences/flaws etc. (Figure 4.1, Figure 4.2). With decorated pottery we were able to find many more conjoins between sherds than with single coloured sherds (Figure 4.3).



Figure 4.1: Preliminary sorting according to glaze colour and rims, bases and body sherds. Jenny Winnett, 26 October 2009, scale 500mm

Once all the pottery was catalogued we realised it had to be re-examined in some detail because the sheer size of the corpus meant that two vessels in the same type could be 3000 catalogue numbers apart. We may initially have only have had the base of an object. Finding the upper body later shifted how we could understand other vessels of this same type. The focus of the original sorting was on the rims and bases. Many body sherds were bulk bagged and while they may belong to known bases or rims we have not been able to make these connections at this time. This would require an additional one or two phases of review and more extensive sorting. The original sorting and counting is called Stage 1 cataloguing.



Figure 4.2: Further sorting of sherds into vessel groups. Sue Hearn is working with a student volunteer. Jenny Winnett, 2 November 2009.

As there were doubts about the reliability of these original data we wanted to re-catalogue the whole of the Thomas Ball corpus but this was impossible within the timeframe of a consultancy project or its budget. What we did was re-catalogue 25 per cent of the boxes, making sure we addressed all contexts and number of boxes with each context.¹ This has been called Stage 2 cataloguing. We were able to ignore many of the boxes which were full of body sherds, few of which were diagnostic.² In addition all identified decorated sherds or vessels were re-catalogued. This focus on decorated pottery increased our understanding of this material substantially following the initial cataloguing. Many more vessel types and shapes were identified because of the consistency of particular forms used for decoration.³ A decoration type series was established during the Stage 1 cataloguing and amended and developed during the Stage 2 cataloguing (Appendix 4.2).

What became clear quite quickly in the re-cataloguing process (Stage 2) was that it was an essential part of the analysis if we were to consolidate our understanding of Thomas Ball's corpus. Like many archaeologists before us we found that the sheer quantity of material meant that we have to interrogate it by using different approaches. We had to focus in on categories of analysis to even begin to strengthen some understanding of the nature of this material.

¹ The majority of the Stage 1 cataloguing was undertaken by Jenny Winnett with assistance from Sue Hearne and student volunteers and additional cataloguing of Stage 1 by Rowan Ward. Dr Bernadette McCall was responsible for most of the Stage 2 re-cataloguing of the 25 per cent of the main corpus while Mary Casey was responsible for the re-cataloguing of all the handpainted pottery, with assistance from Robert Maxwell. Both Bernadette and Mary Casey undertook the re-cataloguing of the incised pottery.

² It is likely that re-examination of bags of body sherds will allow for resorting which may assist further analysis.

³ This will be discussed in more detail below.



Figure 4.3: Detailed sorting of decorated pottery into vessels and decorative types. Jenny Winnett, 3 December 2009.

One of the most useful aspects of our existing cataloguing system is the type series we started developing in the 1990s and published in 1999.⁴ The type series was consolidated as part of a review in 2008 by Rowan Ward, based on the work we had undertaken on other early sites between 1999 and 2008.⁵ We have now tested this enlarged type series as part of the 710-722 George Street cataloguing. In addition to the vessel-shape type series we had to develop a 'decorative type series' so as to consistently catalogue the numerous decorated vessels we found. Prior to excavation at the Thomas Ball pottery we had found only a few decorated vessels, including a few handpainted examples from the city block to the east, which we believe were waster pottery from Ball's site used for drainage, and the occasional incised or roulette sherds from sites in Parramatta or tiny fragments from other early sites.⁶ We found a few examples of decorated vessels from excavations on early sites in Parramatta (Section 4.7.2). Generally, the locally-made pottery found on sites in Parramatta was in better condition and we started to find a number of near intact vessels and full profiles, as with the Parramatta Children's Court site. We began to identify more shapes than we had on sites in the Sydney CBD. But little of this earlier work or finds prepared us to understand the sheer quantity and variety of vessels and decoration that were being manufactured in early Sydney by convict potter Thomas Ball.

⁴ Casey 1999.

⁵ Ward 2008.

⁶ Casey & Lowe 2006a: 93; 2006b: 127; 2009: 70.

As part of this process we designed a specific ‘locally-made pottery’ form on our Access comparative database (Figure 4.4). We redesigned it incrementally based on different stages in the cataloguing. The initial design was retooled once it was decided we needed to re-catalogue at least 25 per cent of boxes (Stage 2). Brian Robson (who has worked on our database for more than 10 years) and Mary Casey spent some time refining our entry form. We had started direct entry of the catalogue quite early in the Stage 1 cataloguing because the data we were collecting became too complicated to keep writing it down on paper. This in turn had consequences for auditing the data. Normally the specialists use the paper catalogue to audit the accuracy of the database dataset but this was not possible as there was no paper copy. Therefore, we had to do this through various queries once we started to examine the data and amend inconsistencies. The accuracy of the Stage 1 cataloguing was also checked as part of the re-cataloguing (Stage 2) process.

The screenshot shows a Microsoft Access form titled 'Pottery'. The form is divided into several sections with tabs for 'Site/Area Edit', 'Function/Shape Edit', and 'Manufacturing Faults'. The 'Site/Area Edit' section includes fields for Site/Area (20 Albion Street, Surry Hills, ALL), Grid E, Grid N, Box # (2), Context # (624), Category (Ceramic), Decoration (slip), and Manufacturing. The 'Function/Shape Edit' section includes fields for Catalogue # (1), Type Series Number, Function/shape (pot, yard, garden), Manufacturer, # Items (1), # Frags (8), Weight (g) (448), Portion Count, EVE Count, EVE Part of Body, Quality, Kiln Furniture, Rim Diameter, Rim Thickness, Rim Width, Base Diameter, Base Thickness, Body Height, Body Thickness, Vessel Dimensions, and Artefact Dimensions. The 'Manufacturing Faults' section includes a 'Remove' button. The form also has a 'Description' field with the text 'Orange fabric and self slipped'. At the bottom, there are buttons for 'New Duplicate', 'New Blank', 'Undo Record Changes', 'Delete Record', and 'Return to Main Menu'. A status bar at the bottom indicates 'Record: 1 of 7806' and 'No Filter'.

Figure 4.4: Screen capture of the Stage 2 lead-glazed pottery database direct entry form.

A decorative type series was established which mostly consisted of a table with descriptions and photographs of the various decorations (Appendix 4.2). Decorations consisted of handpainted, incised, and coggled or rouletted designs. While some elements of each of these different types of decoration had previously been found, the sheer scale of the variety of decoration could not be conceived from our known examples.

The count for the pottery in this chapter of the report excludes pottery used as kiln furniture, possibly as saggars or setters. Typically, we have catalogued them in the same way but for the purposes of this section of the report it was easier to exclude all ‘kiln furniture’ from pottery wasters. The counts for these are in Appendix 4.1: Table 6. They are also discussed in Section 4.9 below.

4.1.3 Archaeological Contexts containing Locally-Made Pottery

Most of the locally-made pottery was found in waster pits (Area A, Figure 4.5) or as backfills (Area B, Figure 4.6) of shallow erosion gullies in the lower part of the site (Appendix 4.1: Table 1). A total of 36,474 sherds were found in Area A, representing 72.83 per cent of all locally-made sherds found on the site (Appendix 4.1: Table 2). See Section 3 for discussion of these pits and Vol. 2: Section 8, Trench Reports, Areas A and B.

There were three waster pits in Area A. 70 per cent of the material from these pits was of locally-made sherds (pits 7651, 7649 and 7660, Figure 4.5). These sherds are presumed to have been dumped around 1823 when Thomas Ball lost possession of this land to Thomas Buxton (Buckton) and the pottery ceased production. A few sherds of imported pottery suggest a deposition date in the early 1830s. One of the fills (7646 in pit 7651) contained a slightly worn 1827 George IV penny which supports an end date in the late 1820s/early 1830s. The dumps of pottery wasters were only a short distance from each other. It is likely that the kiln was also nearby. It may have been on the adjacent property to the east, immediately outside the study area. As discussed above, these pits are thought to have been backfilled with sherds from waster heaps surrounding the kiln. The new owners of the land, who wished to put it to a different use, would have sought to clean up the site and the easiest way to do this was backfill shallow pits or gullies on the site. Generally we consider that rather than dig new holes they used existing depressions or gullies to bury the wasters as none of the waster pits were very deep.

Another feature in Area A containing locally-made pottery was the backfilling of a clay extraction pit (7436). This contained very sticky clay which was difficult to excavate by machine or hand. A number of context numbers were given to the fill of this feature in order that any differences within test pits and any contamination below rooms of the Woolpack Inn might be more accurately recorded. These contexts are 7326, 7385, 7390, 7399, 7400, 7430, 7437, and 7449.

In Area B the main feature was a shallow gully (7489) filled with pottery sherds. The sherds were not mixed with wet clay as they were in Area A (Figure 4.6). Within the gully the sherds were in a sandy matrix and had been notably broken up. Waster material in a sandy matrix would have drained well. For this reason it may have been deliberately used in the previous location of the gully. This dump was later built over and was found immediately beneath the earthen floor of a timber structure at no. 718 George Street. The occupation deposit (7395) associated with this structure was contaminated by the waster dump below. As a result, 176 sherds belonging to the gully material 7489 were originally excavated as 7395. This was basically loose material coming off the top of the main waster fill.

Only 17 sherds of locally-made pottery were found in Area C (Appendix 4.1: Table 2). This was less than many of the non-pottery related features in Areas A and B. Many features or deposits with no chronological relationship to the operation of the Pottery contained quantities of locally-made pottery sherds (Appendix 4.1, Table 1). Most of the sherds were found in Area A, which is considered to be the western half of the Pottery property. Subsequent development of the site necessarily disturbed many of the deposits associated with the pottery, and so it is unsurprising that many sherds were found in features associated with later structures. Some deposits, such as underfloor deposits, accumulated around unconsolidated sherds sitting in or on the strata below. Therefore the locally-made pottery formed a 'background noise' to all of the archaeological features excavated on the site.

The implication of this is that nearly all of the locally-made pottery found on the site is probably associated with the Thomas Ball Pottery. Contextual information suggests that these sherds were the by-products of the operation of his Pottery rather than fragments of ceramic used as part of the domestic day-to-day activities of nineteenth-century residents. While it is possible that a few

sherds came from another local potter this could only be a small part of the overall corpus found at the site and no specific instances have so far been identified.

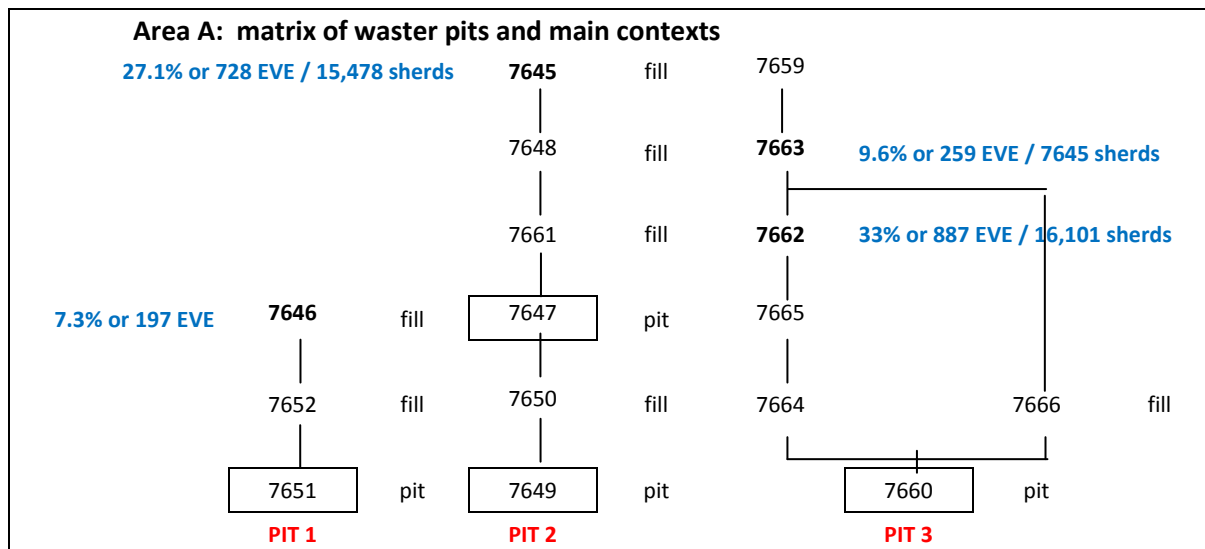


Figure 4.5: Matrix of contexts and waster pits in Area A. The four main fills contain 77 per cent of locally-made pottery vessels (EVE) or 74 per cent of locally-made sherds recovered from the site. See Appendix 4.1: Table 1.

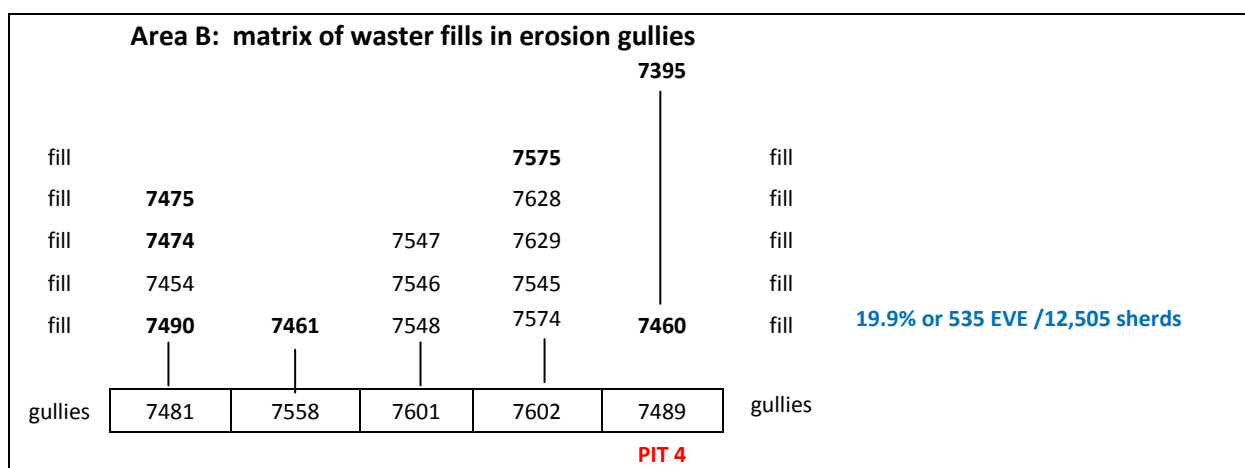


Figure 4.6: Matrix of main Area B contexts with locally-made pottery. Context 7460 has 12,505 sherds, 19.9 per cent of all locally-made pottery found at the site. Context 7460 has most of the locally-made pottery in Area B. See Appendix 4.1: Table 1.

4.1.4 Dating the Backfilling of the Waster Pits

In the ceramics report Rowan Ward identified a number of imported sherds found within the waster pits (the fills of Pit 2:7647 and Pit 3:7660, Vol. 2, Section 9.1).

- Clay extraction pit (7391):
 - Just one item was recovered in fill 7399 that was not of local manufacture: a rim sherd from a green shell-edged pearlware plate, dating between c.1780 and c.1840 (#73594) (Ceramics Report, Section 9.1).
- Pit 7647 contained three fills and 11 imported ceramics:

- Fill 7645 had 15 sherds from 10 items, with *terminus ante quem* dates (dates from which the type of vessel was made) ranging between 1780 and 1834 (Ceramics Report, Section 9.1, Table 2.2).
- Fill 7648 contained one imported item (9 sherds). The handpainted pearlware plate was made in the United Kingdom and had a broad date range of c.1780 to c.1870 (#74093).
- There is some suggestion of backfilling after 1830 of this waster pit or that it was not properly sealed until after this date and later ceramics infiltrated the fills.
- Pit 7660
 - Fill 7662 was the only one of the five fills to feature any imported ceramics. It contained five imported ceramics consisting of 9 sherds. The beginning dates for manufacture for these five ceramics ranged between 1790, 1800 and 1830. The presence of a brown-transfer print sherd dates the deposit to post-1830. Fill 7662 was underneath other fills suggesting there was limited opportunity for disturbance by other features but this area was quite cut up by modern footings.
 - There is some suggestion of backfilling after 1830 of this waster pit or that it was not sealed until after this date.
- Pit 7651
 - In the upper fill (context 7646) was an 1827 George IV penny, slightly worn. This also supports a slightly later backfilling of the Area A waster pits, perhaps c.1830 rather than c.1823. But this was the back yard area and was possibly not sealed by later structures until c.1830 and later ceramics may have entered into the fill of this pit.

4.2 The Pottery

Three main types of pottery were manufactured at Thomas Ball's Pottery: lead-glazed, slipped and self-slipped (Appendix 4.1: Table 3). Only a few items of slipped (12) or self-slipped (46) were found. By far the majority of items being made at the Pottery were lead-glazed ceramics (2625). These are typically fine earthenware but occasionally they were coarse earthenware and some were even stoneware (Appendix 4.1: Tables 3, 4). Fine earthenware was recorded in 93.8 per cent of all vessels found, a total of 95 per cent of the sherds. The majority of lead-glazed vessels were identified as being made from fine earthenware (Appendix 4.1: Table 5).

4.2.1 Fabrics

A total of 93.8 per cent of all vessels were in fine earthenware with the remaining in coarse earthenware (156) and stoneware (11) (Appendix 4.1: Table 4). The stoneware figure is not very accurate as there has been very little re-cataloguing of this material and it requires more attention to reach an accurate EVE count. A total of 561 sherds of 'faux stoneware' were identified. It is noted that the 'faux stoneware' is stoneware as defined by the degree of vitrification.⁷

4.2.1.1 Earthenware

Earthenware pottery has a relatively porous body, greater than 5 per cent, which needs to be covered by a glaze to make it waterproof. The fine earthenware is represented by small holes in the fabric and is well mixed. Coarse earthenware is less well mixed and has larger inclusions.

⁷ Section 9.2: Scientific Analysis of Thomas Ball's Pottery - Nicholas Pitt.

4.2.1.2 Stoneware

A hard, strong vitrified ware, with a grey to pinky buff colouring (Figure 4.41). Stoneware found overseas on archaeological sites was fired above 1200°C. The difference between stoneware and earthenware is the degree of porosity or the level of vitrification.⁸

4.2.1.3 Fabric Colour

The fabric colours are based on the original clay used to make the pottery and the degree of firing. The identification of fabric colours was based on preliminary Munsell colour charts but not every sherd was examined in relation to the Munsell chart. Twelve different colour ranges were identified but were generally determined to be based on three clays: a fine white clay, a pale brown clay and a red clay (Appendix 4.1: Table 9). These gave the variation in the colour range which is then further added to by firing temperature and duration of firing.

Hyacinth de Bougainville, during a visit to Sydney in 1828, identified that a potter, probably John Moreton, was using two types of clay, a grey clay and a red clay.⁹ The grey clay mentioned by Bougainville may be the fine white clay used at the site rather than a grey clay. The scientific analysis information below supports the presence of two clays, white and red, but no analysis was undertaken of the buff fabrics which possibly came from pale brown clay. Admittedly though, the range of firing, overfiring, and uneven firing in the wasters is testimony that a visual inspection is inadequate for properly concluding how many clays were used to manufacture the pottery.

4.2.1.4 Scientific Analysis¹⁰

How many clays?

The limited scientific analysis (11 sherds) allowed the following conclusions to be drawn concerning the clay and fabric of the ceramics from the Thomas Ball Pottery. It is noted that there was no analysis of the buff-coloured clays. Firstly, the clay used for the sampled ceramics appears to have been from at least two prepared clay sources. One of these sources was used for red fabrics, which were relatively high in iron oxide (conc. $\text{Fe}_2\text{O}_3 > 3.5\%$ (w/w%)), the other was used for white and buff fabrics and was relatively low in iron oxide (conc. $\text{Fe}_2\text{O}_3 < 2.0\%$ (w/w%)). Chemical analysis showed that all clays used were non-calcareous (low in calcium). The compositional results were consistent with the clay being sourced from around Sydney. Further sampling and more precise chemical analysis, using a different analytical technique, would be required to allow more definite, statistically sound statements to be made about the number of clay sources which were used.

Vitrification analysis of the fabrics suggested that pale yellow glazed ware and mulberry ware were fired at lower temperatures than the 'faux stoneware' (as these other wares had lower levels of vitrification).

Differences between the clays

The wares which had multiple samples analysed for level of vitrification, namely pale yellow glazed ware and faux stoneware, shared consistent levels of vitrification within the ware (Section 9.2, Table 5). This suggests that all samples of a particular ware were fired under similar conditions (temperature, kiln atmosphere, firing time etc). However, as vitrification levels vary between wares, this implies that at least for pale yellow glazed ware and faux stoneware (which shared similar chemical compositions for their fabrics), firing conditions must have varied between the different ware types. Given that other variables such as firing time or clay composition are held constant, vitrification levels generally increase with firing temperature.¹¹ The higher vitrification

⁸ Frank & Janet Hamer 1986: 305.

⁹ Riviere 1999: 80.

¹⁰ This section is taken from Nick Pitt's scientific report, Section 9.2.

¹¹ Maniatis & Tite 1981.

levels of the faux stoneware suggest that it was fired at a higher temperature than the pale yellow ware.

Vitrification

'Faux stoneware' samples demonstrated a similar level of vitrification to other English stoneware, and deserve to be considered a type of stoneware. Fine pores associated with pinholing and incipient bloating were seen using electron microscopy in all samples except mulberry ware. These fine pores were probably due to properties inherent in the clay, although other causes would have been possible.

Organic Inclusions

Organic inclusions of plant fibres and pollen were found in four of the six analysed samples of pale yellow glazed ceramics. There are at least three possible reasons for their presence in the ceramics. The organic inclusions may have been accidentally incorporated in the clay as it was being prepared by the potter, they may have already been in the clay-bed or they may have been deliberately added as temper material. Of these possible reasons, Nick Pitt considered the first to be more likely.

4.2.2 Glazes and Colours

Lead glazed means that the vessel was decorated with glazes made from lead. Slipped means that a thin watery clay slip was used to finish the vessel before firing. The slip was either made from the same clay of the vessel (self-slipped) or made from a different coloured clay to that of the vessel (slipped). A fired glaze forms a glassy surface which is fused to the pottery body. It also provides a decorative finish to the vessel. The majority of the ceramic corpus (97.8%) was lead glazed on either the interior or exterior with a small group being self-slipped (1.7%) or slipped (0.4%). The lead-glazed vessels probably also had a slip between the glaze and the clay fabric of the vessel as it assisted with the firing process in helping the glaze adhere to the fabric.¹² A range of colours were used in the glazes. The most common interior glazes were: yellow (535 vessels), pale yellow (362), mulberry (350), brown (328 vessels, 22,215 sherds), and pale brown (289). Many of the vessels had no exterior glaze (estimated 2187 vessels, 43,329 sherds). Where they had exterior glaze the commonest were yellow brown (126), pale yellow (59), pale brown (45), mulberry (43) and yellow (33) (Appendix 4.1: Tables 3, 4, 5, 12).

4.2.2.1 Scientific Analysis¹³

All glazes were lead based as expected, with many of the sampled glazes also containing quantities of tin oxide (SnO₂). The presence of tin in nineteenth-century earthenware glazes was not expected but further research has shown that it has been observed in other nineteenth-century earthenware glazes (and late eighteenth-century porcelain glazes from South Carolina).¹⁴ Tin was used as an opacifier in glazes (to make them opaque), including the glazes of delftware pottery. The concentration of tin oxide in Thomas Ball pottery was lower (0.5 to 2% (by weight)) than was typical in tin-glaze pottery (which was 4% to 11% by weight).¹⁵

The stoneware vessels were lead-glazed except some of the exterior surfaces where the finish resembled a thin salt-glaze. The chemical microanalysis showed that it was not a salt-glaze as such, as it was too low in sodium. Rather it was a completely vitrified region, rich in potassium, probably originating from the vapours of a wood-fired kiln.

¹² Pearce 2007: 154-155.

¹³ Takes from Section 9.7, Nick Pitt.

¹⁴ For further discussion see Section 9.2, pp 19-20).

¹⁵ Tite et al 2008: 69; Tite 2009: 2075.

Analysis shows that the dark red mulberry ware was not being darkened using manganese as was often the case for many eighteenth and nineteenth-century black-glazed ceramics.¹⁶ Instead it appears to be coloured by iron, which is concentrated in the top region of the glaze. This iron may be concentrated in the fine, dark spots visible near the top of the mulberry glaze SEM image shown in Section 9.2: Figure 18 (Volume 2).

Conclusions were also able to be made about how the glazing materials were applied to the ceramics. Comparative analysis of the glaze and body compositional data showed that all the glaze materials appear to have been applied directly to the ceramic vessels as raw lead compounds, or as lead compounds mixed with a clay slurry, rather than lead mixed with quartz (such as in the form of ground flint). Mixing and heating lead compounds with quartz to produce 'fritted glazes' before application to ceramics was becoming common in the early nineteenth century and was a safer method for the potter.¹⁷

Electron microscope images of the glaze-body interface suggested that glazing material may have been applied to unfired ceramics, rather than to vessels which had already been fired once ('biscuit fired').

¹⁶ Couper 1847: 439, 442; South 1993: 85-86.

¹⁷ Fritting is the process where part of a glaze recipe, typically a lead compound, such as litharge (an ore of lead (II) oxide) and a form of silica (usually as quartz in the form of ground flint or sand), are heated together to melting point. They then will form an insoluble compound, called a frit, which can be ground and used for glazing. A principal advantage of fritted glazes is that the lead they contain is insoluble, while lead (II) oxide is water soluble. Using an insoluble lead compound for glazing lessens the risk to the potter of experiencing lead poisoning. For further information on fritting see Hamer & Hamer 1986: 145.

4.2.3 Vessel Shapes and Quality

The identification of vessel shapes was based on the updated 2008 type series (with some minor changes) which we also reviewed as part of this process. This amended type series was itself heavily influenced by concepts of the Medieval Pottery Research Group (MPRG) established by British scholars.¹⁸ The main shapes are (Appendix 4.1: Tables 8 to 22; Appendix 4.4: Vessel Type Series):

1. **Pans:** truncated cone-shape with various rims - everted, thickened and rolled (lead glazed: 365).
 - Size of sherds or uncertainty of form means that some vessels were identified as possible pan/basin/bowl (113) or pan/bowl (112) or pan/deep bowl (1) or pan/crock (1). These are utilitarian vessels with a range of household uses, typically identified as food preparation although those with thinner bodies were possibly used for serving as well.
 - Probable pans constitute approximately 22.5 per cent of the lead-glazed corpus.
 - Diameters of these vessels range between 140mm to 420mm with the majority being 280mm (43), 300mm (39), 320mm (68), 340mm (50), 360mm (31) and 400mm (29). The majority of these are large robust vessels.
 - Thickness of the bases where they were definitely attributed to pans was between 5 to 8 mm.
 - Typically pans are glazed on the interior and slipped on the exterior. The main colours for pans were: brown (58), pale brown (58), red brown (48), mulberry (58) and yellow (61).
 - A number of pans were decorated: handpainted (46), incised (16), incised and handpainted (8), rouletted (3) and also in marble or agate ware (1).
 - A number of pans with thinner walls were found at the Pottery (Figure 4.7). The thickness of the bodies ranged from 5 to 10mm while the more robust pan bodies were 8 to 18mm. The thicker bodied pans are more typical of those found on other archaeological sites in Sydney and Parramatta.
 - The majority of pans are utilitarian (305), while some are medium (59) and one was fine or faux annular ware.



Figure 4.7: Two pans which are finer than typically found, 7662/#87663 and 7646/#85031. Russell Workman, 15/4/2010, scale 10cm.

¹⁸ Ward 2008 for Casey & Lowe; MPRG 1998.

2. Bowls (356): curved open vessel in a range of sizes, mix of utilitarian, medium and finer forms, (Appendix 4.1: Table 8; Figure 4.8). Also with a range of rim shapes (Appendix 4.4).

- These can be quite small fine vessels (such as tea slop or sugar bowls, often with some decoration) or larger bowls probably used for food preparation (Type 7.2.1 to 17.2.6). Forty-five bowls are considered to be fine.
- The dimensions of the finer vessels range from a rim diameter of 100mm to 180mm, base diameter between 60mm to 90mm, base thickness of 2-3.5mm and 4-8mm, and body thickness between 2-3mm, 3-4mm, 4-5mm, and 5-6mm.
- The more robust vessels have rim diameters of 200 to 400mm with body thickness ranging between 5 to 11mm. The quality of the bowls ranged from medium (151) to utilitarian (157).
- Bowls have also been included in the number of crossover forms indicating some uncertainty in the identification of shapes and the fragmentary nature of this corpus: cup/bowl (6), bowl/dish (3), dish/bowl (16), jar/bowl (7), note pan/basin/bowl (113), pan/bowl (112) and pan/deep bowl (1) were identified above, also poe/bowl (38). These reflect the presence of sherds with a number of characteristics not specific to bowls.
- Vessels were identified with different decorations: handpainted (59), incised (7), incised and handpainted (3), rouletted (3) and also marbled or agate ware (7). The finer bowls are typically hemispherical in profile which places them in the eighteenth-century tradition of the form.¹⁹



Figure 4.8: Bowls or basins as they are also termed are Type 17 in the Casey & Lowe type series. Front row: 17.2.7 7460/86310(2), 17.6.6 7662/87375(1), 17.2.6 7662/87346(1), 17.1.2 7645/85913(1); Mid row: 17.1.8 7662/87389(1), 17.6.7 7663/86905(1), 17.1.3 7460/86511; Back row: 17.6.8 7662/87878(1), 17.1.9 7646/85071(1), 17.2.6 7460/86415(2). Russell Workman, 3/3/2011, scale 10cm.

¹⁹ Rickard 2006.

3. Dishes (361): these are vessels deeper than a plate, depth being more than 1/3 ratio of a vessel's diameter. A dish was defined by the Medieval Pottery Research Group as being different from a bowl based on its depth, and they are shallower, and are also an open vessel. The rim diameter is typically greater than the base and the height is between 1/3 and 1/7 of its rim diameter. This contrasts with bowls (Type 17) which are typically deeper, with the height being 1/3 or more of the rim diameter. (Appendices 4.1 for tables and Appendix 4.4 for type series drawings).

- These have a range of rim/body finishes, from straight to different everted angles, from shallow to sharp. The Type for many of these vessels is 4.1 to 4.7. Items catalogued as Types 9.3 and 9.5 (plates) have been re-categorised as dishes as they are deeper than plates.
- The rim diameters of the dishes are mostly 220 or 240mm. Many of these are handpainted (247) and are of medium quality.
- The body of the dishes is usually 4 to 5mm or 5 to 8mm thick.
- 56.9 per cent of the handpainted vessels were dishes. Where uncertainty about some vessels being a dish they were identified as dish/bowl (10) and dish/plate (17).
- Dishes are interpreted as being tableware or serving dishes, particularly the decorated types. Typically they are glazed on the inside and slipped on the exterior. Many of them are glazed with yellow (198) or pale yellow (88) while a few have green speckled decoration (4). The hand-painted dishes have a wide variety of decoration on the rim and base. Decoration sometimes extends over the everted rim or occasionally it is located just below the rim or the everted rim (Appendix 4.2).
- Other decorations included: handpainted (247), incised (4), incised and handpainted (25), rouletted (4) and also marble or agate ware (1) (Table 15).
- Some dishes were finer (10) while most were of medium quality (332) and a few were considered to be utilitarian (13).



Figure 4.9: Green speckled dish, Type 4.1. 7460/#86011. Russell Workman, 6/10/2010, scale 10cm.

4. **Crocks** (138): these are large hollow vessels, with or without lug handles, some with ledges for lids to sit on (Figure 4.10). They often have a flaring profile or can be quite straight. They are typically used for the storage of foodstuffs. Type 14 has lug handles while Type 15 has no lug handles. Some have a broad rim to aid lifting. A crock-shaped vessel is typically quite robust and becomes heavy when full. A lifting aid can be necessary. We do acknowledge that the presence or absence of lug handle is not definitive proof that a particular vessel did not have a lug handle, only that we do not have examples with handles.
- These are utilitarian vessels²⁰ with rim diameters between 180 and 480mm. With the most frequent ranging between 240 to 420mm.
 - Some vessels were called crock/pot (23).
 - Many had lug handles (104), Type 14, while others (31) had no lug handles (Type 15) or were not found with the evidence for such handles.
 - The lug handles are a narrow piece of clay attached to the sides of the crock, typically quite close to the rim (Type 14.2, 14.3, 14.5, 14.6) or in one case lower down the body (Type 14.4). Only evidence for three Type 14 crocks had been found on Casey & Lowe sites prior to Thomas Ball's Pottery.
 - All the crocks were lead glazed. The main colours were: brown (33), red brown (29), mulberry (31), and pale brown (13).
 - All crocks were utilitarian.
 - Some of the lids discussed below were made for these crocks.



Figure 4.10: Handled crocks. These are Type 14 in the Type Series. Left: front row: 14.6, 7646/85069(1), 14.3.1, 7646/85011(1); middle row: 14.3.2, 7646/85068(3); back row: 14.5, 7645/#85572(3). On the right is the near complete profile of a handled crock 7646/85010. Russell Workman, scale 10cm.

²⁰ Ward 2008: 22-25.

- 5. Jars (116):** A jar has a wide neck opening with a short neck or rim that has a pronounced indentation/constriction at the neck, creating a distinct shoulder. The body is either straight sided or tapered towards the flat base, with the base diameter usually smaller than the maximum diameter of the jar. The height is variable, from squat to tall, and the overall diameter also varies considerably. Sometimes the jar has an internal lip below the interior rim edge, where a lid would rest. Most examples are defined by the rim and only in a few cases by the base.
- Jars come in four sizes: small (3), medium (12), large (36) and very large (62) (Table 8).
 - They are 4.41 per cent of the EVE count for vessel shapes (Table 8).
 - The majority of the very large jar types have an internal ledge for resting a lid on.
 - Crossover shapes are: jar/bowl (7), jar/crock (5), jar/pot (1) and jug/jar (7).
 - Four jar sherds are incised, one medium jar is incised and another handpainted, one very large jar is rouletted but the remaining jars are not decorated.
 - The majority of jars were considered to be either of medium (9) or utilitarian (107) quality (Table 20).
 - The various sized jars come in a range of colours: brown (10 large, 9 very large), mulberry (11 large, 25 very large) and red brown (11 very large), with the remaining colours having between one and six occurrences per shape (Appendix 4.1: Table 16).
- 6. Lids (65):** The majority of lids are produced by throwing a pan-shaped vessel and turning it upside down (Types 11.1, 11.6, 11.7, 11.10), (Figure 4.19). Most of these types, where the profile is complete, have an everted rim. One lid has a rim designed to sit on the ledged lip of a jar or crock (Type 11.4).
- Type 11.4 is the most common of the lid shapes found at the site (22). This type has a ledged-shaped rim (Appendix 4.1: Table 9; Appendix 4.4).
 - Incomplete lids are frequently defined by having a glazed exterior and a slipped interior which is typically the opposite of a pan which has internal glazing and slipped exterior.
 - A number of lids are decorated: handpainted (6), incised (5), incised and handpainted (3) and marble or agate ware (1) (Table 15). These are often quite fine vessels.
 - Lids were a mix of utilitarian (44), medium (15) or fine (5) quality but in the case of utilitarian forms the lid may not have matched the colour of the crock or jar for which it was purchased (Table 20).
 - Lids come in a range of colours (Table 16).
- 7. Plate (52):** This description is used to describe shallow dishes or flatwares. Characteristics include a height of less than 1/5 the rim diameter and an everted upper part of the wall (MPRG: 5.4). This category has been adjusted since the 2008 report. It previously included shapes that are now defined as dishes rather than plates, notably 9.3 and 9.5.
- All plates are lead-glazed and are typically associated with tablewares, for serving or consuming food.
 - The majority of shape types are Type 9.2 (37) which is an angle-sided plate (Table 9). The original vessel identifying this type does not have a base and it is possible that further research may locate the base and it may be found to be a dish. Type 9.4 is the closest to a modern plate and is typically found in imported wares rather than locally made vessels.
 - Only three plates were decorated (Table 15).

- The identified 'quality' for plates is likely to be inaccurate because of the original limitations of the cataloguing.
- Plates were glazed in mulberry (10), yellow (12) and pale yellow (16) colours (Table 16).
- Where rim diameters are known they were 210mm (1) and 220mm (2).

8. Chamber Pot or Poe (28): These are an ovoid shape with a flat or rolled rim, Type 16 (Figure 4.11).

- The chamber pots are mostly decorated on the exterior and lead glazed on the interior and exterior.
- There are a number of poe/bowls (38) identified in the Thomas Ball corpus. This is because a range of bowls and poes have a very similar thickened rim (Type 16.6). The decisions concerning type (is it a bowl or a chamber pot?) were influenced by the location and type of the glaze.
- A number of the poes have a thick glossy interior glaze in a different colour to the exterior. Counts for this characteristic are only partial.
- The shapes found here are common to archaeological sites in Parramatta. There were only two new poe types: 16.11 and 16.12 with a rolled rim (Table 9; Appendix 4.4).



Figure 4.11: Yellow chamber pot (left), 7474/89613. This is now on display in the new development. It is a very typical shape which imitates that found in contemporary British creamware. On the right is a mulberry ware chamber pot (7662/88066) with incised decoration. The interior glaze on this chamber pot is a different colour (a greeny brown). Russell Workman, scale 10cm.

9. **Other shapes:** There are a range of other shapes but many have quite small counts: candle stick (5), colander/drainier (2), cup (7), jug (10), jug/jar (7), mug (5), mug/cup (2), saucer (10) and teapot (5), (Figure 4.12, Figure 4.13). The candle stick from Ball's site is different to that found on a few other sites in Sydney and Parramatta. The mugs have more evidence of the overall shape of the form than found elsewhere. One of the saucers (7645/85499) is exactly the same as a 'faux annular' ware saucer found at Pitt & Campbell Streets (5215/37124).



Figure 4.12: A range of different shapes were identified that had not been found previously: a black-glazed candlestick (7662/88501), a mug (7662/88083), a dish or saucer (7460/86643) used as a saggar with later glazes and breakage marks. Russell Workman, 8/3/2010, scale 10cm.



Figure 4.13: Three children's tea dolls set toys, lid, bowl and other vessel, made by Thomas Ball. Front left: 17.9 7662/89903; front right: 17.9 7648/89251 and back: 11.14 7460/86770. Russell Workman, 8/3/2010, scale 10cm.

4.2.4 Decoration

Seven different types of decoration or combinations for decoration were identified on 602 EVE count vessels (Appendix 4.1: Table 13). Handpainted decoration was the most common and 59 different designs were identified (Appendix 4.2: Decorative Type Series) on 433 (EVE) vessels, 72 per cent of all decorated vessels (Table 30). There were 12 different incised and rouletted decorative types on 131 vessels as well as a marbled decorative style (14) and green speckling (17) (Appendix 4.1: Table 31). The Decorative Type Series is based on the identification of different or distinct patterns but many similar elements are repeated within these patterns.

4.2.4.1 Handpainted Patterns

The patterns have been developed from some quite basic geometric or decorative techniques and are often painted in brown or green slips and typically on a yellow background (Figure 4.14, Figure 4.15). It is helpful to read this section while looking at Appendix 4.2 which illustrates the Decorative Type Series (Appendix 4.2; Appendix 4.1: Table 30):

- Lines: straight lines, wavy lines, curved lines, intersecting lines, two bands of intertwining lines forming a cable, either monochrome or bi-chrome in colour or wide bands. These were located in a mixture of positions: horizontally around the rim but occasionally vertically or on the base of the vessel.
- Semi-circles: bands of semi-circles, often close to being wavy lines but quite distinct. An occasionally double band of semi-circles.
- Dots: single dots, rows of dots, or dots inside and/or outside semi-circles; dots to make a circular flower motif.
- Asterisk: single or multiple asterisks or stars.
- Dashes: series of dashes or short curved lines.
- Plant and insect motifs, mostly abstract or simplified attempts to represent plants or insects.
- Simplified attempt at an arrow (HP47). May be an attempt to paint a broad arrow.



Figure 4.14: HP 1, handpainted decoration was frequently found on the base of dishes or saucers. The decoration is thought to indicate that these were tablewares or at the least serving vessels. Russell Workman, 10cm scale.

The most frequent handpainted decoration type is HP20 (37 EVE) which has a row of green semi-circles with dots above and below. HP3 has 33 examples with bichrome cable (entwined band of green and brown wavy lines). HP5 (33) is a single brown wavy line. HP8 (28) is a bichrome insect or bud. HP12 (19) is a wavy green line while HP14 (17) is a row of three connected dashes. HP 24 (17) is a line of brown dots separated by circular dot motif (abstract flower). HP25 (26) is a row of thick raised brown dots. Some of these decorative types are quite festive and may have been produced to sell at Christmas or for other festive occasions (Figure 4.16). This is suggested for HP20, HP23,



Figure 4.15: Bichrome floral or insect motif consisting of a central irregularly ovoid shape with dashes or petals, of contrasting colour radiating out from it in a single direction. Petals are in groups of two, four or six. These shapes were mostly dishes with fragments of a bowl at the top. Decoration was on the rim as well as the base of the dish. Russell Workman, 10cm scale.



Figure 4.16: HP20, a green wavy line with red brown dots, above and below, around the rim of pale yellow dishes. Row 1: 7460/#86118(3), #86103(3), #86111(2); Row 2: 7460/#86109(2), #86108(4), #86115(6); Row 3: 7460/#86120, #86107(3), #86113(7), #86114(5). Russell Workman, 25/11/2010, Scale 10cm.

HP24 and possibly HP27 because of the contrast between the green and reddish brown colours. Handpainted decorated vessels were found in seven contexts in the four main waster pits from the site (Appendix 4.1: Table 32).

Many of these simple painted decorations were probably applied using a slip cup. This is most obvious in the case of the raised drops found in a number of patterns. An example of a slip cup is illustrated in Carpentier and Rickard 2001: 126-127. This is discussed further in Section 4.5.

4.2.4.2 Incised and/or Rouletted (impressed) Patterns

There are 12 different 'incised' decorative patterns. Most have been made with a five-pronged tool placed against the leather-hard vessel while it rotated on a lathe or wheel to form a band of reeded or rilled lines (Figure 4.35, Figure 4.36). Different incised patterns are often used in combination up and down the body of the vessel (Appendix 4.2):

- Horizontal wavy lines of different spans: ID1, ID4 and ID7. Occasionally two of these differently spanned wavy lines are used on the same vessel. This indicates that at least in these cases the use of different lengths is a design decision and is not simply arbitrary. These are typically around the rim of a dish or bowl or pan or just below the shoulder of a lid. When used on a yellow vessel it is often highlighted with a band of green slip. Examples of intersecting bands of wavy lines (ID10) or a vertical bend of wavy lines (ID11) are occasionally found. These are also used down the bodies of mugs.
- Horizontal straight lines (ID2): these are termed either reeded or rilled and were typically of five lines. This pattern was found on rims and bodies, often emphasising the shape of the vessel. It was usually highlighted with a band of green slip. It is possible these were formed by a rouletting tool as suggested by Rickard but this is not certain (Figure 4.35, Figure 4.36).²¹
- Three separate rouletted or coggled bands were identified. A circular tool with raised shapes was used to impress a pattern into the body of the vessel (Figure 4.17). The three identified bands are a mixture of different shapes:
 - ID3: impressed band of triangles and rectangles, some examples with green slip on yellow glazed vessel (Figure 4.37).
 - ID8: impressed band of triangles and circles.
 - ID9: impressed band of rectangles with circles (Figure 4.38).
- Incised series of vertical lines: identified as 'faux shell edge' (ID5 & HP6). Only one example so far found.
- Series of vertical incised or rouletted lines: probably made with a wide circular tool impressed into the vessel while it was turned on the wheel, ID6.
- ID12 is an unusual decoration with body panels created by incised horizontal and vertical lines with horizontal wavy incised lines within the panel. Only one known example.



Figure 4.17: Rouletting wheel used at the Lue Pottery, Lue, near Mudgee, NSW.

²¹ Rickard 2006: 34.

4.2.4.3 Moulded and Sprigged Patterns

- Sprigged: this is made by pressing a thin piece of clay into a shallow mould and producing a raised pattern (Figure 4.18). The finished product was glazed yellow with green highlights around the edge. Three sherds of this were found during cleaning in Area A (7644) above Pit 2. The sprig was attached to a clear-glazed brown vessel. Only five sherds have been found which suggests this type of decoration was not common.
- Most of the knobs or finials found had a raised impression probably produced by moulds in four sizes, with approximate diameters of 17mm, 22mm, 33mm, and 37mm. They appear to be flower forms but the quality of the knobs (knobs) are of different degrees of production suggesting that some moulds were used more frequently and no longer produced a well-modelled knob. The knobs are similar to generic flower decorations found on British teapots decorated in slip wares but without the moulded leaves.²²

The use of sprigged decoration was not uncommon in a range of British pottery traditions, such as commemorative jugs and stoneware jugs, but it was also used during the early manufacture of factory-made slipware.²³

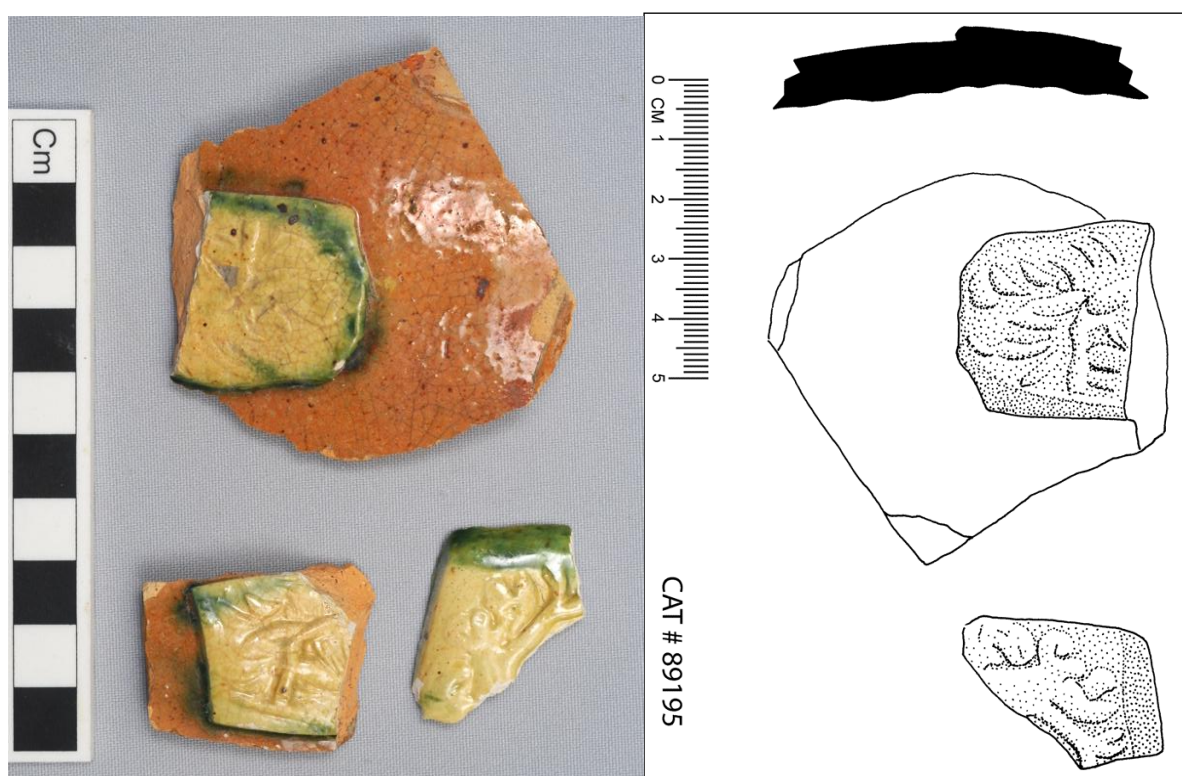


Figure 4.18: Sprigged decoration in fine white fabric with yellow and green slip, probably a tree on the larger sherd, found on a brown vessel (#89195). The drawing of the smaller sherd suggests a different type of plant or animal. There was probably a band of sprigs around the vessel. Evidence of where another sprig was attached is visible on the larger sherd. Photo: Russell Workman, 10cm scale; Drawing: Franz Reidel.

²² Rickard 2006: 78-80; two of these are dated to about 1785.

²³ Rickard 2006: 16 (figures), 24.



Figure 4.19: Moulded lids, mostly slipped with a couple of mulberry glaze. The smaller glazed lids were probably associated with tea wares or serving vessels. Left photo: Left row : 7662/#88405, #88403, #88406, #88402, #88407; Row 2: 7662/#88397; Row 3: 7662/#88398; Row 4: 7662/#88399, #88395, #88408, #88396. Right: mulberry-glazed knobs 7645/#85954, 7662/#88400. Russell Workman, 25/11/2010, Scale 10cm, 1cm divisions.

4.2.4.4 Marble or Agate Ware

This is not a 'decoration' but a mixture of two clays, pale red (orange) and white, mixed together to form the appearance of 'marble' when glazed (Figure 4.20, Figure 4.28). The glaze is mostly a 'clear' lead glaze to reveal the mixed colours of the fabric. Only 14 vessels identified as 'marbled' were found on site, in Areas A and B (Appendix 4.1: Table 13). It is noted that these were not identified in Stage 1 cataloguing but only during Stage 2. There are likely to be more marbled wares found in Stage 3 cataloguing.

In Britain this type of ware was introduced during the beginnings of the influence of decorative stones such as marble, agate and porphyry. In 1724 there was a patent for 'an new art or method of staining, veining, spotting, clouding, damasking, or otherwise imitating the various kinds of marble, porphyry, and other rich stones, and tortoiseshell, on wood, stone, and earthenware'.²⁴ The development of imitations of marble or agate or tortoiseshell slips was part of the beginnings of factory-made slipware which Wedgwood was already manufacturing some years prior to 1759.²⁵ This is discussed further in Sections 4.6.1 and 4.6.2.

