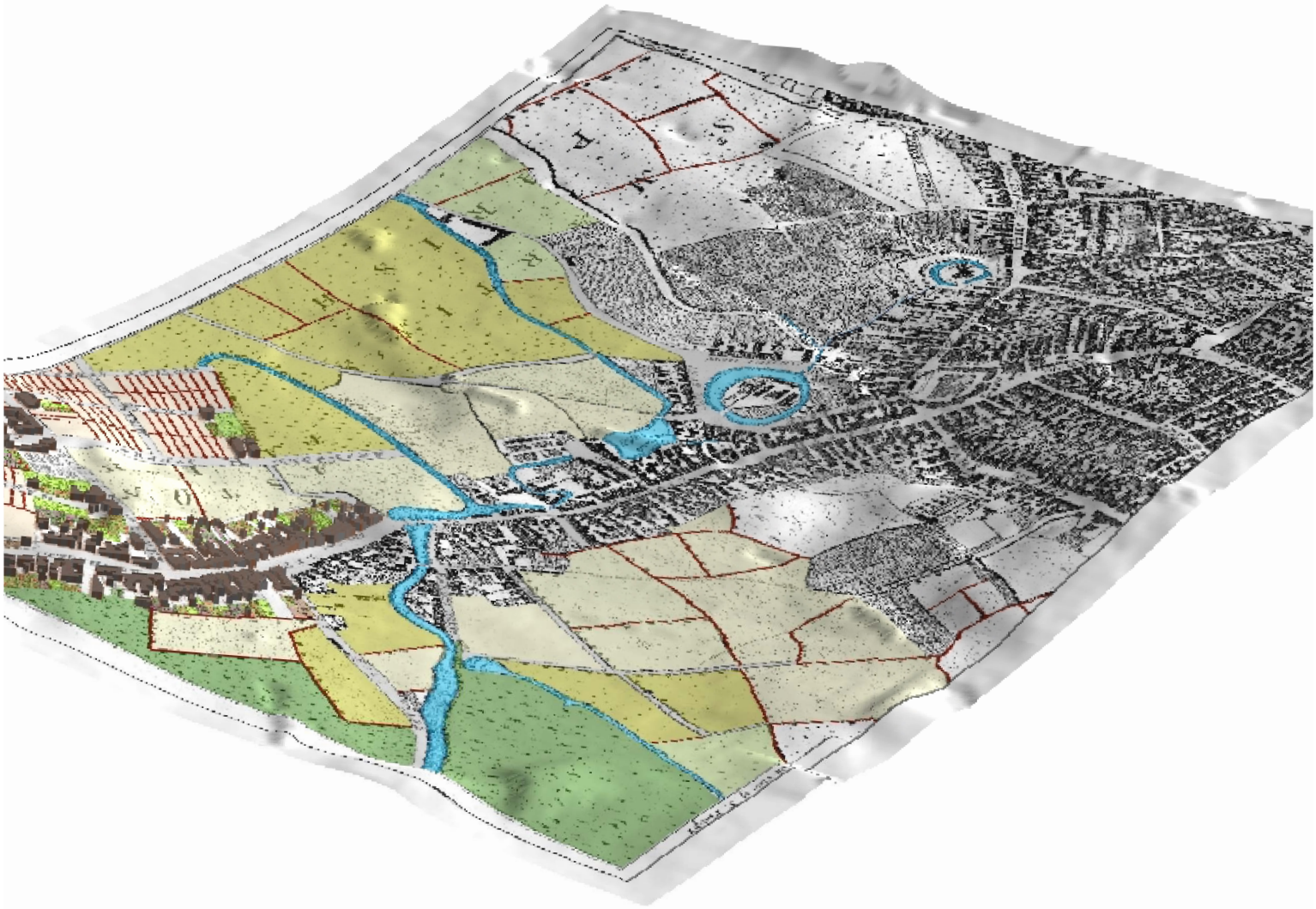
'…that great, dirty leviathan'

Archaeology and Development in Birmingham City Centre, AD 1100 – 1900



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with

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birmingham archaeology

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Preface

This document is the final unpublished report of the Birmingham Life Work and Death project, undertaken by Birmingham Archaeology between May 2007 and August 2008. The report collated the results of the project, and was intended to be reworked, edited and slimmed down for publication and dissemination. For various reasons, the final stages of the project were not undertaken at Birmingham Archaeology by the original project managers. This report therefore forms an important archive of that initial project, and contains research materials which may not otherwise be published. For that reason, we felt it would be pertinent to make the report available for wider access. It should be noted, however, that this is not a final monograph and is not intended to be one. It should be noted that the report was submitted in August 2008 and has not been updated since; there will be key sites and research undertaken since that date which are not included.

Amanda Forster and Stephanie Rátkai, February 2017

Document Control Grid

Title:	'…that great, dirty leviathan' Archaeology and Development in Birmingham City Centre, AD 1100 – 1900
Author(s):	Stephanie Rátkai and Amanda Forster
Origination date:	August 2008
Circulation:	Historic England, Project Team
Current status:	Unpublished project report

Chapter 1 Life, Work and Death; what's it all about?

By Amanda Forster and Stephanie Rátkai

Development, planning and construction are not new phenomena in Birmingham City Centre. The last 800 years of its occupation has seen the continued development of a bustling and busy city. Its size and importance have increased exponentially from Birmingham's early roots and, today, it is the City's continuing development that enables us to investigate, understand, conserve and protect its heritage. *Life, Work and Death in Birmingham City Centre AD 1100-1900* is a project that aims to bring together information on archaeological remains both to aid future development and to make accessible the work already undertaken as a result of more recent development. The project provides a synthesis of work undertaken via the planning process, highlighting both the contribution of this work to an understanding of Birmingham's heritage and paving the way for a more informed archaeological strategy for future development and mitigation.

Archaeology, since 1990, has been protected within the framework of Planning Policy Guidance 16 (PPG16), which sets out the Secretary of State's policy on archaeological remains on land, and how they should be preserved or recorded in an urban setting and in the countryside. In order to facilitate PPG16, the local planning authority (in this case, Birmingham City Council) needs to base their detailed development plan policies and proposals on an evaluation of the archaeological remains in their area (PPG16, paragraph 16). This project provides that evaluation, synthesising and making accessible results of over 80 individual investigations undertaken within the remit of PPG16.

Project aim

The overall aim of this project, as outlined in the project brief (Patrick 2006, see Appendix 1), has been to provide a holistic overview of the archaeological remains recorded in Birmingham City Centre within the study area (see Figure 1.1). This overview is intended to broaden the knowledge of archaeological evidence for the historic development of the City and inform future decisions about its above and below-ground heritage (*ibid.*, 2). The project was initiated by Birmingham City Council and English Heritage in 2006, with a Project Brief prepared by CgMs on their behalf (Patrick 2006). The project was then undertaken by Birmingham Archaeology, with work starting in May 2007.

The project aims were to;

- set the results of PPG16 projects within their wider context,
- provide a framework for the publication of the results,
- inform future decisions concerning above and below ground heritage.

Despite the large amount of archaeological work undertaken within the study area, it was felt that the lack of published work and dissemination has led to fragmentation of the results of investigations and, subsequently, of the understanding of Birmingham's historic development (Patrick 2006, 2). Moreover, individual investigations undertaken are often seen on a site-by-site basis and not brought together within a regional or national context. The aim of the current project, therefore, has been to synthesise this information, to provide a holistic overview of Birmingham's development and archaeological heritage. The results of this will be two-fold. In the first instance, better understanding of the study area's historic environment will inform future decisions about its above and below-ground heritage. This greater and more accessible synthesis of investigations will, in line with Birmingham City Council's *Archaeology Strategy* (BCC 2004), facilitate archaeological responses to future development in the city. The provision of informed advice for the management of archaeology within an ever-changing urban

environment like Birmingham's city centre is vital for the protection of archaeological remains in the context of and without stifling of new development.

In order that the project was undertaken within an achievable and realistic programme, certain boundaries were put in place early in its development. Perhaps most pertinently, the project did not intend to produce a definitive account of Birmingham's development and heritage. Moreover, an emphasis on the results of developer-funded investigations aimed to highlight the huge contribution made by the work undertaken within the planning framework and to give account of that work. Original research was not undertaken; the point of the project has been to collate, synthesise and disseminate in order to highlight gaps in our current knowledge and highlight potential – not to research those gaps in any detail. Thus, without undertaking large amounts of additional research and investigation, what is included in this report are essentially a few individual pieces of a very complex jigsaw.

Methodology and project structure

Project team

The original project brief stated that the project team should include personnel familiar with the archaeology of Birmingham (Patrick 2006, 13). The project has been managed by Birmingham Archaeology, and the project team included a range of specialists familiar with the City's archaeology. The project has thus given the various specialists involved a welcome opportunity to view their data in a broader context and to demonstrate the potential of more synthetic approaches to the archaeological resource.

The advantages of this multi-disciplinary approach are evident and the methodology drives home the importance of always looking, where possible, at the broad context of individual sites. This synthesis provides a useful tool in identifying possible avenues for future research in the academic sphere (see Chapter 7) and has enabled the dissemination of important data such as the burials at Park Street Gardens and St. Bartholomew's, and the artefact assemblage recovered from The Old Crown (see Rátkai in prep), which would otherwise have remained unpublished.

Study area

The location of the study area is indicated on Figure 1.1. Its western boundary follows the Birmingham and Worcester canal from Commercial Street to the junction with the Birmingham and Fazeley canal. The latter forms the northern boundary, to the junction with the Digbeth Branch canal. The eastern boundary is defined by the latter and the Grand Union Canal to the Coventry Road. The study area is defined to include the buildings fronting onto the canal on the western, northern and eastern bounds of the study area. The southern boundary of the study area follows Coventry Road and Warner Street, to Bradford Street up to the street block which includes the River Rea. Further to the south the boundary is formed by Cheapside, to Barford Street, following Hurst Street to its junction with Thorp Street. This boundary then follows a line to the Birmingham and Worcester canal to the north of Commercial Street. Within the study area a number of archaeological investigations were highlighted in the original brief for inclusion (49 in total, see Patrick 2006, 6). Further to those highlighted, the project has seen a few relevant additions to the project database which almost doubles the dataset and now numbers 85.

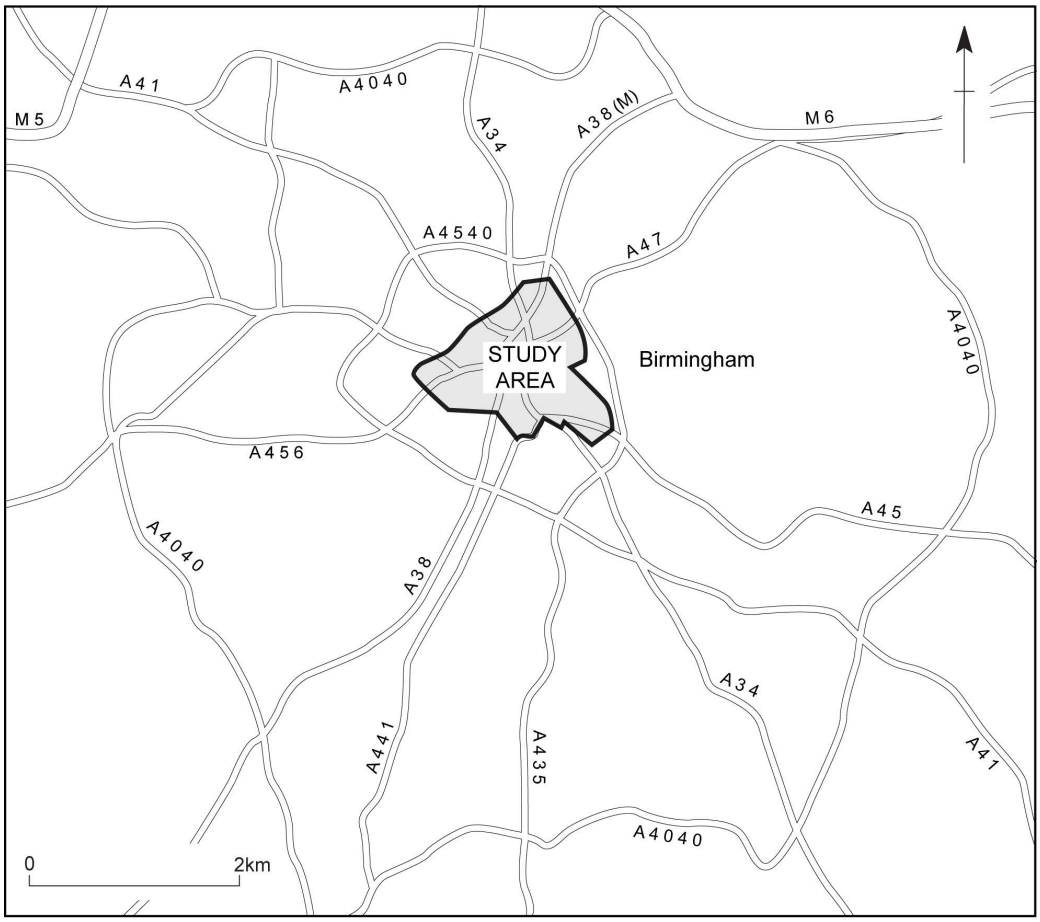

Figure 1.1 Study area

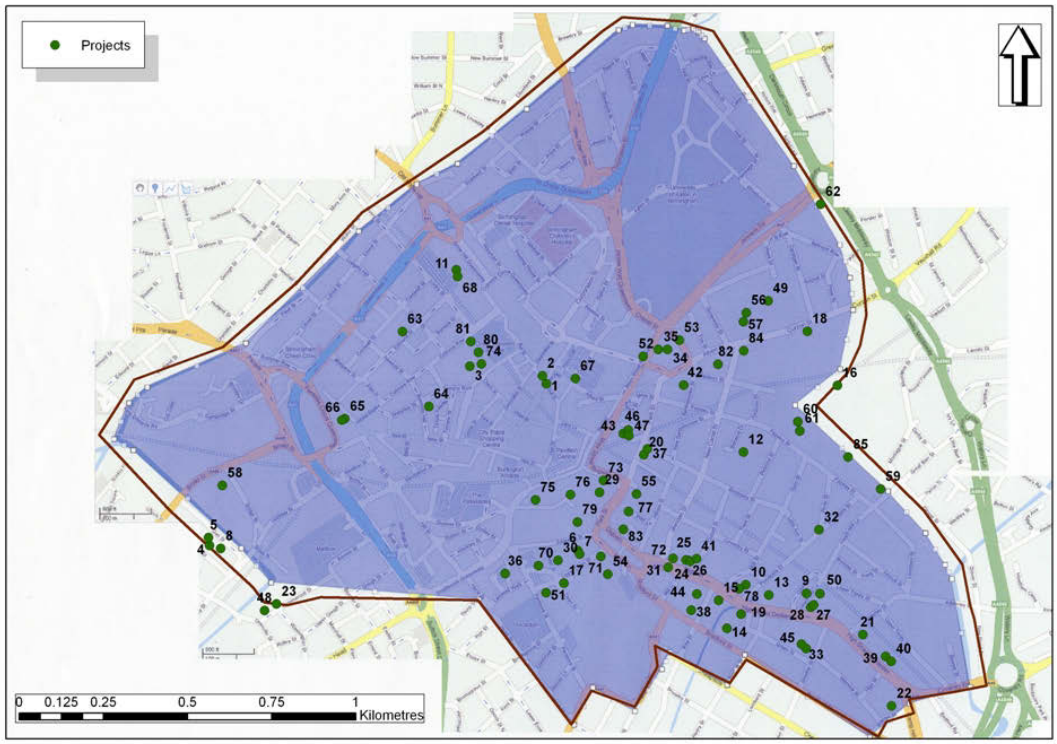

Figure 1.2 Location of projects within the study area. Numbers refer to each individual site and relate to Table 1.3.

Within the study area, all but one of archaeological projects included have been undertaken in under the auspices of PPG16. Whilst the majority of the recovered data has remained unpublished and inaccessible to many, the importance of the archaeological information has been highlighted in popular publications (Buteux 2003, Hodder 2004), as well as in two recent monographs relating to excavations at St Martins and the Bull Ring (Brickley et al 2006; Patrick and Rátkai 2008).

Within the study area archaeological survival is not limited to below-ground deposits; a number of important buildings, largely of industrial use, including some Grade 1 listed, and locally listed, survive. There are 146 statutorily listed buildings and 81 locally listed buildings. Below-ground remains comprise very occasional finds dating to the pre-medieval period with extensive deposits of medieval and post-medieval date surviving to an excellent standard. In places, the medieval and post-medieval deposits are deeply stratified and often include waterlogged deposits. Whilst large-scale projects such as the recent Bullring development have raised public interest in particular, a myriad of smaller investigations have transformed understanding of the city centre's archaeology.

Project methodology

As with any project, the methodology and approach has been led by the original brief. The initial aims of the project are reflected in its methodology although, as work progressed, some additional routes have had to have been taken. Whilst the project has drawn on a wide range of sources (see Table 1.1 and 1.2), the bulk of evidence has been generated from archaeological works undertaken in the city as a result of PPG16 intervention. Full details of these projects can be found in the project gazetteer (see Chapter 8) and discussions throughout this report make reference to individual sites by ID number (see Table 1.3).

The undertaking of this project facilitated a more critical look at the development process and the archaeological works undertaken within it. Whilst it is commendable that a huge amount of information has been gathered through the process, there has been the realisation that not all sites, and particularly the artefactual and environmental assemblages from them, have been recorded in sufficient detail to allow the data to be synthesised readily at a later date. This is often not a problem specifically with the planning process, nor the contracting unit or individual specialist, but is more a result of factors essentially divorced from the archaeology; the initial drivers behind the investigation, the required outcome or the level of recording a project demands. Since the instigation of PPG16, archaeological investigation and research in areas like Birmingham's city centre have largely depended on the outcome of debates between developers, planners, curators, consultants and archaeologists, informed largely by desk-based assessment and evaluation (Carver 1996, 45). The purpose of some levels of investigation (eg evaluation) is to inform that debate and not to provide a published account of its undertaking. These projects included in this report represent all stages of planning related investigation and many, whilst providing a record and archive, may not be fully interpreted in the same manner as a full archaeological excavation might (see below).

Throughout the 1990s and early 2000s archaeology in the commercial world became a very empirical enquiry – precise recording and observation intending to provide a site which was preserved by its record, which researchers can revisit and reconsider interpretations (Bradley 2006, 3). This works in theory and, whilst there are criticisms of such an approach (see *ibid.* and Andrews *et al* 2000 for discussion), archaeological investigation undertaken commercially has to be sympathetic and responsive to the needs and requirements of the client. Mitigation may well be in the hands of the planning archaeologist but time-scales, budgets and specific areas of investigation are often influenced within the constraints of individual development and not by research driven enquiry. Notwithstanding, once the details of development have been decided, the archaeological response should then be driven by research outcomes outlined in a Written Scheme of Investigation linked to local and national research objectives. The execution of the

archaeological project should then become a research driven initiative, requiring engagement with the archaeology beyond merely empirical record (Andrews *et al* 2000, 530).

Source	**Method**
Sites and Monuments Record	All sites included on the SMR have been inputted into the GIS database. This includes point and polygon files, and includes spot finds, sites, and statutorily and locally listed buildings
Historic maps	Map regression and the use of historic maps within the GIS aspect of the study has been key to seeing the sites within an historic context. Maps were georectified to allow comparison and overlays in the GIS. However, due to the inaccuracies inherent in older maps, the georectification in places is approximate to avoid complete distortion of the original maps. See Table 1b for maps used
Desk-based assessments	Grey literature reports which include both the larger, landscape-based assessments and the smaller, site-specific investigations. A analysis compiled from all the DBA reports can be found in Appendix 3
Evaluation, watching brief and salvage recording	Includes all grey literature reports. The reports have been scanned in and will be made accessible via the project website
Excavations	Again, this includes all grey literature reports as well as publications. In addition, in some cases Post Excavation Assessments have been consulted.
Building recording	Information from individual building recording exercises is supplemented by statutory and local lists, and information collated by Stephen Price and archived in the Birmingham Museum and Art Gallery will be consulted.
Archaeological archives	Consultation of archives when necessary and if available
Conservation Area Appraisals	Available via the Birmingham City Council website
West Midlands Archaeological Research Agenda	As available on the internet
Unpublished archives	Mainly photographic archives, such as those kept in the Birmingham City Library Local Archives.
Unpublished research	Generally, unpublished research included is that which has been commissioned as part of a piece of work, such as historical research.
Published work	Most pertinently, excavation reports of St Martins and the Bullring excavation reports, but also the corpus of published material available.
Primary artefact assemblages	Where full recording had not been undertaken, artefacts have had to be studied at first hand

Table 1.1 Sources of information

1553	Hill and Bickley's conjectural map of Birmingham (1890)
1731	Buck's East Prospect of Birmingham
1731	Westley's map of Birmingham
1732	Westley's south prospect of Birmingham
1750/51	Bradford's map of Birmingham
1751	Buck's South West prospect of Birmingham
1753	Buck's Eastern prospect of Birmingham
1760	Tomlinson's Plan of the Manor of Bordesley
1762	Jackson and Bradford's South East View of Birmingham
1778	Hanson's map of Birmingham
1779	Snape's Plan of the Parish of Birmingham
1795	Plan of Birmingham
1808	Inge Estate map
1808	Sherriff
1810	Kempson's map of Birmingham
1819	Birmingham
1824	Pigott Smith map of Birmingham
1828	Beilby's Map of Birmingham
1838	Jobbin's Map of Birmingham
1847	Ackerman's Panoramic View of Birmingham
1849	Birmingham
1855	Guest's Map of Birmingham
1855	Pigott Smith map of Birmingham 1:528
1889	Ordnance Survey 1st Edition 1:500
1890	Ordnance Survey 1st Edition 1:2500
1904	Ordnance Survey 2nd Edition 1:2500
1915-27	Ordnance Survey 3rd Edition 1:2500
1937-38	Ordnance Survey 4th Edition 1:2500

Table 1.2 Historic map sources

ID	Report Number	Report Name	Report Author	Report Type	Unit/ Organisation	Date
1	479	An Archaeological Desk-Based Assessment of the Proposed Martineau Galleries Development	Steve Litherland, Catharine Mould	DBA	BUFAU	1997
2	479.02	An Archaeological Watching Brief of the Proposed Martineau Galleries Development	BUFAU	WB	BUFAU	1997
3	455	The Churchyard of St Philips Cathedral: An Archaeological Desk-Based Assessment	BUFAU	DBA	BUFAU	1997
4	550	Early Gas Works, Gas Street: Architectural Recording and Analysis, an interim report	Steve J. Linnane	BREC	BUFAU	1998
5	550.01	Early Gas Works, Gas Street: Architectural Recording and Analysis - addition to Report No. 550	John Halsted, Mark Breedon	BREC	BUFAU	1999
6	603.01	An Archaeological Watching Brief at The Row Market, Edgbaston Street, Birmingham City Centre	Eleanor Ramsey	WB	BUFAU	2000
7	603	An Archaeological Evaluation at The Row Market, Edgbaston Street, Birmingham City Centre	John Hovey	EVAL	BUFAU	1999
8	618.02	Salvage Recording on the site of the former gasworks, Gas Street	Stephen Litherland	WB	BUFAU	2001
9	664	The Custard Factory, Phase Two, Digbeth: Archaeological Excavation 2000 Post-Excavation Assessment and Research Design	Catharine Mould	EXC	BUFAU	2000
10	768	Floodgate Street/Milk Street, Digbeth: An Archaeological Desk-Based Assessment	Sarah Watt	DBA	BUFAU	2001
11	835	An Archaeological Desk-Based Assessment of Oppenheim's Glassworks, Snow Hill	Melissa Conway	DBA	BUFAU	2001
12	939	The Typhoo Wharf, Bordesley Street, Digbeth: An Archaeological Desk-Based Assessment	Malcolm Hislop	DBA	BUFAU	2002
13	960	Historic Building Recording at 210 High Street, Deritend	Malcolm Hislop	BREC	BUFAU	2002
14	973	170 High Street, Deritend: An Archaeological Desk-Based Assessment	Melissa Conway	DBA	BUFAU	2002
15	1007	Deritend Bridge, Digbeth: An Archaeological Evaluation	Josh Williams	EVAL	BUFAU	2003
16	1034	The Warwick Bar Conservation Area, further archaeological DBA and building recording	Malcolm Hislop, Steve Litherland	DBA/BREC	BUFAU	2003
17	1053	Dean House, Upper Dean Street: PX Ass and Research Design 2003	Helen Martin	EXC	BUFAU	2003
18	1100	The Proposed City Park Site: Desk-Based Assessment 2003	Malcolm Hislop	DBA	Birmingham Archaeology	2003
19	1143	170 High Street, Deritend: An Archaeological Evaluation 2004	Helen Martin	EVAL	Birmingham Archaeology	2004
20	1161	27-28 Park Street, Digbeth: An Archaeological DBA 2004	Malcolm Hislop	DBA	Birmingham Archaeology	2004
21	1285	149-159 High Street, Bordesley: An Archaeological DBA and Field Evaluation 2005	Helen Martin	DBA/EVAL	BUFAU	2005
22	1392	Warwick Street/ Warner Street: An Archaeological Desk-Based Assessment 2006	Eleanor Ramsey	DBA	Birmingham Archaeology	2006
23	1545	31 Commercial Street: A Desk-Based Assessment	Malcolm Hislop	DBA	Birmingham Archaeology	2007
24	336.03	An archaeological watching brief at Hartwell (Smithfield) Garage, Digbeth	Steve Litherland	WB	BUFAU	1997

ID	Report Number	Report Name	Report Author	Report Type	Unit/ Organisation	Date
25	336.02	Hartwell (Smithfield) Garage Site, Digbeth: An Archaeological Evaluation	Steve Litherland, Derek Moscrop	EVAL	BUFAU	1996
26	336	An Archaeological Assessment of the Hartwell (Smithfield) Garage Site	BUFAU	DBA	BUFAU	1995
27	310	The Old Crown Inn, Deritend: An Archaeological Evaluation	Steve Litherland, Catharine Mould, Stephanie Ratkai	EVAL	BUFAU	1994
28	310.01	An Archaeological Watching Brief at the Old Crown, Deritend	BUFAU	WB	BUFAU	1998
29	353	A Preliminary Archaeological Assessment of the area of Moor Street, Bull Ring and Park Street	Catharine Mould, Steve Litherland	DBA	BUFAU	1995
30	354	Edgbaston Street, Pershore Street, Upper Dean Street and Moat Lane: Preliminary Assessment	Catharine Mould, Steve Litherland	DBA	BUFAU	1995
31	337	An Archaeological Assessment of the Digbeth Economic Regeneration Area and Cheapside Industrial Area	BUFAU	DBA	BUFAU	1995
32	575	An Archaeological Desk-Based Assessment of Part of the Digbeth Millennium Quarter	Catharine Mould	DBA	BUFAU	1999
33	SMR 20614	Deritend Salvage excavation, archive		EXC	City of Birmingham Museum	1984
34	SMR 20676	An Archaeological Evaluation at Plot 7, Masshouse, Birmingham	James Goad	EVAL	HEAS, Worcester CC	2003
35	SMR 20676	An Archaeological Evaluation at Plot 3, Masshouse, Birmingham	Chris Patrick	EVAL	HEAS, Worcester CC	2002
36	SMR 03014	Archaeological Observation at Wrottesley Street, Birmingham	Warwickshire Museum Field Archaeology Projects Group	WB	Warwickshire Museum Field Services	2000
37	SMR 20619	Land on the southern corner of Park Street and Bordesley Street, Digbeth, Birmingham EVAL	Nick Tavener	EVAL	Marches Archaeology	2000
38	SMR 20744	Birmingham Machine Tool Services Ltd, 312-314 Bradford Street, Birmingham DBA	Dave Hodgkinson, Louise Edmondson	DBA	Wardell Armstrong	2004
39	SMR 20060	Excavation at 131-148 High Street, Bordesley, Birmingham	Martin Cook, Stephanie Ratkai	EXC	County Archaeological Service, Hereford and Worcester CC	1995
40	SMR 20060	Evaluation at 131-148 High Street, Bordesley, Birmingham	Robin Jackson, Stephanie Ratkai	EVAL	County Archaeological Service, Hereford and Worcester CC	1995
41	SMR 20427	Watching Brief at Hartwell Smithfield Garage, Digbeth, Birmingham	Darren Miller, Laura Jones	WB	Archaeological Service, Worcestershire CC	2000
42		An Archaeological Evaluation of Land Adjacent to Park Street Gardens, Birmingham	ULAS	EVAL	ULAS, for Patel Taylor Architectural Services	????

ID	Report Number	Report Name	Report Author	Report Type	Unit/ Organisation	Date
43	13510.R02.Rev1	City Park Gate, Birmingham: Report on an Archaeological Evaluation (Freeman Street Evaluation)	Laurence Hayes	EVAL	Gifford	2006
44	C1016231061OUT	Digbeth Coach Station Desk Based Assessment. Appendix A and Addendum: Mill Lane Site	Cathy Patrick	DBA	CgMs Consulting	
45	SMR 20614	Summary of WB here	J. I. McCallum, A. Roe	WB	BUFAU	1983
46	1418	7-8a Freeman Street, Birmingham: Historic Building Recording	Malcolm Hislop, Michael Lobb	BREC	BA	2006
47	1528	7, 8 and 8a Freeman Street, Birmingham Supplementary Historic Building Recording	Shane Kelleher	BREC	BA	2006
48	1448	Former Adamant Co. Works 37-45 Commercial Street Building Recording and Documentary Record	Malcolm Hislop	DBA/BREC	BA	2006
49	1540	Eastside Birmingham, Historic Building Recording	Michael Lobb	BREC	BA	2007
50	1168	25-27 Heath Mill Lane, Deritend Archaeological Evaluation 2004	Eleanor Ramsey	EVAL	BA	2004
51	730	Upper Dean Street, Desk Based Assessment and Building Recording	Steve Litherland, Sarah Watt	DBA/BREC	BUFAU	2000
52	923	Masshouse Circus, Archaeological Recording	Roy Krakowicz, Andy Rudge	WB	BA	2002
53	773	Masshouse Circus: An Archaeological Watching Brief	Charlotte Neilson, Mary Duncan	WB	BUFAU	2001
54	SMR 03015	Birmingham Moat: its history, topography and destruction	Lorna Watts	PUBLICATION	Birmingham City Museums and Art Gallery Archaeology Department	
55	3015	Land between Park Street and Allison Street DBA	Oxford Archaeological Unit	DBA	Oxford Archaeological Unit	1999
56	SMR 20432	Report of an Archaeological Watching Brief at Millennium Point, Curzon Street	Gifford	WB	Gifford	1998
57	SMR 20432	Report on Archaeological Recording and Evaluation at Millennium Point, Curzon Street	Gifford	EVAL/BREC	Gifford	1997
58	SMR 20499	Archaeological Watching Brief: Aetna Glassworks, Broad Street	Paul Belford	WB	Ironbridge Archaeology	2003
59		DBA and Survey of standing structure: Scammels Engineering Works and former smithy of the former Fazeley Street Gas Works	Martin Cook	DBA/BREC		2002
60		DBA and survey of land and standing structures: Warwick Bar Stoplock and Dock	Martin Cook	DBA/BREC		2001
61		DBA and survey of land and standing structures: Warwick Wharf	Martin Cook	DBA/BREC		2002
62	SMR 20500	DBA and Survey: Former Belmont Glassworks and Ashted Pumping Station	Martin Cook	DBA/BREC		2001
63	1041	Historic building survey of 134 to 138 Edmund Street, Birmingham City Centre	Steve Litherland	DBA/BREC	BUFAU	2003

ID	Report Number	Report Name	Report Author	Report Type	Unit/ Organisation	Date
64	1057	An Historic Building Assessment of the HSBC Bank, 26-33 Bennetts Hill, Birmingham	Malcolm Hislop	BREC	BUFAU	2003
65	1124	Town Hall, Chamberlain Square, Birmingham: Archaeological observation and recording 2003	Chris Hewitson	EXC	BA	2003
66	1196	Birmingham Town Hall: An Archaeological Watching Brief (Phase 2) 2004	John Halsted	WB	BA	2004
67	1200	Martineau Galleries, Birmingham: An archaeological desk based assessment	Kevin Colls	DBA	BA	2004
68	1467	Snow Hill Queensway, Birmingham: An Archaeological Excavation and Watching Brief 2006	Eleanor Ramsey	EXC/WB	BA	2006
70	473	Land to the south of Edgbaston Street, Birmingham City Centre: Archaeological Investigations 1997-99	Cathy Mould	EXC	BUFAU	2001
71	635	The Row, Birmingham City Centre, West Midlands: An Archaeological Watching Brief	Chris Patrick	WB	BUFAU	2000
72	638	Further Archaeological Investigations at Hartwell Smithfield Garage site, Digbeth, Birmingham	Bob Burrows, Lucie Dingwall, Josh Williams	EVAL	BUFAU	2000
73	687	The Archaeological Evaluation and Excavation at Moor Street, Birmingham City Centre 2000	Cathy Mould	EXC	BUFAU	2000
74	701	The churchyard of St Philips Cathedral, Birmingham; an archaeological watching brief	Chris Patrick	WB	BUFAU	2001
75	703	Historic Town Plan Analysis and Archaeological Evaluation of Manzoni Gardens, Birmingham City Centre	Bob Burrows, Cathy Mould	DBA/EVAL	BUFAU	2000
76	712	Historic Town Plan Analysis and Archaeological Evaluation of the Open Markets, Birmingham City Centre	Bob Burrows, Cathy Mould	DBA/EVAL	BUFAU	2000
77	776	Park Street, Birmingham City Centre: Archaeological Investigations 2001	Bob Burrows, Helen Martin	EXC	BUFAU	2001
78	787	Floodgate Street, Digbeth, Birmingham: An Archaeological Evaluation	Josh Williams	EVAL	BUFAU	2001
79	798	Excavations at St Martins Churchyard 2001: Post-Excavation Assessment and Research Design	Jo Adams, Richard Cherrington	EXC	BUFAU	2001
80	845	An Archaeological Watching Brief during groundworks at St Philips Place, Temple Row, Birmingham	Richard Cherrington	WB	BUFAU	2001
81	876	An Archaeological WB during cable trench excavation at the junction of Colmore Row and St Philips Pl	Stephan Williams	WB	BUFAU	2001
82	964	Proposed New Library, Albert Street/Fazeley Street, Birmingham City Centre	Sarah Watt	DBA	BUFAU	2002
83	1274	Site Bounded by Digbeth, Allison Street, Well Lane and Park Street, Birmingham City Centre	Malcolm Hislop	DBA	BA	2005
84	1181	Refurbishment of Curzon Street Station, Stage II HLF Submission Conservation Management Plan	Malcolm Hislop	BREC	BA	2005

ID	Report Number	Report Name	Report Author	Report Type	Unit/ Organisation	Date
85		DBA and Survey of land and standing structures of the former smithy of the Fazeley Street Gas Works	Martin Cook	DBA/BREC		

Table 1.3 Reports used in the text with ID numbers

Chapter 2 Environment and Resource in the City Centre

By Tom Hill

Of the 46 below-ground investigations assessed for this project, some form of archaeological environmental data was recovered from 13 of them, giving us a limited, but highly important insight into the domestic and industrial life of the inhabitants of the city, and the environmental landscape backdrop onto which these lives were set. These sites were clustered around the St Martin's area and Digbeth/ Deritend arterial route (Figure 2.1). For the wider environmental context, other sites in the region have also been assessed.

