Falling through the Cracks: Method and Practice at the CSR Site, Pyrmont

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This paper discusses the excavation methodology and analysis of underfloor deposits at the CSR Site, a CRM archaeological project undertaken by Casey & Lowe in late 1996. This site is located in Pyrmont, on the foreshores of Sydney Cove, not far from the earlier areas of settlement in the Rocks and Millers Point. The sets of archaeological evidence investigated are from the underfloor spaces of seven houses at this site. This paper examines aspects of the analysis of these deposits, with a focus on the detailed distribution of artefacts, the results of the analysis and our interpretation of their meaning and how this added to our understanding of working-class lives in Sydney. Some links in the archaeological process between research design, excavation, post-excavation analysis and interpretation are discussed.

CRM archaeology in Sydney and its methodologies and practices has been the subject of considerable commentary (Birmingham 1992b; Casey 1999, 2003; Connah 2003; Crook, Lawrence & Gibbs 1999; Mackay & Karskens 1999; Mayne & Murray 2001, 2003). This paper explores methodological practices and approaches to archaeological analysis at the CSR site in Pyrmont (Casey & Lowe 2000).[1] Particular issues canvassed include the excavation methodology and the design and structure of the artefact catalogue and database. The underfloor deposits of seven, three and four-roomed, two-storey terrace houses located along three street frontages are examined (Figs 1, 2, 3). Seven of the twelve houses excavated had substantial underfloor deposits with two deposits being between 15 and 20 cm deep. All underfloor deposits were contained within the house footings and were stratigraphically above each house's construction deposits.

The CSR site was the location of the second Colonial Sugar Refinery in Sydney. The refinery moved from a polluted swampy area about 3 km to the south in 1878 and was built adjacent to residential terrace housing dating from the 1860s (Casey & Lowe 2000). Many of these houses survived into the early and mid-twentieth century. This site was excavated in late 1996 as part of the redevelopment by Lend Lease Development.

An archaeological assessment was written for the site in 1996, a few months prior to the CRM excavation (Casey & Lowe 1996). A 1999 paper used the CSR buttons to describe and discuss the types of buttons found on mid and later nineteenth-century urban sites in Sydney generally (Lindbergh 1999). Pollen analysis from this site has also been discussed by Mike Macphail (1999). An archaeological honours thesis analysed the faunal material from some of the houses (Torres 1997). The excavation report was completed in 2000 (Casey & Lowe 2000).

HISTORICAL BACKGROUND

As part of the CSR excavation project a lengthy contextual history was written to provide a background for the archaeological analysis (Casey & Lowe 2000:23–57). This chapter drew on work by geographers and historians such as Alford (1984), Aplin (1982), Dixon (1976/1999), Edwards (1978), Fitzgerald (1987, 1990), Fitzgerald & Golder (1994),

Fig. 1: Location plan showing many of the sites discussed in this paper. 1: DMR site; 2: 20 Albion Street; 3: 20 Poplar Street; 4: Cumberland/Gloucester Street; 5: Conservatorium site; 6: Silknit House; 7: Bulwara Road site.

Fig. 2: Redrawing of 1892 plan houses in Areas A and C. Based on Plan of the Pyrmont Estate, Parish of St. Andrews, City of Sydney, 1st May 1892. ML M4 811.173/1892/1.

Fig. 3: View of houses within the CSR site. By kind permission of the CSR Archives.

Karskens (1997), Kingston (1988), Kociumbas (1997), Mayne (1982) and contemporary nineteenth-century government reports. This historical analysis was designed to provide an overview and critique of historical interpretations of Pyrmont in the nineteenth century as well as the lives of women and children.

The Pyrmont and Ultimo peninsula consisted of a rocky sandstone ridge which formed a spine along the length of the peninsula with numerous freshwater streams running down off the ridge. The Pyrmont end of the ridge formed two separate headlands (Fig. 1). The peninsula was granted quite early after white settlement (1788) and amalgamated into two main land holdings by prominent men in colonial NSW, John Macarthur and Surgeon John Harris. The excavation area was within John Macarthur's land grant (Pyrmont) but was immediately adjacent to those parts of Harris's estate (mostly Ultimo) that were not developed until the 1890s. Development of the northern part of the peninsula was limited until the building of the Pyrmont Bridge in 1858 provided easy walking access from the nearby wharves of Darling Harbour and Sydney city.

By 1867 Pyrmont had over 400 households, including those living in some of the houses excavated at the CSR site. Sydney's population was rapidly expanding as the wealth of the colony grew in the years after the first gold strikes in 1851 (Fitzgerald & Golder 1994:31, 42). The McCredies, a family of successful stonemasons and builders, built one of the first houses within the CSR Site, not too far from their building yards in Bowman Street (Casey & Lowe 2000:49). The Saunders family were actively quarrying in both Pyrmont and Ultimo (Fitzgerald & Golder 1994:42–45). Many of Pyrmont's residents worked in the quarries. From the 1860s a series of ironworks were established. Pyrmont was a suburb where industry lived side by side with its workers. This situation was intensified when CSR opened its new refinery on Pyrmont Point by taking over the sites of some of the early industries, including the Chown Brothers shipbuilding yard. The types of industries relocating to Pyrmont attracted skilled as well as unskilled workers. The workers had to live in close

proximity to their place of employment because it was too expensive to travel to work on public transport or too far to walk. Thus we see in Pyrmont and Ultimo the development of residential accommodation and industrial complexes in close proximity to each other in the closing decades of the nineteenth century (Fitzgerald & Golder 1994:47–49).

These changes were also responses to the development of nearby wharves and a goods rail line through Pyrmont-Ultimo which were necessary for the booming export primary industries of the 1870s and 1880s (Ashton 1990:19; Fitzgerald & Golder 1994:62). The deindustrialisation of the eastern side of Darling Harbour was responsible for the establishment of many industries to the western side in Pyrmont and Ultimo. Aside from the large industrial complexes, the 1880s saw the development of smaller scale industries which serviced the large industries, such as iron foundries. All this development tended to push out any remnant dairies or agricultural practices which were part of the early occupation of Pyrmont and Ultimo (Fitzgerald & Golder 1994:41f, 69).

The living conditions of Pyrmont with its semi-skilled workers, wharf labourers, seamen, shopkeepers, tradesmen and families were typical for the inhabitants around the southern foreshores of Sydney Harbour from Sydney Cove, Millers Point, Darling Harbour, and Ultimo to Pyrmont. The first street lighting was installed in the early 1860s and a twelve-inch water pipe was laid in nearby Harris Street in 1861 although it was not until the mid 1870s that reticulated water was generally available in Pyrmont and Ultimo. Access to sewerage was still not available in 1875. There were problems with cesspit design, filthy water closets, control of stormwater, the presence of stinking cow-sheds, poorly built housing, and lack of adequate school buildings ('Eleventh Progress Report' 1876:77–78). Brick houses were perceived to offer better conditions than older stone housing.

The association of Pyrmont and Ultimo with the wharves involved their residents in the outbreak of bubonic plague in 1900. In Sydney, 197 people caught the plague and 66 died. Eight residents of Pyrmont caught the disease and three died,

while in nearby Ultimo 14 people caught the plague and three died. These groups resided along the eastern side of the peninsula, near Darling Harbour (Curson & McCracken nd:118–126, Fig. 123, Table 5.1). The bubonic plague resulted in the forming of the Sydney Harbour Trust (SHT) which resumed the foreshores of Pyrmont and Ultimo as well as Millers Point and the Rocks. The cleansing activities undertaken by the SHT included dredging around Pyrmont Wharf, Darling Harbour and CSR wharves. The harbour had been used as a dumping ground for rubbish by nearby residents and industries (Fitzgerald & Golder 1994:68, 73).

Curson & McCraken in their analysis of the plague and its course concluded that:

> A high proportion of dwellings in central Sydney and adjacent suburbs such as Alexandria, Waterloo, Redfern, Pyrmont, and Glebe were structurally deficient, unventilated, poorly roofed, lacking in even the most basic sanitary conveniences, and with rubbish-accumulated and rat-infested basements and yards (Curson & McCracken nd:194).

Many of the residences within Pyrmont and Ultimo were demolished as new plans were made for development and expansion of existing and new industrial and commercial activity. Few of these plans came to fruition though the demolition of the late nineteenth-century housing stock has continued. The houses within the CSR land, then owned by the CSR company, were not resumed and many survived into the 1920s and 1930s.