²⁴ Quoted in Rickard 2006: 19, pp. 18-30 for discussion of related techniques and slip designs and finishes.

²⁵ Rickard 2006: 20-21.



Figure 4.20: Marbled or agate bowls, showing the light and dark colours of the mixed fabric beneath a clear lead glaze. The photo shows the exterior of a number of larger vessels, mostly unglazed. Front 2 rows: 7646/#85024(7); middle left: 7460/#86483(3); middle right: 7460/#86529(2); back left: 7645/#85534(1); back right: 7645/#85436(2). Russell Workman, 3/2/2011, Scale 10cm.

4.2.4.5 Green Speckling

This involves the use of a deliberate pale green glaze with darker green 'specks' in the glaze (Figure 4.21). There were 17 examples of this style of decoration. Whether it was deliberate or accidental is hard to determine but its presence on 17 vessels in a number of contexts does support that it was a definite decorative technique. There is one example of a clear glaze with green speckling (Appendix 4.1: Table 31). It is likely this type of decoration can be interpreted within the same tradition as marble or agate ware, perhaps as an imitation of green porphyry.²⁶ This was a development from traditional slipware decoration where colours were intermingled and sometimes combed to create an imitation of marble (Figure 4.31). This is discussed further in Section 4.6.2. It is acknowledged that the green speckling found at this site is a poor quality imitation of these British techniques. It was an early style of slip decoration and fits in with the late eighteenth-century date range of Ball's work as a potter in Britain.

²⁶ Rickard 2006; Rickard and others typically describe porphyry imitation in slip as 'speckled' 2006: 7, Fig. 13.



Figure 4.21: Green speckling which is probably intended to create a decoration that imitates green porphyry, as in the case of early variegated slips in factory-made slipware. Russell Workman, scale 10cm.

4.3 Tablewares, Serving and Teawares

In this section the finer wares are reviewed with the Utilitarian wares being discussed in Section 4.4. Identification of the quality of wares was made within the gross categories of 'fine', medium and utilitarian, with some rarer techniques specifically identified. Medium (809 or 30%) and Fine (74 or 2.8%) are typically associated with one of the food categories and well as children's toys (Appendix 4.1: Tables 18, 19, 20, 26, 27, 28, 29, 34, 36, 37, 38, 46). Table 18 lists the different fabric thicknesses which were the main means to identify quality. Colour of glaze and vessel form were also used.

4.3.1 Functional Analysis

During cataloguing our normal practice is to identify the functional categories with which certain vessel shapes are typically associated. We use a tripartite system of General Function: i.e. food, household, personal, recreation etc, which places the artefact within a recognisable system of intended functions likely to be found within a 'residential' or 'domestic' occupation.²⁷ The second step is a Specific Function which breaks the pottery into a range of functions within the General Function group. Such as with Food (GF), an item could be used for preparation, storage, tableware, serving and teaware or any grouping of these items such as tea/tableware or serve/tableware (Appendix 4.1: Table 23, 26). The Specific Function is further subdivided into individual shapes (Appendix 4.1: Table 24, 27). This process assists archaeologists in understanding the nature of the material they are cataloguing. To do this we need to understand these categories according to vessel shapes. Casey & Lowe have been working on this process for 22 years and the Thomas Ball Pottery site is a model of how it all comes together and how we need to tweak it in the face of substantial quantities of material.

The lead-glazed pottery has mostly been identified as falling within the food category, 1789 or 68 per cent of the EVE count (Appendix 4.1: Tables 23, 25), with a few personal items that had the same rim profile (mostly pokes or chamber pots (28) or poke/bowls (38)). The five household items were candlesticks of the same shape. It is acknowledged that many of the items not yet identified

²⁷ Casey 2004. Intended means what the manufacture designed the vessel for and perhaps the original intention behind the use of the purchaser.

will either fall into the food category once they have been re-catalogued in Stage 3 or remain unidentified due to insufficient lack of evidence. The recreation items were toys (5), probably pieces from a dolls or children's tea set. The yard item was a garden pot.

Food

The main categories into which food vessels were grouped are (Appendix 4.1: Tables 18 to 27):

- **Beverage** (5) mostly mugs or mug/cups but not ones typically identified as being used for 'tea', such as a tea cup with a saucer.
- **Containers** (81) more specific categories could not be identified with certainty but some could be identified as specific shapes, such as bowl (52), jar (1) and jar/crock (5).
- **Preparation** (571) food preparation is by far the largest category, being 21.7 per cent of all EVE counts but only 3.45 per cent of sherds (1705). Most of the identified vessels were pans (285, 10.86 per cent of forms) or pan/basin/bowl (113) or pan/bowl (112) with a few dishes (9) as well as two colander/drainers.
- **Preparation/Serve** (168) is another substantial category. This includes vessels that may have been used in either category, as neither of them could be excluded. This group mainly consists of bowls (52), dishes (44) and pans (70).
- **Preparation/Store** (212) mostly consists of crocks (137), crock/pot (20), and various sized jars (40), jug/jars (7) and lids (5). While it is likely that crocks were more typically used for storage vessels it is also possible that had they reached a residence they may have been used for cooking. Cooking vessels are rarely found, one good example is a cooking pot from Cumberland/Gloucester Street site).
- **Preparation/Tableware** (24) includes mainly dishes (15) and bowls (7) as well as a jug and a saucer as well as a probable jug handle.
- **Serving** vessels (15) are typically paired with tableware/serve or preparation/serve. Among the specific serving items area dish/bowl (10), jug (3) bowl (1) and a plate (Table 25).
- **Storage** vessels (93) are mainly various sized jars, medium (12) and very large (62), and lids (19), possibly for jars.
- **Tablewares** (165) include bowls (100), dish/plates (17) and plates (45). These are a mixture of medium quality bowls (77), some fine bowls (11) as well as medium (11) and utilitarian plates (34).
- **Tableware/Serve** (404) is a large combined group being mostly bowls (78) and dishes (295) as well as a few pans (7), plates (10), cups (6) and lids (7). Quite a few of the bowls are fine (21) and medium (45) quality wares. Many of the dishes in this group were decorated. The presence of decoration on vessels is considered likely to mean that it was for display purposes. Dishes were the mostly commonly decorated shape. It is possible that dishes were used to eat soup and 'wet' stews for people at a table. The use of the serving category is to acknowledge that they could also be used for serving food at the table, such as being used as a vessel to transport food to the table for communal serving.
- **Tableware/Tea** (28) also a mixture of vessels which may have been used at the table for a meal or as part of a tea set. These forms are typically remains of finer or medium quality bowls (13) or lids (4) that may have been used on sugar bowls or similar, as well as cups and saucers of various quality as well as jugs (2), possibly milk jugs.
- **Tea wares** (11) were infrequent, and included a cup (1), saucers (5) and parts of teapots (5). Four of the teapots were categorised as utilitarian.

4.3.2 Quality

The majority of the food-related vessels were of utilitarian or medium quality. In the Stage 1 cataloguing program many vessels were identified as 'utilitarian' which were re-catalogued in Stage 2 as 'medium'. This suggests that the current counts for utilitarian are likely to be inaccurate. Items identified as 'medium' or 'fine' should be correct where they were reviewed as part of the re-

cataloguing stage but there is likely to be some increase in numbers. This increase should be fairly limited as nearly 100 per cent of the handpainted material was reviewed in Stage 1 and most of this was fine or medium quality.

A utilitarian vessel is typically a thicker bodied, more robust form (Appendix 4.1: Table 18). They are found in a range of colours, even including yellow, which is often found on 'medium' quality vessels. Utilitarian vessels include pans (309), pan/basin/bowl (113), pan/bowl (104), bowls (160), poes (chamber pots) (25), poe/bowl (23), crocks (139), lids (61), and jars of various sizes (105) (Appendix 4.1: Table 19). Many of the same vessels occur in 'medium' (6-10mm thickness and often decorated) but this category is dominated by dishes (336) (Tables 20, 28). Many medium quality vessels were decorated, usually yellow glazed and handpainted, or handpainted and incised, or simply incised. Some pans (59) are included in the medium group as there were some thinner-bodied pans as well as decorated ones (Appendix 4.1: Tables 15, 19, 20). There were approximately the same number of 'medium' quality bowls (159) identified as utilitarian ones (160). The finer vessels are often thin-walled (2-6mm) and yellow glazed and decorated. These were often of faux annular ware or more correctly 'imitation dipped ware' as it is now being termed. Most of the finer (74) vessels were bowls (46) and dishes (10) as well as a few cups (3) and saucers (3).

The use of 'faux stoneware' during Stage 1 cataloguing was based on a visual inspection which was confirmed by Nick Pitt's honours research (Section 9.2). The quality of the fabric and the use of decoration place it in the medium quality range while the vessel forms would suggest they were utilitarian. It is acknowledged that this description is not actually 'quality' based but it is quite a distinct ware and decoration and quality boundaries at Thomas Ball's potter are quite mutable.

Medium and Fine

This group consisted of (Appendix 4.1: Tables 27, 45, 46):

- Bowls – tableware (77 medium and 11 fine), tableware/serve (21 fine and 45 medium).
- Cups - tableware/serve (2 fine and 2 medium).
- Dishes – preparation/serve (36), preparation/tableware (12), tableware/serve (273 medium and 10 fine) and faux annular ware or 'imitation dipped ware' (3 fine).
- Dish/plate – tableware (15).
- Mugs - beverage (3 medium) or mug/cups (2 medium).
- Pans – preparation/serve (35) a thinner group of pans not typically found on other sites, tableware/serve (9).
- Saucers – tea (3 fine and 2 medium); tableware/tea (3 medium).
- Poes or chamber pots – personal/food (12 medium and 2 fine).

The most common shapes among the medium and fine vessels were bowls (810), dishes (283), pans (48), lids (10) and cups (3) and saucers (9). The majority of finewares are tea bowls or tableware bowls with a few dishes creeping into this category.

4.3.3 Decoration

Not all of the decorated vessels are tablewares, serving vessels or teawares. Quite a few utilitarian vessels are decorated with incised patterns (Table 34). The utilitarian decorated vessels will be discussed below (Section 4.4.4). The majority of the handpainted vessels are fine (51 EVE or 8.5%) or medium quality items (368 EVE or 61%) (Appendix 4.1: Table 34). The commonest decorated forms in medium and fine wares are (Appendix 4.1: Tables 45, 46, 47, 48):

- **Dishes** – (283 or 62%) handpainted decoration was found on 249 vessels with only 20 being incised and handpainted. The majority of dishes were made for tableware/serve. The form of the dish was a relatively rare shape prior to excavation at this site, being the most found from any Casey & Lowe site.

- **Bowls** – (81 or 17.7%) were the next most commonly decorated food shape. Most of these (63 or 13.8%) were handpainted with a few being speckled (8) and marbled (6). A number of these bowls were quite small and fine, notably the faux annular wares and other thin walled bowls.
- **Pans** – (48 or 10.5%) were pan forms which were mainly handpainted (42) with a few incised (1) also incised mixed with painting (3) or rouletting (1).
- **Lids** – (10) while a relatively small in number the ones in the tea/serve, tableware/tea or tableware/serve category were often the fine faux annular ware and were lids for fine bowls. The decoration was typically a mixture of incised band of lines on a yellow glaze with a green slip highlighting the band.

Handpainted dishes were typically decorated around the rim and often with a central decoration on the base of the dish. Good examples of dishes illustrated in Appendix 4.2 are: HP1, HP2, HP7, HP8, HP11, HP20, HP24, HP31, and HP38.

4.4 Utilitarian Ware

Utilitarian vessels (1780) come in a range of vessel shapes and functions with many coloured glazes and fabrics. It is acknowledged that many of the items identified as Utilitarian are likely to be re-identified into medium if we go to Stage 3 cataloguing. This is why there are occasional anomalies such as utilitarian tablewares which should presumably be medium rather than utilitarian. These are thicker bodied, more robust vessels (usually thicker than 10mm) which dominated the pottery corpus found at this site.

Approximately 66 per cent of identified quality categories at the end of Stage 2 cataloguing were utilitarian (Appendix 4.1: Table 18). These types of vessels are often found on pre-1850 archaeological sites in Sydney and Parramatta: i.e. Parramatta Justice Precinct, cnr George & Charles Streets, Parramatta, cnr Pitt & Campbell Streets, Haymarket and the bakehouse at the Conservatorium of Music site.

4.4.1 Fabrics

The colours of the fabrics, as discussed above in Section 4.2.1, relates to the colour of the original clay. Variations within the colour of the fired fabric or clay will relate to firing conditions. As we are analysing pottery wasters it is known that all of the pottery was thrown out as it was considered to be of a quality too poor to sell as it had suffered damage during firing or manufacturing. Therefore the colour of the fabric in many cases is not the intended colour (mostly due to over firing or underfiring) but also because of other conditions that may arise within the kiln, i.e. uneven firing or explosions. Many sherds still give us some idea of the original (or intended) colour of the fabric. In the case of the utilitarian pottery the commonest colour was pale red or pale orange (1152 or 67%) with darker versions of red (59) or dark red (77) followed by white or cream (347 or 20%) (Appendix 4.1: Table 42). The grey fabrics are often overfired. The dominance of the pale red or pale orange fabric is surprising and was not necessarily expected based on our experience at other sites.

4.4.2 Glaze Colours

Utilitarian vessels typically have a single glaze but will on occasion have a differently coloured interior glaze. Twenty-seven examples of different coloured glaze were identified: dark red/mulberry (337 or 19.9%), brown (297 or 17.5%), red brown (240 or 14.2%), pale brown (210 or 12.4%), yellow (180 or 10.6%), black (79 or 4.7%), olive (71 or 4.2%) or pale yellow (65 or 3.8%) (Appendix 4.1, Table 41). While most of these colours were already known from other sites the dark red/mulberry coloured vessel on a red fabric was not known to Casey & Lowe which is surprising as these were the major single colour found on utilitarian vessels (Table 41). The dark red/mulberry glaze is mostly found on pale red (268), red (29) or dark red (11) fabrics (Appendix

4.1: Table 43). This indicates that Thomas Ball deliberately used this dark glaze on darker coloured fabric vessels. The majority of yellow vessels had a white (115) or cream (27) fabric but were occasionally found on pale red (23). Pale red fabrics also had brown (231), pale brown (149), and red brown (208) glazes. Pale yellow glazes were mostly found on a cream (40) or white (14) coloured fabric - only 10 vessels had a yellow glaze on a pale red fabric.

4.4.3 Functional Analysis

Utilitarian vessels come in a range of General Functions. Food is the dominant category with 1080 vessels (Appendix 4.1: Table 38). Many were unidentified (641) at the end of Stage 2 cataloguing but it is anticipated that many would be re-categorised into food function as part of Stage 3. There are a number of household vessels (6) as well as personal (25), personal/food (23). 641 vessels are currently within the unidentified category.

Food

An examination of major food Specific functions identifies the following groups (Appendix 4.1: Table 38 to 40).

- **Beverage** (2) – mugs.
- **Containers** (71 or 4%) – more specific categories identified within the Utilitarian group were: bowl (50), jar (1), jar/crock (5), and lids (3).
- **Preparation** (537 or 30%) – the main shapes were pan (273 or 15.3%), pan/basin/bowl (113), pan/bowl (104) and bowl (36).
- **Preparation/Serve** (84 or 4.7%) – with mostly bowls (42), pans (35) and a few dishes (7).
- **Preparation/Store** (201 or 11.3%) – is another crossover category with mostly crocks (13), jars (34) and crock/pot (20).
- **Storage** (91 or 5%) – is mostly jars (71) and lids (20) probably made to go with the jars or the crocks.
- **Tablewares** (46 or 2.5%) – these forms are plates (32) and bowls (11). Again it is possible these would be re-catalogued as medium quality.
- **Tableware/serve** (16) – are a mixture of bowls (7), dishes (3), plate (2) and cups (2).
- **Tea** (4) – four teapots were identified by spouts. It is likely that a few knobs were identified which may have come from teapot lids but there was insufficient evidence to catalogue them as teapots. It is noted that none of the finer knobs had a steam hole as found on what is probably a Thomas Ball teapot knob from the Parramatta Children's Court site.²⁸

What is clear from this work is that sometimes the separation of vessels into separate functional categories can become a complex interpretive process. The categories we use as part of our analysis for general archaeological sites (many of which are residential in nature) are designed to help us interpret common research questions. A pottery manufacturing site which is making types of pottery not normally found at residential sites requires different categories. It is acknowledged that some of these vessels could as easily be placed in the category of preparation/store/serve. In some cases the reduction down to preparation/serve has been made where they were decorated. This is considered to indicate an intention to display the item rather than have it retained purely for functional use in a kitchen.

Personal

- **Hygiene** (25 or 1.4%) – are all chamber pots or podes. A number of these had a different coloured interior glaze with a high gloss finish.

²⁸ Casey & Lowe 2006, Section 4, 92, Fig. 4.4, middle, front row. It is a moulded knob with a central steam hole in creamy yellow glaze with some evidence of green decoration on the lid.

Personal/Food

- Hygiene/preparation (23 or 13%) relates specifically to a vessel type which is the same as the poes but they are decorated on the inside which is not expected with a chamber pot which is more typically decorated on the exterior.

Unidentified

- Containers (76 or 4.2%) – are mostly lids (27) for storage vessels.

4.4.4 Decoration

There were 602 decorated vessels but only 87 were utilitarian (Appendix 4.1: Table 34, 36, 37). The most frequent decorative techniques were incised (47 or 7.8%), rouletted (15 or 2.5%), handpainted (11 or 1.8%), incised and painted (6), marbled (4) and speckling (3). The majority of the decorated vessels were handpainted pans (5), incised pans (16), poes (12), bowls (5) and poe/bowl (4), and incised and painted pans (4). Rouletting was found on pan/bowls (3), pans (2), crock (1), poe (10), poe/bowl (1) and jar/bowls (2) and a jar (1). Marbled fabric was found on a pan (1), pan/bowl (1), and a plate (1).

The most frequent decoration styles are: (Appendix 4.1: Table 44; Appendix 4.2)

- ID1 (24) – a combed band of incised horizontal wavy lines – medium wave.
- ID2 (15) – combed or rilled band of horizontal straight lines, with typically five incised lines in the band. These can be below the interior or exterior rim or around the exterior body.
- ID3 (10) – Narrow coggled band consisting of repeated tiny impressed triangles and rectangles.
- ID7 (3) – Combed band of sharp wavy lines. The sharp wave typically has a near vertical return.
- ID6 (3) – Wide band of vertical incised or rouletted lines, may be coggled rather than incised or rouletted. Mostly found on large preparation or storage vessels.

4.4.5 Mulberry Ware

A total of 350 or 13.3 per cent of vessels were decorated with an interior dark red or mulberry-coloured glaze (Appendix 4.1: Table 12). Only 43 or 1.6 per cent of vessels had an exterior glaze in dark red or mulberry. A full range of food preparation, storage and beverage shapes were found in this colour as well as chamber pots or poes (7) and part of a teapot (Table 17). Of the 350 vessels a total of 337 were utilitarian (Table 41). This was the largest single coloured glaze in the utilitarian category. This glaze was found on a number of different fabrics (mostly pale red (268) or red (29), but also dark red (11), orange (10) and pinky brown (9)) (Table 43). This suggests that this glaze was developed to more easily cover reddish fabrics.

While the majority of mulberry ware is undecorated, 36 EVE or 210 sherds were decorated. Most of these (25) were decorated with incised lines and the remaining 11 had rouletted decoration (Appendix 4.2).



Figure 4.22: Range of incised vessels, mostly with a mulberry-glazed vessels with ID1 decoration on the right of the photo. Front row: 7662/#88132(1), 7662/#88111(4), 7662/#88104(2); middle row: 7662/#88101(1), 7662/#88106(11); Back row: 7663/#87043, 7645/#85912(3), 7662/#88103(2). Russell Workman, scale 10cm.

4.5 Decorative Techniques²⁹

This section discusses the techniques used to apply the individual decorative elements of the wider patterns in the Decorative Type Series (Appendix 4.2). They are arranged according to decorative motifs such as dots and lines, which themselves are combined to form the different decorative types. Firstly, the possible colouring materials used for decorations will be discussed, and then the method of application of colouring material will be considered.

It also should be noted that these comments are based on visual inspection of the handpainted pottery of Thomas Ball combined with broader knowledge of pottery techniques current in the early nineteenth century. No technical or scientific examination of the decorated pottery from the site has been undertaken.

4.5.1 Possible colouring material

The handpainted pottery from 710-722 George Street appears to be based upon three main colours (red brown, brown and green). The brown and green colours can occur in slightly different variants. The possible sources of these colours are discussed below.

Red brown

Red brown decorative motifs occur on numerous decoration types (red brown dots occur on HP 13, 20, 21, 23, 24, 25, 27, 28, 29, 30, 31, 33.2, 39, 46, 50 and 58; red brown lines occur on HP 8 and 46). The colour of the motifs is typically around 'reddish yellow' (7.5YR 6/8) or 'yellowish red' (5YR 5/8) on a pale yellow (5Y 8/4 or 2.5Y 8/4) glaze. Red brown decorations are visibly raised from the surface of the vessel (for instance the dots on 7645/#85315 are 0.3mm above the surrounding glaze surface) and at least one example shows evidence of a dot falling off a vessel before glazing and

²⁹ This section was written by Nick Pitt in discussion with Mary Casey.

firing (7645/#85315, Figure 4.23). The example shown in Figure 4.23 also features a dot from which the glaze has partly worn, revealing what appears to be a halo of clay fabric of a similar red brown colour. For these reasons, it seems likely that red brown decorations were produced by applying a red brown clay slip to ceramic vessels made with a white-firing clay fabric, once these vessels were dry.³⁰ How this slip may have been applied to the vessels is discussed below.



Figure 4.23: Decorated lid fragment HP13 (7645/#85315), showing red brown dots, including one which appears to have fallen off before glazing. Russell Workman, 1cm scale division.

Brown

Brown decorations occur as both dots (on HP 16, 20, 23, 24, 25, 35, 36, 41 and 44) and lines (on HP 1, 2, 3, 4, 5, 7, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 26, 29, 27, 29, 35, 37, 38, 41, 42, 43, 44, 45, 46, 47, 48 and 49) in the decorations of vessels from 710-722 George Street. Brown decorations should be seen as a distinct colour from red brown decorations, as demonstrated by a few sherds on which brown and red brown co-exist, one of which is shown in Figure 4.24. The colour of the brown decorations ranges from 'dusky red' (10R 3/3) to 'dark brown' (7.5YR 3/4).



Figure 4.24: Decorated rim fragment (HP27 7460/#86181), showing red brown dots, and brown and green lines. Russell Workman, 10cm scale.

³⁰ A slip is a homogenous mixture of clay and water which may or may not have additional components added to it, in order to modify its properties. Slips can be used for coating ceramic vessels to give a smooth finish, for manufacturing moulded vessels using a technique called slip-casting, and for decorating vessels, as appears to have been the case here. See "Slip" in Hamer & Hamer 2004: 332-333.

Brown decorations can also appear to be raised from the surface of the vessel, although generally this is much less pronounced than for red brown motifs, with some brown decorations appearing at roughly the same level as the surrounding glaze. Some brown decorations also have a metallic sheen or lustre. Figure 4.25 shows an example of brown dots which are both raised from the general glaze surface and showing a metallic sheen.



Figure 4.25: Decorated rim fragment HP36 (7460/#86366), showing brown dots visibly raised from the general glaze surface, and exhibiting a metallic sheen. Russell Workman, 1cm scale divisions.

Since brown decorations can be raised from the surface of vessels, it appears that they were again produced by applying some colouring material such as a slip to the surface before firing (and probably before applying the glazing material). Although the exact nature of this colouring material cannot be known without technical analysis (such as SEM-EDS performed for other groups of pottery from this site³¹) some reasonable suggestions can be made on the likely colouring material. Firstly, it is very likely that the brown-coloured material was being applied as a slip with an additional colorant. Adding a colouring material is a practice known to be used for other slip decorated ware manufacturers.³² Furthermore, the colouring material which was used was probably an iron oxide compound added to the clay. Iron oxide added to a glaze under a neutral kiln atmosphere³³ gives brown colours.³⁴

Green

Green decorations occur both as lines (HP 1, 2, 3, 4, 6, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 27, 28, 29, 30, 31, 32, 33.1, 33.2, 34, 35, 36, 37, 38, 39, 40, 42, 43, 45, 46, 47, 49, 50, 51, 52, 55 and 56) and dots (HP 22, 24, 25, 26, 29, 31, 40, 48, 53, 58 and 59). In some instances green decorations can appear raised from the general surface of the vessel, especially when thickly applied. This can be seen in the examples shown in Figure 4.24 and in Figure 4.27. However in most cases the green decoration appears quite thin and not raised above the level of the glaze, as is seen in the example shown in Figure 4.23. Green decorations also show a tendency to run in the glaze, as can be seen in the example shown in Figure 4.26. The exact shade of green observed in the decoration varies between vessels, sometimes appearing quite green-brown, but the colour never varies on the same sherd.

³¹ See volume 2, section 9.2, "Scientific Analysis of Thomas Ball Pottery".

³² Sussman 1997: 6; Hamer & Hamer 2004: 334.

³³ A neutral kiln atmosphere means that the gases in the kiln favour neither of two major groups of chemical reaction – oxidation reactions or reduction reactions. Which of these two groups of reactions occur during firing will determine what forms many chemical compounds are present, and thereby determine the colour of the pottery produced.

³⁴ Hamer & Hamer 2004: 188.

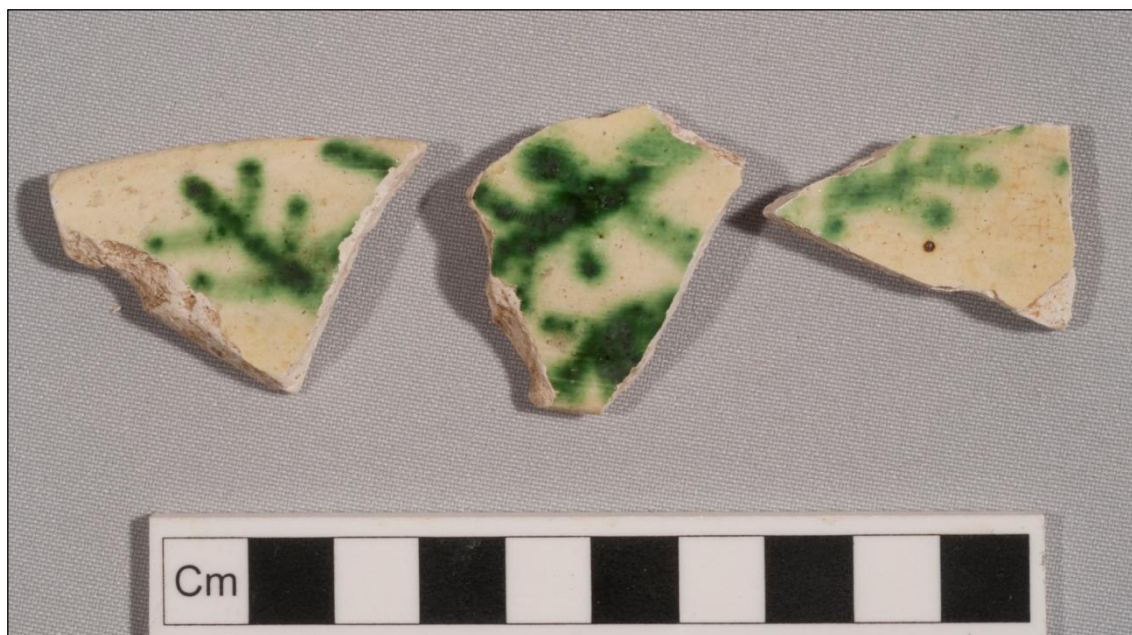


Figure 4.26: Decorated rim fragments HP33.1 (7460/#86186), showing a motif based on green lines which demonstrates the tendency of green decorations to run in the glaze. Russell Workman, 10cm scale.

Again, as the green decoration can appear raised, it seems likely that it applied as a slip with additional colouring material. The additional colouring material was probably a form of copper or a copper compound, as other sources of green colour in glazes, namely chromium and iron fired in a reducing atmosphere (a 'celadon' glaze) result in greyish greens.³⁵ The form of copper used as the colorant was likely to have been either copper metal filings, or black copper (II) oxide (CuO), as both will result in speckled glazes, compared to red copper (I) oxide (Cu_2O) or copper carbonate (CuCO_3).³⁶

If copper was the colorant for the green decoration, it may also account for several other features that these decorations display. Copper oxide dissolves readily in molten glazes, leading to colour bleeding,³⁷ as observed in the green decoration. Copper in glazes also requires an oxidising kiln atmosphere to produce a green colour. In a reducing atmosphere it would produce a reddish brown.³⁸ Therefore where green decorations appear more brown it may be because of a less oxidising kiln atmosphere and some atmospheric reduction.

4.5.2 Possible decoration application techniques

For reasons explained in the discussion above, the colouring material used to decorate vessels from Thomas Ball's Pottery appear to have applied as a coloured slip. The decorations show two main decorative components for any decoration type (dots and lines). How a clay slip may have been applied to produce dots and lines is discussed below.

Dots

³⁵ Hamer & Hamer 2004: 54, 169.

³⁶ Hamer & Hamer 2004: 81.

³⁷ Hamer & Hamer 2004: 81.

³⁸ Hamer & Hamer 2004: 81-82.

Dots occur on numerous decoration types from 710-722 George Street (HP 13, 16, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33.2, 35, 36, 39, 46, 48, 50, 58, 59), and in three main colours, namely red brown, brown and green. Dots appear to range in diameter between 3mm and 8mm. The colouring matter appears to have been applied using a nail head. This conclusion is based upon the presence of a dimple in the centre of many dots. This dimple is particularly visible in red brown dots. According to Lynne Sussman, such a dimple is characteristic of applying slip decoration using a nail head. The nail head would have been dipped in the slip and then used to apply the slip to the vessel surface.³⁹ Figure 4.27 shows a particularly clear example of a dot with a visible dimple in its centre.



Figure 4.27: Rim sherd with decoration type HP24 (7460/#86142, interior), showing pronounced dimple in the centre of dot decorations. Russell Workman, 1cm scale divisions.

Although Sussman also refers to the use of nails hammered into a board being used to make a repeating pattern of dots, such as floral motifs similar to HP24,⁴⁰ it seems unlikely that this technique was used by Thomas Ball at his Pottery on George Street. This is because the relative positions of the dots in each floral motif are slightly different, even when motifs on the same vessel are compared. Also there were different numbers of dots on various vessels, suggesting the pattern was not produced by a device that provided for repeating of a decoration.

Lines

A variety of lines appear in decoration types from 710-722 George Street, namely short lines which comprise part of a more complex decorative motif (HP 2, 4, 7, 8, 10, 11, 14, 15, 16, 19, 30, 33.1, 33.2, 34, 37, 38, 46, 47, 48, 49, 51 and 52), continuous wavy or semi-circular lines (HP 1, 3, 5, 12, 13, 15, 16, 17, 18, 20, 21, 22, 23, 26, 27, 28, 29, 31, 32, 35, 36, 40, 41, 42, 43, 44, 45, 50, 54, 56 and 57) and continuous straight lines (HP 6) which form a band around a vessel. As discussed above, many examples of the decorations (including lines) appear raised above the surface of the vessel they are on. This suggests that the line decorations were applied by slip-trailing, which can produce such a result.⁴¹ It should be noted that applying decorative lines and bands by brushing does not produce raised lines⁴² and it also only appears to have become more common after c.1880.⁴³

Slip-trailing, such as that which appears to have been used for these ceramics, was performed using a slip-bottle or blowing-pot. According to descriptions from slightly later in the nineteenth century,

³⁹ Sussman 1997:10.

⁴⁰ Sussman 1997: 10, 15 (fig 15 & 16); also Rickard 2006: 94 referring to trials by Anthony Butera.

⁴¹ Sussman 1997: 7.

⁴² Sussman 1997: 7.

⁴³ Sussman 1997: 6.

this consisted of a container with a larger opening and a spout, resembling a tea-pot.⁴⁴ The potter filled the container with slip and then blocked off the larger hole with clay. One or sometimes several quill pipes were passed through the clay plug. When the potter blew air through the ‘spout’ of the container, the slip was forced out of the quill.

As the decorated vessels from Thomas Ball’s Pottery do not appear to have sets of exactly parallel lines, each line appears to have been applied individually, implying that only a single quill at any one time was being used for the slip-bottle. Slip-trailing is a versatile technique and would be capable of producing all the line based motifs seen on vessels from 710-722 George Street, including continuous straight lines, wavy lines and floral motifs.⁴⁵ Although slip-trailing was often used with a lathe for decorating the exterior of vessels,⁴⁶ there seems to be no reason why a similar effect could not be achieved through rotating vessels more slowly on a potter’s wheel. Indeed, this seems the most effective means of achieving the horizontal bands and wavy lines on the interior rim of many dishes from the site.

4.6 Imitation of and Influences from Contemporary British Ceramics

4.6.1 Marble or Agate Ware⁴⁷

This is not a ‘decoration’ but a mixture of two coloured clays to form the appearance of ‘marble’ when glazed (Figure 4.28).



Figure 4.28: Example of vessel with ‘marbled’ fabric from 710-722 George Street (#85052, Context 7646): a. cross-sectional view showing fabric comprised of two different coloured clays; b. exterior view of base, showing same marbled fabric visible underneath a clear lead glaze. Russell Workman, 10cm scale.

Marble wares comprised of different coloured clays are typically called ‘agateware’ to differentiate them from pottery which has been decorated using different coloured slips to produce a marbled surface finish.⁴⁸ There are two broad categories of agateware – ‘thrown agateware’ made by wheel throwing, and ‘laid agateware’,⁴⁹ also known as ‘press molded agate’,⁵⁰ which is made by moulding vessels with a prepared sheet of marbled clay. As the marbled/agateware from the Pottery of Thomas Ball at 710-722 George Street were wheel thrown, the remainder of this discussion will be restricted to thrown agateware.

⁴⁴ Sussman 1997: 6; Ure 1847: 1023.

⁴⁵ Sussman 1997: 7-10.

⁴⁶ Sussman 1997: 6; Ure 1847: 1023.

⁴⁷ Nick Pitt research and wrote this section with some additions by Mary Casey.

⁴⁸ Erickson & Hunter 2003: 87, Noël Hume 1969: 132.

⁴⁹ Erickson & Hunter 2003: 87.

⁵⁰ Erickson & Hunter 2003: 109, n. 3.

The earliest recorded thrown agateware produced in England appears to have been made in the late seventeenth century by the London potter John Dwight.⁵¹ Production of agateware in England on a commercial scale did begin until around the 1730s, when potters were manufacturing thrown agateware in the Staffordshire potteries.⁵² Production in Staffordshire continued until the 1770s. These Staffordshire examples were twice-fired, lead-glazed earthenware.⁵³ A thicker type of thrown agateware was produced in the late eighteenth century in Staffordshire and used for plates, dishes and bowls.⁵⁴ Although thrown agateware production in Staffordshire is said to have ceased by the end of the eighteenth century,⁵⁵ it did continue to be produced in other areas of England throughout the nineteenth century.⁵⁶

At least two contemporary potters have described methods for producing thrown agateware.⁵⁷ The first stage in producing agateware is to build up a stack of slabs of different coloured clays.⁵⁸ The coloured clays selected should be compatible with one another in terms of shrinking rates, firing temperatures, and other physical properties.⁵⁹ Once the slab has been formed, it needs to be 'wedged' or kneaded, although care needs to be taken while kneading, to ensure that different coloured clays do not become blended together, blurring the agate pattern.⁶⁰ After wedging, the clay is thrown no differently to usual,⁶¹ except that care needs to be taken so that the clay is not overworked and the layers remain distinct.⁶² After throwing, the exterior and interior surfaces of the vessel need to be scraped or turned to remove a muddy layer on the surfaces and reveal the marbled fabric.⁶³ Once the marbled fabric is revealed, the vessel is complete and can be fired, or it can be treated with other common place techniques, such as attaching handles or glazing.

The marbled ware found on site was not identified in Stage 1 cataloguing but was recognised early in Stage 2. As far as we can determine no other known examples of locally-made marbled or agate ware have been identified. It is possible to interpret the use of 'agate' as an attempt to imitate a marbled finish such as will be discussed below in the section on factory-made slipware (Figure 4.33, Figure 4.34; Section 4.6). A total of 14 vessels in marbled clay were found during Stage 2 cataloguing (Appendix 4.1: Table 13). These were bowls (7), dishes (2), and the lids of a pan, pan/bowl and unidentified (Appendix 4.1: Table 15). All were either utilitarian (4) or medium (10) quality vessels (Table 34). Eight of the marble vessels came from 7460 in Area B and six from Area A, three each from contexts 7645 and 7464. Because they were not recognised in Stage 1 cataloguing the small count is not accurate but it is likely that as we have catalogued 25 per cent that this type of fabric, which is also a deliberate decoration, was a very small proportion, perhaps 0.2 per cent of the overall decorative corpus (Appendix 4.1: Table 14). While it is possible the count for this fabric may triple when we catalogue the remaining 75 per cent in Stage 3, it is not likely to be more common than 1 per cent of the decorative corpus.

⁵¹ Erickson & Hunter 2003: 87-89.

⁵² Erickson & Hunter 2003: 90-91; Also Rickard 2006: 20.

⁵³ Erickson & Hunter 2003: 91

⁵⁴ Erickson & Hunter 2003: 91, Noël Hume 1969: 132, 134.

⁵⁵ Erickson & Hunter 2003: 91; Sussman 1997: 42-43.

⁵⁶ Brears 1974: 33, Erickson & Hunter 2003: 91.

⁵⁷ Erickson & Hunter 2003: 96-98, Hewitt [c.2000].

⁵⁸ Erickson & Hunter 2003: 96, Hewitt [c.2000].

⁵⁹ Erickson & Hunter 2003: 89.

⁶⁰ Erickson & Hunter 2003: 96-97, Hewitt [c.2000].

⁶¹ Hewitt [c.2000].

⁶² Erickson & Hunter 2003: 98.

⁶³ Erickson & Hunter 2003: 98, Hewitt [c.2000].

4.6.2 Imitation Factory-made Slipware⁶⁴

4.6.2.1 Background

The use of the terminology 'faux annular ware' in relation to some locally-made pottery arose from the assumption that it was considered to be a copy of annular ware and was first suggested in Casey 1999. This was the first identification of locally-made pottery imitating British contemporary pottery. Our understanding of this decorative style has developed since this time in relation to trying to tie down the derivation and nature of the use of a band of incised or rouletted lines (typically 5), more usually called reeding or rilling, which in all overseas examples is considered to be produced by engine turning on a lathe and frequently found on Mocha ware or slipware as a secondary level of decoration. It is noted that the green slipped or glazed reeded rims were produced by 1792.⁶⁵

Factory-made slipware is incorrectly also called banded or annular ware and in the late nineteenth century was called 'dipped' ware. In modern terminology it is frequently called Mocha ware which is a particular decoration on factory-made slipware using a specific technique with the appearance of a 'delicate tree-like' or dendritic markings rather than a different ware (Figure 4.29). These types of Mocha marking are considered to have originated from the imitation of decorative elements found in a moss agate or mocha stone.⁶⁶

The mechanized techniques of slipware were developed from the 1764 onwards when Wedgwood began to experiment with a horizontal mounted engine lathe to decorate English creamware and redware pottery. The decorations used on this type of pottery are different to those used to decorate factory-made slipware but the technology used was similar.⁶⁷ The use of the lathe allowed a potter to decorate pottery in a precise and repeatable way by placing the pot on a lathe and turning it and applying decoration, such as a band of rilled or reeded lines or a coggled or rouletted impression around the rim. Later on the lathe was developed to cut out decoration in the leather-hard clay, often through a coloured slip to provide a contrasting decoration. While the lathe could be used in two ways the one relevant to this discussion was the decoration of a leather-hard pot mounted on the engine-turned lathe and a shallow pattern of repeat decoration rouletted or incised into the rim of the vessel.⁶⁸



Figure 4.29: Range of mocha ware tree-like patterns, Stoke-on-Trent Museum. Mary Casey 2005.

⁶⁴ This section researched and written by Mary Casey and based on research in Lynnette Sussman (1997), Jonathan Rickard (2006), and J. Hawkins (1999), as well as some other references. This style of decoration was previously called Faux Annular Ware but we are now calling it Imitation Factory-Made Slipware.

⁶⁵ Rickard 2006: 12, 13.

⁶⁶ Sussman 1997: 26; Rickard 2006: 46.

⁶⁷ Sussman 1997: 26; Hawkins 1999; Carpentier and Rickard 2001.

⁶⁸ Carpentier and Rickard 2001: 116; Rickard 2006; Sussman 1997: 4-5.

Factory-made slipware, also called industrial slipware⁶⁹, used many of the decorative techniques of seventeenth and eighteenth-century slipware made in small country potteries in Britain (Figure 4.29, Figure 4.33). In a traditional country pottery, the potter applied slip decoration to change the colour of the vessel from the red or orange colour of the local clay. The slip was also applied as a coloured slip decoration. Slip is made from watery clay. Many slipware vessels were decorated with animal scenes as well as simple decorative techniques of lines, wavy lines and dots as well as marbled finishes. Those illustrated in

Figure 4.30, Figure 4.31 and Figure 4.32 represent a range of simpler styles produced on mostly utilitarian vessel shapes including: pans, plates or dishes, mugs, cups, tankards and jugs.



Figure 4.30: Dish or plate with an orange fabric covered with a dark brown coloured slip. Simple trailed decoration of lines, zig-zags and dots. Design probably applied by a slip cup with three quills which allowed three lines to be trailed simultaneously. Probably Midlands or north of England, second half of 18th century. Diam. 305mm. Stoke on Trent Museums webpage, Slipware Collection, Accession number 1951 P3.

The traditional slipware was a coarse or unrefined earthenware while all factory-made slipware was made in refined earthenware, basically the same fabric as contemporary tablewares: creamware, pearlware and whiteware. Traditional slipware was very much in the tradition of country potteries and their focus on producing utilitarian pottery for rural and domestic life which were not for use at the table. While factory-made slipware was produced in a refined fabric it was also the cheapest decorative pottery available during the early nineteenth century and was not intended for tableware.⁷⁰ Other influences on factory-made slipware came from attractive stones such as agate, marble and porphyry. Potters produced marble-like finishes which presumably sought to represent the more expensive finishes used in decorative arts and furniture in the finish or glazes of pottery, presumably intending to convey the impression that the vessels were more valuable than they were (Figure 4.34).⁷¹ Also see Section 4.6.1 for discussions on agate ware or marbled clay found at the site.

⁶⁹ http://www.stokemuseums.org.uk/collections/browse_collections/ceramics/slipware_collection/industrial_slipwares?tab=info. Accessed 1 July 2010.

⁷⁰ Rickard 2006: 15.

⁷¹ Sussman 1997: 1; Rickard 2006: 15.



Figure 4.31: Late seventeenth to early eighteenth-century slipware excavated on the Sadler Pottery Site, Burslem. Probably manufactured by Richard Parrot. A combed marbled slip decorated vessel is on the lower right shelf. Stoke-on-Trent Museum, Mary Casey 2005.

Factory-made slipware was mostly focused on hollow vessels while traditional slipware involved decoration of many open vessels as well as hollow vessels (Figure 4.31, Figure 4.32, Figure 4.33). The use of wheels or lathes in the decoration of factory-made slipware led to a shifting focus of where decoration and how decoration was placed on the vessel. On hollow vessels, new designs were introduced with strong elements of horizontal decoration on the vessel: the rim, the shoulder and the foot. This rose out a new way of looking at the vessel in relation to using a lathe to turn it for decoration. We begin to see reeded decoration round the rim as well as other coggled bands.⁷²

The same is seen with Ball's finer hemispherical bowls which were decorated on the exterior although the open vessels had horizontal rim decoration (Figure 4.35, Figure 4.36). Once the design shifted to open vessels the new fields of horizontal design no longer worked and more traditional approaches to decoration continued, such as decoration in slip bands or lines and dots around the rim with more detailed or decorative decoration in the centre of the flat vessel.

⁷² Sussman 1997: 4.



Figure 4.32: Slipware probably from William Burns Pot Works, Burslem. Stoke-on-Trent Museum, Mary Casey.



Figure 4.33: Range of factory-made or industrial slipware, Stoke-on-Trent Museum. Most are late eighteenth and early and mid-nineteenth-century examples; all are probably British. Mary Casey.



Figure 4.34: Tankards and jugs with reeded decoration highlighted with green slip around the rim. Note the use of a marbled glaze and sprigged decoration, one of which is highlighted in green. Rickard 2006: 16.

4.6.3 Direct Decorative Influences from Factory-made Slipware

4.6.3.1 Reeding or rilling with green highlighting

The use of reeding or rilling as a secondary decoration on factory-made slipware was typically found in association with creamware (1790-1820) and pearlware (1780-1840) vessels and rarely found on whitewares (1830 to present). Rouletted bands also had a similar date range and use. Among the decorative rim treatments used were: plain rouletted, green or other colour stained rouletted, plain rilled, green or other colour stained rilled. The presence of a rim decoration, a second decoration other than the main slip decoration, is thought to only have occurred during the earlier period (1790-1840s) as it was more expensive to produce two types of decoration and therefore these stopped being added to keep the price of these vessels down.⁷³

Unlike the British factory-made slipware, the use of reeding or rilling and rouletting was the main decoration by itself other than being highlighted with green slip (Figure 4.34). In the case of the imitation factory-made slipwares produced by Thomas Ball the reeding and green slip is always the main decoration on the pale yellow or cream glazed vessels, mostly cups, bowls and lids, and saucers. The use of green-slipped engine-turned rilling was typically a decorative technique used at the top and base, or occasionally the shoulder, of a jug or mug or pepper pot in Mocha, Slipped or Dipped wares.⁷⁴ We have seen no examples of this decoration used by itself other than what is most likely to be locally-made pottery, presumably by Thomas Ball.⁷⁵

⁷³ Rickard 2006; <http://www.jefpat.org/diagnostic/Post-Colonial%20Ceramics/DiptWares/DiptWaresIntroduction.htm#Rilling>. Sussman 1997: 57-60 provides an important discussion on the development of a chronology for factory-made Mocha and slipware.

⁷⁴ Rickard 2006: 15-16, 23, 25, 28, 36-37, 40, 48, 49, 62, 67; Sussman.

⁷⁵ Although it is noted that we are currently cataloguing some from 15 Macquarie Street, Parramatta which is very fine and we hesitate to attribute it to Thomas Ball at this time.



Figure 4.35: Variety of reeded lines (ID2) highlighted with green slip (HP6) which is similar to factory-made slipware on creamware. Remains of four lids are in the left column (front to back): 7662/#88461(1), 7663/#86827(1), 7645/#85354(1), 7645/#85258(1). In the middle column: 7460/#86383(2), 7645/#85256(2) - frags of a cup, 7662/#88460 - partial lid; right column: 7663/#86825(1) - bowl, 7645/#85499 - base, 7650/#89274 - base. Russell Workman, 3/2/2011, scale 10cm.



Figure 4.36: Range of thicker vessels, all dishes. Bottom row (LtoR): 7663/#86824(5), 7646/#85221; 2nd row: 7662/#88464(5); 3rd row: 7662/#88463(5); Back row: 7645/#85266(3), 7646/#85267(3). Russell Workman, 3/2/2011, scale 10cm.

More Factory-Made Slipware Influences

Following on from the discussion of reeded decoration frequently found on factory-made slipware above there are other similarities in the decorative techniques used on the utilitarian styles that are worth investigating. There are other elements of slipware that Thomas Ball may have borrowed and modified. One of the main problems in applying this hypothesis easily to our vessels is that the greater majority of the handpainted vessels were open dishes rather than the tall and closed vessels typically manufactured for slipware. It is therefore more likely that the incised and rouletted decoration is the key to the relationship with factory-made slipware.

Other decorative elements of factory-made slipware found on Thomas Ball pottery other than the use of reeding with green slip highlighting are (see Appendix 4.1: Table 30, 31 for EVE counts within each decorative type):

- Rouletted bands around rims with green slip (Rickard 2006:32-33, 35, 36, 91, 93), (Figure 4.37, Figure 4.38).
- Use of wavy or zig-zag line decoration (Rickard 2006:36, 53, 68; 89, fig. 124; 91, 92, 93); (Appendix 4.2: HP12, HP13, HP15, ID1 & HP6).
- Placement of dots above and below wavy lines (Rickard 2006:88, fig. 125) – (Appendix 4.2: HP16, HP20, HP21, HP22, HP23, HP26, HP27, HP28, HP26, HP35, HP44, HP48, HP50).
- Bands of dots (Rickard 2006:71, 77). (Appendix 4.2: HP24, HP25, HP58?).
- Simple flower motifs constructed from a circle of dots with a central dot in the middle (Rickard 2006:94, figs 131, 132; 71, Fig. 103). (Appendix 4.2: HP24).
- Use of sprigged decoration (Rickard 2006:9, fig. 14; 29, fig. 39; 82, Fig. 116). (Appendix 4.2: sprig).
- Marbled or variegated surfaces (Rickard 2006:16-29). (Appendix 4.2: marbled).
- Simplified or abstract plant, bud or insect motifs (Rickard 2006:72-73). (Appendix 4.2: HP4, HP8, HP14, HP30, HP33.1, HP33.2, HP34, HP37, HP46).
- Moulded tea pot knobs with rouletted bands on the shoulder which is similar to some of the finer incised wares (Rickard 2006:78-79, Fig. 101).



Figure 4.37: Rouletted decoration (ID3) highlighted with green slip. Narrow coggled band consisting of repeating tiny impressed triangles and rectangles. These dish sherds came from pit 2, 7645/#85343. Russell Workman, 10cm scale.



Figure 4.38: Rouletted decoration (ID9) highlighted with green slip (HP6), narrow coggled band of rectangles with circles in the middle. These two sherds from a dish came from Pit 3, 7662/#88113. Russell Workman, 1cm scale divisions.