The current landscape of buildings and roads which occupies much of Birmingham's city centre is very likely to have been originally covered by a relatively dense forest for much of the prehistoric and perhaps even the historic periods. By the time the climatic amelioration of the Holocene had taken place some seven to eight thousand years before the present, mature woodland consisting of oak, lime and elm was established, with hazel, birch, alder, and other shrubs present depending on local soils and drainage (Greig 2008). The pattern of clearance of this woodland by human communities for settlement and agriculture remains frustratingly unclear, although the palaeoecological record can provide some 'snapshots' of past environmental changes.

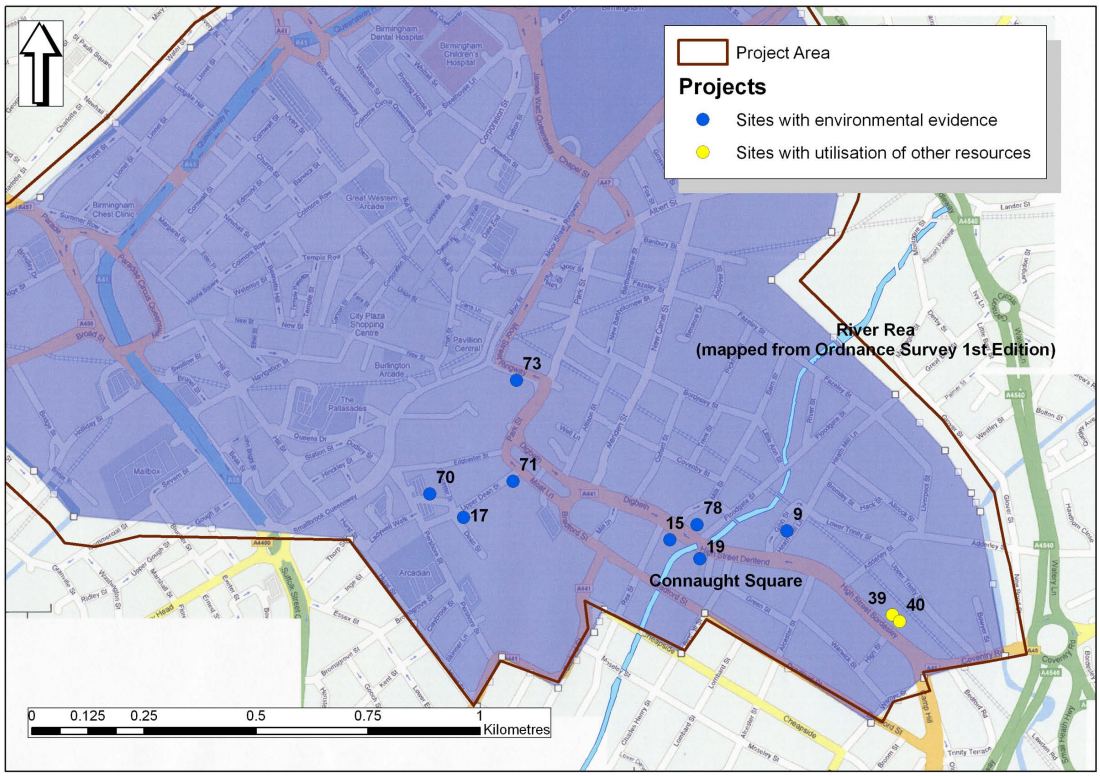

Figure 2.1 Location of sites with environmental data

The underlying geology

The city of Birmingham is built on an underlying solid geology consisting of a mix of Permo-Triassic Bromsgrove Sandstones (formerly called Keuper Sandstones) and Mercia mudstones (formerly called Keuper Marl; Haines & Horton 1969, Hodder 2004; Warrington *et al* 1980) (Figure 2.2). During the Permo-Triassic Period, between *c.* 290 and 210 million years ago, England was positioned much closer to the equator, which resulted in an arid desert-like environment and these hot and dry conditions were responsible for the characteristic red coloration of the bedrock commonly encountered across the area. An ancient tectonic fault known as the Birmingham Fault runs through the study area, where Mercia mudstone unconformably meets the Bromsgrove Sandstone. Similar faults have resulted in the exposure of older Carboniferous Coal Measures to the east near to Coleshill and further west near Oldbury. A major period of mountain building called the Hercynian Orogeny was taking place at this time, during the development of the supercontinent *Pangaea* (Doyle *et al*, 1997). The resulting structural deformation caused numerous folds and faults in the rock, commonly trending north-east to south-west. The Birmingham Fault is positioned just east of St Martins Church in the Bull Ring and runs south-west towards Northfield and north-east towards Sutton Coldfield. With distance east from the fault, Mercia mudstones typify the solid geology throughout the study area. In contrast, whilst the city centre is located on a ridge of Bromsgrove Sandstone, Wildmoor sandstones and Pebbly Sandstones of the Kidderminster Formation (formerly known as the Bunter Pebble Beds) are present further west (Hodder 2004).

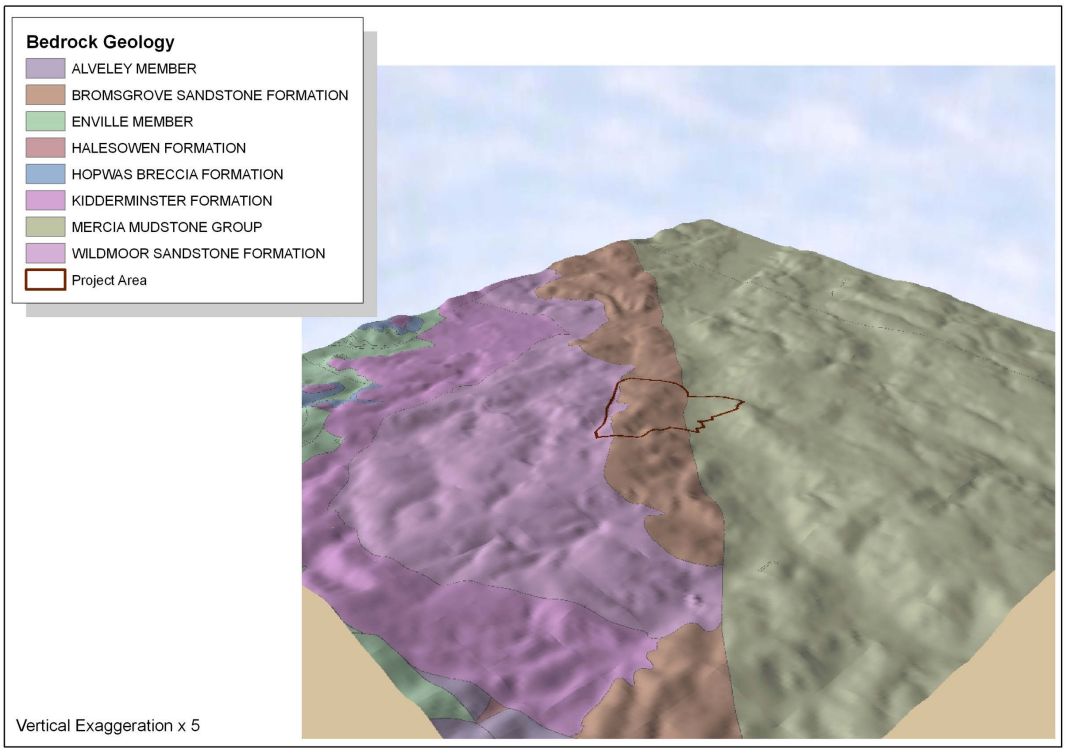

Figure 2.2 Solid geology of Birmingham

Any deposits laid down after the Permo-Triassic period have subsequently been completely removed by erosion, until the accumulation of Pleistocene (last 2 million years) drift deposits over the bedrock throughout much of the study area. These deposits include Mid-Pleistocene glacial sands and gravels that are likely to date either to the Anglian (480,000-430,000 years ago) or Wolstonian (300,000-130,000 years ago) glacial periods. The Pleistocene glacial history of the city centre is somewhat poorly understood, although the deposits here are more likely to date to the earlier Anglian period. During the glacial periods, much of area would have been

covered by ice and the drift deposits would have accumulated either through direct deposition from the base of these ice masses or through subsequent glaciofluvial deposition during glacial movement. During the last glacial period (known as the Devensian and reaching its maximum c. 22,000 years ago) direct glacial activity did not affect the study area, with sedimentation being confined to pro-glacial fluvial processes typified by erosion of the older drift deposits and bedrock. Insect species recorded in peat exposed during construction of the Wholesale Markets (Hodder 2004, 23) indicated that *c* 11,000 years ago the climate in Birmingham was much colder and comparable with that found in the more mountainous regions of Britain, and in northern Scandinavia or Russia. Subsequent fluvial activity during the last 10,000 years (the present interglacial; the Holocene) has resulted in the development of the region's current drainage network.

Much of the Birmingham city centre study area and its surrounding suburbs are located on an area of upland commonly termed the Midland Plateau. Within the present city boundaries, the plateau rises to over 200m O.D. in places and developed as a result of the interaction between the underlying bedrock, the tectonic activity discussed above, and the subsequent erosive action of the rivers Avon, Cole, Severn and Trent and their tributaries. The River Rea for example, part of the Trent Valley system, flows northeast through the study area and follows the approximate line of the Birmingham Fault. The Mercia mudstone is much more susceptible to erosion than the Bromsgrove Sandstones located immediately west of the fault, hence the River Rea preferentially erodes the Mercia mudstone and associated drift deposits to the east of the fault. Such variations in rock type have therefore contributed to the character of the landscape within the study area. The superficial (drift) geology of the area is shown in Figure 2.3.

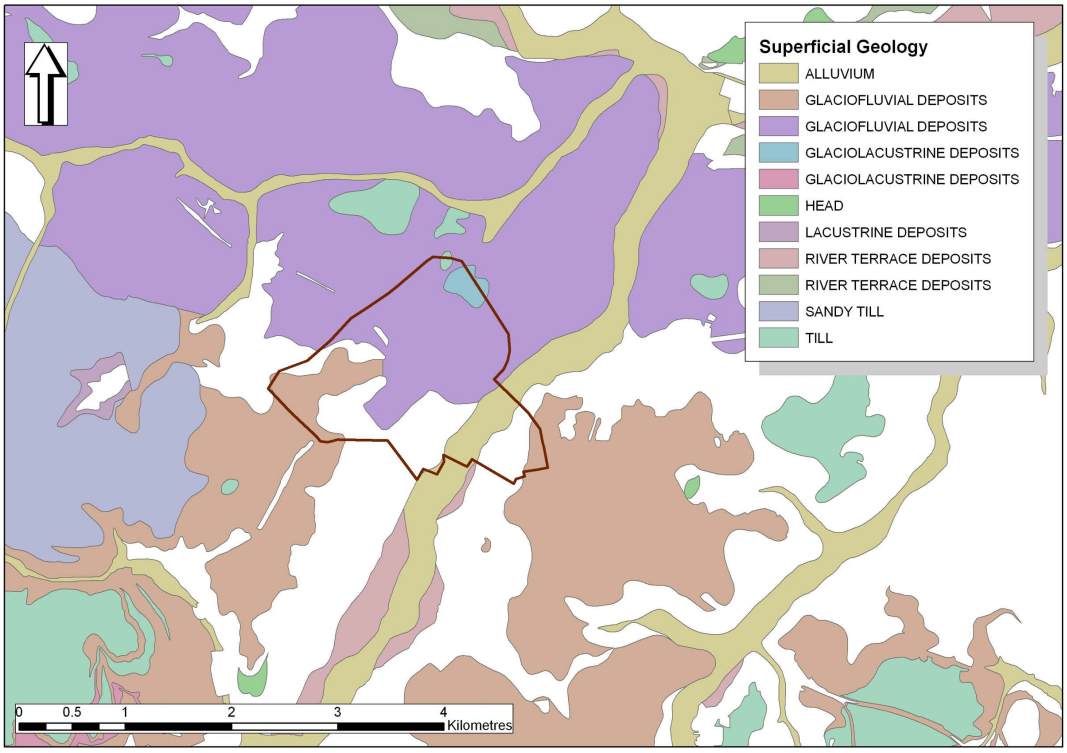

Figure 2.3 The superficial (drift) geology of the area

Landscape Development

The more recent development of the landscape of Birmingham results from processes following the end of the last (Devensian) glaciation some ten thousand years before the present. In common with much of the rest of the country, the region would have been covered by woodland that became established following the post-glacial climatic amelioration. However, surprisingly

little is known of the prehistoric character of either the original vegetation cover of Birmingham or the environmental changes associated with the development of the landscape. This is due to an overall lack of organic deposits such as peat, which preserve the sub-fossil pollen grains, and beetles which provide evidence of vegetation changes. Continuing archaeological and palaeoenvironmental work within the city will hopefully contribute more to this gap in our knowledge in the future. Of especial significance would be the detailed assessment of any waterlogged deposits for a range of biological remains, especially pollen, plant macrofossils and beetles. The most likely locations of such deposits is proximal to the watercourses of the city (see below) but discrete areas of intact organic sediments may be present elsewhere, albeit sealed beneath later activity. It is likely that in common with much of the west midlands, by the mid Holocene (*c.* 5000 BC) mixed woodland was established, dominated by lime, oak and hazel, but with other trees and shrubs such as elm, birch, pine and alder present, depending upon variations in local soils and topography. There is also little evidence of when human communities began to clear this woodland for settlement and farming, although samples from beneath the burnt mound site at Bournville, indicate that lime-oak woodland persisted into the Bronze Age at this location. It has been suggested that such dense woodland was perhaps not conducive to prehistoric peoples who may have been attracted to the lighter, more easily tilled soils of adjacent areas such as the Avon Valley (Greig 2008).

A thin (0.50m) organic unit adjacent to the River Tame at Perry Barr was sealed beneath 4m of overburden and provided rare evidence of the prehistoric environment of the city. The pollen record suggests that closed woodland was present on both wetland soils of the river floodplain and on dryland contexts during the later Neolithic period (2900-2700 BC) (Tetlow *et al* forthcoming). The dryland vegetation appears to have been lime-dominated woodland. There is no evidence for human presence at this time but clearance for settlement and farming seems to have subsequently resulted in a contraction in the lime woodland, probably during the Bronze Age. The record at Perry Barr is discontinuous and affected by poor preservation of the biological remains, but it would appear that by the Romano-British period (AD 200-400), the woodland in the close vicinity of this site had been cleared and that open grassland was dominant in the wider landscape. In contrast, evidence from Metchley Fort would seem to suggest a slightly different picture for this general period, with woodland recovering following abandonment of the Roman fort *c.* AD 200 and persisting throughout the Anglo-Saxon/early medieval period, after which time the area was gradually re-occupied (Greig 2002; 2005).

There is, on the whole, little evidence of environmental or landscape changes from the end of the Romano-British (AD 410) through to the later medieval period. Most of the place names in Birmingham, including Birmingham itself, are Anglo-Saxon in origin (Hodder 2004) and it has been suggested that the Anglo-Saxon settlement of Birmingham was probably in existence before AD 650 (McKenna 2005), although there is no archaeological evidence to support this. Recent pollen work undertaken in the city centre at Edgbaston Street and Park Street indicates that mature woodland was present in and around the medieval town, with the percentages of tree and shrub pollen in many of the samples sufficient for the analyst to speculate that "…perhaps Birmingham was indeed founded in a wood" (Greig 2008). It was therefore likely that in places at least, relatively dense woodland covered the Birmingham Plateau from the end of the last glacial period until settlement in medieval times. The pollen record provides a glimpse of the variation in vegetation cover that must have existed more widely by this period, with trees such as hornbeam, hawthorn and beech present. The analysis of beetle and plant remains from watercourse, ditch and tanning pit deposits from the same areas largely reflect very local conditions, which perhaps (unsurprisingly) indicates rather foetid conditions typical of decaying, mouldering waste around human settlements or the open water and aquatic vegetation present in the ditches on the site (Smith 2008). Some of the samples do reflect the wider environment, with indications of open grassy areas and animal dung, perhaps suggesting that these areas of the town were used for stalling animals or for pasture.

Two sites along the River Rea floodplain but outside the study area and a few miles outside the city centre, at Selly Oak and Longbridge have recently been the subjects of an environmental study by Katie Head (2007). At Longbridge, data, dated to the late Saxon and medieval periods,

indicated a mixed environment of alder/hazel woodland by the river, with meadow pasture and arable land beyond. Open woodland of lime and oak was present on the drier slopes. The woodland area by the river appears not to have been used by the earliest settlers but, as time progressed, there was clearance and an increase in grasses suggesting a greater amount of pasture. From the medieval period onwards there was a mixture of pasture and arable farming. At the Bourn Brook site in Selly Oak, the land by the river was open damp grassland in the later medieval/early post-medieval period.

Resources

The agricultural potential of the Birmingham soils appear to have been relatively limited, with the poorer soils immediately west of the city centre preventing subsequent agricultural expansion until the 18th century (Upton 1997, 40). Birmingham appears to have been fully enclosed by the 17th century except for the area of heath in the northwest which was enclosed in 1802 and soon built over (Stephens 1964). However, environmental evidence from the Bullring, revealed that areas of heathland were exploited, if not agriculturally, since there was evidence of heather and heath which may have been used for animal bedding, thatching and broom making. Exploitation of poorer land was also attested by the presence of peat found at Moor Street (**73,** Patrick and Rátkai 2008).

There is some reference to agricultural activity in the Birmingham area during the 11th century from the Domesday Book with "land for 6 ploughs. In demesne is 1 [plough]; and 5 villains and 4 bordars with 2 ploughs" (Buteux 2003, 7). Reference is also made to furlongs and leagues of woodland surrounding the agricultural plots. Agricultural activity was clearly taking place, even if the local soils were not the most productive, and wheat, barley, oats and rye are all attested in the archaeological record (Ciaraldi 2008, Greig 2008). The pollen record from Edgbaston Street (**70**) also identified the crop buckwheat - known to be more productive than other cereals in poor, sandy soils. This was grown in abundance during the later medieval and post-medieval periods (Patrick and Rátkai 2008) although rye cultivation is known in the area from the Anglo-Saxon period (Head 2007). In 1437, lands which are presumed to have comprised Birmingham manor were described as consisting of 1,300 acres of meadow, pasture, wood and moor but only 400 acres of arable (Stephens 1964). A documentary reference implies that there were open fields in Birmingham in the later 16th century (Stephens 1964) and an earlier 14th century reference suggests there was hedged and ditched land. Plant and pollen evidence from the Bull Ring sites is consistent with hedges within the townscape and with open pasture. In 1553 there were nine folds in the borough of Birmingham but sheep never seem to have completely ousted arable farming in the Birmingham area. Faunal remains indicate that the main meat consumed in Birmingham was beef and both sheep and pig remains are poor in the town. It is therefore surprising to see an injunction against pig-keeping in Old Square/Pemberton Estate development (see Baker, Chapter 3), the inclusion of which would seem to suggest that evidence of pork consumption should be more evident in the archaeological record.

There is evidence for orchards within the wooded townscape of Birmingham. Prunings of apple or pear wood from Floodgate Street (**78,** Edgeworth et al, forthcoming) are indicative of an orchard in the early post-medieval period and there is documentary evidence for cherry orchards (Ciaraldi 2008). The lack of plant or pollen remains which suggest the consumption of apples, pears or cherries must be a result of the nature of archaeological deposits recorded to date showing a bias towards more industrial assemblages.

Maps of the 18th century show that there were numerous market gardens in the town and there is some plant macrofossil evidence for them also. Hutton (1783) recorded '*Health and amusement are found in the prodigious number of private gardens scattered round Birmingham, from which we often behold the father returning with a cabbage, and the daughter with a nosegay*.' However, as Birmingham expanded it was unable to provide all the agricultural produce that it needed. Arthur Young (1791) noted the long distances which produce for Birmingham travelled. He indicated that garden vegetables came from Evesham and Tamworth, 30 and 16 miles away respectively, as a result

of their being few gardens near Birmingham. Corn came from Compton (50 miles distant), Buckingham (56 miles distant) and Evesham.

Since the agricultural potential of Birmingham was not the best, it was not a major factor in the town's success. Water, however, in the form the River Rea and the many springs and tributaries that run through Birmingham, was a major factor in the town's growth in terms of its available resources. A reliable supply of water is vital to the establishment and expansion of any settlement but here it was a vital component of Birmingham's industrial development. The course of the Rea has been moderated over the years, most recently with the culverting of the river in the 19th century. An erstwhile course of the river is fossilised in the parish boundary between Birmingham and Aston and which separates Digbeth to the west and Deritend to the east. This boundary runs along the river to the northeast and southwest but veers east and skirts 'Deritend Island' (see Westley's map and discussion in Chapter 3, below). The large 'pool' at Floodgate Street (**78,** Edgeworth *et al*, forthcoming) seems to respect the parish boundary and the actual course of the river in the later medieval and early post-medieval period is a matter of conjecture.

Recent archaeological investigation at Connaught Square (in the vicinity of reports **15** and **19**), an area where the river ran before culverting, has revealed deep layers of alluvium and the probable course of the 17th century river. The preservation of organic remains has been excellent and there is some scope for working out what industries were located here and when they were established. Combining this evidence with that from the early maps may help in understanding the water management systems, which were in place in the medieval and early post-medieval periods.

Streams also drain down the south-east facing slope of the Rea valley emerging where the porous sandstone meets the impervious Mercia mudstones along the Birmingham fault. Digbeth, Hutton (1783) asserts was originally known as '*Well Street, from the many springs in its neighbourhood*'. These numerous watercourses seem to have been used from the earliest periods of the town's history. Other springs were used to supply a bathhouse which lay to the south of the Parsonage Moat at Lady Well. Hutton wrote '*At Lady-Well, are the most complete baths in the whole Island. There are seven in number; erected at the expense of 2000l. Accommodation is ever ready for hot or cold bathing; for immersion or amusement; with conveniency for sweating. That, appropriated for swimming, is eighteen Yards by thirty-six, situated in the centre of a garden, in which are twenty-four private undressing-houses, the whole surrounded by a wall 10 feet high*' (Hutton 1783).

The heart of the early town was established on higher ground above the Rea floodplain and was bounded to the south by two moated sites – the Parsonage Moat and the Manor Moat – the two moated sites being linked by a watercourse, probably natural in origin, but subsequently channelled. Springs in this area were used in order to feed the two moats and joining watercourse. Comparison of the results of environmental sampling from the Manor Moat (**54**) (Greig 1980, Ciaraldi 2008) revealed two apparently different aquatic environments; one fairly stagnant, the other free-flowing. Although there is no archaeological evidence for this, it would seem to suggest that the water within the moat itself was carefully controlled, possibly by a sluicing system. Further evidence of water management may be evident in the Pudding Brook and Dirty Brook (see below).

The Manor Moat was backfilled and levelled in 1815-17 prior to the construction of Smithfield Market and a similar fate befell the Parsonage Moat in the following decade with the construction of a new turnpike road, Pershore Street, which linked Bromsgrove Street and Worcester Street. The linking watercourse seems to have gone out of use in the late 18th to early 19th century. Until this point it appears to have been kept clean and free-flowing (Patrick and Rátkai 2008). Pudding Brook and Dirty Brook to the south of Digbeth which, although positioned parallel to one another, flowed in opposing directions. Pudding Brook flowed north to supply water to the Birmingham Moat, whilst the latter possibly a comparatively late feature in the landscape - it is not visible on Bradford's or Westley's maps - was something of an open sewer taking waste from the Manor Moat and northern end of the watercourse (**17,** Martin and Rátkai, 2005).

Several wells have been excavated within the project area, the earliest dating to the medieval period. This was found in an evaluation trench on Moor Street (**73**, Patrick and Rátkai, 2008). The quality and abundance of the water in Birmingham is also attested by two 19th century mineral water works, situated in Digbeth (see Ramsey and Forster, Chapter 3).

Utilisation of other natural resources is also evident within the Bordesley (**39** and **40**), Digbeth (**78**) and Deritend (**9**) areas of the city centre (Edgeworth *et al*, forthcoming), where archaeological excavations identified quarry pits. The clays from both the Mercia mudstone and the alluvium derived from the River Rea were a source of raw material for brick, tile and pottery. In addition, many of the buildings within the study area are built of sandstone, which may have been derived from quarries in close proximity to the city centre.

During the medieval period, industrial activities also took advantage of the water sources present throughout the city (see above), with evidence for activities such as retting (the extraction of fibres from plants such as hemp or flax through soaking in water), the production of willow supple, tanning and blacksmithing apparent in the archaeological records of Digbeth, Deritend, and the areas around Edgbaston Street (**70**), Park Street (**77**) and Moor Street (**73**; Patrick and Rátkai, 2008). Post-Medieval pits and a large artificial 'pool' at Floodgate Street, Deritend (**78;** Edgeworth *et al*, forthcoming) demonstrate exceptional preservation of organic material in the form of plant macrofossils, including seeds and wood, and even remains such as animal hair. The wood remains, in particular, from this site are important as some of them were datable by dendrochronology (tree-rings) providing precise calendar dates of between AD 1519 and 1550. One of the samples was identified as a French barrel, probably a wine barrel which had been used to store lime, an important element in the dehairing and defleshing of hides in the tanning process.

The town and its industries expanded and changed but the demand for water remained and increased. The advent of a vast network of canals in the later 18th century again utilised water but this time for transport. The need for an effective means of transporting goods and merchandise to and from the town's industrial centre ensured that the canals were an essential part of the commercial life of the city and the country until the advent of the railways in the 1830s. The canals remained in use up until the 1960's, after which point their use as an effective means of transporting goods was no longer economically viable. The severe winter of 1963 resulted in boats being frozen to their moorings for considerable periods of time and has been partially blamed for the decision of the British Waterways Board to formally cease commercial carrying on the canals. Although the canal network became abandoned and fell into disrepair for much of the late 20th century, the canals have received considerable investment as a result of the urban regeneration that has taken place in Birmingham in recent years. The canal network is now a focal point for tourism and leisure, living on as a reminder of Birmingham's rich industrial history.

Chapter 3 Archaeological Investigations in the Heart of Birmingham

By Eleanor Ramsey and Amanda Forster

As has been explained above, the purpose of the project has been to provide a detailed and integrated account of the archaeological investigations undertaken in Birmingham city centre as a result of PPG16 and developer-funded work. It is vital to remember where this information stems from, and also to keep in mind the gaps in our knowledge both geographically, temporally and by the varied preservation of some strands of evidence (such as palaeoenvironmental remains and waterlogged finds). This chapter, therefore, serves not to provide a detailed and integrated discussion of the archaeological evidence to date, but rather to set the framework of what is known and how we come know it. Each archaeological investigation undertaken has been given an identifying number, which appear in bold throughout the text, and relate to the numbers on Figure 3.1. Where specific points are being referred to within project reports, the author is also referenced. These numbers are the used to identify sites on maps and in the Gazetteer. The remainder of the book provides an integrated account of the city and its development within the themes of life, work and death.

Developer-funded work in the city centre

A total of 85 projects were included in the synthesis and, with the exception of Lorna Watts publication of the Birmingham Moat, which was funded by Birmingham City Museum and contributed to her MA thesis (Watts 1985), all were developer funded projects. Fourteen archaeological organisations were involved in the work, with reports written and researched by 39 different authors. The projects were conducted between 1983 and 2007, and cover all types of archaeological mitigation from desk-based assessment through historic building recording to full open area excavation. One of the most visually evident observations of this synthesis is the unequal distribution of the sites across the city – a fact which results from the distribution of developments undertaken which have had an impact on archaeological remains and therefore for which some sort of archaeological work has been required within the planning process (Figure 3.1). Of the 313 hectares included within the study area, roughly 132 hectares has been subject to some kind of archaeological work, predominantly concentrating on the south and west (Figure 3.2). While this has given us a fantastic opportunity to learn more about the medieval centre around St Martins, the development along the Digbeth arterial route, and the post-medieval development outwards to the west, the north and east has been less well covered. All projects were monitored by Mike Hodder, the Planning Archaeologist for Birmingham.

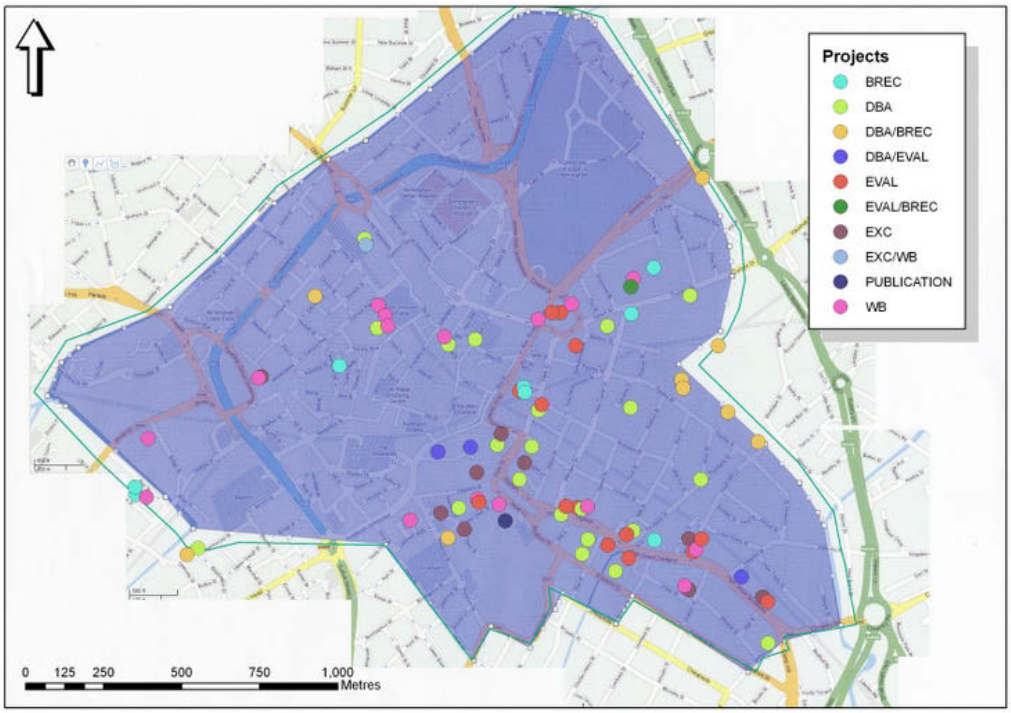

Figure 3.1. Location of sites included in this study.

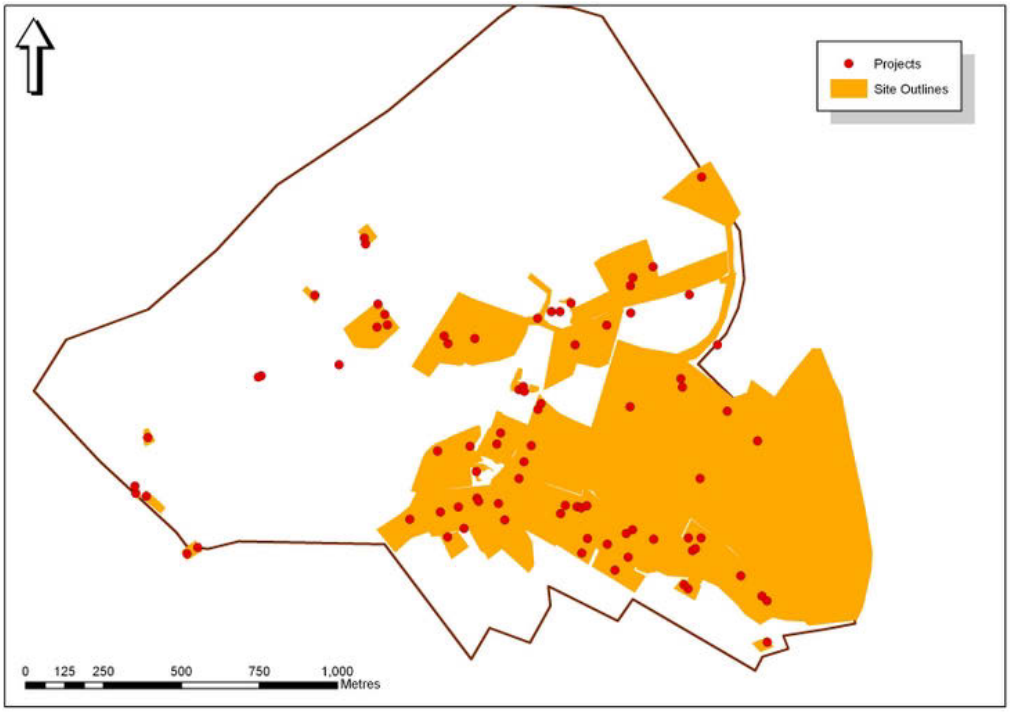

Figure 3.2. Total area included in archaeological investigations of all types across the study area.

Desk based assessment

A total of 33 desk-based assessments have been conducted within the bounds of the study area (Figure 3.3). Individually these have contributed to the understanding of the origins and development of particular sites and have been used to inform planning decisions for individual projects, and the characterization of Conservation Areas. Taken as a whole, however, they also contribute substantially to our understanding of the development of the city. Though the coverage is by no means comprehensive for within the study area, patterns emerge, clearly demonstrating the ebb and flow of development and redevelopment in the areas covered, and highlighting the influences throughout Birmingham's history that have created these changes.