RESEARCH QUESTIONS

As this was a CRM salvage excavation, a main concern was to find and record the most intact archaeological remains using sound methodological practices. We were also concerned to be able to adequately address our research questions. A series of modest research questions were posed at the start of the project as a means of focusing on a contextual analysis of the deposits and their assemblages (Black & Jolly 2003:3, 12, 17; Casey & Lowe 2000:3). This type of analysis is frequently missing in excavation reports for urban sites in Sydney (Lawrence 1999:9, 14). During the writing of the report and using the results of the archaeological program the research questions were refocused onto ones which allowed us to explore the archaeological evidence in a contextual and analytical manner. The question relevant to this paper and its background are as follows:

> The material culture associated with the nineteenth-century occupation of the CSR site has the ability to inform us about day-to-day issues associated with the lives of the residents of Pyrmont. The material culture can provide information on living standards, consumer choices, construction of gender identity and the nature of childhood. Therefore interpretations of material culture of the CSR site should add to our understanding about the social and economic influences on the residents of Pyrmont and how these influences affected their behaviour, as manifested through their choices about:
>
> • where activities were undertaken within a house,
>
> • what type of activities were undertaken within a house,
>
> – what, how and where to eat,
>
> – what to wear,
>
> – what was acceptable recreation for adults and children within working-class homes?
>
> – what to buy (Casey & Lowe 2000:3, 225).

These questions were designed to achieve an understanding of the site on a local scale, specifically the nature of the archaeology at the site and what it represented in terms of people's lives. Local questions are important for gathering evidence relevant to the city, to begin to develop an understanding of the resource and its meaning on its own terms. While many local archaeologists have a well-based understanding of the likely archaeological resource to be found on Sydney's urban sites it has not been written about in any great detail or depth. Attention to local issues can contribute to far-reaching analysis and interpretation that can change our understanding of the local with its implications for boarder scale actions, such as British imperialism, identity and power (Casey 2002).

Interpretation in Archaeology

The interpretation of archaeological evidence has been under debate in all fields of archaeology and no more so than in historical archaeology (Walker 1967; Beaudry et al. 1991:152; Hodder 1992:184, 1999; Wylie 1989:19; Hodder & Shanks 1995). There is no space in this paper to discuss interpretation in archaeology in detail but as an examination of the role of the archaeologist as interpreter underlies this paper, particularly in terms of excavation and artefact catalogues, analysis, and their interpretation and the type of questions posed, a number of points should be made.

Hodder and Shanks (1995) and Hodder (1999) identified aspects of an interpretative archaeology which are relevant to this paper concerning issues such as functional attributions to artefacts, the importance of minimum vessel counts and how we interpret archaeological evidence by trying to find out what it means. It is important for archaeologists to make their role as interpreter explicit as it is a 'material practice' of the present which produces knowledge, stories, and texts from the residues of the past. The aim of an interpretative archaeology is to make sense of things by producing meaning. Interpretation is ongoing as there is no 'final or definitive' explanation of the past and it is therefore multivocal by allowing for different interpretations of the past which may arise (Hodder & Shanks 1995:5). Hodder (1999:67–68, 92–94) and others have observed that many aspects of archaeology which have been considered objective observations are affected by interpretation, whether it is how we decide where a layer begins or ends, which post holes make up which structure, the shape of a pot or what is important when we look at an archaeological section.

DEVELOPING OUR APPROACH

Excavation Methodology

To address the research questions in a meaningful way we designed a series of methodologies that would allow us to explore as much of the site as possible within an eight-week excavation timeframe and enable us to collect data that we considered to be meaningful to our research questions. The chosen methods determine the data that are collected (Black & Jolly 2003:21) and are therefore interpretation dependent (Hodder 1999:52). The methodologies anticipated a model of archaeological potential where we would find the footings of the houses and their demolition deposits, cesspit and underfloor deposits, yard deposits and pits, and outbuildings as well as other structures in association with the former landscapes of streets which still survived within the site.

The typical excavation strategy for our urban sites for the last 12 years was one adopted for both single and multi-house sites. It focused on the whole house and yard area so as to

maximise information based on individual house sites and then the whole set of information from each site could feed into a neighbourhood approach. In this way the various levels of analysis could be linked into each other and provide a solid basis for a comparative approach across sites within the city; by moving from analysing a house site, to neighbourhood, and then to the city-site (Beaudry 1984; Rothschild 1987; Staski 1987; Lawrence 1999:10; Crook, Lawrence & Gibbs 2000:26) and was the product of a series of small excavations undertaken by Casey & Lowe in the Rocks (Observer Hotel), Millers Point (Darling House), Pyrmont (Bulwara Road), Kirribilli (Greencliffe), Haymarket (Old DMR site) and Surry Hills (20 Poplar Street, 20 Albion Street).[2] The excavation strategy was fully formed by the time we excavated the CSR site, Pyrmont. The basis of our field technique was open area stratigraphic excavation, the use of machinery to remove twentieth-century overburden and demolition deposits where they were extensive, detailed recording and stratigraphic excavation of deposits (Casey & Lowe 2000:1).

We developed our research questions in tandem with our methodologies and as part of this process we reviewed methodologies and research questions on other urban archaeological projects in Sydney. Part of this review concerned the status of gender research in urban archaeological projects as presented in a paper at the third Australian Women in Archaeology Conference in 1995 (Casey 1998). Further aspects of this review were presented at the 1995 ASHA conference in Hobart and in a seminar at the University of Sydney in May 1996 (Casey 1995). A series of problems were identified with the reports under review; they had not used methodologies that made it feasible to undertake comparative analysis without considerable additional analysis and research. These reports had not included a detailed synthesis of results but had presented trench reports without any overview and there was rarely any analysis of the artefacts or significant assemblages. Frequently these circumstances resulted from a combination of lack of funding, a parallel lack of statutory power and an absence of a research focus from the consultants (Casey 1995). Others have also identified these issues (Lawrence 1999; Mayne & Murray 2001; Crook, Lawrence & Gibbs 2002:28).

Basic requirements were identified for archaeological reports that are essential for comparative analysis between sites: writing a clear synthesis of the excavation results, preferably house by house and property by property; identification of significant deposits; a reasonable level of analysis of the artefacts from individual contexts; the use of minimum vessel or item counts when cataloguing the artefacts from all sites; a computer database; and a detailed response to the research design. This approach informed our work as early as 1993; it arose from our focus on comparative analysis, of contexts within a site and between sites, and an insistence on making it possible to compare any of our urban sites with each other (Casey & Lowe 1994). The importance of site comparability is an issue of concern to others (Crook, Lawrence & Gibbs 2002:26) and requires a focus on artefacts within their context rather than simply as 'fetish' items (Lawrence 1999:10).

The artefact catalogue and the computer database

An artefact catalogue is a list or inventory of the artefacts found at a site or present in a collection. A catalogue is frequently undertaken to support the analytical program of the archaeologist and is the basis of the analysis of artefacts for an archaeological program (Ewen 2003:29, 32). In an historical archaeological context the identified themes will include site information, material, form, technology and more detailed information such as functional criteria (Crook, Lawrence & Gibbs 2002; Ewen 2003).

An essential part of establishing a database structure for comparative analysis at a single site and between sites was to develop one with comparability as the underlying premise. Until 1997 we used single site databases in Microsoft *Access* but at this point we had a multi-site database designed to our specifications. The database design and analysis we had been involved in since 1992 provided a solid basis for developing a more sophisticated cataloguing database system. A second database was designed in association with Sarah Colley for the faunal material. This produced two stand-alone databases. These databases have been modified during the succeeding years to incorporate new fields to accommodate additional kinds of interpretative information in the database.

While it is all well and good to get a database professionally designed it is absolutely essential that archaeologists have a series of principles underlying the structure and the desired outcome and hopefully the cataloguing methodologies have been tested. The archaeologists must know what types of information they want to extract at the end of the process. It was also important to recognise that within the constraints of the practice of urban archaeology in Sydney there is only really one opportunity for the consultant undertaking a project to look at the artefacts, during cataloguing, and we needed to learn as much about them as we can at that time.

A set of criteria were developed by general reading on database design, our previous experience with site databases, undertaking a basic course in designing computer databases, as well as detailed discussions with the database consultant, the Archaeological Computing Laboratory, University of Sydney. The following criteria underlie the choices made in the design of the main artefact database and draw on a range of influences. It had to:

1. Be structured to contain data from all of our current and future sites to assist with comparative analysis between sites.

2. Be based on identifying minimum item/vessel counts but also include sherd counts.

3. Have an easy front end form designed for data entry.

4. Use pull down tables for consistency of entry to avoid spelling mistakes and typos.

5. Have as much of the data as possible in searchable fields, i.e. it had to be entered into individual fields rather than in a single general description field which could not be easily searched.

6. Be based in a database package that was freely available on the market and could be continuously upgraded as opposed to Minark, a database then in use on a number of projects in Sydney.

7. Be relational and relatively easy to use.

8. Allow for reasonably complex queries to be performed.

9. Be flexible to permit upgrading of features as the research program requires.

While this type of database is now easily accessible it was not always the case and many sites in Sydney were on databases that were difficult to use and not compatible with each other. This problem is less likely these days with compatibility more commonly found in databases.

We had spent the previous four years developing our cataloguing system. It should be noted that Tony Lowe, the co-director of Casey & Lowe, was a specialist building materials cataloguer on projects such as First Government House Site (Season 2), Babes in the Woods and Westfield, Parramatta. We had both worked on cataloguing but it was as writers of

excavation reports that we were primarily addressing the artefact catalogue and its structure. How was it to be used to produce information that would address evolving sets of research questions and allow for a wide range of analysis?