Figure 4.39: HP24 with the simple flower motif made of dots is occasionally found on factory-slipware. Russell Workman, scale 10cm.



Figure 4.40: Earthenware slipware bowl decorated with cable motif, cats eyes and a simple flower motif. From Slesin 1997. Another example of this motif is in Rickard 2006: 94, Figs 131, 132.

4.6.4 Stoneware

Quantities of sherds (561) identified as 'faux stoneware', which following scientific analysis was confirmed to be lead-glazed stoneware, were found at the site (Appendix 4.1: Tables 4, 11, 19, 20, 26, 34, 49, 50; Fig. 4.1). To date, the Stage 2 re-cataloguing of the stoneware has not been completed. The sorting of these sherds is quite difficult as they fracture in a linear manner and joins are not obvious, nor are differences between vessels easily discernible. This means that the Stage 1 vessel counts are generally unreliable and the decorative analysis is also inadequate. The small number of sherds (561) indicates that this material is a small part of the overall corpus and may be evidence of Ball experimenting to see if he could produce stoneware. Nearly all, 92 per cent, of the stoneware came from Waster Pit 2, Area A, from the upper fill of the pit. Most of this was olive coloured (490 sherds) with some mulberry coloured sherds coming from Pit 3 (29). The small quantity of sherds may indicate that the pottery was experimental in an attempt to produce a better quality fabric, perhaps more resistant to shock.

The stoneware is basically the same clay as used in the earthenware but is fired to a higher temperature. In some cases items called stoneware may be little more than overfired vessels. In other cases some vessels were definitely intended to be stoneware as they have quite a different appearance and shape to the earthenware vessels. To date we identified 11 (EVE) vessels but preliminary resorting makes it clear that there are likely to be more vessels. Vessel shapes identified to date are: dishes (2), jugs (3), jug/jar (4), and poe/bowl (1); two strap handles probably for jugs have also been found. General function identified for the stoneware vessels are: food (9), personal/food (3), and storage (2). Identified decoration includes some painting and use of incised bands (Figure 4.41).

An interesting element of some of these sherds is that they are glazed on the interior which is completely unnecessary for stoneware as the fabric is impervious to liquids which is why it became so associated with containers for liquids of all kinds.



Figure 4.41: Decorated stoneware, (HP57) 7645/#89815.

4.7 Thomas Ball's pottery on Other Sites⁷⁶

4.7.1 Ball Pottery on Sites in the Rocks and Sydney CBD

Although it can be difficult to identify likely examples of Thomas Ball's ceramics from other sites without visual inspection of the artefacts, the 2008 honours thesis of Carly White⁷⁷ affords an opportunity to indirectly compare decorated lead-glazed ceramics from 710-722 George Street with those from four other sites. White's thesis considered 'colonial earthenware' from trench A of Cumberland/Gloucester Streets Site 1994 excavation, Lilyvale, First Government House and the Harrington Street Well.⁷⁸ White visually inspected at least some of these assemblages.⁷⁹

Although much of White's analysis was based on glaze position (i.e. interior, exterior or both) and colour, she also formed a decoration type list, which was accompanied by photos of examples of 14 of the 19 types observed.⁸⁰ This allows a comparison to be made with the decoration types observed at Thomas Ball's Pottery. This is outlined in Table 5.1. For Decoration Series found at Thomas Ball's Pottery see Volume 4: Appendix 4.2.

The comparison in Table 5.1 shows that out of the 11 incised decoration types, four were likely to correspond with decoration observed at the Pottery of Thomas Ball, while all handpainted designs had likely parallels with Thomas Ball ceramics. However, further analysis by White showed that her decoration types did not occur evenly across the sites she considered. Rather, all the incised pottery which had parallels from Thomas Ball's Pottery, was found on the Lilyvale site.⁸¹ Also, most of the handpainted pottery was found at the Lilyvale site, with only one fragment of White's type 14 (HP12) found at First Government House, and one fragment of White's type 16 (HP6) found in the assemblage of trench A, Cumberland/Gloucester Streets site.⁸² Although the total numbers of sherds counted were very low (no more than one or two of any one type), the concentration of Thomas Ball parallels at the Lilyvale site does suggest that Thomas Ball's pottery may not have been used in the same quantities at all sites.

White Type No. ⁸³	White Type description	White photo reference	Likely Thomas Ball comparison type
<i>Incised decoration types</i>			
Type 1	Single application of six narrowly spaced horizontal lines beneath rim (exterior) and one extra line beneath where edge of tool rested.	p 81; LV18730	ID2
Type 2	Multiple applications of multiple horizontal lines on body (exterior). Even spacing indicates use of tool.	p 81; LV18763	ID2
Type 3	Single application of six widely spaced horizontal lines on body (exterior). Uneven spacing suggests lines were added individually.	p 81; LV18456	does not resemble closely any Ball types
Type 8	Single line parallel to rim (interior).	p 82; LV17948	none
Type 9	Single application of two lines in waves on body (exterior).	p 82; LV18064	ID1 or ID7
Type 10	Single application of three lines in waves on body (exterior).	p 82; LV18064	ID1 or ID7
Type 15	Single line parallel to rim (interior).	p 84; CUGL 24989	none

⁷⁶ This section was researched and written by Nick Pitt.

⁷⁷ White 2008.

⁷⁸ White 2008: 38-39.

⁷⁹ White 2008: 37-38.

⁸⁰ White 2008: 45-55, 55-56, 81-85..

⁸¹ White 2008: 57, fig 5.14.

⁸² White 2008: 57, fig 5.14.

⁸³ Note that White did not use 'type 7' and that 'type 4' was a moulded decoration displaying in relief a leaf similar to that of a grape vine (White 2008:55).

White Type No. ⁸³	White Type description	White photo reference	Likely Thomas Ball comparison type
Type 17	Three horizontal lines below rim. Thick depressions caused by fingertips, rather than tools.	not illustrated	none
Type 18	Double line parallel to rim (interior).	p 85; FGH10123	none ⁸⁴
Type 19	Two horizontal lines widely spaced around body (exterior).	not illustrated	none
Type 20	Single horizontal line around body (exterior).	not illustrated	none
<i>Handpainted decoration types</i>			
Type 5	Green line parallel to rim and large orange dots below line.	p 81; LV14737	Similar to HP6 (only with dots)
Type 6	Green horizontal line around body (exterior), with small orange dots below line.	p 82; LV17885	Similar to HP6 (only with dots)
Type 11	Green line parallel to rim, wavy green line around body (exterior), and small brown and green dots either side of line.	p 83; LV14556	possibly HP20
Type 12	Brown spattered lines around interior of vessel.	p 83; LV14556	similar to HP5 or HP17
Type 13	Single green line running parallel to rim crossed by fine wavy brown line.	p 84; LV14556	possibly HP45
Type 14	Single green wavy line around rim (interior).	p 83; FGH 10126	HP12
Type 16	Single green line running parallel to rim.	not illustrated	HP6

Table 5.1: Decorated types as described by White, compared with decorated types from the Pottery of Thomas Ball.

To summarise, White's 2008 thesis allows decorated Sydney manufactured earthenware from the Lilyvale, Cumberland/Gloucester Streets, Harrington Street Well and First Government House sites to be compared to those found at the Pottery of Thomas Ball at 710-722 George St, Haymarket. From this comparison, a handful of probable examples of Thomas Ball's pottery are able to be identified, mostly from the Lilyvale site.

Apart from White's thesis, further information on the artefacts from the Lilyvale, First Government House and Cumberland/Gloucester Streets sites is available from the EAMC Archaeology Database.⁸⁵ Although the descriptions of lead-glazed ceramics from these sites are of varying levels of detail, some descriptions are detailed enough to suggest that certain artefacts may be examples of Thomas Ball's pottery, as found at 710-722 George Street. From the Lilyvale site, out of 182 catalogue entries (443 fragments) for lead-glazed ceramics,⁸⁶ two have descriptions suggestive of decorative patterns seen at 710-722 George St.⁸⁷

The lead-glazed ceramics from Lilyvale are also relevant to those interested in locally manufactured-pottery because they include a chamber pot fragment marked "J. LEAK".⁸⁸ However, the ceramic description field for Lilyvale does not describe the decorated examples found by White,⁸⁹ raising the possibility that further decorated examples of locally-made ceramics were found at Lilyvale but not catalogued as such.

⁸⁴ Note that the example illustrated by White also shows specks of green glaze on a yellow background. This makes the vessel somewhat similar to examples from 710-722 George Street, Haymarket, although in this specific case, the speckling occurs with a lower frequency to that illustrated for HP9, in appendix 4.2 of this report.

⁸⁵ La Trobe University and Industry Partners 2006; see also the database manual, Crook & Murray 2006.

⁸⁶ These were ceramics with the following codes in the "decor" field: BlackLeadGlz, BrownLead, GreenLead, LeadGlaze, OrngeLead, RedLead, YellowLeadGlz.

⁸⁷ One cup (LV14169) is described as Yellow Lead Glaze, with green line & brown dots. A jar (LV11722) is described as Red Lead [Glaze] with an orange body & incised exterior.

⁸⁸ LV11805. Jonathan Leak was another prominent early Sydney potter.

⁸⁹ White 2008: 81-85 (Appendix A). Also see summary in table 1, above.

From First Government House, catalogued ceramics from the 1990-1991 Young Street and Raphael Place (YRP) excavations there were seven catalogue entries (and seven fragments) which had descriptions which were suggestive of decorative patterns of Thomas Ball's pottery,⁹⁰ out of a total of 148 catalogue entries (and 231 fragments) of lead-glazed ceramics from the site.⁹¹ There were no detailed descriptions in the catalogue of lead-glazed ceramics from the 1983-87 excavations at First Government House to allow decorated ceramics potentially made by Thomas Ball to be identified. However, the database does include a photograph of the bowl sherd identified by White as having a wavy green line on its rim suggesting that it was made by Thomas Ball.⁹²

Out of the EAMC data, the Cumberland/Gloucester Streets site catalogue provides the greatest likelihood of identifying any Thomas Ball parallels, as the EAMC archaeology database includes images of all ceramic types,⁹³ and is supported by a specialist artefact report.⁹⁴ These images of ceramic types show four examples of hand-painted decoration, which strongly resemble those associated with Thomas Ball found at 710-722 George Street.⁹⁵ Another rouletted type was photographed, showing a pattern similar to that categorised as ID3 at 710-722 George Street.⁹⁶ A further photographed sherd showed a combination of incised lines and green highlighting below the rim, similar to the combination of HP6 & ID2 found at 710-722 George Street and 2008 excavations at Cunningham Lane.⁹⁷ However, the particular gloss of the glaze on this photographed example is higher than that typically seen in Thomas Ball's pottery, making it uncertain whether this example was made by him or not.

The type series from the Cumberland/Gloucester Streets site also allows some rudimentary analysis to be made of the wider artefact catalogue, showing the relative frequency of decorated types, compared to other lead-glazed ceramics (Table 5.2).

Type Name	Type description	Number of catalogue entries	Total of Quantity
Lead Glzd ware 3	white fabric, yellow int & ext glaze, traces of Green	56	70
Lead Glzd ware 8	white fabric, brown terracotta slip dots, lead glaze overall	2	3
Lead Glzd ware 10	white fabric, wavy Green line below rim	1	1
Lead Glzd ware 16	brown fabric, brown int and ext glaze with Green cross	1	1
<i>Total for Lead Glazed Ware (including other types, not listed individually)</i>		1018	2524
Red Glzd ware 4	pink fabric, int red glaze, rouletted ZI rim border	2	2
<i>Total for Red Glazed Ware (including other types, not listed individually)</i>		32	50
HP Earthenware Green 1	combed lines at rim, green glaze over	27	33

Table 5.2: Table showing the types from the Cumberland/Gloucester Streets site which resemble decorated ceramics from the Pottery of Thomas Ball.

⁹⁰ YRP0111, YRP0199, YRP0236, YRP5915, YRP5985, YRP6026, YRP6201.

⁹¹ These were ceramics with the code, "Lead glazed coarse earthenware" in the "Type Series" field.

⁹² FGH10126.

⁹³ Crook & Murray 2006: 9. It should be noted that Wilson (1999), who oversaw the cataloguing of the Cumberland/Gloucester Streets site ceramics, used the concept of "type" differently to the standard practice of Casey & Lowe. Wilson uses type as a means of categorising ceramics by fabric and then by surface finish (1999: 210-211). The way the term is employed by Casey & Lowe almost always refers to the physical shape of a ceramic vessel.

⁹⁴ Wilson 1999.

⁹⁵ These types are: Lead Glazed Ware 3 (CUGL25256), Lead Glazed Ware 8 (CUGL62114), Lead Glazed Ware 10 (CUGL62115) and Lead Glazed Ware 16 (CUGL63887).

⁹⁶ Red Glazed Ware 4 (CUGL63874). Note that other rouletted types, described as "ear-of-wheat", found at the Cumberland/Gloucester Street site were clearly not the same as any from Thomas Ball's Pottery.

⁹⁷ HP Earthenware Green 1 (CUGL63135). For photos of examples from 710-722 George Street, see Appendix 4.2 of this report; for an example from Cunningham Lane see Figure 4.42.

Apart from the decorated wares, other lead-glazed ceramics from the Cumberland/Gloucester Street site also resemble pottery associated with Thomas Ball. One photographed knob is almost identical to those knobs found at 710-722 George Street.⁹⁸

In addition to the sites discussed so far, there is sporadic evidence that Thomas Ball's pottery has been found on other archaeological sites around Sydney. Occasionally this information occurs in completed excavation reports. For example, the ceramics artefact report for the School of Arts, Pitt Street site included a description of 'coarse earthenware'. This material included 'a few pieces of decorated ware including two pieces of cream ground with green wavy lines and dots',⁹⁹ as well as some pieces showing signs of 'rudimentary rouletting'.¹⁰⁰

Another site where decorated lead-glazed ceramics similar to Thomas Ball's products have been found is during the 2004 Cunningham Lane excavations, immediately northeast of the 710-722 George Street site (Figure 4.42).¹⁰¹



Figure 4.42: Lead-glazed ceramic bowl with incised lines below rim and green glaze highlighting found at 2008 Cunningham Lane excavations. Photo by Jenny Winnett.

Figure 4.42 shows one decorated ceramic from the Cunningham Lane site with incised lines below its rim and green glaze highlighting, which strongly resembles the combination of ID2 & HP6 observed on lead-glazed ceramics from 710-722 George Street.

⁹⁸ Lead Glazed Ware 13 (CUGL63839). Note that other sherds in this type are not knobs, but rim, body and base fragments.

⁹⁹ Thorp 1990: §4.2 [p 14]. Wilson 1999: 219 also notes that some marked lead-glazed ceramics from the Cumberland/Gloucester Streets site had the same fabric and glaze pattern as pottery from the School of Arts, Pitt Street site.

¹⁰⁰ Thorp 1990: §4.2 [p 14]. The complete description of the 'coarse earthenware' analysed by Thorp is:

The body is coarse earthenware, occasionally poorly fired and generally thick walled although this sample includes a few finer pieces. It is produced on a wheel. It is often unglazed but many pieces are lead glazed in a variety of brown, red/brown, ochre, cream and buff, green and green/yellow colours. The most distinctive pieces incorporate a simple form of decoration, often bands or splatters of colour.

The sample includes a few pieces of decorated ware including two pieces of cream ground with green wavy lines and dots and, the most distinctive and fine, a cream ground with brown and green stripes. A few pieces show some form of rudimentary rouletting.

¹⁰¹ Personal communication with R. Stocks, June 2011.

4.7.2 Ball pottery on Casey & Lowe Sites

Decorated lead-glazed ceramics have also been found at several other sites excavated by Casey & Lowe. At the Conservatorium site, numerous lead-glazed ceramics were found,¹⁰² mostly in contexts associated with the early nineteenth-century bakehouse (c.1801-1815), which pre-dated the construction of the Government Stables and its courtyard, c 1818-1820,¹⁰³ underneath what is now Verbruggen Hall. Among a minimum item count (MIC) of 113 lead-glazed ceramic vessels from the whole site, there were three examples which were handpainted in patterns very similar or identical to Thomas Ball.¹⁰⁴ Interestingly, all these patterns were either interweaving brown and green wavy lines (Figure 4.43),¹⁰⁵ identical to HP3 from 710-722 George Street, or a green wavy line,¹⁰⁶ suggesting some attempt at maintaining a matching set.

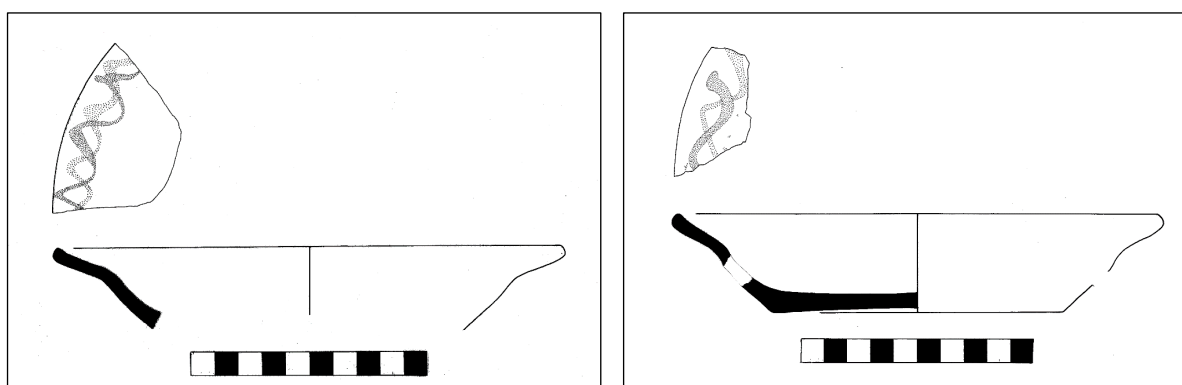


Figure 4.43: Handpainted, lead-glazed ceramics from the Conservatorium site. Left: 1004/[#2097, #2145, #2156, #2176, #2181, #2194, #2163] and right: 1004/#2116.¹⁰⁷ Franz Reidel.

Also in the contexts associated with the bakehouse were four vessels (MIC) of what was termed in the catalogue and report at the time, 'annular creamware'.¹⁰⁸ Although at the time it was unclear whether these examples were locally made, knowledge of Thomas Ball's pottery and lead-glazed ceramics from other sites makes it seem possible that three of these vessels were made by Thomas Ball.¹⁰⁹ These three vessels consisted of a bowl, a saucer and a cup and each had incised lines, highlighted with green glaze below the rim (Figure 4.44), much like the decoration pattern, ID2 & HP6, observed at 710-722 George Street, and other parallels at the Cumberland/Gloucester Streets and Cunningham Lane sites already discussed here. The fourth vessel, a bowl, which had been identified as 'annular creamware',¹¹⁰ is unlikely to have been made by Thomas Ball, as its decoration, of thick, brown and cream bands above the base on the exterior surface is unlike anything found at 710-722 George Street. Moreover, the slightly indented cream bands indicate that it was made using a lathe, a technique not noticed on material from Thomas Ball's Pottery although he was clearly influenced by this technique.

¹⁰² Casey & Lowe 2002; for detailed discussions on the lead-glazed ceramics see §5.2.4 (vol 1, ch 5, pp 120-127), §14.6 (vol 2, ch 14, pp 101-108) and Appendix 14.6 (vol 2, ch 14, pp 109-121).

¹⁰³ Casey & Lowe 2002, §5.2.4.1 (ch 5, p 121).

¹⁰⁴ The items were 657/#305; 1004/[#2097, #2145, #2156, #2176, #2181, #2194, #2163]; 1004/#2116; 1053/#2519.

¹⁰⁵ 657/#305; 1004/[#2097, #2145, #2156, #2176, #2181, #2194, #2163]; 1004/#2116.

¹⁰⁶ 1053/#2519.

¹⁰⁷ Drawings originally reproduced in Casey & Lowe 2002, Appendix 14.6, p 112.

¹⁰⁸ Casey & Lowe 2002, § 5.2.4.2 (ch 5, pp 126-127).

¹⁰⁹ 1005/#2378; 1005/[#2379, #2384, #2399, #2403]; 1034/[#2385, #2486].

¹¹⁰ 1046/[#2158, #2510].



Figure 4.44: Fragments of a saucer (left: 1005/[#2379, #2384, #2399, #2403]) and a cup (right: 1005/#2378) from the Conservatorium site.¹¹¹ These were originally termed “annular creamware”, although it now seems possible that they were manufactured by Thomas Ball at 710-722 George Street. Mary Casey.

Other sites excavated by Casey & Lowe, where decorated parallels to Thomas Ball’s pottery have been found include the old DMR site on Campbell Street, Sydney,¹¹² Parramatta Children’s Court,¹¹³ Pitt & Campbell Streets, Sydney¹¹⁴ and the Parramatta Justice Precinct (Figure 4.45, Figure 4.46, Figure 4.47).¹¹⁵

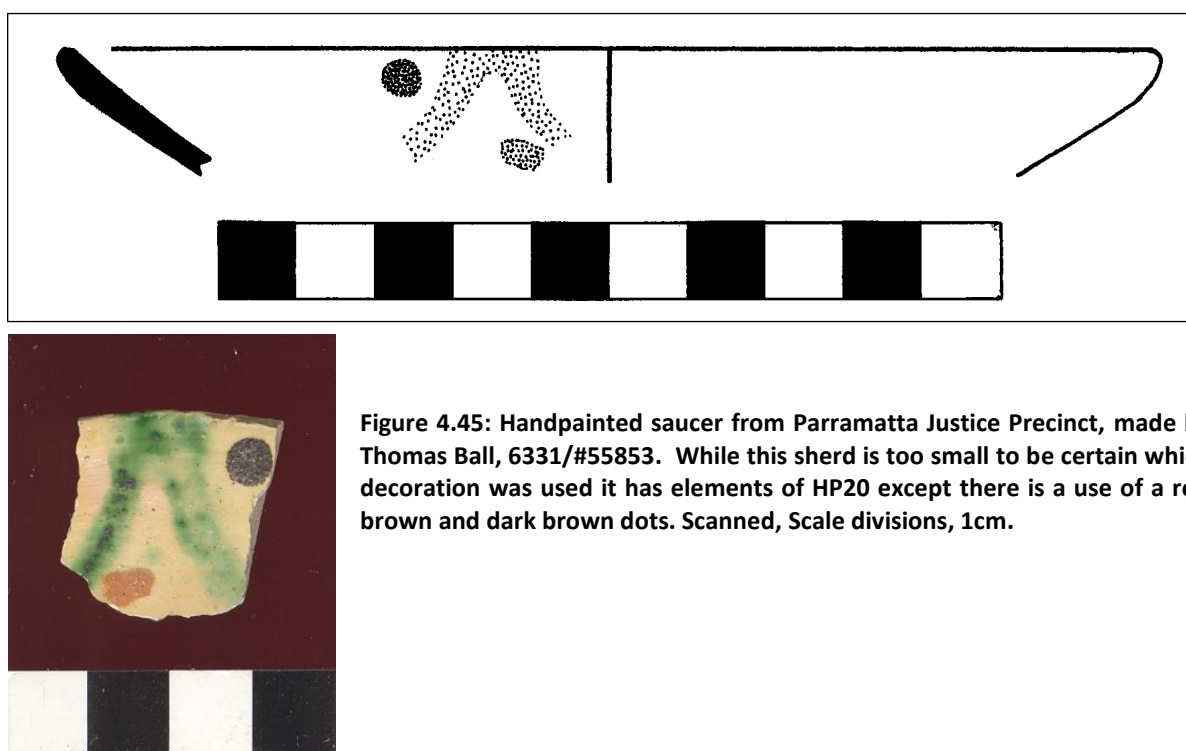


Figure 4.45: Handpainted saucer from Parramatta Justice Precinct, made by Thomas Ball, 6331/#55853. While this sherd is too small to be certain which decoration was used it has elements of HP20 except there is a use of a red brown and dark brown dots. Scanned, Scale divisions, 1cm.

¹¹¹ Image originally reproduced in Casey & Lowe 2002, §5.2.4.2 (ch. 5, p 126), photo 5.5.

¹¹² Casey 1999: 22-23.

¹¹³ Example of incised and handpainted: [3156/#21594, 3688/#21595, 3712/#21598] (one vessel across multiple contexts). See Casey & Lowe 2006a, §8.1.7.2 (vol 2, section 8.1, p 45).

¹¹⁴ Example of incised and handpainted (ID2 & HP6): 5215 /#37124; example of handpainted (HP37): 5239/#37208.

¹¹⁵ Examples of incised and handpainted: 6529/#55888, 6336/#38966; example of handpainted: 6331/#55888.



Figure 4.46: Coffee Can (6336/#38966) and base of chamber pot (6336/#38977) of a storage vessel from Parramatta Justice Precinct with incised and handpainted decoration, (ID2 & HP6). Both these vessels were probably made by Thomas Ball. Mary Casey, 10cm scale.



Figure 4.47: Fragment of a bowl (left) from the Parramatta Justice Precinct (6529/#55888) found in association with the Wellington jug. Teapot knob (3958/#21613) (right) from the Parramatta Children's Court site, George Street Parramatta. Mary Casey, scale divisions, 1cm.

The following table contains a summary of the type of decorated lead-glazed ceramics found at various sites (Table 4.3).

Site	Handpainted?	Rouletting?	Incised?	Incised & Handpainted?
Lilyvale	Y		Y	
First Government House; Young Street and Raphael Place 1990-1991	Y			
First Government House 1983-1987	Y			
Cumberland/Gloucester Streets	Y	Y		Y
School of Arts, Pitt Street	Y	Y(?)		
Cunningham Lane				Y
Conservatorium	Y			Y
DMR site	Y ¹¹⁶			Y
Parramatta Children's Court				Y
Pitt & Campbell Streets	Y		Y	Y
Parramatta Justice Precinct	Y			Y

Table 4.3: Summary table of what sites contain decorated lead-glazed ceramics similar to those associated with Thomas Ball found at 710-722 George St, Haymarket.

¹¹⁶ Note that one handpainted saucer from the DMR site, shown on the left of plate 4 of Casey 1999, features a pattern not seen at 710-722 George Street, Haymarket.

4.8 Kiln & Manufacturing Techniques

Although no *in situ* evidence for Thomas Ball's kiln was found during excavations, the site did retain structural and other debris relating to the production and firing of pottery and other artefacts between c.1801-1823. These items, dumped during the lifetime of the Pottery and after it was abandoned, were found redeposited in pits, hollows and gullies of Areas A and B, and occasionally in other disturbed locations (Vol. 2, Section 9; Section 4.1.3). The field drawing made by the surveyor Hallen in c.1831 of the study area and surrounding properties shows a circular structure with narrow extension just to the southeast of Area A (Figure 3.26 centre right). Its shape and location in the Brickfields strongly indicates that it was a kiln, perhaps used by Ball, with a single flue and stoke hole on the northeast side.¹¹⁷



Figure 4.48: Sorting of kiln structure and furniture artefacts from Area A, context 7460. Front: lead glaze and slag on various clay items and setter fragments. Middle: briquetage. Back: bricks. Russell Workman.

¹¹⁷ Preliminary cataloguing and analysis of pottery and kiln furniture from this site was undertaken by Jenny Winnett and Nick Pitt, extensively reviewed by Mary Casey, Bernadette McCall and Robyn Stocks. Kiln structure artefacts were catalogued by Robyn Stocks. Possible kiln sketch in *Field Books, Survey of the City of Sydney*, A. Hallen, SR Reel 2628 (2/5195), Item 347, p5.

4.8.1 Structural Evidence for Thomas Ball's Kiln

The structural evidence for at least one of Thomas Ball's kilns was found mainly within backfilled pits and drainage gullies in Area A (fills 7649, 7647, 7651, 7660) and in the western part of Area B (fill 7460), with a far smaller amount from features in Area C (Appendix 4.1: Tables 55, 56, Figure 4.48). The debris indicates an updraught clamp or Scotch kiln with a reusable or permanent low sandstock brick curtain wall mortared and rendered with clay. The kiln may have had a temporary clay or briquetage domed superstructure with a small opening at the top. The kiln is likely to have been sunken partly into the ground with at least one brick flue in which wood was burnt as fuel, stoked from a pit at one or both ends. The chamber floor may have had a central platform and could have been sandy or paved in a combination of sandstock bricks and celled or perforated kiln bricks, both of which were found at the site. Continual use and rebuilding of the kiln is indicated by used bricks with heat-deteriorated, heavily vitrified and slag-coated surfaces. The inclusion of fragments of previously fired objects within the upper walling also testifies to this. The kiln was probably similar to one of several small kilns excavated in Britain and America dating from the seventeenth to early nineteenth-century and may have features in common with a c.1830-1852 brick kiln found nearby in Albion Street, Surry Hills (Section 4.8.2).¹¹⁸

The burning of wood created an atmosphere in the chamber that caused physical changes in the clays and glazes of the pottery, kiln furniture and structure (Sections 4.2.1, 4.2.2). Physical evidence for wood at the site included charcoal fragments and plant microfossils (Volume 2, Section 9.6). The dominant pollen species in modified topsoils in Areas B and C (7472, 7386) was casuarina (*Allocasuarina/Casuarina*) indicating that the '1788' vegetation on the southern slope of Brickfield Hill was an *Allocasuarina-Eucalyptus* forest/woodland with a predominant grassy understorey (with Old Man Banksia (*Banksia serrata*)) on drier sites and a fern understorey on damp sites. It is highly likely that the wood burnt in Ball's kiln was locally sourced. Early land clearance on Brickfield Hill meant that much of the material may have been gathered from the area around Cockle Bay where swamp oak (*Casuarina glauca*) was growing until the 1820s.

The sandstock bricks were made of poorly mixed and crushed pink and white clays with numerous ironstone and organic inclusions. The bricks had been hand-moulded in a wooden stock frame and had no frog ('flat' type) on the stock face. Physical changes caused by exposure to heat observed on individual brick surfaces and mortar/render helped identify how the bricks were laid (both stretcher and header fashion) in the lower kiln wall or flue (Figure 4.49). One brick fragment had a 'XX' tally mark at one end (7460/95195, Figure 4.50). These bricks were typical of those made at Brickfield Hill in the first decades of the colony, 1788-c.1830. Other denser red-grey sandstock bricks found in Area B were specially cut to create key and bevelled-edge bricks that would have been used to build one or more corbelled flues (7460/95208, 95212-13; Figure 4.50). These can be compared to specially-made key-bricks and tiles found at the sixteenth to mid eighteenth-century pottery kilns in England.¹¹⁹

¹¹⁸ For early brickmaking in Sydney see Birmingham 1983; Gemmell 1986; Pavlou 1976; Ringer 2008; Stocks 2008, 2009b; and Varman 1993. Primary sources are: Collins 1798, 1802; Tench 1789, 1793; and Worgan 1788. For Britain: see Dobson 1850.

¹¹⁹ Dwight's Fulham Pottery, London - see Green 1999: 179, Fig. 145. Donyatt, Somerset, Site 13, Area N, Kiln 2 see Coleman-Smith 2002: 158-160, Fig. 24, Nos. 35/2, 35/9.

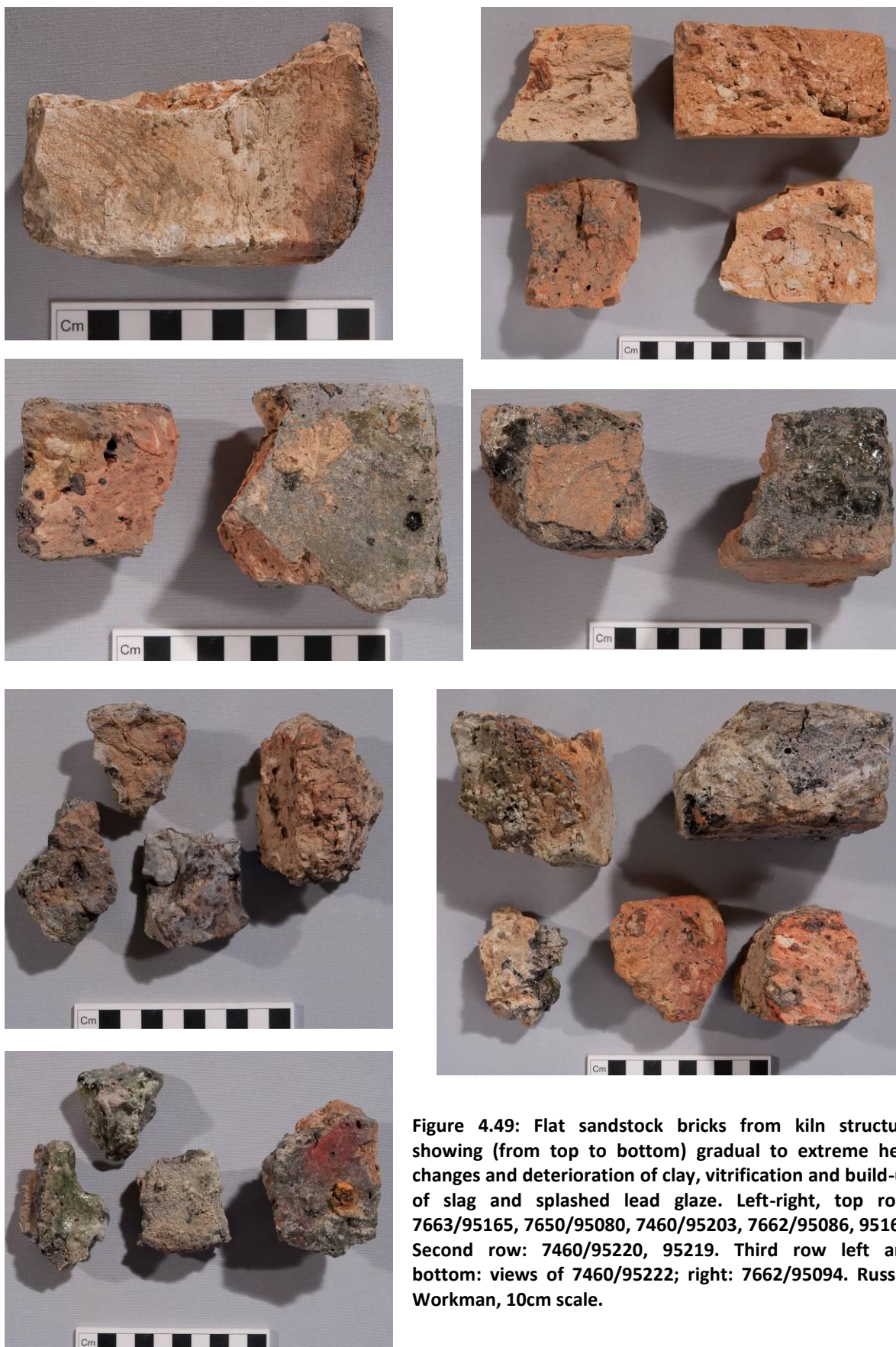


Figure 4.49: Flat sandstock bricks from kiln structure showing (from top to bottom) gradual to extreme heat changes and deterioration of clay, vitrification and build-up of slag and splashed lead glaze. Left-right, top row: 7663/95165, 7650/95080, 7460/95203, 7662/95086, 95167. Second row: 7460/95220, 95219. Third row left and bottom: views of 7460/95222; right: 7662/95094. Russell Workman, 10cm scale.



Figure 4.50: Shaped and marked bricks from the kiln structure found in context 7460. Top row left: corbel or keystone brick (95298). Top right and Middle row left: bricks with bevelled side edges and partly darkened dense clay fabric (95208). Middle row right: brick fragment with incised 'XX' tally mark (95195). Bottom: dense brown clay bricks fragments (95212). Russell Workman, 10cm scale.



Figure 4.51: Selection of heat-affected bricks with finger-smoothed clay mortar and render/lining provided information about kiln wall bonding and possible reuse. Top left: overhanging side hack or original brick kiln stacking mark, mortar above dark green glaze on face and side (7648/95067); right: mortar on blackened vitrified chipped end (95064). Bottom left: denser brown-grey brick fabric with darkened clay mortar (7460/95213); right: bright orange clay mortar on face and side of partly heat-affected brick (7663/95167). Russell Workman, 10cm scale.

Other specialised materials used to construct the kiln included 'kiln bricks' with square hollow cells that were used in kiln chamber floors to distribute heat from the flues (Figure 4.52, Figure 4.53). The bricks were laid cell-side down directly above the fire enabling the heat to travel more effectively upwards, a process often further aided by piercing small holes through the bottom of the cells. The single example of a kiln brick with simple, non-pierced cells (7648/95068 Type S) was made of well-crushed and mixed buff clay that was quite different to that available locally. This brick was probably imported from Britain. Although worn, it was barely affected by heat and may have been used only briefly in the kiln. The more common type was represented by five kiln bricks with five nail-pierced holes per cell (7662/95097 Type 5S). It was made from a coarser and probably local mix of pink to red clays, sometimes with rounded hard lumps, and crushed ironstone nodules. The 5S type had been used in the kiln during several firings, becoming badly deteriorated and fragmented with exposed surfaces thickly coated with lead glaze and slag. For the final firings these kiln brick fragments were laid at odd angles, even upside-down in a different way to their original function. There were no examples of wider and thinner 'kiln tiles' at the site which were commonly used in other potteries in Britain and in drying floors of grain and malt kilns in Britain and Australia.

A range of comparable kiln tiles and bricks, some with nail-pierced holes, were used in a number of sixteenth to mid eighteenth-century pottery kilns in England.¹²⁰

Buff-coloured clay was used as mortar and render/lining on the bricks. It was finer but otherwise similar to that used to create the layered upper wall (briquetage). This clay turned orange-red to dark grey in the hot kiln (Figure 4.51). The bricks and the sandstock roof tiles that were reused as kiln furniture or perhaps shelves had been made in another part of Brickfield Hill. They may have been sold as seconds, broken and discarded on heaps by the manufacturers or retrieved from dismantled earlier local structures. They represent cheap, readily available building materials that were part of a long-term recycling strategy conducted by the early colonists. The roof tiles are not thought to have been made after c.1810 and appear only to have been reused by Ball as stacking furniture (setters) or perhaps fragmentary briquetage inclusions rather than larger structural or roofing elements (Section 4.9.7).¹²¹

The temporary upper walling (briquetage) of the kiln was made by hand-applying layers of partly pugged clay which contained small to large fragments of plant matter, sandstones, ironstones, pre-fired broken bricks, tiles and pottery. Each layer of clay was reapplied after the previous layer had dried with some showing careful finger-smoothing. The pottery sherds were mainly used to line the inner surface, presumably to take advantage of their thermal properties and to provide strength. The largest fragment of briquetage found in Area A was slightly curved and 8-10mm thick. It consisted of at least nine layers (7460/95223, Figure 4.54). Pressure and heat during firing caused dislodged glaze and vitrified slag to travel through the layers to the outer surface. Some of this was already present on the inclusions used in the mixture. The clay and inclusions were affected by the heat, becoming harder and turning various shades of orange, red or even black. The curved shape of the briquetage indicates that the kiln was circular or oval and/or had a domed upper walling. This material can be compared to similar fragments found during excavations of kilns in Britain and America, notably the sixteenth to mid eighteenth-century pottery kilns at Donyatt, England.¹²²

¹²⁰ A kiln floor tile found in an early leaseholder storage cellar (3960/26319) at the PCC Site Parramatta was identical to one recently identified by Robyn Stocks reused in the south wall of the c.1810-1822 Dairy Cottage at Parramatta Park. Both tiles were made of similar coarse clays and had 4 pierced holes in the cells (4S type), see Stocks 2006: 14, 38; Casey & Lowe 2011: Section 3.2. For British tile types see Belford & Ross 2004: 215-225; Crew 2002, 2004. Donyatt, Somerset kiln bricks and tiles in Coleman-Smith 2002: 158-160, Fig. 24.

¹²¹ Roof tiles were manufactured at Brickfield Hill from 1788-c.1810 and approximately one third were broken during firing. See Stocks 2008, 2009b; and Varman 1993. Primary sources are: Collins 1798, 1802; Tench 1789, 1793; and Worgan 1788. For Britain: see Dobson 1850.

¹²² Donyatt Site 13, Area N, Kiln 2 in Coleman-Smith 2002: 158-160, Fig. 25: 35/11-12. Use of pottery wasters in briquetage see Pearce 2007: 159. USA: see 'clay plugging' at the 1770-72 porcelain factory in Philadelphia see Hood: Fig. 61.



Figure 4.52: Range of broken kiln bricks with squarish cells and perforations from contexts 7460, 7645, 7648 7662 7663. Russell Workman, 10cm scale.

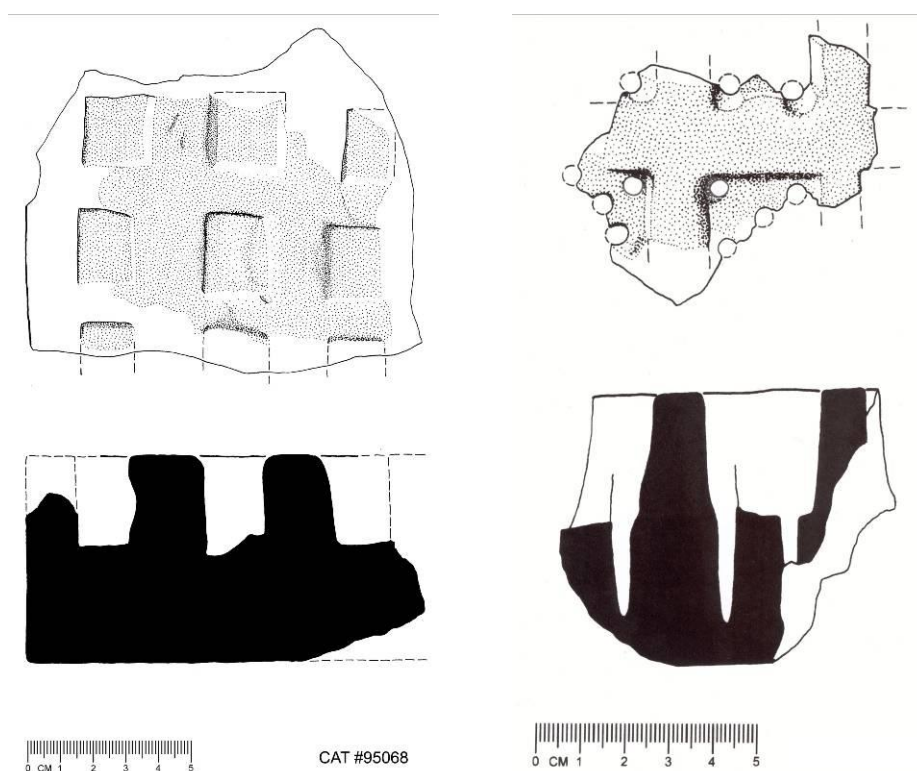


Figure 4.53: Kiln brick types. Left: S type with plain cells (7648/95068). Right: SS type with 5 holes in cells made by a nail (7662/95097). Franz Reidel amended by Sandra Kuiters.



Figure 4.54: Large kiln walling or briquetage fragment (7460/95223). Left top-bottom: curved profiles of three sides showing construction layers, pot inclusions and gaps filled with glaze and slag. Right top: exterior with finger-smoothed layers; bottom: interior with pot body sherds used to line interior. Russell Workman, 10cm scale.

4.8.2 Comparative Kiln Structures

The kiln and pottery waster debris from Ball's Pottery was used to fill clay extraction pits and other cuts relating to brickfield and pottery-making activities. It was also used as fill in the water-worn gullies at the southeast and western parts of the site (cuts 7660, 7647/7649/7651; and gully 7489). This was done to clear and level the allotments for redevelopment as well as to raise the level of George Street. The cuts and pits that were slightly back from the road and to the south-east would probably have been closer to the location of Ball's kiln. The upper walling of the kiln would have been reconstructed after each firing and it is possible that the whole structure was also rebuilt or relocated several times during the lifetime of the Pottery. The field drawing by Hallen in c.1831 of a circular kiln to the south of the site with one flue and stokehole on the northeast side was perhaps built by Ball. It may be the only representation of a kiln at Brickfield Hill in the historical records (Figure 3.26 centre right).

Evidence for possible older kilns may include a circular, oval or rectangular sunken area with one or more flues and fireboxes, and possible burnt soils and deposits. The sub oval cut 7660 in Area A, disturbed to the north and south, was superficially similar in shape and size to a sunken kiln but the base and sides had no evidence for an *in-situ* structure or burning. It was most likely used as a pond for softening and manipulating (pugging) clay prior to throwing (Section 3, Figure 3.19).

Excavation of the c.1830-1852 rectangular clamp or Scotch brick kiln at 20 Albion Street, Surry Hills (Figure 4.55) showed that natural clay not far below the flues and soils below the surface outside the kiln walls were not changed by the heat. Although used to fire sandstock bricks, this is the only pre-1850s kiln to be excavated in Sydney. With part of the lower curtain walling and most of the six parallel flues and stokeholes *in situ* this kiln has provided interesting evidence for local construction techniques and firing methods. The unfired or green bricks had been stacked directly above the flues onto a hard-packed sand floor which became burnt dark red by the heat of the wood fuel. Curiously, the sandstock bricks with shallow rectangular frogs being made and used to build the flues and lower walls of the Albion Street kiln were also used to construct the cesspit (7658) at the rear of the Woolpack Inn in Area A of the site (Section 3, Figure 3.37).¹²³

No kiln earlier than or contemporary with that of Thomas Ball's Pottery has been excavated in Australia, although several sites scattered across Brickfield Hill, Sydney have revealed areas of brickfield activity such as clay extractions, pugging and cartage. In 2008, pottery and clay pipes from the nearby 1821-1838 pottery and clay pipe kiln(s) of Jonathan Leak located off Elizabeth Street, between Goulburn and Wentworth Streets, were retrieved but have not yet been analysed.¹²⁴

¹²³ Albion Street kiln - see Stocks 2010 'Kiln structural Report, 20 Albion Street, Surry Hills' in App. 3 'Brickmaking techniques' in Casey & Lowe, in prep, *Archaeological Investigation 19-41 Reservoir Street, Surry Hills*; also Casey & Lowe 1995b.

¹²⁴ Leak excavations pers. comm. Graham December Wilson, 2008.

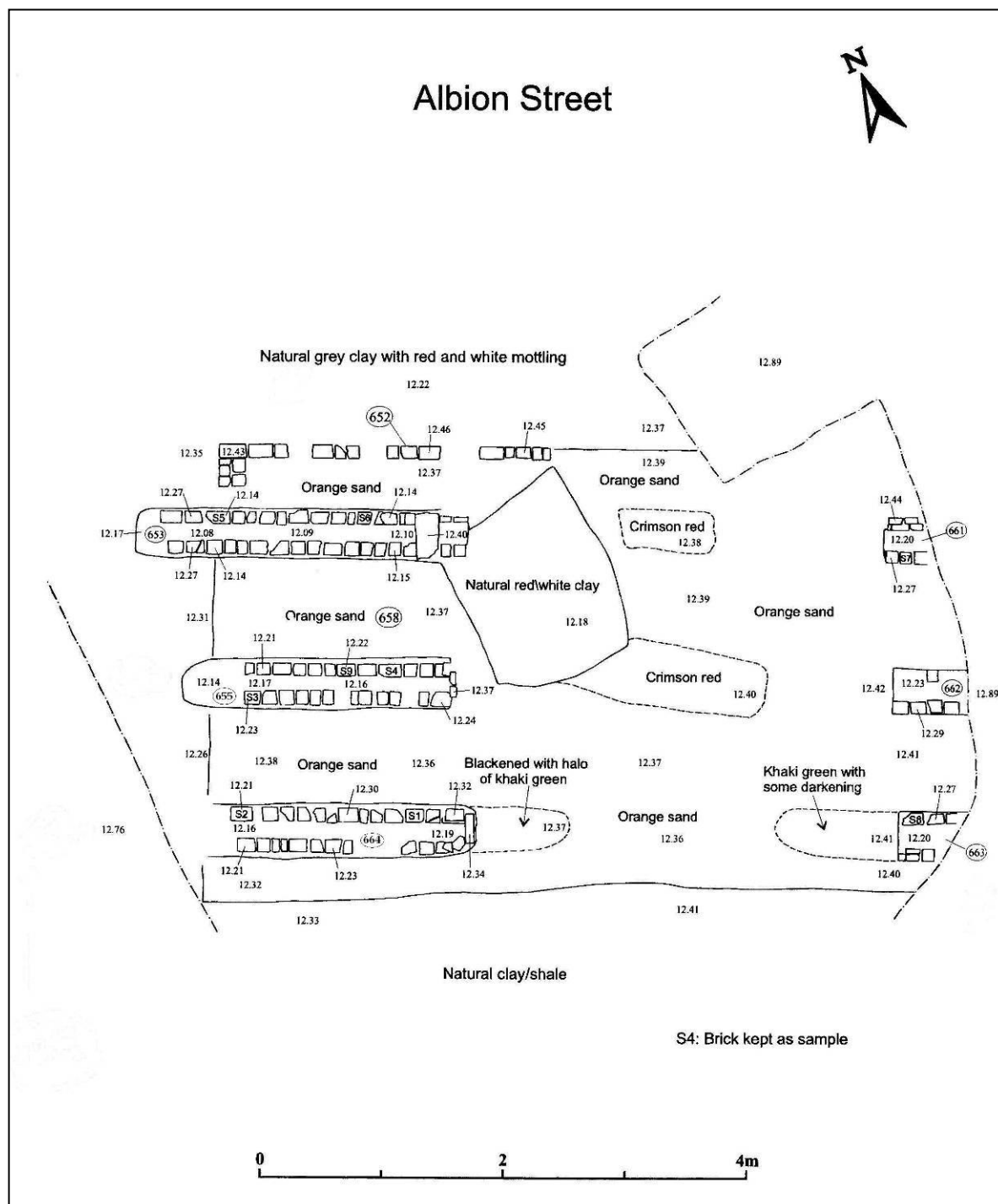


Figure 4.55: Sub-rectangular base and flues of clamp or Scotch kiln at 20 Albion Street, Surry Hills, drawn by Franz Reidel 1996.