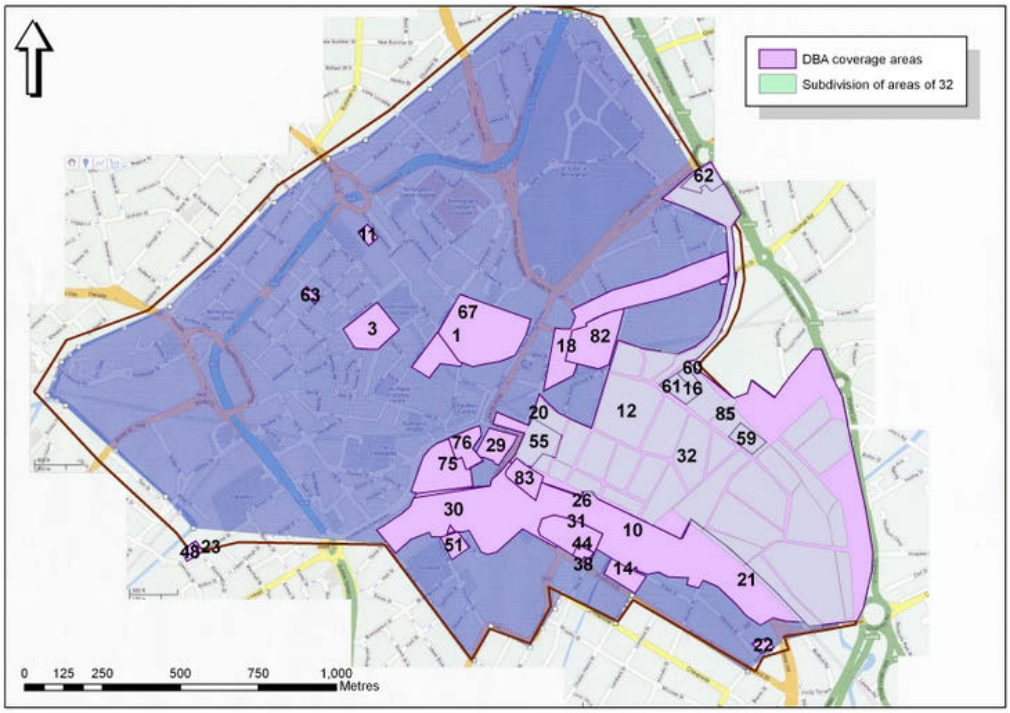

Figure 3.3 Areas covered by desk based assessment within the study area.

The date of the reports ranges from 1995 to the present, over which time a substantial amount of other archaeological work, evaluation, excavation and building recording has also been conducted in the city. The majority of the work was undertaken by Birmingham Archaeology (previously BUFAU), with additional work being undertaken by CgMs, Wardell Armstrong, Oxford Archaeology, APS and Martin Cook. The projects range in size and scope from the history of individual buildings to the assessment of very large and complex areas. Of the 33 projects that comprised desk-based assessment, nine were conducted in conjunction with historic building recording and three in conjunction with, or informing, later archaeological evaluation. Although a large number of individuals have contributed to the collection of desk-based assessment work, particular acknowledgement is due to Cathy Patrick (nee Mould), Steve Litherland, Malcolm Hislop, Sarah Watt and Martin Cook. A full list of the desk-based assessments can be found in the Gazetteer.

The desk-based assessment is a standard and very important part of the archaeological process within commercially funded work. The methodology employed for these reports is therefore standard, and adheres to the relevant CIfA *Standards and Guidance for Archaeological Desk-Based Assessments*. The range of sources consulted is comprehensive, and includes a number of record offices, museums and collections. It should be noted, however, that consultation of the Sites and Monuments Record and resources held at Birmingham Central Library, including cartographic sources, was conducted for every project.

Archaeological investigations; watching brief, evaluation and excavation

Within the study area, a total of 46 below-ground investigations have been conducted, comprising excavation, evaluation and watching brief (see Figure 3.4 and 3.5). Of these, archaeological deposits of some description were encountered in 41 projects, ranging from evidence of medieval boundary ditches and industry, to Victorian cellaring. The majority of the work was undertaken by Birmingham Archaeology (previously BUFAU) with additional work being undertaken by the City of Birmingham Museum, Hereford and Worcester County Archaeological Service, Gifford, HEAS Worcester CC, Ironbridge Archaeology, Marches Archaeology, ULAS and Warwickshire Museum Field Services.

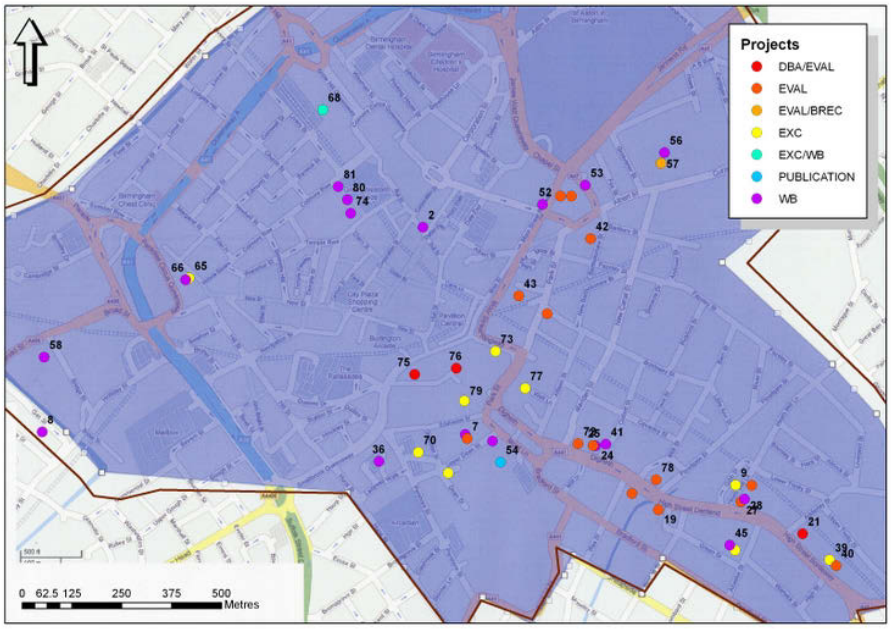

Figure 3.4 Location of sites including intrusive investigation

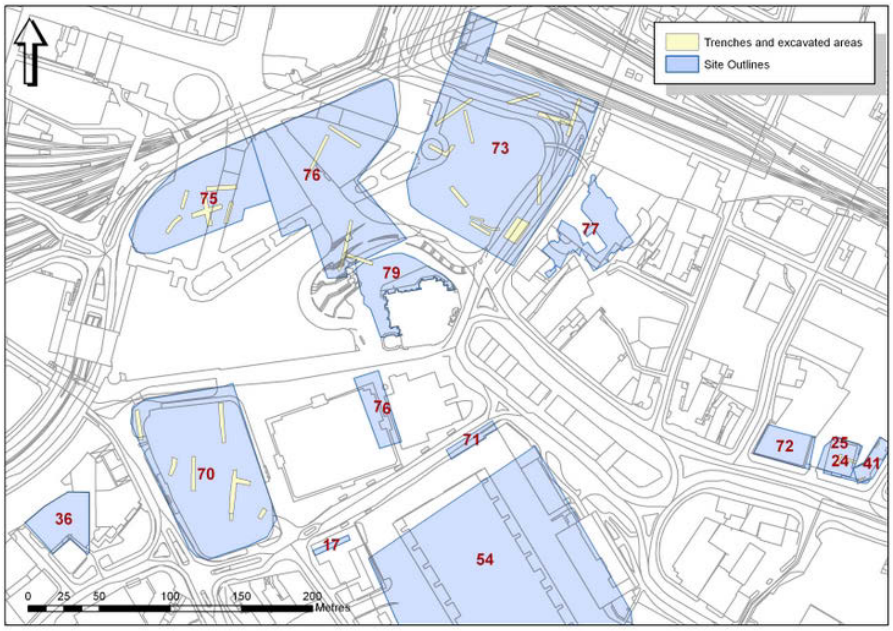

Figure 3.5 Detail of intrusive investigations around St Martins

Before medieval Birmingham

None of the developer-funded work undertaken within the study area has recorded the any substantial prehistoric finds. Two worked flints were recorded from excavations at Moor Street and Edgbaston Street are the sum of prehistoric finds; out of context they offer little to our understanding of the prehistoric peoples whom may have lived in and around the area at this time (see Figure 3.6). Two find spots listed on the Sites and Monuments Record add further hints of prehistoric activity. One is listed as a polished stone axe identified during observations of road widening along High Street, Deritend in 1953 (SMR 02996), the other as two palstaves, the precise location unknown (SMR 20157). The polished stone axe is Neolithic in date and made of stone from Langdale in the Lake District (Hodder 2004, 24).

The perceived lack of prehistoric evidence, and indeed evidence for later periods, has been blamed for a vicious circle leading to a lack of research into these areas (Hodder 2002). Urbanisation means the discovery of new sites with fieldwalking and aerial photography is limited within major urban centres such as Birmingham. The intensity of development within the city centre also means that the preservation of below-ground deposits is compromised. Notwithstanding, whilst there is little in the way of prehistoric evidence for the central Birmingham, this is not to say the region as a whole is devoid of prehistory. Much of this has been recently covered by Hodder (2004).

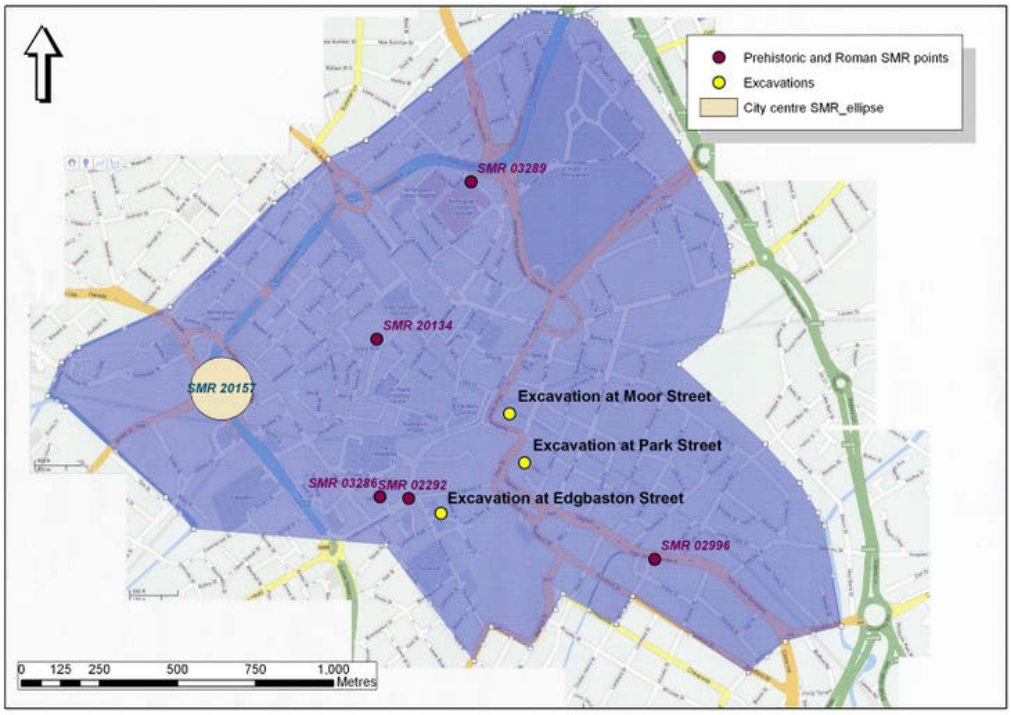

Figure 3.6 Location of prehistoric and Roman finds from the study area

Despite being an area of intensive urbanisation, the rural areas that ring the Birmingham conurbation provide undeveloped pockets of landscape. To the north of Birmingham, large undeveloped areas are present at Sandwell Valley Country Park, Barr Beacon, Sutton Park and the rural area to the east of Sutton Coldfield. Each of these areas holds potential for further discoveries and, to date, they have certainly contributed much to our understanding. Excavations at Sandwell Priory in the Sandwell Valley recovered over 800 Mesolithic flints near a spring and excavations at Wishaw Hall Farm recorded over 1,500 (Hodder 2004; Hodder 1991; Fitzpatrick 2008, 503). Neolithic flints have been found all over Birmingham, with much of the flint recovered from fieldwalking at Sutton Park being of this date. An axe made of similar stone to the one found in Deritend was found at Minworth Sewage Works, located to the south

of Wishaw Hall Farm. Earthworks at Hillwood Common Road and Kingstanding are also possibly Neolithic or Early Bronze Age (Hodder 2004, 25).

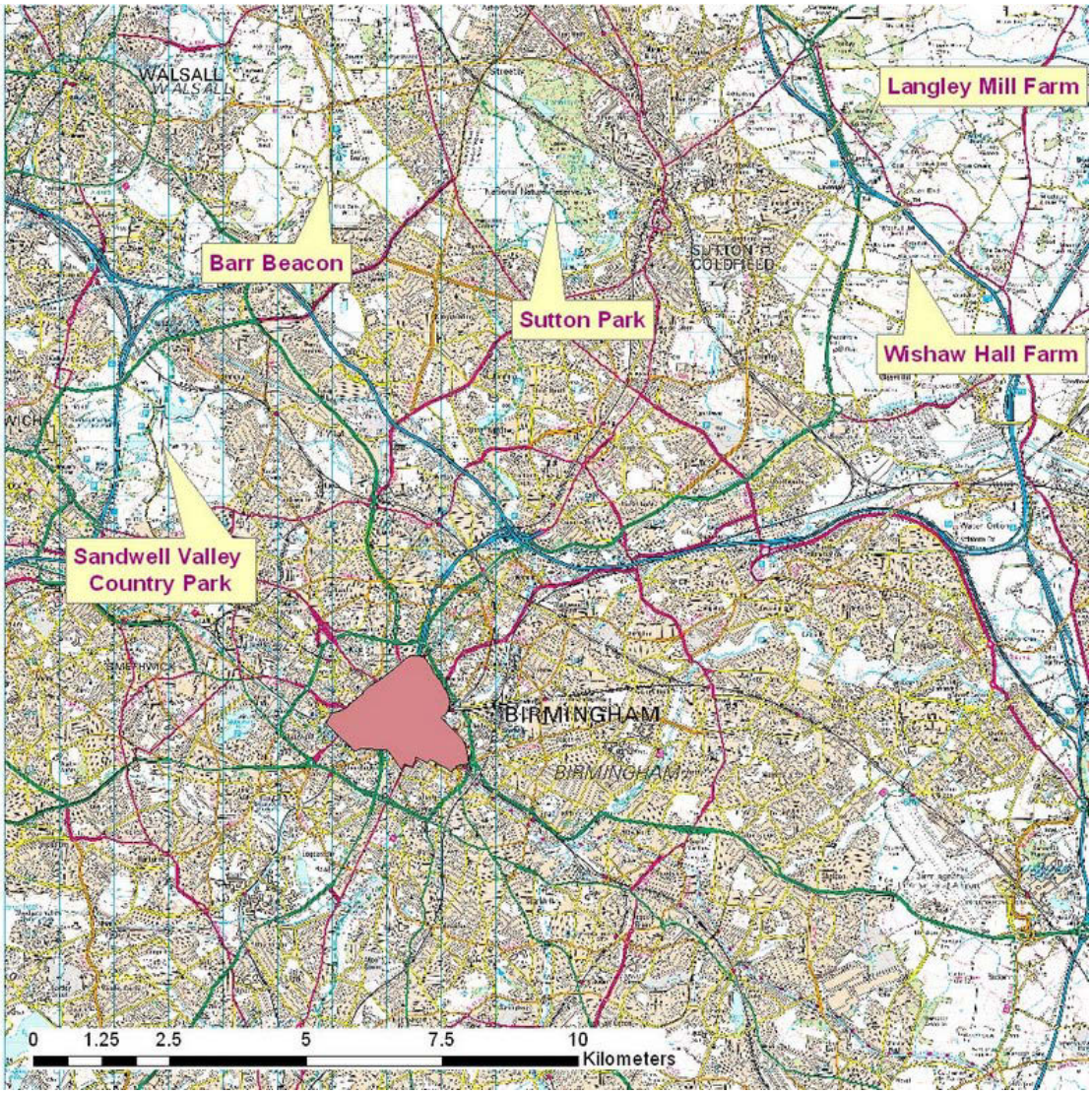

Figure 3.7 The Birmingham conurbation and surrounding areas

Chance finds dating to the Bronze Age period have also been identified, including mace heads from Perry Common and Barr Beacon, axe-hammers from Kings Norton and Stirchley, and bronze artefacts from Sutton Park and Hall Green (Hodder 2004, 27). Numerous burnt mounds have also been found all over the Birmingham area. These Bronze Age earthworks are normally found near streams, and as such have been identified within the urban conurbation in parkland etc, as well as outside it. The first archaeological excavation of a burnt mound in the region was at Sutton Park (Hodder 2004, 30). While few actual settlements have been located, it is possible that the distribution of burnt mounds is reflective of settlement that no longer survives. A burnt mound was identified at Langley Brook, and an enclosure ditch identified during excavations at Langley Hill Farm may potentially be of this date (Hodder 2004, 28).

Also, during works associated with the M6 Toll in 2001, a small Iron Age settlement was excavated at Langley Mill Farm and a larger Iron Age enclosure with associated roundhouses recorded to the north of Langley Brook (Devaney 2008, 350; Powell and Ritchie 2008, 306). Excavations at Wishaw Hall Farm also identified a sequence of aligned boundaries dating to the Iron Age (Trevarthen 2008, 359). Before this, the evidence for the Iron Age in Birmingham as a whole was very sparse and comprised a glass bead and a few fragments of pottery (Hodder

2004, 45). There are however three hillforts just outside the city, and suggestions that there may be others near Birmingham such as at Barr Beacon (*ibid.*).

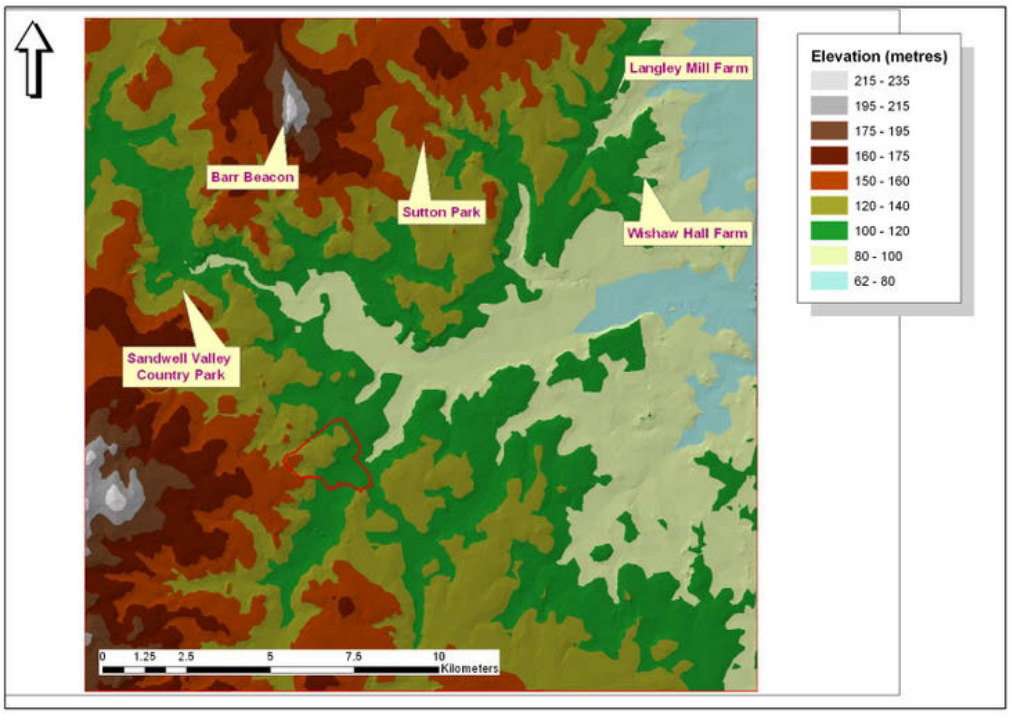

Figure 3.8 The topography of the Birmingham region showing study area

While these sites are certainly not a comprehensive gazetteer of archaeological sites in the Birmingham area, they do serve to illustrate the value in looking at the landscape as a whole when attempting to understand the potential for past human activity in the study area. Of the areas where significant amounts of archaeology have been uncovered, many have a similar topography and environment than that of the south and east of the study area. Indeed, if the natural resources of Sutton Park would have been attracted activity from the Mesolithic onwards, it might be said that similar resources in the study area would have been equally attractive.

Within the study area, evidence for the Roman period is equally lacking, with only four Roman coin find spots listed on the Sites and Monuments Record (SMR 02292, SMR 03286, SMR 03289 and SMR 20134), again with dubious provenance. As with the prehistoric evidence, the evidence for activity in the Roman period has been slightly enhanced by the excavations in advance of the Bullring development, with thirteen sherds of Roman pottery being identified at Moor Street and Park Street.

Hodder suggests that, though small in number, such finds are significant and could hint at the location of a Roman farmstead in the area (Hodder 2004, 70). It may be that the use of Roman ceramics in the region was limited, thus masking the actual level of occupation and increasing the significance of smaller assemblages. Under certain circumstances such a small amount of Roman pottery would be seen as of negligible importance. However, recent excavation and fieldwalking along the line of the M6 Toll road have highlighted the paucity of Roman ceramics on Romano-British rural settlements in the area (Booth 2008, 521). The Wroxeter Hinterland Survey (Gaffney *et al.*, 2008) and information from other counties in the west Midlands seems to indicate a very limited usage of Roman ceramics outside the urban, military or villa environment. There are strong indications that some areas of Britain were never fully Romanised and the use of Roman ceramics is correspondingly low (pers. comm. Dr Jerry Evans).

As Hodder (2004, 69-70) notes, "concentrations of Roman pottery in small quantities which would be interpreted elsewhere as evidence for manuring… can be recognised as significant local concentrations". In this situation the presence of a few Roman sherds at Moor Street and Park Street is worthy of note. This is the first discovery of Roman material other than coins in the city centre and is to be seen alongside the increasing number of Roman settlements now known elsewhere in Birmingham and its immediate surroundings (Hodder 2004, 63-70; Booth 2008). Roman coin hoards found some time ago in Dudley Street and Holliday Street (Birmingham City Council, Sites and Monuments Record) might also be related to settlements. It may be significant that no Roman sherds were found at Edgbaston Street, an area which may have been too boggy during this period to be utilised in any way.

Outside the study area and the wider bounds of the city centre the archaeological evidence for the Roman period increases. Perhaps most significant are the excavations to the southwest of the study area at Metchley Roman fort, undertaken during development of the University Hospital site (Figure 3.10). The fort at Metchley was established in the mid-1st century and occupied on and off until *c.* AD 200 (Jones 2005). The fort was linked to others in the region by a network of roads, leading to Wall, Alcester and Droitwich, with Hodder suggesting there might also be roads leading to Greensforge, Penkridge and Mancetter (Hodder 2004, 59; also see Booth 2008, 517, fig. 218). However in urban areas the lines of these roads have been obliterated, and despite efforts such as those of Peter Leather and the Roman Roads project which attempted to locate the roads using techniques including geophysics, they remain in built up areas essentially unknown (see www.brrp.bham.ac.uk).

Figure 3.10 Ongoing excavations at Metchley Roman Fort

To the north of the study area the Roman road Icknield Street survives as an earthwork in Sutton Park (Hodder 2004, 61). The projected alignment of the road between Sutton Park, Perry Barr and Metchley Fort passes to the west of the city centre and has recently been recorded at investigations at Wellhead Lane, Perry Barr (Burrows 2008). Evidence for Roman settlement surrounding Birmingham city centre also includes Perry Barr, where Roman industrial remains have been identified in the form of wasters from kilns (Hodder 2004, 70f). Another pottery kiln was recorded at Sherifoot Lane in Sutton Coldfield where the production of tankards was noted along with other vessel forms (Hodder 2004, 73). To the east of Sutton Coldfield, evidence of Roman settlement and activity has been identified at a number of sites investigated as part of the M6 Toll development (Booth 2008, 516f.). In addition, excavations

at Longdales Road in Kings Norton have also revealed evidence for Roman farmsteads (Jones forthcoming).

What's in a name? Locating Anglo Saxon Birmingham

Birmingham is an Anglo-Saxon name meaning 'land-unit of Beorma's people' (Bassett 2000, 8; Buteux 2003, 7). Despite this, the city has no archaeological evidence for Anglo Saxon settlement, nor any recorded Anglo Saxon history (Bassett 2000, 1). At the time of the Domesday Book it was one of the least important settlements in the area, comprising nine peasant households representing a population of around 50. Several other placenames in the landscape are indicative of Anglo-Saxon settlements, including Bordesley to the southwest, 'ley' meaning clearing in woodland or, as Gelling suggests, meaning 'settlement in a woodland area' (1974, cited in Bassett 2000, 3).

Further Anglo-Saxon evidence is, however, ephemeral. The proximity of Roman and Medieval settlements does possibly suggest continuity of settlement, but no real evidence has been identified for the intervening period. Hodder (2004) conjectures that the curiously shaped Parsonage moat may be a late Saxon manor, of a similar shape and size to others in the country, but notes that this is based on later mapping. No evidence of this moat has been identified. Hodder also suggests that the possibly circular graveyard surrounding the church of St Martins also hints at an earlier church on this site. Either of these sites may have formed the focus for the medieval town (*ibid.*, 80).

Unfortunately, the late Anglo Saxon period in the region was largely aceramic (apart from burhs such as Warwick, Hereford etc and despite large scale production of late Saxon pottery at Stafford), and so the likelihood of finding dated contexts is rare, even had there been settlement in the area. Furthermore, there appears to be no real continuity between early/middle Saxon and late Saxon settlement, especially in Warwickshire (Rátkai, pers. comm.). The original Anglo-Saxon settlement of Birmingham was almost certainly dispersed and possibly on higher ground, with the focus of the medieval settlement moving down the hill when the water resources were required for the newly constructed moats.

Birmingham is mentioned in the Domesday Book, with the manor valued at £1, significantly less than the neighbouring manors of Aston and Handsworth (Buteux 2003, 7). The Anglo-Saxon lord who held Birmingham before the conquest was Wulfine, and after that date it was recorded as held by Richard, ancestor of Peter de Birmingham. The overlord was William Fitz Ansculf, whose honorial caput was at Dudley Castle (Buteux 2003).

The medieval period

The medieval period is the first in Birmingham's history where we get significant evidence in the archaeological record. The area which we know to have been the focus of medieval Birmingham has largely been covered by desk-based assessments, which can themselves be grouped into three main areas (see Figure 3.11). The first forms a ring around St Martin's Church, the area most likely to be the initial focus for the early town (reports **29**, **30**, **31, 75**, **76** and **83** all covering this area). The second comprises two reports (**1** and **67**) which cover the area to the north of the medieval town around the priory and hospital. The third group covers the important, and likely ancient route, over the River Rea through Bordesley, Deritend and Digbeth, into Birmingham (**10**, **14**, **21**, **22**, **26**, **38** and **44**). Importantly there is a significant gap in the coverage of the High Street area to the north of St Martin's church as a result of little development since the 1980s.

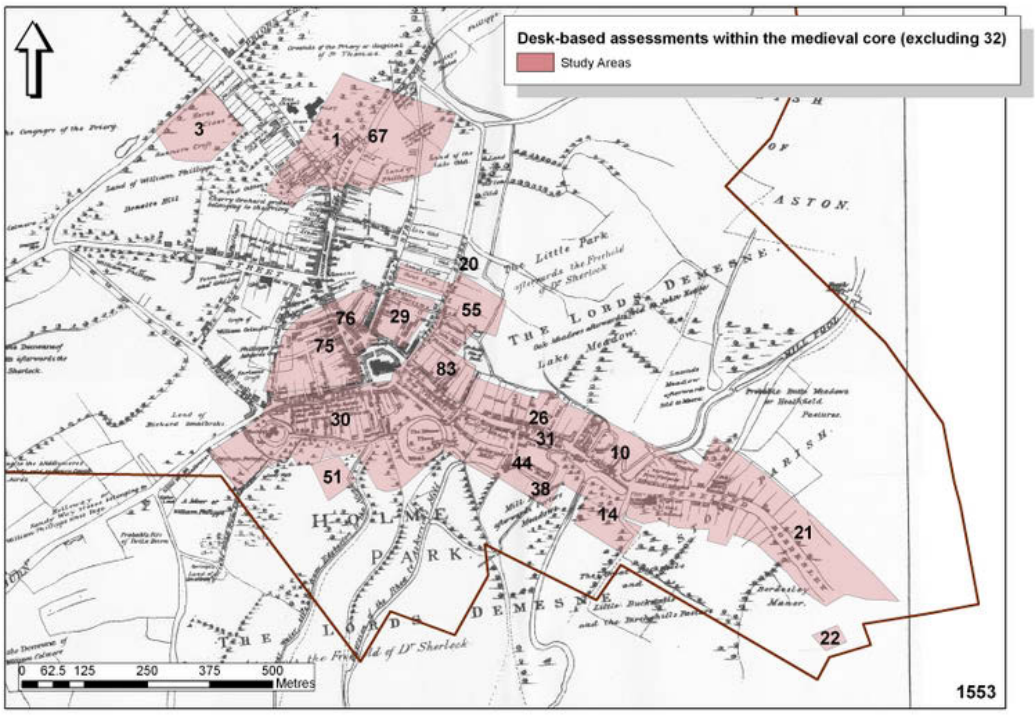

Figure 3.11 Areas covered by desk-based assessments covering the medieval core of the city

Intrusive excavations are also numerous. Twenty-nine of the intrusive investigations undertaken fall within the bounds of the early town, using Bickley and Hill's conjectural map of 1553 as a guide (published 1890). Perhaps unsurprisingly, 17 of these projects recorded medieval remains, with three further sites outside the medieval boundaries also recording residual pottery. While the level of survival differs considerably, from extensive remains to occasional pits and layers and residual finds, the collective evidence contributes substantially to the body of knowledge for this period (Figure 3.12).

In the heart of the city, archaeological investigations at Edgbaston Street (**70**), Moor Street (**73**) and Park Street (**77**) identified substantial amounts of medieval archaeology. All of these projects have now been fully published and provide a strong foundation to understanding the nature of the medieval town (see Rátkai and Patrick 2008). Other major excavations similarly have been, or will be published. Of significance here are Floodgate Street and Gibb Street (Edgeworth *et al*, forthcoming) and High Street, Bordesley (Rátkai and Martin Bacon, forthcoming). In addition, several evaluations and watching briefs which have been written up as grey literature reports, and are not intended for wider publication, also recorded medieval remains. The integration of these results allows a fairly detailed account of the city and its development to be built up. Much of this information has contributed to the synthetic discussions given in Chapters 5 and 6, concerning the themes of life, work and death and won't be repeated here. The remainder of this chapter highlights some of the key sites that have been investigated under the headers of water, transport and commerce.

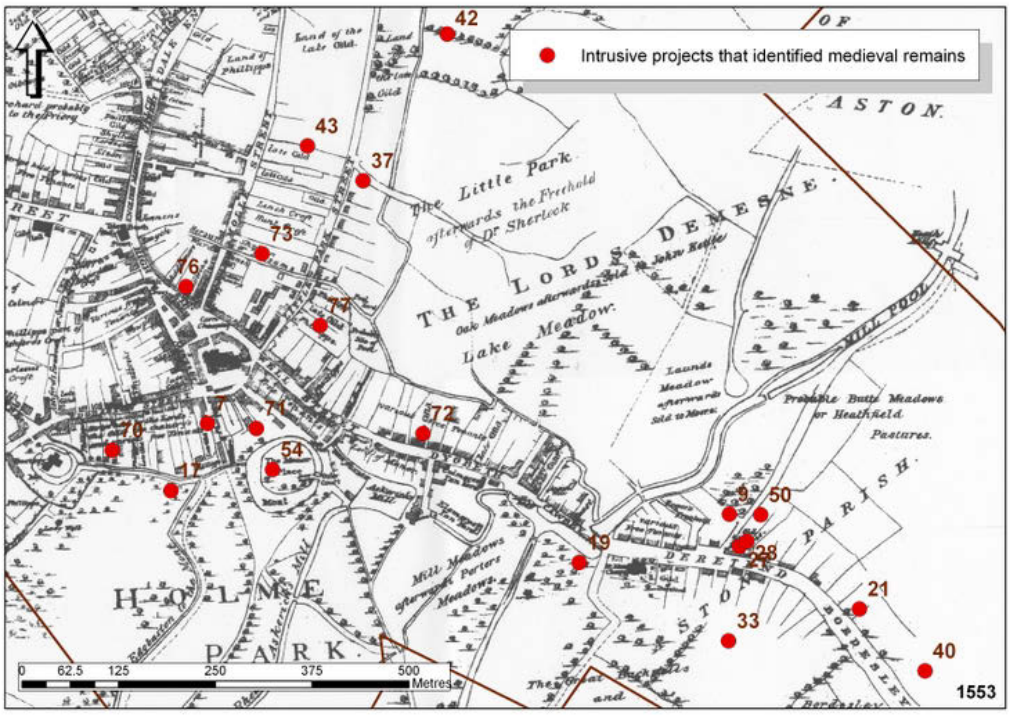

Figure 3.12 Intrusive investigations with evidence for medieval remains, over Bickley and Hill's conjectural map of Birmingham in 1553, published 1890.

Post medieval Birmingham

It is the post-medieval period that truly put Birmingham on the map, both nationally and internationally, and archaeological investigations within the LWD study area have enhanced our understanding of both the change and development of the city within its historic core, and its expansion outwards during this period. However, bias in the location of projects means that while the expansion to the east is well covered, the expansion to the north, south and west is much less so (Figure 3.2). Furthermore, expansion outwards was not uniform, in date or composition, so what information that was gained from these investigations does not necessarily inform the post-medieval city in other areas.

All of the 33 desk-based assessments touch on the later post-medieval period, with 25 of these project areas occurring within the limits of the city by 1751. Of the 46 intrusive projects that occurred within the limits of the study area, early post-medieval archaeology was found at 23 of them (Figure 3.13). By contrast, 38 of the 43 intrusive projects within the study area as a whole identified archaeology dated to the late post-medieval period.