The fields used in the main artefact database, as current in July 2004, belong to the following main categories:

1. Site and locational information (Table 1)
2. Cataloguer's Name and Specialist Area
3. Catalogue Fields (Table 1)
4. General Comments/Description field
5. Type series, used for certain items, local and imported lead-glazed pottery, slipped pottery; glass bottles; numerous miscellaneous items, mostly buttons, beads, etc. Definitely not used for mass-produced ceramics as this can be produced using queries on various sets of the data if warranted.
6. Evidence of reuse, such as ceramics re-cut as tokens, material stored inside a bottle other than what it would have been originally purchased with, such as paint, turpentine etc, and other evidence.
7. Associations with adults, children, female or male if this was considered likely, such as children's toys, men's trouser buttons. This category is typically filled in during the analysis stage to bring out specific issues we are interested in at individual sites.

Further aspects of the use and design of this database will be discussed below. It is important to realise that a database and a catalogue are tools. A good database and catalogue is likely to be a mix of descriptive and interpretative approaches. Hodder (1999:67–68) has suggested that cataloguing is more interpretative than previously thought as it involves 'selection, judgement and interpretation'. It is not a fixed structure as it needs to be tested and modified on subsequent projects in innovative ways and in consultation with specialist cataloguers. As previously mentioned the cataloguing system was designed to store data from multiple sites and to provide a basis for a comparative analysis between contexts or assemblages or rooms, as well as houses and sites.

The issue of cataloguing guidelines had been raised in various venues at seminars and conferences, and in print (Crook, Lawrence & Gibbs 2002; Brooks in press; Ewen 2003). These should be minimum standards as criteria that are too prescriptive hamper archaeologists rather than advance their analysis (Ewen 2003:29). Part of the failure of the process in NSW is that the statutory authority has not yet been able to establish these guidelines (mainly due to lack of resources) in consultation with the archaeological community. There is clearly some debate about what is necessary in an artefact catalogue (Brooks in press; Crook, Lawrence & Gibbs 2002; Ewen 2003) but the range of criteria catalogued will in many ways be a response to a research design and the type of questions archaeologists are likely to ask of their data or consider that their data is capable of answering (Ewen 2003:33).

Functional Analysis

Identification of the functional aspects of all categories of artefacts, where possible, is an essential component of our cataloguing system. South identified sets of artefacts associated with historic period activities, such as food processing, household and military groupings and which have been advanced and expanded (South 1977; Majewski & Schiffer 2001:30). Identification of the likely functions of the artefacts is the next step after identification of fabric, form, technology and dating (Worthy 1982:337–338; Beaudry et al. 1988:52). The use of functional categories is the basis of moving from the artefacts to the people who chose, purchased, used and discarded them. Beaudry et al., focusing on Chesapeake ceramics, used functions to 'systematize the chaos…in a way that will make the cultural dynamics behind them more accessible' (Beaudry et al. 1988:51). They sought to produce a 'functional typology' and identified three aspects of vessels which seventeenth-century residents of the Chesapeake considered significant: shape, size and ware. These three characteristics were considered to be ones which 'mediated people's everyday interaction (behaviour) with' the objects described and were therefore a suitable basis for

Table 1: Detailed list of date entry fields for site and locational information, and cataloguing fields used in Casey & Lowe's artefact database.

General Category	Detailed Categories
Site and locational information	• Site name and address • Excavation area names • Grid/square reference • House number • Room number • Context number • Individual context square number in an underfloor deposit grid • Spit number • Box number the artefact is located in

Catalogue Fields	• Catalogue number, different for each item and between sites
	• General category of material being catalogued: building material, ceramic, glass, shell, metals, miscellaneous
	• General function/Specific function/Shape
	• General description fields:
	    fabric, portion, colour, country in which item was manufactured, product, manufacturer, product, presence/absence of marks
	• Pattern series for ceramics:
	    pattern number or name where known, type of decoration
	• Join (conjoin)
	• Minimum item (vessel) count
	• Sherd count
	• Measurements:
	    rim diameter, dimensions, weight
	• Date range:
	    from and to dates and an indication if uncertain of date

building a 'functionally sensitive typology' (Beaudry et al. 1988:53). It was Beaudry's work on the Chesapeake probate inventories that led to the development of a conceptual framework for exploring ceramics (Beaudry 1988; Yentsch 1990:24).

Many of the elements of a functional system relate to the anthropologically observed stages through which food passes. Yentsch (1991:27) in her work on the Chesapeake, borrowing from Mary Douglas (1986), identified five stages through which food was transformed: procured, prepared and stored, distributed, consumed, and discarded (1990:25). These steps involved different spaces and labour requirements. Yentsch was concerned to identify how these phases had both functional and symbolic aspects. To understand the 'food domain' it was essential to use minimum vessel counts and identify the shape of vessels and then see how they fit within the individual stages of the food domain (Yentsch 1990:25). By exploring functional aspects of vessels Yentsch hoped to elucidate changes in social practices associated with food and vessels as a means for perceiving shifts in the food domain. Yentsch adopted the vessel typology established by Beaudry et al. but also modified it in ways relevant to her study.

Ceramics found at a site, prior to the development of functional approaches, were mostly used to date stratigraphy by producing Mean Ceramic Dates, and a list of ceramics from the site may also have been provided (Yentsch 1990:24). While some archaeologists argue for caution in the use of functional categories on grounds of cultural relevance (Brown & Cooper 1992:7), and others argue against their use because an item may have had multiple uses (Griffiths 1978; Majewski & O'Brien 1987:183–186; Brooks in press) or that function does not necessarily follow form (Majewski & O'Brien 1987:184), its applicability depends on how you approach your project and the flexibility of the categories.

With respect to ceramics Majewski and O'Brien warn of the need for caution in relating behaviour to ceramics but consider that 'more effective use will be made of the archaeological record' if four issues inform the analysis. There is a need to understand 'how ceramic materials are introduced into a site'. Adoption of appropriate 'classification systems' depends upon the specific type of archaeological project. An awareness that the shape of a vessel does not mean this was its intended or actual use. Fourthly, the need to consider the 'processes' through which an artefact passes as 'it proceeds through the cultural system' (Majewski & O'Brien 1987:186). Ewen's (2003:52–53, 72–75) discussion of the use of functional analysis noted many of the above issues but observed its value was in determining the primary use of artefacts. South acknowledged the issue of alternative uses as early as 1977 when discussing his functional categories (South 1977:95–96). Attribution of artefacts to specific functions is a means of establishing order within the assemblage with specific social and cultural contexts. It should not be designed to limit the alternative interpretations of the use of the site. Functional analysis is essential to shifting the focus from the artefacts to the people who purchased, used and disposed of them.

Our approach to functional analysis is to catalogue items in a series of functions established at the beginning of a cataloguing project and then to actually test it during the analysis stage of the work. Single functional categories are attributed where possible to artefacts because choices and decisions need to be made. These categories are not assumed to be static but with any database, decisions need to be made and the constraints of consulting mean that they need to be made at the main and usually the only opportunity—prior to and during the cataloguing stage.

When analysis is being undertaken we begin to question the chosen categories, how useful they are, do they fit the

pattern being revealed, should they be re-examined from another perspective, is something missing? For example the typical grouping of pins could be as household/sewing, buttons would be personal/clothing and beads could be personal/adornment as beads are found on dresses, bags, in jewellery, rather than just on a single type of clothing or accessory. Yet at certain sites they need to be reconsidered, as all three artefact types could be present is association with sewing as a cottage industry and could be reclassified as commercial sewing. Functional categories are only a problem if the archaeologist undertaking the analysis is not flexible enough in their thinking or is unaware of the likely patterns of an expected corpus of material, and does not incorporate appropriate levels of understanding of the range of possible social and cultural dynamics of a site.

The creation of a type series for early locally-made ceramics from the DMR site involved throwing out all assumptions about use and exploring functional criteria from a zero base (Casey 1999). New South Wales, in contrast with the Chesapeake (Beaudry et al. 1988), does not have early detailed probate inventories to assist with understanding the contemporary identification of vessel forms and functions. In the case of the DMR site, and our ongoing expansion of the early pottery type-series, a limited group of sources was used to identify vessel shapes and possible functional categories: advertisements for the pottery in the *Sydney Gazette*, published catalogues from later nineteenth-century potteries, various historical texts and published comparative archaeological evidence from Britain and the USA. This formed the basis of the list of shapes and their functions (Casey 1999: Appendix 2). The purpose of the work was to provide a social and cultural context in which to analyse the early locally-made pottery forms without imposing modern assumptions. This was the first such attempt at this type of context analysis in Australia for forms that have no modern parallels, unlike most of the imported British ceramics and even Chinese export porcelain.