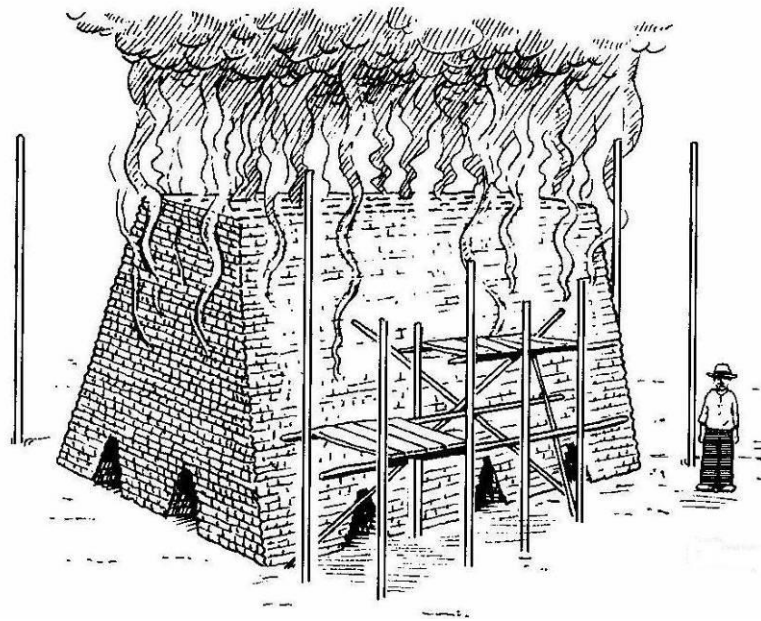


Figure 4.56: Clamp kiln with temporary walls from R. Ringer 2008: 18.



Figure 4.57: Scotch kiln with reusable walls from R. Varman 1993: Fig. 97, from “The Kiln”, Lionel Lindsay etching, Art in Australia, September 1925.

We know from contemporary sources the brick and tile kilns at Brickfield Hill, Sydney were of clamp or more permanent Scotch updraught construction (Figure 4.56, Figure 4.57). In New South Wales and Victoria this practice continued until the 1860s by which time simple downdraught kilns were also in use. Most of the early eyewitness accounts only describe the work being done at the brick and tile kilns and do not discuss structural elements in detail. Little is known about the form of early kilns built in Sydney to fire pottery although it is likely that they conformed to those built and operated by potters in Britain, some of whom like Thomas Ball came to Sydney as convicts. However this may not have always been possible, as there were several restrictions on construction and operation in Sydney. These included the lack of skilled labour, animal power, mechanical equipment and raw materials, including coal for fuel. As a result, structures may have more closely resembled those of the previous century, or been an adaptation using a mix of technologies. Any developments in pottery-making, whether machinery or stylistic since Ball's departure from England in 1799, would have to be learnt from new personnel, goods or reference material that came to Sydney. The organisation of brick and pottery yards based on medieval models was documented by various practitioners in Britain during the nineteenth century. These plans, profiles and yard layouts may be relevant to the spatial organisation of Ball's Pottery (Figure 4.63). Depictions of Fowlers Pottery in Camperdown, Sydney in 1865 and James King's Irawang Pottery in the Hunter Valley in c.1836 are also valuable sources of information (Figure 4.58). Irawang Pottery operated intermittently from 1833-1856 and was partly excavated in the 1960s and 70s.¹²⁵

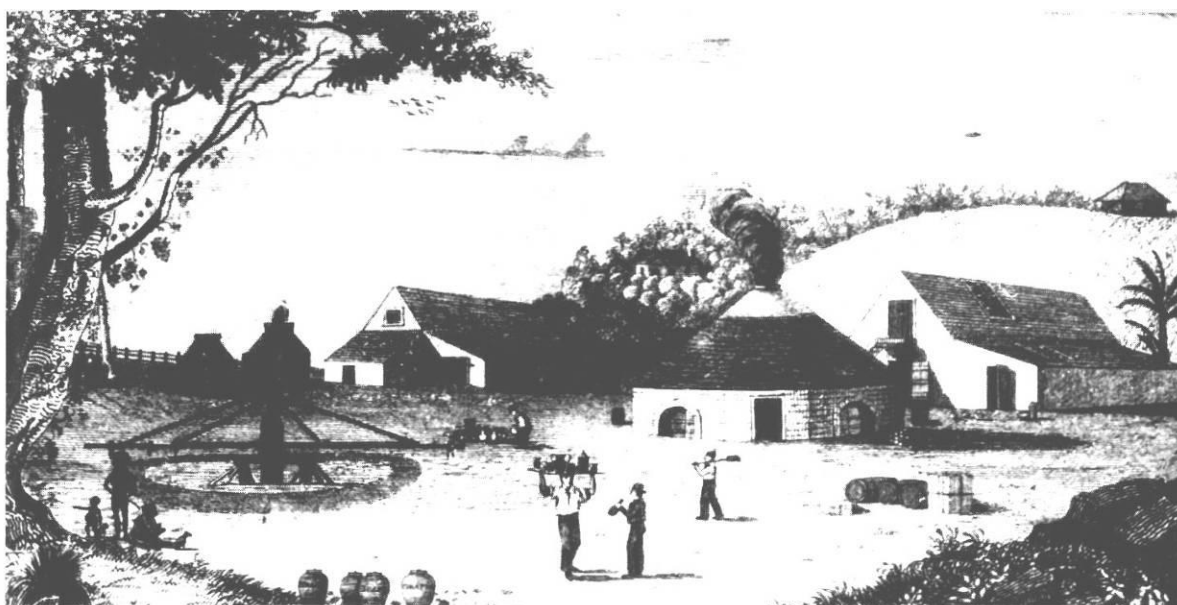


Figure 4.58: James King's Irawang Pottery, Hunter Valley. Advertisement showing layout in c.1836, with clay-pugging mill to left, bottle kiln centre right. From Birmingham 1983: 81.

¹²⁵ Sydney brick, pottery and pipe kilns described by Collins 1798, 1802 (1975); Tench 1789, 1793; and Worgan 1788 (1978, 2010). Technological development and excavation of Australian kilns see Casey 1999; Casey & Lowe 1995b, 2009; Ford 1995; Gemmell 1986; Lawson 1971; Lewis 2011: Chapter 6.02; Pavlou 1976; Ringer 2008: 17-20; Stocks 2006, 2008, 2009b; Varman 1993: 8-11, 40, Figs. 18, 20-21, 97-98. Also Irawang and Fowlers works: Bickford 1971; Birmingham 1983; Kelloway 2008. New Zealand see Clough 1989. British kilns and development: see Dobson 1850: Vol. 1, 60-62, 74-79, 104-105; Belford, P. & R.A. Ross 2004; Coleman-Smith 2002; Copeland 2009; Crew 2002, 2004; Dawson & Kent 1999; Green 1999; Killock, Brown & Jarrett 2003; McGarva 2000; Pearce 2007; Tyler et al 1999; Tyler et al 2005; Tyler, Betts & Stephenson 2008. Ireland: see Wilkins & Bunce 2007. USA: see Guerke 1987: 28-34; Hood 2007; Wingfield, Richmond & McKelway 2010. Spatial analysis of excavated pottery works in Greece: see Shaw et al 2001. Britain: brick and tile manufacture and yard layouts see Dobson 1850.

Numerous circular, oval and rectangular pottery kilns from this period and earlier have been investigated in Britain, Europe and America. In Britain the closest parallels to Ball's kiln would probably be those run by small businesses in rural villages rather than large enterprises in bigger towns. Roadside pottery clamp kilns were common in the narrow valleys of Donyatt village, Somerset in the late sixteenth to early nineteenth centuries. They were continually rebuilt and some may have been used to fire clay pipes. During excavations a variety of small circular or sub-circular kiln bases with one or more flues or fireboxes were revealed, having been rebuilt and reshaped through time by individual potters (Figure 4.59).

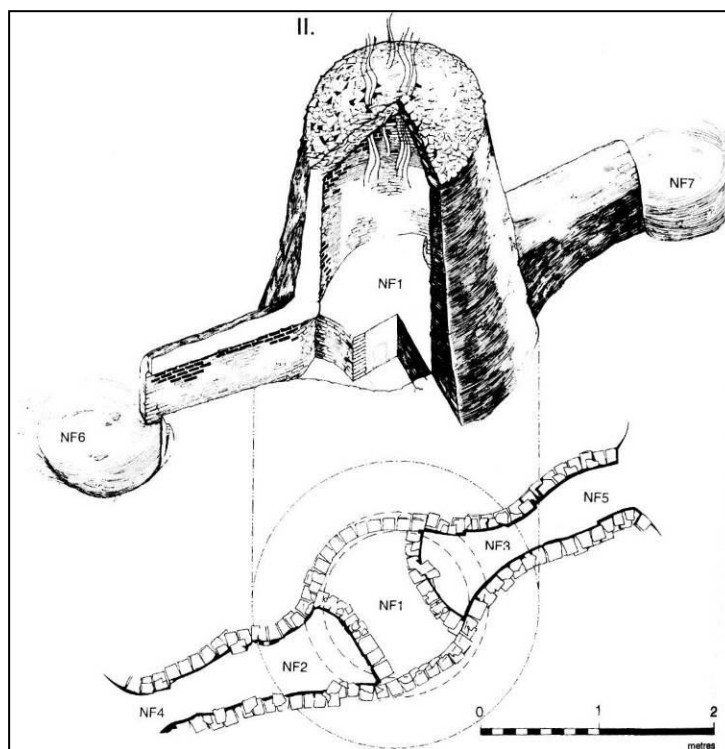


Figure 4.59: Circular clamp pottery kiln with central plinth and opposed firemouths. Sixteenth century with early eighteenth-century reuse from Donyatt Site 13, Cutting N, Kiln 2, plan and conjectural perspective reconstruction, from Coleman-Smith 2002: 220, Fig. 9.

A variety of oval and rectangular kilns were used to fire salt-glazed, tin-glazed and lead-glazed pottery during the seventeenth to eighteenth centuries. Their internal platforms, flues, fireboxes and stokeholes were fitted to suit the landscape, firing and technological requirements and the potter's individual needs (Figure 4.60). However, such variation is not as pronounced in four late eighteenth to early nineteenth-century small clamp and bottle kiln bases built of brick and stone excavated in Massachusetts and Connecticut

(Figure 4.61). The limited resources of the potters in eastern America may provide good parallels with those experienced in the first decades of settlement in Sydney.¹²⁶

Updraught pottery bottle kilns had an outer shell or 'hovel' that tapered to an upper chimney for better heat control and were fuelled predominantly by coal fed via fireboxes at the base of the inner kiln (Figure 4.62). They were commonly used to fire pottery in Britain from the 1750s until the

¹²⁶ Comparative plans and kiln development see Green 1999: Figure 23. The four USA kilns used to fire red earthenware were excavated by Old Sturbridge Village (organisation) - see Blakely 1989. For Hervey Brooks bottle kiln excavation see Worrell 1980 'To Burning a Kiln of Ware' The Way Hervey Brooks Did It' at http://www.osv.org/explore_learn/document_viewer.php?DocID=1052.

c.1900 when the mechanised improved versions were superseded by more efficient and hotter downdraught and continuous kilns. Examples of bottle pottery kilns have been excavated in Britain and America and several continue to be built and fired. It is possible that Thomas Ball also used a bottle kiln to fire his pottery but there is no evidence for this.¹²⁷

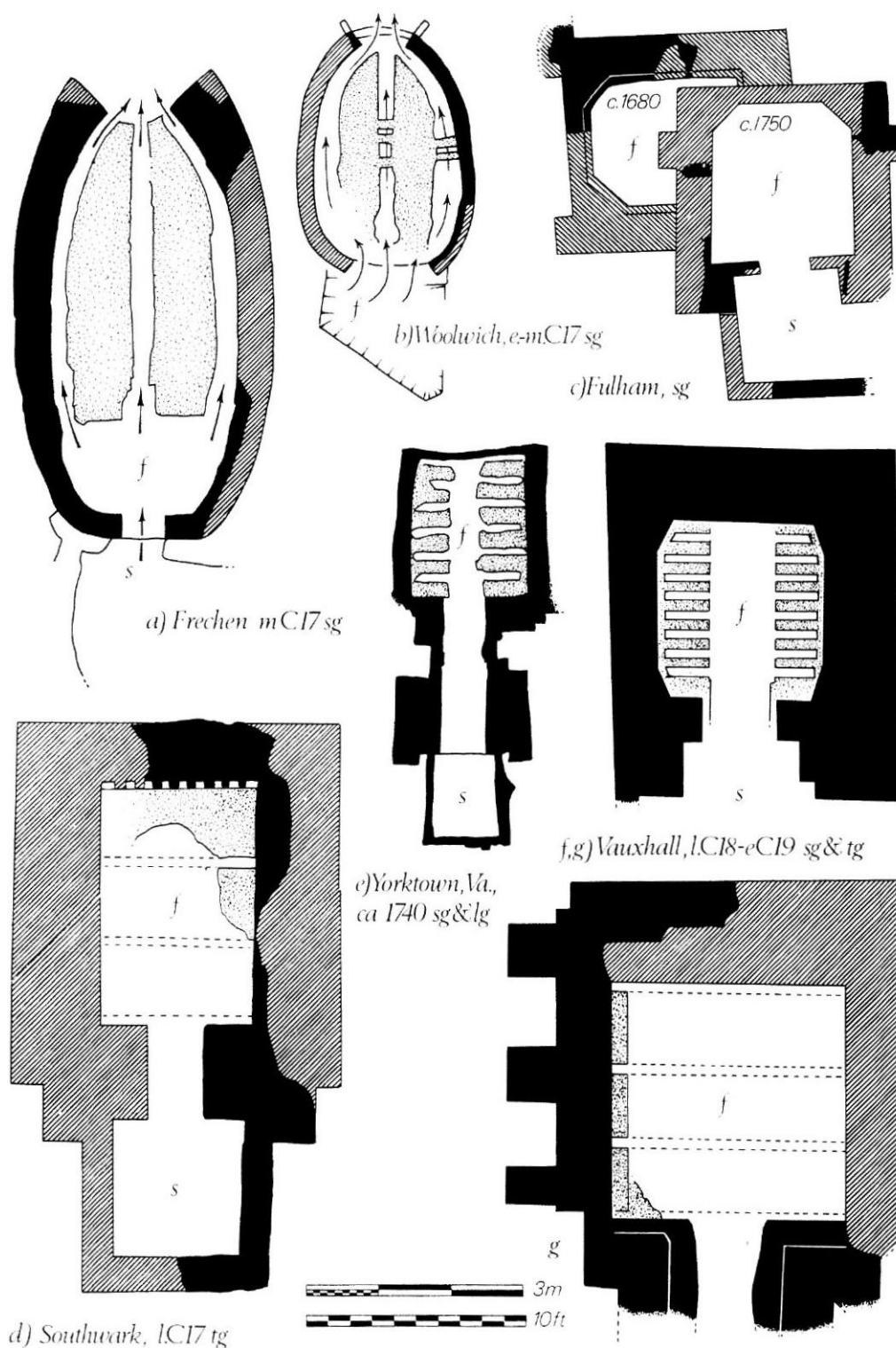


Figure 4.60: Comparative plans of various salt-glaze and other kilns excavated in Britain, Germany and USA.
 From Green 1999, Figure 23. Note: f = firebox, s = stokepit, sg = salt-glaze, tg = tin-glaze, and lg = lead-glaze kilns.

¹²⁷ Dawson & Kent 2008: 202-203; Francis 2000: Fig 20; Copeland 2009.

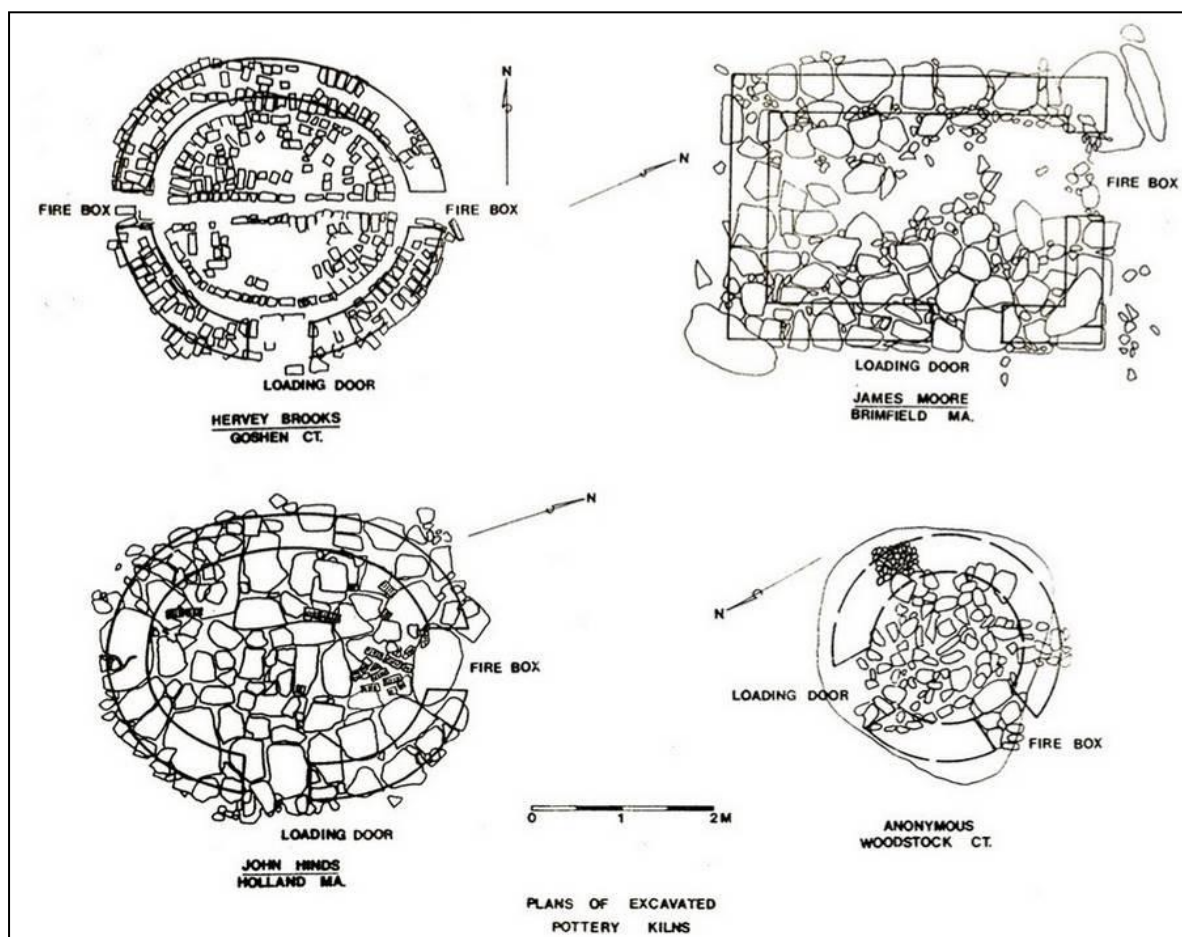


Figure 4.61: New England, USA late eighteenth and early nineteenth-century excavated brick and stone kiln bases. Note top left was a bottle oven. Drawn by Old Sturbridge Village (www.osv.org).¹²⁸

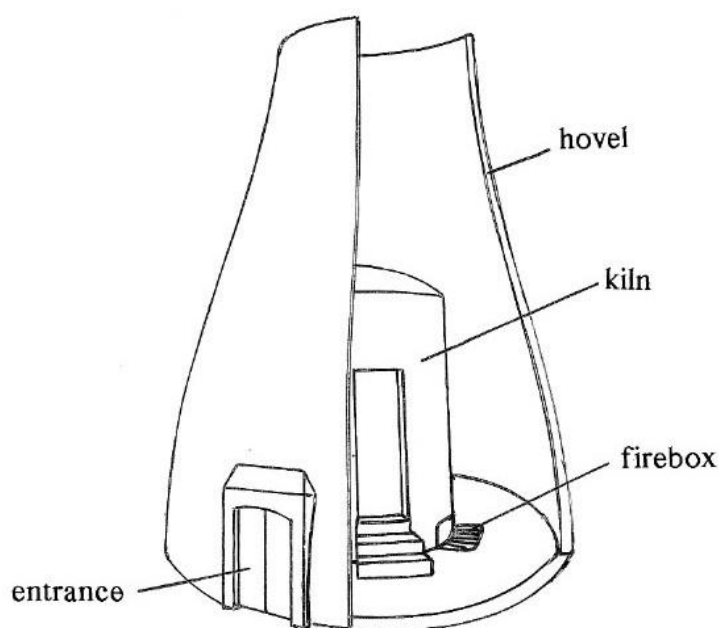


Figure 4.62: Cross-section of a typical bottle oven with central kiln inside hovel, from Francis 2000: Fig. 20.

¹²⁸Plans of osv.org cited at

<https://picasaweb.google.com/lh/view?q=kilns+osv&uname=covenanteer&psc=G&filter=1506006274519007497>.

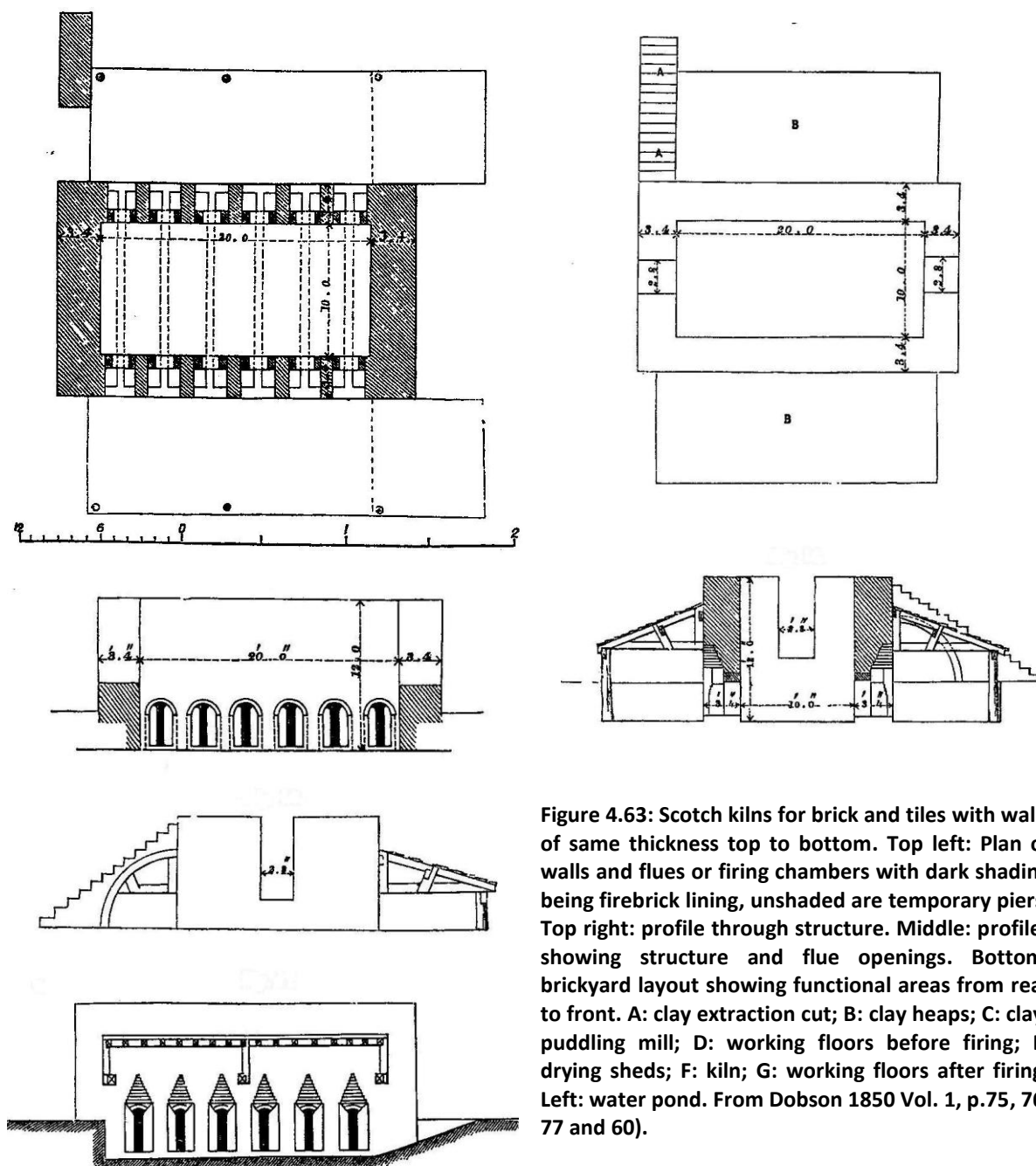
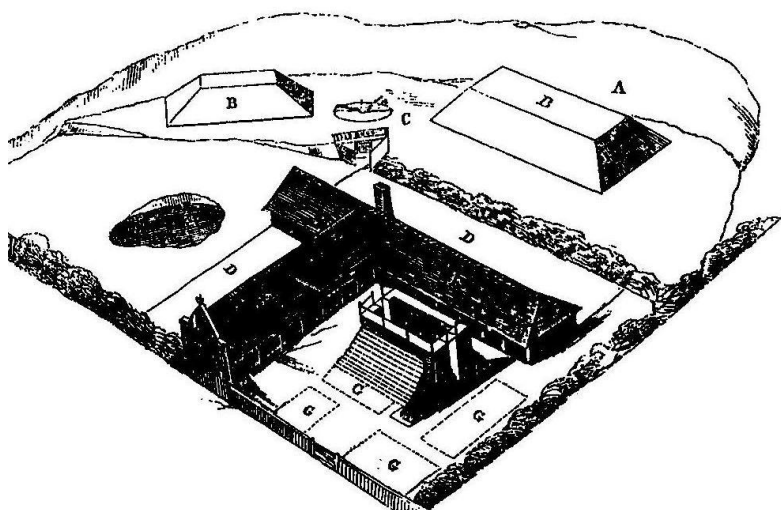


Figure 4.63: Scotch kilns for brick and tiles with walls of same thickness top to bottom. Top left: Plan of walls and flues or firing chambers with dark shading being firebrick lining, unshaded are temporary piers. Top right: profile through structure. Middle: profiles showing structure and flue openings. Bottom: brickyard layout showing functional areas from rear to front. A: clay extraction cut; B: clay heaps; C: clay-puddling mill; D: working floors before firing; E: drying sheds; F: kiln; G: working floors after firing; Left: water pond. From Dobson 1850 Vol. 1, p.75, 76, 77 and 60).



4.8.3 Tools and Equipment

When Ball's Pottery closed in 1823 most intact or usable tools and equipment would have been carried off site, recycled or sold rather than abandoned at the site. Pot-forming and decorating tools may have consisted of organic materials, broken pottery or roof tiles which have either not survived in the archaeological record or are difficult to distinguish from other worn fragments. The only definite tool found at the site was a large hand-held clay smoother/pounder from the middle fill of a pit filled with ceramic wasters and kiln debris in Area A (7648/89252, Figure 4.64). The tool would have been useful in preparing clay, smoothing-out harder lumps or perhaps even burnishing surfaces of large pots. Measuring 81mm high the sub-spherical lump of cream clay with orange swirls and inclusions was patted roughly into shape and held in the right hand of an adult leaving deep finger and thumb impressions (and prints) around the side. The lower circular working surface, 107mm in diameter, had become smooth with a curved edge, the fine striations indicating both circular and linear motion. The greater wear or scarring evident along what was the bottom edge when held in the hand may have been the result of gentle pounding. At 846 grams this object could also have functioned as a weight. A number of similar clay tools but smaller in size has been recently found at Jonathan Leak's 1821-1838 pottery in the Haymarket.¹²⁹



Figure 4.64: Clay smoother/pounder with finger and thumb impressions on side, flat circular base with striations and scarring from wear (7648/89252). Russell Workman, 10cm scale.

Several types of vessels and kiln bricks appear to have been perforated using different-sized hand-forged nails. Some of the kiln furniture was cut by wire or possibly a large knife; the spurs partly shaped using a cylindrical wooden dowel. There was no evidence for metal hardware from the kiln structure or shovels and wheelbarrows that may have been used to stoke the fire and clear away debris. The surface of a number of vessels showed evidence of tools used to make them prior to being decorated (Figure 4.65, Figure 4.66). These features included facets trimmed by a knife or other firm object; string or wire marks from where the pot had been cut from the wheel; knife or palette marks on the base edges where the pot had been levered-up from the wheel; and three sets of short parallel marks from a drying tripod stand on the base of a large bowl (7646/85022).¹³⁰

¹²⁹ Leak tools yet to be fully analysed - pers. comm. Graham Wilson December 2009. For range of tools used to make pottery in Britain see Copeland 2009: 72.

¹³⁰ Triangular holes made by sticks in Fareham draining dishes in England described in McGarva 2000: 20-21.



Figure 4.65: Knife or palette marks on base when lifted off wheel (7663/86915). Russell Workman, 10cm scale.



Figure 4.66: Exterior base of Type 17.6.2 large bowl with spattered splitting yellow glaze and base marks string and wheel marks, and tripod marks from probable drying stand (7646/85022). Russell Workman, 10cm scale.

4.8.4 Kiln Stacking and Firing

Once the vessels and other objects had been made and had dried, leather-hard glaze was applied to the desired surfaces. The objects were then ready to be stacked in the chamber of the kiln. Our understanding of how Thomas Ball stacked and fired his kiln(s) over time has been gained by analysing the kiln debris and structures found on the site in conjunction with the available historical records. Interpretation has also been informed by archaeological investigations of contemporary and earlier pottery, pipe and brick making sites in Sydney, Britain, Europe and America.¹³¹

Stacking of the kiln chamber was a time-consuming task whereby a stable internal structure had to be built using the items to be fired. These items were contained, separated or supported by a variety of kiln furniture (Section 4.9). Care had to be taken not to smudge any glaze and to allow for adequate and even heat and oxygen distribution in the chamber. Heat filtered up through gaps or holes in the chamber floor from burning wood fuel that had been placed in one or more flues sunk below the ground surface (Sections 4.8.1, 4.8.2). The burning of wood created an atmosphere in the chamber that caused physical changes in the colour and texture of the clays and glazes of the vessels, kiln furniture and structure (Sections 4.2.1, 4.2.2).

The pottery discarded by Ball showed a wide range of clay and glaze colours, with many faults being evident from all stages of manufacture (Appendix 4.3). Poor or uneven clay mixing, throwing and glazing placed considerable stresses on the vessels when they were fired in a kiln where the heat was not able to be fully controlled and at times oxygen was (unintentionally?) restricted or reduced. Such technical difficulties were typical of wood-fired clamp or Scotch kilns where proximity to the centre of the kiln or the heat from the flue openings in the floor determined how well the pot was fired and its final colour. This variation could be extreme and unidirectional with one side of a vessel having an entirely different colour or glaze vitrification to the other. These effects were also evident in the kiln furniture, such as the darkening of the clay and glaze (Figure 4.79) and distinct silhouettes of vessels or saggars placed on flat tile setters (Figure 4.95).

Evaluation of kiln stacking and firing evidence can be problematic when considering that pottery broken during firing could have been reused as kiln furniture (Section 4.9.6). This dual function left a variety of visible and invisible marks and residues on the pottery (listed as manufacturing faults) whose origin had to be disentangled during cataloguing and analysis. The manufacturing faults and kiln disasters which resulted in numerous pot wasters and broken kiln furniture has allowed a glimpse into the stacking patterns of different types of vessels (Kiln Furniture Type Series Appendix 4.5). Compilation of the stacking data is ongoing using evidence from the positions of bobs and other furniture on the pottery, the direction of glaze flow such as dripping and pooling, heat or atmosphere-induced surface changes, and instances of blowouts, encrustation or vessel breakage and collapses (Figure 4.67 to Figure 4.72, Figure 4.84, Figure 4.93, Figure 4.96, Figure 4.97).

Ball appears to have used placing rings and spurs to separate and support most of the finer glazed earthenware vessels in saggars or base setters with the assistance of different bob types and other setters (Figure 4.68 (right), Figure 4.83). There is evidence that saucers and plates were stacked above each other base-down and separated by widely-spaced small bobs next to and on the rim. Some of these vessels had cracked and collapsed onto each other in the kiln (Figure 4.67). In earlier

¹³¹ Australian references see Section 4.8.1-2. Britain: Pearce 2007: 156-162; Copeland 2009. Bobs and other kiln furniture still adhering to pot wasters and firing reserve marks from early eighteenth-century Polesworth, North Staffordshire in Barker 1998. Stacking and firing evidence in London at Dwight's Fulham Pottery in Green 1999; and at the Doulton Pothouse, Lambeth in Tyler et al 2005; Warwickshire in Melton & Scott 1999: 119-121, Figure 19; Cupar, Fife Scotland in Martin & Martin 1996; various tin-glazed kilns in Tyler, Betts & Stephenson 2008: Fig. 86. Ireland in Francis 2001: 80-81. A spectacular collapsed sagger causing 34 tin-glazed dishes and supporting pins to fuse together inside a c.1640-60 kiln was recovered from the 'Zuidergracht' Canal in Delft, Netherlands, see the Delft Museum, Netherlands Nro. C.10-2005. USA: kiln furniture used to make porcelain in 1770-72 at Philadelphia see Hood 2007; and for manufacturing faults see Hunter & Ray 2007.

and contemporary kilns in Britain plates and dishes were commonly stacked in saggars using horizontal bar or pin supports. Investigation into this possibility using Type 12.6 bobs is ongoing (Section 4.9.4.2). There was less evidence concerning fine cups and mugs due to their limited numbers but they were probably also fired in saggars or base setters. Larger olive-green, red-brown or mulberry-glazed bowls, crocks and other open vessel types were open-stacked, rim-down (Figure 4.68 left). They were supported and separated by different types of bobs beside and on the rim (Figure 4.70). Glaze that pooled on the rim caused bobs to adhere and was often transferred to adjacent stacked vessels (Figure 4.68).¹³²

Setters of clay, pottery and roof tile acted as firm horizontal (base or lid) and vertical separators for stacked pottery and saggars in the kiln (Sections 4.9.5, 4.9.6). Thick clay setters were not common but like the roof tiles they often had impressed marks from pottery rims or kiln furniture spurs or rims. They also bore reserve marks made by differential heating or reduction of the clay surface during firing (Figure 4.78, Figure 4.87, Figure 4.95). The original shapes and sizes of all the setters were difficult to determine due to secondary fragmentation in the kiln and post-deposition. However, it is clear that several were roughly reshaped into circles, ovals or rectangles (Figure 4.90, Figure 4.96). Where higher, thicker or angled kiln setters were required all furniture could be double-stacked (Figure 4.69, Figure 4.97). Similarly, some of the bobs were pressed together to create unique multiple supports or those of double height (Kiln Furniture Type Series Appendix 4.5; Figure 4.85). All of the kiln furniture with the exception of the rectangular spurs (Type 12.4) can be directly compared to that used by earlier and contemporary potters in Britain and America. These objects are discussed individually below (Section 4.9).

The small recreational objects made by Ball appear to have been fired in the same kiln(s) as the pottery due to their similar surface discolouration and occasional dripped lead glaze adhering to fragments of other clay items (Section 4.10). The marbles were probably placed together in small groups as some were perfectly fired while others had numerous heat-related faults. They may have been in saggars, on setters or tucked in odd spaces between the stacked pots. However, the severe discolouration, uneven firing, dripped glaze and fragments of adhering pottery, kiln furniture or other marbles on a number of the examples indicates that they were fired in very exposed or open-stack locations (Section 4.10.2; Figure 4.101 to Figure 4.103).

In Britain tobacco pipes were customarily fired in saggars, carefully placed concentrically and/or bowl-down depending on the size of the sagger. Occasionally they were placed on a hand-formed clay stand. The fired-clay of the reed pipes was highly varied in colour with a number having uneven clear or scattered thin salt-like 'glaze' and/or drops of light brown lead glaze on the upper stem surface. Several of the discarded fragments also had overfired distorted stem ends (Section 4.10.1, Figure 4.98 to Figure 4.100). These firing features and faults suggest that Ball placed the pipes in shallow saggars or setters where the stem ends were slightly more exposed to the heat or reduced atmosphere. Although comparative information regarding firing of clay whistles has not been found in the literature, the example in the shape of a bird was probably well protected within a sagger. The buff clay had no dripped glaze and was only slightly discoloured towards the top of the bird where it may have been exposed above the sagger (Section 4.10.3, Figure 4.105).¹³³

¹³² Discussion of stacking and firing with range of saggars & other kiln furniture see Barker 1998; Copeland 2009; Hood 2007; Martin & Martin 1996; Pearce 2007: 156-162; with historical pictures Tyler, Betts & Stephenson 2008. Bars/props/pegs/pins set into clay bobs or squeezes to stack plates or bowls see Barker 1998; Tyler et al 1999: Fig. 11; Tyler et al 2005: Figs. 49-50; 'pegs' and historical pictures in Tyler, Scott & Stephenson 2008; 'annular' in Martin & Martin 1996. Ireland: Francis 2001: 81, Figs 25ix-x.

¹³³ Pipes laid in saggars at Broseley, England, Atkinson 1975: 35; Ayto 1994: 12. In Brennbeh Knasterkopf, Germany at <http://www.knasterkopf.de/index.htm>. A c.1700 lumpy clay stand for firing glazed pipes found in Vilnius (Vilno), Lithuania see Knasterkopf 18/2005 Summaries at <http://www.knasterkopf.de/htm/he18.htm>. Pipe making waste including clay bobs & other furniture in Maryland, USA: Pope's Fort Maker c.1646 and Emanuel Drue c.1660, in Luckenbach & Kiser 2006 Figs. 23 and 3.



Figure 4.67: Stacking of finer yellow-glazed saucers/plates with scarring on bases, rims missing (7645/85442 on 85441). Russell Workman, 10cm scale.



Figure 4.68: (left): Two red-brown glazed rim sherds adhering with glaze scar (7646/85245); (right): circular glaze pooled from kiln furniture placing ring or narrow vessel rim (7645/85434). Russell Workman, 10cm scale.



Figure 4.69: Double stacked pot body and base fragments (7664/87073). Russell Workman, 10cm scale.

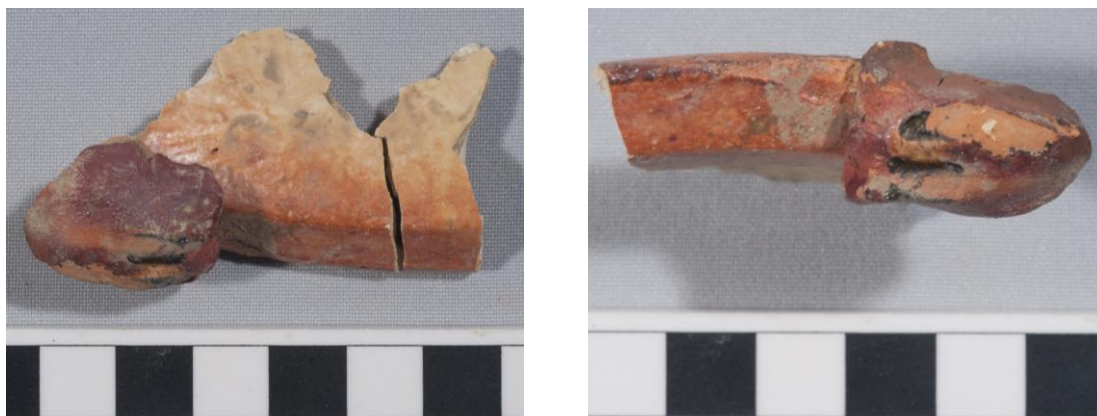


Figure 4.70: Views of Type 12.7.28 bobs on rim of pot Type 1.5 (7645/85664). Russell Workman, 10cm scale.



Figure 4.71: Selection of pot and setter fragments with various bobs, encrusting and pooled glaze (7645/85879, 89853-89862). Russell Workman, 10cm scale.



Figure 4.72: Pot base setter fragment adhering to Type 12.7.2 bob (7645/85879). Russell Workman, 10cm scale.

4.9 Kiln Furniture Types

The kiln furniture was analysed to discover how the range of items were used to stack different vessels and items in the kiln (Section 4.8.4) as well as to more fully understand production and firing processes at Thomas Ball's Pottery (Appendix 4.1: Table 55-63). The range of clay items made by Ball and used as kiln furniture are described in the following sections and, with the exception of the setters, are incorporated into a numbered Kiln Furniture Type Series (Appendix 4.5). Of the specially-made types the thick large cylindrical saggars and the finer carefully cut spurs and placing rings were pre-fired and designed to be reused. In contrast, the damp, pliable and poorly-mixed clay bobs were placed directly onto or below parts of individual vessels during stacking. Bob shapes ranged from amorphous lumps or pinches of clay to rolls and cut bars. During kiln firing the bobs became distorted into unique irregular forms which were brittle and less able to be reused. Being hand-moulded the finer earthenware bobs often had fingerprints (Figure 4.73, Figure 4.74) which may in the future also aid in identifying the individual potters or assistants which at present can only be discerned by specific similarities of manufacture. Finally, thick flattish clay slabs or handy fragments of discarded pottery and second-hand roof tiles were used as convenient horizontal setters, small shelves or narrow vertical spacers.



Figure 4.73: Left: Fingerprints on coarse earthenware Type 12.7.7 bob (7645/95314); Right: on thin fine earthenware bob Type 12.8.1 (7662/95460). Russell Workman, 10cm scale.



Figure 4.74: Fingerprints on flattened fine earthenware bob Type 12.8.9 (7662/95444). Russell Workman, 10cm scale.

4.9.1 Saggars Type 12.2

Saggars are typically large cylindrical vessels in which finer wares are placed during kiln firing. They can be vertically stacked and whether upright or inverted provide protection and regulate ventilation when kiln temperatures may be uneven. The relatively few saggars identified in the assemblage from the site were plain cylindrical straight-sided vessels with a low flat-topped rim and a flat base (Appendix 4.5). Thomas Ball does not seem to have used saggars with cut-out or pierced walls for better ventilation (oxidisation) during stacking or those with slots to fit handled vessels as used by contemporary potters in Britain and America (Figure 4.76).¹³⁴

Ball only used saggars of local non-refractory coarse or occasionally fine earthenware with ironstone inclusions. This made it difficult to discern sagger sherds from those of other large thick vessels found in the debris, especially when the latter were reused as pot setters (Figure 4.75, Section 4.9.6). Although no complete example of a sagger has been found at the site rim, body and base sherds from at least 42 vessels were identified, with 36 from Area A, pit 7660 (fills 7662, 7663) (Appendix 4.1: Table 55).¹³⁵

The saggars were made in a limited size range with those able to be measured having rim diameters of 280-380mm and a body height up to 146mm (Appendix 4.1: Table 57). Many saggars have encrusted clay and spattered glaze or slag which is thickest on the interior base. The variety of dripped glaze colours, from pale yellow to green, red, brown and mulberry suggests that saggars contained a wide range of vessels in the kiln and were used for several firings. The encrusting of small clay fragments in the base, similar to that found with pottery bases reused as setters (Figure 4.91, Figure 4.92), appears to have been intended to prevent adhesion of vessels or kiln furniture by allowing the glaze to pool in the hollows. Ball was presumably attempting to follow other potters in Britain and America who commonly employed flint chips or coarsely-ground quartz for the same purpose (Figure 4.76).¹³⁶

Although only 25 per cent of the varied types of pottery wasters from the site have been fully reviewed (Section 4.1.2), some information about Ball's use of saggars during kiln firing can already be gained. Saggars and better-shaped base setters appear to have been largely reserved for firing of finer glazed wares. These items were stacked with the aid of pre-fired furniture such as placing rings and spurs, whereas many coarse ware vessels were open-stacked. Use of saggars may have begun to decline after the first kiln firing, when a variety of large broken vessels became available that could do the task just as well (Section 4.9.6.3). This economising strategy was one of many commonly used by potters and made even more sense for Ball, as his financial difficulties are known to have increased. Time, materials, labour and firing space could be saved if broken saggars were not remade but merely replaced by unsellable large vessels. However, the continually changing combination of sagger and open-stacking within the kiln chamber would be a challenging and probably time-consuming task. It required many different types of kiln furniture, especially the highly flexible bobs which often had evidence of last-minute pot-shifting. In addition, the delicate

¹³⁴ Copeland 2009: 111-139; Melton & Scott 1999: 123-124; Pearce 2007: 156. Saggars with pierced walls in the Stoke-on-Trent Museum and Art Gallery 2005 exhibition, visited by Mary Casey; see also Barker 1998; Christophers & Haselgrove 1973: Fig. 7; Green 1999: Appendix 2; Melton & Scott 1999: 119-120, Figs. 18-19; Martin & Martin 1996; Tyler et al 2005: Fig. 51; Tyler, Betts & Stephenson 2008; Wade Martins 1983: 20, Fig. 32, Plate VII. Discussion of sagger functions and sizes in Ireland see Francis 2001: 80-81; and for 1770-72 porcelain manufacture in Philadelphia USA in Hood 2007.

¹³⁵ Refractory clay sagger making and placement in British kilns in Copeland 2009. Fireclay saggars for smelting metal from ore during the later part of the nineteenth century were found immediately to the north of the site beside Cunningham Lane by Austral Archaeology, report by Hickson forthcoming. The total number of saggars within the assemblage has yet to be finalised due to ongoing analysis.

¹³⁶ Flint chips or ground quartz were frequently used on interior of sagger bases to prevent vessel adhesion during glost firing. See Barker 1998: 321; Hood 2007: Fig. 55, 60, 62, 63. Ground flint for stoneware production - see Green 1999: 145-146.

balancing of different-sized and shaped vessels for each setup would be more prone to collapse than when using mostly saggars which had sturdy rims and sides for high stacking.



Figure 4.75: Selection of saggar sherds showing internal encrusting, glaze and slag from firing (7662/88564). Russell Workman, 10cm scale.



Figure 4.76: Kiln furniture from the mid-eighteenth-century pottery at Town Road Hanley, North Staffordshire. Left-right: clay bob, two different 'ring stilts', pierced saggar with salt-glazed bobs on flint chips or ground quartz, salt-glazed 'crown stilts'. Mary Casey, Stoke-on-Trent Museum and Art Gallery 2005 exhibition.



Figure 4.77: Range of placing rings (upper) and rectangular spurs (lower two rows) from the site. Russell Workman, 10cm scale.



Figure 4.78: Placing ring (7460/88367) on tile/setter (7645/95030) demonstrating how two impressions were probably made by a points from a similar ring during firing. Russell Workman, 10cm scale.

4.9.2 Spurs Rectangular Type 12.3

Thomas Ball manufactured two subtypes of reusable fired kiln furniture in the shape of small sub-rectangular 'spurs' to balance and separate finer vessels during firing (Appendix 4.5, Figure 4.77 lower rows). Spurs were made from a flattened fine earthenware slab which had a cylindrical wooden dowel pressed along the central length, creating a channel. The slab was then cut by wire and/or knife into rectangular or square shapes. The basic form, Type 12.3.1, was modified by angled cuts midway along the side ridges to create four points, Type 12.3.2. Type 12.3.1 tended to be smaller but more numerous than Type 12.3.2 (Appendix 4.1 Table 58). The clay used to make the spurs was identical to that of the placing rings and finer glazed vessels. The spurs were occasionally self-slipped (7645/88571). The Munsell colour range of the clay was white, cream, or buff 10YR 8/1-3 'white' to 'very pale brown' or 7.5YR8/4 'pink'; pale red 5YR 6/6-8 to red 10R5-6/6 'red'; and a possibly reduced N5/ 'grey'.

All 16 examples were dumped into Area A, pit 7647 (fill 7645) along with the more numerous placing rings (Appendix 4.1: Table 55). Although Subtype 12.3.1 tended to be smaller than Subtype 12.3.2 (Appendix 4.1 Table 58), almost all appear to have been used to fire vessels with at least one of the same yellow, light brown, green and red-brown or mulberry glazes (Section 4.2.2). Subtype 12.3.2 was more successful than Subtype 12.3.1 in supporting glazed vessels without adhering to them (Figure 4.79). The surfaces of most spurs were coated in a thin 'glaze' from the wood-fuelled atmosphere in the kiln (Sections 4.2.1, 4.2.2) and thicker lead glaze that dripped or flowed down from the supported vessel, pooling at points of contact and on the base of the spur. Several spurs had been fired in a reducing atmosphere or repeatedly enough to turn the fabric grey and darken the dripped glaze (Figure 4.79).



Figure 4.79: Spurs Type 12.3.1 with dripped/pooled glaze and ridges broken off from adhering vessels (left-right: 7645/88575, 88576). Russell Workman, 10cm scale.



Figure 4.80: Range of sizes and colours of Spur Type 12.3.1 (left-right: 7645/88574, 88573, 88572, 88578, 88579(2)). Russell Workman, 10cm scale.

The manufacture and use of rectangular spurs, rather than triangular forms, appears to be unique to Thomas Ball and their limited numbers and distribution suggests that they may have been an experiment, perhaps only used for a single firing. Spurs probably functioned in a similar way and may have been more efficient for Ball to produce than trivets, tripod or triangular stilts, spurs or 'cockspurs' common at earlier and contemporary potteries in Britain and America.¹³⁷

4.9.2.1 Spurs Rectangular 2-Ridged or Pointed Type 12.3.1

This spur subtype is the basic model characterised by a concave upper surface with narrow long ridges or spurs at the top of vertical sides or ends (depending on the individual item) and a flat base (Figure 4.79, Figure 4.80). Ranging in size from 15 x 9mm to 27 x 21mm these spurs were generally smaller than Type 12.3.2 but had a similar variety of fabric colour which was occasionally affected by reduction of oxygen in the kiln and/or successive firings (Appendix 4.1: Table 58).

4.9.2.2 Spurs Rectangular 4-Pointed Type 12.3.2

This spur subtype was less numerous and a modification of Subtype 12.3.1. The top of the long side ridges were cut at an angle to create a point at each corner that effectively reduced the size of the contact area with the supported vessel (Figure 4.81). These spurs are generally squarer, larger and more robust than 12.3.1 spurs and may have held slightly larger vessels. They ranged in size from 27 x 23mm to 33 x 30mm (Appendix 4.1: Table 58).