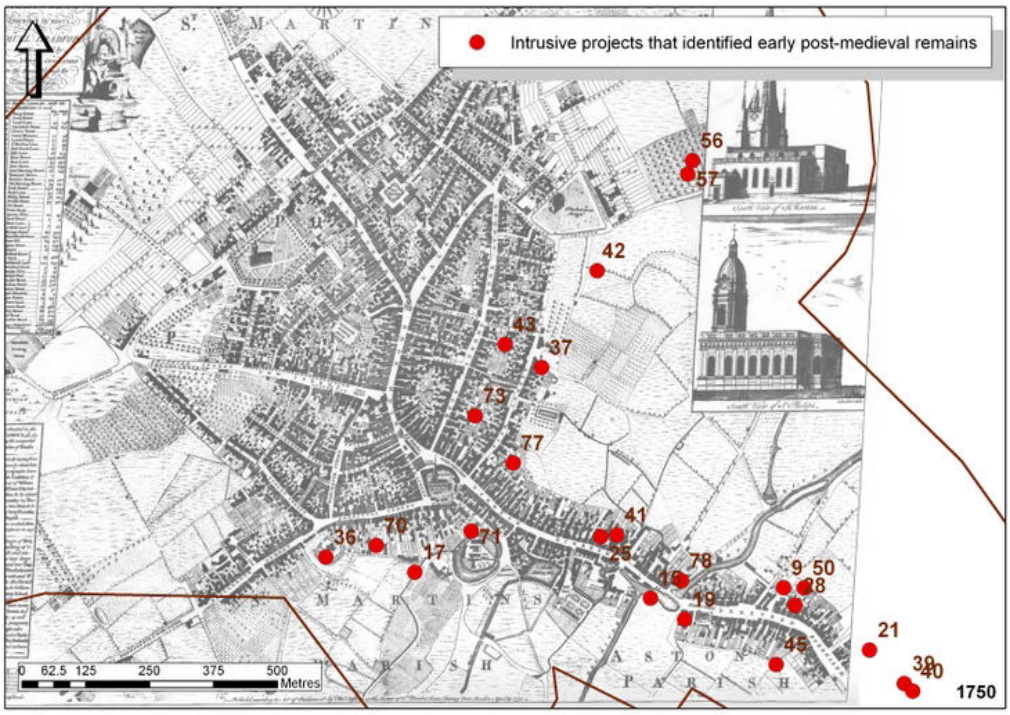

Figure 3.13 Map showing location of intrusive investigations which have recorded early post-medieval remains

Historic building recording

In addition to desk-based assessment and below-ground archaeological investigations, the built heritage of Birmingham has also been investigated as work required as part of development. Within the LWD study area (at the time of writing) there are 189 Statutorily Listed buildings (7 Grade I), and an additional 77 locally listed buildings. 18 projects in total have researched and recorded historic buildings within the LWD study area. Again, some of these projects were standalone reports, and some were part of mitigation strategies that included desk-based assessment and evaluation of the associated below-ground remains. These reports covered industrial buildings, commercial buildings, domestic buildings and buildings associated with the transport infrastructure of the city (Figs 3.14 and 3.15).

Development of medieval Birmingham

Developer-funded work in Birmingham has provided an excellent opportunity to trace the development of the city through its archaeological record. This adds a huge wealth of evidence that can be seen alongside the historic narrative, providing an insight into what actually happened on the ground, within its own chronological framework. This can only enrich our understanding of the city. Due to the nature of the archaeological works, individual sites only provide snippets of information – individual pieces of a jigsaw that is not only hugely complex but also three-dimensional. As is clear from the beginning of this chapter, the development and therefore the archaeological investigation of the centre of Birmingham has been concentrated around the areas of Digbeth and Deritend, which has resulted in large gaps in this discussion.

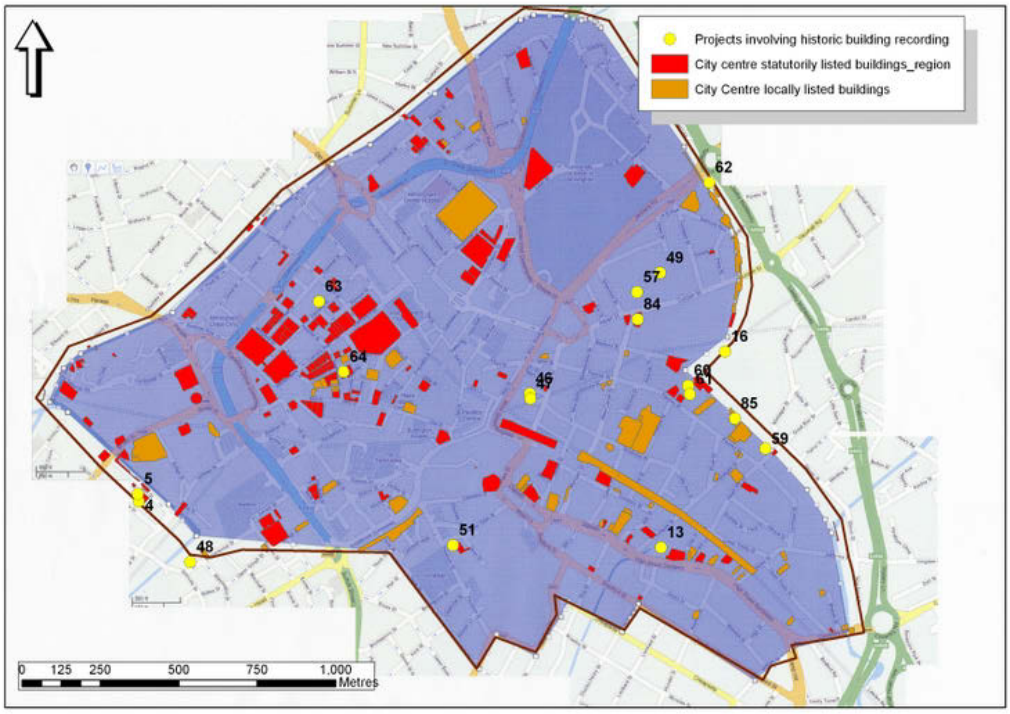

Figure 3.14 Projects including historic building recording within the study area shown alongside listed buildings

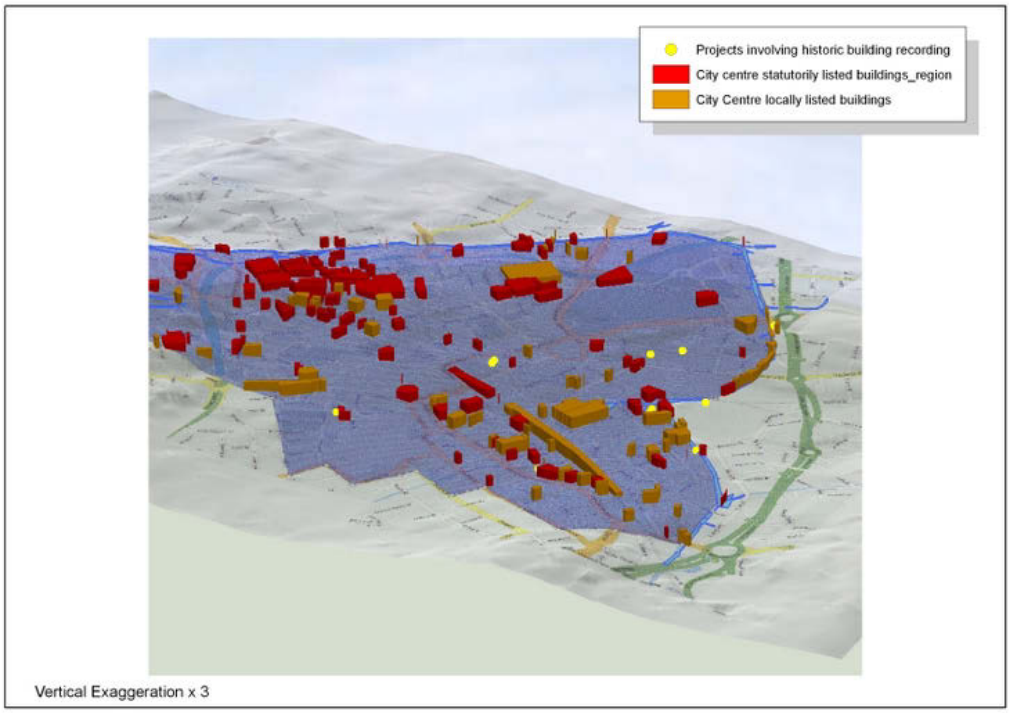

Figure 3.15 Exaggerated view of the city showing buildings within the study area that have been recorded alongside those listed.

Archaeological investigation has so far failed to record anything pre-dating the 12th century, which is perhaps unsurprising. With the considerable development the centre has undergone, it should be expected that little of its archaeological heritage will lie preserved. Notwithstanding the potential for truncation, current archaeological evidence concords well with the historical narrative. First mention of Birmingham can be found in the Domesday Book (1086), when a village stood on the site which included a manor-house and church. It is known that 80 years later in 1166, Peter de Birmingham, was allowed to establish a weekly market by royal charter of Henry II. The market was to be held at his 'castle' of Birmingham (Bassett 2000, 2). This 'castle' most probably refers to the site of the moated manor house, although we have (as yet) no firmly dated archaeological evidence for when the site was initially developed and what form it took.

Archaeological works have recorded the presence of sandstone walls and moulded stonework interpreted as indicating the presence of a twelfth century ringwork containing a stone building with moulded stonework (Hodder 2004, 89; Watts 1980). Further investigation of the northern arm of the moat recovered fragments from a twelfth or thirteenth century cooking pot from the base of its fill (Patrick and Rátkai 2008). The market charter was the earliest issued in Warwickshire, which must have given Birmingham a substantial boost to its development (McKenna 2005, 10). Such charters were, apparently, not given to towns readily. Before doing so the king would normally undertake and inquiry known as an *ad quod damnum* which established the impact a new market charter may have on existing ones in the locale. None could be founded if the next market town was within a day's journey (Pounds 2005, 14; also Pelham 1950, 141). It has been argued that the purchase of the charter was accompanied by the deliberate foundation of a town (Holt 1985, 4-5), which Bassett also suggests is evident in its layout (2000, 2). The market place has a distinctive triangular formation, with St Martins at its hub, which may be a result of its being deliberately laid out in a single operation (Bassett *ibid.*; see Figure 4.16).

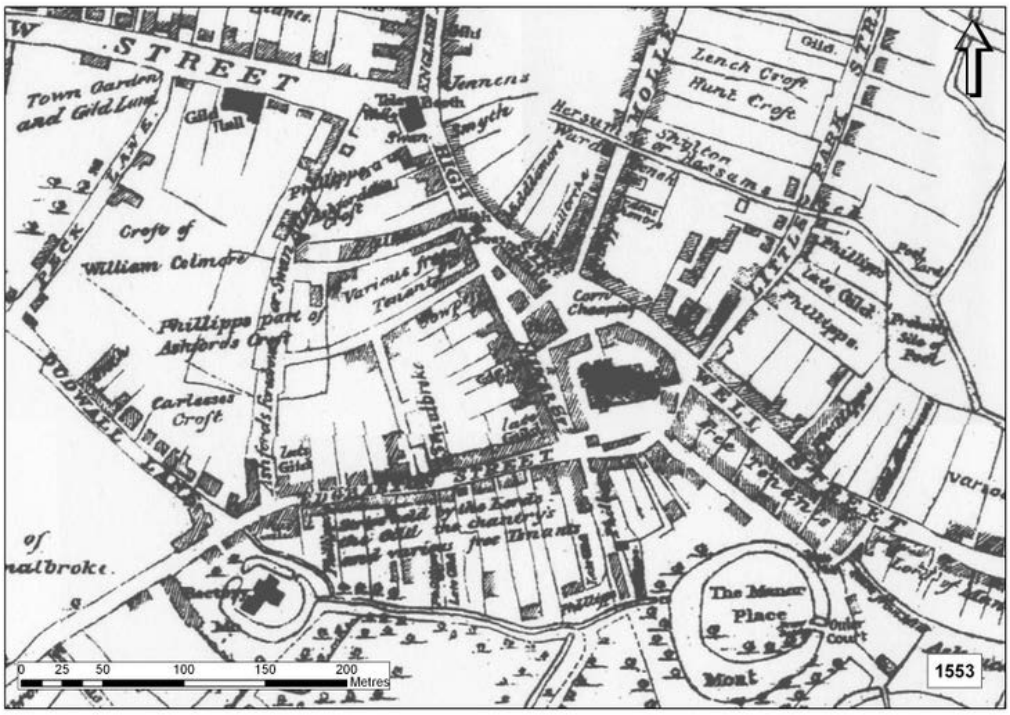

Figure 3.16 The market place has a distinctive triangular formation, with St Martins at its hub, which may be a result of its being deliberately laid out in a single operation.

Report 30 suggests that a model based on the development of a small manor possibly centred on a moated homestead may be proposed as the most likely form of pioneer settlement of Birmingham around the later 11th and early 12th centuries. Between the 11th and 14th centuries the population of north Warwickshire probably doubled, and perhaps almost trebled, which inevitably led to the growth of a network of market centres, particularly in the century after 1150 (**30**). Moated sites are a distinctive feature in the settlement pattern of this part of the Forest of Arden, and the majority of these probably date from between the 13th and 14th centuries. However, the circular shape of the Birmingham Moat and the sub-circular shape of the Parsonage moat may indicate that these particular moats date from an early phase of moat building in the regions, estimated to be around 1150 (**30**).

It was noted in Site **30**, that Edgbaston Street, which forms the base of the triangle of the Bull Ring market place, would have carried mainly local traffic from the southwest to and from the main axial route represented by High Town and Digbeth, and may have seen some of the earliest urban activity in the centre of Birmingham (**30**). The limits of Edgbaston Street are defined by Parsonage Moat to the west and Birmingham Moat to the east. While the origins of the two moats and their original relationship to each other is not clear, they are likely to have been important foci of the rural development and it has been suggested that they originally represent the manorial site and its 'home farm' (Baker in **30**). The natural wells or springs of this district may have been exploited at an early date, for example the Lady Well is known from medieval documentation, and Edgbaston Street would have represented what was in the 12th century prime development site (**30**; Figure 4.16).

The development and planning of the medieval town is covered in Chapter 4 (Baker); suffice to say that there is some suggestion that plots and later structures seem to preserved the positions of several medieval plot boundaries (**83**; Figure 4.17). The medieval town itself would have been demarcated by large ditches, and plot boundaries within the town by smaller ditches. For example, the rear extent of the properties along the north side of Digbeth are demarcated by a large ditch identified in excavations some 7m wide and at least 2m deep (**83**).

Figure 3.17 Surviving boundaries of burgage plots seen on the 1890 map

Historical reference does indicate significant settlement at the neighbouring settlements of Bordesley and Deritend by the later fourteenth century. The first known reference to 'Bordesleie' is in 1226, although the origins of the settlement have been suggested to have been considerably earlier due to the place name itself (Litherland, in **22**). The earlier settlement of Bordesley must have taken the form of dispersed farming settlements, with the development of the linear High Street occurring much later. Archaeological evidence from the two excavations and evaluation undertaken did not produce sufficient medieval evidence to suggest that that particular part had ever been occupied in the medieval period. The few fragments of pot that were recovered were more likely to represent finds from ploughsoil. Two of the earliest topographic references to Bordesley are probably William Hutton's description of the limit of building being 130 yards from the junction of the Warwick and Coventry Roads in 1783, which equates with the limits of Bordesley depicted on the Tomlinson Map of 1760.

In 1381 Sir John de Birmingham, 'lord of the villa or hamlet called Duryzatehende' and the parishioners of Deritend and Bordesley, successfully obtained an agreement from the prior and monks of the Priory of Tykeford, who possessed the parish church of Aston, to be allowed to appoint their own chaplain (McKenna 2005, 14f.). The building of the St John's Chapel, Deritend, was the result and could not have been accomplished without considerable expense on the part of the inhabitants of the area, which is perhaps testament to their industrial and economic success at the time (Holt in **31**). It has been noted that during excavations in the 1950s by Sherlock during the widening of Deritend High Street, that sandstone foundations were observed which probably belonged to the medieval chapel. Further discussion of St Johns can be found in Chapter 7 (Adam's, Brickley and Smith).

The existence of the impressive 15th century building still extant on High Street, Deritend, is further indication of the wealth of the area. The structure may have been either a wealthy merchant's house, or perhaps (as is more generally accepted) built as a school, schoolmasters house and guild hall by the Guild of St. John's. In 1538 John Leland mentions a 'mansion house of timber' which may possibly be same building (Holt in **31**). The building, now the Old Crown pub, is one of Birmingham's rare medieval survivors and the earliest building within the study area (Figure 3.18).

Figure 3.18 The Old Crown, High Street, Deritend

An important part of the medieval town would have been the Priory or Hospital of St Thomas, founded around 1250, at the same time the Parish Church of St Martin was re-built (**83**) (Figure 4.19). Two desk-based assessments cover the Priory or Hospital of St Thomas (**1**, **67**). Land was given to the Priory in 1286, although in 1344 the Hospital was reported to be in a poor condition. The only evidence for the location of the Priory is the street names of Upper and Lower Priory Street which feed into The Square. The precise location of the Priory and Hospital buildings is unknown, though the precinct is thought to have been located on the site of the later Georgian Square, shown on Westley's map of 1731 (Figure 4.20). Hill and Dent observed that the chapel may have been located on the site of the 18th century Upper Minories: 'part of its walls still remained buried under the shop on the south side of that street occupied by Mr Berrill.' A photograph shows this to be part of a sandstone wall (Hodder 2004, 18). The location of the Priory orchard (which would have been located outside the precinct) may correspond with the orchard mapped by Westley (1731), which shows a small piece of the cherry orchard may have survived, although divided into two parts by a lane running from Temple Row towards Welch End along the course of the present day Cherry Street (**1**; Figure 4.20).

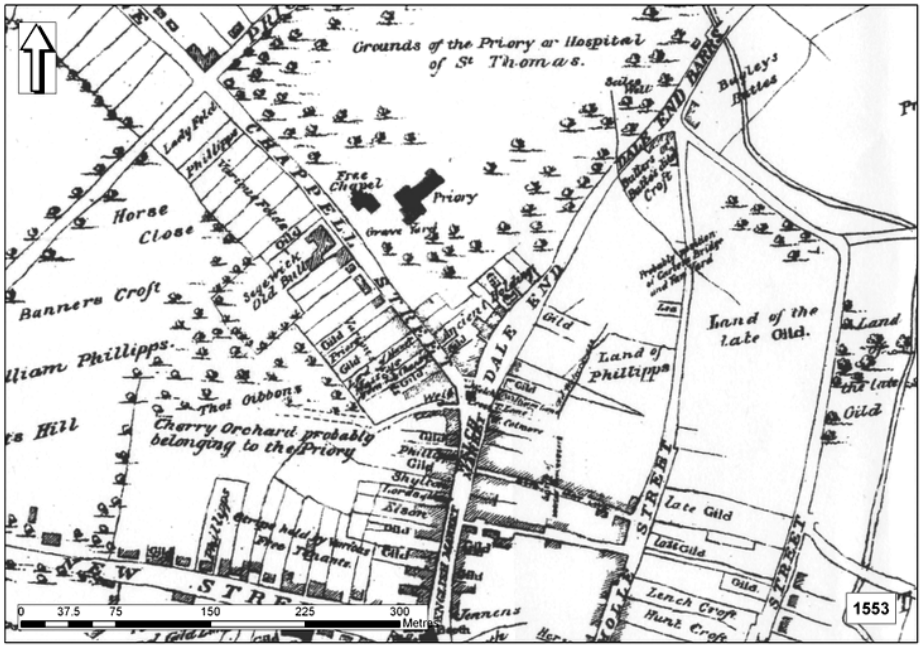

Figure 3.19 Showing the grounds of the Priory or Hospital of St Thomas, founded around 1250

Later sources state that the Priory was dedicated to St. Thomas the Apostle, whilst the Hospital was dedicated to St. Thomas the Martyr (Thomas of Canterbury). It was an Augustinian foundation, with a free church, hospital, graveyard, rabbit warren (or coningre, now Congreve street), cherry orchard and (according to Hill and Dent) a house for a clerk and which reportedly had its own natural water supply (Bond 1993; Cullum, in **1**). Studies have suggested that monastic foundations such as this one would have been founded on land which was immediately outside the medieval town (Butler 1993). The dissolution of the Priory did not take place until 1549 and it remains unclear when the Priory buildings were demolished. Stone and other building material was probably systematically robbed from the ruins from an early date (Hutton Beal Collection MS 330, in **1**). The bulk of the priory lands were eventually sold by the Holte family after the Civil War and, by the time of Westley's map (1731), the study areas of reports **1** and **67** had several characteristics of the Georgian planned suburban development (**1**).

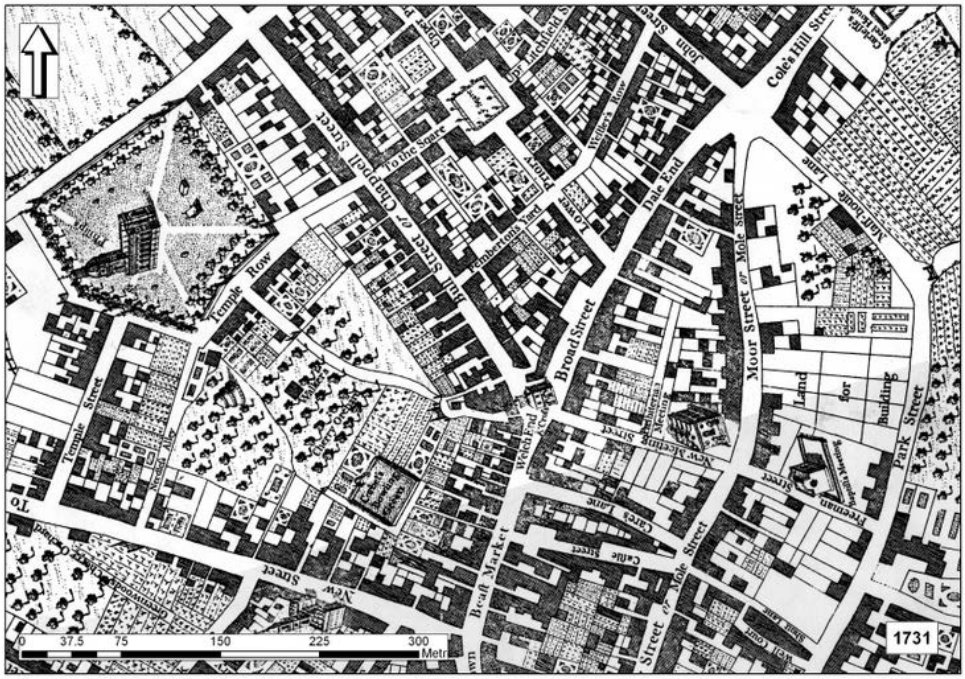

Figure 3.20 The Priory and Hospital Buildings. The precise location of the Priory and Hospital buildings is unknown, though the precinct is thought to have been located on the site of the later Georgian Square, shown on Westley's map of 1731. The lane running from Temple Row towards Welch End (today called Cherry Street) dissects what remained of the cherry orchard.

Perhaps a more defining moment in the transition of Birmingham from its medieval town origins to the modern city is the infilling of the two moats of the manor and the parsonage. The various watercourses in the vicinity of the moats began to disappear in the 18th century and continued to do so during the 19th (**51**). The two moats were infilled and developed, and new streets were cut through. Documentary evidence dating to 1886 refer to the earliest lease on Upper Dean Street as being made in 1828, though the road itself is not shown on maps until 1839 – and not named until 1847 by which time the whole street block was built up (**51**). The Pudding Brook was incorporated into the drainage system.

The industrial character and planned development of Birmingham beyond its early medieval market charter is covered in Chapters 4 (Baker) and 5 (Rátkai). The remainder of this chapter concentrates on particular themes which have proved critical to the development of the culture of Birmingham.

Crossing the River Rea

Chapter 2 has already outlined the importance of the River Rea to Birmingham's inhabitants. Over time the course of the River Rea slowly meandered and shifted its location within this landscape. An earlier course of the Rea is thought to be marked by the present day Milk Street, and it has been suggested that a later mill leat followed another course of the Rea (Demidowicz in **32**). Recent excavations at Connaught Square have revealed the 17th century course of the river (Hewitson pers. comm.). The number of major roads from towns in the surrounding area which either crossed or lay close to Birmingham must have been a major catalyst for its successfully being granted a market charter. Those roads from the east and south were funnelled through the Bordesley, Deritend and Digbeth, crossing the River Rea at this point. Several projects have been undertaken along this route (Sites **10**, **14**, **21**, **22**, **26**, **31**, **38** and **44;** see Figure 2.21).

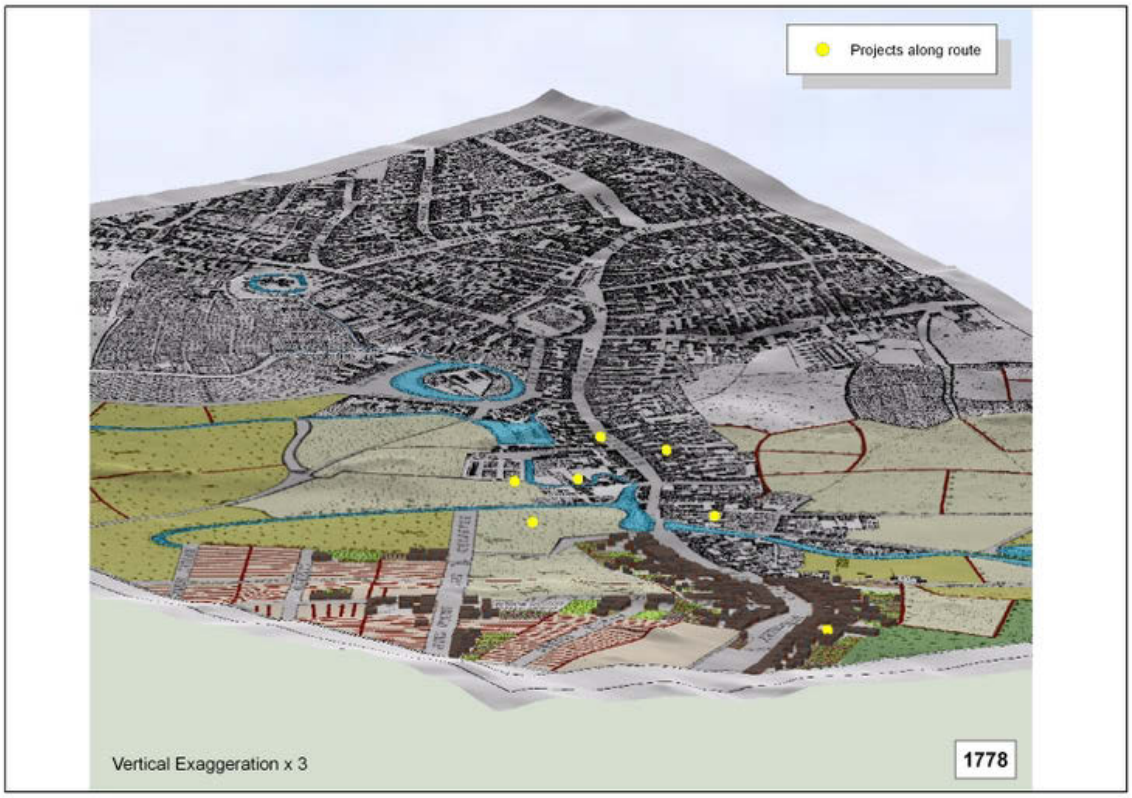

Figure 3.21 *Projects which have taken place along the route of the road crossing the River Rea*

The crossing of the river at this point is often highlighted as a main contributing factor to the growth of Birmingham's centre where it is. Bassett's analysis of the pre-modern roads coming into and out of Birmingham indicates that the Digbeth/ Deritend crossing was not the only way across the Rea (Bassett 2001, 11). A major crossing point was also that at Duddeston (Aston Parish), which may have provided a choice of crossing depending on traffic or weather conditions (*ibid.*). It is interesting to note that communications to many of the neighbouring towns of importance (such as Coventry and Alcester) appear to have realigned routes to accommodate the crossing at Digbeth where they are more naturally aligned to Duddeston (*ibid.*). The establishment of the market and town of Birmingham in 1166 must, therefore, be seen as a primary catalyst for the redirection of these routes (*ibid.*, 12). Notwithstanding, it remains unclear as to whether the market charter itself 'causes' the rise of Birmingham, or whether it capitalises on a pre-existing unofficial market. A market charter would instantly mean revenue for the lord of the manor, whereas an unofficial market would not. The archaeology of the roads themselves therefore, may provide an interesting angle from which to view this problem. If the infrastructure itself could be dated, then it might be possible to establish when Birmingham became a market to visit.

The crossing point itself has remained as elusive (archaeologically) as the river. Recent excavations at Connaught Square (2008, and not included in this report) have failed to locate the bridge, as did those at 170 High Street, Deritend (**13**). A photograph of the bridge from 1935 (Figure 3.22) indicates that the crossing point was located well beneath the course of the current roadway – although at this time the river would have been redirected since Westley's map of 1731. On Ackerman's Panorama of 1847, the bridge can clearly be seen crossing the High Street immediately to the east of Floodgate Street where, to date, no archaeological investigations have been undertaken. It is interesting to note, however, that a large ditch excavated at Floodgate Street has been interpreted as having been created to supply causeway material, to provide drainage alongside it, while at the same time clearly demarcating the

causeway from surrounding land (Feature L11; see Edgeworth forthcoming). The bridge was the subject of a protracted court case between the justices of the borough of Birmingham and the inhabitants of the county of Warwickshire over bridge repairs between 1625 and 1642 (Gill 1952, 51, cited in **14**). The bridge had fallen into such a state of disrepair by the mid-17th century that visitors to the town thought it had been sabotaged in the Civil War (Gill 1952, 51, cited in **14**). In 1652 the repairs were finally carried out but the form of the bridge at this time is unclear. William Hutton, in his *History of Birmingham* (1783) refers to the erection of a new stone bridge in 1750 and states that earlier bridges were mainly of timber. Westley's prospect of the town, drawn up in 1731, shows a wide stone bridge carried over the river on three piers, demonstrating that the river was spanned by a stone bridge from at least the early 18th century (**14**).

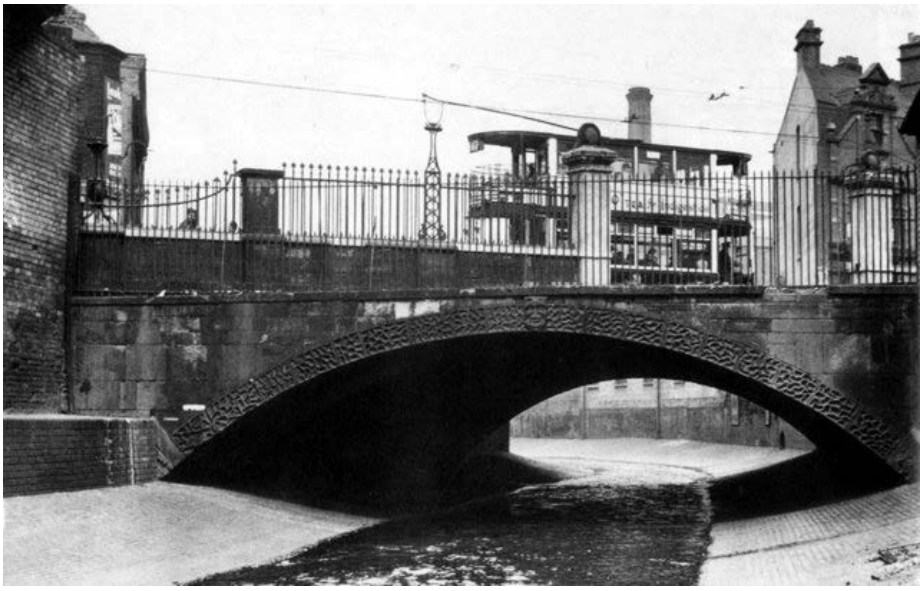

Figure 3.22 Photograph showing the bridge at Deritend, 1935

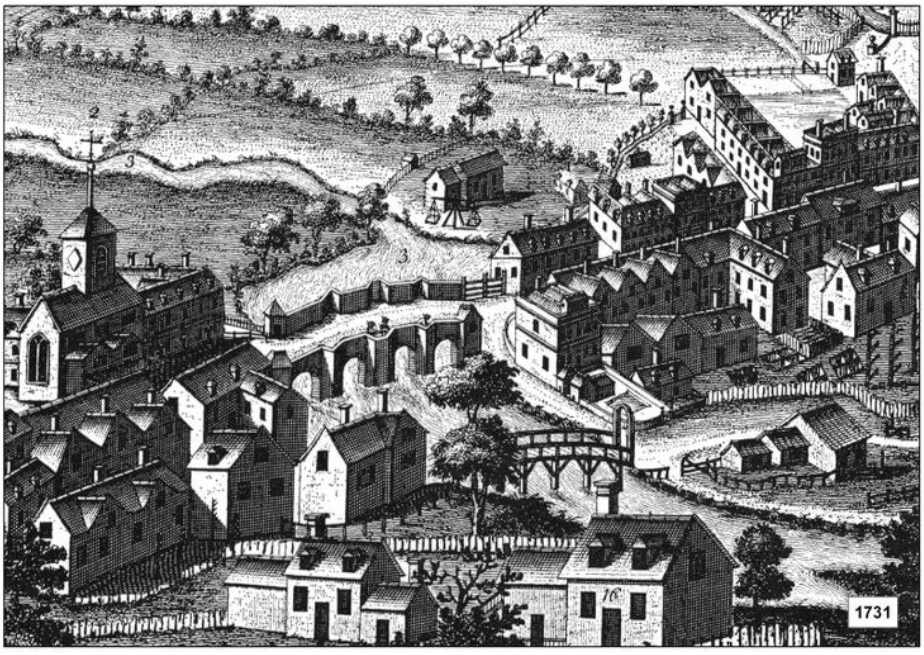

Figure 3.23 Westley's prospect of the town, drawn up in 1731, showing a wide stone bridge over the river

Unlike Deritend, Bordesley was outside both the parish and the Lordship of Birmingham and represents another discrete phase in the exploitation of the route crossing the Rea (**22**). The southward curve in the road at the Deritend/Bordesley junction presumably follows an ancient line, but it also marks the beginning of another clearly recognisable promoted market street development. The plots to the north and south appear to have been of roughly equal depth, bounded by common rear boundaries laid out parallel to the widened street which extended as far as the junction of the Warwick and Coventry roads. The precise eastern extend of the associated plot series is not certain (**22**). Excavations at 149-159 Bordesley High Street may have recovered evidence for the back boundary of properties located along the frontage of the High Street, although there is a possibility the ditch may form the boundary to the lands of the medieval manor of Bordesley (Rátkai and Martin Bacon forthcoming).