While there has been discussion that re-use or possible multiple uses makes it difficult or impossible to determine functions with any accuracy (Carney 1999; Brooks in press; Majewski & O'Brien 1987:183–184), our approach is that these items were bought for a specific use, they were designed for a specific or limited range of uses and most often they will probably be used for this specific purpose. Evidence for different uses are likely to be observed from an examination of the artefacts, their context, the assemblage from which they came and use-wear evidence. While this information can be interesting and revealing, this is the 'end use' of the artefacts not the reason why they were purchased for household use.

Minimum Vessel Counts

The use of minimum vessel or item counts on urban sites in Sydney has been limited, but we consider it to be crucial. As Lynne Sussman (2000:96) explains, 'you cannot understand your site unless you view the artefacts as garbage (sherds); you cannot understand the occupants unless you view the artefacts as possessions (objects)'. Sussman exposed the lack of statistical validity of proposing that sherd counts are the equivalent of minimum item or vessel counts. Sussman noted the clear difference between sherd and item counts observing the 'surprise lay in the degree of the differences that resulted when the same material was counted as sherds and as objects…for any serious research purposes, sherd counts cannot be used as substitutes for object counts' (2000:103).

We calculate minimum item counts (MIC) in the same way as minimum vessel counts (MVC) but apply it to more than vessels i.e. pins, beads, marbles, nails etc. We use the subject-assessment method where various types of ceramics

are sorted by fabric, decoration and shape, conjoins or cross-mends found and then minimum vessel counts identified (Noel Hume 1968:267–268; Majewski & O'Brien 1989:88).

The use of minimum vessel counts and functional categories enables historical archaeologists to move from sherds to vessels; to understanding the role of these items in people's lives and why items were purchased by individuals, as well as changing social and cultural patterns in geographically and temporally different places (Beaudry et al. 1988; Yentsch 1990, 1991; Casey 1999). Such methods allow inter and intra-site comparisons (Casey 1999:13, Table 7). If sherd counts are used the evidence is more biased by depositional processes which do not relate to the use-life of the artefacts. Comparison between sites becomes more meaningful once this bias is removed.

Pattern Series

Archaeological sites in urban Sydney contain thousands of sherds of imported British ceramics, especially those occupied during the middle and later nineteenth century. These sherds are predominantly transfer-printed whiteware. While many of the patterns have names assigned by their manufacturers many others do not. Other patterns are without marked names or manufacturers. To retain this information and make it accessible a pattern series or image database was created of all the different patterns, named and unnamed, found on sites. During cataloguing ceramic pattern information was grouped into two fields, decoration and pattern. In the decoration field a code for the type of ceramic decoration was identified, i.e. blue, red, green, purple transfer print, annular, mocha etc. In the pattern field the pattern name was written or where the name was unknown a sequential number was given, i.e. bltp1, bltp2, bltp3. If the pattern name was found later the number could be corrected with the new name.

Each pattern was scanned into the image database and annotated with a file name identical to the pattern series name/number. Hard copies of these images were printed to provide a reference for cataloguing and as a means of updating the database with the names of new patterns. Printing these images removes the need to physically retain the pattern series as a reference collection from different sites and reduces the physical storage space to currently three folders in two locations as well as the digital version.

Through the pattern series a range of information can be gathered on ceramic patterns and personal choices, preferred patterns and colours, types of patterns, stylistic influences such as neo-classical design on ceramic patterns, the number of patterns found in different colours, as well as patterns which are rarely found. The pattern series is another means we have adopted to create order among the disorder of thousands of ceramic patterns to begin to make sense of these data for the individual site, across sites and the city and to further our understanding of the ceramic market itself. The type and colour of transfer-printed patterns as well as other kinds of decoration influenced choices in ceramic purchases and are important to understand when reviewing issues affecting consumption or manufacture. There has been little examination of this type of information within the context of sites in Sydney or in the rest of Australia.

THE CSR SITE

Excavation

Twelve houses were excavated in five areas within the CSR site. Archaeological deposits from seven of these houses are discussed below. This discussion centres on the underfloor (sub-floor) deposits found within them as these were the most substantial archaeological deposits. All but one of the eight cesspits found were backfilled with sterile deposit. No rubbish pits were found excavated into the rocky ground. It is likely that the vacant areas of the nearby Harris Estate were a suitable place to dispose of household rubbish (Casey & Lowe 2000a). Such practices have been found on other sites (Casey & Lowe in prep.).

All underfloor areas were grided with a 50 cm grid located square to the walls and excavated in 5 cm spits (arbitrary division of a deposit). One hundred per cent of the underfloor deposit was wet sieved through nested sieves with 5 and 2 mm mesh. Recording forms were designed with a grid, onto which were sketched the layout of the room, showing how many grids were contained within the room. The location of known doorways or thresholds, fireplaces and probable windows, based on the presence of window glass, were marked. Levels were taken and notes made as each grid square was excavated. Sieving forms were designed to record the nature of the matrix, quantities of charcoal, eggshell, fish scales and other material that we chose to sample rather than fully collect. All artefacts were labelled with the context number, spit number and grid reference.

Post-excavation study involved cataloguing artefacts using a minimum item count (MIC) as well as sherd counts. Cataloguing included recording all the grid data collected during excavation, general description and dating information as well as a functional attribution which subscribed probable uses to items we considered related to actual uses (Table 2). Conjoining sherds (cross-mends) were identified. Experienced cataloguers were used for all categories of artefacts: ceramics, glass, metals, miscellaneous (buttons, beads, pipes, jewellery etc.), building materials, organics and faunal remains. We emphatically endorse the use of specialist cataloguers which is in general practice in Sydney (Bickford 1993; Godden Mackay Logan 1999; Higginbotham 1990a, 1990b, 1992) but not universal. If we are to make full use of the artefactual evidence we need to have specialised knowledge, building on developed expertise, focused on the artefacts to apply as much rigour and accuracy to the subsequent analysis and response to the research design. Others have expressed similar concerns about the use of non-specialist cataloguers (Crook, Lawrence & Gibbs 2000; Ewen 2003:8).

Comparative Sites

Underfloor deposits have been studied at a number of comparative sites in Sydney: i.e. Paddy's Market Site (Godden Mackay & Thorp 1993), Darling House (Casey & Lowe 1994), Greencliffe (Casey & Lowe 1995a), Cumberland/Gloucester Site (Godden Mackay 1999), Jobbin's Building (Lydon 1993b); and also in Melbourne (Murray & Mayne 2001, 2003). Literature published in *Historical Archaeology, Australasian Historical Archaeology* was reviewed for how comparable deposits had been excavated, analysed and interpreted. These added to our knowledge of typical strategies on sites in Sydney and other urban and rural Sydney sites. They are a predictable aspect of the archaeological resources on eighteenth and nineteenth-century urban sites in Australia.

Such deposits in the United States are typically called 'sub-floor' and appear to be rarely found or not analysed in detail. In one case it was suggested that these types of deposits were not significant as they contained unimportant artefacts such as pins and shot (Majewski & O'Brien 1987:185). South (1977) and Tordoff (1979) call them '"primary de facto" refuse' deposits. One reason why this type of deposit is not typically found in the USA is the presence of cellars underneath houses (Jeanne Harris pers com.). In Sydney

Table 2: List of minimum item counts (MIC) of the main specific or sub-functions of artefacts found in underfloor deposits in House 15. Does not include all categories (see Table 3).

General Function	Specific Function	Front Room Context 17	%	Kitchen Context 18	%
clerical	writing	3	3	123	3.6
economy	currency	-	-	13	0.4
food	condiment	-	-	38	1.1
	container	-	-	4	0.1
	food	-	-	4	0.1
	serve	-	-	2	0.1
	store	-	-	4	0.1
	tableware	-	-	66	1.9
	tableware/serve	-	-	1	0.0
	tea	2	2	75	2.2
food/alcohol	closure		-	1	0.0
food/ pharmaceutical	container		-	2	0.1
household	furniture	1	1	6	0.2
	furnishing	-	-	20	0.6
	ornament	-	-	9	0.3
	security	-	-	3	0.1
	sewing	24	23	1613	47.1
personal	access	-	-	5	0.1
	adorn	37	36	579	16.8
	clothing	17	17	566	16.5
	groom	2	2	14	0.4
	jewellery	2	2	29	0.8
	religious	-	-	2	0.1
	time-keeping	-	-	3	0.1
	unidentified	2	2	-	0.0
pharmaceutical	medicine/toilet	-	-	9	0.3
recreation	game	-	-	3	0.1
	hunting	-	-	2	0.1
	smoking	2	2	35	1.0
	toy	9	7	197	5.8
	Total	**97**	**99**	**3428**	**100.1**

cellars are only usually found with larger houses or on rural sites in New South Wales and rarely within an urban terrace house in Sydney.

Model for Underfloor Deposits

The working hypotheses for the formation of underfloor deposits at urban sites in Sydney are:

1. They occur with butt-boarded floors and therefore are predicted to be found in houses dating earlier than the late 1870s and 1880s.

2. They rarely occur with any density after the introduction of tongue-and-groove floorboards and are predicted not to occur in houses dating after the c. 1880s.