Figure 4.81: Upper and lower views of Spurs Type 12.3.2 showing clay colour and dripped/pooled glaze from upper vessel (left-right: 7645/88582, 88583, 88584). Russell Workman, 10cm scale.

¹³⁷ Britain: Barker 1998: especially Figs. 30, 42-44, and plate stacking in Copeland 2009; historical discussion of stacking, firing and furniture including 'trivets' Tyler, Betts & Stephenson 2008. Ireland: Francis 2001: 81, Fig. 25viii. USA: Cockspur or rooster claw 'bobs' made in the eighteenth century by John Hinds in Holland Massachusetts see www.osv.org and <https://picasaweb.google.com/covenanteer/HindsSite5057765852514747682>.

4.9.3 Placing Rings Type 12.4

Reusable circular pre-fired fine earthenware placing rings were able to balance and separate finer vessels, particularly when they were stacked inside each other during firing (Appendix 4.5; Figure 4.77, Figure 4.78). They could be used as a stable individual support for wide open vessels such as plates and dishes. Although no complete example was found the size and form of some 242 rings of different diameter and height could be discerned in the assemblage (Appendix 4.1: Table 59). Almost all were made on the wheel using the same fine earthenware clay and in a similar manner to straight-sided vessels and cut horizontally by a wire or string when still wet (Figure 4.82). Small plain undiagnostic ring fragments were assigned to the generic Type 12.4; those with short thorn-like points or spurs stuck onto one (upper) rim (or edge) using wet clay to Type 12.4.2 (Figure 4.83, Figure 4.84). Although the furniture type series includes Type 12.4.1 there was no conclusive evidence at the site for any rings without points or other features.

The clay fired to the same colour as the spurs and fine earthenware pottery, with 14 being poorly mixed or marbled red and white. The Munsell colour range of the clay was white, cream or buff 10YR 8/1-3 'white' to 'very pale brown' or 7.5YR8/4 'pink'; pale red 5YR 6/6-8 to 7/6 'reddish yellow' or 2.5YR 6/8 'light red'; orange 7.5YR8/6-5YR5/3 'reddish yellow-reddish brown'; red 10R5/6 'red'; and a possibly reduced 'N5/ 'grey'. The surfaces of most rings were coated in a thin 'glaze' from the wood-fuelled atmosphere in the kiln (Sections 4.2.1, 4.2.2). Patches of thicker lead glaze also dripped or flowed down from the supported vessel, pooling at points of contact and on the base of the rings. The glaze colours were similar to those on the spurs and the pottery. They ranged from cream to orange, yellow brown, brown, red brown, dark brown, dark red or mulberry, olive yellow and olive green. The placing rings with points or spurs (Type 12.4.2) were identical to 'ring props' or 'ring stilts' used by various potters in England from the 1480s, but there was no evidence for other types such as single or double-edged 'crown rings stilts' made by contemporary British potters (Figure 4.76). Instead reused pottery base setters may have functioned in this way (Section 4.9.6.3).¹³⁸

4.9.3.1 Placing Rings Type 12.4.1

Simple circular placing rings were made on the wheel and cut horizontally by a wire or string when still wet. No spurs or other features were added or cut before firing. This type, found at several excavated potteries in Britain, has not been identified in the assemblage. The circular scar on the interior base of a fine yellow-glazed vessel (7645/85434) may have been formed by adhesion to a ring of this type or the base of Type 12.4.2 or perhaps a narrow vessel rim with a diameter of 39mm (Figure 4.68).¹³⁹

¹³⁸ Britain: history of and use of 'ring props' in Pearce 2007: 158; various 'ring stilts' in Barker 1998. 'Ring stilts' of various types from Town Road, Hanley in North Staffordshire thought to have been made at Humphrey Palmer's Church Works in the 1760s-70s were on display at the Stoke-on-Trent Museum and Art Gallery 2005 exhibition. USA: see Hood 2007: Fig. 60.

¹³⁹ Britain: plain 'rings' made and used in the sixteenth century at Fulmodeston - see Wade-Martins 1983: 20, Fig. 32, Plate VII; also range of 'cylinders' and 'rings' in Tyler et al 2005: Fig. 48. USA: 'cylinders' used in 1770-72 porcelain kiln in Philadelphia see Hood 2007: 44, Figs. 57, 59.



Figure 4.82: Views of high wheel-thrown placing ring type 12.4.2, both sides with position of broken spur indicated by added clay on interior and change in dripped glaze on rim (7645/88591). Russell Workman, 10cm scale.

4.9.3.2 Placing Rings Type 12.4.2

These circular placing rings were mostly made on the wheel and cut horizontally by a wire or string when still wet. Before they were fired a small number of short thorn-like points or spurs were stuck onto one (upper) rim (or edge) using wet clay (Figure 4.77, Figure 4.83). The points lessened the contact area with the glazed vessel and allowed heated air to flow through. Made in a range of sizes their base diameter measured from 40-110mm, body height from 4-31mm, and thickness from 3-16mm (Appendix 4.1: Table 59).¹⁴⁰

¹⁴⁰ Identical 'rings' used in Britain from the 1480s; see Pearce 2007: 142, 158, Fig. 83.



Figure 4.83: Range of placing rings type 12.4.2 showing shape and manufacture and usage details. Top (left-right): Ring interiors irregular slumped (7460/88368); unused or unglazed after biscuit firing(?) (7662/88676); narrow angled (7662/88706); layered or marbled clay (7646/95495). Middle and bottom: exterior and horizontal interior views. Russell Workman, 10cm scale.



Figure 4.84: Placing ring type 12.4.2 features, fabric and glazes. Top (left-right): Applied clay spur with red-brown 'glaze' from burning wood in kiln, dripped glaze and adhering fine earthenware fragment from vessel being fired above (7646/85248, 7662/88669). Middle and bottom: pooled glaze down exterior and on base (7645/88598) and (7662/88706, 7646/95495). Russell Workman, 10cm scale.

4.9.4 Bobs

The term 'bob' refers to unfired clay kiln furniture hand-made into various shapes and used to stack pottery in the kiln. Thomas Ball usually made bobs from poorly mixed and crushed local clays or occasionally from readily available scraps of fine, marbled or coarse earthenware left-over from pottery manufacture. The Munsell colour range was: white 10YR 8/1-3 'white' to 'very pale brown'; white 7.5YR8/4 'pink'; pale red 5YR 6/6-8 to 7/6 'reddish yellow' or 2.5YR 6/8 'light red'; 7.5YR8/6-5YR5/3 'reddish yellow-reddish brown'; red 10R5/6 'red'.

Clay bobs were the most numerous type of kiln furniture used by Ball. Some 1,919 bobs were found amongst concentrations of dumped kiln debris. They were mainly found in pits in Area A (fills 7660, 7647 and 7651) and in Area B (fill 7460) (Appendix 4.1: Tables 55, 61). As different types or subtypes were found in greater concentration in some contexts, further analysis may be able to identify separate kiln firings. The term 'bob' appears to best fit this type of informal kiln furniture and with some variation is used in the literature about earlier and contemporary pottery production in Britain and America.¹⁴¹

Bobs were sorted first by their manufactured shape and then typed according to how they were used in the kiln. Their use was evidenced by one or a combination of vessel impressions, adhering fragments of pot and other furniture, surface finger and heat distortion, discolouration and glaze splashes. During cataloguing each bob was assigned a shape type number (12.6, 12.7, 12.8 or 12.9) which prefixed another number that identified how the bob was used in a common sequence from 0 to 70 (Appendix 4.5: Types 12.6 to 12.9). There were also several examples of multiple bobs (given an M suffix to the subtype), denoting instances where different bob shapes were squished together or stacked to form a more desirable or larger kiln support (Figure 4.85). It is clear from the data that the more carefully-made and standardized types of bobs, the bars and rolls, were the most numerous in the assemblage and used for the greatest variety of tasks (Appendix 4.1: Table 60).

4.9.4.1 Bobs Amorphous Type 12.5

This type of clay bob was characterised by its amorphous-shaped lump of coarse earthenware or clay that had been quickly placed in the kiln during stacking without any prior shaping and minimal finger manipulation (Appendix 4.5). These bobs were mainly found in pits in Area A (fills 7662, 7663) and Area B (fill 7460) (Appendix 4.1: Tables 60, 61). Although of varied size there were few subtypes among the 210 examples with most being used as simple supports or for sealing gaps between vessels. Aside from undiagnostic fragments, the most common subtype only had evidence of being used on one flat surface (12.5.1). The next common types had been used on a flat surface/base to support vessels across one end or along one side (12.5.6, 12.5.10) or to separate the edges and rims of plates or other fine wares. They were differentiated from Type 12.8 'pinches' by their lumpiness and general lack of evidence for finger-manipulation. It was often difficult to distinguish worn amorphous bobs or those with no evidence of use from simple lumps of clay dropped during pot manufacture or kiln construction (briquetage). However, they were much denser and had far less sand and other inclusions than worn sandstock brick and tile fragments.¹⁴²

¹⁴¹ Bobs or 'props' in Britain: Barker 1998; Green 1999: Appendix 2; with references to other sites in Melton & Scott 1999: 123-24, Figs. 19-20. USA: general and c.1820 Hervey Brooks kiln in Goshen Connecticut see Worrell & Jenkinson 'The Work of the Potter's Hands' at http://www.osv.org/explore_learn/document_viewer.php?DocID=1055

¹⁴² Equivalent to Melton & Scott 1999: 'props' Fig. 20.201-208 and possibly bobs Fig. 19.196-197. See also clay 'pads', 'cones' and 'cylinders' and 'squeezed lumps' used for various applications in Barker 1998; Green 1999: Appendix 2; and clay 'prop' or 'support' in Pearce 2007: 142-43, Fig. 85.

4.9.4.2 Bobs Bars Type 12.6

This type comprised rectangular, cuboid, or sub-cuboid bars cut from hand-flattened slabs of clay. At least one cut edge must be evident. The bars were of variable thickness and made from fine to coarse earthenware as well as poorly mixed or layered clay. The position on the slab where the bar was cut dictated whether it was rectangular or more triangular in plan, and whether it had vertical or irregular (original slab) edges. The original clay slabs were also used as thick clay setters, lids or possible small shelves (Section 4.9.5). Bars needed to be prepared prior to kiln stacking to be available for hurried positioning, repositioning and combining with other bobs. Most of the 636 bobs were found in pits in Area B (fill 7460) and Area A (fills 7662, 7663 and 7645) (Appendix 4.1: Tables 60, 61; Appendix 4.5). Although approximately 23 per cent had only one flattened surface or were undiagnostic fragments, the most common subtypes were formed when the bars were inserted between rims rather than bases of vessels (12.6.6, 12.6.2, 12.6.23 and 12.6.26).

Bar bobs can be compared to kiln furniture of earlier and contemporary British and American potters and may have been used in conjunction with other bob types to more firmly set vessels in place. 'Bars' or 'pins' in Britain commonly supported flatware, such as plates and shallow dishes, placed in neat horizontal stacks within saggars during glaze firing. They were secured to the inner walls by holes or amorphous clay bobs or 'squeezes'. Further analysis of the bar bobs used by Ball needs to be done to confirm whether this practice was followed.¹⁴³



Figure 4.85: Multiple bobs (left): angled stacking type 12.6.6M 7460/95242; (right): vertical stacking type 12.6.50M 7460/95264. Russell Workman, 10cm scale.

4.9.4.3 Bobs Rolls Type 12.7

The most numerous bob type, some 867 items, were rolls of clay of various lengths and diameters with a circular or oval section. The smaller examples of this type were made of fine and coarse earthenware. The rolls could be roughly shaped or tightly and carefully formed either from lumps, pinches or cut pieces (bars?) of clay. Several had been pinched-off one end of larger rolls. As the rolls varied so greatly in size the maximum diameter of the item (where not distorted by vessel pressure) was measured in order to evaluate possible subtypes and differences in stacking use. This measure resulted in the subdivision of the type into two rough sizes: small to medium rolls with diameters from 0-20mm and large rolls with diameters greater than 20mm.

¹⁴³ Bars/props/pegs/pins with rectangular or triangular section, some set into 'squeezes' of clay for stacked plate or bowl firing in Britain: see Barker 1998: especially Figs. 29, 37, 39; Tyler et al 1999: Fig. 11; Tyler et al 2005: Figs. 49-50; 'annular' in Martin & Martin 1996. USA: see Hood 2007: Fig. 59. Ireland: Francis 2001: 81, Figs 25ix-x.

Although these bobs were quickly rolled by hand, many groups of small rolls that were found in the same context were quite regular in form. This indicates that they were made in a methodical manner to conform to a pre-conceived type and were used to support/separate several vessels of the similar size. Some 867 of these bobs were found, mostly in pits in Area A (fills 7645 and 7662, 7663) and Area B (fill 7460) (Appendix 4.1: Tables 60, 61; Appendix 4.5). The most commonly used subtypes had been shaped by being placed between rims or bases of vessels (12.7.6, 12.7.2, 12.7.23, 12.7.4 and 12.7.26). Many of the smallest rolls were systematically made to be quickly inserted between rims leaving a tail or small protruding handle at one or both ends (Figure 4.86). Studies of kiln furniture made by earlier and contemporary potters in Britain and America rarely mention deliberately rolled clay bobs, sometimes called ‘sausages’ or ‘snakes’. The closest parallels to Ball appear to have been made in London at the c.1812-c.1926 Doulton stoneware pothouse in Lambeth and Dwight’s eighteenth and nineteenth-century kilns in Fulham, as well as during the early eighteenth century at Polesworth, north Warwickshire.¹⁴⁴



Figure 4.86: Selection of 77 Type 12.7.23 bobs of fairly regular form used to separate two vessels, with impression across the centre of both sides, some with broken ends (7460/95288). Russell Workman, 10cm scale.

¹⁴⁴ Tyler et al 2005: Fig.49.; ‘snakes’ in Green 1999: Appendix 2, 188, Fig. 152, 194-95, Fig. 157. Polesworth ‘sausages’ in Melton & Scott 1999: Fig. 19. See also roll sections used to adhere bars in Francis 2001: 81, Fig. 25x.

4.9.4.4 Bobs Pinches Type 12.8

These bobs were made from finger-pinched or pulled-off lumps of fine to coarse earthenware or occasionally poorly mixed and crushed clay. They usually had irregular small shapes that were completely finger-manipulated and covered in fingerprints. Occasionally they were pinched off the ends of other formed bob types or difficult to discern from bob rolls. Most of these 182 bobs were found in pits in Area A (fills 7662, 7663; and 7645), and Area B (fill 7460) (Appendix 4.1: Tables 60, 61; Appendix 4.5). Aside from undiagnostic fragments, the most common subtypes were those used for simple support scenarios such as being inserted between rims and occasionally between the bases of two vessels (12.8.6, 12.8.10 and 12.8.1, then 12.8.21 and 12.8.26).

4.9.4.5 Bobs Flat Type 12.9

This type of bob was made by flattening both faces of a lump of clay by hand before use and included otherwise undiagnostic flat bob fragments. They were made of either fine to coarse earthenware or poorly mixed and crushed clay (Appendix 4.1: Tables 60, 61; Appendix 4.5). These bobs were differentiated from amorphous bobs (12.5) which were flattened only during use, bar bobs (12.6) which were cut, and clay setters which were generally thicker, larger and made of coarser clays (Section 4.9.5). Some 21 of the 24 mostly broken examples had two flattened surfaces probably from being used to separate two vessel bases (12.9.2). They appear to be similar to small short 'pillars' or shaped 'pads' of clay used in earlier and contemporary British kilns.¹⁴⁵

4.9.5 Clay Setters

Clay setters were made of coarse earthenware or poorly mixed clays hand-flattened to a variety of different thicknesses with slightly irregular edges. They were usually thicker than flat bobs (Type 12.9) but there is not enough evidence to know if they were formed into rectangular or other shapes. Clay setters were the least-commonly found type of hand-formed kiln furniture at the site (Appendix 4.1: Tables 55, 62). Fragments from four large slabs (Figure 4.87) were found in pits in Areas A (fills 7645 and 7662) and B (fill 7460) but a number of other smaller worn flat pieces of clay may also be of this type. Clay setters were similar to some of the kiln briquetage and could have been used in the chamber floor. They were also the right thickness and texture to be the slabs from which bob bars (Type 12.6) were cut. Several large thick setter fragments had surface impressions and discolouration that occurred after they were placed horizontally in the kiln as furniture or shelves. The small impressions were made by vessels, spurs or placement rings similar to those observed on the surface of some reused pre-fired tile setters (Section 4.9.7). Clay setters can be compared to kiln furniture used as 'setters', 'shelves', 'bats' and 'lids' at various earlier and contemporary potteries in Britain and America.¹⁴⁶

¹⁴⁵ Green 1999: Appendix 2, 187-188, Figs. 151, 152.514.

¹⁴⁶ Britain: 'setters', 'bats' 'lids' and 'shelves' see Green 1999: Appendix 2; Melton & Scott 1999: Fig. 18; Tyler et al 2005: Figs 38, 40-41, 44-47. Also clay 'prop' or 'support' in Pearce 2007: 142-43, Fig. 85. USA: 'saggar disks' see Hood 2007: 44, Fig. 58.



Figure 4.87: Group of clay setter fragments on the sorting table (7460/95237-38). Russell Workman, 10cm scale.

4.9.6 Pottery Setters

A range of suitable ceramic vessel base rim and body sherds that had broken during manufacture were reused as setters during kiln firing. They were found in Areas A and B amongst dumped kiln debris in Areas A and B. The largest setters as well as those with flat bases were placed horizontally in the chamber to stack and protect pottery in a similar way to saggars. The smaller or curved sherds were used as vertical separators (Appendix 4.1: Tables 55, 62). All these items were made of local non-refractory clays and where possible their original vessel type has been recorded. Pot wasters were commonly used as kiln furniture by earlier and contemporary potters in Britain and America.¹⁴⁷

During analysis it was often difficult to discern reused ceramics from vessels broken when they were initially fired in the kiln and it should be noted that the numbers recorded here reflect only the 25 per cent of the assemblage that has been reviewed. Their reuse as setters was identified by a number of features added by the potter to prepare the surface of the pot for reuse and manufacturing faults which occurred during refiring. Most diagnostic were the small and often evenly scattered clay fragments or encrustation featured mainly on the interior bases. Also noted were surfaces which had been finger-smeared with wet clay. It was concluded during analysis that the clay was used by Ball as an alternative to flint chips or ground quartz commonly used by potters in Britain and America (and difficult to obtain in Sydney) to prevent vessels adhering to the base during glost firing (Figure 4.76).¹⁴⁸ Other indicators included refired broken edges, different-coloured glaze or pot/furniture adhesions, and burnt or distorted surfaces.

4.9.6.1 Rim Setters

Some 58 rim sherds have been identified as setters used vertically and horizontally to separate and support pottery and other items in the kiln (Appendix 4.1: Table 62). Almost all were from thick-walled large utilitarian vessels such as pans, jars and crocks (Types 1, 14, 15, and 17), with clay-smeared and partly encrusted surfaces as well as refired edges (Figure 4.88, Figure 4.89).

¹⁴⁷ Britain: North Staffordshire in Barker 1998. USA: John Hinds site at Holland, Massachusetts HSKFO2a & 2b, HSKFO3a & 3b shown at: <https://picasaweb.google.com/covenanteer/HindsSite5074800677571434370;/HindsSite5074800690456336274;/HindsSite5074800724816074658;/HindsSite5074800754880845746>.

¹⁴⁸ Hood 2007: Fig. 55.

4.9.6.2 Body Setters

At least 23 curved sherds from broken vessels of all sizes but of an unknown original shape were reused as horizontal and vertical setters. Like the base setters they were characterised by the presence of encrustation, edge refiring and different splashed and pooled glazes, but these items had more consistent surface clay smearing. Some appear to have been deliberately shaped or modified (Figure 4.90).

4.9.6.3 Base Setters

Broken or unsellable bases of large utilitarian vessels such as pans, bowls and crocks were commonly reused as base setters during kiln firing, with 252 being recognised at this stage in the assemblage (Appendix 4.1: Table 62). Due to the lack of rims and other diagnostic features only two pan shape types were able to be identified (Types 1.9.2 and 1.4.2) from contexts 7646 and 7460 (Appendix 4.4: Vessel Type Series). Placed horizontally in the chamber, some of the base sherds had low or symmetrically-broken sides that enabled them to be inverted and reused on the opposite face, or as lids (Figure 4.92). Occasionally the irregular broken edges of the sides were utilised for specific support (Figure 4.93) similar to some pedestal or crown ring stilts made by eighteenth-century British potters (see Section 4.9.3).¹⁴⁹

The bases were often encrusted on the interior with small quite evenly scattered fragments of clay as well as smeared clay on the sides prior to reuse. Exploded clay, pot and pooled glaze similar to that seen inside saggars adhered mostly to the upper surface of the base; the underside, closest to the fire, was often blackened. The edges of the broken vessel sides were commonly covered with glaze forced out from the surface or dripped from other vessels.

4.9.6.4 Lid Setters

Flat lids with a central knob or hole (shape type 11.7) were a useful but rare setters type in the kiln. The single example found in the assemblage had a missing knob and edge nibbling/shaping. When used as a setter or perhaps a saggars lid, the lower face was encrusted with small clay fragments and splashed glaze, and the upper face had been subject to fierce burning (7663/87005, Figure 4.94). Examples of possible lid setters or saggars lids with central hole have also been found in Britain.¹⁵⁰

¹⁴⁹ Barker 1998: 331, Figs. 26, 27.

¹⁵⁰ Lid fragments with splashes of glaze on convex underside from early eighteenth-century Polesworth, Warwickshire in Melton & Scott 1999: 121, Figure 19.185.



Figure 4.88: Clay-smeared rim setter fragment 7460/86475. Russell Workman, 10cm scale.



Figure 4.89: Clay-smeared rim setter fragments 7460/86476. Russell Workman, 10cm scale.



Figure 4.90: Clay-smeared triangular body setter now fragmented 7490/89625. Russell Workman, 10cm scale.



Figure 4.91: Evenly encrusted base setter fragments, left 7646/85026 and right 7646/85006. Russell Workman, 10cm scale.

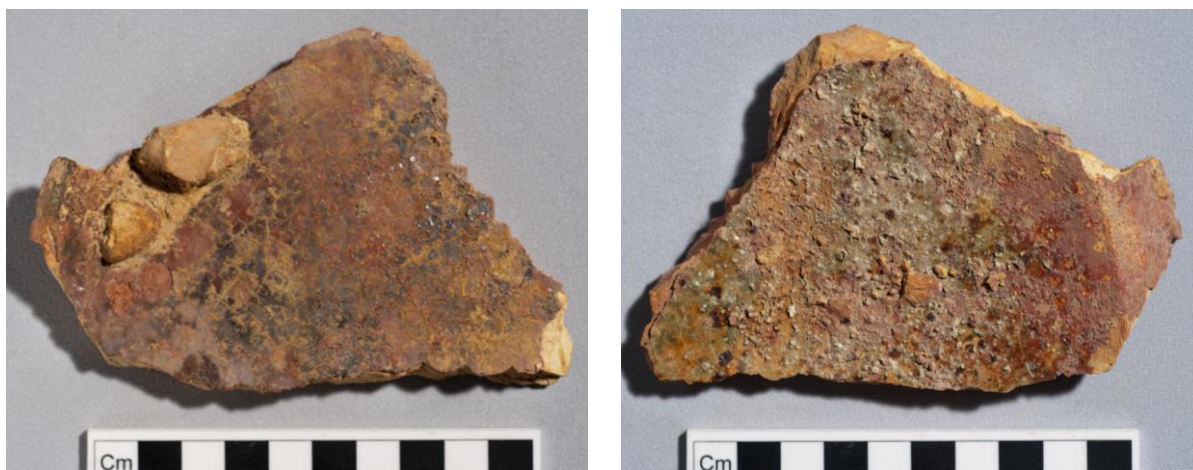


Figure 4.92: Base setter fragments. Left: bob fragments on interior. Right: encrusted exterior 7663/86997. Russell Workman, 10cm scale.



Figure 4.93: Base setters showing dripped glaze over breaks and adhering pot fragment. Left to right: 7460/86796, 86643. Russell Workman, 10cm scale.



Figure 4.94: Lid setter fragment with encrusted underside and burnt upper 7663/87005. Russell Workman, 10cm scale.

4.9.7 Sandstock Tile Setters/Shelves

Low-fired sandstock roof tiles made in Sydney from 1788-c.1810 were reused at Thomas Ball's pottery as kiln setters and possibly shelves (Appendix 4.1: Tables 55, 63; Figure 4.95 to Figure 4.97). The poorly crushed and mixed pink and white clays often had a folded appearance in profile, as well as red ironstones, sand and inclusions of vegetable matter. The clay source for the tiles was different from that used to make bricks but both were fired in the same kilns at Brickfield Hill. The tiles were made to roof early government buildings and other important structures in the colony. However, they were difficult to fire successfully and eventually proved insufficiently robust for long-term use. The tiles reused by Ball were typical of those made in kilns close to his pottery at Brickfield Hill rather than the thicker types made by slop-moulding at Parramatta from c.1790. Most were thin and rectangular with some fragments retaining a single lug (or nib) or two square peg or nail holes for attachment to roof battens (Figure 4.96). Rarer were small slightly curved fragments of half-cylindrical ridge tiles. The lack of sheared-off lugs and weathered surfaces indicates that the tiles may not have been used on roofs of previous structures or at Ball's Pottery and were probably purchased or retrieved by Ball as cheap seconds or discarded fragments along with the bricks used in the kiln structure directly from the Brickfield Hill yards. There is no evidence for any of the tiles being used in the lower brick wall of the kiln but the smaller fragments may be amongst the aggregate in the upper clay lining.¹⁵¹

Thomas Ball may have utilised the larger flat rectangular tiles as horizontal surfaces, lids or thin shelves in other parts of the Pottery, such as drying sheds or yards, but their primary purpose appears to have been as setters or shelves in the kiln. Evidence for the stacking is seen on the surfaces where the position of the pot is shown in reserve within a darkened background, or splashed lead glaze; or as curved or sharp impressions sometimes with adhering pot or furniture fragments (Figure 4.95). Smaller broken tiles may also have been placed vertically in order to separate saggars or pots in the kiln. Impressions of narrow tiles or pot sherds steadied by soft clay bobs during stacking have been identified on several bob subtypes (Appendix 4.5).¹⁵²

¹⁵¹ Discussion of brick and tile manufacture at Sydney and Parramatta see Stocks 2008, 2009b; and Varman 1993. Primary sources are: Collins 1798, 1802; Tench 1789, 1793; and Worgan 1788. Britain: see Dobson 1850.

¹⁵² Similar reserve marks on flat setters from Britain in Green 1999: Appendix 2; Tyler et al 2005: Figs. 44-47.

Tiles (along with saggars and suitable pottery sherds) were used as setters in successive kiln firings. Being pre-fired and covered in sand they were well-suited and more robust than the thicker hand-flattened clay setters made at the pottery (Section 4.9.5). Many of the tiles became (further) broken in the kiln making it difficult to ascertain their shape and size when being reused as furniture. Several appear to have been deliberately snapped or cut across the width to form smaller rectangular or oval shapes. Occasionally the tiles were double-stacked for extra height or width and glaze had pooled in the gaps (Figure 4.97). Roof and floor tiles were commonly used as kiln furniture by earlier and contemporary potters in Britain and America.¹⁵³



Figure 4.95: Tile setters with stacking evidence on the surface; (left): reserve silhouette of vessel (7662/95098); (right): impression and remnants of placing ring or vessel rim (7662/95104). Russell Workman, 10cm scale.



Figure 4.96: Selection of Peg 1 and Single Lug 1 type tile setter fragments or shelves showing burnt encrustation and pooled glaze (context 7662). Russell Workman, 10cm scale.

¹⁵³ Britain: North Staffordshire in Barker 1998; Tyler, Betts & Stephenson 2008: Figs. 26, 83-85 (85 has marbled clay).



Figure 4.97: Double-stacked tile setter fragments showing blistered and pooled glaze (7645/95031). Russell Workman, 10cm scale.

4.10 Other Products of the Pottery: Pipes, Marbles and Whistle

The excavation of the waster pits and other redeposited material from Thomas Ball's Pottery has enabled other recreational items to be attributed to this manufacturer. These were hand-carved earthenware reed pipes and hand-rolled clay marbles which have been found previously on other excavations in Sydney and Parramatta. In addition, a previously unknown form, an earthenware whistle moulded in the form of a bird, can now be tentatively included in Ball's repertoire (Appendix 4.1: Table 64).¹⁵⁴

4.10.1 Pipes

Evidence for eight broken carved facettied pipes were found at the site mostly from redeposited pot waster and structural kiln debris in Area A (Appendix 4.1: Table 64; Figure 4.98 to Figure 4.100). At least seven appear to have been broken during manufacture or discarded before being used. One was almost complete with a chipped bowl rim (7645/7728). Two very small fragments of a pipe bowl that was smoked or burnt on the interior were found in a Woolpack underfloor deposit (7324), perhaps disturbed from an underlying context.

The pipes were thick-walled with a short stem for a reed or other organic mouthpiece and made from fine buff to coarser orange clay with tiny red inclusions. The prepared clay was initially rolled around a fairly thick cylindrical rod that formed the bore; the bowl end was slightly bent and hollowed out by finger-turning and narrowly pierced to reconnect the bore hole. When leather-hard the pipe was hand-carved into octagonal facets that ran along its length from the flat rim of the long forward-sloping bowl to a thick conical spur, and then along the short stem with a trimmed flat end. During kiln firing the clay changed to mottled orange or light grey and was darker towards the underside. When overfired the clay turned dark brown-grey and the shape was distorted. The pipes and the marbles were fired in the same kiln as the lead glazed pottery with five examples having drops of yellow-cream (7461, 7645), red-brown (7645, 7648) or orange-clear (7645) glaze on the upper surfaces. There were no obvious examples of adhering clay items as seen with the marbles (Section 4.8.4). The pipes were remarkably uniform, indicating that they were carved by a single skilled person, and perhaps the result of one firing. They measured 76mm in length, with a bowl height and diameter of 36 x 25mm. The spur was roughly 6mm in height, the short stem was 14-18 mm in diameter, the bore hole 6mm.

¹⁵⁴ For find locations in Sydney and Parramatta and discussion of these types of pipes and marbles see Stocks 2008, 2009a. Other types of white clay pipes that may also have been made by Ball were also found at the PJP site (with a thick conical stem); and immediately to the northeast at 2-6a and 12 Cunningham Street Surry Hills (large effigial or face bowl with dark brown clay eyes) by Austral Archaeology, report by Hickson forthcoming.

The morphology of the pipes is unusual and Thomas Ball appears to have been influenced by both British and American traditional styles. Curiously, the closest parallels are pipes made by seventeenth-century and later pipemakers in the frontier Chesapeake Bay region of the eastern states of North America; partly because they were robustly made using clays of similar texture and tools for a clientele that had little access to imported goods. Pipes made by these European settlers in America, using a similar limited set of tools to Thomas Ball, based their forms on red clay Indigenous examples and it is probable that Ball or someone in his employ had seen one of these in Sydney or overseas. Carved facettted clay pipes have been rarely found at excavated sites in Sydney and Parramatta, indicating that they were only made briefly or were perhaps unpopular. Ball may have made them along with the marbles as an experiment, or to gain new customers when imported supplies were limited.

The only contemporary Sydney pipemaker known to have made pipes in large numbers was William Cluer. He began making moulded ball clay pipes in 1802 and after he died in 1821 his business was run by his wife Mary Morgan until 1846. A large proportion of the pipes marked by William Cluer or his firm found at local sites, including 710-722 George Street, show that they were made using worn moulds. They had been smoked for as long as possible and were only discarded when irreparably broken and badly torrefied (stained). This consistent pattern of pipe overuse seen at various sites in Sydney and Parramatta points to a time of pipe shortages which Ball may have attempted to capitalise on. Alternatively, his hand-made pipes may have been produced in the couple of years before Cluer began production with imported moulds.¹⁵⁵



Figure 4.98: Carved facettted pipes from Area A (context 7645) showing range of fired clay colours and surface glaze drops. Front row: 97728(1), 97729(2). Back row: 97732(1), 97731(1), 97730(2). Russell Workman, 10cm scale.

¹⁵⁵ USA reed pipes in Luckenbach and Kiser 2006: Fig. 22; the facettted pipes by 'The Carver' c.1640 from Virginia, Fig. 4 curved stem pipes by Emmanuel Drue c.1660 from Maryland; see also Association for the Preservation of Virginia Antiquities 1997, 1998; Virtual Phips, The Archaeology of the Phips Homestead, Woolwich, Maine (ca. 1639 to 1676) at <http://w3.salemstate.edu/~ebaker/Phipsweb/phipsindex.html>. General pipe information and facettted style see Ayto 1994; Bradley 2000; Humphrey 1969:30, Fig. 42; Oswald 1975; Reckner & Dallal 2000:58. Early Australian pipemakers in Gojak and Stuart 1999.



Figure 4.99: Carved faceted pipes Area A (context 7645), reverse of above. Front row: 97729(2), 97728(1). Back row: 97730(2), 97731(1), 97732(1) interior possibly grey from firing rather than use. Russell Workman, 10cm scale.



Figure 4.100: (left): carved faceted pipes detail of stem showing carving marks and darker red stem end from greater heat in kiln (7461/97843, 7648/97745); (right): Exterior of bowl fragment showing unmixed clays (7324/96444). Russell Workman, 10mm scale divisions.

4.10.2 Marbles

Some 57 hand-rolled clay marbles were found at the site, with four fired to a high enough temperature to be the equivalent of stoneware (Sections 4.2.1, 4.2.2; Appendix 4.1: Tables 64, 65; Figure 4.101 to Figure 4.104). Although they were discovered in contexts of many periods, including underfloor deposits of the Woolpack and House 710 in Area C, it is clear from their inclusion within the redeposited waster and kiln debris in Area A (7645, 7646) that they were made by Thomas Ball. They ranged in size from 13 to 27mm in diameter with the most common being 17mm. The darkened 'stoneware' examples were the largest being 18-27mm in diameter.

The marbles were made from a range of buff to red clays with small ironstone inclusions. Many were highly asymmetric or ovoid and marked with fingerprints. Several had drops of clear, orange, olive green, brown and red-brown lead glaze or adhering earthenware fragments indicating they had been fired in the same kiln as the pottery and pipes. The marbles with significant manufacturing faults and lack of surface battering wear are unlikely to have been used in games. However, due to lack of supply in the colony those with some faults appear to have been sold as seconds as similar marbles with drops of glaze and filed-off adhesions have been identified from at least one Parramatta site. It is also possible that these marbles may have actually aided kiln stacking rather than just being positioned where possible in-between vessels and other items.¹⁵⁶



Figure 4.101: Hand-rolled white, buff to red clay marbles from Area A, made by Thomas Ball. Front row: 7323/96047, 96058, 96067, 96214. Middle row: 7324: 96525, 96616, 96623. Back row: 7331/96758, 7330/96677, 7349/97670. Russell Workman, 10cm scale.



Figure 4.102: Hand-rolled buff to orange clay marbles from Area A waster pit fill 7645 with splashed lead glaze and adhering pot fragments from kiln firing, made by Thomas Ball. Bottom row: 97737, 97736, 97736, 97738, 97742. Middle row: 97734, 97735, 97736, 97739. Back row: 97741, 97733, 97740. Russell Workman, 10cm scale.

¹⁵⁶ Marbles with glaze found at PJP site - see Stocks 2008, 2009a. See also Baumann 1970; Opie 1997; Randall 1971.



Figure 4.103: Hand-rolled white, buff to orange clay marbles from Area B with splashed lead glaze and adhering clay fragments from kiln firing, made by Thomas Ball. Front row: Area B House 716 cleaning 7457/97827, 97831, 97830, 97828, 97829, 97832. Middle row: 7457/97823, 97824, 97825, 97826. Back row: topsoil 7472/97844, fill east of House 718 7490/97853, 97854. Russell Workman, 10cm scale.



Figure 4.104: Clay, stoneware (stw), porcelain and limestone marbles from Area A Woolpack Room 3 underfloor deposit (7335). Hand-rolled clay and stoneware types were made by Thomas Ball. Front row: 'Stw alley (glazed)' 96968, 'Clay m made paint' 96969, 'Clay m made' 97016, 'Clay m made paint' 97030, 'Clay h made' 97082; Middle row: 'Stw alley (glazed)' 96964, Limestone 'Stonie' 96966, Porcelain 'China alley linear' 96967, 'Clay m made paint' 96965, 'Stw alley (glazed)' 96964; Back row: 'Clay m made paint' 96850, 'Clay m made' 96886, 'Clay h made' 96911. Russell Workman, 10cm scale. Key: h=hand; m=machine.

4.10.3 Bird Whistle

A small whistle moulded into the shape of a sitting pigeon with head facing forward and wings folded was found in the fill of a drain constructed in c.1880-1902 after the demolition of the Woolpack Hotel in Area A (7657/97752). The whistle measured at least 62mm in length, was 24mm wide and 33mm in height. Made of unglazed buff fine earthenware with common tiny red ironstone or clay inclusions it had a worn beak and broken tail (Figure 4.105). Slight light-grey discolouration of the clay on the upper part of the bird occurred during firing.

Although a unique object, the whistle has been tentatively attributed to Thomas Ball due to the similarity of the clay and manufacturing techniques, such as trimming and firing, as used to make the pipes, marbles and some of the pottery (Appendix 4.1: Table 64). Its depositional context is slightly problematic but it is possible that the bird was discarded many years before it became incorporated into the drain fill along with sandstone rubble. The slightly worn or much-handled appearance of the whistle suggests its use as a toy or musical instrument by children or adults over a long period of time.¹⁵⁷

The eyes, beak and feather detail formed in a 2-piece mould were not evenly rendered or sharp, and the upper and lower seams had been roughly trimmed. A rectangular object or moulding stick had been pushed vertically into the underside of the belly creating oval-edged hole when removed. Subsequently a cylindrical object had pierced through the lower back of the bird into the side of the lower hollow, and then a narrow rectangular hole was made horizontally from the end of the tail into the top side of the upper hole. The head had been fired to a slightly darker grey and was later stained by iron in the soil.

The mouthpiece was the tail, the air directed into the lower hollow with the sound adjusted via the holes similar to an ocarina. Although unlikely it is possible that a small amount of water was used if the hollow was stoppered at the bottom. Bird whistles have been made for thousands of years in the Middle East, Mediterranean, China and the Americas, and are well represented in Britain and Europe from the Medieval and later periods. The most similar in form to the whistle at the site were those of a pigeon or pheasant made at the time of the American Civil War in the 1860s.¹⁵⁸

¹⁵⁷ Stone-lined drain trench context 7657, see Section 3.5.2.2 in this Volume.

¹⁵⁸ Online www.thingsmusical.com/bird-whistle. A seventeenth-century glazed bird or chicken whistle from Buckley England in the Aberystwyth University ceramic collection & archive at <http://www.ceramics-aberystwyth.com/buckley.html>. A number of near identical c.1860 Civil War glazed and unglazed whistles or ocarinas with impressed detailing are listed on Ebay. Indigenous American bird water whistle history and manufacturing methods at <http://www.ceramicshistory.com/ceramicshistory19>. Roman period Egyptian swallow whistle at <http://www.ostracon.ch/News2009/whistleSwallow/whistleSwallow.htm>.



Figure 4.105: Views of moulded clay bird whistle (7657/97752). Russell Workman, 1cm scale.

5.0 Artefact Overview

5.1 Research Questions for Artefact Analysis

Several general questions were asked of the artefacts recovered during the course of excavations at 710-722 George Street, Haymarket. These questions have been used as a basis for addressing the research design developed for the archaeological assessment and excavation of the site.¹ They have been adapted from several other nineteenth and early twentieth-century sites investigated by Casey & Lowe in the Sydney city area.² These research questions formed the basis for the specific methodology and aims employed for excavation of the site and for post-excavation artefact analysis. The most relevant questions underpinning the analysis of artefacts by each of the materials specialists are:

- What type and range of artefacts were found?
- What do the artefacts indicate about the range of activities undertaken at the site? Do the artefacts show changes in site use over the different occupation phases?
- In what way did the consumer goods at the site represent the availability, quality and variety of those in the world at large? What kind of interaction with the wider world do they indicate?

5.1.1 Artefacts Analysis

Due to the particular characteristics of the 710-722 George Street site several constraints were recognised as potentially affecting the artefact analysis. Many artefacts from the site (particularly those from the early pottery production phase) were recovered as secondary fills in large dumps. Ordinarily these types of deposits are not readily associated with primary activity areas. However, the large volume of pottery production wasters found in Areas A and B provide an important assemblage for the study of early pottery production in the colony (discussed in Section 4), despite the lack of evidence for kilns or other work areas. Their accumulation and disposal on site provides a significant body of data for understanding small-scale industrial practices in the early stages of the colony.

The most revealing artefacts relating to the post-Brickfield periods were found in underfloor deposits (principally those of the Woolpack Inn in Area A, but also in smaller occupation deposits from the mixed residential/commercial buildings in Areas B and C). Substantial artefact assemblages were also found in several cesspits in Areas A to C and within the backfill of a well in Area C. A detailed report on the results of the lead-glaze pottery analysis has been presented in a separate chapter (Section 4). The relative quantities of this material compared to the remainder of the site have not been included in the majority of artefact tables in this overview. Other classes of artefact found in association with the lead-glaze pottery assemblages and related to the pottery production have also been discussed in Section 4.

5.1.2 Cataloguing of Artefacts

All artefacts were catalogued by a specialist team using the cataloguing system developed by Dr Mary Casey, in consultation with the various specialists. The basis of this system has been published elsewhere and will not be repeated here.³ The main elements of this cataloguing system are the use of minimum vessel or item counts (MIC) to quantify the assemblages and the attribution of functional categories to the artefacts during cataloguing. This assists in understanding how the artefacts related to the daily lives of the people who used and disposed of them. Maintaining a

¹ Casey & Lowe 2008 *Archaeological Assessment 710-722 George Street, Haymarket, Sydney* for Parkview.

² A list of Casey & Lowe projects can be found at: <http://www.caseyandlowe.com.au/index.htm>

³ Casey 2004:30-33.

standard approach to artefact cataloguing also allows more meaningful comparative analysis between other archaeological sites excavated by Casey & Lowe.

The material catalogues prepared by each specialist are found in Appendix 5.4 of this report. Separate artefact reports for all material categories with the exceptions of miscellaneous items, metals and building materials which form the basis of the following summaries are included in Section 9. All information relating to these large and varied artefact classes has been obtained from the catalogues or in consultation with the relevant specialist.

5.2 Overview of Artefacts

The following brief overview presents a summary of the nature of the general artefacts found within the study area. Of the 11,807 artefacts recorded following the archaeological program at 710-722 George Street it was possible to identify a minimum of 8,838 items (Appendix 5.3: Table 1).⁴ Artefacts were recovered from the three main excavations areas: Area A (No. 720-722), Area B (No. 712-718) and Area C (No. 710) comprising 128 contexts in total (Table 3). Area A had the highest number artefacts (4355 items), accounting for 49 per cent of the minimum item count from the site; Area B contained 43 per cent of the assemblage, with Area C containing only 8 per cent of the items recovered during the excavation (Table 2). Outside of the Brickfield-phase fills the greatest numbers of artefacts were concentrated in contexts associated with underfloor deposits from the Woolpack Inn (Area A) and from the backfill of the well (7650) in Area C (Table 3). Artefacts were classified according to material class: miscellaneous (42.4%), organic (19.8%), glass (18.9%), ceramic (8.8%), architectural and building debris (6.1%) and metal (4.0%) (Table 1). In addition to these six artefact categories were 6874 fragments of bone and 373 fragments of shell which were collected from across the site (Tables 4, 6).⁵

5.2.1 Bone and Shell

Faunal remains were recovered from all three areas of the site (Table 4), with most recovered in Area A (71%). Bone was recovered in 23 contexts in Area A, 27 contexts in Area B, and 12 contexts in Area C. Unidentified fish species accounted for 42.8 per cent of the total faunal remains (2,940), with rat or rodent species making up 39.8 per cent (2,276), and sheep bone the next most prevalent with 17.7 per cent (1,220) (Table 5). Overall the high number of fish and rat/rodent bones reflects the underfloor deposits in Area A. The shells were found in 41 contexts across the site, with 184 shells in Area A, 136 in Area B and 53 in Area C (Table 6). The majority of the shells in Area A came from the Woolpack underfloor deposits (123), with 37 also found in the fill of a pit (7645). In Area B most shells (54) came from fill in a rubbish pit (7509), and in Area C (25) most shells came from the underfloor deposit in the front room of No. 710 George Street (7444). The shell assemblage was dominated by rock oyster (48.8%) and mud oyster (30.0%) (Table 7).

5.2.2 Building Materials

The number of building materials found across the site numbered 539 items, with bricks and roof tiles/setters dominating the assemblage (Table 8). The 225 bricks represented 41.7 per cent and the 262 roof tiles/setters 48 per cent of the building materials recovered. It is likely that the 262 roof tiles/setters and the 11 briquetage may relate to the Phase 3 pottery production on the site (Figs 5.1, 5.2).

⁴ All data and tables in this section can be found in Appendix 5.3 and/or specialist artefact reports.

⁵ These artefacts are quantified separately as they were catalogued by fragment and not by minimum number of individuals.



Figure 5.1: Selection of roof tile fragments reused as kiln setters, Area A, with burnt material and glaze on the surfaces (7645/#95028). Russell Workman, 10cm scale.



Figure 5.2: Example of briquetage fragments, Area B, showing finger smoothing and glaze patches (7460/#95224). Russell Workman, 10cm scale.

5.2.3 Metals

The metal category of artefacts numbered 352 items and these were represented by 34 individual shapes (Table 9). Nails were the most common shape (263), representing 74.7 per cent of the metal category. Most of the metal items were identified with the general function of architecture, including brackets, bolts, doorknobs, eye bolts, hinges, hooks, nails, screws, spikes and tacks (Figs 5.3, 5.4). A number were also related to horse transportation, such as horseshoes and a stirrup. Tools included an axe and files, and storage containers a barrel hoop, tin can and a tin/box.



Figure 5.3: Copper alloy household fittings, Area A. Front: handle 7323/#82010. Middle row: doorknobs 7335/#82064, 7335/#82065. Back row: roseplate 7337/#84911, hook 7324/#82053. Russell Workman, 10cm scale.



Figure 5.4: Examples of iron strap hinges, Area C. Front: 7569/#82270. Middle: 7313/#82166. Back: 7569/#82267. Russell Workman, 10cm scale.

5.2.4 Organics

The organics artefact category numbered 1,749 items and these were identified by 36 different shapes which incorporated the functions of food, clothing, architectural and household furnishings (Appendix 5.3: Table 10). By far the most commonly identified organic item was the grape, with the 1,374 seeds representing 78.6 per cent of the assemblage. Other food items were found in far smaller numbers – apricot (3), coconut (1), nectarine (2), peach (2) and walnut (7). All 1,374 grape seeds were found in the well in Area C (7520), with 820 in fill 7567, 292 in fill 7568 and 262 in fill 7569, and represent only a small sample collected from the whole deposit. A number of leather items were also found in the same well and were mainly associated with footwear, in the form of various shoe and boot parts (Table 10), along with fragments of a woollen coat.

5.2.5 Miscellaneous

The miscellaneous category contained 3,750 artefacts and these were represented by 109 individual shapes (Table 11). By far the most dominant item found was the tobacco pipe, with the 1,409 items accounting for 37.6 per cent of this category (Figure 5.5).



Figure 5.5: Selection of English and Scottish ball clay tobacco pipe bowls from Area C. Front row (L-R): 7460/#98317, 7393/#97894, 7313/#97880. Middle row: 7313/#97877, 7444/#98309, 7444/98309. Back row: 7581/#98434, 7465/#98356. Russell Workman, 10cm scale.

Other frequently found shapes included pins (844), beads (676), buttons (183), marbles (146) and slate pencils (111) (Figs 5.6, 5.7, 5.8).



Figure 5.6: Glass beads of various colours and sizes used as jewellery and clothing decoration from a single excavated spit within gridded square D1 in Room 5 of the Woolpack Inn, in Area A (7337/#97435-#97462). Russell Workman, 10cm scale.



Figure 5.7: Types of sew-through and shanked metal buttons found in the Woolpack Inn, Area A (underfloor contexts 7323, 7324, 7335 and 7337). Front row: mother of pearl. Second row: bone. Third row: glass. Back row: porcelain and glass. Russell Workman, 10cm scale.



Figure 5.8: Types of marbles found in Areas A & B. Front row (L-R): limestone 7417/#97810, 7638/#97868, 7335/#96932. Second row: limestone 7335/#96986, 7337/#97376, linear-painted porcelain 7335/#96985 and glass 7337/#97377. Thomas Ball hand-rolled clay third row: 7320/#96012, 7331/#96759, 7335/#96931, 7324/#96675; Back row: 7337/#97623, 7337/#97433, 7337/#97488. Russell Workman, 10cm scale.

Aside from smoking, some of the other functions represented within this category of small finds relate to clothing, jewellery, currency, literacy, sewing, personal grooming, playing, gaming, weapons, cutlery, and household furnishings. Items identified within the category of jewellery and accessories numbered 39 (Table 12), with 74 per cent of these (29) found within the underfloor deposits of the rooms of the Woolpack Inn in Area A. The 39 items were made of glass, gold, brass, copper, ivory, mother of pearl, antler, grass, seed and leather (Figure 5.9).



Figure 5.9: Selection of the jewellery from Area A. Front row (L-R): pierced farthing coin pendant 7335/#96096, cross 7337/#97255, and locket back 7337/#97425. Back row: mounted blue glass pendant 7337/#97509, gold oak leaf and acorn earrings (7337/#97427, 7337/#97427, 7337/#97426), and gilt copper alloy dagger-shaped pendant 7337/#97232. Russell Workman, 10cm scale.