Islands and boundaries

The River Rea not only provided a water source for industry in the area of Digbeth, but it also provided a boundary between the parish of St Martin's, Birmingham and Aston (Figure 3.24). Birmingham is unusual because the manor, borough and parish boundaries were all the same whereas other medieval towns often have more than one parish. For example, Coventry is divided up between different manors and parishes. The earliest representation of the River is on Westley's map of Birmingham from 1731 (Figure 4.25), though we do have accounts which offer some description. Leland says (quoted in Langford (1868, 10);

> *There is at the end of Dirtey a proper Chappel* [St John's] *and Mansion house of timber* [thought to be Old Crown], *hard on the ripe* [river bank], *as the brook runneth down and as I went through the ford by the bridge, the water came down on the right hand, and a few miles below goeth into Tame. This brook above Dirtey breaketh into two arms, that a little beneath the bridge close again.*

Although it is difficult to envisage exactly what Leland is alluding to here without a visual aid, it could be taken to mean that the river forks on the south side of Digbeth and the two streams join together to the north of the High Street. This would produce the course of a channel which is the old Parish boundary and a second flow which is approximately on the line of the River Rea shown on Westley. Rátkai believes that the 'parish boundary arm' was still in existence when the pool at Floodgate St was constructed, as the drains in and out of the pool appear to be directing the flow from this river arm. Consequently, the disuse of the pool as connected with the abandonment, silting up or redirection of 'parish boundary arm' creates the single river stream shown on Westley's 1731 prospect (Rátkai, pers. comm.).

The sharp diversion of the 'parish boundary arm' of the river encloses an area to the east of the river which has become known as Deritend which, at that time, lay within the Manor of Birmingham but in the Parish of Aston. It is thought that Digbeth was built up above flood level into a causeway, in order to cross an island created by the two river channels. It is likely that this island was created first by the original course of the Rea encompassing it on its northern and eastern side, with a subsidiary arm of it cutting off the corner and thus forming the southern and western arms. This later became the main course of the river and drainage ditches defining the backplots and the plot boundaries of Deritend island (which can be seen on map evidence), must have been cut to better drain and define the relict course.

The name of Deritend Island for this patch of land has stuck. It seems that over time, the street frontages must have been continually built up. In the 17th century two inns stood on the street frontage, the Old Leather Bottle and the Old Three Crowns, which were both built early in that century (**10**). The names Old Three Crowns and Leather Bottle do not appear in the earliest Trade Directories and must indicate that either they had different names or they weren't pubs/inns at this point (Rátkai, pers. comm.). The analysis of old photographs and sketches show that the activity of raising the street level had continued after the construction of these buildings, which were (at the time of photographing) entered down a flight of steps (Litherland, in **10**). It is possible that the two inns were originally private houses, and in 1684 they were sold

by Thomas Billingsley of Deritend to widow Sybill Brierley, John Brenand, a whitesmith, and Thomas Addyes, gentleman (Birmingham Weekly Post 1883, in **10**).

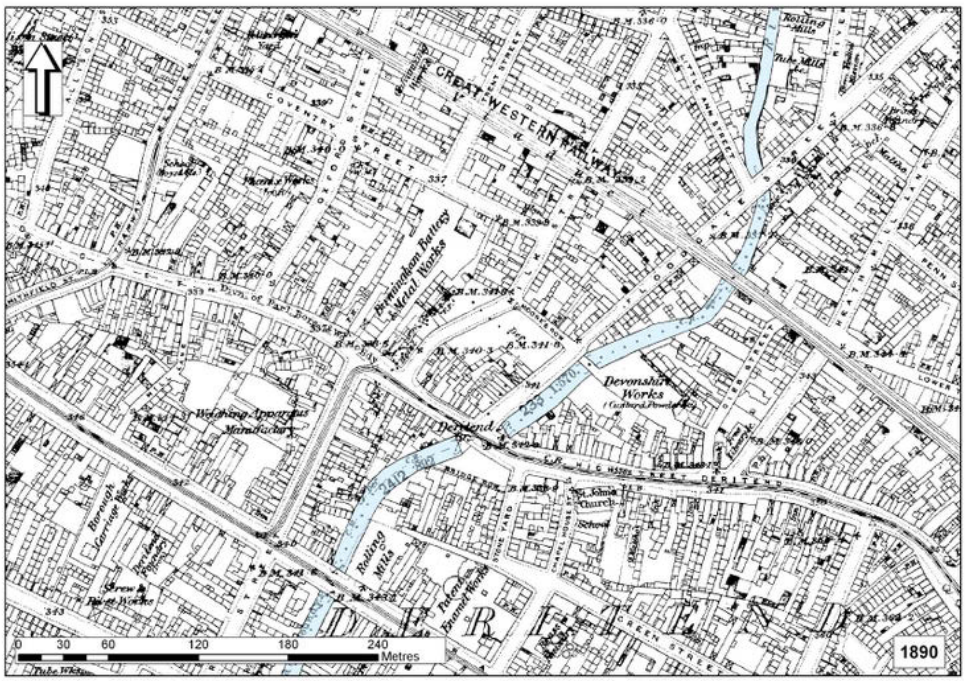

Figure 3.24 Map showing River Rea and boundary between the parish of St Martin's, Birmingham and Aston

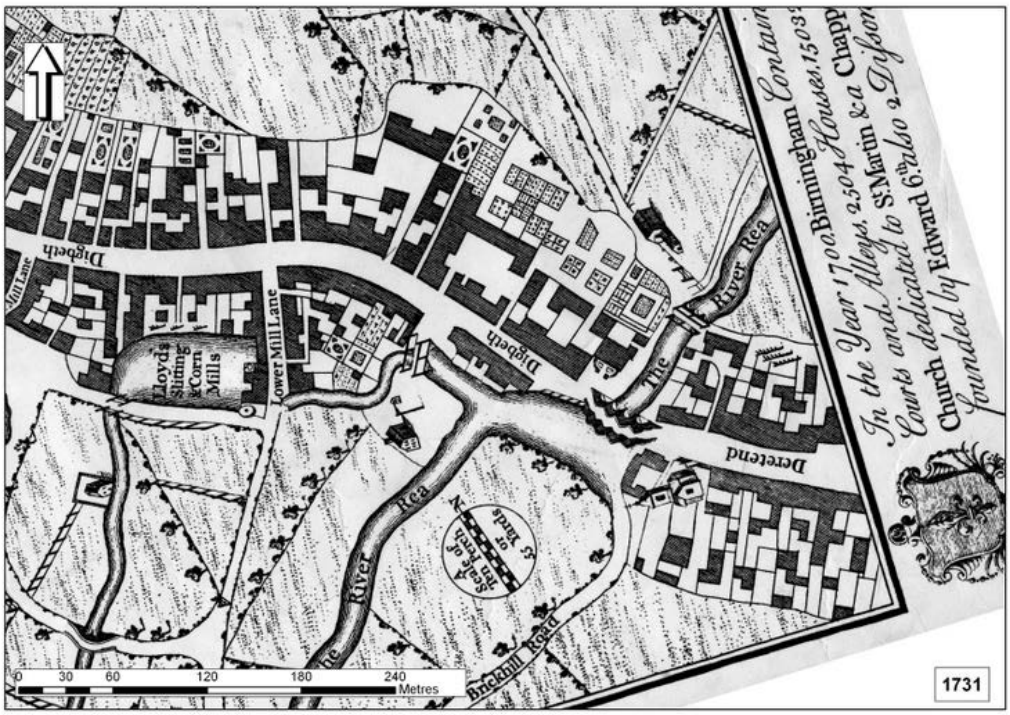

Figure 3.25 The earliest representation of the River Rea; Westley's map of Birmingham from 1731

The mills of Birmingham

To the south side of Digbeth, the course of the River Rea and the series of springs and streams discouraged development in that area. Instead, the 1553 survey records a series of meadows, deerpark, cornmills, pools and watercourses belonging to the manor house, which occupied the large site to the south of St Martin's Church (Figure 4.26). Mills were an important aspect of Birmingham's production and manufacturing economy (as they were throughout the country), taking advantage of the opportunities given by the presence of water (Pelham 1950, 150). Within the Manor itself, there were three operating water mills by the mid-16th century; a manorial corn mill, a malt mill and another corn mill, the pool of which was fed partly by the moat stream and partly by a new leat diverting water from the Rae (*ibid.*). Archaeological investigations into the sites of mills have been limited, however, desk based assessment over large areas especially those around Heath Mill lane, situated to the north of Digbeth and Deritend, have incorporated historical evidence for not only their presence, but also for their changing uses over time.

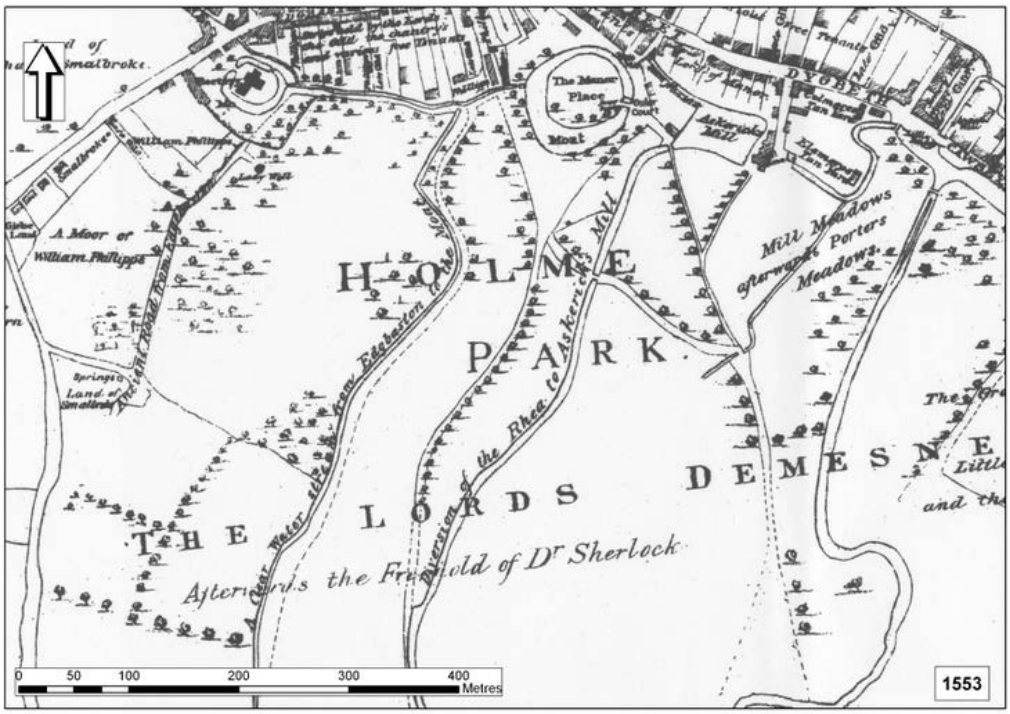

Figure 3.26 Bickley and Hill's conjectural map of 1890, based on a survey of 1553 which records a series of meadows, deerpark, cornmills, pools and watercourses occupying the large site to the south of St Martin's Church

Heath Mill was situated on an island in the Rea, astride the Birmingham-Aston parish boundary and about 500m downstream from Deritend Bridge. The present day line of the Rea represents a bypass leat which looped around Heath Mill from the floodgates in the early post-medieval period, which is shown on Bradford's map of 1750/51 (**32**). The mill lay at the end of a widened section of the river serving as the mill-pond, and was the manorial corn mill for Birmingham. The mill leat and floodgates are shown on Bradford's map of 1750 (Figure 4.27), and the mill buildings appear to have been constructed on a raised piece of land at the centre of the River Rea, with waterwheels on either side (**32**).

Though it was first recorded in the 15th century, Heath Mill was probably already ancient by then, and remained a corn mill until shortly after 1791 (**32**). From the 1540s onwards more detailed information is available on the economic activities of the residents of Birmingham from

their wills, and the probate inventories compiled by their executors. Holt (in **31**) identified that, whilst some of the Deritend smiths had introduced mechanization to the manufacturing process, water resources in the area were restricted to cornmilling. The area around Heath Mill was low-lying and situated to the north east of Deritend High Street, away from the focus of occupation and at the southeastern corner of the present day Fazeley Street, Heath Mill Lane and Great Barr Street junction. In the late-17th century Heath Mill was leased by the Cooper family, and by the early 18th century was being referred to as Cooper's Mill. The millpond (in areas **67**) temporarily raised in the 17th century, causing flooding of the ford at Deritend.

The construction of the canal prompted a significant change to the course of the river and to the mill (**32**). Kempson's survey of 1794 shows the water from the Rea had been diverted into the former mill leat and this leat now represented the new course of the river. On this map the original course of the river is referred to as the 'Back Brooke'. A later plan dated to 1806 shows a weir adjacent to the southern limit of the canal within the land boundary of the mill now annotated as Deritend Mill, and further change was represented by the creation of a new mill pond to the east of the former leat in a field known as 'Lake Meadow'. This pond had a short lifespan and was drained and backfilled to allow the completion of the extension of Fazeley Street by 1810 (**32**). The 17th century Flood Gates (to which the street name Floodgate Street refers) were part of the Heath Mill and are shown to the north-east of Site **10** on Bradford's map of 1751.

Westley's map and perspective of Site **44** and **38** shows a watercourse which runs more or less parallel to the Rea, into the mill pond, labelled at this time as Lloyds Slitting and Corn Mills (Figure 3.28 and Figure 3.29). An outflow from the pond runs east, joins up with another small watercourse and then eventually joins up with the Rea. Beyond this was still open land. Two and three storey buildings front onto Digbeth and Mill Lane and to the rear was an open area which stood a much smaller building, possibly an outbuilding or cottage. To the west of Site **44** were large buildings on the street frontage with an open yard area to the rear, and further to the west is the moated manor house. To the southeast of Site **44** and **38** was a building with a large pair of scales annotated on the perspective, though this looks like an Inn sign on the plan. In front of this on the plan there are floodgates depicted on the bridge.

One aspect of Birmingham's phenomenal success during the 17th century was the conversion of the town's cornmills to industrial use. Robert Porter was the tenant of a blade mill in Digbeth in the 17th century, and this was either the Moat Mill or the Town Mill. After the occupation and sacking of Birmingham in 1643, this mill was ordered to be dismantled, due to the belief that its swords had supplied the Parliamentary forces (VCH Warwickshire vii, **31**).

Heath Mill was still a corn mill at the beginning of this period, although after 1791 it began to be used for industrial means as well. In the period between 1805 and 1808 a large triangular mill-pond was built immediately upstream of the site, between the lower course of the Rea and a long bypass-leat that looped north around the mill. Steam power began to be used at the site in the 1820s and the mill was fully converted to steam power and rebuilt in the 1850s. At this time the old course of the Rea was disused and the flow diverted permanently through the former by-pass channel or side race (Demidowicz 1991). The later triangular millpond was also reclaimed in the early 1850s, as it had gone by 1855 and had been built over by the 1880s (**32**).

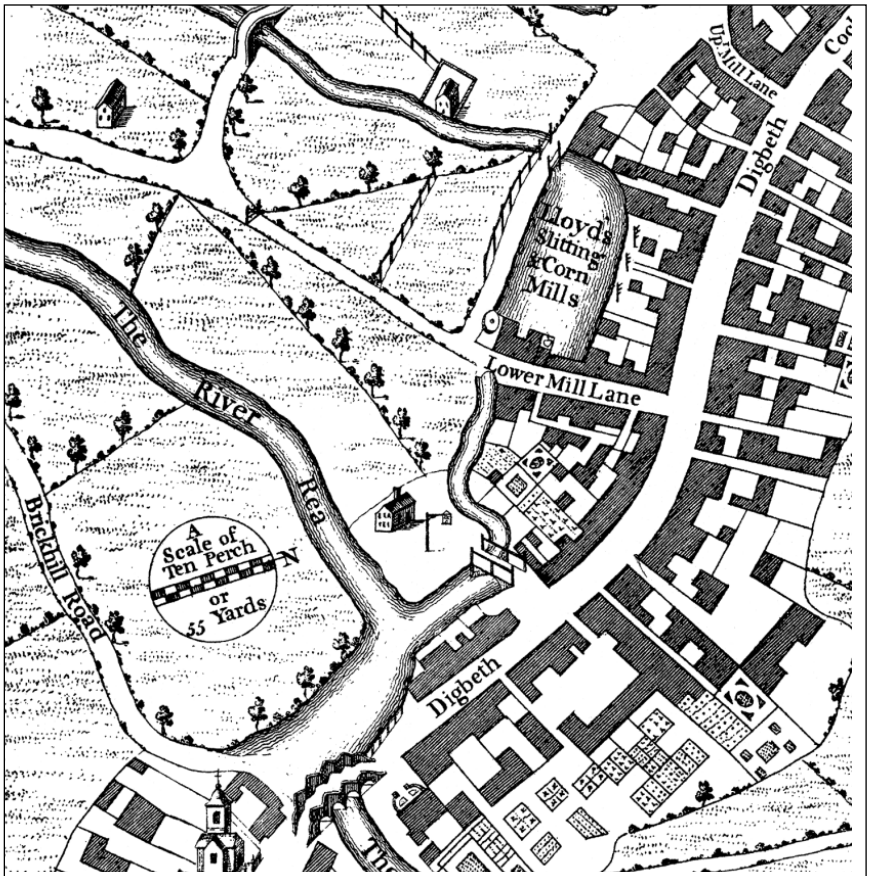

Figure 3.28 Lloyds Slitting and Corn Mills, from Westley 1731

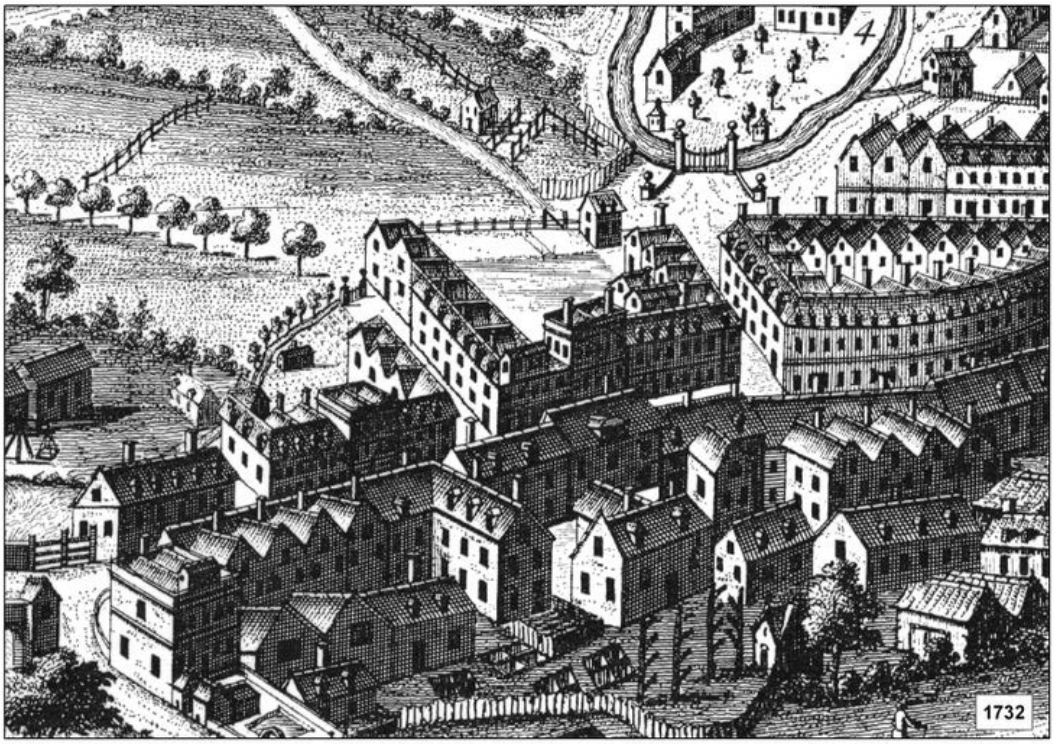

Figure 3.29 Lloyds Slitting and Corn Mills, Westley 1732

The windmill is documented as being worked in conjunction with the watermills at Heath Mill Lane in the 18th century. The report notes it is suggested that the windmill might be located on the Heath Mill Lane frontage, within the northwestern corner of Area 31. The windmill is shown on Buck's 1731 East Prospect of Birmingham and on later ones (**32**, Figure 3.30). The style of the build is smock mill which comprises a tower built of wood, usually octagonal in shape and painted white. The report notes that Thomas Dixon's View of 1826 depicts the windmill with common sails, and Tomlinson's map of Bordesley of 1760 shows a field annotated as 'Windmill Piece' adjacent to the course of the River Rea and opposite Heath Mill. Three structures are depicted, one of which stands slightly to one side, away from the street frontage. McKenna suggests that Westley's Prospect of 1732 may have been drawn from the windmill site, and gives a national grid reference for a suggested location of the windmill (McKenna 1985, 32). The report further suggests that by taking a number of known points from Westley's Prospect and transferring the angle of vision onto a modern Ordnance Survey map it is possible to suggest an alternative location for the windmill, at the northeastern corner of Area 29, which is within Tomlinson's Windmill piece and corresponds to structures depicted on this map, and on later ones. In topographic terms, this location would have proved favourable for catching the prevailing wind through the Rea Valley. The mill appears to have been demolished by 1834 (McKenna 1985, 32) and Ackermans Panoramic depicts a chemical works extending back from the Heath Mill Lane frontage (**32**).

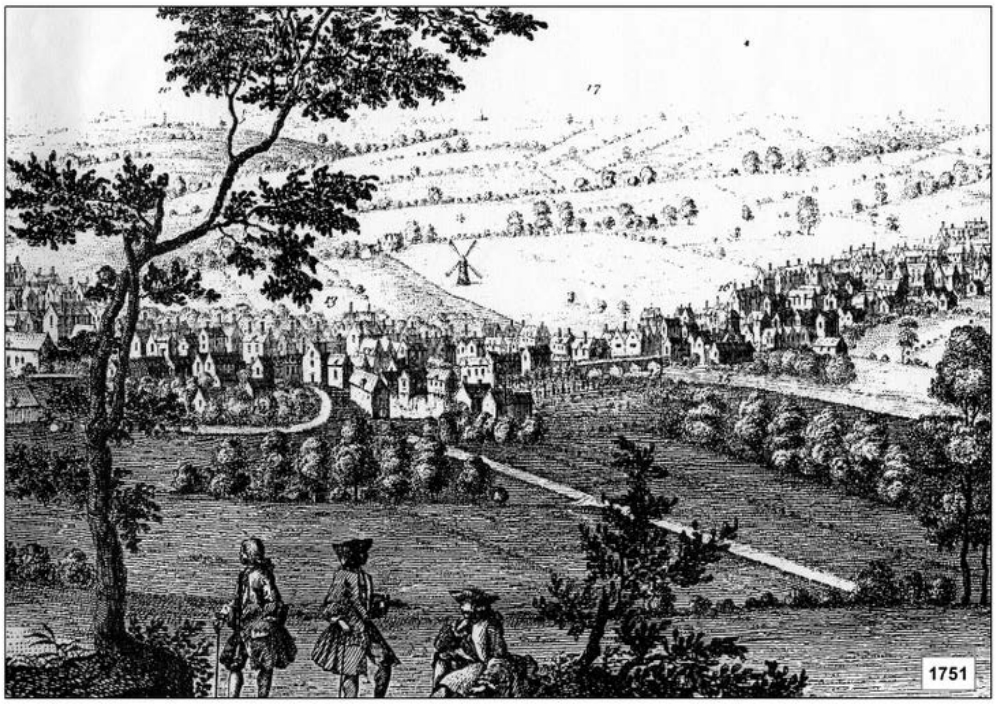

Figure 3.30 Buck's 1751 Southwest Prospect of Birmingham, showing windmill

The area of the 19th century millpond was mentioned in a City Commissioners report of 1845 which described how, in the absence of an adequate sewerage system, the mill courses were used to carry human effluent away from the town (**32**). However, when the mill was not at work the side races carried little water and over time became blocked with sewage. George Demidowicz's comprehensive study of the mill records that a local report describes how the pool and river were 'rendered very offensive by the number of dead dogs and putrid mud which they contain' (Demidowicz in **32**).

Documentary research conducted for a site adjacent to the Gas Works, owned at the time of the project by Scammels Engineering Works (Site **59**), identified a small, square structure adjacent to the canal on the Pigott Smith map of 1824, with a large building or complex of buildings nearby (Figure 3.31). Documentary sources, such as Robson's Birmingham and

Sheffield Directory includes on the list the occupiers of Old Mills several wire drawers, whereas Heath Mills were occupied by Ball and Walker, patent steel pen manufacturers. By Ackerman's Panorama of 1847 the two groups of buildings adjacent to the canal were separated by an open space giving access to the canal (Figure 3.32). It is possible that by the mid-19th century the land between Fazeley Street and the canal was redeveloped. Two occupiers were listed on the trade directories (The Post Office and Kelly's directory of Birmingham 1845 and 1875); The Birmingham Gas Light and Coke Company, and S Walker, metal refiner and rolling mills (**59**).

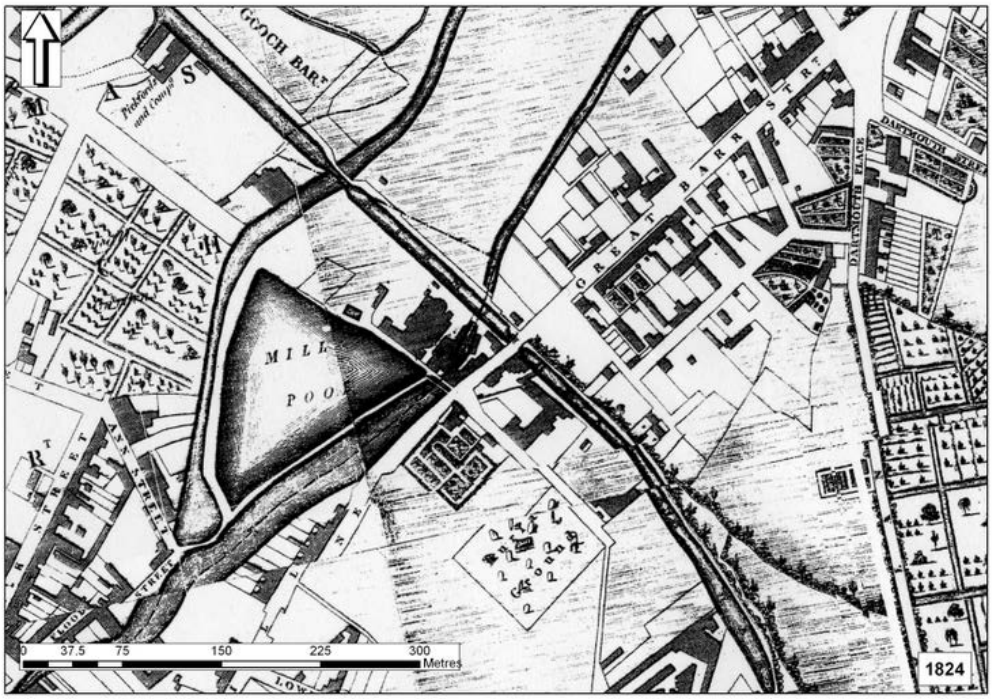

Fig 3.31 Buildings and Structures adjacent to the canal (in the vicinity of Site 59), Pigott Smith map of 1824

*Figure 3.32 Buildings and Structures adjacent to the canal (in the vicinity of **59**), Ackermans Panoramic 1847*

Continuing exploitation of Birmingham's water

The mapping of the 18th century indicates that most of the back-plots of properties fronting onto the higher end of Digbeth had been extensively built on by this time. The area along the Digbeth/ Deritend High Streets that was situated closest to the River Rea is likely to have been subject to episodes of flooding prior to the culverting of the river in the mid-19th century. The exploitation of the natural water supply continued as an important feature of the area. A spring is shown on the Inge Map of 1808, and this was the site of Digbeth Mineral Springs (as depicted on the Ordnance Survey 1:500 edition in 1889, Figure 3.33). In the same location on later maps a cistern is depicted, and in 1850 the premises of Goffe and Company, mineral water manufacturers were situated on the south side of Well Lane in a three-storey brick building originally built as a school. An article in *Birmingham Faces and Places* from the 1st March 1889 describes workmen coming across a large tank while lowering a yard. The cistern measured 6 feet x 12 feet, and, according to an inscription on the tank, was cut in 1854 and fed by a 400 feet-deep artesian bore. This bore was connected via culverts to a series of wells, which in turn were connected to an underground reservoir 40 feet long. The workmen reported that the pattern of bricks used in its construction indicated this reservoir was already quite old (**31**).

Figure 3.33 The Ordnance Survey 1:500 edition in 1889, showing location of Digbeth mineral spring

Before water was systematically piped into houses in the later-19th century, the wells would have provided an extensive water supply, and there were several in this area that were once visible on the Park Street side of upper Digbeth, called Well Street in the 18th century (**31**). Part of the retort house of the Gas Works was converted for use as an Ice House in 1884, and the patent Transparent Ice Company made ice at the works. The Ice Works supplied, by cart, the major hotels and restaurants in Birmingham, and also delivered ice by canal, within a fifty mile radius of Fazeley Street (**32**). The ice works were later incorporated into a wharf and warehouse for Fellows Morton and Clayton, now called The Bond. A large wharf was also built to on the north side of the Birmingham and Warwick canal, which was the Corporation processing plant for Birmingham's night soil and ash, which by 1885 was handling two million pans of waste a year some of which was recycled (Upton 1993, in **16**). This land was never

intensively developed until the 1870s, possibly due to its proximity to the river and problems with flooding.

It was not until the water system around Cooper's Mill or Heath Mill was altered in the 1850s that the water management of the Rea was under control. The night soil and ash processing plant was an important component of the Corporation's response to one of the most pressing issues confronting the Victorian industrial town, and was developed in the 1870s and 1880s in response to increasing concerns about sanitation and public health. The basic waste products based on the coal technology were enormous quantities of ash from open fires, and night soil (**16**). The process originally comprised sorting of the ash waste by hand, but in 1879 machinery, plant and stabling were erected at the Montague Street wharf, mechanizing the unpleasant process. The works were further extended in 1882, resulting in a huge increase in the number of loads processed. The works also employed a large number of people, comprising a superintendent, 7 foremen and clerks, 60 collectors, 4 ashmen, 22 wharfmen, 30 stokers, 9 wheelwrights, 1 groom and two labourers. Newspaper reports of the time attest to the civic pride in the application of 'scientific principles' to the problem of waste disposal (**16**).

Canals

The increasing industrialisation of Birmingham led to increasing problems with its road communications during the 18th century, due to heavy traffic and to the type of geological formation it traversed (Wise and Johnson 1950, 183). Although the well-drained sandstone and Pebble Bed provided a decent foundation for the roads, the 'bottomless clays' of the Keupar Marl and Middle Coal measure series offered difficult conditions (*ibid.*). The construction of the canal system during the second half of the 18th century served to address this issue of communications and infrastructure. They were designed to provide a cheap means for transport for materials (coal, iron, limestone, clay, bricks) within the growing industrial district, and to link the manufacturing district with the chief national water routes (*ibid.*, 184). The canal system had an immediate economic effect; when the first boat-loads of coal arrived at the Birmingham wharves from Staffordshire in 1769 the price of coal fell immediately by half (*ibid.*). Unsurprisingly, the construction of the canals was to be massively influential on the development of the area, with industries almost immediately lining it, and swiftly radiating outwards as industry output increased (**32**). Industries such as glass, gas and metal based works were quick to establish manufactories and warehouses in these areas (**32**).

The Digbeth Branch Canal was built on land leased from the Gooch Estate (see Baker, Chapter 5) and was first depicted on a plan of 1789. The Warwick and Birmingham Canal followed in 1793, and the building of both canals was to prove a catalyst for accelerated expansion of the town east of Park Street and north of Digbeth (18). Both canals are depicted on Kempson's map of 1810 (Figure 4.34). Kempson's map shows that road grids had been cut through to the south of the Site **18** study area (covered in detail in Site **32**), but although new plots had been laid out within Site **18**, little new development had occurred here (**18**). There was much development to the south of Site **18** (including Site **82**), between Park Street and the canal, depicted in more detail on later maps. It is likely that these were domestic dwellings with small home-based industries arranged in courts with evidence of planning of a grid like road pattern (**82**).

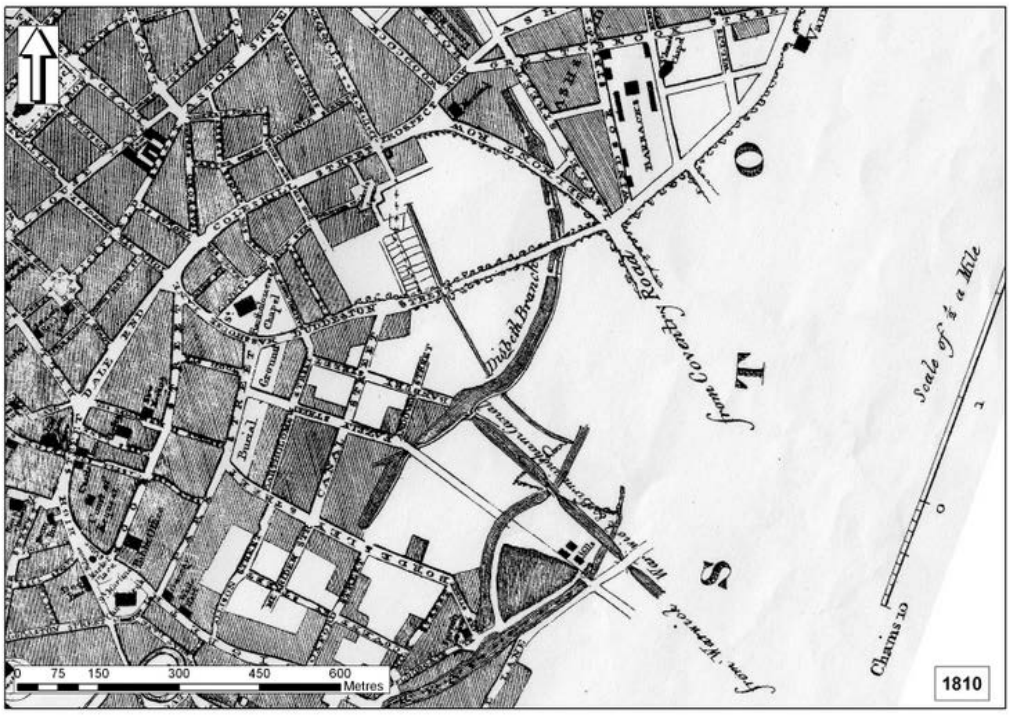

Figure 3.34 Kempson's map of 1810 showing the Digbeth Branch Canal and the Warwick and Birmingham Canal

The Digbeth Branch Canal is a short canal which aimed to link the Birmingham and Fazeley Canal at Aston Junction and the Grand Union Canal at Digbeth Junction (or historically, at the adjacent Warwick Bar) in Digbeth. The follows the topography of the area and has six locks leading down from Aston Junction (Figure 3.35). It is first depicted on a plan drawn up by John Snape in 1789 as a single branch terminating within an otherwise nearly empty plot of land that was bordered by Fazeley Street to the north, Bordesley Street to the south, Trent Street (now Pickford Street) to the east and Canal Street (now New Canal Street) to the west. Two buildings are recorded in the area, labelled 'Steam Mills' (**12**). The Warwick and Birmingham canal followed in 1793, and the building of the canals encouraged growth and development in the land surrounding the urban area (**16**).