3. There may be other gaps in the butt-boarded floors, such as where holes have opened after knots have fallen out of the floorboards.

4. They may collect in corners or along wall edges where there may be a gap between the end of the boards and the wall.

5. Washing of kitchen floors assists with the development of gaps and holes in the floorboards.

6. They occur most frequently in kitchens where there appear to be no floor coverings.

7. Only small deposits collect in the front rooms suggesting the common presence of floor coverings as well as less frequent use of this space and therefore limited opportunity for these deposits to form.

8. Some artefacts will be deliberately placed within the floor cavity but many artefacts will accrue accidentally through loss of small items during day-to-day activities.

9. Cats and rats are also likely contributors to the deposition within these areas.

10. They relate to the whole occupation period of the house, until the butt-boarded floors are replaced by tongue-and-groove floorboards or floor coverings, such as linoleum, are laid onto the kitchen floors.

11. The presence of stone floors will inhibit the development of such deposits.

12. Not all deposits will fit the above criteria.

Further it is considered that:

13. The occurrence of underfloor deposits in kitchens is significant and revealing of the range of activities undertaken within a kitchen.

14. These types of deposits also form in the spaces between the ceilings and floorboards of the upper levels of houses.

15. Sweeping will disturb some evidence of the spatial relationships between the artefacts and the use of the spaces but not to such an overwhelming extent as to destroy the significance of spatial information contained within these deposits.

16. Underfloor deposits need to be excavated in a spatially coherent manner and sieved to collect tiny artefacts, such as beads, pins, jewellery, rodent and fish bone, and to fully explore the archaeological information contained within these deposits.

Hypotheses 1, 2, 6, 7, 8, 9, 10, 11, 13, 15, and 16 were tested on a series of Sydney sites (Casey & Lowe 1994, 1995a, 1995b, 2000, 2002a) and are generally found to be accurate predictors of likely archaeological deposits.

Approach to Analysis—Underfloor Deposits

To be able to respond to the research question previously outlined, a series of analyses were undertaken. The initial focus was to understand how various depositional issues associated with the underfloor deposits could be approached. The quantities of artefacts from each of the underfloor deposits from the houses were mapped (i.e. Tables 3, 4) into a table form that allowed for quantification but within a grid layout illustrative of the distribution patterns from each underfloor deposit.[3] The structural elements in each room, fireplace, windows and doorways, were added to the table to assist with spatial interpretation.

Table 3: Distribution of all artefacts (MIC) (excluding window glass, bone and shell) found in Context #18, kitchen (Rm 2) underfloor deposit, House 15 New Street.

#18	A	B	C	D	E	F	G	H	J	Total	%
1	55	56	60	101	354	207	303	50	12	1198	33
2	31	55	101	112	349	243	307	180		1378	38
3		1	30	29	58	135	130	122		505	14
4		5	15		34	14	35	71		174	5
5			45	65	12		2			124	3
6	28	40	35	17	8	4	1	15		148	4
7	20	30	4	6	1	1	1			63	2
Total	134	187	290	330	816	604	779	438	12	**3590**	99
%	4	5	8	9	23	17	22	12	0	100	

◻ Fireplace – approximate
▬ Position of window – approximate
▬ Position of doorway – approximate

→ N

Table 4: Spatial distribution of sewing (1613), clothing (566), beads (570) items in context #18, kitchen underfloor deposit, Area A, House 15 New Street. (Room within footings, 3800x3200 mm)

#18	A	B	C	D	E	F	G	H	J	Total	%
1	29	42	35	77	334	174	205	42	5	943	34
2	11	33	73	85	287	208	249	161		1107	40
3			16	21	37	113	101	96		384	14
4			8		24	3	23	48		106	4
5			28	53	7		1	14		103	4
6	17	26	26	5	4	2				80	3
7	12	10		4						26	1
Total	69	111	186	245	693	500	579	361	5	**2749**	100
%	3	4	7	9	25	18	21	13	0	100	

◻ Fireplace – approximate
▬ Position of window – approximate
▬ Position of doorway – approximate

→ N

These data were integrated to assist in understanding patterns relating to the structural elements of each room, i.e. near the fireplace or window and the absence of artefacts behind the door. Through this technique each of the kitchens could be analysed within themselves and then compared to each other based on natural and artificial light, egress and other features or patterns deemed to be significant.[4] In this way it was hoped that activity areas would be revealed. As part of this analysis a series of different functional groups and their sub-function categories were analysed to explore the nature of these activity areas. As the following discussion will reveal the artefacts found in the kitchen were predominantly linked to women's and children's behaviour. The following discussion will focus on House 15 New Street which had the most extensive deposit but also contained some surprising aspects that were atypical when compared with six other houses and their kitchens.

ANALYSIS OF UNDERFLOOR DEPOSITS AND SEWING-RELATED ARTEFACTS

All excavated houses were numbered with their street number to facilitate discussion and incorporation of information about known occupants from the council rate assessments and street directories. Room 1 was always the front room and Room 2 was the kitchen. All of the seven houses analysed had two storeys, and most had two rooms downstairs and one room upstairs. These seven houses were built in sandstock brick with stone foundations within a ten-year period between 1865 and 1875. There was sufficient evidence from the surviving fabric to determine the position of the fireplace and doorways in each room (Fig. 4). All rooms were built with fireplaces, walk through access from the front door into the front room, then through to the kitchen and then into the rear yard. There were no hallways and all yard areas were small. Typically the kitchen (Room 2) underfloor deposits contained a much greater quantity of artefacts than the front room (Room 1) of the house (Table 5).

Analysis of the underfloor deposit revealed a heavy concentration of artefacts adjacent to the western wall of the kitchen which had an external doorway and window (Table 3). Within a metre of this wall more than 71 per cent of non-faunal artefacts were found and 85 per cent were within 1.5 m of the wall. This pattern appears to be centred on the presence of the window and doorway and possibly with some lesser influence from the fireplace.

The concentration of artefacts near the window and doorway was replicated in the six other kitchens with substantial deposits that were the subject of detailed analysis (Houses 17, 19, 21, 3, 5, 7) but rarely to the same degree (Casey & Lowe 2000:vol 3, tables 28,1, 28.3, 28.5, 37.5, 37.7, 37.9). In most cases the artefacts were concentrated around the doorway more than the window and in House 21, 84 per cent of all artefacts were close to the doorway. All of the doorways and windows of the kitchens in the seven houses analysed were oriented to the west where they would get light from the strong afternoon sun. This type of sun is typically considered undesirable because of the associated heat of a Sydney summer but for sewing it would be a good and free source of light flooding into an otherwise dimly lit house.

In the kitchen of House 15 the spread of sewing and clothing-related artefacts and glass beads were examined to determine how they related to the overall artefact pattern. There were some minor fluctuations in the pattern when the overall percentages for each line of the grid is examined but these reinforce this pattern as being created by the use of sewing and clothing-related artefacts because 88 per cent of artefacts now fall within 1.5 m of the western wall or

Fig. 4: View to southeast over the house and yard footings in Area A. House 15 is left foreground. Area following removal of demolition but prior to the excavation of the underfloor deposits.

alternatively 80 per cent are within the 1.5 m of the doorway (Table 4).

One of the dominant artefact groups was related to sewing/clothing, and this was particularly so in House 15. The spatial analysis of the sewing/clothing artefacts was suggestive of a focus of activity around the rear doorway and window area along the western side of the kitchen (Table 4). There is some limited dispersal of these artefacts in front of the fireplace which may indicate occasional use of this light source for sewing, possibly in association with lamp light. Most the rooms were too small to have a table in the centre and it would have been placed against one of the walls. The kitchen in House 15 was the largest one found at the CSR site at 13.2 sq m (4.10 x 3.22 cm) with the one in house 5 being as small as 6.3 sq m (Casey & Lowe 2000:68, Table G).

But how does the sweeping of floors affect the distribution patterns of artefacts within the kitchens? What would be a typical pattern of sweeping, perhaps towards the doorway and perhaps some localised sweeping near the fireplace where there may be ash or cinders which should not be spread over the whole floor. If sweeping towards the door was crucial then the pattern in House 15 should reveal a stronger collection of artefacts in the immediate area of the doorway (Tables 3, 4). Yet the concentration is more between the doorway and the window. In addition this distribution along the western wall should not have been replicated in all of the houses as sweeping patterns would be influenced by the presence of obstacles (furniture) in each room. If there were pins, buttons, beads and hooks-and-eyes visible on the floor many could have been picked up prior to sweeping rather than being deliberately swept between the gaps in the floorboards as they would have been basic tools of trade and perhaps were too valuable to be knowingly sweep away, rather than accidentally lost. While there must surely be some influence from sweeping it is not considered sufficient to affect the overall pattern so markedly although this evidence needs to be used with caution and tested elsewhere.

Table 5: Range of general functions found in the underfloor deposits in the front room and kitchen of four houses in Area A.