The category of sewing, including lacemaking, was represented by 860 items (Table 13), with pins accounting for 98.1 per cent of the assemblage. Area A contained the most number of items relating to the activity of sewing, with the 647 items representing 75.2 per cent of the total assemblage. Three items of particular interest here are an ivory needle holder (7337/#97540) and two brass bodkins (#98016, #98085). The two different-sized bodkins were both found in the underfloor deposit of the front room of No. 710 George Street, in Area C (7444) (Figure 5.10).



Figure 5.10: Finely decorated brass bodkin fragments from Area C. Front: 7444/#98085. Back: 7444/#98016. Russell Workman, 1cm scale divisions.

Excluding the pins, the most commonly found sewing-related item was the brass thimble with the eight examples all dating from 1850 (Table 14). Two of these thimbles were part of a set that featured a short verse in relief on a band around the lower exterior body: 'I WISH YOU WELL' (7333/#96803) and '[BE] MERRY & WISE' (7335/#96841) (Figure 5.11).



Figure 5.11: Selection of machine-pressed brass thimbles from Area A. (L-R): 7324/#96636, 7333/#96803, 7335/#96841, 7337/#97208. The two central thimbles feature verses. Russell Workman, 10cm scale.

Some 49 items associated with weapons, munitions and the military were identified in Areas A (17) and C (32), with lead shot (35) being the most commonly represented especially in the underfloor deposit of Area C (context 7444, Table 15, Figures 5.12 and 5.13).



Figure 5.12: Items associated with weapons, munitions and the military, Area A. Front row (L-R): British pistol gunflint 7392/#97715, badge fragment 7337/#97429, gun eye bolt 7337/#97134, pistol percussion cap 7324/#96325. Back row: lead fineshot 7335/#96993, swanshot 7337/#97288, buckshot 7324/#96470, musket ball 7324/#96059, brass .32 calibre bullet cartridge 7337/#97132. Russell Workman, 10cm scale.



Figure 5.13: Lead shot found in excavated 1m squares of underfloor deposit 7444, Area C. (L-R): A2 #97901, C3 #98123 and F5 #98300. Russell Workman, 1cm scale divisions.

A total of 28 items were identified with personal grooming, health and hygiene. Of these ten were decorative hair combs and eight were ordinary combs (Table 16). One item of particular interest is a cut, carved and partly polished walking stick handle made of antler (#50960), found in one of the fills (7567) in the well in Area C (Figure 5.14).



Figure 5.14: Items associated with personal grooming, health and hygiene found in Area C. Front: bone toothbrush 7389/#97888. Second row: bone toothbrush 7389/#97887. Back row (L-R): glass spectacle lens 7444/#98149, bone stopper 7444/#97930, small brass pillbox lid with glass inset 7444/#98154, antler walking stick handle 7567/#98363. Russell Workman, 10cm scale.

Of the 163 recreational games and toys, the majority were marbles (146 or 89.6 per cent of the category, Appendix 5.3: Table 17, Figure 5.8). The remaining 17 items were dolls (7), counters (2), dominoes (2), and a single lead soldier (1), a teaset saucer (1), a teaset teacup (1), a teaset cup (1), toy glass (1) and bird whistle (1) (Figure 5.15, 5.16). The clay bird whistle (7657/#97752) is in the shape of a sitting pigeon and is thought to have been made by Thomas Ball.⁶

⁶ See Section 4.10.3.



Figure 5.15: Selection of toy and game recreational items from Area A. Front row (L-R): toy cup 7632/#97862, Jews harp 7301/#96003, doll's leg 7337/#97431. Middle row: toy tea cup 7337/#97527, toy saucer 7324/#96430. Back row: hand-cut and polished bone dominoes 7323/#96167, 7232/#96201; toy stemmed glass 7335/#97091. Russell Workman, 10cm scale.



Figure 5.16: Clay bird whistle with broken tail, Area A 7657/#97752. Russell Workman, 5cm scale.

In Areas A and B a total of nine items relating to the economy were recovered. These were three lead tokens, 4 copper coins and 2 silver coins (Table 18, Figure 5.17).⁷ The 1826 farthing found in the underfloor accumulation on Room 3 of the Woolpack Inn (7335/#96906) had a small pierced hole to the left of Britannia's head that indicated its reuse as a pendant or possible token (Figure 5.9).



Figure 5.17: Examples of a lead token with rayed design 7323/#76117 and obverse of a copper British 1827 penny 7646/#97744 found in Area A. Russell Workman, 10cm scale.

The 1,409 tobacco pipes were found in all three areas of the site, in a total of 69 contexts (Section 5.7; Table 19). Area A had 930 pipes in 28 contexts, Area B had 99 pipes in 26 contexts, and Area C had 380 pipes in 15 contexts. The majority of the pipes in Area A were recovered from the underfloor deposits of the Woolpack Inn, numbering 791 pipes and representing 85 per cent of the total pipes from this Area. In Area C the overwhelming majority of pipes were found in two features (90%), with 179 pipes from the underfloor deposit of the front room of No. 710 George Street (7444) and a combined total of 163 pipes from the well fills (7569, 7568, 7567, 7466, 7465), in particular fills 7466 and 7567. The 23 pipe manufacturers identified across the site represent manufacture in Australia, Belgium, England, France and Scotland (Table 20). Some 260 pipes had known manufacturers, representing just 18.4 per cent of the total pipe assemblage, with the remaining 1,149 (81.5%) being of unknown manufacture (Table 21). The 930 pipes in Area A included just 89 with known manufacturers, the 99 pipes in Area B included just 15 with known manufacturers, and the 380 pipes in Area C included 156 with known manufacturers. In Area C the most frequently represented manufacturer was Desiree Barth from Andenne, Belgium, identified on 72 individual pipes. Although the majority of the pipes did not have identified manufacturer details,

⁷ The artefact storage shed was broken into one night during the excavation and a small box containing coins and other items of special interest found up to that point was stolen. Unless these items had been specifically noted on the site recording sheets at the time of excavation the information about these artefacts was lost. After the robbery any coins subsequently found were taken off site at the end of each day.

a few more were at least able to be assigned a country of origin stylistically (Table 22). A total of 359 pipes (25.5%) were assigned a country of manufacture, with 1,050 pipes still remaining unknown (74.5%). A number of tobacconists were also identified on 83 pipes with five from Australia, England and the United Kingdom. (Tables 23, 24). The Sydney tobacconist Hugh Dixon is the most commonly found, on a total of 78 pipes (94%), with most from Area C (67). Hugh Dixon pipes have a long date range, from 1839 to 1904 (Figure 5.18).



Figure 5.18: Examples of pipes commemorating the wedding of Queen Victoria and Prince Albert in 1840 made in Britain and sold by the Sydney tobacconist Hugh Dixon. Front: 7466/#98346. Back: 7567/#98384. Russell Workman, 10cm scale.

A further breakdown of the artefacts recovered from each area of the site and their contexts is summarised in Sections 5.2.1 to 5.2.3. Artefacts from the most significant contexts post-dating Brickfield activity within each area were selected for further discussion in this overview. These are found within Section 5.3.

5.3 Area A, Lot 2: Summary of Artefacts

A total of 4,355 artefacts were recovered from Area A in varying contexts which represent the different phases and types of activity that were carried out on the site.⁸ Together these account for 49 per cent of the items found during the excavation.

⁸ These figures do not include bone, shell and the locally made lead-glaze and associated kiln furniture from Phase 3 activity.

The earliest dated artefacts found in Area A were recovered from contexts associated with the period of Brickfield activity on the site (Phase 3). These artefacts have already been discussed in detail and form no further part of the current chapter (refer to Section 4). Instead artefacts associated with the major period of occupancy in Area A, from contexts relating to the construction, occupation and eventual demolition of the Woolpack Inn form the major part of this discussion. This spans a period of nearly six decades prior to the construction of the Mercantile Bank building in the early 1880s. Occupation deposits in the form of a series of underfloor accumulations were excavated from Rooms 1 to 5 (7323, 7324, 7331, 7335, 7337), as well as a cesspit (7658) located near the boundary between 722 and 724 George which was backfilled sometime during the latter stages of the building's occupation. The artefacts indicate it was probably backfilled sometime after 1870 (7653, 7654, 7655).

The underfloor deposits were for the most part shallow and no clear stratigraphic divisions could be found. This made it difficult to date their deposition or precise occupation phase. There was also some degree of disturbance to the archaeological remains through the centre of the building, caused by damage from later construction. Despite these constraints the underfloor deposits provide a useful assemblage for determining whether specific activity areas can be recognised within the building. As with many areas of the site, the underfloor deposits contained some lead-glaze ceramics which were residual in these contexts.

Twenty-three functional categories were represented across all the contexts in Area A (Table 25). The most commonly identified categories included recreation, personal, clerical, household, architecture, beverage and food (Figure 5.19). Most of the artefacts (1,052 items) were associated with recreational activities, including 930 tobacco pipes (Section 5.7, Figure 5.60). The 930 pipes were represented by a variety of types. The 374 of 'Churchwarden' type made from c1830-1880 were the most commonly identified (40.2%) (Table 26). The remaining 122 items in this category were a fishhook made from a sewing pin (1), a gaming counter (1), dominos (2), a snuff bottle (1), a bird whistle (1), doll parts (2), marbles (111), toy saucer (1), toy glass (1) and toy teacup (1).



Figure 5.19: A selection of clerical items from Area A. Left and right: slate board fragments with surface marks 7337/#97526, #97501. Front to back (L-R): slate pencil fragments (with initials 'NM') 7335/#96908; with sawmarks 7321/#96036, 7337/97230, 7331/#96680, 7337/#97607, 7337/#97266; square lead pencil 7337/#97485(3). Russell Workman, 10cm scale.



Figure 5.20: Selection of jewellery from Area A. Front row: glass beads 7337/#97312, 7337/#97579, 7331/#96696, 7335/#97090, 7645/#97725. Middle row: left glass beads 7337/#97384, 7335/#96877; right jet beads 7324/#96393, 7335/#97014. Back row: black glass inlay 7337/#97636, purple glass or amethyst inlay 7335/#96823, gilt copper alloy clasp 7337/#97363, black glass inlay 7324/#96607. Russell Workman, 10cm scale.



Figure 5.21: Selection of personal grooming, health and hygiene items from Area A. Front: bone toothbrush 7321/#96029. Back row (L-R): spectacle lens and frame 7337/#97490; vulcanite comb and haircomb fragments 7337/#97229, 7337/#97411, 7337/#97412; pharmaceutical bottle lid 7335/#96907. Russell Workman, 10cm scale.

The 918 items identified as personal included items of jewellery, accessories, clothing, grooming, toiletry, health, perfume, religion and timekeeping (Figs 5.20, 5.21). All of the 642 beads (with one exception) were found in the underfloor deposits of the Woolpack Inn and are all identified with the role of jewellery and made from glass (640) and jet (2) (Appendix 5.3: Table 27). Most of the beads were recovered from the underfloor space in Room 5 (7337), with the 532 items representing 82.7 per cent of the beads found in Area A (Figure 5.6).

The 139 different types of buttons used to fasten clothing were made in a range of materials including silver, silver and fabric, bone, brass, brass and gold, iron, iron and fabric, glass, glass and silver, glass and iron, mother of pearl, and porcelain (Table 28) (Figs 5.7, 5.22). The highest number of small items within the miscellaneous category of artefacts was from the underfloor deposits in the five rooms of the Woolpack Inn.



Figure 5.22: A selection of sew-through and shanked metal buttons found in Area A. Front row: stamped trouser varieties. 7335/#97048, 7337/#97316, 7331/#96722, 7324/#96646. Second row: flat cone shank 7350/#97673, 7331/#96684, 7324/#96608, coarse-stamped dome alpha shank floral 7335/#96820. Third row: ball loop shank and plate floral 7323/#96156, 7335/#96855, 23rd Regiment of Foot jacket 7331/#96770, 7335/#96819, 7331/96685. Back row: 2-piece dome loop shank 7324/#96626, silver inlaid glass mounted 7335/#96870, 2-piece fabric threadbacks 7335/#97062, 7337/#97415, 2-piece fabric Sanders shank 7331/#96765. Russell Workman, 10cm scale.

The 184 shells in Area A represented 49 per cent of the entire shell assemblage found on site and were identified here in 15 contexts (Table 6). The underfloor deposits in the Woolpack Inn contained 123 shells and represented 66.8 per cent of the Area A shell assemblage. Thirty-seven shells were also found in the fill of a pit (7645). Bone was recovered in 23 contexts in Area A with the 4,860 fragments representing 71 per cent of the total bone found on site (Table 4). The

Woolpack Inn underfloor deposits contained 4,681 bone fragments representing 96.3 percent of the Area A bone assemblage (Table 38). The most commonly found bone fragments within the underfloor deposits were the unidentified fish (2,436), followed by the European rat (1,111), sheep (611) and rodent (359). These four animal species dominated the underfloor bone assemblage (96.5%), with other species such as cattle, chicken, dog, goose and pig represented in far fewer numbers (Table 38).

Specific information regarding the artefact assemblages from the major contexts is found in Section 5.3.1

5.4 Area B, Lot 3: Summary of Artefacts

A total of 679 artefacts were recovered from Area B in several different contexts and represent various types of activity that were carried out on this part of the site (Table 2).⁹ Together these account for just 8 per cent of the items found across the entire site.

As for Area A, a significant portion of the artefacts from this area were lead-glaze wasters and other items associated with Thomas Ball's pottery production. These date to Phase 3, the period of Brickfield activity. The locally produced lead-glaze ceramics and associated artefacts have already been discussed in Section 4 and are not further commented upon here. However, unlike Area A, post-Brickfield occupancy in this part of the site is characterised by several shorter phases. Area B experienced successive building and development phases throughout the nineteenth and early twentieth century.

During Phase 4 (c.1823–1840) a single building was recorded on plans at the George Street end of the lot. The archaeological remains from this period did not belong to the structure of the house but were associated with its occupation. They included a sandstock brick box drain and fills (7339, 7431, 7432), and a possible rubbish pit (7508), the fill of which had been disturbed by later building activity (7509). The drain contained 30 general artefacts accounting for only 0.34 per cent of the finds from the site. The pit fill was dominated by oyster shell fragments with a small number of animal bones and a single ceramic item that dates broadly from between 1780 to 1860.

More substantial changes occurred during Phase 5 (c.1840–1860s) when the lot was subdivided into smaller allotments that correlate generally to the modern street numbering of 712 to 718 George Street. During this time the lot contained small shops and residences engaged in a variety of commercial enterprises. Several cesspit fills and an underfloor deposit contained artefact assemblages that can be specifically related to occupation and use of the buildings on this part of the site. These include an underfloor deposit (7395) from the timber building at 718 George Street and cesspit fills found at the rear of 712, 714, 716 and 718 George Street. The cesspits appeared to have been backfilled during Phase 6.

Sixteen functional categories were represented across all the contexts in Area B (Table 29). The most commonly identified categories included food, beverage and recreation. Just under a quarter of the assemblage was associated with the category of food, 159 artefacts. Items associated with this category included bottles (oil, pickle, pickle/chutney, sauce, vinegar), bowls, child's mug, cups, jar, pepper shaker, plates, platter, saucers, small plates, soup plate, stemware, teapots, teaspoon, tumblers and tureens. Of these the most commonly identified are the plates (46), saucers (28) and cups (23) (Figs 5.23, 5.24).

⁹ These figures do not include bone, shell and the locally made lead-glaze and associated kiln furniture from Phase 3 activity.



Figure 5.23: Selection of food-related ceramics from Area B (cesspit fill 7632). Russell Workman, 10cm scale.



Figure 5.24: Selection of Sprigged teaware-related ceramics from Area B (cesspit fill 7632). Russell Workman, 10cm scale.

The beverage category was represented by 140 glass bottles, with gin/schnapps (46), beer/wine (45) and champagne (35) being the most common, totalling 126 items. The remaining 14 bottles were aerated water, beer/wine/champagne, cordial, gin and spirits. The category of recreation was identified with a total of 119 items and once again it was the tobacco pipes which dominated this field, with 99 found (83.2%), (Table 30). Many of the pipes were plain and/or unidentified, however of the known types the Churchwarden type (24) was the single most commonly identified (Figure 5.19). Aside from the pipes the next most common recreation-related items were 18 marbles (15.1%). The majority of these were made of clay and unused. They were found in deposits of waster debris associated with Thomas Ball.¹⁰

¹⁰ Section 4.10.2.

The 136 shells in Area B represented 36 per cent of the entire shell assemblage found on the site and were identified here in 17 contexts (Table 6). The most number of shells (54) came from fill in a rubbish pit (7509). Bone was recovered in 27 contexts in Area B with the 269 fragments representing just 4 per cent of the total bone found on site (Appendix 5.3: Table 4). The most bone (79) was in a backfill of the cesspit at No. 718 George Street (7401) and included cattle (3), chicken (2), European rat (11), pig (3), sheep (58) and unidentified fish (2) (Table 69).

The artefacts from specific contexts are discussed in further detail in Section 5.3.2.

5.5 Area C, Lot 4: Summary of Artefacts

A total of 3,804 artefacts were recovered from Area C again from varied contexts that represent the different phases of activity that were carried out on this part of the site.¹¹ Together these account for 43 per cent of the items found across the entire site (Table 2).

Unlike Areas A and B, no substantial remnants of Brickfield activity were found on this part of the site. From Phase 4 onwards the development of this lot followed a similar path to that of Area B. But as Area C was only a single house site there were some minor differences in the archaeological remains from each phase. Documentary evidence suggests that Area C remained vacant during the 1830s and no archaeological remains were found to suggest otherwise. By 1845 (Phase 5) the first substantial building had been constructed in Area C. It was a two-storey brick and timber structure listed as a shop and residence.

Artefact-bearing contexts from these phases included an underfloor deposit (7444) and a well (7520). A series of backfills were excavated from the well that probably date to between 1860 and 1890 (7465, 7466, 7567, 7568, 7569). The underfloor deposit was from Room 1 of the shop/residence at No. 710 George Street (Table 3). The backfills of two cesspits were also excavated, although cesspit 7418 (fill 7459) and cesspit 7419 (fill 7445) contained modern fills.

Twenty-four function categories were represented across all the contexts in Area C (Table 31). The single most commonly identified category was that of food, with 1,810 items. Other categories that are also well represented are recreation (408), beverage (261), household (261), architecture (253) and personal (131). A fairly large number of items (519) were unable to be identified. The particularly large number of food-related items relative to other categories is due to the inclusion of organic food material; grapes, walnuts, apricots, peaches, coconut and nectarine seeds. These organic items (1,388) represented 76.7 per cent of those identified within the overall category of food, with the grape seeds alone numbering 1,374 (from the well fills). The non-organic food items numbered just 422 and are therefore more in par with the rest of the artefacts in Area C, in particular the items identified with recreation. The 422 non-organic food items covered a wide range of shapes, including bottles (oil, oil/vinegar, pickle, pickle/chutney, vinegar), bowls, breakfast cups, bung jar, cleaver/knife, cups, dishes, egg cups, flacons, forks, jars, jugs, ladle, plates, platters, saucers, slop bowls, small plates, spoon, stemware, stopper, teapots, tin cans, tumblers and tureens. The shapes were associated with the preparation, serving, consumption and storage of food.

The next most commonly represented function is recreation (408), and again the tobacco pipes dominate this category, with the 380 pipes representing 93.1 per cent of the recreation field. The 380 pipes reflect the wide range of imported types available in the marketplace and are typical mid

¹¹ These figures do not include bone and shell.

to late nineteenth century designs sold by the increasing number of local tobacconists (Table 32). The most commonly found decorative types found here are the thistle and ship motif (23), the ship and anchor design (16), and the Churchwarden (14). The majority of the pipes were plain and/or unidentified, however a few of the more notable pipe types include those that commemorate Victoria and Albert's wedding of 1840 (3) (Figs 5.18, 5.25), a pipe depicting Jenny Lind (a famous Swedish singer between 1838 and 1887) (1), and pipes representing the London Great Exhibition of 1851 (1), and Uncle Tom's Cabin, written by Harriet Beecher Stowe in 1852 and made by William Murray until 1861 (3).¹²

Aside from the pipes the next most common recreation-related item were the 17 marbles. Most were commonly imported German types and a considerable number were made of limestone (Figure 5.27).



Figure 5.25: Pipe with portraits commemorating the wedding of Queen Victoria and Prince Albert in 1840 7313/#97876. Russell Workman, 1cm scale divisions.

The beverage category was represented by 261 items, either bottles or bottle closures. Eighty-three per cent of this category were three bottle types – beer/wine (133), gin/schnapps (57) and champagne (27). The remaining 44 items were identified as alcohol bottles (19), aerated water bottles (8), beer/wine corks (3), wire closures (5), gin bottle (1), ginger beer bottles (7) and spirit bottle (1). The category of household is dominated by sewing pins, with the 205 pins representing 78.5 per cent of the 261 household-related items. Other items related to household fittings, furnishings, laundry, maintenance, ornament, sewing (other than pins), storage and time keeping. The category of architecture is dominated by two items, with the 103 nails and 87 fragments of window glass representing a combined total of 190 items (75.1%). The remaining 63 items in this category relate to doors, finishes, structural and non-structural items (Figure 5.26).

¹² Casey & Lowe artefact database. See Section 5.7.



Figure 5.26: Selection of household fittings from Area C. Front: handle 7567/#84902. Middle left: hook 7444/#82285. Centre: bell 7567/#82256. Middle right: brass plug 7444/#82213. Back left: roseplate 7466/#82209. Back middle: knob 7313/#82140. Back right: thin pressed brass roseplate 7313/#82156. Russell Workman, 10cm scale.

The 131 items identified with the personal category included items of jewellery, accessories, clothing, perfume, health, toiletry and timekeeping. The most commonly identified shapes are the buttons (33), beads (30) and shoe/boot (17). The 33 buttons exhibited a standard range of types and fabrics although there were no glass or brass military buttons (Table 33) (Figure 5.27). The 30 glass beads all came from the underfloor deposit in the front room of No. 710 George Street (7444) and are in a wide range of colours (Table 34). The 17 shoe/boot leather items were found in the well fills 7567, 7568 and 7569, and indeed the well fills contained the only leather items recovered from the entire site (Table 35).



Figure 5.27: Selection of buttons from Area C. Front row: metal 7444/: #98087, #98250, #98116, #98088, #98071. Middle row: porcelain 7444/: #97940, #98271, #98243, #9815. Back row: bone 7568/#98393, 7444/#98059. Russell Workman, 10cm scale.

The 53 shells in Area C represented 14 per cent of the entire shell assemblage found on the site and were identified here in nine contexts (Table 6). The most number of shells (25) came from the underfloor deposit in the front room of No. 710 George Street (7444). Bone was recovered in 12 contexts in Area C with the 1,745 fragments representing 25 per cent of the total bone found on the site (Table 4). Most bone (1,376 mni) came from the front room underfloor deposit (7444) and was dominated by the European rat (715) and unidentified fish species (484) (Table 72).

The artefacts from specific contexts in Area C are discussed in further detail in Section 5.3.3.

5.6 Specific Contexts

5.6.1 Area A, Phase 4: The Woolpack Inn occupation, mid-1820s to c.1880

The contexts from the Woolpack Inn that contained significant artefact assemblages were a series of underfloor deposits pertaining to Rooms 1 to 5. These spaces represent the ground floor rooms of the Inn located at the Campbell Street end of the lot. As noted above no clear stratigraphic progression could be determined within these deposits and the artefacts represent a broad sample of activities and occupants over the entire period of the Inn's use (Table 36, 37, 38).

Underfloor deposits exposed on the site accumulated during Phase 4. In Area A underfloor deposits were restricted to the Woolpack Inn. The Inn operated from c.1824 until demolition in c.1880. The exact layout of the building and dimensions of the rooms could not be clearly delineated due to disturbance from later construction, particularly from the modern footings and a large sewer line that cut through Rooms 1, 2, 3 and 5 (Plans 4, 22). These later phases of activity had also affected the degree of preservation and the distribution of underfloor deposits. Where present the underfloor deposits were excavated within a grid of 500mm x 500mm squares, in 50mm spits to provide stratigraphic and spatial controls (Section 3, Figure 3.33).

- The Room 1 underfloor deposit (context 7323) was only 30mm-100mm deep and most squares only contained one spit (less than or equal to 50mm).
- The Room 2 underfloor deposit (context 7324) was shallow, most of the grid squares were less than 50mm deep and the accumulation was only over 50mm in the vicinity of the fireplace.
- In Room 3 the deposit was in the northern portion of the room only, as twentieth-century construction had destroyed the remainder. The underfloor accumulation was in an area of 4m x 1.5m (7335).
- Room 4 contained a mid-brown silty underfloor deposit (context 7331), between 30mm and 75mm deep and almost non-existent at the western end of the room.
- The Room 5 underfloor deposit (context 7337) was generally no more than 30mm deep.

Two spits were removed in Rooms 1 to 4 and only Room 5 (7337) contained some areas of deeper deposit that required removal as three separate spits. The spatial distribution of the artefacts in all five rooms did not indicate where any doors or windows may have been positioned.

The spatial distribution of artefacts is plotted for each room with reference to the quantity of finds that were found in individual grid squares. The numbers refer to minimum item counts. Where a count of zero is recorded in a square this indicates that an artefact fragment (or fragments) was found in the square but did not represent a separate item (see Room 4 for example).

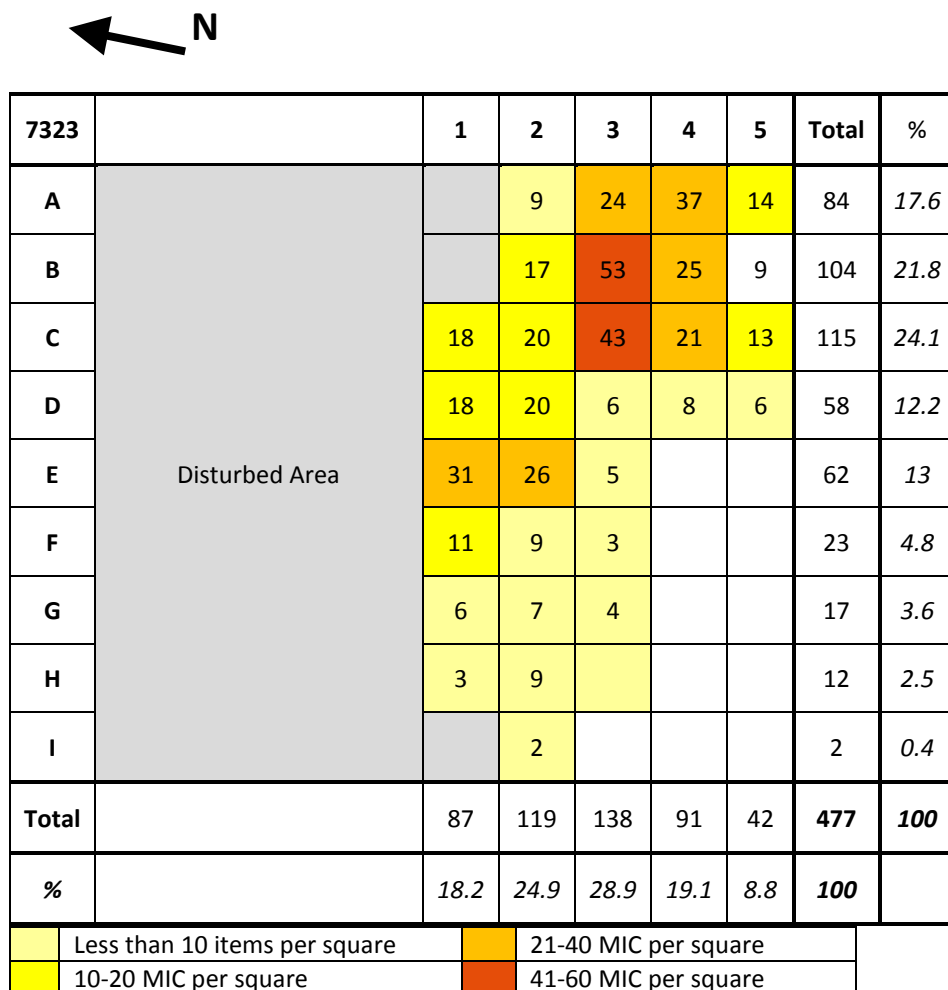
Room 1**UNDERFLOOR DEPOSIT 7323 – SPATIAL PATTERNING**

Figure 5.28 Spatial distribution of general artefacts (MIC) in underfloor deposit from all spits in Room 1 (7323) excluding bone and shell. Each square represents a 500mm x 500mm grid square. The grey area shows the position of modern disturbance through the centre of the Woolpack building.

Grey shading indicates an area of major disturbance from the construction of the nineteenth century building. There were also isolated areas where intrusions from post-Woolpack buildings have partially removed some of the underfloor deposit, particularly in the southwest corner of the room. The absence of artefacts here is more likely a factor of post-deposition disturbance and not as evidence that there was little to no activity in this part of the room.

The remains of a fireplace support were found abutting the dividing wall between Rooms 1 and 2. A large concentration of artefacts in squares A3 and A4 was consistent with the high number of artefacts expected near a fireplace.

Room 1 was located in the southwest corner of the Woolpack Inn and its underfloor deposit was most evident in the northern half of the room, becoming increasingly more rubble-strewn and disturbed further south (Figure 5.28). A breakdown of the 478 artefacts by general function shows that the underfloor assemblage in Room 1 was dominated by the category of recreation, with 197 items identified in this field (Appendix 5.3: Table 39).¹³ Within this category it is the tobacco pipes that are particularly dominant with 182 pipes (92.4%). The nature of the underfloor deposit is reflected by the artefacts present, with the deposit dominated by small items that would easily slip between floorboards (Table 40). This is particularly noticeable within the miscellaneous category of artefacts, with tobacco pipes (182), pins (34), beads (27), buttons (21) and marbles (13) present in solid numbers.

There were also 603 fragments of animal bone contained within the underfloor deposit, catalogued separately from the main artefact data (Table 41). The most commonly identified species is the European rat with the 204 fragments representing 33.8 per cent of the bone found. Rodent was also identified by 98 fragments (16.3%), and the presence of rat and rodent scavengers within the underfloor environment is predictable. Sheep bone is also well represented by 173 fragments (28.7%). Elements of fish, pig, cow and chicken were also present in the deposit. A high frequency of bone fragments from sheep feet and pig's teeth was identified during analysis of the Woolpack underfloor deposits.¹⁴ However the presence of these animal parts is not particularly remarkable when the deposit is an underfloor accumulation made up of items small enough to fall through gaps in the floorboards, and is therefore not necessarily indicative of dietary preferences. The 29 shell fragments were mainly comprised of Sydney rock oyster (20), with the club mud whelk (3), Sydney cockle (1), barnacle (2) and unidentified (3) also represented.¹⁵ The front rooms of the Woolpack Inn, Rooms 1, 3 and 4, were in all likelihood used as public spaces, with activities relating to eating and drinking as well as pastimes such as sewing and gaming taking place.

As noted previously, the underfloor deposit was very rubbly, especially in the southern half of the room, and in some parts it was clearly not specifically just underfloor, with some contamination with the underlying construction layer (7320) and also from one of the upper backfills (7326) of a large clay extraction pit (7436) pre-Woolpack. Intrusions from post-Woolpack activities also impacted on the underfloor deposit, in particular in the southwest corner of the room.

Room 2 was located directly to the east of Room 1 and its underfloor deposit was more extensive than Room 1 (Figure 5.29). The underfloor deposit was sitting above a layer of construction debris (7379) which may have been mixed with an earlier levelling fill as it contained artefacts including glass, lead-glaze pottery and tobacco pipes. A large stone fireplace was built into the eastern wall and this room has been interpreted as the back kitchen of the Inn. A breakdown of the 795 artefacts by general function shows that the underfloor assemblage in Room 2 was again dominated by the category of recreation, with 384 items identified in this field (Table 42).¹⁶ As is the case in Room 1, it is again the tobacco pipes which are dominant, with 361 pipes representing 94 per cent of the recreation field. Again, the underfloor deposit is dominated by small items that would easily slip between floorboards, either as whole items or as fragments when broken (Table 43).


¹³ Shell and bone was catalogued separately and not included in this functional breakdown.

¹⁴ Fillios 2010 Vol 2, Section 9.4 in this report.

¹⁵ Casey & Lowe shell database.

¹⁶ Shell and bone was catalogued separately and not included in this functional breakdown.

Room 2**UNDERFLOOR DEPOSIT 7324 – SPATIAL PATTERNING**


N

7324		1	2	3	4	5	6	Total	%
A	Disturbed Area	11	16		7	28	22	84	0.1
B		12	6	5	22	28	19	92	0.1
C		8	9	9	30	29	34	119	0.1
D		3	7	12	21	27	30	100	0.1
E		4	12	16	36	36	29	133	0.2
F		14	11	13	35	38	33	144	0.2
G		7	15	29	31	29	12	123	0.2
Total		59	76	84	182	215	179	795	100
%		0.1	0.1	0.1	0.2	0.3	0.2	100	
	Less than 10 items per square	21-40 MIC per square							
	10-20 MIC per square	40 plus MIC per square							

Figure 5.29: Spatial distribution of general artefacts (MIC) in underfloor deposit from all spits in Room 2 (7324) excluding bone and shell. Each square represents a 500mm x 500mm grid square. The grey area shows the position of modern disturbance through the centre of the Woolpack building.

This is particularly noticeable within the miscellaneous category of artefacts, with the 545 items identified in this general category representing 68.5 per cent of the assemblage in this room, with tobacco pipes (361), pins (58), beads (35), buttons (28) and marbles (22) present in strong numbers. Glass bottles were also well represented in this room (61), including beer/wine, champagne and gin/schnapps. Spatial analysis of the flat window glass fragments (34) showed that the glass was scattered widely throughout the room, with no concentrations suggesting window frame positions in the walls (Section 3, Figure 3.29).

There were 1,496 fragments of animal bone contained within the underfloor deposit (Table 44). Almost half of the bone, 713 fragments, is unidentified fish (47.7%). The presence of scavenging rodents is again well represented, with 317 fragments identified as European rat (21.2%) and 223 fragments identified as rodent (14.9%). One hundred and seventy two sheep bone fragments were also found (11.5%). The unidentified fish, European rat, rodent and sheep bones account for 95.3 per cent of the bones found in the underfloor deposit (1,425). The high number of bone fragments, aside from the rats and rodents, is thought to be associated with food preparation and disposal associated with kitchen-related activities. Similar numbers of bone fragments were also found in the underfloor deposit of Room 5, also at the rear of the structure and adjacent to Room 2. Also, like in Room 1, there was a high frequency of bone fragments from sheep feet and pig's teeth identified.

The ceramics from the underfloor deposit in Room 2 are only indicative of food consumption, not food preparation, with tableware (plates) and teaware-related items (breakfast cups, cups, small plates, saucers) identified. This dominance of items associated with the consumption of food is indicative of the greater risks of breakages that objects that were used every day, and often more than once a day, faced. The 36 shell fragments were comprised of Sydney rock oyster (29) and Sydney cockle (7) and may relate to the preparation of meals in the kitchen.¹⁷

The impacts from later phases of activity had affected the preservation of the underfloor deposits in all the rooms, and in Room 2 the deposit was limited to the eastern half of the room.

Room 3

UNDERFLOOR DEPOSIT 7335 – SPATIAL PATTERNING

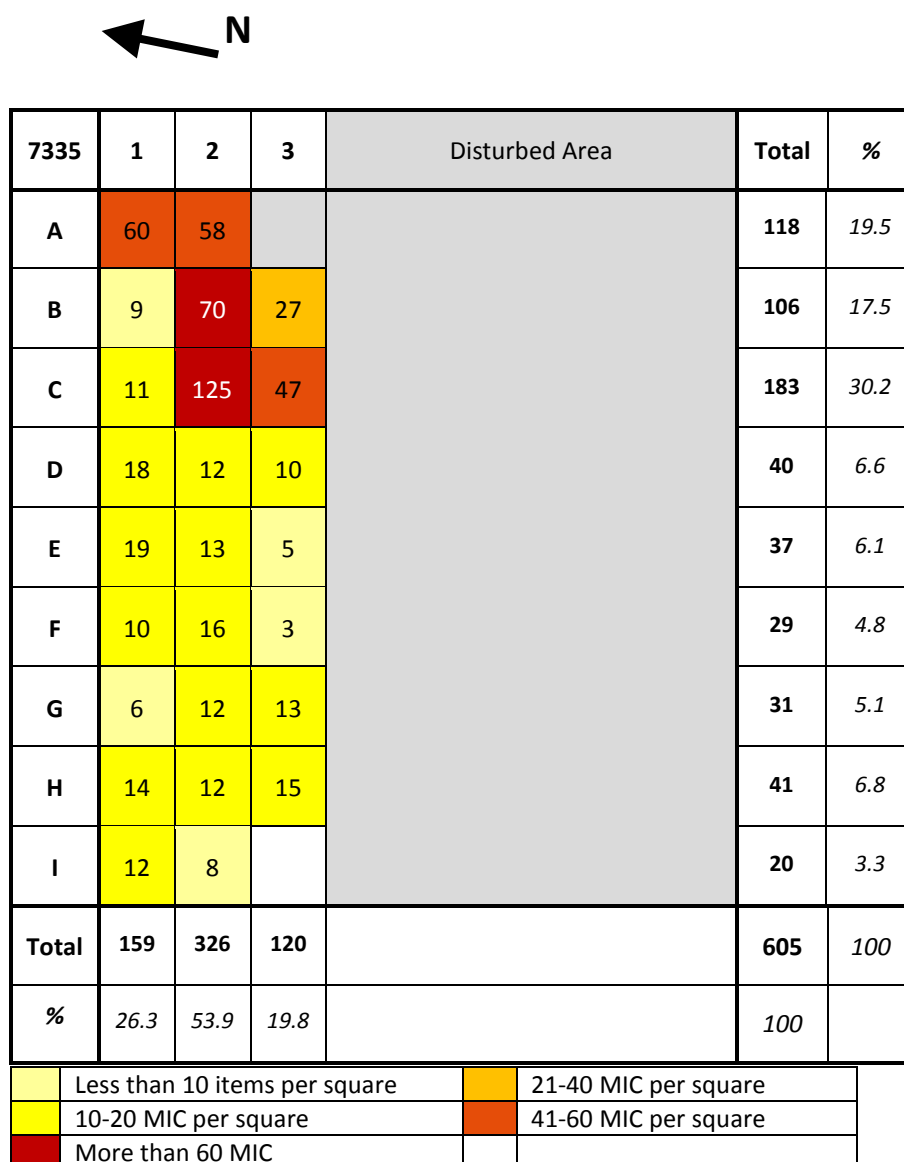


Figure 5.30: Spatial distribution of general artefacts (MIC) in underfloor deposit from all spits in Room 3 (7335) excluding bone and shell. Each square represents a 500mm x 500mm grid square. The grey area shows the position of modern disturbance through the centre of the Woolpack building.

¹⁷ Casey & Lowe shell database.

Room 3 was located to the north of Room 1 and also fronted George Street. Only the northern portion of the room was extant, with the remainder destroyed by twentieth-century construction (Figure 5.30). Because the room was so severely truncated any spatial analysis is compromised. A breakdown of the 605 artefacts by general function shows that the underfloor assemblage in Room 3 was mainly dominated by the category of household, with 221 items identified in this field (Table 45).¹⁸ The two general functions of recreation (110) and personal (102) are also well represented. The deposit is again dominated by small items that fall between floorboards, either whole or fragmented when broken, and it is again the miscellaneous category of artefacts that is particularly well represented, with the 456 items representing 75.4 per cent of the assemblage (Table 46). Pins (215) are the most identified item in this room, with tobacco pipes (82), beads (42), buttons (35) and marbles (25) also present in notable quantities. Glass bottles were also identified in significant numbers (72) and included beer/wine, champagne, gin/schnapps and condiment bottles.

There were 451 fragments of animal bone contained within this underfloor deposit (Table 47). Almost half of the bone (213 fragments) were of unidentified fish species (47.2%), as in Room 2. The European rat was also commonly found here, with 149 fragments identified (33%). The unidentified fish and the European rat accounted for 80.2 per cent of the bone assemblage in this underfloor deposit. Of the 62 sheep bones found, almost half of these were small toe bones.¹⁹ Seven shell fragments, including Sydney cockle (4), Sydney rock oyster (1), bittersweet clam (1) and gold-mouthed top shell (1) were present.²⁰

¹⁸ Shell and bone was catalogued separately and not included in this functional breakdown.

¹⁹ Fillios 2010 Vol 2, Section 9.4 in this report.

²⁰ Casey & Lowe shell database.

Room 4**UNDERFLOOR DEPOSIT 7331 – SPATIAL PATTERNING**

7331	1	2	3	4	5	6	7	Total	%
A	24				12	11	5	52	19.7
B	5	3	1	1	7	5	10	32	12.1
C	2	1	5	7	8	7	3	33	12.5
D		2	5	8	4	6	2	27	10.2
E		5	5	7	5	5	2	29	11.0
F	0	4	2	3	5	5	4	23	8.7
G		2	2	4	4	5	8	25	9.5
H		2	6	4	0	9	3	24	9.1
I		1	0	5	4		9	19	7.2
Total	31	20	26	39	49	53.0	46	264	100
%	11.7	7.6	9.8	14.8	18.6	20.1	17.4	100	

	Less than 10 items per square		21-40 MIC per square
	10-20 MIC per square		41-60 MIC per square
	More than 60 MIC		

Figure 5.31: Spatial distribution of general artefacts (MIC) in underfloor deposit from all spits in Room 4 (7331) excluding bone and shell. Each square represents a 500mm x 500mm grid square.

The underfloor deposit in this room consisted for the most part of a single 50mm spit, with only square A1 having enough depth to require removal of a second spit (7331). There was a fireplace in the northeastern area of the room, located in squares A2 to A4, accounting for the lack of underfloor material in this part of the room (indicated by hatched area) (Figure 5.31).

Room 4 also fronted onto George Street and was directly to the north of Room 3. Contamination of the underfloor deposit was evidenced a large quantity of early locally-made lead-glazed earthenware. This contamination was from deposits below, including the waster pits associated with Thomas Ball and the levelling fills used prior to the construction of the inn. A breakdown of the remaining 264 artefacts by general function shows that the underfloor deposit in Room 4 was

dominated by the category of recreation, with 88 items identified in this field (Appendix 5.3: Table 48).²¹ The general function of beverage was also fairly well represented here, by 62 items (23%). It is again the miscellaneous category of artefacts that is the most commonly identified, with 140 items representing 53 per cent of the assemblage (Table 49). The tobacco pipes (86) were the most commonly found items (recreational), followed by the 67 glass bottles (beer/wine, champagne, gin/schnapps and condiment bottles). There were 337 fragments of animal bone contained within this underfloor deposit (Table 50) and just over half, 173 fragments, was European rat (51.3%). Sheep bone (88) and unidentified fish (56) were the next most commonly represented. These three species together number 317 fragments and account for 94 per cent of the bone in this room. The sheep bone was mainly identified by rib, vertebrae and toe bones and Room 4 had the highest percentage of ribs than any of the other rooms.²² Cattle bones (4), like in the other underfloor deposits, were low in number and severely fragmented. The 23 shell fragments featured eight types of shell with the Sydney rock oyster again dominating (13), followed by the Sydney cockle (3), bittersweet clam (2), oyster drill (1), olive shell (1), lima vulgaris (1), auger shell (1) and gold-mouthed top shell (1).²³

The artefacts in the underfloor deposit from Room 5 contained a higher number of whole objects compared with fragments of incomplete items (Figure 5.32). This is evident in the higher MIC counts compared to fragment counts, a trend that was not so marked in the underfloor deposits of the other rooms without breaking the total artefact counts into functional categories (Table 36).²⁴ These complete objects derive mainly from functions associated with jewellery, sewing, household and clothing and are mostly pins, beads, buttons, other small items of personal jewellery and occasional architectural elements that find their way into the occupation deposits during the course of their use.

²¹ Shell and bone was catalogued separately and not included in this functional breakdown.

²² Fillios 2010 Vol 2, Section 9.4 in this report.

²³ Casey & Lowe shell database.

²⁴ Shell and bone was catalogued separately and not included in this functional breakdown.

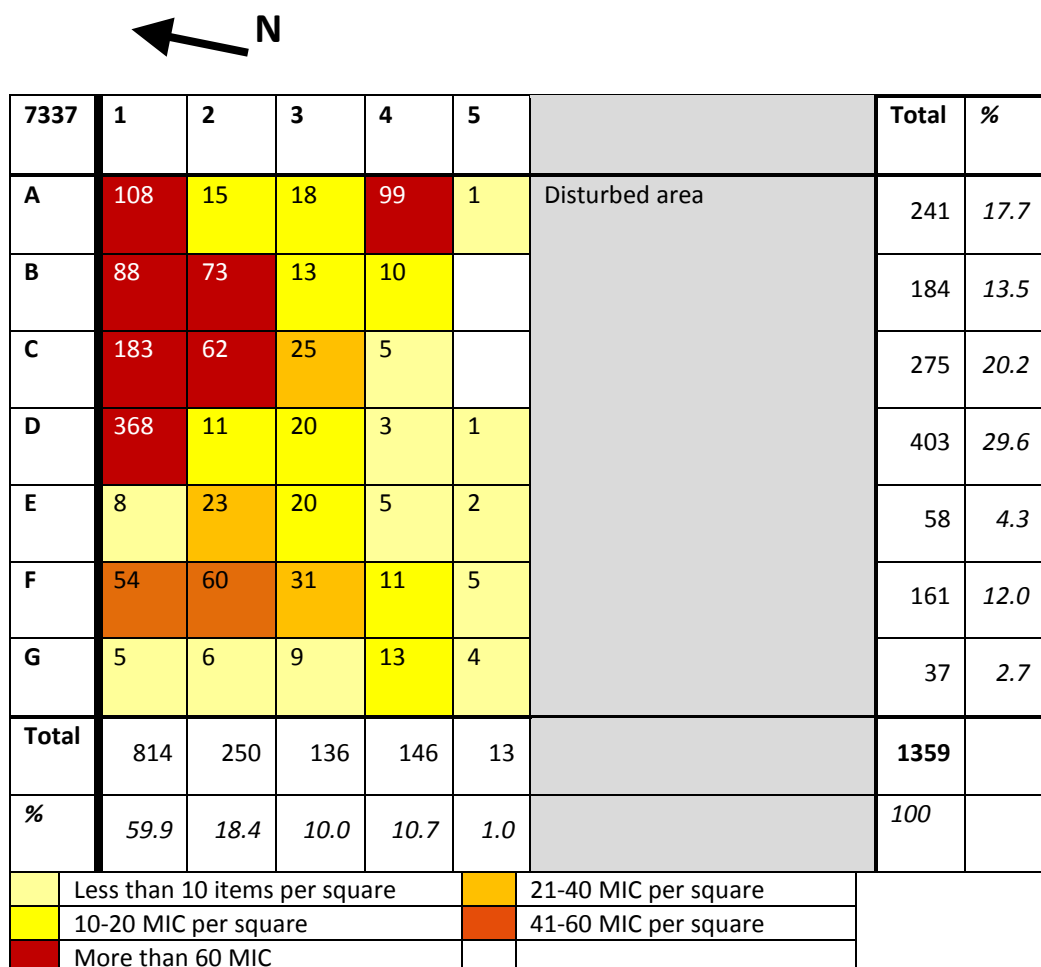
Room 5**UNDERFLOOR DEPOSIT 7337 – SPATIAL PATTERNING**

Figure 5.32: Spatial distribution of general artefacts (MIC) in underfloor deposit from all spits in Room 5 (7337) excluding bone and shell. Each square represents a 500mm x 500mm grid square. The grey area shows the position of modern disturbance through the centre of the Woolpack building.

Room 5 was a back room that shared a common wall with Rooms 3 and 4 and was on the same alignment as Room 2, the kitchen. Room 5 may have been a continuation of Room 2. However, to avoid the dangers of conflation in initial analysis, they were recorded as separate rooms. Room 5 contained the largest number of artefacts found in any of the rooms, with a total of 1359 items recovered. The miscellaneous artefacts category encompasses most small finds relating to such things as personal clothing, personal adornment (Figure 5.33), sewing, toys and smoking, to name just a few (Table 51). The common items found in Room 5 are beads (531) and pins (298) and together these two types of artefacts total 829 items and represent 71.1 per cent of miscellaneous items found in the room (Table 52) (Figure 5.6). Other items found included tobacco pipes (80), slate pencils (53), buttons (37) and marbles (28). The high number of pins in the deposit suggests that sewing took place in this room. The activity of sewing may also be reflected in the high number of beads found here, with the 531 items representative of more than just accidental loss from clothing, jewellery or furnishings. Glass bottles (37) were represented here by beer/wine, champagne, food and pickle types, but notably no gin/schnapps.

Forty-four ceramics were found in this room and the identified ceramics are predominately associated with food (22), in particular the direct consumption of food (18). Items of tableware

(plates), teaware (cups and saucers) and teaware/tableware (egg cups and small plates) are associated with food consumption, with the serving of food (dish and platter), its storage (jar), and drinking of beverages (ginger beer bottle) also represented. This room, like Room 2, is thought to have been a kitchen, and also like Room 2, it contains no ceramics associated with the role of food preparation. If Room 5 is actually part of Room 2, making the two back rooms into a single long kitchen, the dominance of sewing-related items here (pins and beads) indicates that this end of the room was used for other activities. Room 2 also contained no food preparation items, however this may be a reflection of the modern disturbance through the centre of the Woolpack that removed part of the underfloor deposits as well as perhaps the fact that items associated with food preparation were more durable and if broken they would not necessarily break into fragments that would be small enough to fall through floorboards, and items associated with the consumption of food run a greater risk of breakages because they are used every day and often more than once a day.



Figure 5.33: Ivory brooch/pendant featuring a finely fret-sawed/pierced design of a rearing stag 7337/#97400, underfloor deposit, Wool Pack Inn. Russell Workman, 1cm scale divisions.