Despite the canals mostly following the contours, it was necessary to build flights of several locks in order to get to the higher ground away from the Rea Valley, and this had important implications both for the pumped supply of water and the volume of trade that the canals handled (Wise and Johnson 1950, 183). Expansion to the east of the urban centre of Birmingham was gradual overall, but development in the area of the junction of the two canals was relatively rapid (**16**).

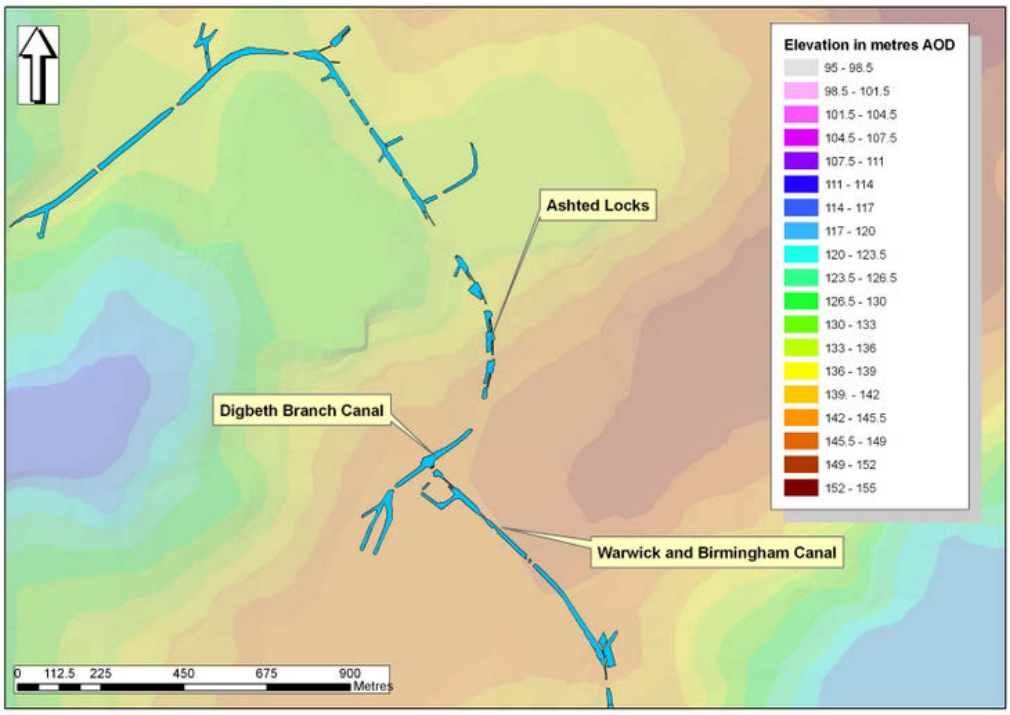

Figure 3.35 Topography of the study area around Digbeth Branch Canal

The coming of rail

The next major phase in the advancement and development of Birmingham's infrastructure and communications is the coming of rail during the 19th century (Figure 3.36 and Figure 3.37). By this time, the strategic and industrial importance of the city demanded links with other main commercial centres; London, Liverpool, Manchester and Derby (Upton 1997, 93). Parliamentary approval was granted to the London and Birmingham Railway in 1833 and to the Grand Junction Railway in the same year. The progress of railway construction was so swift that the GJR from Liverpool arrived before its intended terminus at Curzon Street was completed (*ibid.*). The rail links had a dramatic effect on all aspects of Birmingham life, including firmly establishing the status of the 19th century wholesale markets situated over the former Birmingham Moat, which continued to grow both in size and importance throughout the 19th century (**30**). To the east of the city, development into the open lands had continued due to the cutting of the canals but it was not until the late 1830's and the coming of the railways that this area was to take on the unmistakable urban character that defined it until the mid-20th century (**18**).

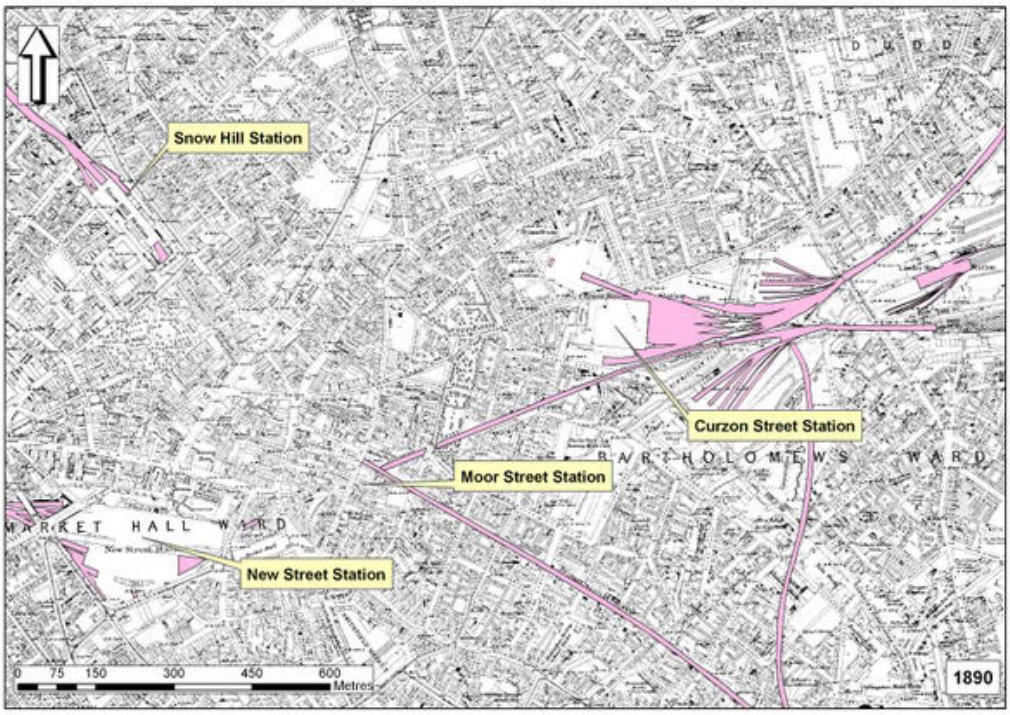

Figure 3.36 Location of the rail stations in Birmingham city centre

Figure 3.37 Curzon Street station, generated from a 3D laser scan undertaken by Birmingham Archaeology and shown in Google Earth

The opening of the Great Western Railways London to Birmingham railway line at Curzon Street had a large impact on the area, altering the balance between the areas industrial and residential characteristics (**32**). This area is characterised by a variety of industries including metal workers associated with brass, iron and steel products, and gas, glass, button works, tanneries, saw mills, malthouses, bakeries and curers. As an article in Industrial Great Britain (1891) records:

> *'the spirit and enterprise of the inhabitants of Birmingham are well illustrated in the number and variety of their occupations. They do not confine themselves to one particular branch of business, but their energies overflow into nearly every department of industry, and each succeeding year gives birth to some new and important undertaking.'*

The railways exploited the as yet relatively undeveloped River Rea valley as a natural transport corridor into Birmingham. The London and Birmingham Railway, which opened in 1839 built its Birmingham terminus at Curzon Street with a goods and stable yard within the Site 18 area. Duddeston Street is renamed Curzon Street, and the station and its associated buildings and yards straddled it, occupying a large area in this vicinity. The character of the area towards the city centre from Curzon Street Station, ie the Bartholomew Row/ Fox Street/ Grosvenor Street block was mostly occupied by terrace housing including court housing (**18**).

The viaduct of the Birmingham and Oxford Junction railway was completed and opened in 1852, and the report notes that Gibb Street, which appears on the maps at an earlier date, may be connected with the viaducts construction. By the time of the 1st Edition Ordnance Survey the area has a high percentage of industrial buildings, including a brass foundry, two nail works, a tube works, smithy, timber yard and malthouse in amongst lines of back-to-back housing (**32**).

New Street Station was built in the centre of the town and was opened in 1852, after the London and North Western Railway was opened in 1846 (**82**). Thus the infrastructure, which had up to this point ringed the town in the form of the canals, was once again brought into the city centre. The siting of the central station was heavily influenced by the opportunity for the new town council to clean up some of the worst and poorest areas in town, such as Froggary, King Street and Peck Lane (Upton 1997, 95). Albert Street is a remnant of a proposed half-mile long 'railway boulevard' which dissected Park Street Gardens Burial Ground (see Chapter 6, below) and was intended to lead to the front of the station from the junction of High Street and New Street, but which had to be abandoned in the face of opposition from local landowners.

The station at Snow Hill (originally one of the other potential sites for New Street station) was opened in 1852, from which point Curzon Street (adjacent to sites **18** and **82**) operated as a goods station only (**82**). Snow Hill was an important arterial route from the centre of Birmingham to the Black Country, bringing in raw materials from this resource rich area prior to the construction of the canals, which would have been a major consideration in the siting of industry in this part of the developing city. Snow Hill station was rebuilt in 1870/1, together with the Great Western Hotel and Arcade to the south (**63**). The station continued to be successful and also attracted other business and enterprise in its vicinity. Flowers was a 'County Brewery' type that characterized the industry of this period, and had been based in Stratford-upon-Avon since 1831. However, when sales in Birmingham doubled between 1869 and 1873 they set up a distribution facility close to the rebuilt Snow Hill station, capitalizing on the direct link to Stratford-upon-Avon and their newly built brewery with a direct connection to the railway here (**63**).

The insertion of Moor Street Station (opened 1909), had a significant impact on Site **29**, as it required the clearance of the northwestern third of the area. The original plan to extend the London and North Western Railway line through the northwest corner of the Moor Street, Park Street and Bull Ring Block was submitted to the Borough Surveyors as early as 1856. By 1878 the Birmingham and Lichfield Junction Railway also had railway related proposals in the Moor Street area, but in the end it was the Great Western Railway Company's proposal which became reality, and Moor Street Station was opened in 1909 (**29**). The station not only provided a terminus for passengers adjacent to the city centre, it served as a vital link between the city's

expanding wholesale markets and the national and international distribution network, superseding to a large extent the earlier good yards situated in Bordesley (**29**).

Markets and commerce

One the main defining attributes of today's city is its role as a major shopping town within the region, and country. The recent development of the Bullring shopping centre not only represents Birmingham's most recent retail development, but brings the layout and focus of the market centre back in line with its historic ancestor (Figure 3.38). It is an excellent example of continuity that, despite massive expansion and development of new shopping areas, Birmingham's real trading heart remains at the foot of St Martins where the present day markets still provide a busy focus for the city's shoppers.

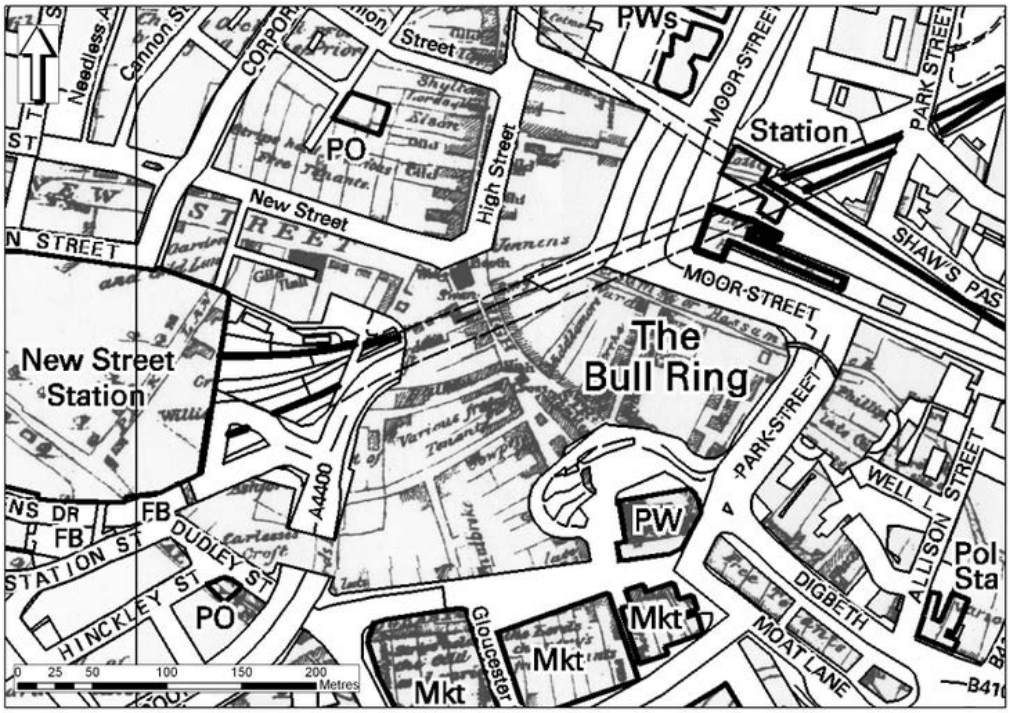

Figure 3.38 Location of the modern Bull Ring shopping centre overlaying an historic map showing continuity of the main areas of focus for markets in the city centre

Kempson's map of 1808 shows that within Site **76**, the market place had been cleared of all five structures relating to the Shambles and the Corn Market and the buildings around St Martins Church Yard. By 1810 a statue of Nelson had been erected at the centre of an otherwise open market place, and Ackerman's Panoramic shows the Bull Ring Market remains open apart from this statue (**76**). Within Site 75, there is little change evident from the mapping from the mid-18th century, until 1835, when the site was cleared and a new market hall was constructed. Skipp (1983) puts the cost of construction at 100k and describes a Doric-style entrance from High Street leading into a hall with 600 stalls (**75**). Earlier structures were also incorporated into the market infrastructure, and Ackerman's Panoramic View of Birmingham 1847 depicts a two storey market hall, labelled as 'St John's Market' (**75**) (Figure 3.39).

The clearance of this area (Site **75** and **76**) was the deliberate enhancement of the market facilities by the City's Commissioners. The success of the markets brought problems with street congestion and traffic issues with produce and livestock being brought into the city. The livestock problem was solved around 1810 when the Commissioners bought the former medieval manorial moat which lay to the south of St Martins church, and opened 'Smithfield

Market' in 1817 for the sale of livestock. A wholesale butcher's market, St Martin's Market, was opened at the later date of 1851 at Jamaica Row (Skipp 1983, in **76**).

Figure 3.39 Ackerman's Panoramic View of Birmingham 1847 depicts a two storey market hall, labelled as 'St John's Market'

The Bull Ring market place also became overcrowded and extended beyond its original boundaries, and this was addressed by the construction of St Johns Market. This market was for meat, vegetable and other sellers, and was subsequently reorganized to accommodate the Fish Market which was brought down from Dale End. A separate Wholesale Fish Market was opened to the south of St Johns Market by the City Corporation in 1869, and the Smithfield Vegetable Market for wholesalers was opened in 1884, replacing the previous pitches on High Street, Spiceal Street and Worcester Street (Skipp 1983, cited in **76**).

The status of Edgbaston Street seems to have declined rapidly during the 19th century. Massive population growth during this period, associated with social changes brought about by the Industrial Revolution, had already contributed to a general decline of the 19th century inner city. The urban poor were forced to live in unsanitary and often old properties commonly situated in courts built behind the more substantial properties that lined the street frontages (**55**). The situation only began to be seriously addressed during Joseph Chamberlain's leadership of the City Council which corresponded with broader changes in the economic shape of Birmingham, particularly brought about by enhanced rail links, which firmly established the status of the 19th century wholesale markets situated over the Birmingham Moat (**55**).

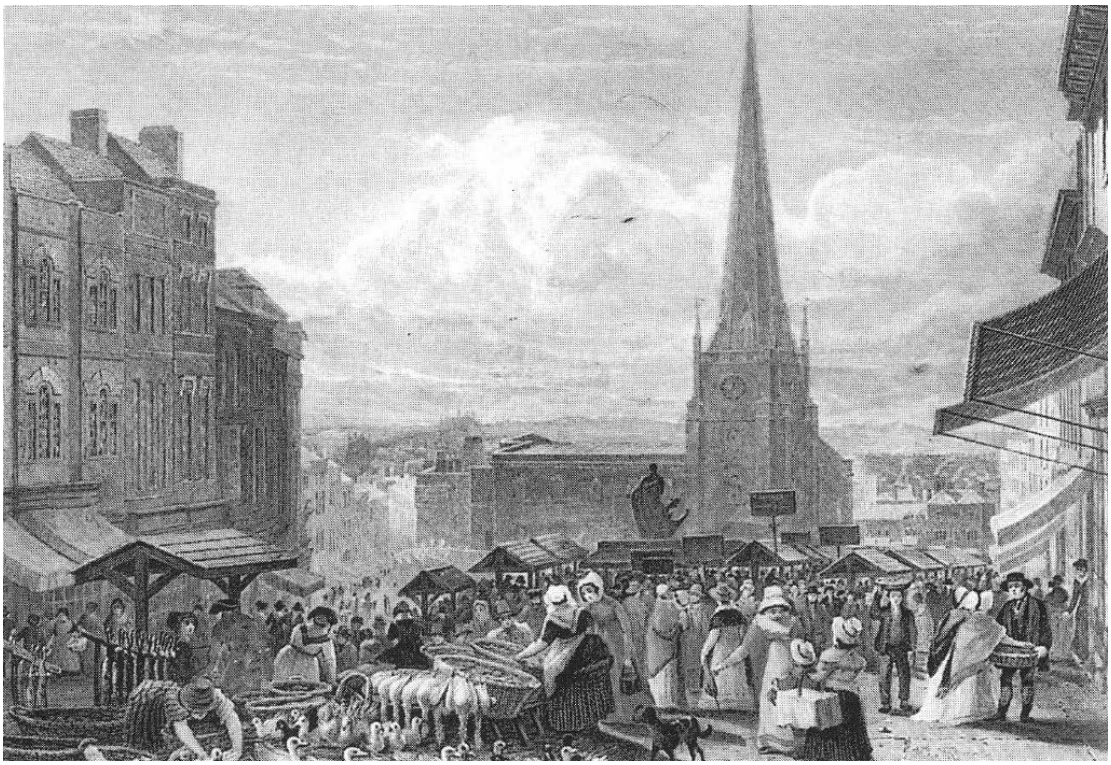

Figure 3.40 View of the Bull Ring from New Street, David Cox, 1827

Chapter 4 A town-plan analysis of Birmingham before 1800

By Nigel Baker

Introduction

While any town or city is, in theory, susceptible to the techniques of town-plan analysis (by which it may be hoped that stages in the process of urban growth may be discerned in the existing or recorded physical structure of the settlement), cities such as Birmingham that have experienced massive growth in the last two centuries present a particular challenge. Whereas much smaller urban places may have escaped radical morphological change associated with economic growth and industrialisation, so that their townscape still displays characteristics associated with their initial, medieval, urbanisation, the prospects of this in a place such as Birmingham are clearly much reduced. Moreover, where, as here, even the earliest available detailed maps show a place that had already been substantially transformed by outward growth and inward infilling, the prospects for recovering details of the earliest centuries of urbanisation diminish still further. Nevertheless, even 21st-century central Birmingham is still – to some extent – a reflection of its 12th-century form. This is apparent not just from the continued existence of a framework of streets that historical evidence show to have been present from the medieval period, but from the persistence in the townscape of property boundaries shown by excavation to have been established at the outset of the urbanisation process.

This chapter is therefore an attempt to reconstruct some stages in the growth of Birmingham up to c.1800, using a variety of sources but – fundamentally – the cartographic record of the townscape, as surveyed and published from 1731 on. Because of the inherent problems, a number of different but complementary approaches have been adopted.

For any study of Birmingham's earliest centuries, a crucial historical milestone is provided by the manorial survey of 1553 which, while not comprehensive (properties that paid no rent to the manorial lord are omitted and some groups of houses are not enumerated), provides an almost plot-by-plot account of the town at the time of the manor's confiscation by the crown and thus gives a sound basis for an approximate estimation of the extent of the built-up area (Bickley and Hill 1890). Within the built-up area thus defined there are no contemporaneous historical sources that directly and unambiguously describe stages in the extension of the town or the creation of new, identifiable, townscape; we must instead turn to the form of the townscape itself, but as recorded two centuries later. The principal sources for this are three 18th-century maps: William Westley's *Plan of Birmingham* surveyed in 1731, Samuel Bradford's *Plan of Birmingham*, surveyed in 1750 and Thomas Hanson's *Plan of Birmingham Survey'd* of 1778. Bradford's plan, more detailed than Westley's, has been used as the base plan for Figure 4.1, from which the more conservative (slow to change) plan elements – streets and property boundaries – have been extracted. In the analysis no reliance is placed on the form of individual plots; instead, attention is directed towards the general characteristics of groups or series of plots and, in particular, their common, shared, boundaries, where one series abuts another. Wherever possible, details shown by these cartographers are verified from other, later, sources. The much more reliable plans of the 19th-century Ordnance Survey and Board of Health which would normally form the base-plans for such an exercise have not been thus employed here because of the degree of change in the townscape in the century before they were surveyed.

The progress of urban development for a century and a half after 1553 must similarly be reconstructed primarily from topographical evidence, with some support from historical and archaeological sources. But, from the 1690s written evidence becomes available, particularly building leases issued by landowners to prospective developers, mostly builders, bricklayers,

masons and carpenters. Such leases often specified the dimensions of new streets and plots, and the form of new buildings. Earlier in the 18th century such conditions were most often of a general nature, specifying the number of storeys or the minimum value of the houses. Later on, specifications issued by some estates went so far as to stipulate joinery dimensions and architectural detailing (Chalkin 1974, 89). Often, restrictions were placed on the occupations that could be pursued in the new development, butchers and smiths being those most frequently vetoed. In most cases, the 18th-century estates promoted their own lands, selling or leasing plots direct to those who would build upon them without intermediates. For the larger estates this meant a process of piecemeal disposal that could extend over several decades. The huge (100-acre) Colmore Estate was developed between 1747 and c.1795 and in only one year (1755) were no building leases issued: numbers generally varied from one or two to sixteen or seventeen plots disposed of annually (Chalkin 1974, 84-5).

The growth of Birmingham has been documented by a number of historians, notably by R K Dent towards the end of the 19th century (Dent 1894), and more recently by C W Chalkin (1974) who examined the way in which Birmingham grew in the 18th century as one of a number of case studies across the country. Chalkin included a map showing the disposition of the great estates, though without their internal detail, their often distinctive estate grids. The most recent addition to this literature has been McKenna's *Birmingham, the building of a city* (2005) which makes extensive use of primary historical material (building leases, private Acts) to document 17th-century and later growth processes and their principal and minor actors. Extensive use has been made here of this work to identify town-plan components.

From 1731 on Birmingham was surveyed and mapped with increasing frequency and accuracy. The plans of 1731, 1750 and 1778 were followed by Snape's plan of 1779 which, although lacking detail within the built-up area, usefully shows the surrounding fields that were then being built over. New maps followed in 1810 (Kempson), 1819, 1824-5 (Pigott Smith) and 1849. Urban developments after the 1730s can therefore be dated within a maximum thirty-year bracket even if the agencies of their inception have yet to be identified from the written sources.

This analysis

The old urban core of Birmingham, built up before 1750, has been analysed using Bradford's plan of 1750 as the primary base map. Within this, the extent of the built-up area by 1553 is indicated approximately, and across the whole area shown the town plan is disaggregated into individual *town-plan components*, or plan-units in the terminology of M R G Conzen (1969). These may simply be individual plot series, defined by common boundaries, that may be the outcome of a single design, or of development over a short period of time, or they may be more complex areas of townscape with, for example, a common orientation or unifying grid-plan that distinguishes them as individual designs or single-phase developments that are recognisably different from neighbouring areas. Wherever possible other independent sources are brought in to illuminate each area. This generally means archaeological evidence for the old, industrial core streets (Edgbaston Street, Digbeth, Deritend, Moor Street and Park Street) and documentary evidence for peripheral areas developed after c.1690.

For the latter, and particularly for areas built up after 1750, the emphasis placed on the use of historical evidence increases decisively as details of land ownership, private Acts of Parliament to enable developments, and leases determining what builder-developers would build and where, become available. Figure 4.2 covers the study area as a whole and offers a schematic guide to the development of major landholdings around the old urban core in the course of the 18th century. It is schematic in the sense that further detailed research will be required if the agency behind the building of each and every street developed before c.1800 is to be determined – though the approximate extent of the larger estates is fairly clear and the Pigott Smith map of 1824 identifies the major landowners. Town-plan analysis still has an application in this period, as discontinuities in the fabric of the built-up area (for example, changes in grid orientation or deflected boundaries) can suggest where one landowning interest ended and another began, in advance of the more detailed historical investigation that is still required and that this chapter

cannot provide. Town-plan components are numbered sequentially below and in Figures 4.1 and 4.2 from the core outwards, but no detailed chronological implication is intended.

A cut-off date of 1800 has been adopted because it was around that time that the study area was first almost fully urbanised. After that date the town continued to expand ever more rapidly outwards while, within the study area, development intensified within the recently-built-up estates and the old medieval core alike, within individual plots and by the insertion of new streets – most famously exemplified by the construction of Corporation Street in 1879 right through the centre of the pre-1800 town. The multiplicity of small-scale changes after c.1800 is well beyond the scope of this chapter and again requires more detailed research (e.g. Digbeth and its environs; Baker 1999).

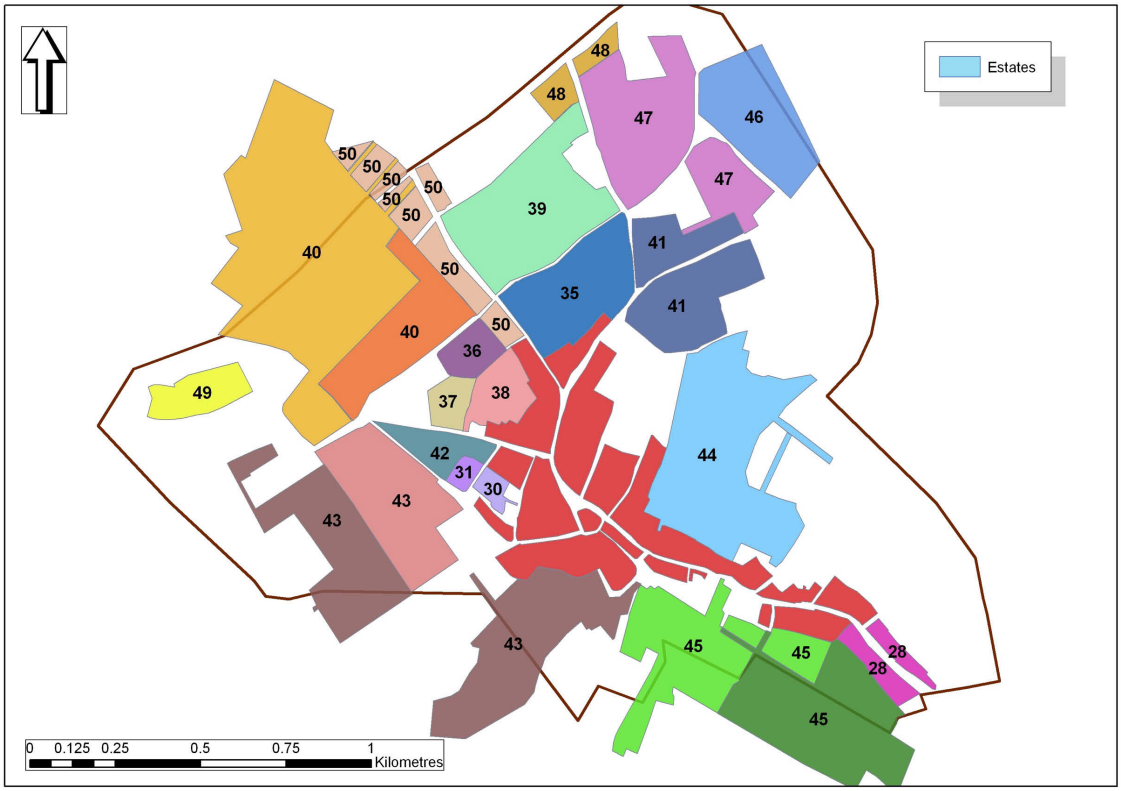

Figure 4.1 The study area as a whole with a schematic guide to the development of major landholdings around the old urban core in the course of the 18th century

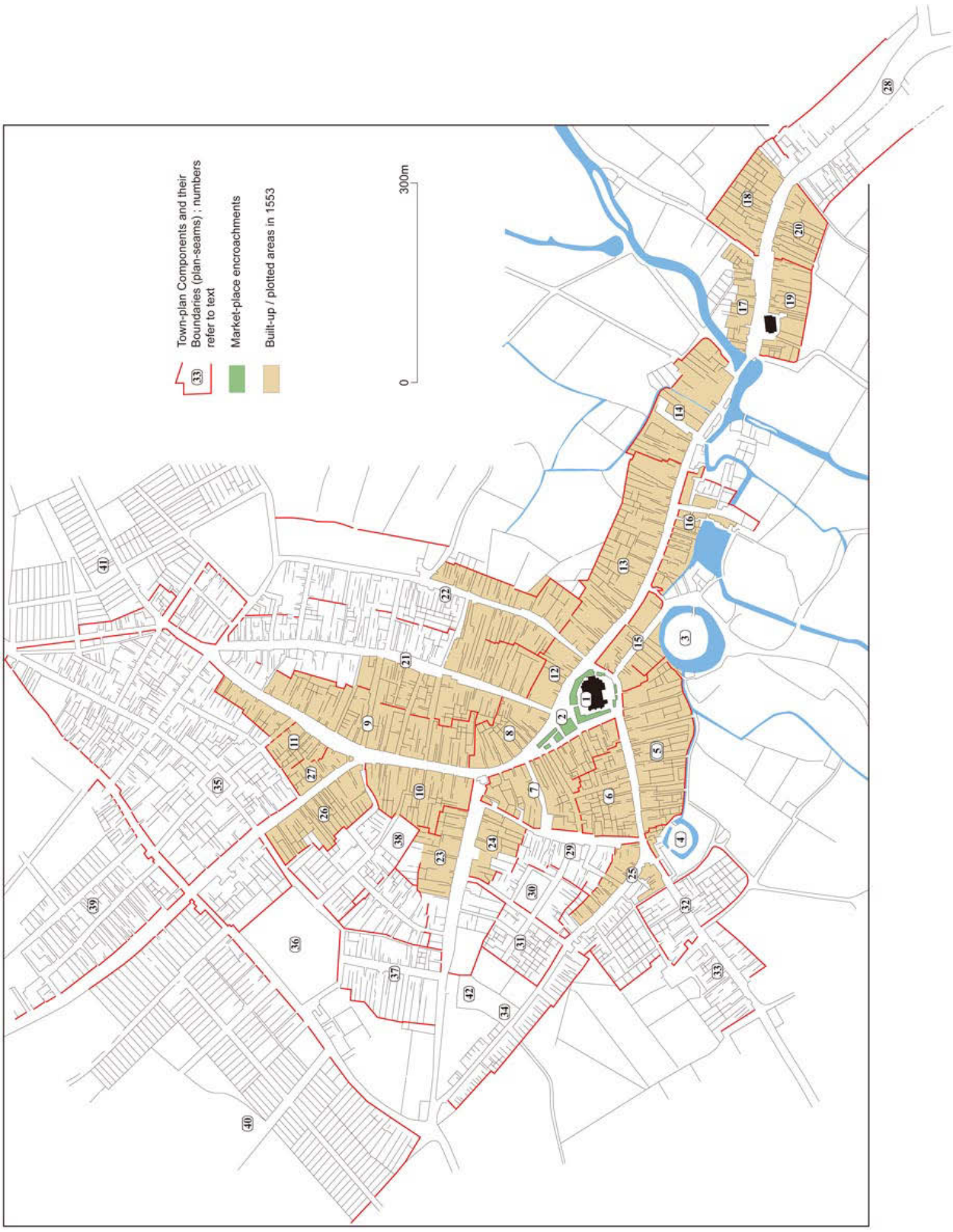

Figure 4.2 Main town planning components numbers relate to those as discussed in the text below.

Part One; town-plan components within the pre-1553 built-up area

1. St Martin's churchyard and encroachments

In summary, the origins of St Martin's church can at present be traced back to the 12th century, on the basis of a stone fragment with chevron ornament reported in the 19th century. Direct documentary evidence is much later, the church first recorded only in 1285 (Brickley *et al* 2006, 12). How far the church actually pre-dated the 12th century is contested. Steve Bassett (2000, 16) has suggested that St Martin's was a 12th-century foundation associated with but secondary to the creation of the market place, while the pre-Conquest parish was served by a different church, possibly one on the site of the Priory or Hospital of St Thomas. Hodder, however, has rejected this view, suggesting instead that St Martin's was the first and only parish church, one, moreover, occupying a circular churchyard and potentially, therefore, of much earlier date (Hodder 2004, 79).

The date at which the churchyard became ringed by buildings is also uncertain. 15th to 16th-century pottery from the churchyard excavations probably derived from surrounding buildings (Rátkai 2006); they do not identifiably appear in the 1553 survey as presumably they paid rent to the parish. They may, however, have been established much earlier, perhaps contemporaneously with the adjacent market-place encroachments, as the church sought to profit from its market-place frontages. Removal of the houses began in the late 18th century and was completed by 1810 (Brickley *et al* 2006, 9)

2. The Market Place

The first reference to Birmingham's market place is the royal charter of 1166 granting to Peter de Birmingham and his heirs a market 'to be held at his castle in Birmingham'. Two questions immediately arise from this. The first is whether this was a genuinely new development or a legal recognition of a long-standing situation. The second is how literally 'at his castle' (*apud castrum*) should be understood. Did the phrase mean merely 'in the general vicinity of the castle', (being the most prominent landmark), or was it much more precise, meaning at the gate of the castle – the manorial moated site – in the Edgbaston Street/Moat Lane area? Either seems possible, though Mike Hodder (pers. comm.) has recently opted for the more precise meaning, arising from the presence of the 'lower market' to the south of St Martin's. The 1189 market confirmation charter referring to the market 'in the town' rather than at the castle could similarly be read either to suggest that marketing activity had shifted north, or that it was the town – the rapidly-growing built-up area – that was already by then the most striking landmark (Buteux 2003, 51).