General Function	House 15				House 17				House 19				House 21			
	Kitchen 18		Front Room 17		Kitchen 15		Front Room 16		Kitchen 13		Front Room 14		Kitchen 11		Front Room 12	
	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%
alcohol	13	0.4	1	1	6	1	-	-	6	0.8	3	5	5	1.2	1	2
alcohol/food	1	-	-	-	1	-	-	-	-	-	-	-	15	3.5	-	-
architecture	89	2.5	7	6	17	3	3	19	20	2.7	9	15	-	-	9	14
beverage	13	0.4	1	1	14	3	-	-	8	1.1	-	-	4	0.9	2	3
clerical	123	3.4	3	3	38	7	1	6	91	12.1	7	11	24	5.6	-	-
economy	13	0.4	-	-	10	2	1	6	5	0.7	1	2	1	0.2	2	3
food	194	5.4	2	2	83	16	3	19	136	18.2	6	10	78	18.3	13	21
food/alcohol	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
food/pharm	2	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-
household	1651	46	24	21	59	11	2	13	23	3.1	1	2	66	15.5	8	13
h'hold/pharm	-	-	-	-	-	-	-	-	1	0.1	-	-	-	-	-	-
personal	1196	33.3	59	53	225	43	4	25	349	46.6	25	40	159	37.2	17	27
pharmaceutical	9	0.3	-	-	2	-	-	-	7	0.9	-	-	6	1.4	2	3
recreation	237	6.6	11	10	45	9	2	13	85	11.3	3	5	63	14.8	8	13
service	4	0.1	-	-	2	-	-	-	2	0.3	1	2	-	-	-	-
yard	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
unidentified	43	1.2	4	4	17	3	0	0	16	2.1	5	8	6	1.4	1	2
Total	**3590**	**100**	**112**	**101**	**520**	**100**	**16**	**101**	**749**	**100**	**62**	**102**	**427**	**100**	**63**	**101**

Comparison of three main types of sewing-related artefacts, pins, buttons and beads, from the kitchen of House 15 with six nearby houses reveals surprising differences (Tables 6, 7). The kitchen in House 15 contained 50 per cent of the main types of sewing-related artefacts found in these seven houses (Table 7), including 81 per cent of pins, 35 per cent of buttons and 28 per cent of beads. Only House 3 had anything similar in bead counts. Most of the houses had between 40 and 140 pins, 50 and 175 buttons and 80 and 200 beads. These were markedly smaller numbers than found in House 15 which had 1596 pins, 397 buttons and 570 beads.

The kitchen in House 15 contained 35 per cent of the buttons from the seven houses. Many of these buttons (100+) were 2-piece dome type buttons which would have been covered with fabric. These were more typical of women's clothing, notably sleeves, jackets, front of dresses while men's clothing had mother-of-pearl or bone buttons for shirts, brass buttons for jackets and occasionally studs or solitaires (Lindbergh 1999). Another sewing-related item was 113 clothing hooks (part of hooks-and-eyes) in House 15. These were commonly used in women's and children's clothing for the closure of back and side seams. While some of the other houses had a few hooks-and-eyes, House 15 had a dominance of hooks which had come adrift from their partner eyes suggesting incidental loss during sewing. These are interpreted as being lost prior to being sewn onto newly-made garments.

The ability to compare the data between these houses provides clues as to what we could expect in a "typical" household in contrast to one where commercial sewing was probably taking place. Commercial sewing refers to circumstances where women took in sewing from outside sources, often referred to a 'piece work', to make additional money while working from home. The kitchen in House 15 represents a strikingly different profile for the range of kitchen activities found in the other houses. Although House 3 had 853 beads in the kitchen suggesting there may have been some commercial sewing within this house, this was likely be restricted to items associated with beads, perhaps bags, hats and shawls.

Table 6: List of all sewing, clothing and adornment related artefacts from seven kitchens in Areas A and C. Based on Tables 6 and 10 in the excavation report (Casey & Lowe 2000:vol 3).

Specific Function	Shape	House 15 Kitchen Context 18		House 17 Kitchen Context 15		House 19 Kitchen Context 13		House 21 Kitchen Context 11		House 3 Kitchen Context 313		House 5 Kitchen Context 315		House 7 Kitchen Context 318	
		MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%
household sewing	bobbin	-	-	-	-	-	-	1	1	-	-	-	-	-	-
	button blank	-	-	-	-	-	-	-	-	-	-	1	2	-	-
	crocket hook	3	0.2	1	2	2	13	-	-	2	1	-	-	1	1
	pin	1596	98.9	53	98	13	87	60	98	136	93	40	91	70	93
	scissors	-	-	-	-	-	-	-	-	3	2	-	-	-	-
	stiletto	1	0.1	-	-	-	-	-	-	-	-	-	-	-	-
	thimble	12	0.7	-	-	-	-	1	1	5	3	3	7	4	5
	unidentified	1	0.1	-	-	-	-	-	-	1	1	-	-	-	-
	Total	**1613**	**100**	**54**	**100**	**15**	**100**	**62**	**100**	**147**	**100**	**44**	**100**	**75**	**99**
		18		15		13		11		313		315		318	
personal adornment	bead	570	98.4	130	96	192	95.5	83	98	521	99	164	99	374	99.5
	bead & chain	-	-	-	-	-	-	-	-	1	0.2	-	-	-	-
	clasp	-	-	-	-	-	-	-	-	1	0.2	-	-	-	-
	catch	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3
	closure	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3
	cross	1	0.2	-	-	-	-	-	-	-	-	-	-	-	-
	decoration	5	0.9	-	-	-	-	2	2	1	0.2	-	-	-	-
	jewellery	2	0.3	6	4	9	4.5	-	-	-	-	-	-	-	-
	plaque	1	0.2	-	-	-	-	-	-	-	-	-	-	-	-
	stud	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	unid	-	-	-	-	-	-	-	-	2	0.4	1	1	-	-
	Total	**579**	**100**	**136**	**100**	**201**	**100**	**85**	**100**	**526**	**100**	**165**	**100**	**376**	**100**
		18		15		13		11		313		315		318	
personal clothing	brush	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	buckle	6	1.1	-	-	1	1	1	1	3	1.3	4	3	1	1
	button	397	70.1	74	88	127	93	55	82	196	84.5	100	77	174	91
	button/stud	1	0.2	-	-	1	1	-	-	-	-	-	-	-	-
	cord	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	cuff link	-	-	-	-	-	-	-	-	-	-	1	1	-	-
	disc	-	-	-	-	-	-	-	-	-	-	-	-	1	1
	eye	-	-	-	-	-	-	2	3	4	1.7	-	-	2	1
	eyelet	7	1.2	-	-	-	-	-	-	-	-	2	2	-	-
	hook	113	20	-	-	-	-	-	-	8	3.4	5	4	3	2
	hook & eye	7	1.2	2	2	-	-	5	7	-	-	-	-	-	-
	press stud	3	0.5	-	-	3	2	2	3	1	0.4	-	-	-	-
	safety pin	8	1.4	1	1	-	-	-	-	4	1.7	8	6	3	2
	shoe	-	-	-	-	-	-	1	1	2	0.9	-	-	-	-
	solitaire	-	-	-	-	-	-	-	-	1	0.4	3	2	-	-
	stud	22	3.9	7	8	4	3	1	1	13	5.6	7	5	6	3
	suspender	1	0.2	-	-	-	-	-	-	-	-	-	-	-	-
	unid	1	0.2	-	-	-	-	-	-	-	-	-	-	-	-
	Total	**566**	**100**	**84**	**100**	**136**	**100**	**67**	**98**	**232**	**99.9**	**130**	**100**	**191**	**99**

Table 7: Main sewing items within seven of the houses.

House	Pins	%	Buttons	%	Bead	%	Total	%
15	1596	81	397	35	570	28	2563	50
17	53	3	74	7	130	6	257	5
19	13	1	127	11	192	9	332	6
21	60	3	55	5	83	4	198	4
3	136	7	196	17	521	26	853	17
5	40	2	100	9	164	8	304	6
7	70	4	174	15	374	18	618	12
	1968	101	1123	99	2034	99	5125	100

Therefore on a number of grounds the quantity and range of sewing-related artefacts in House 15 does not fit the pattern exhibited at other houses within the CSR site. This suggests the occupant or occupants of House 15 during the later part of the nineteenth century and into the early twentieth century were undertaking commercial sewing. This evidence for this is based on (Table 7):

- The sheer quantity of sewing and clothing-related artefacts, specifically buttons, pins, beads and hooks and eyes and the proportion they form of the corpus of artefacts from this house which is considerably higher than found in other nearby houses.
- The dominance of the 2-piece buttons types which were to be covered by fabric which was much higher than in the other houses.
- The presence of more specialised tools such as 12 ordinary thimbles, a stiletto and three crochet hooks.
- The greater variety within each artefact type which is always more than in the other houses.