There were 1,794 fragments of bone in this underfloor deposit (Table 53). Three-quarters of the bone, 1,360 fragments, were unidentified fish (75.8%). The presence of scavenging rodents is again well represented, with 268 fragments of European rat (14.9%). Sheep is also fairly well represented by 116 fragments (6.5%). The unidentified fish, European rat and sheep bones account for 97.2 per cent of the bones found in the underfloor deposit (1,744). Like Room 2, the high number of bone fragments, aside from the rats, is thought to be associated with food preparation and disposal associated with kitchen-related activities. The 28 shell fragments featured five types of shell with the Sydney rock oyster once again being the most common (21), followed by the bittersweet clam (3), paphies sp (2), Sydney cockle (1) and frog shell (1).²⁵

²⁵ Casey & Lowe shell database.

Woolpack Inn cesspit 7658

Artefacts relating to the final occupancy phase of the Woolpack Inn were found in cesspit 7658, within three fills (contexts 7655, 7654, 7653 from lowest to highest). The brick cesspit was probably backfilled in the 1870s when plumbed toilets were installed. Artefacts within the fills suggest that the backfilling occurred after 1858 and probably after 1873. The cesspit was probably still in use until the 1870s but after conversion to the main sewers the structure was backfilled. The fills may have included accumulated rubbish from the surrounding area.

The rectangular sandstock brick cesspit was 23m from the rear of the Woolpack Inn and was located close to the property boundary between 722 and 724 George Street. There were no cess deposits in the structure, and it appears that the three distinct sand fills represent one backfilling event. The three fills contained a total of 72 items (241 fragments), with the most number found in the central fill 7654, representing 83.3 per cent of the cesspit assemblage (Table 54).²⁶ Within the ceramic category two items were found to have conjoins between two of the fills, supporting the idea that the deposition occurred in the one event.²⁷ Both items had conjoins between the middle fill (7654) and the lowest fill (7655). Five sherds in fill 7654 from a blue transfer-printed “Albion” pattern platter (#73613) joined with 37 sherds in fill 7655 (#73622) from the same platter. Three sherds in fill 7654 from a blue transfer-printed “Willow” pattern serving dish (#73614) joined with 21 sherds in fill 7655 (#73621).



Figure 5.34: Ceramics in cesspit 7658 (fills 7653, 7654, 7655). The “Albion” pattern platter with conjoining fragments is at the back left and the “Willow” pattern serving dish with conjoining fragments is at the front right. Russell Workman, 10cm scale.

The general functions of the artefacts recovered from the fills are consistent with a household or an establishment such as the Woolpack Inn, with the functions of food and beverage being the most commonly identified (Appendix 5.3: Table 55). The 72 items in the cesspit were represented by 27 individual shapes within the functional categories of architecture, beverage, economy, food, personal, pharmacy and recreation (Table 56). Included in this are three identified shapes with no identified function – bar, bottle and rod. Overall the general shape of bottle is the most common shape found here (31), associated with beverage (13), food (6), personal (1), pharmacy (9) and unidentified (2). The bottles are in glass (28) and stoneware (3). The beverage-related bottles are identified as beer/wine (8), unidentified alcohol (1), gin/schnapps (1) and ginger beer (3); the food-related bottles are pickle (3), oil (2) and vinegar (1); the personal-related bottle is perfume (1); the

²⁶ Shell and bone counts are not included in this artefact count.

²⁷ Ward 2010 Vol 2, Section 9.1 in this report.

pharmacy-related bottles are unidentified pharmaceutical (3), castor oil (1) and patent medicine (5), and there are two bottles of unidentified function.

The three whole salt-glazed stoneware bottles are all ginger beer bottles (73317-#73319), one of which features the impressed makers' mark of the Sydney potter Thomas Field – "T FIELD" / "POTTER" / "SYDNEY". This mark dates between c.1850 and c.1860s.²⁸ The two ceramics that feature conjoins between fills 7654 and 7655, the "Willow" pattern dish and the "Albion" pattern platter, are also listed in Table 56 as "0" in the item count for fill 7655 because they have already been counted in fill 7654.

Two of the ceramics in the cesspit backfill can be specifically identified with children (perhaps the publican's children). A child's mug with the clobbered transfer-printed pattern "The Ethiopians" was identified in fill 7654 (#73615), and a black transfer-printed alphabet plate was identified in fill 7653 (#73601) (Figure 5.35).²⁹



Figure 5.35: Children's ceramics in cesspit 7658. The black transfer-printed alphabet plate is on the left #73601 and "The Ethiopians" pattern clobbered mug is on the right #73615. Russell Workman, 10cm scale.

Overall the ceramic decorative types recovered in the cesspit are generally indicative of the mid-nineteenth century onwards, and two of the identified transfer-printed patterns in particular supported this, "Albion" (1858-1937) and "Costumbres Espanoles" (c.1861-1873). Three basemarked items indicated that the backfilling occurred in the second half of the nineteenth century, post-1861. These items were the above mentioned stoneware ginger beer bottle manufactured by Thomas Field dated between c.1850 and c.1860s (#73319); a semi-vitreous fine earthenware glazed and moulded jug featured an embossed registration diamond indicating that its design was registered on 19 May 1860 (#73611); and a blue transfer-printed pearlware poe

²⁸ Ward 2010 Vol 2, Section 9.1 in this report.

²⁹ Ward 2010 Vol 2, Section 9.1 in this report.

featuring the “Costumbres Espanoles” pattern (attributed to George Jones of Stoke), dated to between c.1861 to 1873 (#73617).³⁰

Almost all of the glass artefacts in the backfill came from fill 7654 and all the datable items are consistent with being associated with the Woolpack Inn. All the bottles were made after 1820 and before 1920 and one third of the bottles had an 1850s terminus post quem. The beer/wine bottles have an 1820s to 1850s/1870 date range. Most of the medicine bottles were generic forms that were used by chemists and patent medicine manufacturers, with the contents of just two bottles identified as castor oil (#48084) and a cough remedy (#48090).³¹

The cesspit backfill also contained some animal bone, 23 fragments in total (Table 57). Sheep (11) and cattle (8) were the most common, being 82.6 per cent of the bone recovered from the cesspit. Just eight shell fragments were found in the cesspit, in fills 7655 (2) and 7654 (6), and these included Sydney rock oyster (4), scallop (2) and mud oyster (1).

5.6.2 Area B, Phase 5: c.1840-c.1860

Located in the southern part of Area B (at 718 George Street) were the remains of a timber building that had been truncated by later building phases. It appears to have been a 4-roomed structure that represented at least two houses or shops between 1845 and 1861. The archaeological evidence relating to this structure was confined to a fireplace support (7394), some brick walling (7467) and an occupation-related deposit (7395). Its structural fabric was either removed or destroyed in the early 1860s (Phase 6) when the buildings along the George Street frontage were redeveloped.

Occupation deposit, 7395

The occupation deposit (7395) was spread over an area of 5.5m x 6.5m on the western side of the fireplace and was 70mm deep. The deposit was disturbed by later activity and was also contaminated from below by the backfill of an early pottery waster pit (7460). The deposit was excavated within a 500mm x 500mm grid, in 50mm spits and was sample sieved. From the sieving it was clear that the deposit was quite disturbed and lacked stratigraphic integrity. It contained brick and sandstone fragments throughout, along with charcoal, bone and various artefacts. Contamination from the early pottery waster pit was evident in the large amounts of lead-glazed earthenware that dominated the deposit and these have been removed from the artefacts under discussion here. The animal bone (36) and shell (4) is not included in the general artefact count.

A total of 46 artefacts (95 fragments) were found in the deposit and these belong to nine identified general function categories (Table 58). Just five of the items were unable to be identified with a particular function. The two most commonly represented functional categories are food (11) and recreation (11), followed by beverage (7) and architecture (5). The 11 recreation items were all tobacco pipes, and the food items were a condiment bottle (1), dish (1), stemware glasses (2), pepper shaker (1), plate (2), tumbler (1) and saucer (2) (Table 59). The majority of the artefacts within the deposit have broad manufacturing date ranges and generally fit into the Phase 5 period. The nine non lead-glazed ceramics are a good indication of this (Figure 5.36).

³⁰ Ward 2010 Vol 2, Section 9.1 in this report.

³¹ Harris 2010 Vol 2, Section 9.3 in this report.



Figure 5.36: Ceramics in occupation deposit 7395. Russell Workman, 10cm scale.

The blue transfer-printed pearlware pattern “Wild Rose” was identified on a serving dish (#73669). This pattern was made by many potteries and was extremely popular between the 1830s and 1850s. The two shell-edged pearlware plates date between c.1780 to c.1840 and c.1780 to c.1860 and have different end dates because of the colour used on their rims, one is green (#73668) and the other blue (#73675). Shell-edged ware was manufactured by many British potteries, is often unmarked, and was exported in large quantities from the 1780s through to the late nineteenth century. Blue was the most commonly used underglaze colour, with green, red, brown and black used to a far lesser extent.³² Although the colours other than blue probably all began production at the same time these other colours, including the green, are rare after c.1840, with only blue continuing on until the late nineteenth century.³³ Although shell-edged ware was produced until the late nineteenth century it is believed it was in decline in Australia by the 1860s.³⁴ Miller also states that shell-edged ware is not commonly found in archaeological assemblages after the 1860s, even though it continues production into the 1890s.³⁵ The blue flow saucer dates from the 1830s to the 1930s (#73674), the plain pearlware pepper shaker dates from the 1780s to 1870s (#73670), the blue transfer-printed pearlware unidentified item dates between the 1800s to 1870s (#73673), the whiteware unidentified item dates from 1830 onwards (#73667), and the blue transfer printed saucer (#73672) and unidentified item (#73671) both date from c.1830 onwards.³⁶

Two of the 11 tobacco pipes featured Sydney manufacturer marks. One was made by Samuel Elliot. It dated between c.1828 to c.1840 (#97775). The other was made by Jonathan Leak. It dated between 1822 to 1839 (#97783). An undated brass 12-point starburst brooch was identified as

³² Brooks 2005:41

³³ Brooks 2005:41

³⁴ Wilson 1999:218

³⁵ Miller 1991:6

³⁶ Ward 2010 Vol 2, Section 9.1 in this report.

being possibly associated with the military (#97779) (Figure 5.37).³⁷ The animal bone was catalogued separately from the other artefacts and a total of 36 fragments were found here (Table 60). Sheep bone (13) were the most common, followed by unidentified fish (9), European rat (7), cattle (6) and unidentified animal (1).



Figure 5.37: Copper alloy 12-point starburst brooch 7395/#97779, No. 718, and brass buckle 7401/#97801, cesspit fill, No. 718. Russell Workman, 10cm scale.

5.6.3 Area B, Phase 6: 1860s-c.1890

Area B underwent significant changes at the start of this Phase. All but one of the shops and dwellings that had characterised the George Street frontage during Phase 5 were pulled down between 1861 and 1863. Only the structure at No. 712 remained and by 1863 three new two-storey buildings had been constructed. These buildings remained throughout Phase 6 and were still standing at the turn of the century. Bakers, milliners, confectioners, saddlers, a tobacconist, a boot manufacturer and a hairdresser were among the commercial enterprises lining the George Street frontage of Area B during Phase 6.

Artefactual evidence that could be securely dated to Phase 6 was limited to the backfills contained within cesspits found at the rear of 712, 714, 716 and 718 George Street. The four cesspits found in Area B were substantial in construction and well built, especially the three made of sandstone blocks. The cesspits were identified in the backyards of Nos 712 (7625), 714 (7626), 716 (7635) and 718 (7347) George Street and all appear to have been backfilled once they were connected to the municipal sewerage system. The cesspit at No. 712 George Street (7625) was constructed of sandstock bricks, had a clay base and was built in the c.1840-1860s (Phase 5). The ceramics recovered from its backfill (7627) relate to its connection to the sewer in the 1870s (Phase 6). The three sandstone block cesspits (7626, 7635, 7347) were all constructed in the same style and were probably built at about the same time and by the same builder. The cesspits were built and backfilled in the years between 1860 and c1890 (Phase 6). The artefact assemblages recovered in all three cesspits related to the backfilling event that occurred in the 1870s (when toilets were plumbed into the municipal sewerage system). The artefacts do not come from any original cess deposits.

³⁷ Casey & Lowe artefact database

The probability that the four cesspits were backfilled at the same time is confirmed by the identification of conjoining ceramic items between the backfill of the cesspit at 712 George Street (7625) with that at 714 George Street (7626). Three sherds from a blue transfer-printed pearlware “Venus” pattern soup plate (#73769), in the backfill of cesspit 7625 (fill 7627) were found to conjoin with seven sherds (#73771) in the backfill of cesspit 7626 (fill 7632). Twelve sherds from a multi-coloured transfer-printed poe in the backfill of cesspit 7625 (#73768) also had conjoins with eight sherds in cesspit 7626 (#73770).

Cesspit 7625, No. 712 George Street

Within the sandstock brick cesspit at 712 George Street was a dark brown silty material with a high organic content that may represent cess material from the last use of the pit (7630). It contained only a few glass artefacts identified as beverage bottles (#47723-47727). The backfilling of the cesspit occurred sometime in the 1870s when the toilets were plumbed into the municipal sewerage system. The backfill (7627) would have occurred in preparation for the toilet installation and it consisted of building rubble, sand and a number of artefacts.

A total of 44 artefacts (295 fragments) were recovered from the cesspit, with five items in fill 7630 and 39 items in fill 7627 (Table 61). The general functional categories of beverage (18) and food (11) are the most commonly represented, indicative of items commonly associated with household domestic waste, and the artefacts were either comprised of glass (36) or ceramic (8). The five glass bottles in fill 7630 were an aerated water bottle (c.1820), a beer/wine bottle (1850 to 1920), and three gin/schnapps bottles (1800s to 1870). The 31 glass items in backfill 7627 predominately relate to beverage (13) and food (7). Alcoholic beverages including beer/wine (7), champagne (1) and gin/schnapps (4) are dominant, with just a single aerated water bottle. Condiments bottles included oil (1), pickle (1) and sauce (1). The domestic nature of the deposit is emphasised by two glass ornamental items, a lid (#47598) and a vase (#47599), and a perfume bottle (#47597).

The eight ceramic items in the cesspit fill 7627 included two identified transfer-printed patterns and two items had conjoins with another context (Figure 5.38). The two identified patterns were the “Willow” and “Venus” patterns, with the commonly manufactured “Willow” pattern identified on a plate (#73764). The “Venus” pattern was on a soup plate (#73769) and was attributed to Podmore, Walker & Co, of Tunstall and dated between 1834 to 1859.³⁸ Fragments of this vessel were also found in the cesspit at 714 George Street. The cesspit at No. 714 (7626) contained four backfills. The three fragments from the “Venus” pattern soup plate in fill 7627 (#73769) conjoined with seven fragments from the same soup plate in fill 7632 (#73771), and 12 fragments from a multi-coloured transfer-printed poe in fill 7627 (#73768) also joined with eight fragments in fill 7632 (#73770). The fills in both these cesspits represent backfilling prior to their being plumbed into the municipal sewerage line, and the presence of conjoining items in the two cesspits indicates that they were backfilled at the same time using rubbish from the same source. The contents within each cesspit cannot therefore be attributed to a specific house.

³⁸ Ward 2010 Vol 2, Section 9.1 in this report.



Figure 5.38: Ceramics in cesspit 7625, No. 712. The “Venus” pattern soup plate is on the left (#73769). Russell Workman, 10cm scale.

Cesspit 7626, No. 714 George Street

In the rear yard of No. 714 were the remains of a single trapezoidal-shaped sandstone cesspit. The cesspit was constructed from neatly cut but not dressed rectangular sandstone blocks and had a sandstone flagged base. It was of similar construction to the cesspits at Nos. 716 and 718 George Street. The cesspit contained four sandy fills (7634, 7633, 7632, 7631), although ceramic conjoins revealed that they all belonged to the same backfilling event, coinciding with the installation of plumbed toilets. The base fill (7634) contained no artefacts and there was no artefact-rich cess deposit, suggesting that the cesspit had been completely cleaned out and backfilled before being plumbed into a main sewer line and therefore not likely to contain artefacts securely relating to the occupation of No. 714.

A total of 66 artefacts (396 fragments) were recovered from the cesspit, with the single item (3 fragments) in fill 7633 counted as “0” because it conjoined with sherds in fill 7632, 64 items (386 fragments) in fill 7632, and just two items (7 fragments) in the uppermost fill (7631) (Appendix 5.3: Table 63). Again the general functional categories of food (32) and beverage (14) are the most commonly found. The uppermost fill (7631) contained seven glass fragments from two bottles, a beer/wine bottle (1850 to 1870) and a spirits bottle (1800+). The three ceramic fragments in fill 7633 were from a sprigged bone china saucer (1830s to 1920s) and these joined with four fragments from the same saucer in fill 7632 (#73792), supporting the backfilling of the cesspit as a single event.³⁹

Fill 7632 contained the most artefacts (Table 64) and also featured two ceramic items with conjoins with another cesspit (7625) at No. 712 George Street (fill 7627; see above). These conjoining items indicate that the two cesspits were backfilled at the same time (Figure 5.39).

³⁹ Ward 2010 Vol 2, Section 9.1 in this report.



Figure 5.39: “Venus” pattern soup plate and transfer-printed poe. These two items feature conjoins between cesspits 7625 (fill 7627) and 7626 (fill 7632). Russell Workman, 10cm scale.



Figure 5.40: The four “Willow” pattern plates and one tureen lid in cesspit 7626 (#73772-#73776). Russell Workman, 10cm scale.

Aside from the “Venus” pattern, two other patterns were identified, the “Rhine” and “Willow” patterns. The “Rhine” pattern was identified on a black transfer-printed semi-vitreous fine earthenware jug dating from 1845+ (#73777). The “Willow” pattern was identified on five items (a tureen and four plates) and all in blue transfer-printed pearlware (#73772-#73776) (Figure 5.40). Three of the “Willow” pattern plates also included transfer-printed basemarks: one plate featured a bird carrying a ribbon with “OPAQUE CHINA” on it. Because this term was used by many potters the manufacturer could not be identified. It was catalogued with the broad date range of c.1810 to 1870s (#73773). Two plates featured a ribbon with “WARRANTED” above and the initials “P.B. &

H." below. These initials belong to Pinder, Bourne & Hope of Burslem, and date between 1851 and 1862 (#73774, #73775).

One other basemarked item was also recovered within fill 7632, a gilded bone china saucer featuring an impressed circular basemark of four interlinking scrolled "W" characters (#73780). This mark belongs to the Kerr & Binns period at the Worcester Porcelain Factory, dating between 1852 and 1862.

The ceramics recovered from cesspit 7626 are predominantly associated with food (both serving and consumption) and appear to indicate that these items were dumped here as part of a final clearing out of household domestic rubbish prior to the cesspit being connected to the main sewer line. The five "Willow" pattern items - a tureen (#73776) and four plates (#73772-#73775) - suggests that matching dinnerware had been in use, and the presence of another decorative ware (sprigged bone china in a recurring design) supports this. The 12 sprigged items found here featured alternating large and small purple grapevine sprays at regular intervals on the cavetto (saucers), marley (small plates) and upper exterior body (cups). These items are all teaware-related (#73781-#73792/#73794), with five cups, five saucers and two small plates identified (Figure 5.24). Sprigged teaware-related items similar to the 12 items found here have been recovered on other excavated sites, in both the same and different patterns and in the same shapes, and it would appear to have been a very popular and affordable mid nineteenth-century teaware.⁴⁰

The domestic nature of the deposit is also supported by the glass items associated with beverages (beer/wine, gin/schnapps), food condiments (oil, pickle, sauce), serving (stemware), and tableware (tumblers). Two perfume bottles (#47697, #47699) and a grooming bottle (#47698) are also associated with the domestic sphere, as are two toys which indicate the presence of children in a familial environment – a toy cup (#97862) and a doll (#97867) (Figure 5.41).



Figure 5.41: Porcelain head and shoulders of a soft-bodied 'Mary' or 'Jenny Lind' type doll from cesspit 7626 /#97867. Russell Workman, 10cm scale.

⁴⁰ Sprigged teaware has also been found at other Casey & Lowe sites including Penrith Plaza, Penrith; 109 George Street, Parramatta; Parramatta Children's Court, Parramatta; 50-73 Union Street, Pyrmont; 19-41 Reservoir Street, Surry Hills; Parramatta Justice Precinct, Parramatta; and Darling Walk, Darling Harbour.

The glass artefacts also support the proposed date of backfilling (around 1870). Three tobacco pipes were also recovered from the fill (#97864-#97866), with one dating specifically between 1856 to 1874 (#97864).⁴¹ No shell was in the cesspit and just 11 fragments of animal bone were found in fill 7632: cattle (3), sheep (6) and unidentified bird (2).

Cesspit 7635, No. 716 George Street

In the back yard area of 716 George Street were the remains of a single triangular sandstone cesspit. All of the blocks were well cut but poorly dressed and the cesspit had a sandstone flagged base. There was no cess material in the pit. The fills related to the backfilling that occurred in the 1870s when toilets were plumbed into the municipal sewerage system. The four fills and the respective number of artefacts were 7638 (11), 7640 (1), 7641 (2), and 7642 (12). The fills contained a total of 26 items (81 fragments), with the most found in the lowermost (7638) and uppermost (7642) fills (Table 65). The artefacts in the four fills were represented by eight general functional categories, with food (6) and architecture (5) the most common.

A total of just seven ceramics (52 fragments) were found in the cesspit, and all seven items were found in the lowermost fill (7638). None of the ceramics featured basemarks, identifiable patterns or had conjoins with any other context. The seven items were associated with food preparation (pudding bowl), food consumption (cups, saucers, a child's mug) and gardening activities (a plant pot) (Table 66). The plant pot was a complete large fine stoneware vessel manufactured in China (#73798). It was broken into 13 sherds. It was covered in a rough creamy-white glaze on the exterior body, featured a central drainage hole in its base, and dated from c.1790 onwards. Overall the ceramics from 7635 were available throughout much of the nineteenth century and well into the twentieth century, including whiteware, flow ware, sprigged, spongeware, gilded and glazed (Figure 5.42). Perhaps the most interesting item is a child's mug (#73797). This bone china mug features the worn gilded script "A Present" / "for my" / "Dear Girl" on an area of the exterior body and dates from c.1850+. This mug suggests at least a post-1850s deposition.



Figure 5.42: Ceramics in cesspit 7635 (fill 7638). The child's mug featuring the gilded script "A Present" / "for my" / "Dear Girl" is at the rear, second from left (#73797). Russell Workman, 10cm scale.

⁴¹ Casey & Lowe artefact database

Other categories of artefacts included glass, miscellaneous and building materials. A total of 10 glass items (21 fragments) were recovered in backfills 7640 (1), 7641 (1) and 7642 (8). The uppermost fill of 7642 included crown window glass (1870TPQ), plate mirror glass, unidentified bottle forms, and a bottle for one of the many Ayer's famous patent medicines, dating between 1838 to 1939 (#47565).⁴² The presence of a toy (a handpainted porcelain marble, #97868) and a child's mug (#73797) suggests the presence of children in a familial environment. The uppermost fill also contained two vulcanite haircombs that could have been manufactured as early as c.1844 but were noted as being more commonly made from c.1870 (#97873, #97874).⁴³ A total of 22 bone fragments were also found in the cesspit backfills, with cattle bone numbering five fragments and sheep bone 17 fragments. The small quantity of artefacts within this cesspit suggests that they were incidental inclusions in the backfill material rather than being indicative of the nature of the fill itself.

Cesspit 7347, No. 718 George Street

In the back yard of No. 718 George Street were the remains of a single triangle-shaped sandstone cesspit. It was located just 1.2m from the rear of the building and was constructed of mostly whole rectangular sandstone blocks that were well-cut but poorly dressed. The cesspit had a sandstone flagged base and it again contained no deposits pertaining to its use. The cesspit was very similar in construction to its northern neighbours (cesspits 7626, 7635) and these three cesspits were probably built within a relatively short time-frame and possibly by the same builder. The lack of any artefact-rich cess deposit indicated that this cesspit had also been completely cleaned out and then backfilled in the 1870s when toilets were plumbed into the municipal sewerage system. The cesspit contained four fills (7411, 7401, 7387, 7342) and these featured a total of 134 artefacts (654 fragments). The artefacts in the four fills were represented by 11 general functional categories, with beverage (68) the most common (Table 67).

The 11 general functional categories are associated with 116 of the artefacts found in the cesspit, with the remaining 18 items being unidentified because of small fragment sizes. The 68 beverage-related items represent 58.6 per cent of the identified items here, with food (16), recreation (12) and architecture (9) the next most commonly found. The uppermost fill (7342) contained 13 artefacts (9.7%), the next fill layer (7387) contained 71 artefacts (53.0%), the next fill (7401) contained 48 artefacts (35.8%), and the lowermost fill (7411) contained just two artefacts (1.5%). Within the artefact categories glass was the most prevalent, with 84 items (62.7%), followed by 23 ceramics (17.1%), 18 miscellaneous (13.4%), five building materials (3.7%) and four metal items (3.0%). The items are all generally indicative of domestic household rubbish (Table 68).

The glass items were 568 fragments featuring seven items (17 fragments) in the uppermost fill (7342), 63 items (458 fragments) in the next fill layer (7387), and 14 items (92 fragments) in the lower fill (7401). The 68 beverage-related items dominate the glass assemblage and indeed the entire cesspit contents, and are associated with beer/wine bottles (8), champagne (29), gin/schnapps (30) and gin (1). The high frequency of both gin/schnapps and champagne bottles here is not an accurate reflection on consumption habits as beer/wine bottles could be refilled at the pub or hotels from casks, whereas gin/schnapps and champagne would have been imported and sold in bottles only during this period. Five of the gin/schnapps bottles had date ranges of 1800 to 1850, 11 were from 1820 to 1870 and seven were manufactured between 1850 to 1900.⁴⁴ Dates for the beer, wine and champagne bottles all fell within these ranges, with the champagne bottles appearing only after 1850.

⁴² Harris 2010 Vol 2, Section 9.3 in this report.

⁴³ Casey & Lowe artefact database

⁴⁴ Harris 2010 Vol 2, Section 9.3 in this report.

None of the 23 ceramics (41 fragments) feature basemarks or have conjoins with any other context. All of the items (with two exceptions) are represented by very small fragment sizes (catalogued with a portion size of <10 per cent of the vessel).⁴⁵ The two exceptions, both represented by 75 per cent vessel portion size, are a gilded bone china cup (#73684) and a black flow saucer (#73693) (Figure 5.43). The ceramics are predominately associated with food, in particular its consumption (cups, plates, saucers, small plates). Fifteen of the ceramics are food-related items with the one other identified item associated with personal hygiene (ewer). The remaining seven items were all catalogued as unidentified, both in function and shape, reflecting the overall small size of the ceramic sherds found in the cesspit backfills. The ceramic decorative types all feature long periods of manufacture and were available throughout much of the nineteenth century and in many cases, well on into the twentieth century. These include banded, black flow, black transfer print, blue transfer print, blue transfer-printed pearlware, gilded, pearlware, purple transfer print and whiteware. The three fills featuring ceramics (7401, 7387, 7342) have items suggesting at least a post-1860s deposition. The top fill (7342) has a banded plate that dates from c.1860+ (#73662), the middle fill (7387) has a banded saucer that also dates from c.1860+ (#73665), and the lower fill (7401) contains the black transfer-printed “Albion” pattern tureen dating from the years between 1858 and 1937 (#73,691).



Figure 5.43: Ceramics in cesspit 7347 (fills 7342, 7387, 7401). Russell Workman, 10cm scale.

The miscellaneous category (18) was dominated by 11 tobacco pipes, and at least three of these have datable characteristics (97,772, #97,773, #97,793). One of the pipes in particular is unusual in that it is made of black clay and the bowl is relief moulded in the form of a Negress (African American or Indigenous American). It was manufactured in either the Netherlands or France and dates between c.1850 to c.1930 (#97,772) (Figure 5.44). The historical background of this pipe is

⁴⁵ Ward 2010 Vol 2, Section 9.1 in this report.

discussed in Section 5.7.⁴⁶ A pipe stem manufactured by Thomas Davidson of Glasgow dates between 1862 to 1911 (#97,773), and a pipe bowl/stem manufactured by C. Crop of London dates between 1856 to 1924 (#97,793). Some animal bone was also recovered from the cesspit, with most found in fill 7401 (Appendix 5.3: Table 69). The 79 bone fragments represent six species, with the 58 fragments of sheep bone the most dominant (73.4%).



Figure 5.44: Female Negress pipe bowl 7387/#97772. Russell Workman, 1cm scale divisions.

5.6.4 Area C, Phase 5: c.1840-c.1860

A large building and a northern laneway were the structural characteristics of this Phase in Area C. The building was constructed prior to 1845 but the exact date is unknown. In 1845 it was represented in the Assessment Books as a two-storey, six-roomed brick shop with a shingled roof. Its configuration changed a little over Phase 5, with the most notable increase in rooms (4 to 8) probably reflecting the use of neighbouring No. 712 as an extension of the premises in 1858. A grocery business occupied the premises from at least as early as 1855, and continued to make use of it as a shop and finally a house and store in 1861. The Phase 5 artefactual remains are from an underfloor deposit (7444) excavated in the front room of the building.

The underfloor deposit (7444) was inconsistent in depth (between 20mm to 110mm), often amounting to less than 50mm. It was excavated in a 500mm x 500mm grid and in 50mm spits with stratigraphic constraints. The excavated underfloor deposit covered an area of approximately 6m x 3m and consisted of coarse-grained clayey sand with inclusions of sandstock brick, sandstone fragments, shell fragments and charcoal flecking. It included a wide range of artefacts with dates spanning the nineteenth century. Because of the conflated stratigraphic nature of the deposit and the broad date range of the artefacts, the unit could not be securely tied to this or any other Phase. However, the underfloor material has been included in this Phase because it is the earliest possible

⁴⁶ Casey & Lowe artefact database, Robyn Stocks notes.

date for deposition. The accumulation almost certainly includes artefacts from this period, but the material is not exclusive to this Phase.

A total of 963 artefacts (1272 fragments) were recovered within this underfloor accumulation. The general functional category of recreation is the most commonly occurring here, with the 200 items representing 20.8 per cent of the total (Table 70). This is closely followed by the category of household, with 180 items (18.7%). Other well represented functions are architecture, with 139 items (14.4%) and beverage, with 104 items (10.8%). These four general function categories have a combined total of 623 items and represent 64.7 per cent of the entire underfloor assemblage. Given the very nature of the deposit, whereby the artefacts contained in it are all small enough to have fallen through floorboards, a large number of the items remained unidentified even in relation to their general function. These 132 items represent 13.7 per cent of the assemblage. Of the 831 items that were able to be assigned general functional categories the four categories of recreation, household, architecture and beverage represent 74.9 per cent.

The function of recreation was dominated by 182 tobacco pipes, including 179 pipes, two pipe holders and one pipe with holder (Table 71). These pipes accounted for 91 per cent of the recreation category. The remaining 18 items are children's toys, with dolls (2), marbles (15) and a lead soldier (1) (Figure 5.45).



Figure 5.45: Selection of toys, mostly from underfloor deposit 7444. Front row: limestone, glass and stoneware marbles (L-R): 7444/#98269, 7444/#98266, 7444/#98267, 7444/#98268, 7444/#98265, 7444/#98150, 7444/#98172. Back row: porcelain dolls: 7393/#97893, 7444/#98226; lead soldier 7444/#98124; dolls 7444/#98270, 7396/#97900. Russell Workman, 10cm scale.

Household was the next largest group and it was dominated by sewing items. 160 pins represented 88.8 per cent of the household category. Architecture was the next most commonly identified function (139), and the items in this field are dominated by flat window glass (70) and nails (67).

The window glass was identified as 69 fragments of crown window glass (1850 *TAQ* or 1870 *TAQ* depending on thickness), and one broad glass pane (1850 *TPQ*).⁴⁷ All but one of the 104 beverage items were alcohol-related (including the wire from around cork closures). A salt-glazed stoneware ginger beer bottle was the only non-alcoholic item identified in this category (#73328). Of the remaining 103 items the following were represented: general alcohol (20), beer/wine (41), champagne (1), gin (1) and gin/schnapps (40). All the bottles were made after 1800 and before 1900 and many have date ranges that span much of the nineteenth century. Approximately 50 per cent were manufactured after 1850. Among the bottles is a Gilbey's gin bottle that has an 1857 *TPQ* (#48850).⁴⁸ Glass artefacts were also associated with food and pharmacy. Food-related items include condiment bottles (13) and stoppers (3), including oil (4), sauce (3), oil/vinegar (4), pickle (1), and pickle/chutney (4), and the pharmaceutical items include castor oil bottles (5), a vial (1), a tube (1), and generic patent medicine/chemist bottles (7).

Ceramics did not feature highly in this underfloor accumulation, with just 78 items (84 fragments) recovered. They represented just 8.1 per cent of the assemblage. All of the ceramics were represented by very small fragments and because of this a large proportion was unable to be identified, either by function or shape. Forty-three ceramics fell into this category, representing 55.1 per cent of the ceramics found here. None of the ceramics featured basemarks and none were found have to conjoins, either between the spits, squares or indeed any other context.⁴⁹ The 35 items able to be identified by shape reflect a deposit of domestic use, in particular items associated with food, its serving and consumption. Food consumption was by far the most dominant (a total of 30 items), including teaware (23), tableware (6), and teaware/tableware (1). This dominance of artefacts associated with the everyday consumption of food reflects the greater risk of breakages for items that were commonly used every day, and often more than once a day. Teaware items in particular feature prominently here, with the shapes of a breakfast cup (1), cups (9), saucers (12) and a teapot (1) identified. Only three ceramic patterns were identified in this deposit, two transfer printed and one white-glazed and moulded. The two transfer-printed patterns of "Two Temples II" (1) and "Willow" (6) were made by many potteries throughout the nineteenth century, with the ubiquitous "Willow" pattern still being manufactured to the present day. Two white-glazed and moulded semi-vitreous fine earthenware saucers feature the "Forget-Me-Not" pattern (#73838, #73839), and both feature a version of the pattern that is attributed to E. & C. Challinor, of Fenton, Staffordshire and date between 1862 and 1891.

Some animal bone was also recovered from the underfloor deposit, with 1,376 fragments found. The species represented here include cow, dog, rodent, pig, rabbit, sheep and fish, with the two most commonly identified being the European rat (715) and unidentified fish (484). These two categories account for 87.2 per cent of the bone found in the deposit (Table 72). The bone assemblage from the Woolpack Inn underfloor deposits was also dominated by the European rat and unidentified fish. A total of 4,681 bone fragments were recovered from the underfloor deposits of Rooms 1 to 5 (Table 38), and the 1,111 European rat fragments and 2,436 unidentified fish fragments accounted for 75.7 per cent of the bone recovered from these deposits. The European rat and unidentified fish were the two most commonly identified categories of bone found across the whole site. A total of 6,874 bone fragments were found on site (Table 5), with the 1,866 European rat fragments (27.1%) and the 2,940 unidentified fish fragments (42.8%) accounting for 69.9 per cent of the entire bone assemblage.

Overall the artefact assemblage is indicative of household domestic use, not retail space, suggesting that another room beyond the limits of the excavation to the west was the street-frontage area of

⁴⁷ Harris 2010 Vol 2, Section 9.3 in this report.

⁴⁸ Harris 2010 Vol 2, Section 9.3 in this report.

⁴⁹ Ward 2010 Vol 2, Section 9.1 in this report.

the shop/commercial business. Contamination of the deposit from the underlying construction layer (7518) and levelling fill (7519) is evident, with some lead-glazed items relating to the local Sydney potter Thomas Ball and his use of the site in Phase 3 (see Section 4).

5.6.5 Area C, Phase 6: 1860s-c1890

The Phase 5 building at No. 710 continued to be in use throughout most of Phase 6, although by 1888 it had been pulled down and replaced by a large elongated structure that may have been split to accommodate two or three businesses. It appears that the Phase 5 building was demolished sometime in 1882 or 1883, as suggested by the notes of the Assessment Books and the occupants listed in the Sands Directory. No. 710 was occupied by grocers until the early 1870s. That decade saw a wool and fancy warehouse and a fancy toy bazaar take up residence. In the early 1880s, shortly before the Phase 5 building was demolished, it was occupied by a tobacconist as well as the fancy bazaar.

The archaeological remains pertaining to the building were limited to the backfilling of a well and the construction and then backfilling of two cesspits when toilets were plumbed into the municipal sewerage system.

Cesspit 7418, No. 710 George Street

The remains of two brick cesspits were found in the backyard area of 710 George Street. Cesspit 7418 was against the northern property boundary of No. 710 George Street. The cesspit had a natural clay base. The backfill of this cesspit (7459) was of late nineteenth-century fill and consisted of mostly brownish-grey sand with large brick, sandstone, render and plaster inclusions. There was no cess material, suggesting that it had been completely cleaned out and backfilled before being plumbed into a main sewer line, just like the cesspits in Area B.

A total of 40 artefacts (55 fragments) were recovered from the cesspit backfill. Thirty-six of these could be assigned general functional categories with just four items remaining unidentified (Table 73). Six functional categories including architecture, beverage, clerical, food, pharmacy and recreation were identified. The six items associated with the function of clerical were whole salt-glazed stoneware penny ink bottles, dating between the 1830s to 1930s (#73333-#73338). These six penny ink bottles dominated the ceramic assemblage in function (clerical), shape (penny ink), decoration (salt glaze) and fabric (stoneware). The remaining ceramics related to food, platter (1), plates (2) and saucers (3), and three items remained unidentified. None of the ceramics featured basemarks or had conjoins with any other context, and the decorative types represented all had very broad general date ranges of manufacture, stretching from the early nineteenth century through to the mid twentieth century (Figure 5.46).

Overall, apart from the above mentioned penny ink bottles, bottles in general are the most commonly recognised shapes with 40 recovered in the cesspit backfill. Glass bottles were identified as beverage, food and pharmacy (Table 74). The two beer/wine bottles date between 1820 to 1850 (#48875, #48886), the champagne bottles (2) date between 1850 to 1920 (#48884, #48885), the condiment bottle (1) dates from 1820+ (#48878), the pickle/chutney (1) dates from 1850+ (#48877), the pickle bottle (1) dates between 1850 to 1920 (#48874), and a generic pharmaceutical bottle dates from 1820+ (#48876). A stopper belonging to a sauce bottle, embossed with "GEORGE WHYBROW", dates from 1840 (#48881).



Figure 5.46: Ceramics in cesspit 7418 (fill 7459). The six salt-glazed stoneware penny ink bottles are the most dominant item in the cesspits artefact assemblage (#73333-#73338). Russell Workman, 10cm scale.

Three of the tobacco pipes were also datable, and all three were indicative of a post-1850s backfill. One pipe bowl featured a view of the 1851 Great Exhibition Crystal Palace building (#98312), a stem fragment had the mark of Duncan McDougall of Glasgow, dating to the years between 1846 and 1967 (#98314), and a mouthpiece was identified as being manufactured by Desiree Barth of Belgium. It dated to the years between 1855 and 1890 (#98316).

A very small amount of animal bone was also found in the backfill, with the nine fragments in total associated with cattle (2) and sheep (7) (Appendix 5.3: Table 75).

Cesspit 7419, No. 710 George Street

Cesspit 7419 was located further south of cesspit 7418. It had been greatly impacted upon by early twentieth-century footings (7440) and a concrete encased service trench. Only the eastern end of the structure survived and it too had a natural clay base. The backfill of this cesspit (7445) was similar to that found in cesspit 7418, a clay loam with brick and charcoal inclusions, few artefacts and no evidence of any cess-like fill.

Just nine artefacts (26 fragments) were recovered from the cesspit backfill, They were of glass (5), ceramic (3) and metal (1). None of the glass was dated, however the ferrous nail dated from the years between 1860 and 1890 (#82163). A sprigged bone china saucer dated between the 1830s and 1920s (#73895), and a green flow semi-vitreous fine earthenware toiletry box dated between c.1840 and the 1930s (#73896) (Table 76) (Figure 5.47).



Figure 5.47: Ceramics in cesspit 7419 (fill 7445). The sprigged bone china saucer is on the left (#73895) and the green flow semi-vitreous fine earthenware toiletry box is on the right (#73896). Russell Workman, 10cm scale.

The two brick cesspits 7418 and 7419 contained no artefact-rich cess deposits. The artefacts in both fills (7459 and 7445) were part of the clean-out and backfilling event that occurred in the Phase 6 period (1860s to c1890). The two artefact assemblages relate to the backfilling that occurred in the 1870s when the toilets were plumbed into the municipal sewerage system, as in Area B.

Well 7520

A sandstock brick well (7520) was located 3.8m from the rear of the building at No. 710 George Street. It was constructed in the period between c.1840 to c.1860 (Phase 5). The well had a depth of 4m and contained five fills. The top 1.5m of the well was excavated by hand (7465, 7466), however due to safety regulations the rest of the well was excavated by machine. The machine removed the eastern half of the well and then roughly separated the fill into three 1m spits (7567, 7568, 7569). Artefactual analysis indicated that the fills related to the late Phase 6 period (1860s-c1890), and that the lower three fills of the well were backfilled as part of a single short term event.

A total of 2,582 artefacts were recovered from the five fills. The three machine excavated fills (7567, 7568, 7569) yielded the greatest numbers (2,355 artefacts and 91.2 per cent of the entire well assemblage, see Table 77). Fill 7567 had the largest number of artefacts (1,229), and just under half of the total for the well (47.6%). A total of 21 general function categories were identified across these five fills, with 15 of these categories being represented in fills 7567 and 7568 (Table 78). Overall it is the general functional category of food that is the most common in all the fills, with the 1,660 items representing 64.3 per cent of the total. A number of items remained unidentified both in general function and shape because of small fragment size, with these accounting for 14.2 per cent of the entire well assemblage (366). The identified functions reflect a backfill of household waste with some contamination in the upper two fills from demolition debris.

Modern Fills 7465 and 7466

The upper two fills (7465 and 7466) had a high level of contamination from modern demolition material, including cement render, sandstone rubble, concrete, sandstock bricks and dry pressed bricks in a yellow clay and sandy loam mix. These two fills had a combined total of 227 artefacts (383 fragments and 8.8 per cent of the well contents). They will be discussed here only briefly and with particular reference to the glass and ceramic artefact categories, drawing on the information contained in their specialist reports (Section 9).⁵⁰

The top fill (7465) contained glass with a probable date range of between 1850 and 1920. The identified bottles included beer/wine (4) and oil/vinegar (1). The 13 ceramics were generally indicative of typical household refuse, with items associated with food consumption (teaware) dominant. Basemarked ceramics indicated that the upper fill was deposited post-1880. The basemarked items included a salt-glazed stoneware bottle with the impressed mark of “T FIELD” / “POTTER” / “SYDNEY”, dating between c.1850 and c.1860 (#73339), and two white-glazed and moulded semi-vitreous fine earthenware saucers with the black transfer-printed basemark featuring “ROYAL IRONSTONE CHINA” above a coat-of-arms, with “W.H. GRINDLEY & Co” / “ENGLAND” below, dating between 1880 and 1925 (#73912, #73913). Also in this fill was a fragment from a blue transfer-printed pearlware “Two Temples II” pattern small plate, dating between c.1819 to c.1870 (#73910), that joined with three fragments from the same small plate in fill 7466 (#73930) and one fragment in fill 7568 (#74031). These conjoins indicate that the backfilling of the well occurred within a short period of time and was part of a single short term event (Figure 5.48).



Figure 5.48: Ceramics in well fill 7465. Russell Workman, 10cm scale.

The second fill layer, 7466, contained more artefacts than the top layer although it still contained demolition material. Out of the 202 artefacts recovered in this fill 114 were glass and 25 ceramic, representing 68.8 per cent of the total. The glass bottles were made by technology that spanned the nineteenth century, with the earliest dateable bottle being an oil/vinegar bottle with a patent

⁵⁰ Harris 2010 and Ward 2010

registered mark dated February 28, 1849 (#48999). Other bottles from this fill date to about the same time: a William Goodman Henfrey aerated-water bottle (1848 to 1878), and manufacturing technologies such as bare iron pontil scars (1840s to 1870), form-tooled lip finishes on beer/wine bottles (1850 to 1920), cup bottom moulds (1850+) and blow-back moulds (1850+). Food (condiments, tableware) and beverage (alcohol, aerated waters) represents approximately 73 per cent of the glass assemblage. There are also generic medicine bottles, castor oil bottles (pharmaceutical) and a mirror (household) identified in the assemblage which are generally indicative of domestic refuse.



Figure 5.49: Selection of ceramics in well fill 7466. Fragments from the blue-transfer-printed “Willow” pattern plate (#73928), at front left, joined with fragments in well fill 7567. Fragments from the blue transfer-printed pearlware “Two Temples II” pattern small plate (#73930), at front centre, joined with fragments in well fills 7465 and 7568. Russell Workman, 10cm scale.

This household waste is also reflected in the 25 ceramics found in the fill. Items associated with food (jars, platter, plates, breakfast cup, cups, saucer, teapots, small plates) dominated, but it also included clerical items (4 ink bottles) and maintenance items (3 blacking bottles) (Figure 5.49). Two of the ceramics feature dateable basemarks and both are stoneware items that were manufactured in the United Kingdom by the same manufacturer and date from the same period. A Bristol-glazed stoneware jar featured the impressed circular mark of "STEPHEN GREEN" / "IMPERIAL" / "POTTERIES" / "LAMBETH" (#73351), and a salt-glazed stoneware blacking bottle featured the impressed circular mark of "STEP(HEN GREEN)" / "PATENT" / "DOUBLE GLAZED" (#73345). Sherds from two vessels in context 7466 indicated again that the backfilling of the well occurred as part of a short term event, with five fragments from a blue-transfer-printed “Willow” pattern plate, dating from c.1810+ (#73928), joining with three fragments in fill 7567 (#73988). A blue transfer-printed pearlware “Two Temples II” pattern small plate, dating between c.1819 to c.1870 (#73930), has three fragments with conjoins in fills 7465 (#73910) and 7568 (#74031). Within the glass category a conjoin was also noted between this fill and two others: a dark aqua square pickle/chutney bottle, dating between 1850 to 1870 (#49092, #49025) featured three fragments that joined with seven fragments in fill 7568 (#48530) and two fragments in fill 7569 (#49161).

As stated above, the lower three machine excavated fills yielded the greatest number of artefacts (7567, 7568, 7569) with a combined total of 2,355 items retrieved through sample sieving and representing 91.2 per cent of the entire well assemblage. These three fills are now discussed in slightly more detail than the preceding two upper fills of 7465 and 7466.

Fill 7567 was the upper 1m of well fill, directly below fill 7466. It contained just under half of the total artefacts contained in the well (1,229; 47.6%, Table 79). Just under three-quarters of the fill was identified with the general function of food, with the 911 items representing 74.1 per cent of the fill assemblage. The domination of this particular category is explained here by the inclusion of 820 grape seeds which represent 90 per cent of the food-related items. The non-grape seed items number just 91, representing the remaining 10 per cent of the food-related group. Overall the 820 grape seeds represent 66.7 per cent of the entire assemblage recovered from fill 7567. The largest number of identified items in the food category, aside from the grape seeds, were the glass pickle/chutney bottles (32). Condiment bottles were well represented within the glass category, with oil/vinegar (1), oil (1), pickle (1), pickle/chutney (32), condiment (5) and vinegar (2).

The glass bottles were made using techniques that spanned the nineteenth century, with the earliest datable item being a condiment bottle with a Betts patented capsule foil seal dating from 1849 (#48459). Other bottles from this fill date to about the same time: form-tooled lip finishes on beer/wine bottles (1850 to 1920), cup-bottom moulds (1850+) and blow-back moulds (1850+). Dates for product manufacturers include Rowland's Macassar Oil (1840 to 1853). Other datable artefacts include panelled press moulded tumblers (1830+), stemware with a ground and polished base (1840+), and a vertical wick lamp chimney (1820+). Overall the glass reflects domestic-related rubbish with items associated with food (condiment bottles), beverage (alcohol, aerated waters), pharmaceutical (generic and patent medicine bottles) and household lighting (lamp chimney and shade).

Like the glass, the 66 ceramics in fill 7567 also reflects a deposit of domestic household waste. Items associated with the serving, consumption and storage of food are particularly dominant, including jars (2), jugs (2), platters (2), bowl (1), plates (10), breakfast cups (3), cups (6), saucers (5), slop bowls (2), egg cup (1) and small plates (5), with items relating to clerical (2 ink bottles), household maintenance (3 blacking bottles) and personal hygiene (2 ewer, 1 ointment/toothpaste jar) also present.

Three of the ceramics feature identified basemarks, two being Bristol-glazed stoneware jars with the impressed circular mark of "STEPHEN GREEN" / "IMPERIAL" / "POTTERIES" / "LAMBETH" and dating between 1820 to 1858 (#73366, #73367), and the third item is a blue transfer-printed pearlware "Willow" pattern platter featuring the transfer-printed basemark of "Copeland" / "Late Spode" and dated between c.1847 to 1867 (#73989). Three of the ceramics were also identified with conjoins in three of the other well fills, reiterating that the backfilling occurred as a single event. Four fragments from the blue transfer-printed pearlware "Willow" pattern platter (featuring the transfer-printed basemark of "Copeland" / "Late Spode", #73989) joined with three fragments in fill 7569 (#74071). Three fragments of a blue transfer-printed "Willow" pattern plate dating from c.1810+ (#73988) joined with five fragments in fill 7466 (#73928), and a fragment from a blue transfer-printed "Rousillon" pattern slop bowl, dating from 1846+ (#73980) joined with two fragments in fill 7568 (#74032) (Table 5.50).



Figure 5.50: Selection of ceramics in well fill 7567. Fragments from the blue transfer-printed pearlware “Willow” pattern platter (#73989), at front centre, joined with fragments in well fill 7569. A fragment of the blue transfer-printed “Rousillon” pattern slop bowl (#73980), at centre left, joined with fragments in well fill 7568. Russell Workman, 10cm scale.

A total of 74 items were identified with the general function of recreation in fill 7567 and all are tobacco pipes (Figure 5.51). Many of these are datable and span the nineteenth century.