The market place as a whole covered a triangular area measuring about 250 metres long north to south by about 100 metres across at its base, formed by Edgbaston Street and St Martin's Lane, curving around the churchyard perimeter. The geography of the market place has often been described and need only be summarised here. Its western side was formed by Spicer Street (home to the town's wealthiest merchants in 1553), its eastern side by Corn Cheaping, a section of the continuous, sinuous, primary High Street-Digbeth road running NW-SE through the town, carrying inter-regional traffic from the Lichfield and Wolverhampton directions (west and north) to the south and east (Coventry, Stratford and ultimately London). As usual, such street-names reflect the segregation of functions within a large urban market place, the Shambles occupying the northern apex of the triangle with livestock markets along the main street to the north: the Beast Market or English Market from the Tollbooth at the New Street junction to Carrs Lane; beyond, as far as Dale End, was the Welch Market, dealing with sheep and wool. In 1553 this part of town was characterised by sheepfolds (e.g. Bickley and Hill 1890, no.87, xviii).

The manorial survey of 1553 also shows clearly that the market-place encroachments recorded by the 18th-century town plans were then in place. The Bailiff and commonality of the Borough were paying 8 shillings per annum for 'divers stalls for the fishmongers, butchers and tanners there in the market' (Bickley and Hill 1890, no.90, xviii). Encroachments out from the principal frontages appear to be represented by entries such as that for the 'parcel of a shop' measuring 5 feet by 10 feet in front of William Budges' shop, or one shop and one 'standing' at the outermost end of the Shambles (Bickley and Hill, ibid, nos.93, 98, xix, xviii). The origins of the main encroachments are not recorded, but a row such as the Shambles is most likely to have been a manorial initiative, most probably of the 13th, or at latest 14th, century. The market place encroachments were gradually demolished by the Street Commissioners in a process that commenced in 1784 (Brickley and Buteux 2006, 9).

What of the origin of the triangular market-place itself? The 'village green' hypothesis is now widely discredited – the green being a feature most characteristic of nucleated settlement, for which there is absolutely no evidence (see Bassett 2000, 1). So, to what extent is there evidence of design – of town planning or 'higher-order decision-making' – in the form of the market place; was it, in Steve Bassett's words, 'the product of a formal act of creation'? It has to be said that the case for this may have been overstated (*ibid*, 2 and n.11). While there is abundant evidence for the careful laying-out of the surrounding plots and, in the Moat Lane/Digbeth block, a possibly more intensive re-design of a plot series with a back lane (see below), the possibility that the triangular market place evolved from an informally-used open space at a three-way junction of major routes, on the lines of Swaffham (Norfolk) or Ross-on-Wye (Herefordshire) cannot yet be ruled out. Nor, however, can deliberate seigneurial creation. One distinct possibility is that the necessary open space was created around the existing church by pulling back the south-western frontage of the primary through-route to a new line represented by Spicer Street, possibly already there as a short-cut through to Edgbaston Street. A similar process may be envisaged in the creation of the 12th-century market place at Leominster (Herefordshire) in the space between an ancient main road and Leominster Priory's precinct frontage.

3. The Manorial Moat and 4, the Parsonage Moat

Again, these features have been extensively discussed by other writers (Watts 1980, Buteux 2003, Hodder 2004) and no more than a short summary would be appropriate here. The manorial moat is fairly certainly identifiable as the de Birmingham *castrum* of the 1166 charter, having yielded an architectural fragment of probable 12th-century date, a cooking-pot rim of 12th or 13th-century date, and a wall pre-dating the very fine 13th-century masonry that was the most striking feature of the salvage excavations of 1973-5. Its circular form suggests that it may have originated as a ringwork (Hodder 2004, 89; Watts 1980). The origins of the Parsonage Moat to the west are more obscure. It may simply have been a moated rectory contemporaneous with St Martin's church, or the de Birmingham family's home farm, though Mike Hodder has suggested the possibility that it could be the site of the pre-Conquest manor house (2004, 79).

5. Edgbaston Street south plot-series

A short series of watered plots, each ending at the watercourse linking the Parsonage moat to the Manor House moat, their appearance on Bradford's map assumes a degree of apparent regularity from the alleyways that penetrate the series from the frontage down the slope to the watercourse, between (approximately) every second or third individual plot. The Edgbaston Street frontage was fully built-up in 1750 with ranges of buildings extending part-way or intermittently down the alleyways towards the rear. The alleys were evidently developing at that time, Wesley's map of 1731, though somewhat schematic, showing fewer of them, though building development behind the street frontage was already by then well advanced.

The Edgbaston Street excavation provides crucial archaeological evidence. The plots (probably the series as a whole but certainly the plots towards the western end) appear to have been laid

out and occupied before the end of the 12th century, and to have accommodated both domestic and industrial functions, having produced a 'genuine domestic group' of late 12th to early 13th-century pottery (Rátkai, Chapter 5) – rare in Birmingham at this date. Tanning, however, was the most archaeologically well-represented activity on the excavated plots, being present from the 13th century or earlier through to the early 18th century. The necessary water supply would have been provided by the watercourse, running between the two moats, that formed the common rear boundary. Where excavated, this channel was seen to have been kept open into the late 18th century. Thus provided, these plots would have offered an unusually advantageous topography for industrial exploitation, in that a supply of running water was present at the rear while the plot heads – the occupied frontage – were up-slope, well-drained and clear of the Rea floodplain.

It has been suggested that the triangular market place originally extended south to the edge of the de Birminghams' moat (see Demidowicz 2002, Figure3) and that the easternmost plots of the Edgbaston Street series were later extended over it. It must be said that there is no supporting topographical evidence for this. The plot series appears to have been completely homogenous in character right up to the short, regular plots facing east onto Moat Lane. They appear to have been regular, watered strip plots of standard type, with no sign of the plot-less buildings characteristic of market-place encroachments.

The mapped plots need not necessarily have been precisely coeval with the plots as first established, though there appears to be no hard evidence for discontinuities in their occupation that might suggest re-planning. McKenna (2005, 14) refers to new tenancies created after the Black Death by Fulk de Birmingham in Edgbaston Street and at the Smallbrook Street – Horsefair junction. This appears to refer to an entry in the 1553 survey to a burgage and garden held by Richard Hamon by the terms of a charter dated 1352, interpreted by the survey's editors as evidence that Fulk de Birmingham parcelled out the south side of the street at that date (Bickley and Hill 1890, no.84, p.xvii); this, however, seems to be taking the evidence too far. The archaeological sequence also shows a major reorganisation of the excavated plots c.1700-1720 represented by the formation of a widespread dark cultivation-type soil following the disuse of the back-plot industrial infrastructure developed over the preceding centuries (Buteux 2003, 75-6). Meanwhile the frontage, from Westley's plan of 1731, remained fully built up, and McKenna, in discussing the rapidly increasing population of Birmingham in the late 17th century, gives an example of the infilling of tenements in the urban core from Edgbaston Street where, in 1674, a piece of land only 2 yards and 4 inches wide was purchased with the right to build up against the neighbours' buildings (McKenna 2005, 23).

6. Edgbaston Street north plot-series

By 1750 the clarity of layout still visible in the plot series on the south side of the street had long disappeared from the north side, as plots had been developed facing east onto Spicer Street (plan-component 7) and, to a lesser extent, west onto Worcester Street, resulting in a confusion of property boundaries – some running north-south belonging to the Edgbaston Street plots, others west-east. Because of this dense and confused pattern, no chronological relationship can be determined between the Edgbaston Street plots and those facing east onto Spicer Street and the market place. While it is most probable that the latter were the earlier plots – belonging to the market place and the main axial street – this cannot be demonstrated, the workings of the property market in this area having by the 18th century already confused the junction of the two series. It is possible that the Edgbaston Street north plots were initially formed at the expense of earlier east facing plots that had originally run all the way back to Worcester Street, as some still did (plan-component 7) north of Bell Street. Lease Lane (Lea Lane in 1731) extended north to Bell Street through the middle of the Edgbaston Street series and may represent a secondary alleyway developed up the length of a plot, though it was present by 1553. The series as a whole may originally have terminated on Bell Street, though that, by 1731 and certainly by 1750, had already been developed with its own short plots on both sides, further confusing the pattern in this very densely built-up central area.

7. Spicer Street plot-series

The plots lining the western frontage of the market place (Spicer Street, extending north into the lower end of High Street) were quite distinctive, the series as a whole exhibiting a curved formation, their boundaries leaving the main frontage perpendicularly but bending towards an east-west alignment further to the rear. This distinctive formation may simply have been to accommodate the plot-series within the angle formed with Edgbaston Street but may also perhaps reflect the underlying grain of pre-existing fields, the curve perhaps even continuing across Worcester Street to be reflected by Dudley Street and later infill development (Colmore Street) to its north (see below).

The longitudinal penetration of this block of properties by Bell Street, Philip Street and other minor alleyways, appears to be related to the 'ladder-pattern' phenomenon so often seen in English towns in the medieval and post-medieval periods. This occurs where properties running between a principal frontage (usually a market place) and a secondary through-street to the rear become intensively sub-divided by minor lanes – the north side of the market place in Nottingham providing a good example – to service infill housing in the back-plot areas with connections to both frontages. This process is actually documented for Philip Street where, in the late 17th century, the landowner Roger Phillips leased land on the High Street frontage to a London haberdasher for building four houses, followed in 1692 by a further lease to a Birmingham bricklayer and others for the construction of a new street and houses behind (McKenna 2005, 23).

The Spicer Street market-place frontage was occupied by the wealthier merchants listed in the 1553 survey. No archaeological evidence is available from this area but it would be surprising if this was not part of the primary 12th-century settlement core, probably accommodating trading functions that did not require watered plots or a down-wind marginal position on account of fire-risk. The intensity of later development precludes any chance of reading a designed origin from the recorded characteristics of the plots other than, as already discussed, the possibility that the frontage line was the most 'designed' component of the formation of the market place itself.

8 and 9. High Town south-east and east-side plot-series

Two areas have been distinguished here simply on account of the different form of the plots on the curve of High Town and further north along the street, though it is probable that they formed, and may well have been conceived as, a single series. Their unifying characteristic appears to have been a common back boundary to the plots at a distance of 60-80 metres back from the High Town frontage roughly mid-way between it and Moor Street behind. On purely topographical grounds this might be taken as being indicative of a single planned origin for both streets, though this was fairly certainly not the case. Archaeological evidence from the Moor Street and Park Street excavations indicates that this boundary line in part fossilises the line of the ditch demarcating the boundary between the town plots and the manorial deer park known as Little Park or Over Park. Where it was examined at Moor Street, the ditch was found to have been backfilled by c.1250, then sections were re-cut, only to be backfilled again by c.1300. Towards the north end of the plot-series, as Moor Street converged with the main street, the plots became shorter and shorter. The plots at that end may still have been bounded by the park ditch though Demidowicz reconstructs it converging on the Dale End frontage some way south of the Moor Street junction (Demidowicz 2002, 149). As seen on the 18th-century plans the plot-series rear boundary was not continuous, being bisected by the lanes running through to Moor Street but also occurring at slightly different distances back from the frontage from block to block; this may reflect a process of departure from an originally continuous ditched boundary as, with the workings of the property market over time, some main-street plots were extended back or were curtailed by developments on Moor Street. The lanes that run through the series (Castle Street, Carrs Lane, New Meeting Street) may be post-1553 insertions and archaeological or documentary research should be able to establish their origins.

In the absence of archaeological evidence there is no way at present of dating the laying-out or the first occupation of these plots. Those at the south end, fronting the Market Place, are likely to have been built up before the end of the 12th century, but those at the northernmost end were, at the time of the 1553 survey, either unoccupied or contained only sheepfolds. It may be that occupation never extended north to the Moor Street junction in the medieval period, or that the plots at that end were subject to post-Black Death depopulation, reverting to gardens and grazing: this is a key area for future archaeological investigation.

10. High Town west plot-series

This was a short series of plots covering a frontage length of c.160 metres from New Street north to Crooked Lane at the junction with Bull Street (Chapel Street). The series was fairly certainly truncated by the insertion of New Street (see below) and probably by post-medieval infill developments behind. It is difficult to reconstruct the original rear boundary but it may have been about 70-90 metres west of the frontage, running south from the right-angle bend in Crooked Lane. To the south the development of plots facing New Street seems likely to have further truncated this series (see below).

11. Dale End north plot-series

Divided into two blocks by Lower Priory, established c.1700, this plot-series lay at the outer end of the built-up area in 1553. It seems probable that only the south-western block preserved the full depth of its plots by 1750, those of the north-eastern block having been truncated by the development of Westley Street at the rear. The plots of the south-western block lay at an angle to the Dale End frontage, parallel with the diverging course of Bull Street (Chapel Street). Lower Priory may have been built along an existing thoroughfare or passage as the main street space – particularly as seen on Westley's plan of 1731 – differed in character either side of it. Westley labels the south-western part as Broad Street, with Dale End to the north-east. The frontage line too was quite different in each part, that of Broad Street having a distinctive bulbous appearance characteristic of an extra-mural market street. The frontage itself, as shown in 1731, was staggered, suggestive either of encroachment or perhaps of a less-intensive use of the frontage that might be expected towards the margins of the settlement.

12. Corn Cheaping plot-series

This series occupied the eastern Market Place frontage between Moor Street and Park Street. But, given that both these streets appear to be additions to the town plan, the series should be seen as originally part of a much longer series stretching without interruption from High Town to the Rea. Their rear boundary was the ditch separating the town and the manorial deer park to the north-east. The ditch was accumulating rubbish from the early 13th century (and was backfilled by c.1250, but later re-cut and rapidly filled again) offering a *terminus ante quem* for the occupation of the Corn Cheaping plots, though in reality they are likely to have formed part of the 12th-century settlement core. Despite the medieval infilling of the ditch it persisted in the landscape as a property boundary, to be mapped in the 18th century by Bradford and others, and survived into the 20th century.

13 and 14. Digbeth north plot-series

This long (nearly 500-metre) plot-series extends eastwards and downhill from Park Street, but, as discussed above, may be considered to have been, in origin, part of the much longer continuous series extending down Dale End, High Town and Corn Cheaping, the series as a whole extending over 1100 metres (though it must be repeated that the northern end of this was not built up in 1553 and may not have been earlier). The rear ditch as mapped ran more or less parallel to the Digbeth frontage, bounding plots that were between c.60 and 70 metres long. A distinction has been drawn here between the main Digbeth plot-series (13) and that at the bottom (14) adjacent to the Rea and surrounded by its subsidiary channels, the plots here being longer and more irregular in form. This area was known as Deritend Island, and excavation

here has demonstrated activity in the form of pottery waste dumping in the early to mid-13th century and possibly in the 12th. The presence of a roadside ditch illustrates the fundamental need for drainage in this location and would almost certainly have bounded a raised, causewayed, carriageway. The first property boundaries too were also ditched. Use of these appears to have ceased in the later 13th century (a response to a deteriorating climate?) before resuming with industrial activity in the later 15th or 16th centuries (Hodder 2004, 91).

Excavation has shed light on the main plot-series (13) at a number of points. At the top of the series, the Park Street excavations explored the boundary ditch at the rear of the Digbeth plots and found that it contained potting waste, possibly from kilns located over the boundary in the park (Rátkai, Chapter 5). More recently, excavation on the gradient has hinted that the apparent integrity and homogeneity of these plots may conceal a more complex pattern of development.

The chronology question

Further work needs to be done on the chronology of plot take-up in this ostensibly long plot-series and the containing structure that appears to underlie it. While it is probable that the plot frontages at the top end (market-place) of the series were occupied by c.1200, the density and rate of occupation of plots further east will only be established with further sampling. The Hartwell-Smithfield garage site, about half-way down the series found pits of the 13th or early 14th century and cobbling waste from the 15th-16th centuries (Hodder 2004, 91) but the Floodgate Street excavations right next to the Rea point to activity there around 1200. There is no necessity to assume a simple process of west to east linear urban growth: the floodplain channels at the bottom of the slope may have attracted particular industrial functions earlier than plots up-slope offering more limited facilities. A really informative chronology will probably only ever be derived from an excavated sample large enough to yield dendrochronological dates from waterlogged deposits at a number of locations. This raises the wider question of the velocity of urban growth in the period after 1166. At present this question is barely approachable from internal archaeological sources. Comparison with contemporary market towns elsewhere in the region, such as the Herefordshire market-towns that had added secondary 'New Streets' to their primary single-street linear plans before c.1200, suggests that major additions to the town plan are likely to have been separated by decades rather than centuries (see Hillaby 2005, 2006).

15. Digbeth (south) and Moat Lane

This town-plan component includes both the south side of Upper Digbeth (Cock or Well Street on Westley's plan) and Moat Lane to the rear, the block separated from the plots further along Digbeth by Upper Mill Lane. Moat Lane does not seem to be specifically identifiable in the 1553 survey though by 1731 it had developed its own frontages on both sides. Bradford's map of 1750 shows short, apparently fairly regular strip-plots, those on the south side backing onto the last plot of the Edgbaston Street series.

The date at which Moat (or Court) Lane was first built up has not been established. It may have had a more significant origin than that of a simple access-lane to the manor site. Lying parallel to Digbeth, it has more the appearance of a back-access lane to the frontage plots, possibly originating as part of a small seigneurial planning scheme associated with a discrete part of the main through-street frontage close to both the moat and the market. The recorded appearance of the strip-type plots here does not however resemble market-place encroachment and there is no reason to suspect such a process operating here.

16. Digbeth (south) plot-series

The south-side Digbeth plots were generally short and irregular in their layout, and were divided into a number of blocks by access lanes to the moat, watercourses and mill behind the main-street frontage. The plots shown in this area on the earlier 18th-century maps differed in

character either side of Lower Mill Lane, those to the west being short but of regular strip-plot form, those to the east being confined to the main frontage with alleyways separating irregular blocks of development behind; the differences are more clearly apparent on the 1750 map than on Westley's of 1731. Historical evidence suggests that the south side of Digbeth was, for most of the medieval and early post-medieval period, largely given over to watercourses with only limited numbers of buildings. The Tanners Row of the 1553 survey may either have been the plots, all of which backed onto a watercourse, west of Mill Lane, or Mill Lane itself. One of the tenants in 1553 held a watercourse 'with its appurtenances in Tanners Row' (Bickley and Hill 1890, no.88, p.xviii).

17, 18, 19 and 20: Deritend

The recorded and surviving morphology of Deritend suggests a developmental history entirely separate from that of Digbeth, as indeed was the case. Lying on the east side of the Rea within the parish of Aston, it was a separate manor from Birmingham, although the lords of Birmingham owned it too by 1270. Holt (1995) has suggested that Deritend was developed independently as a market to rival Birmingham's. Its physical separateness is marked by the difference in width and orientation of the main street either side of the Rea, and by the change in direction and constriction in width at its junction with Bordesley High Street. A complication arises from an evident eastward shift in the main channel of the Rea (noted by Stephanie Rátkai) that suggests that Deritend Island too (see above) would originally have been part of this manor. It appears as a simple, coherent, market-street, served by its own chapel from 1381 and with its own distinctive plot-series either side. Nevertheless, even within this small, discrete area, subtle morphological differences may be observed.

A diagonal plan-seam appears to pass through Deritend on the line of Heath Mill Lane (Cooper's Mill Lane in 1750). On the north side of the main street the plots (plan-component 17) were short and irregular, ending against a common boundary that lay, along with a number of others, at right-angles to Heath Mill Lane, defining a series of large un-built up plots stretching from the lane to the river. East of the lane the main-street plots (18) were longer, but these too ended on a common boundary at right-angles to the lane, though in this case the boundary was prolonged eastwards to form the common back-fence line to the Bordesley plot series up the hill. The plots on the south side of the street (19, 20) were more uniform in character, though here the seam was represented by a change in the frontage line and a consequent narrowing of the eastern half of the street. The seam appears to mark a terrace forming the eastern edge of the Rea floodplain and was prolonged to the south-west by a field boundary – as might be expected in such a situation. In summary Deritend may have the appearance of a discrete town-planning event, but closer examination suggests that it was slotted into a pre-existing framework of boundaries, determined both by the floodplain edge and by land parcels laid out perpendicularly to it.

Archaeologically, the area is probably best known as the area in which the eponymous 'Deritend Ware' 13th-century pottery was first found in the 1950s, since when wasters have been found not just on other Deritend sites (the Old Crown and Gibb Street) but up the hill in Digbeth as well (see above; Hodder 2004, 91, Buteux 2003, 33). The lack of 15th-16th-century material from Deritend remains an enigma: there is no question of desertion, the 1553 survey recording a minimum of 35 households and an implied population of at least 100, a statistic supported by the earliest Aston parish registers (Holt 1995).

21, 22: Moor Street and Park Street

Moor Street and Park Street are fairly certainly additions to the medieval town plan of Birmingham – extra streets created in the form two chords cutting across the arc of the main Dale End – Deritend through-street, taking land from the manorial deer park and adding it to the growing town. A deceptively simple town-planning exercise, their layout is such that neither is a cul-de-sac, both offering through traffic along the trading frontages. More striking still is their size: although neither is likely to have been completely urbanised at any point in the

medieval period, as a pair they created not far short of 2000 metres of additional through-street frontage, the equivalent of a planted town the size of (for example) pre-13th-century Pershore, or of replicating the whole of the original Birmingham north-south through-street from Dale End to the Rea. As elsewhere (13th-century Leominster for example) it may be that manorial ambition to create new rents far exceeded the capacity of the local economy to generate recruits for the urban venture. Moor Street was built up for about half its length in 1553, Park Street even less, though further work will be required to identify any contraction in the extent of settlement in the preceding two centuries.

Recently discovered (by George Demidowicz) historical evidence shows that both streets had been established before 1296, a rental of that year, and another of 1344-5, recording them as Park Street and Lower Park Street. As in 1553, settlement was apparently confined to the southern (market-place) end.

Excavations on the east side of Moor Street, behind the Corn Cheaping plots, found activity from the 12th century onwards, and it is probable that Moor Street was laid out at that time. Industrial activity dominated the archaeological record for the 15th and 16th centuries. The Park Street excavations, behind the Upper Digbeth plot-series, again showed evidence of industrial activity from the 12th century onwards, though not necessarily occupation, though the ditched boundary with the main-street plots disappeared through infilling sooner next to Moor Street than on Park Street. Industrial activity on the excavated Park Street plots included metal-working (including iron smithing and cutlering), flax-retting and hemp processing (Buteux 2003, 33-7). The Park Street excavations were also able to show that the plots' common rear boundary ditch, though infilled in the 14th century, persisted as a property boundary and was thus mapped in the 18th century.

The 18th-century maps also show lengths of common rear boundaries separating the west-side Moor Street plots (plan-component 21) from those on the main street (9) and these boundaries probably derive from a prolongation of the manorial park boundary. Discontinuous back boundaries also separated the Moor Street plots from those on Park Street, generally suggesting that they may have been an element of organisation in the provision of separate plots for each street, though this arrangement became eroded by the working of the property market, made more unpredictable perhaps by empty or lightly-used and cheap plots on the margin of the built-up area. The 1731 map clearly shows that, north of Freeman Street (the northernmost of the east-west lanes), Park Street was unoccupied, though its west side was by then divided into plots ready for building; these were densely built up twenty years later (Bradford's map) though the east side remained open – the St Martin's overspill burial ground being established there in 1807 and turned into a park in 1880 (Buteux 2003, 103-4).

23, 24. New Street

New Street is but one of many examples of medieval 'New Streets' added to English market towns. The related phenomenon of 'Newlands' place-names was noted by James Bond in, for example, early 13th-century Pershore, Witney and Banbury (**Bond 197X**). New Streets are also found in the Herefordshire market towns of Ross, Leominster and Ledbury, where in each case they were additions to an originally linear town plan; Ledbury's New Street can be shown to have been in place by 1186 (Hillaby 2005) and Leominster's was most probably there by c.1200 (Hillaby 2006). Birmingham's New Street can now, thanks to documentation recently unearthed by George Demidowicz, be shown to have been in place by 1296; previously the earliest documentary *terminus ante quem* given for the street was 1448. New Street, as Steve Bassett and others have noted, bears one distinctive sign of deliberate design in its layout: the exact right-angle formed by its north side with the main High Town frontage. And, when it was created, it introduced a new east-west orientated plan-element into the underlying general landscape grain, trending north-west to south-east (Bassett 2000, 13; see Dudley Street, plan-component 25, below).

Otherwise, there is very little sign of a 'designed' origin. The width of the street at its east end suggests that it was probably created as a street market, probably to accommodate livestock

brought in from the west of the region (Prof. R Holt, pers. comm.); the eastern end was used as a swine market in the 18th century. The street tapered from east to west, except that its junction with High Town was partly closed off by the Tollbooth or town hall and what appear to have been encroachments out from the plot frontages either side of it. The depth of the New Street plots on both sides, as shown by the 18th-century maps, also diminished from east to west, though the extent to which land was acquired by the infill developments behind is not always clear. On the south side, this may however have been because the plots were created inside (i.e. stopped at) an earlier agricultural boundary, forming part of the underlying NW-SE (Dudley Street) alignment (see below).

The street was not intensively occupied in 1553, a mere ten tenants listed there (though there may have been other households paying rents elsewhere) (Bickley and Hill 1890). The impression given by the two most detailed 18th-century maps (Bradford 1750, Hanson 1778) is that the easternmost plots on the south side (plan-component 24, framed by Peck Lane to the west and Worcester Street to the east) formed a distinct group of narrow plots, contrasting with the broader plots that composed the rest of the street (component 25). This block included, in its centre, the hall of the Guild of the Holy Cross, established in Birmingham in 1392 (VCH Warks.VII, 75). How far the distinction between this block of narrow plots and the remainder reflects a pre-1553 characteristic of the street is not certain; nor, at present, is how this difference was expressed architecturally when the 1750 and 1778 maps were drawn.

25. Dudley Street

Dudley Street was at the outer end of the Edgbaston Street built-up area in 1553 but was fully built-up on both sides by 1731, by which time occupation had spread down much of Pinfold Street beyond (plan component 34).

Local urban 'grain' and the underlying field pattern

The street itself exhibited a distinct curve, lying north-west to south-east, and this was reflected by other boundaries in the area, most immediately the fragmentary rear plot boundaries to the north. These, together with the rear common boundary to the plots on New Street, determined the orientation that the infill development between the two main streets would take (Colmore Street, see below). Dudley Street appears to have been a particular curved component (most likely determined by a field boundary) of a more general pattern of roads and boundaries following a ruling NW-SE orientation, the incidence of these extending from Bull Street – Snow Hill southwards beyond the study-area, but also apparently extending across the Rea floodplain (see plan components 17-20, above). This underlying trend in the landscape has been identified by Steve Bassett, who recognised in the field pattern south-west of the 18th-century built-up area 'a loosely rectilinear layout shared by several of the most important roads which run through the manor (Bassett 2000, fig. 1). The implications of this deserve further investigation than is possible in the context of this chapter but the issue is, in summary, that there are hints here of an agricultural landscape, datable to before c.1200, possibly a co-axial system whose boundaries trended north-west to south-east and extended indifferently across the natural and the manorial geography.

Returning to Dudley Street and its immediate surroundings, it is also possible that the curving alignments north of Edgbaston Street also belong to the same agricultural landscape, specifically that the plot grain between Worcester Street and the market place reflected the same curving field strips represented by Dudley Street.

26, 27 Bull (Chapel) Street

Bull Street, named after the inn on its south side, formerly Chapel Street, was the final part of the main approach-road from the north-west, its extension in that direction down the reverse slope of the Colmore Row ridge being Snow Hill. In 1553 Bull Street was built up to half-way along its south side, the houses stopping around the inn and ending with a sheep fold and two

adjoining crofts beyond the sign of the Bull (Bickley and Hill 1890, no.82, p.xvi). Opposite the Bull stood the chapel of the Priory of St Thomas, whose precinct occupied all but the south-eastern end of that side of the street. There may not have been a single, common rear boundary to the south-side plots (as shown by Westley's 1731 plan), the later, more detailed 18th-century maps showing a number of boundaries parallel to the street roughly along the plan seam represented by the first right-angle bend in Crooked Alley at the rear of the High Town plots (plan component 10). There is no sign of anything anomalous in the plan in this area that might support the argument for some kind of extension to St Thomas's precinct or cemetery on the south side of the street (Bassett 2000, 20).

Part two: Town-plan components outside the 1553 built-up area

Introduction

The snapshot of the built-up area that the 1553 manorial survey provides may be insufficient in some important respects as a tool for urban historians (on account, for instance, of tenancies beyond its scope and buildings not individually enumerated), but it is the last such source available for 180 years, until William Westley's map was printed. In that time, however, Birmingham grew by roughly a third; after, it grew even faster though, as explained in the introduction to this chapter, that process was measured at regular intervals as more town maps were surveyed and published. It is entirely fitting that it was William Westley's map that opens this new era as he himself was deeply involved in the process of urban expansion, being a carpenter, architect, and, in modern terminology, a property developer. Moreover the period in which he was most active was a true turning point in the town's development, during which its centre of gravity was irrevocably shifted northwards, uphill, away from the old industrial core and its watered plots, and in which for the first time virtually all new building was in brick. Also, from that point onwards, surviving records would ensure that many of the individual stages in the town's incremental growth and the individuals who were responsible for them would be documented.

28. Bordesley

The built-up area was extended beyond Deritend along Bordesley High Street in stages in the course of the 18th and early 19th centuries, being built up on both sides by 1824 (the Pigott Smith map); in 1750 only the bottom (Deritend) end had been built up. Archaeology provides evidence of smithing activity through the 17th to mid-18th centuries from this area, though finds of medieval pottery are rare, confirming that this was not a permanently inhabited part of the town until the post-medieval period (Rátkai, Chapter 5).

29. Worcester Street west plot-series

Not, apparently, built up in 1553, the central location and through-traffic of this street make it highly likely that the frontage between New Street and Edgbaston/Dudley Street would have been developed soon after, sooner rather than later in the 17th century, if not before. By 1731 development appears to have been dense enough for a minor secondary street to have been developed behind its south end (Old Meeting Street). The development of the ground at the rear followed, and this is documented.

30. Colmore Street/Peck Lane and 31, Queen Street/King Street

This has the appearance of a discrete block of infill development behind the older frontages of Dudley Street, Worcester Street and New Street. Peck Lane and Colmore Street met at right-angles to form a T whose arms each connected to one of the main frontages. A minor lane, the Froggery, formed a third, shorter street off the north side of Colmore Street. This area was

developed between 1690 and 1692 by a bricklayer, a carpenter and a builder on land known as School Croft, leased for building from William Colmore. The lease stipulated that the new street was to be 9 yards wide and was to lead from Peck Lane through the croft towards the new buildings of Robert Phillips (Phillip Street) (McKenna 2005, 4). The extension of Colmore Street across Peck Lane (plan component 31), as King Street, with Queens Alley, later Queen Street off its north side, took place later, between 1731 and 1750.

32, 33: Smallbrook Street

By 1750, and probably by 1731, housing extended about 280 metres south-west along Smallbrook Street from the junction with Dudley Street. This appears to represent building within two pre-existing land parcels, that to the east (plan component 32) having curved boundaries, shared with the Parsonage Moat enclosure (plan component 4) that may reflect an agricultural boundary framework. This land was leased for building by its owner, Richard Smallbrook, to a gunsmith in 1707; the latter disposed of part of it and handed the remainder to trustees who in turn subleased it for building to a bricklayer and a carpenter (VCH Warks VII, 8).

34. Pinfold Street

Already by 1731 Pinfold Street was largely built up from the end of Dudley Street as far as the junction with New Street and Bewdley Street. The 18th-century maps all show a strip of narrow, ribbon-like development comprising very short house plots confined by parallel rear common boundaries, breaks in which are suggestive of the incremental development of perhaps five or six individual land parcels. The precise period in which this development occurred has not been established, nor the agencies behind it.

35. The Pemberton Estate: Old Square

In contrast, the development of the major block of land lying between the north side of Bull Street and Dale End is extremely well understood and documented. This was formerly the precinct, cemetery and estate of the medieval Hospital or Priory of St Thomas. The estate was purchased by John Pemberton, an ironmonger and Quaker, beginning in 1697, and he began laying out a series of narrow streets converging on a central square, possibly to the design of William Westley, but clearly closely modelled on the new squares built in west London from 1660 onwards. Plots were conveyed to builders beginning with the Bull Street frontage, and by 1707 sixteen houses had been built around the square. The first occupants included ironmasters, doctors, ironmongers and gentlemen; the exclusivity of the area was guaranteed by prohibitions on particular 'nuisance' trades (bakers, butchers, blacksmiths), on keeping pigs, and on dung heaps. The Upper Minories and Upper Priory were developed c.1707, followed by Newton Street between 1708 and 1710; the street itself was to be 10 yards wide, flanked by plots measuring 10 yards 2 feet 6 inches wide by 40 yards in length; houses were to be of three storeys. Lichfield Street was laid out by Thomas Newton (developer of Newton Street) together with the side streets to its south. Westley's Row (Westley Street in 1750), behind the Dale End plots, was laid out by William Westley c.1722 (McKenna 2005, 25-6; VCH Warks VII, 8).

36. St Phillips

'St Phillips, with its High Town parish, marked the new Birmingham, as opposed to the old medieval town' (McKenna 2005, 28). Construction of the church commenced in 1709, on a parcel of land known as Horse Close, in the ownership of Robert Phillips, lying on the top of the ridge followed by Colmore Row, part of a long distance route between the south-west (Bewdley, Stourbridge) and the north (Aston, Lichfield) (Bassett 2000, fig.3, road 16). Like the fabric of the new High Town that it served, St Phillips is basically a brick structure behind its polite stone cladding. It was consecrated in 1715, at which time Temple Row (later sometimes called Tory Row on account of its up-market inhabitants) was under construction along the

south-eastern side of the churchyard, built by the same individuals responsible for the church, possibly to a design of William Westley (McKenna 2005, 28-30).

37. Temple Street

Temple Street forms a very clear, discrete development block connecting the south-west end of Temple Row and St Phillip's churchyard to New Street to the south. Its shorter east-side plots were serviced by a narrow alley to the rear, Needless Alley. By 1731 all but three plots on its west side had been built up. This, and the alignment of the street on St Phillips suggest that they were conceived as a single scheme, Temple Street being built after 1715 and completed in the course of the following fifteen or so years.

38. Cannon Street/Cherry Street

Cannon Street is another clear and discrete planning episode and represents the final stage in the infilling of the former open ground between New Street and Broad Street, just post-dating William Westley's plan. It was developed from 1733 by William Hay, toymaker (metal-goods manufacturer) who first laid out Cannon Street to a width of ten yards from Moses Guest's Cherry Orchard through to New Street (McKenna 2005, 32). Cherry Street was laid out across its upper end formalising a pre-existing winding path shown by Westley's plan running through the Cherry Orchard to the middle of Temple Row; this path became Crooked Lane.