Date of Main Sewing Activity and Association with Known Residents

The association of this type of deposit with known residents is problematic as it was built up during the full period of occupation of the house (see also Murray & Mayne 2003). These deposits accumulated through day-to-day activities, such as sweeping, spillage, accidental loss and so on. Therefore the deposits in House 15 would be associated with at least eight families (Table 9). Analysis of the 5 cm spits confirms the sewing-related deposition was associated with the later occupation (post-1890), as more than half the sewing items came from spit 1 and 41.2 per cent from spit 2 (Table 8). Most of the surviving upset head pins were steel and date from 1890 onwards. The nature of the pins suggests they are likely to have moved downwards through the soft silty sandy deposit more easily than other artefacts although buttons and beads were found in both spits but with a greater quantity in spit 1. The shell-dome fabric-covered type buttons typically date from 1825 and the manufacture of porcelain buttons dates from 1840 although there were quantities of the later sew-through fabric-covered buttons dating from the 1880s (Lindbergh 1999:52–53). The dating of the pins and their presence suggests that most of the sewing dated from the 1890s and their presence in spit 1 indicates the sewing was mostly associated with the later period of known occupation. House 15 was generally occupied by tenants while the house was continuously owned by the one family until it was acquired by CSR. There are no listed seamstresses or tailors in occupation from 1873 (Table 9). From 1918 to at least until 1932/33 the residents were Rebecca and George Burns. The house was demolished in the 1940s. Rebecca Burns is the only resident listed from 1923 suggesting that her husband (or father) is no longer resident. Typical practice in *Sand's Directories* is to only list women's names when there is no

main male resident. It is possible that many of the sewing-related artefacts in spit one relate to Rebecca Burns' occupation of the house.

Table 8: Main sewing items within context 18, House 15 and proportion of items within each spit.

House	Spit 1	%	Spit 2	%	Spit 3	%	Total	%
Pins	764	54.9	712	64.0	120	61.2	1596	59.1
Buttons	228	16.4	140	12.6	29	14.8	397	14.7
Beads	348	25.0	189	17.0	33	16.8	570	21.1
Thimbles	6	0.4	6	0.5	-	-	12	0.4
Crochet hook	1	0.1	1	0.1	1	0.5	3	0.1
Stiletto	-	-	1	0.1	-	-	1	-
Hook	38	2.7	63	5.7	12	6.1	113	4.2
Safety pin	6	0.4	1	0.1	1	0.5	8	0.3
Totals	1391	99.9	1113	100.1	196	99.9	2700	99.9
	51.5%		41.2%		7.3%		2700	

Table 9: List of occupants of House 15 based on *Sands Directory* and Council rates.

Year	Tenant	Occupation	Landlord
1873	Griffiths, William	butcher	
1875	Griffiths, William	butcher	
1877	Griffith, William		William Smith
1882	Griffiths, William	butcher	William Smith
1888	Griffiths, William	butcher	
1889	Goodridge, Jacob	coachbuilder	
1890	Goodridge, Jacob	coachbuilder	
1893	Goodridge, Jacob	coachbuilder	
1895	Goodridge, Jacob		
1896	Goodridge, Jacob		
1897	Fellew, William		
1899	Forsvick, Charles		
1901	Goodridge,		Mrs H. Smith
1902	Kirk, Mrs Mary		
1904	Kirk, Mrs Mary		
1906	Martin, John		
1908	Martin, John		
1910	Sampson, Henry		
1912	Sampson, Henry		
1914	Sampson, Henry		Mrs W. Smith
1916	no entry		
1918	Burns, George		
1920	Burns, George		
1923	Mrs Rebecca Burns		
1925	Mrs Rebecca Burns		
1930	Mrs Rebecca Burns		
1932/33	Mrs Rebecca Burns		

Other Issues

Is the presence of so many sewing artefacts in House 15 influenced by factors other than commercial sewing? It is possible that issues of class do influence this frequency but this is not considered to be the determining influence. If there is a class difference between the occupants of this house and others within the study area it is unlikely to be more than between working class and lower middle class. Nor is this class difference likely to be visible in issues of quantity but more likely in quality and variability. In the case of House 15, variability is perceived to be linked with commercial sewing.

Another aspect of this analysis is that a limited range of studies has so far been undertaken on items associated with sewing and clothing on Sydney sites. Lydon in her paper on sewing-related artefacts from the Lilyvale site noted the presence of these artefacts was restricted to domestic contexts, such as underfloor deposits, and frequently found in areas

where light was important, such as near the back steps of houses. Lydon did not think mere presence of quantities of sewing artefacts represented commercial sewing and sought evidence of specialist tools (Lydon 1993a:132). A different approach has been undertaken in the analysis of the CSR site where quantity, range and comparison with similar contexts provided the basis for such identification. While specialist's tools might be found or anticipated where lace-making and detail work might be required, basic sewing and piecework would involve little more than pins, needles, thread, thimble, scissors, buttons, hooks-and-eyes, and if cutting out patterns a measuring tape and chalk. Many of these items were found in the underfloor deposits (Table 6).[5] They are quite different to the needlework tools of a middle class woman (Griggs 2001:81) and therefore do not represent more genteel practices. Therefore it is considered that the presence of specialist tools is not the only way to indicate the likelihood of commercial sewing within a residential environment.

Once further work has been done on sewing and clothing artefacts found at a variety of sites it might be possible to identify issues of class within the corpus of sewing and clothing artefacts. Lindbergh (1999) in her work on buttons did not believe that they were able to address issues of class or gender as we have such a limited understanding of the use of buttons in the past as well as some button types, such as mother-of-pearl buttons, being used for clothes made for male and females, adults and children of all classes. Yet if we examine the context of this type of sewing within a 3 or 4-room house in the working-class area of Pyrmont the likelihood of commercial sewing does underscore the working-from-home environment which has been associated with the hidden history of working-class women's lives (Alford 1984:1–7; Grimshaw et al. 1994:128–129).

Other Kitchen Activities

Aside from sewing and clothing-related items many artefacts were found which indicate a whole suite of activities taking place within these kitchens. Among the personal artefacts in House 15 were jewellery including lockets (2), rings (3), brooches (10) and fake gems. Other items included religious medals, hair combs (9), brushes (10), a hair pin (1) and lipsticks (2). Also found were artefacts associated with fishing, playing of games, hunting and fishing, music, smoking, food, writing, pharmaceuticals and household furnishings (Tables 2, 10). These items represent aspects of working-class lives, ownership of costume jewellery, sometimes silver jewellery was found and attention to grooming.

Toys (752), notably marbles (636 or 84% of all toys), were frequently found in all the kitchens (Table 10). Forty-six pieces (6% of all toys) of dolls' teasets were found in seven kitchens, including ten cups and 12 saucers. Other toys included parts of dolls (51), lead soldiers (6), parts of toy vehicles (2), a boat, a jockey, a cyclist and an early plastic German miniature bear. Quantities of clerical-related artefacts were found testifying to the presence of literate members in all the households. Most of the clerical items were also found in the kitchens (Tables 2, 5).

Children and Toys

Research on childhood and toys in Australia has only recently begun to develop (Kociumbas 1997). Kociumbas (1997:95) considered toys were laden with social values. Boys were given clock-work trains and boats. Military toys became increasing popular towards the end of the nineteenth century. Educators recommended mini carpenter sets and plasticine for boys to keep their minds occupied. Kociumbas suggests that

Table 10: Recreational artefacts from kitchen underfloor deposits in seven houses within the CSR Site.

Specific Function	Shape	House 15 Kitchen 18		House 17 Kitchen 15		House 19 Kitchen 13		House 21 Kitchen 11		House 3 Kitchen 313		House 5 Kitchen 315		House 7 Kitchen 318		Total	
		MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%	MIC	%
fishing	sinker	-	-	-	-	2	2	-	-	1	0.5	-	-	-	-	3	0.3
game	counter	-	-	-	-	-	-	-	-	-	-	-	-	5	3	5	0.5
	dice	1	0.4	-	-	1	1	-	-	-	-	-	-	1	1	3	0.3
	domino	2	0.8	-	-	-	-	-	-	12	6.2	-	-	-	-	14	1.5
hunting	bullet	1	0.4	1	2	1	1	-	-	-	-	-	-	-	-	3	0.3
	cartridge	-	-	-	-	-	-	-	-	1	0.5	-	-	-	-	1	0.1
	gun flint	1	0.4	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
music	harmonica	-	-	-	-	-	-	-	-	1	0.5	-	-	-	-	1	0.1
smoking	case	1	0.4	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
	pipe	33	13.9	3	7	5	6	15	23	37	19.2	35	30	7	4	135	14.7
	snuff bottle	1	0.4	-	-	-	-	-	-	1	0.5	-	-	-	-	2	0.2
toy	bear	-	-	-	-	-	-	-	-	-	-	1	0.9	-	-	1	0.1
	boat	-	-	-	-	-	-	-	-	1	0.5	-	-	-	-	1	0.1
	block	-	-	-	-	-	-	1	1.6	-	-	-	-	-	-	1	0.1
	cyclist	-	-	-	-	-	-	-	-	1	0.5	-	-	-	-	1	0.1
	doll	13	5.5	9	20	5	6	5	7.8	7	3.6	8	6.8	4	2.2	51	5.5
	doll, pudding	-	-	-	-	-	-	-	-	1	0.5	-	-	1	0.6	2	0.2
	doll's tea set	13	5.5	1	2.2	4	4.8	3	4.7	7	3.6	5	4.3	12	6.6	45	4.9
	figure	-	-	-	-	-	-	-	-	1	0.5	-	-	-	-	1	0.1
	jug	-	-	-	-	-	-	1	1.6	-	-	-	-	-	-	1	0.1
	jockey	-	-	-	-	1	1.2	-	-	-	-	-	-	-	-	1	0.1
	marble	166	70	31	68.9	61	73.5	39	60.9	122	62.9	67	57.3	150	82.9	636	69.1
	rattle	-	-	-	-	-	-	-	-	-	-	1	0.9	-	-	1	0.1
	soldier	5	2.1	-	-	1	1.2	-	-	-	-	-	-	-	-	6	0.7
	wheel	-	-	-	-	2	2.4	-	-	-	-	-	-	-	-	2	0.2
	vehicle	-	-	-	-	-	-	-	-	1	0.5	-	-	-	-	1	0.1
	whistle	-	-	-	-	-	-	-	-	-	-	-	-	1	0.6	1	0.1
	Total	**237**	**100**	**45**	**100**	**83**	**100**	**64**	**100**	**194**	**100**	**117**	**101**	**181**	**100**	**921**	**99.8**