Figure 5.51: Group of broken tobacco pipes from context 7567 in the well, Area C. Russell Workman, 10cm scale.

Some examples of the dateable pipes are: the thistle and ship motif, made by Desiree Barth, Belgium, dating between 1855 to 1890 (#98369-#98372); the Baltic Cutty type dating between 1823 to 1882 (#98373); pipes manufactured by Thomas White, Edinburgh, dating between 1823 to 1882 (#98374-#98380); a pipe manufactured by William Murray, Glasgow, dating between 1830 to 1861 (#98382); pipes made in the United Kingdom for the Sydney tobacconist Hugh Dixon, dating between 1839 to 1904 (#98383; #98385; #98386; #98388-#98390), and the Churchwarden type, dating between 1830 to 1880 (#98391). In the early 1880s, shortly before the Phase 5 building at No. 710 George Street was demolished, it was occupied by a tobacconist (as well as a fancy bazaar), and whether any of the pipes in the well reflect shop stock is open to conjecture (Figs 5.52, 5.53). One item of interest, catalogued under the general function of personal, is a tapered piece of sawn and modified antler used as a walking stick handle (#98363) (Figure 5.14).



Figure 5.52: Baltic Cutty tobacco pipe, right side with fouled anchor (7567/#98373). Russell Workman, 1cm scale divisions.



Figure 5.53: Baltic Cutty tobacco pipe, left side with three-masted sailing ship (7567/#98373). Russell Workman, 1cm scale divisions.

Fill 7568 was the middle 1m of the machine excavated fills. It was below fill 7567 and contained 631 artefacts, just under a quarter of the entire number of artefacts contained in the well (24.4%) (Appendix 5.3: Table 80). Over half of the items in the fill are identified with the general function of food, with the 370 items representing 58.6 per cent of the fill assemblage. The strong presence of this category is again explained by the presence of 292 grape seeds which represent 78.9 per cent of the food-related items. The non-grape seed items number 78 and represent the remaining 21.1 per cent of the food-related category. Overall the 292 grape seeds represent 46.3 per cent of the entire assemblage recovered from fill 7568. Remains of a peach (1), apricots (2) and walnuts (2) were also identified. Condiment bottles are again well represented in this fill, with 24 identified including flacon (2), oil/vinegar (1), oil (1), pickle/chutney (8), pickle (11) and vinegar (1).

Some of the glass bottles were made with technologies that spanned the nineteenth century, but others used techniques practiced only from 1850 onwards such as form-tooled lip finishes on beer/wine bottles (1850 to 1920), cup bottom moulds (1850+) and blow-back moulds (1850+). Other dateable glass items include a Betts patented capsule foil seal dating from 1849+ (#48550), a partial British Royal registry mark dating between 1842 to 1868 (#48548) and press-moulded panelled tumblers dating from 1830+ (#48566). The glass recovered in this fill again reflects domestic-related rubbish, with items identified with food (condiment bottles), beverage (aerated water and alcohol bottles, tumblers), personal toiletry (perfume bottle) and household lighting (lamp chimney and shade).



Figure 5.54: Selection of ceramics from well fill 7568. Russell Workman, 10cm scale.

The 59 ceramics are typical of domestic household waste. Items associated with the serving, consumption and storage of food are predominant, including jars (2), dish (1), tureen (1), bung jar (1), plates (6), breakfast cups (3), cups (9), milk/cream jug (1), saucers (7), slop bowl (1), egg cup (1), small plates (3), with items relating to other household functions also represented in beverage (2 ginger beer bottles), clerical (3 ink and 1 penny ink bottles), household maintenance (2 blacking bottles), household ornament (1 figurine), personal hygiene (1 ewer, 2 pews) and pharmaceutical (1 ointment jar) (Figure 5.54). Three of the ceramics feature identified basemarks: a salt-glazed stoneware ginger beer bottle with the impressed mark of the Sydney ginger beer manufacturer "D. KEARNEY" on the shoulder (#73377, dating between c.1851 and 1861); a bristol-glazed stoneware

jar with the impressed circular mark of "STEPHEN GREEN" / "IMPERIAL" / "POTTERIES" / "LAMBETH" (#73383 dating between 1820 and 1858), and a blue transfer-printed "Gondola" pattern saucer with a transfer-printed basemark featuring "GONDOLA" in a foliated scroll cartouche, dating from c.1830+ (#74041).

Eight of the ceramics feature conjoins in four of the other well fills, again corroborating that the backfilling of the well occurred during a short period of time and was part of a single short term event. Three fragments from the salt-glazed stoneware ginger beer bottle with "D. KEARNEY" on its shoulder (#73377, dating between c.1851 and 1861) joined with one fragment in fill 7569 (#73393). Two fragments from the bristol-glazed stoneware jar manufactured by Stephen Green, (#73383, dating between 1820 and 1858) joined with four fragments in fill 7569 (#73395). Two fragments of a blue transfer-printed "Willow" pattern serving dish, dating from c.1810+ (#74028) joined with one fragment in fill 7569 (#74072). Eleven fragments of a salt-glazed stoneware bung jar (#73368, dating between c.1830 and 1930s), joined with seven fragments in fill 7569 (#73396). Three fragments of a blue transfer-printed pearlware saucer (#74037, dating between c.1800 and c.1870) joined with four fragments in fill 7569 (#74070). Two fragments of a blue transfer-printed "Rousillon" pattern slop bowl (#74032, dating from 1846+) joined one fragment in fill 7567 (#73980). One fragment of a blue transfer-printed pearlware "Two Temples II" pattern small plate (#74031, dating between c.1819 and c.1870), joined with one fragment in fill 7465 (#73910) and three fragments in fill 7466 (#73930), and 11 fragments of a black flow chamber pot (#74011, dating between c.1830 and 1930) joined with five fragments in fill 7569 (#74057).⁵¹

Apart from the above ceramic conjoins, others were also noted in two other artefact categories, glass and organic. Seven fragments of a square dark aqua pickle/chutney bottle (#48530, dating between 1850 and 1870, fill 7568) joined with three fragments in fill 7466 (#49092, #49025) and two fragments in fill 7569 (#49161). Within the category of organic were two items, a gumboot and a coat, with conjoins between fills 7568 and 7569. Two fragments of a rubber gumboot, dating from c.1880 and found in fill 7568 (#95597), joined with eight fragments of the same boot in fill 7569 (#95598). Three fragments of a wool coat in fill 7568 (#95571) joined with 13 fragments of the same coat in fill 7569 (#95570) (Figure 5.55).



Figure 5.55: Cut fragments of woollen coat found in well fills 7568/#95571 and 7569/#95570. Russell Workman, 10cm scale.

⁵¹ Ward 2010 Vol 2, Section 9.1 in this report.

A number of leather items were also recovered from fill 7568 (20 in total). These items were mostly footwear, with various parts of shoes/boots identified including lining (1), counter (2), heel cupping (1), offcut (3) and outsole (1), a partial pump/slipper (2), near whole lace-up boots (2), and the sole of a shoe (1). Offcuts were separated into parts of belts/straps (3) and general offcuts (2). The footwear was all identified as adult-sized and the datable leather items ranged between c1820 and c1860 (Table 35).

A total of 17 tobacco pipes were found in fill 7568. Many of these are datable and span the greater part of the nineteenth century. A sample of the datable pipes follows: steam engine and paddle steamer motif dating between 1839 to 1904 (#98406) (Figs 5.56, 5.57), the Baltic Cutty type, manufactured by Thomas White of Edinburgh between 1823 and 1882 (#98407), thistle and ship motif, made by Desiree Barth of Belgium, dating between 1855 and 1890 (#98410), and pipes made in Britain for the Sydney tobacconist Hugh Dixon, dating between 1839 and 1904 (#98412-#98416).



Figure 5.56: Tobacco pipe manufactured for the Sydney tobacconist Hugh Dixon, steam engine on left side (7568/#98406). Russell Workman, 10cm scale.



Figure 5.57: Tobacco pipe manufactured for the Sydney tobacconist Hugh Dixon, paddle steamer on right side (7568/#983406). Russell Workman, 10cm scale.

The 631 artefacts contained in fill 7568 are generally indicative of a deposit dating from Phase 6 (1860s to c1890), however one item indicates that it occurred in Phase 7 (c1890+). A handle of a large silver-plated spoon features hallmarks that include a crown, “VR” in a rectangle, and then the makers mark of “G C & Co”, identified as Charles Green & Co Ltd, Birmingham, and dating from 1905 (#98396).⁵²

Fill 7569 is the lowermost fill in the well and contains 495 artefacts, 19.2 per cent of the entire well assemblage (Appendix 5.3: Table 81). Once again over half of the items in this fill are identified with the general function of food, with the 313 items representing 63.2 per cent of the fill assemblage. The high occurrence of this category is once more explained by the presence of 262 grape seeds which represent 83.7 per cent of the food-related items. The non-grape seed items number just 51 and represent the remaining 16.3 per cent of the food-related category. Grapes were not the only edible items in evidence, with coconut (1), nectarine (1), peach (1), apricot (1) and walnut (2) also identified. Among the food-related items were glass condiment bottles (14): oil/vinegar (1), pickle/chutney (7) and pickle (6).

The glass bottles in this fill were for the most part made using techniques that date from 1850 onwards, including form-tooled lip finishes on beer/wine bottles (1850 to 1920), cup bottom moulds (1850+) and blow-back moulds (1850+). Other datable glass items include a Cooper & Aves pickle bottle, with a Betts patented capsule foil seal, dating from 1849+ (49153), an unidentified bottle made by Crosse & Blackwell of London, dating between 1830 and 1900 (#49157), and an alcohol bottle made by William Powell & Co, Bristol, dating between 1830 and 1906 (#49102). One glass item, a machine-made panelled tumbler, has a manufacturing date of between 1910 and 1930 (#49137), indicating that there was some contamination of this fill caused by the excavation methodology used (bulk machine excavation). The glass in this fill reflects household rubbish, with items identified with food (condiment bottle, stemware), beverage (aerated water and alcohol bottles, tumbler), personal toiletry (perfume bottles), pharmaceutical (generic medicine bottles) and household lighting (lamp shade).

⁵² Casey & Lowe artefact database, Robyn Stocks notes.

The 45 ceramics in fill 7569 also reflects a deposit of domestic household waste (Figure 5.58). Items associated with the serving, consumption and storage of food are again predominant, including a jar (1), a dish (1), jugs (3), a ladle (1), a platter (1), a tureen (1), a bung jar (1), a bowl (1), plates (4), a breakfast cup (1), cups (7), saucers (3), egg cups (1) and small plates (3), with items relating to other household functions also represented in beverage (3 ginger beer bottles), household maintenance (5 blacking bottles), personal hygiene (1 ewer, 1 poe) and pharmaceutical (1 ointment jar). Five of the ceramics have identifiable basemarks: a salt-glazed stoneware ginger beer bottle features the impressed mark of the Sydney potter "T FIELD" / "POTTER" / "SYDNEY", (#73393, dating between c.1851 and 1861). A salt-glazed stoneware ginger beer bottle with the impressed mark of the Sydney ginger beer manufacturer "D. KEARNEY" on the shoulder and the impressed mark of the Sydney potter "(T FIEL)D" / "(POTTE)R" / "(SYDN)EY" remaining on the lower body dates from the years between c.1851 and 1861 (#73394). A blue flow jug in the "Romanesque" pattern features the basemark "ROMANESQUE" and the monogram mark used by Thomas Dimmock & Co. of Shelton & Hanley. It dates from 1828 to 1859 (#74078). A salt-glazed stoneware bottle with the remains of an impressed mark of the Sydney potter "T (FIELD)" / "POT(TER)" / "SYD(NEY)", dates between c.1850 and c.1860 (#73385), and an unidentified purple transfer-printed base sherd features the basemark "J. & W. PRATT", dating between 1836 and 1859 (#74056).



Figure 5.58: Selection of ceramics from well fill 7569. Russell Workman, 10cm scale.

Seven of the ceramics also featured conjoins in two of the other well fills (6 in fill 7568 and 1 in fill 7567). The six items with conjoins in fill 7568 included the following: one fragment from a salt-glazed stoneware ginger beer bottle with the impressed mark of "T FIELD" / "POTTER" / "SYDNEY" (#73393, dating between c.1851 and 1861) joined with three fragments that featured the impressed mark "D. KEARNEY" on the shoulder (#73377). Four fragments from a bristol-glazed stoneware jar manufactured by Stephen Green (#73395, dating between 1820 and 1858) joined with two fragments (#73383). One fragment from a blue transfer-printed "Willow" pattern serving dish, dating from c.1810+ (#74072), joined with two fragments (#74028) and seven fragments of a salt-glazed stoneware bung jar (#73396, dating between c.1830 and 1930s), joined with 11 other

fragments (#73368). Four fragments of a blue transfer-printed pearlware saucer (#74070, dating between c.1800 and c.1870), joined with three other fragments (#74037), and fragments from a black flow chamber pot (#74057, dating between c.1830 and 1930) joined with eleven other fragments (#74011). The item with conjoins in fill 7567 consisted of three fragments of the blue transfer-printed pearlware “Willow” pattern platter (#74071, dating between c.1847 and 1867) that joined with four fragments featuring the basemark “Copeland” / “Late Spode” (#73989).

Apart from the above ceramic examples, conjoins were also noted in two other artefacts categories (glass and organic). Two fragments of a dark aqua square pickle/chutney bottle dating between 1850 and 1870 (fill 7569, #49161) joined with three fragments in fill 7466 (#49092, #49025) and seven fragments in fill 7568 (#48530). Within the category of organic were two items, a gumboot and a coat, with conjoins between the two lower fills 7568 and 7569. Eight fragments of a rubber gumboot, dating from c.1880 and found in (fill 7569, #95598) joined with two fragments of the same boot in fill 7568 (#95597). Thirteen fragments of a wool coat in fill 7569 (#95570) joined with three fragments of the same coat in fill 7568 (#95571) (Figs 5.55, 5.59).



Figure 5.59: Double-layered cut woollen coat fragments with hand-stitched buttonholes found in well fill 7569/#95570. Russell Workman, 10cm scale.

A number of leather items were also recovered from fill 7569 (16 in total). These items are mainly footwear (16), with various parts of shoes/boots identified including counter (2), heel (1), heel cupping (1), insole (2), offcut (1) and sole (1). Three pump/slippers (partial and uppers), a near whole lace-up boot (1) and a whole lace-up shoe (1) were also recognised. The footwear was all identified as adult-sized except for one child-sized insole for a shoe/boot (#95608). The datable leather items range from 1812 through to 1900 (see Table 35).

A total of 14 items were identified with the general function of recreation in fill 7569 and all are tobacco pipes. A number of these are datable and again they span the greater part of the nineteenth century. A sample of the datable pipes are: pipes made in the United Kingdom for the Sydney tobacconist Hugh Dixon dating between 1839 and 1904 (#98426, #98428-#98431), a pipe manufactured by Thomas White of Edinburgh dating between 1823 and 1882 (#98433), and a Jenny Lind type dating between c.1840 and c.1900 (#98425). Jenny Lind (Johanna Maria Lind) was a Swedish opera singer who was famous from 1838 until her death in 1887 (see Section 5.7, Figure 5.67).

Although almost all of the 495 artefacts contained in fill 7569 are indicative of a deposit dating from the Phase 6 period (1860s to c1890), one solitary item did suggest that there was some disturbance to the deposit that was a direct result of the excavation methodology used. A fragment from a machine-made panelled glass tumbler (#49137) has a manufacturing date of between 1910 to 1930,⁵³ indicating that the use of a machine to bulk excavate the well had resulted in some contamination of this lower fill.

There were 333 fragments of animal bone from the well (Appendix 5.3: Table 82). Five species were identified. Sheep was the most common with 248 fragments (74.4%). The remaining 85 fragments were cattle (66), chicken (11), pig (5), unidentified fish (2) and rabbit (1).

Well summary

Artefact analysis indicated that the five fills contained in the well related to the late Phase 6 period (1860s-c1890), and that the lower three fills occurred within a short period of time as part of a single backfilling event. The upper two fills were excavated by hand (7465, 7466) and contained a large amount of contamination from demolition material. The building at No. 710 George Street was demolished sometime around 1882 or 1883 and it was replaced by a large elongated building by 1888. This later building was constructed over the well so the material within it had to therefore pre-date this structure. Within the uppermost fill (7465) were two white-glazed and moulded semi-vitreous fine earthenware saucers featuring the black transfer-printed basemark "ROYAL IRONSTONE CHINA" above a coat-of-arms, with "W.H. GRINDLEY & Co" / "ENGLAND" below (#73912, #73913). These dated between 1880 to 1925 and indicated that this fill occurred at least after 1880.

The top two fills were excavated by hand to a depth of c.1.5m, and the remainder of the well was excavated by machine due to safety regulations. The machine removed the eastern half of the well and then roughly separated the fill into three 1m spits (7967, 7968, 7969). This excavation methodology explains the intrusion of two twentieth-century items into the lower fills of 7568 and 7569 (a handle of a silver-plated spoon featuring a manufacturers mark belonging to Charles Green & Co Ltd of Birmingham, and a fragment of a machine-made panelled glass tumbler. The spoon handle (#98396) dated from 1905. The tumbler (#49137) was manufactured between 1910 and 1930.

The presence of a number of ceramic, glass and organic conjoins between the various fills also indicated that the backfilling of the well occurred during a relatively short period of time. The identified shapes recovered within the well fills reflect a deposit of general household domestic waste, with items associated with the consumption of food (and beverage) particularly well represented, although the total number of artefacts in the well is disproportionately swollen by the inclusion of 1374 grape seeds which represent just over half of the 2582 artefacts recovered here (53.2%). The presence of such a large number of grape seeds, which were found only in the well

⁵³ Casey & Lowe artefact database

and nowhere else on site, may perhaps be explained by the fact that No. 710 George Street was occupied by grocers until the early 1870s.

5.7 Tobacco Pipes⁵⁴

Ball clay moulded smoking pipes formed the largest part of the miscellaneous assemblage from the site and provide interesting information about the occupants and spatial uses of the different allotments. The main focus of the discussion will be the Woolpack Hotel in Area A supplemented by a small selection of other pipes from Areas B and C (in instances where finds were instructive or unusual). For general pipe tables see Appendix 5.3; the clay pipes made by Thomas Ball at his pottery found in Areas A and B are described in Section 4.10.1.

5.7.1 Area A

Excavation of various contexts in Area A revealed that the residents, workers, and visitors to this allotment were prodigious smokers having thrown away or lost some 930 broken ball clay and fine earthenware pipes. 494 of these (approximately half) were decorated or were able to be identified as a specific type. The pipes were mainly found in underfloor deposits of Rooms 1 to 5 of the Woolpack Inn. The overwhelming majority (45.6%) were from the Room 2 underfloor (7324), with some also incorporated into the fill below (7379). This probably occurred during renovations. Due to the nature of the activities within the Woolpack the high number of pipe fragments (791) found below the floors was not unexpected. Most were long-stemmed pipes known historically as 'Churchwardens' or more exactly for this assemblage 'Short Churchwardens'. With few exceptions they were of identical form with a small plain bowl, short spur, distinctively trimmed narrow stems and simple mouthpiece (Figure 5.60). They have been broadly dated from c.1830 to c.1880 on morphological grounds. A far smaller number of this type of pipe was also found in Area B and C contexts of the same period, notably the underfloor deposit of Room 1 at No. 710 (7444) (Table 5.1).

The maker of these plain 'Churchwardens' is unknown. The ball clay with tiny inclusions of red ironstones had occasionally been fired to a buff colour or had uneven grey to red surfaces. Similar impure clay was also noted in the pipes made by the Elliott family in Sydney during the 1820s to 40s, as well as three pipes with a plain bowl and large spur marked 'W/M'. The latter was perhaps produced by William Morgan of Liverpool with known dates of c.1767-96 and 1803, but is more likely to have been made by William Murray of Glasgow (perhaps early in his career before his mark became standardised on the stem). Murray operated from 1830-1861 and was favoured by several smokers in Areas A and C. Curiously the underfloor deposits of Room 3 did not contain any of these specific 'Churchwardens' but another slightly different model was found made by the large Glasgow firm of Duncan McDougall from 1846-1967. Both Murray and McDougall, along with several other Scottish manufacturers represented here exported widely to Australia and New Zealand.⁵⁵

Extremely long-stemmed pipes known as a 'yard of clay' were introduced in c.1819. They measured up to 36 inches or 900mm in length and were straight to slightly curving.. Although a passing phase they became popularly known as 'Churchwardens' and led to the marketing of more practical-sized versions or 'Short Churchwardens'. Due to their size and fragility these pipes could only be smoked by people at their leisure and definitely not those undertaking manual labour. They were commonly held at or owned by public houses such as the Woolpack in order to be shared amongst their clientele. In contrast personally-owned robust and short-stemmed Scottish 'Cutty' or Irish

⁵⁴ This section on tobacco pipes was written by Robyn Stocks

⁵⁵ Oswald 1975: 179; Bradley 2000: 118; Davey (ed.) 1987; Jack 1986.

‘Dudeen’ types (specifically made to be held in the mouth while working) were found in much fewer numbers below the hotel floors.⁵⁶

The length of the main plain ‘Churchwarden’ type, estimated at 275mm or almost 11 inches with the stem alone being 240mm, created a special challenge during assessment of actual minimum pipe numbers. The most numerous fragments were from near-identical narrow stems which were time-consuming to rejoin although an attempt was made for all contexts, especially those in the same or adjacent squares of underfloor deposits. Far less bowl fragments than mouthpieces were found showing that not all parts of every discarded ‘Churchwarden’ pipe represented in the assemblage had been deposited on the site or managed to survive within the archaeological record, even in below floor contexts. Therefore, while only fragments of 62 mouthpieces of this type of pipe were found in the underfloor deposit of Room 2 in the Woolpack (Table 5.2) a more realistic total estimate would include a proportion of non-joining bowl and stem fragments up to a maximum of 320 items.⁵⁷

Area	House	Room	Description	Context	#MIC
A	WP	1	UF	7323	57
			Construction	7320	13
			Construction	7392	1
		2	UF	7324	227
			Constr or fill	7379	22
		4	UF	7331	36
		5	Redep topsoil	7333	5
		7	UF	7337	5
		Mortar level	Below 7379	7384	1
		PH	Fill	7362	1
?	Mach fill	7398	2		
			AREA A TOTAL	370	
B	712	Rear PH	Fill	7608	1
B	712/714	TT17	Various	7575	2
		714	Cesspit	Fill	7632
	716	PH	Fill	7539	1
		All	Cleaning	7457	2
		?	Fill (Ball)	7461	1
	718	Cut	Fill	7474	5
			Fill	7475	3
		PH	Fill	7505	1
		Sth of fireplace	UF	7395	1
		Tree bole	Fill	7473	3
		?	Fill (Ball)	7460	1
			AREA B TOTAL	22	
C	710	1	Demolition	7313	1
			UF	7444	4
			Fill below UF	7519	1
		Rear	Cleaning	7396	1
		Well	Fill	7567	1
			AREA C TOTAL	8	
			SITE TOTAL	400	

Table 5.1: Location of all plain Churchwarden pipes c1830-80 on the site. Note UF are underfloor deposits; (Ball) indicates redeposited wasters and kiln debris from Thomas Ball’s pottery.

⁵⁶ Harley 1963:15; Ayto 1999: 6, 10 dates the introduction of Churchwardens to c1850 and states that the name was perpetuated and possibly invented by Charles Dickens.

⁵⁷ Length estimated using fragments 7320/#96019-20, 7324/#96363, #96490-90.

Room	Context	Mouthpiece	Bowl	Stem	Total
1	7323	11	2	42	55
2	7324	46	33	145	224
3	7335	0	0	0	0
4	7331	5	1	30	36
5	7337	0	2	3	5
TOTAL		62	38	220	320

Table 5.2: Positively identified plain Churchwarden pipes c1830-1880 in different rooms of Woolpack Hotel in Area A.



Figure 5.60: Area A (Short) 'Churchwarden' type pipe reconstructed from fragments in 7320 and 7324, three mouthpiece tips at extreme right. Front row: bowl 7324/#96363, stem 7320/#96020 (4 fragments). Second row: mouthpiece 7320/#96019. Third row: stem 7320/#96020 (2). Fourth row: bowl 7324/#96490. Fifth and sixth rows: two mouthpieces 7324/#96491 (8). Russell Workman, 10cm scale.

Other popular forms of pipes smoked at the Woolpack included those with naval or shipping decorative motifs. One of these had an unusual cannon-shaped mouthpiece (Figure 5.61). Several pipes demonstrate political and other interests of their owners, such as the 'Garibaldi', celebrating the final liberation of Italy in 1860; the 'Harlequin' with depictions of two different clowns or jesters; and the 'Masonic' with 'friendship, love and truth' on the bowl, a slogan also used by the Society of Oddfellows.⁵⁸

⁵⁸ A 'Garibaldi' pipe with a similar stem mark is listed as model number 34 in McDougall's price list 1860-62 was found at Casseldon Place, Melbourne in GML 2004: Section 3: 180. Pipes with heart in hand and other symbols of the brotherhood of Oddfellows were found in Area C, for general information about these and Masonic pipes of the late eighteenth and nineteenth-century see Harley 1963: 18, GML 2004: 178 and Wilson 1999: Type 122.



Figure 5.61: Plain and decorated British and European tobacco pipes from Area A. Front row: 'Ship & Anchor' bowl with hatched seams by Desiree Barth, Belgium 7335/#96954, Gouda Holland shield on spur 7321/#96026, 'Harlequin' bowl 7324/#96465, 'Masonic' bowl fragment 7324/#96547, 'Fluted Leaf' bowl-stem 7350/#97657. Second row: band & beaded stem with roses and fleur-de-lis (probably French) 7324/#96288. Third row: 'Thorn' by L. Fiolet / á St Omer France 7337/#97568, 'Cannon' mouthpiece 7654/#97751, 'Fluted Leaf' bowl with drilled tips 7323/#96213, 'Masonic' stem 7335/#97034. Back row: early 'Leaf' seam 7350/#97677, 'Leaf' seam 7350/#97676, plain 7350/#97678, plain 7350/#97679, 'Briar' model '15' 7337/#97406. Russell Workman, 10cm scale.

Notable pipes from Area A include the 'Armorial' and 'Effigial' types made in Australia during the 1820s through 1840s; and those made in Britain for the local colonial market, such as the 'Lachlander' and the 'Squatters Budgerie' (Figure 5.62). A limited number of small businesses moulded pipes in Sydney before c.1850, often starting out as convict workers at Government brick yards or as servants to private potters. While many pipes were plain, several local makers represented in this assemblage (such as William Cluer, Jonathan Leak, Joseph and Samuel Elliott, John and Anson Moreton, and possibly William Davis) marked their pipes or had distinctive decorative styles.⁵⁹

⁵⁹ Gojak and Stuart 1999; Stocks 2009; Wilson 1999. Bowls with identical drilled leaf seam decoration to that in Figure 5.61 7323/#96213 were found in waster material from the Jonathan Leak kiln off Elizabeth Street, Sydney during excavations by Graham Wilson in 2007. These distinctive pipes were noted in photographs used for an exhibition at the National Museum of Australian Pottery, when Geoff and Kerrie Ford visited Casey & Lowe on 17th August 2011, see <http://www.australianpottery.net.au/index.php>



Figure 5.62: Tobacco pipes from Area A Woolpack made in Sydney or in UK for Australian market, or sold by Sydney tobacconists. Front row: 'Briar' with torrefied clay sold by Hugh Dixon 7642/#97872, 'Squatters Budgereee' stem 7324/#96546, 'Armorial PoWf swirl banded' mouthpiece 7323/#96091. Second row: 'Squatter Budgereee' bowl fragments 7324/#96557 (1) and 7324/#96564 (2); 'Effigial' bowl fragments, ear to back 7320/#96013(1), lobes above spur 7324/#96584 (1) and back with curled hair 7323/#96073 (1). Thrid row: Joseph Elliott 'Fluted' bowl/stem 7335/#97056 and marked stem fragments 7324/#96488, 7324/#96649, John Moreton marked 'Leaf Vine' bowl/stem 7324/#96657. Back row: William Cluer bowl fragments 7324/#96525 (1) and 7648/#97746 (2), Anson Morton stem fragment 7323/#96122. Russell Workman, 10cm scale.

The five marked William Cluer pipes from Area A are potentially the earliest remaining at the site. Cluer began manufacturing in Sydney in 1802 and was successful enough to export to Britain. His wife Mary (Morgan) Cluer who died in 1832 reportedly ran the family business during William's absence overseas in 1821-2 and after his death in 1824; the pipeworks continued until c.1846. His pipes are often found in blackened and worn condition due to the addiction and poverty of the owners as well as what appears to have been a scarcity of pipes in the colony before the 1820s. Three of the four Cluer pipes from the underfloor deposits (7324) of the Woolpack and one from the middle of redeposited kiln wasters & debris (7648) from Thomas Ball's pottery were characteristically well-used (Figure 5.62).⁶⁰

Armorial pipes with the Hanoverian Coat of Arms or Prince of Wales feathers and Effigial pipes with bowls moulded in the shape of different male heads were found in similar numbers in Areas A and B. As they were made by a small number of local makers such as the Elliott family or Jonathan Leak from the 1820s to 40s they are able to be easily distinguished from British versions. Unfortunately these pipes are often unmarked. Only one Effigial bowl/stem from an underfloor deposit (7395) in Area B was able to be tentatively attributed to Jonathan Leak. Leak worked from 1822-1839.⁶¹

⁶⁰ Cluer's history in Gojak and Stuart 1999: 44-45.

⁶¹ These pipes have been found at many sites in Sydney and Parramatta, and carried by whalers or traded to remote parts of Australia and New Zealand, see Dane & Morrison 1979 Plate VI. The nearby pipeworks of Jonathan Leak has been recently excavated by Graham Wilson in Sydney. Early Sydney pipemaking and potting history see Casey 1999; Ford 1995.

A relatively rare example of a marked pipe stem with leaf vine decoration made by John Moreton was found in the underfloor deposit (7324) of Room 2 of the Woolpack (Figure 5.64). Moreton was a convict and emancipated potter from 1822-1844 and father of Anson Moreton who started work in 1829 and ran their local family pottery and pipe-making business until 1847. The similarity of the lettering and decoration on the John Moreton pipe stem to those of the more ubiquitous 'MPP' points to a common maker as do the general dates for the contexts in which they were found at the site. Most marked MPP pipes were found in Area A underfloor deposits of all rooms of the Woolpack as well as the construction debris of Room 1 (7320); and in Area B contexts relating to brickfield or early redevelopment activities after the closure of Thomas Ball's pottery such as fill (7305), drain fill (7432) and the backfill (7475) of an eastern cut (Table 5.3).⁶²

Area	Manufacturer	Context	#MIC
A	Moreton, A	7323	1
	Moreton, J	7324	1
	MPP	7320	2
		7323	6
		7324	5
		7331	3
		7333	6
		7335	1
		7337	1
B	MPP	7305	2
		7432	1
		7475	1
		TOTAL	30

Table 5.3: Locations of Moreton and MPP marked pipes.

The analysis of the pipes from the assemblage has revealed another British pipemaker to the list of those known to have made 'Squatter Budgerees' pipes for the Australian market. Fragments of four of these pipes were found in Area A below the floors of Rooms 2 and 5 of the Woolpack but two slightly different varieties were found in Area C. The most common version from the backfill (7567) of the well and the underfloor deposit (7444) of No. 710 in Area C was marked by the Edinburgh pipemaking firm of Thomas White who operated from 1823-1882 (Figure 5.66).

There were 89 pipes with known pipe manufacturers from underfloor deposits at the Woolpack. Some of these are rarely seen in Australia, such as the unrecorded James Gilmour of Kilmarnock, Scotland (7324). However, most were made by large or long-term Scottish or English businesses like William Southorn, which operated from 1802 until 1961 and was one of the last to operate in the vicinity of Broseley, Shropshire. Broseley pipes (contexts 7321 and 7323) were the first in Britain to be widely exported to the colonies, in particular eighteenth-century America, but later out-produced by other cities. They were thought to be among the best quality items produced in Britain.⁶³

Large European pipemaking businesses, such as Louis Fiolet of St Omer, France, Desiree Barth of Andenne, Belgium and pipemakers from Gouda, Holland are also represented but in few numbers.

⁶² Jonathan Leak, John and Anson Moreton in Casey 1999: 8; Ford 1995: 7-20. John Moreton marked plaque and probable jug in Casey and Lowe 2009: 55-62.

⁶³ Scottish pipes in Australia see Jack 1986, New Zealand see Pfeiffer 1986. A James Gilmour pipe previously found at Parramatta Justice Precinct Site 5583/#53070, see Stocks 2009. Southorn of Broseley see Walker 1979: 401; www.broseley.org.uk.

These exporters were more popular in the latter part of the nineteenth century and many Barth Pipes were found in Area C (Figure 5.64, 5.65).⁶⁴

5.7.2 Area B

Far fewer pipes were recovered from Area B, the predominant types were the 'Churchwardens' and those with leaf decoration on the bowls and stems similar to those found in Area A. The black ball clay bent pipe was the most significant with the bowl carefully moulded as the head of an indigenous American woman. This type was associated with eighteenth to early nineteenth-century Dutch depictions of east-coast native Americans on tobacco packaging. By c.1850 these depictions had developed into cross-cultural caricatures that blended African and Native American features. Artefact #97,772 shows an African woman with feather headband and pierced ears characteristic of Native Americans (Figure 5.63). They are an important resource for research into the Transatlantic slave trade. Interestingly this bowl appears to have been painted in red and yellow, perhaps when reused as a toy by a child living in No. 718, before then becoming part of the backfill (7387) in cesspit 7347.⁶⁵



Figure 5.63: Tobacco pipe with 'Effigial Negro' type bowl from Area B. Moulded head of an indigenous American woman that has through time evolved into an African American with painted feather headband and pierced ears 7387/#97772. Russell Workman, 1cm scale divisions.

⁶⁴ Louis Fiolet pipes see Duco 2004: 31-37. For similar Fiolet and Barth pipes from Cumberland and Gloucester Streets Site, The Rocks see Wilson 1999.

⁶⁵ See Duco 2003; Hampshire Record Office, Archive Education Service and *The Transatlantic Slave Trade and Abolition : 19-20*, online at www.hants.gov.uk/rh/archives/slavery.pdf.

5.7.3 Area C

The well at the rear of House 710 contained numerous pipes in the three lower fills. They were possibly discarded during occupation but were more likely to have been dumped during general demolition and clearance at the end of the nineteenth century. The wet and anaerobic soil conditions in the well had stained some of the pipes, obscuring evidence of use. The same conditions softened the glaze on mouthpieces and corroded the few and unusual small cylindrical iron holders. They included a large range of types with many multiple examples which were mostly imported from Britain or Europe. The assemblage differed from those in Areas A and B with no identified Australian makers and a higher proportion of 'Cutties' and 'Dudeens' than 'Churchwardens'. At least several pipes appeared not to have been smoked and it is very possible that a proportion may have been discarded stock from a shop at the front of the property rather than those personally owned by the residents (Figure 5.51).

The most popular known pipemaker in Area C was Desiree Barth of Belgium (1855-1890) with 72 examples of well-made plain, fluted and ship-themed varieties. The pipes had distinctive carefully hatched seams, mottled ball clay and large bore holes (Figs 5.64, 5.65). Pipes sold by Hugh Dixon from his Sydney tobacconist shop (trading from 1839-1904) were found in all areas of the site with 67 pipes found in Area C alone. Local tobacconists like Dixon, Edwin Penfold and Thomas Saywell had their names marked on the pipe stems by commissioned British makers.

Interesting pipes from Area C include the two 'Squatter Budgerie' varieties described above (Figure 5.66), one of several types that were made for the colonial market, such as the eight 'Ship & Advance Australia' (7444, 7466, 7567), and one 'Lachlander' (7389/#97889). Pipes evoking the nineteenth-century interest in technological achievements and industry were also found, such as one bowl showing the Crystal Palace of the 1851 London Great Exhibition (7459/#98312) and the two examples of a 'Steam Engine and Paddle Steamer' (7444/#97960, 7568/#98406).



Figure 5.64: 'Thistle and Ship' pipes made by Desiree Barth, Belgium from Area C. Left: 7466/#98323, right: 7466/#98322. Russell Workman, 10cm scale.



Figure 5.65: Selection of other Barth pipes from Area C underfloor deposit. Front row: complete plain 7444/#98075. Second row: near whole 'Fluted' with red wax on mouthpiece 7444/#98196. Third row: 'Churchwarden' stem 7444/#98279. Back row: bowl/stems with hatched seams 7313/#97878, 7444/#98137; mouthpiece with iron holder 7444/#98131. Russell Workman, 10cm scale.



Figure 5.66: 'Squatter Budgerie' pipe types from Area C well fill 7567. Front: Thomas White #98377. Second row: Thomas White #98377. Back row: unknown maker #98381. Russell Workman, 10cm scale.

During the nineteenth century pipes were increasingly used to advertise products as well as showcase famous people such as the 'Swedish nightingale' Jenny Lind (7569/#98245), who was well known from 1838 to 1887 and toured America with P.T. Barnum in 1850. Major royal occasions were commonly celebrated on pipes, for example the two different Victoria and Albert 1840 wedding commemoratives sold by Hugh Dixson in Sydney (7466/#98346, 7567/#98384), one with royal portraits and a crude depiction of Buckingham Palace (7313/#97876, Figure 5.67). Representations of significant literature or art was also used to sell pipes, such as the 'Uncle Tom's Cabin' type in well fill 7466/#98327 (Figure 5.69) made by William Murray, Glasgow after it was written by Harriet Beecher Stowe in 1852 and before he ceased production in 1861.⁶⁶

⁶⁶ Similar 'Steam Engine & Paddle Steamer' motifs on pipe at Casseldon Place Victoria, in GML 2004: Figs. 6.40-41, #LL19577 made by J. Agnew of Glasgow, 1849-57. Jenny Lind or Johanna Maria Lind Swedish opera singer, 1820-1887, see www.jenny lind.org.



Figure 5.67: Area C unusual pipes. Left and centre: 'Fluted Jenny Lind' pipe bowl 7569/#98245. Right: bowl commemorating the 1840 wedding of Victoria and Albert 7313/#97876. Russell Workman, 1cm scale divisions.



Figure 5.68: 'Uncle Tom's Cabin' 7466/#98327. Russell Workman, 10cm scale.

6.0 Response to Research Questions

6.1 Research Questions

A range of research questions were identified in Section 1.4 and 4.1.1. The focus of this section is a brief overview response to the research questions relating to the Thomas Ball Pottery. These questions have been rewritten to address the results of the detailed analysis in Section 4 which also must be read in relation to this response to the research questions. The research questions addressed below are:

- Type of products being made in the Brickfields?
- Manufacturing Techniques and Processes.
- How does Thomas Ball's Pottery change our understanding of the type of pottery being manufactured in colonial NSW?

6.2 Response to Research Questions relating to Thomas Ball's Pottery

6.2.1 Type of Products being made in the Brickfields

While we did not find evidence of direct brickfield manufacture we were able to identify a number of Sydney sandstock bricks that were used to construct the kiln and clay roof tiles reused as kiln furniture. In addition, we can now attribute the manufacture of a wide range of pottery, and some recreational items such as clay tobacco pipes, marbles and perhaps a bird whistle to Ball. The pottery is discussed by Mary Casey and Nick Pitt in Sections 4.1 to 4.6, and the other items by Robyn Stocks in Sections 4.8 to 4.10.

6.2.2 Manufacturing Techniques and Processes

Section 4.8 to 4.10 discusses the nature of pottery and ancillary product manufacturing used by Thomas Ball. The redeposited debris from Thomas Ball's Pottery shows that he fired his wares in a wood-fuelled updraught clamp or possibly Scotch-type kiln sunk into the ground surface. It had a (near) permanent lower sandstock brick wall bonded and lined with clay and at least one corbelled flue. The temporary domed or curved superstructure was made of hand-applied layers of clay containing fragments of previous walling, clay furniture (bobs) and lined on the interior with pottery sherds to provide extra strength and better thermal retention. The shape of the kiln base built by Ball is not known but may have been oval or circular similar to a probable circular kiln shown on an adjacent allotment in the c.1831 Hallen's Survey Fieldbook. The only excavated near contemporary wood-fuelled clamp or Scotch kiln in Sydney, built between c1830-1852 in Albion Street, Surry Hills, was rectangular, multi-flued and used to fire bricks. Both sub-circular and rectangular kilns were used to make contemporary or earlier pottery in Britain, Europe and America, their forms often built to conform to the surrounding landscape and available materials. Bottle kilns were used to fire pottery in larger towns but were not universally adopted for earthenwares at the time of Ball's departure from England and there was no evidence for one on the site.

Most of the bricks used by Ball to build the kiln were moulded and then fired in wood-fuelled clamp kilns by government gangs or small independent brick and tile manufacturers who operated at Brickfield Hill. The few denser bricks that had been shaped by Ball to create one or more corbelled flues as well as one of the specialised 'kiln bricks' were possibly imported from Britain. The chamber floor was made using kiln bricks with cells and pierced holes to efficiently transfer heat up from the wood-fired flue(s). Ball would have reconstructed the upper part of the kiln after every firing and when the bricks had seriously deteriorated after a number of firings it would have been rebuilt from scratch, reusing whatever materials were viable.

Although he does not appear to have been a large producer Ball may have had more than one kiln operating at one time, perhaps for large orders or experimental firing when attempting to make new types of pottery, glaze colours and other items. Part of the analysis being undertaken is to discover whether different firings and perhaps a sequence of manufacture can be discerned in the artefacts. Examination of the bricks from the kiln debris showed a sequence of physical changes to the fabric which after a number of firings resulted in the vitrification and then marked deterioration with a build-up of slag and splashed lead glaze on the surfaces closest to the heat.

To stack the pottery and other products in the firing chamber Ball used a wide range of kiln furniture. These fall into three categories: formal wheel and hand-shaped and pre-fired forms; informal clay forms some of which were hand-shaped; and reused broken fired pottery and recycled sandstock clay roof tiles.

The first category included placing rings with small applied points and thick cylindrical saggars which were made on the wheel using the same fine and coarse local earthenware as the pottery and fired in the kiln before use. This furniture conforms to types Ball probably used in Britain and for which there is ample evidence from excavated contemporary and earlier sites. Ball also made two versions of a formal rectangular 'spur' type that he may have adapted from triangular or tripod forms used in Britain and America. These rectangular forms were unique to Ball and made from rolled flat fine earthenware that had been impressed with a dowel then cut to shape. The narrow sides of the main spur subtype used to support pottery in the chamber were cut to create four narrow points on the second subtype. The rings and spurs were used to support finer glazed wares in the kiln, their narrow points lessening the possibility of accidental fusing of the vessel with the furniture. These types of pottery were also more protected in the firing chamber by being placed or stacked in saggars, or the better base setters.

The second category was the most numerous in the assemblage and in the main comprised five types of clay 'bobs' defined by their manufactured shape: amorphous, bars, rolls, pinches and flat. The other rarer furniture type was flattened clay slabs used as horizontal setters, either below or above a pot or sagger. All these types were still damp when placed in the chamber as the pottery and other items were being quickly positioned during stacking. Although most were broken when the kiln was dismantled the distortion of their shapes and other surface changes that occurred in during firing has enabled the compilation of a type series based on stacking evidence. It is hoped that this data will enable a better understanding of how and where Ball stacked different wares and products in the kiln.

The third category comprised reused broken pottery vessels and sandstock roof tiles. Ball was able to recycle or reuse many items within the production cycle. Pottery broken during manufacture could be ground down and included as grog in coarser wares, or included in the kiln superstructure. The larger sherds were reused as kiln furniture with the bases in particular providing a convenient and economic alternative to standardised saggars which were individually potted. To prevent the glazed vessels from adhering to the bottom of setters and saggars Ball smeared wet clay and scattered small fragments of fired clay instead of flint chips and ground quartz commonly used in Britain. The roof tiles were probably broken discarded fragments or second-hand stock made in the nearby brick kilns. Their hard flat shapes with sanded surfaces made ideal setters, lids or shelves for the kiln chamber.

Prompted in part by economic motives Ball appears to have used a wide range of kiln furniture to stack his kiln. The presence of wheel-thrown pre-fired saggars, spurs and placing rings; informal unfired clay setters and bobs; and reused broken pottery and roof tiles in the kiln debris indicates that Ball used a combination of closed and open-stacked firing depending on what products were in the chamber. The range of kiln furniture may also suggest that Ball may have begun his trade in

Sydney with formal pre-made types and then due to changes in what products he made, economic pressure and scarcity of available materials and labour, introduced the other forms as replacements.

6.2.3 How does the Thomas Ball's Pottery change our understanding of the type of pottery being manufactured in colonial NSW?

- What does the pottery tell us about Ball's training, skills, materials, techniques and understanding of pottery manufacturing techniques and technology?

Sections 4.1 to 4.6 discuss the extensive variety of pottery manufactured by Thomas Ball ranging from the utilitarian wares, already known from many pre-1850 archaeological sites in Sydney and Parramatta, to medium and finer wares including table and finer wares. Thomas Ball produced at least 59 different handpainted decorative patterns (probably made with a slip or blowing pot through a single quill) as well as a few incised, rouletted and a single sprigged decoration (Appendix 4.2). Many of the decorated vessels were tablewares but some were also utilitarian. The utilitarian forms produced related to typical daily household and domestic activities but we had not found all of these shapes previously. Some of the simpler decorated forms had been found on other sites, such as nearby Pitt and Campbell Street site, the old DMR site, Cunningham Street site, as well as those in other parts of the Sydney CBD: the Conservatorium site, First Government House site, and the Cumberland and Gloucester Streets site. See Section 4.7 for discussion of site comparisons. These are mostly identified by decorated vessels as it is difficult to identify his undecorated and utilitarian work from catalogue description alone.

A new utilitarian style made by Thomas Ball which we had not previously seen had mulberry-coloured glaze and was found on 350 vessels, including 337 utilitarian and 13 medium quality. This glaze was found on 25 differently shaped vessels, including bowls (41), crocks (31), jars (39), pans (58), plates (10), dish (7), chamber pots (7) as well as fragments of a teapot (Appendix 4.1: Table 17). Mulberry or dark red glaze was the most common glaze found on utilitarian vessels, a total of 20 per cent (Table 41). Thirty-six vessels were decorated with incised (26) and rouletted (10) decoration.

The decorated vessels are a stylistic descendant of British traditional and factory-made slipware. Detailed analysis of the reasons behind this is presented in Section 4.6. While we already knew that the utilitarian lead-glazed earthenwares followed in the tradition of British country potteries and those post-medieval traditions of Surry Hampshire Borders near London, there was little comprehension of the variety of decorated wares available in Sydney nor who had manufactured them.⁶⁷

We know from historical resources that Thomas Ball arrived in Sydney in 1799 and had been trained at Staffordshire and may have worked in Warwickshire at a pottery as he was convicted at Warwick in 1796 but further research is required at both these locations to understand who he was working with and the nature of his work. Much of his decorated pottery suggests a familiarity with decorating vessels using a lathe so he could turn the vessels to roulette or incise the decoration onto the leather hard body as well as apply single slip decoration through a quill or in some cases with the aid of a nail. There is no evidence that he had exposure to developments in decorative technology of a three-coloured slip cup which was patented in 1811 which accords with the skill set

⁶⁷ Casey 1999.

he had upon his arrival in NSW in 1799. He appears to have been familiar with a single coloured slip cup but was not very skilled.

The influence of slip-style decoration on the hand-decorated vessels is derived for his clear desire not only to produce utilitarian pottery but also to produce decorated table and serving wares as well as recreational items such as smoking pipes and children's toys. This would have put him in direct competition with contemporary decorated wares, Mocha and slipped creamware and pearlware as well as early transfer printed creamwares and Chinese export porcelain imported into Sydney. The influence of both traditional and factory-made slipwares on his work, the manufacture of which was contemporary with the operation of his Pottery, between c.1801 and 1823, also probably relates to their being the cheapest decorated pottery produced in Britain. Most of the archaeological evidence from archaeological sites in Sydney during this period testifies to the presence of the other three wares but rarely slip decorated creamware or pearlware. It is likely that Ball was trying to produce the cheapest decorated vessels, pipes and toys he could to be sold during the early period of infrequent deliveries of imported ceramics and other goods on ships. The production of a unique form of clay pipes was perhaps intended for a niche market when the main local producer may have been struggling to keep up with demand.

Examination of the pottery suggests that Ball was a reasonably skilled potter but lacked some skill as a decorator or his family may have assisted with the pottery decoration, as was common in country potteries in Britain. Examination of the finer wares, those simple imitation creamwares with reeded lines with green slip found on other sites, suggest that Ball had experience as a fine potter working in Staffordshire and knew how to make refined-bodied fabrics such as creamwares or pearlwares. He was able to achieve this despite the problems he would have faced with transforming the local clays, which initially he had no expertise with, into a product which was of a fine or medium quality and about which originally we were uncertain were locally made or imported. As the quality of the decoration indicates his lack of skill with the slip decoration it is likely that he worked as a potter in the Staffordshire factory system rather than as a decorator. His familiarity with and use of horizontal patterns on hollow vessels and the use of a lathe or wheel to create them testifies that he was familiar with this type of technology and its application in decoration of hollow vessels, such as mugs and chamber pots.

His use of a single firing is also odd in terms of refined wares but was standard for country wares. The tradition of more than one firing was a development of the production of finerwares during the eighteenth century. I note that our identification of a single firing is based on the absence of biscuit fired vessels rather than clear evidence of a single firing.

The discovery of Thomas Ball's Pottery has radically changed our understanding of what was being made in colonial Sydney, the stylistic context in which he practiced his pottery manufacturing and how it may or may not have related to imported pottery available in the Sydney marketplace. Further work on this will be presented in a forthcoming publication of the pottery. For now we can begin to develop our understanding of locally-made pottery and recreational items found at other sites and begin to expand our understanding of the value placed on this pottery by residents of colonial Sydney and Parramatta.

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