they probably preferred Jack-in–the-Boxes, kinetic toys, kaleidoscopes, kites, drums and cricket bats. Playing marbles was an ubiquitous children's game as demonstrated by the hundreds found in seven houses above. The type of toys given to girls included baby dolls that came with tiny clothes, prams and cots and teddy bears. Other toys included swings, rocking-horses, working sewing machines, dolls' houses. Recommended were money boxes (Kociumbas 1997:99). Other items given to young girls included dolls' teasets, child-size thimbles, and 'jacks' made from lamb knuckles, all of which are commonly found on sites and are well represented at the CSR site.

Karskens considers the presence of 'slate and slate pencils, figurines and hundreds of toys…reveal that children were not regarded by working-class people as "non-human"'. These represented how 'they were cared for and indulged with all kinds of playthings' (Karskens 1999:177). Yet Yamin (2002) at Five Points in New York and Paterson proposes a different interpretation. Yamin found many artefacts similar to those from the CSR site but in features (pits and cesspits) associated with working-class houses rather than in underfloor deposits. The toys included marbles, part of dolls, including the frozen charlotte type but only a few pieces of dolls' teasets as well as writing slate and slate pencils. Yamin observes these artefacts were associated with working children and considers this testifies to the active lives of boys who had disposable income and could take their marbles with them and play anywhere, including the streets. The artefacts traditionally associated with girls are the dolls and dolls' teaset items, as well as the child-size thimble which are part of the tools used to guide them in emulating the roles of their mother. These two views are somewhat divergent and indicate considerable room for further research into the lives of working-class children, the toys with which they played and what it can tell us about attitudes to children.

The deposits at Five Points and Paterson contained many less toys than found in the underfloor deposits at the CSR site. This implies the underfloor deposits at the CSR site provide a stronger picture of daily life inside these households. The marbles there were lost while children played in the kitchen not just on the street. Boys and girls played with a variety of toys in this space, perhaps underneath the table to be out of the way of their mother cooking over the hot stove or sewing at the window. While the meaning of the nature of household patterns can always be disputed the presence of children will, in most cases, indicate the presence of women, and sewing within a kitchen is more likely to indicate the presence of women rather than a male tailor. It is considered that the kitchen underfloor deposits at the CSR site, and notably House 15, brings alive many aspects of the lives of working-class women and children in urban Sydney.

RESULTS

The analysis of Houses 15 and 3 revealed that at some stage in the life of these houses, women (more likely then men in these cases) were likely to be undertaking commercial sewing. The perceived importance of evidence for sewing in working-class houses stems from debates about the role of working women in nineteenth-century society. Maynard suggests that there was 'a vast private economy of home dressmaking and tailoring' and that historians have hardly acknowledged this 'private economy'. This market provided a lot of colonial-made clothing and possibly 'retarded' the development of the ready-made clothing market until the later nineteenth century. The number of women sewing in the home was not adequately represented in the official figures such as censuses. Maynard

does stress that sewing was part of the 'household chores, ranging from mundane repairs to making bed linen and curtains, as well as fine quality work such as embroidery'. The different aspects of sewing were class specific, 'with plain needle work an activity more suited to the lower classes' while 'embroidery and home dressmaking' belonged to the 'genteel' pursuits of the middle classes. The type of work undertaken within the home would have included needlework, dressmaking and millinery (Maynard 1994:126–127).

One of the few histories that discuss women's lives during this period observed that the type of work undertaken by the urban working-class wife included domestic labour and childcare which assisted the family to 'maximise resources'. Work within the home consisted of, 'boiling water for heavy laundry; cooking over wood or coal-fired ranges…coping in small houses with large families; carrying shopping; struggling to keep children clean and husbands fed…' (Grimshaw et al. 1994:128). The poorest women also took in factory outwork such as sewing, provided washing and ironing services for those who could afford it, or sold newspapers, rags and bottles, and old clothes. Single women started to undertake more waged work. This was in contrast to the circumstances where women worked within the family; 'even where they undertook heavy work or male tasks, dominant ideas about the family kept such actions from breaching conventional concepts of masculine and feminine'. Between the 1860s and 1890s 'women's waged labour' became an important area of debate as they challenged the 'normative values' of this society (Grimshaw et al. 1994:129–130).

'As long as women worked within a home or family context, however hard or however numerous the tasks, man's paramount position as head of the household was not challenged. But waged work for women was another matter' (Grimshaw et al. 1994:165). The work of women whether single or married was seen as a threat to male employment unless single women were employed as servants. The workplaces where women worked were often 'highly exploitative, with low wages, long hours and poorly ventilated' and had detrimental affects on women's health (Grimshaw et al. 1994:166).

By identifying the presence of households where women are likely to have undertaken sewing we can begin to refashion and augment understandings of working-class women's lives. At no. 15 New Street, Pyrmont, a working-class house, sewing was part of the daily tasks the wife did to supplement her husband's wages, or perhaps this work produced the only income for a widow or deserted wife. The directories and assessment books for this period indicate eight different residents for the post-1880s period to which most of the pins belong (Table 9). Some lived there for more than ten or 18 years while others lived there for as little as four years. It is therefore difficult to tie this information down to any specific resident. Therefore this evidence is more related to the picture of the neighbourhood of Pyrmont at the turn of the nineteenth century.

CONCLUSIONS

The kitchens of these seven houses revealed a whole range of artefacts and associated activities, sewing for household as well as for commercial purposes, jewellery, hair combs, toys, pipes and such. Children typically played in the kitchen as seen by the presence of lots of toys, notably marbles, dolls and dolls' teasets. The construction of how women and men represented their gender identifies can be analysed through the presence of jewellery, mostly costume but with some in gold,

and decorative buttons and shirt studs. By collecting evidence in a controlled, methodological manner, and entering it into a specifically designed database catalogue, we were able to reproduce and analyse complex patterns of behaviour which can tell us much about working-class lives.

By analysing the kitchen underfloor deposit from House 15 and comparing it with similar deposits from nearby houses, patterns relating to how working-class peoples lived have begun to be revealed. There is a whole assemblage of evidence which can help us start to understand the material culture which formed the structure to their lives, the cultural and social necessities which testified to their survival and humanness. They are representative of a life of activity centred in the kitchen, the daily grind for the wife and mother to look after their house and provide meals for her husband and children and in some cases undertake work for money. There were times of joy with children playing in the kitchen and celebratory meals.

The materiality of these lives has slowly begun to be revealed through detailed excavation and analysis. These are lives whose voice has not survived into modern times through written texts. While we know some things about the lives of people who lived in slum housing, these underfloor deposits provide a more 'typical' profile of lives as lived within working-class housing rather than 'slum' housing. They offer us some interesting comparative insights within the neighbourhood of the CSR site through which to compare the rest of urban Sydney and Australia.

Hopefully this paper has helped identify a range of issues for other archaeologists, especially consultants, on suitable ways to approach and analyse this type of site. Considerable additional analysis was undertaken as part of the CSR site archaeological investigation and it is hoped to present more of this work in the near future.

NOTES

1   The full archaeological report for the CSR site is lodged at Casey & Lowe's webpage, www.caseyandlowe.com.au.

2   See Bibliography for references to reports for these sites.

3   This is a development of ideas put forward in South (1977) and Birmingham (1992a).

4   The kitchens were presumed to be the rear room of the ground floor house as there were no detached kitchens.

5   My grandmother and her two sisters were all seamstresses and supported themselves and their children with the income they made from sewing. On visits to their houses I was always fascinated by their sewing and its tools.

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