39. The Weaman Estate

The Weaman Estate, north-west of the Pemberton Estate, was the second of the great blocks of land in single ownership to be opened up for development from the beginning of the 18th century. Bounded to the south-east by Steel House Lane (formerly White Hall Lane) and to the north-west by Snow Hill, building had commenced by 1731 with Slaney Street and Weaman Street, progressing northwards from Steel House Lane. By 1750 building along these streets had nearly been completed and Catherine Street, the next street to the north-east had been laid out ready for building. To encourage further development, in 1772 a private Act was obtained by the Weaman sisters for the building of a new church (St Mary's) as a chapel-of-ease for St Martin's, facilitated by an agreement for an exchange of property with the Lench Trust, who owned adjoining land (Chalkin 1974, 85-7). By 1778 a grid of streets (Loveday Street, Russell Street, St Mary's Row and Weaman's Row) framed St Mary's churchyard and were beginning to be developed. In the course of the 1770s the Weamans changed their policy of selling off land and began leasing it, as the Colmore Estate had been doing (Chalkin 1974, 84). In 1782 the sisters issued new building leases, one going to Richard Newman, a button maker, for the development of houses on Loveday Street (McKenna 2005, 32-5). From 1777 the gun trade began to relocate into this area from Digbeth, starting with new houses for wealthy manufacturers with workshops behind, and by c.1800 the estate had become known as the Gun Quarter, a process of creeping industrialisation that was closely paralleled next door as the jewellery trades colonised the Colmore Estate

As elsewhere around Birmingham (the Colmore Estate and Snow Hill, the Gooch (west) Estate and Smallbrook Street) property holdings appear to have been more diversified along the line of the old approach roads, and here Lench's Trust, held property alongside Lancaster Street. The precise boundaries of this have not been established, though Lench Street offers a general location and common property boundaries to its plots are suggestive of its extent. As elsewhere, further detailed work will be required to precisely disentangle the interests here.

40. The Colmore Estate

This 100-acre estate was named after the old Birmingham family who moved out of their original house on High Street to the New Hall lying out in the countryside north of Bewdley Street and Colmore Row on the reverse slope of the ridge. In 1746 the family moved from Birmingham to Middlesex having obtained a private Act for building on their land. The first

building leases were issued in 1747 (McKenna 2005, 35-6). Bradford's map of 1750 captures an early stage in the estate's development. The north side of Colmore Row, overlooking St Phillip's, had already been built up and a grid of streets laid out behind it (Newport Street, Church Street, Charles Street) with plots ready for building. Not quite all the land south-west of Snow Hill belonged to the Colmore Estate, the Pigott Smith map of 1824 showing other property interests (Inge and Vyse) along Snow Hill and Constitution Hill, the old main approach road from the north (see plan component 50, below).

Hanson's plan of 1778 shows the grid extended northwards, built up as far as Great Charles Street, with Lionel Street beyond laid out but not yet developed. Beyond it, three acres had by then been set aside for a new church, St Paul's, and its graveyard. Snape's plan of 1779 shows St Paul's standing in its churchyard insulae and the streets around it laid out diagonally across the underlying field pattern.

The map also catches the Birmingham and Fazeley Canal, completed up to the western edge of the Colmore Estate grid and about to be continued across it at a slight angle. It was completed across the estate before 1790 and had little impact on its plan, except that the original intention to build Water Street and Fleet Street as a continuous east-west street was abandoned and they were developed as separate cul-de-sacs, severed by the canal passing diagonally across their original line. Nevertheless, the canal was of importance to the estate. Charles Colmore and his agent gave evidence to the House of Lords in 1771 to the effect that the coming of the canal would increase the take up of building leases, and that the sites closest to the projected route would be most in demand (Chalkin 1974 81).

The estate neared completion around the end of the century, and Kempson's plan of 1810 shows it built up for three blocks north of St George's, where it abutted two further distinct estate grids, one in the angle of Graham Street and Frederick Street, largely undeveloped in 1810, and a minor one based on Kenyon Street, already built up (McKenna 2005, 36; VCH Warks VII, 8-9).

The Colmore Estate, like the Weaman Estate to the east, succumbed to more and more intensive industrialisation. St Paul's Square, at its heart, has been described as 'respectable rather than grand' but even here elegant neoclassical houses built on the frontages from c.1770 concealed contemporary workshops behind. Plots on the Colmore Estate varied in size, with street frontages from five to twenty or thirty yards. Even the smaller plots could accommodate a house on the frontage with workshops or workers' housing behind; the largest plots were partly built up by the lessee, the remainder conveyed to other builders (Chalkin 1974, 84). In the course of time industrial functions overtook residential functions, and many of the oldest buildings of what became the Jewellery Quarter show evidence of conversion from the former to the latter (Cattell *et al* 2002, chapter 5).

41. The Jennens Estate

Another old Birmingham dynasty, the Jennens were High Street iron dealers who, like the Colmores, left town and let their Birmingham lands for development from 1729. Their property lay at the northern edge of town, beyond Dale End and Stafford Street. Building plots began to be taken up first on Chappell Street, but the process was slow (there is no sign of development in this direction on Westley's plan of 1731). In 1749 St Bartholomew's was founded as a chapel-at-ease for St Martin's and – as on the Colmore and Weaman Estates – as an incentive for further development and as a means of raising property values in the immediate vicinity of the new church. New building leases were granted (for example, to John Collins, a carpenter) that specified building to three storeys in brick. Bradford's plan of 1750 shows the process already well advanced, with buildings along Chappell Street, new streets laid out and plots ready for building; the estate was completed c.1810 (McKenna 2005, 37-9).

42. The Inge Estate

This was the last stage in the infilling of the triangular block bounded by New Street on the north, Worcester Street and Dudley Street/Pinfold Lane. Private Acts were obtained for development from 1753 onwards. The most profitable element was Queen Street, developed by builder John Lewis between 1777 and 1786, the street being an extension of Colmore Street and King Street (plan components 30, 31) developed before 1750.

43. The Gooch (west) Estate

Along with the Colmore Estate, this is perhaps one of the best known of 18th-century Birmingham's great estates. It represented the final release for building of large parts of the ancient manorial demesne, lately in the possession of the Sherlock family (VCH Warks VII, 8), and, of all the major estates around Birmingham, it was the Gooch Estate that benefited earliest and most substantially from the arrival of the canals. Three substantial parcels of land were involved; having inherited, in 1766 Sir Thomas Gooch secured a private Act for their development.

On the west side of town, south-west of Pinfold Street, an initial block of forty acres of land was laid out with a grid of ten streets servicing 209 plots; the canal wharf south of Halesowen Street guaranteeing its success (McKenna 2005, 40-1). Hanson's plan of 1778 and Snape's the year after capture an early stage in its development. They show the new grid, which adopted the NW-SE orientation of the pre-existing fields, developed north of Smallbrook Street and east of Suffolk Street, which formed the main longitudinal axis of the new grid. By 1810 the built-up area extended a block west of Suffolk Street and, by then, Bromsgrove Street had been laid out to the south of Smallbrook Street exactly perpendicular to the grid axis, connecting Bristol Road (heading south-west) with Moat Row, running around the Manor House site. Development was already spreading south of Bromsgrove Street into the Rea floodplain. The Pigott-Smith map of 1824 shows that the early 19th-century development of the Gooch Estate may have been complicated by other landholdings around Smallbrook Street and Exeter Row, part of the pre-existing approach road from the Edgbaston direction. For example, the south-western part of the Gooch Estate grid, around Ellis Street and Blucher Street, is marked as Inge property, the south-eastern. But apart from the older plots of Smallbrook Street it is only Thorpe Street and Inge Street (off the west side of Hurst Street, part of the grid) that stand out as an anomalous planning elements. Further detailed research would be able to disentangle the development of these different property interests in this area in the early 19th century.

44. The Gooch Estate (south-east)

This part of the Gooch Estate covered the manorial deer-park, Little or Over Park, north of Digbeth and east of Park Street, extending from the latter down the gentle gradient into the floodplain and down to the bank of the Rea. This was developed from the 1780s, but the major spur to development was the building of the Digbeth Branch Canal in 1790 and the Warwick and Birmingham Canal in 1793. Thereafter, development mushroomed almost overnight, most of it taking place in 1790-1795. The new grid was laid out on a NW-SE alignment, roughly parallel to Digbeth, making use of a pre-existing lane, Lake Meadow Hill, running off Park Street, to form the new grid axis (Bordesley Street). A second, parallel street (Coventry Street) was laid out roughly half-way between Bordesley Street and Digbeth, with cross streets at intervals (Allison Street, Meriden Street, Oxford Street), some broken through to the Digbeth frontage. North of Bordesley street the grid insulae were much larger than the two-acre blocks to the south; Fazeley Street and Banbury Street were laid out roughly west-east. From this initial start the grid and the built-up area were extended eastwards down to and across the Rea, though even by 1824 garden ground remained unbuilt on down by the river north of Floodgate Street and Ann Street (Baker 1999).

45. The Bradford Estate

Henry Bradford sought to develop his land south of Digbeth, Deritend and Bordesley from 1767. Within eleven years he had established a simple grid of streets based on Bradford Street and Alcester Street, the grid lying approximately on the orientation of the underlying field pattern, roughly perpendicular to the course of the Rea (McKenna 2005, 44). Plot take-up was initially slow, despite Bradford's opening 'loss leader' offer of free land, and later by land at half the price of that on competing estates (Chalkin 1974 81). Building took place most rapidly in the 1780s and 90s, spurred by the opening of the Digbeth Branch Canal, and by 1810 (Kempson's map) both main longitudinal streets, Bradford Street and Cheapside, had been extended across the Rea to link up to Moat Row and thus to Bromsgrove Street on the Gooch Estate.

46. The Holte-Legge Estate

In 1788 Heneage Legge, heir to the Holte family 100-acre estate north of Birmingham, secured a private Act that enabled him to begin issuing leases for building. The first, of May 1788, was to John Powell, brickmaker, for a large plot at the junction of Holte Street and Woodcock Street, with careful specifications for the houses to be built there (McKenna 2005, 44). Although it has not been possible, in the context of this chapter, to determine the full and precise extent of this estate, the core grid of 1788 is readily apparent, Holte Street forming the axis with Heneage, Lister and Oxygen Streets forming cross streets. This block lay between the old approach roads of Aston Street/Road, heading north-east, and Coleshill Street/Prospect Row, heading east. On the east side it was largely confined within the Digbeth Branch canal of 1790. Beyond this, the Piggott Smith map of 1824 identifies extensive tracts of Heneage Legge land continuing well to the east, beyond the study area. On its west side however was a more extensive grid of streets, part of which was developed well before Legge's 1788 Act, which also appears to have Holte-Legge associations (see below).

47. Unidentified estate (Holte-Legge?), Aston Street

A grid of streets with a predominant NNW-SSE axis can be seen developing either side of Aston Street from 1778 onwards. South of Aston Street, Duke Street and Woodcock Street had been laid out and partly developed by 1778. Duke Street followed the line of the Birmingham – Aston parish boundary, which was continued northwards in a straight line across Aston Street, across the grain of the underlying fields. Also on this side of Aston Street, development had commenced at the Aston Street – Lancaster Street (Walmer Lane) corner with a second street laid out parallel to the latter. By 1810 the line of Duke Street had been extended by the construction of (the suggestively named) Legge Street, and the single street parallel to Lancaster Street had turned into a grid pattern of eight or more blocks. As elsewhere around Birmingham, the 18th-century street grid was a rationalisation of the pre-existing field-pattern grain, although in this case at least one extended field boundary survived and was incorporated into the built-up area within the grid (the boundary between the plots on Staniforth Street and Moland Street). Gosta Green lay on the east side of this area. It was formed as an open space on Aston Street at the awkward junction with Woodcock Street and Duke Street and, later, Legge Street as well. Further work is required in this area to determine its pattern of landownership and development in these years.

48. The Prinsep Estate

A small, single-street, development to the north of the Weaman Estate, named after the landowning family. Bagot Street continued the line of Prinsep Street on the opposite side of Lancaster Street and may have been part of the same development. Prinsep Street can be seen laid out on Snape's plan of 1779, it was omitted from Kempson's of 1810, though reappears built up by the time of the Pigott Smith map of 1824.

49. The Crescent

The Crescent was an 'exclusive development' of £500-pound houses by Charles Norton, a builder, in which no shops or factories were to be permitted and coach houses and stables were to be provided with separate rear access. The scheme was first launched in 1788, got nowhere, but was revived in 1790-93, though only four houses were ever built (McKenna 2005, 46-51).

50. The Inge Snow Hill property

Although from the map-derived morphology alone there is nothing to distinguish the strip of land running along the south-west side of Constitution Hill, Snow Hill and Bull Street from its surroundings, the Pigott Smith map of 1824 consistently labels this as Inge property, as far north as a block of Colonel Vyse's land south of Constitution Hill. The details of the development process of this part of the Inge estate have not been researched here, though McKenna (2005, 32) describes the creation in 1766 of Brettell Street by Benjamin Bretell, who leased part of a close between Snow Hill and Groom Street (Livery Street) and cut a street 5 yards and 1 foot wide across it before building on it. Bretell, a bricklayer, was responsible for other schemes in the area (McKenna, ibid, 50). Development of the Inge property appears to have kept pace with that of the Colmore Estate behind it, whose main NE-SW streets were inserted through it at intervals, though north of Great Charles Street the Snow Hill frontage properties were constrained by those behind suggesting that development of the lateral (Colmore Estate) streets was preceding that of the old approach-road frontage. Again, further documentary research would easily clarify the details of the development process throughout this area, much of which was destroyed later in the 19th century by Snow Hill station and its approaches.

Chapter 5 Life and Work in Birmingham City Centre

By Stephanie Rátkai

With contributions from Shane Kelleher, Quita Mould, David Higgins and Ian Baxter

> *By uniting also with industry, we become industrious. It is easy to give instances of people whose distinguishing characteristic was idleness, but when they breathed the air of Birmingham, diligence became the predominant feature. The view of profit, like the view of corn to the hungry horse, excites to action. Hutton (1783)*

Introduction

Evidence for life and work within the study area has come from a variety of sources, most evidently the artefacts from intrusive investigations and the standing buildings. There were very few artefacts or ecofacts recovered from the watching briefs, pottery being the most common. The most significant site was to the rear of the Old Crown, Deritend where a waster pit was discovered in the early 1990s (**27**). The results of this evaluation are discussed in the box below.

A larger amount of material was recording during evaluations but the greater part of this has either been published or is to be published. Thus the unpublished datasets are insufficient in themselves to provide information for synthesis. It has therefore been necessary to slot this data into a framework derived mainly from the excavated sites of the Bull Ring (Rátkai and Patrick 2008) and Floodgate Street (Edgeworth *et al* forthcoming).

Apart from the Old Crown pottery, the other significant body of information was derived from standing buildings. Birmingham can boast a rich and diverse built heritage dating back to the medieval period. Various types and architectural styles are represented in Birmingham, ranging from timber-framed medieval houses, the narrow courts of the 18th century and later, and early 19th-century back-to-backs (the common form of housing in the older parts of Birmingham (Mutthesius 1982, 107)), to fine examples of late 19th-century Board Schools (Figure 5.1). However, despite this array of buildings of various dates, types, and style, the vast majority of historic buildings recorded under the remit of PPG 16 in Birmingham date from the 19th century and are, on the whole, buildings associated with work and, more specifically with industry, transport, and commerce. This situation has presumably arisen from a number of factors, which include the scope of PPG 16, trends in modern development and the decline of small-scale British industry in the late 20th-century. Another observation that must be made is that the bulk of historic buildings recorded under the remit of PPG 16 in Birmingham are statutorily listed. In addition, it must be stressed here that there were varying levels of survival of buildings recorded; some are complete whilst others are merely represented by a surviving wall. The concentration on buildings of work seems to be in accordance with Mike Hodder's assertion that "much of the archaeological evidence for this period relates to industry, including workplaces, power sources, raw materials, products and waste products, sometimes reused, and the transport network that carried them, particularly canals" (Hodder 2004, 133).

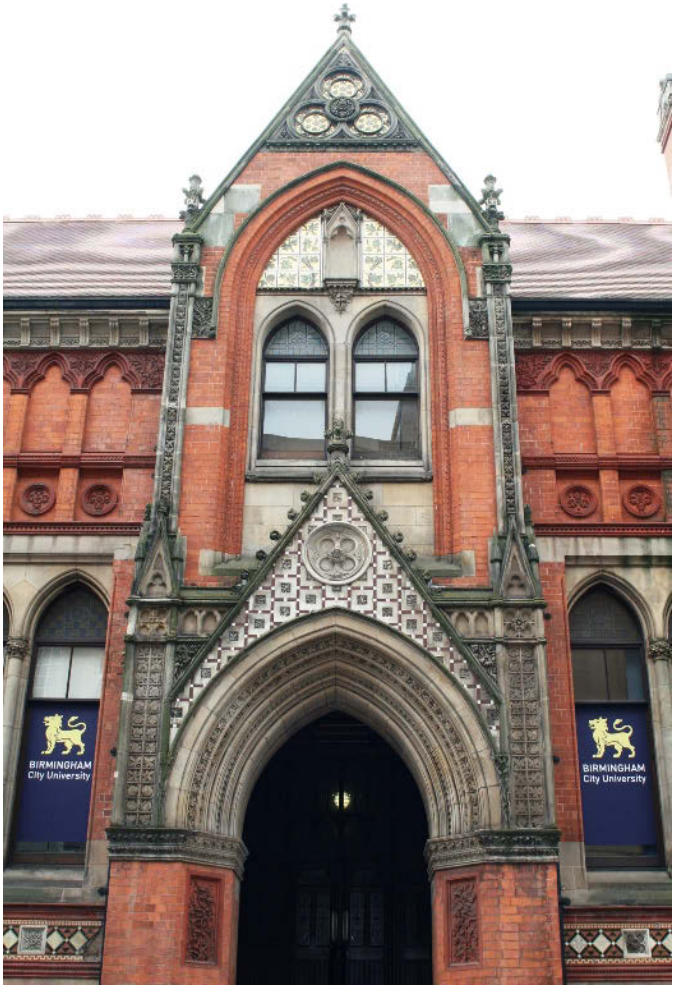

Figure 5.1 The 19th century Birmingham Government School of Ornamental Art, now part of Birmingham Institute of Art and Design, Birmingham City University, by J H Chamberlain 1883-5, on Margaret St

Period 1 12th to 14th centuries

Artefacts: Pottery

The most important medieval assemblage was from a pit to the rear of the Old Crown Deritend (**27**), which contained pottery production waste and fragments of kiln superstructure (Rátkai forthcoming d). The pit held a large quantity of Deritend ware jug sherds in the highly-decorated style, together with a small number of cooking pot sherds. Watching briefs to the rear of the Old Crown in 1995-1997 produced only small amounts of pottery but these were also consistent with production waste and included one piece of kiln superstructure. Further back still from the Old Crown, an evaluation on Heath Mill Lane revealed a possible medieval clay extraction pit. Full excavation of the site in May 2008 (personal inspection by author) has thrown up the possibility of other uses for the pit, including retting. There was only a small amount of pottery. Both fine and sandy oxidised Deritend ware fabrics were present. The handle from a reduced Deritend ware jug was possibly a waster and was found in the fill of the pit. There was also a possibly spalled Deritend ware jug sherd. Apart from these two sherds there was nothing to indicate that the remaining Deritend ware sherds were pottery waste, although the balance of probabilities is that they were.

Site	Source	Reduced Deritend ware	Oxidised Deritend cooking pot	Oxidised Deritend ware Jugs	Oxidised Deritend ware	12th-e 13th century	unidentified 13th-14th c pottery	other 13th-14th c medieval	misc 14th-15th c	wasters/kiln furniture/kiln structure
Moor Street	Ratkai in press	x	x	x	x	x		x		x
Freeman Street	Report 43	x	x	x	x					x
Park Street	Ratkai in press	x	x	x	x	x		x		x
Hartwell's Garage	Report 72	x	x	x	x	x		x		
Hartwell's Garage	Report 25							x	x	
Floodgate Street	Edgeworth et al forthcoming	x	x	x	x	x		x		
Gibb Street	Edgeworth et al forthcoming	x	x	x				x		x
Old Crown	Report 27		x	x	x					x
Old Crown WBs	Report 28	x	x	x						x
Heath Mill Lane	Report 50	x	x	x	x					
149-159 Bordesley High Street	Report 21, Ratkai and Martin forthcoming	x	x		x					
Deritend	Sherlock 1957	x	x	x	x					
Green Street, Deritend	Report 14							?		
St Martin's	Ratkai 2006	x	x	x	x			x		
Birmingham Moat	Watts 1980	x		x			x	x	x	
The Row	Report 71						x			
Edgbaston Street	Ratkai in press	x	x	x	x	x		x		
Manzoni Gardens	Report 75						?			

Table 5.1 Period 1 pottery

Further pottery production waste was recovered from the Freeman Street evaluation (**43**). Both oxidised Deritend ware jugs and reduced Deritend ware was found here, along with some wasters. There is no indication in the report as to the quantity of pottery found nor is there any indication that other fabrics were present other than Deritend wares. As the report stands, the most likely interpretation is that all of the pottery represents dumped production waste in either an unused backplot or in an area of Little (or Over) Park before the establishment of the backplots, or indicates that pottery production was actually taking place in the burgage plot itself.

In a wider setting, further pottery production waste has been found at Park Street (wastered white slip decorated Deritend ware jug (Figure 5.2), oxidised cooking pots, and a kiln bar) and a very small amount of waste was found a Moor Street (an unglazed jug with overall white slip and a kiln spacer). Sherlock (1957) noted waster pits on Deritend High Street and the small amount of Deritend ware from Gibb Street (Rátkai forthcoming b) has also been interpreted as kiln waste. A large quantity of reduced Deritend ware cooking pot sherds from Floodgate Street (Rátkai forthcoming a) is in all probability production waste also.

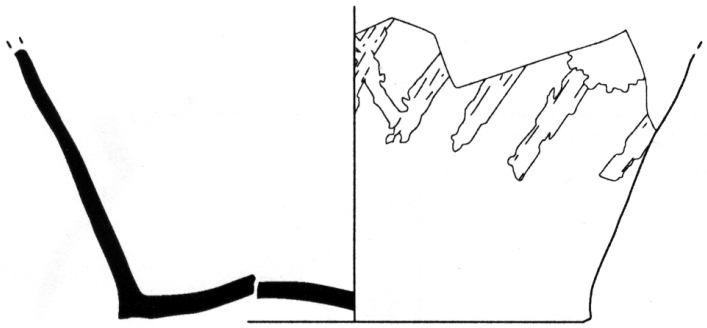

Figure 5.2 Wastered, white slip-decorated Deritend jug from Park St

There is no documentary evidence for pottery production in the medieval period and an absence of topographic names such as those containing the element 'pot/potter' or 'crock/crocker' eg 'Pottersfield' or 'Potters Row'. This, in itself, may suggest that pottery production was primarily associated with areas peripheral to the town, for example, in Little Park, rather than in the rear of burgage plots. There is one possible piece of evidence, other than archaeological, for medieval pottery production in the town and this is the surname Muddeman, Muddiman, Muddyman or Mudde. In the West Midlands this surname may have been used of potters (Gooder 1984, 6). Several Muddimans are recorded in the 1856 Post Office Directory and four of the five mentioned are listed in Digbeth or Deritend. The reference is, of course, quite late but there is certainly scope for further work tracing the occurrence of the name in earlier documents to see if the name really is a relic of medieval potters in the town.

At Hartwell's Garage (**24**, **25**, **41**), the pottery was mainly of local manufacture. It is possible that the pottery could be interpreted as evidence of reduced Deritend ware production but the evidence is equivocal and there is possibly more in this small assemblage consistent with normal domestic occupation. The latest medieval pottery in the assemblage was a small Chilvers Coton C sherd from pit F100 which dates to the late 13th century at the earliest.

Most of the pottery (68 sherds, weighing 442g) came from pit F100. Reduced Deritend ware predominated both in sherd weight and sherd number. The average medieval sherd weight was very low at 6.5g (both for the pit material and the entire medieval group), the usual range being c 10-20g on urban sites. Strangely, the sherds were not particularly abraded. The lack of abrasion was in marked contrast to the pottery recovered from the Gibb Street site where small sherd size was matched by a high degree of abrasion (Rátkai forthcoming b). The Chilvers Coton sherd suggests a date c. 1300 for the deposition of the pit fill, assuming that the sherd is not itself intrusive since some contamination is evidenced by a small intrusive post-medieval coarseware sherd.

Medieval pottery which represented purely domestic debris was found at Manzoni Gardens (**75**), in the Manor Moat (Watts 1980), in St Martin's churchyard (Rátkai 2006) and at 149-159 Bordesley High Street (Rátkai forthcoming c). The latter almost certainly represents a ploughsoil scatter incorporated into a later feature fill. These sites together produced only a very small amount of pottery and it is to the forthcoming Bull Ring excavation report which we must turn to gain any idea of 'typical' medieval urban domestic pottery use. This is best exemplified by Phase 1 assemblages from Area A Edgbaston Street and from the town/deer park boundary ditch on Moor Street (Rátkai 2008).

A small group of pottery was recovered from Birmingham Moat (Watts 1980) which is likely to have derived from occupation on the moat platform. The brief pottery report was written when medieval pottery studies were in their infancy both nationally and, in particular, locally. In addition the pottery was not well stratified or rather was quite likely to have become disturbed and contaminated. From the illustrations in Watts (1980 figs. 23-24), it is possible to pick out Deritend ware jugs (*ibid.* fig. 24, 15-16) and reduced Deritend cooking pot sherds (*ibid.* fig. 24

1-4), which gives a terminus ante quem for the construction of the moat of c 1250. The remaining medieval pottery is difficult to categorise from the information given, although there is nothing to suggest that it was radically different from other domestic groups recovered from Birmingham.

From at least the early 13th century and possibly from the later 12th century, Birmingham's pottery needs were met for the most part by local production. Some pottery found its way to Birmingham from Coventry or the Coventry area, from Worcestershire and from the Brill-Boarstall industry in Buckinghamshire. A spouted bowl possibly from Oxfordshire was found at Park Street and a sherd, at present unsourced, from the Old Crown contained flint and was clearly not local. However, the majority of the pottery not made in Birmingham appears to have come from South Staffordshire or North Warwickshire. The former is to be preferred as the main source since only a very small number of sherds could be attributed to Chilvers Coton, a major kiln site in northern Warwickshire, and the economic contacts between Birmingham and southern Staffordshire, particularly the Black Country area, from where coal and iron and other raw materials were imported, are well attested. Documentary evidence also reveals that the burgesses of Dudley were granted freedom of tolls in Birmingham as early as 1218 (Watts 1977, 39) and shows how early commercial contacts were established between the two towns. In addition the feudal overlords (the de Paganels and later the de Somerys) of the de Birmingham family, themselves possibly a cadet branch of the de Paganels, had their seat at Dudley Castle, in the heart of the Black Country. At Weoley Castle, a fortified manor site owned by the de Paganels and later the de Somerys, situated to the southwest of the city centre, the medieval pottery assemblage was mainly made up of various Deritend wares, and whitewares and iron poor-wares, which could be paralleled in South Staffordshire.

Waster dumps behind the Old Crown almost certainly predate the 1360s when the site was first documented. Likewise wasters discovered by Sherlock (1955) predate the construction of St John's Chapel in the 1380s. In addition the highly decorated style of the oxidised Deritend ware jugs is unlikely to have continued beyond the mid 14th century. Once the production of Deritend wares ceased it is difficult to ascertain what pottery was in use in Birmingham in the second half of the 14th century, since all the medieval assemblages contain Deritend ware of one sort or another and it is not possible to tell if any of this material in the smaller groups is residual. Generally, pottery of the later 14th and 15th centuries was typified by an absence of decoration and rather sparing use of glaze on jugs. From evidence elsewhere in Warwickshire and south Staffordshire it seems reasonable to assume that some whitewares and the iron poor wares were in use throughout the 14th century. To date there is no evidence to suggest local pottery production in the later 14th to 16th centuries and there are no pottery groups which could definitely be ascribed to the later 14th and early 15th centuries. Whether this reflects shrinkage of the town, a difference in the disposal of domestic rubbish or a difference in plot use is at present uncertain. What little documentary evidence there is (quoted in Watts' 1977, 40) suggests investment in the town in the second half of the 14th century with a provision of a chaplain for the Hospital of St Thomas the Martyr (1351), the construction of St John's Chapel (c 1380) and the granting of a license for the Guild of the Holy Cross (1392). By 1403 the town and its market must have been reasonably flourishing for William de Birmingham to have sued people for evading market tolls.

Deritend Ware; a medieval pottery industry

Pottery is the most resilient and common find on medieval sites. However, as a craft or industry, pottery-making was generally the preserve of the lowly and as such there is very little documentation associated with the potters, pottery making and marketing of pots. Potters rarely appear in taxation records. This may be because they earned too little to be eligible for taxation or because a number of potters were female and thus are not visible in their own right. We have no idea who the medieval Birmingham potters were but it seems likely that they were both local and from outside the region.

The first evidence that pottery was being made in Birmingham was only found some 50 years ago. Pits containing wasters, that is, pottery which has been spoilt or distorted by overfiring, or is under fired was found in Deritend by Sherlock (1955) in an area beneath and to the east of St John's Chapel. More recent work has uncovered wasters on the opposite side of Deritend High Street, with further finds in Digbeth, Park Street, Freeman Street and possibly Moor Street. To date, no kilns have been found and it is not clear whether the kilns were situated at the rear of the burgage plots, where they would surely have posed a fire risk and have been a general nuisance to their neighbours or whether they were situated in more marginal or undeveloped areas like Little or Over Park.

Possibly the earliest pottery which was definitely made in Birmingham was a dark grey ware used for cooking pots. There is some evidence that this ware may first have been made in the 12th century but examples of this date are comparatively rare. More common are cooking pots with a very distinctive angular rim and large capacity globular jugs. These jugs were almost always unglazed and, despite their rather plain appearance, may have been valued, since one of these jugs, found at Moor Street, had evidence of a substantial riveted repair. This grey pottery is known as Reduced Deritend Ware. The cooking pots with angular rims seems to occur mainly in the 13th century and possibly early 14th century. The jugs are unlikely to have been made after the mid 13th century. Handles from pipkins or skillets have been occasionally found.

Another early type of pottery, Deritend Cooking Pot Ware, was brown in colour and used mainly for cooking pots, often with elaborately modelled rims. Although the clay is the same as that used for the reduced wares, the form of the cooking pots is completely different. The straight-sided form could date from the later 12th to the early 13th century. Other more rounded forms were in use during the 13th and possibly early 14th century. Other vessels types produced in this ware were bowls, pipkins and dripping trays. A possible lid was recovered from Park Street (Rátkai in press).

The most striking locally produced pots were the glazed Deritend Ware jugs. These were red or red-brown in colour and were decorated in a variety of ways. Some were brushed with white slip patterns (ILL), others had trails of roller-stamped white slip. Other applied decoration consisted of clay scales or teardrops, dots and

stamped rosettes. A large dump of decorated jug wasters was found to the rear of the Old Crown, Deritend (Rátkai forthcoming d). In addition to the jug wasters there was also a ram's head spout, probably from a jug.

Petrological analysis carried out by Dr. David Williams (2008) on pottery from Park Street demonstrated that the clay source for both the oxidised Deritend wares and the reduced Deritend wares was the same and there seems little doubt that both types of pottery were produced in Birmingham using iron-rich clay derived from weathered Mercian Mudstone and the Triassic sands and gravels found in the river terraces of the River Rea. The exact relationship between the reduced and oxidised wares is as yet unclear.

Within the counties of the West Midlands white slip-decorated pottery, other than Deritend ware, is uncommon and Deritend ware occupies a somewhat anomalous position in the West Midlands region. The use of white slip decoration is not commonly seen in counties bordering the region such as Leicestershire, Northamptonshire, Oxfordshire and Gloucestershire. The rarity of locally produced white slip decorated pottery in the West Midlands may help explain the wide distribution of oxidised Deritend ware jugs in the region.

The white slip-decorated jugs find their nearest parallels in London-type ware and a number of points of similarity are present, beyond the mere use of white slip decoration, which could, after all, have been merely copied by the Birmingham potters. Aspects of vessel form and construction, for example, the method of handle attachment, suggest a more personal contact between the London-type ware potters and their Birmingham contemporaries. The use of an incised 'makers mark' on one of the Deritend ware jugs, which can be paralleled on a London-type ware jug (Pearce et al 1985, fig. 38), is yet another link between the two industries. Although the documentary evidence is slight, there is enough to suggest that commercial and craft ties did exist between London and Birmingham, and, within this context, it is not unlikely that a London potter or potters set up in business in Birmingham to manufacture the decorated Deritend ware jugs, alongside already established potters who were making Reduced Deritend ware and oxidised cooking pots.

Artefacts: Domestic

Only a small number of portable finds of medieval date can be identified from the synthesis of unpublished excavations. Additional material of medieval date has been identified from a scan of those excavations published previously and the Sites and Monuments Record, while the suggested date of a single item previously considered to be of medieval date has been called into question. The finds comprise principally of items of dress, dress accessories and domestic items, discarded when of no further use in some cases and the result of casual loss in others. Two objects were lost by wealthy owners the remainder being items used and discarded by the ordinary working man.

A medieval silver coin of unspecified denomination, was recovered from St Philip's churchyard. The absence of coins, both in the grey literature and published sites, is of no great significance. Dyer (pers. comm.) points out that the relative absence of such items should not be seen as an indication of impoverishment but rather is symptomatic of the careful husbanding of money by all classes of society.

The recovery of a gold ring from Digbeth is recorded in the Sites and Monuments Record (MON UID MBM782; MR No 02891). The gold ring is said to have diagonal fluted decoration with an inscription on the interior surface and is believed to be of medieval date. The only surviving record of the gold ring is contained a letter sent to Birmingham Museum in 1982 which describes events some forty or so years previously. The letter recounts that the ring was recovered in the 1890's from the Moat Row area during the excavation of foundations for the former Meat Market. In the 1930's the letter writer sent the ring to the British Museum where it was identified as being of medieval date, possibly dating to the 13th century. The ring was eventually sold for £25 to Messrs. Spink and the present whereabouts is unknown. The loss of a gold ring represents not only a personal but also significant financial loss and would be greatly regretted by the owner. The ring provides, perhaps, the only direct archaeological evidence of a high status individual in medieval Birmingham, whether an inhabitant or visitor.

Documentary sources in Watts (1977, 39), however, show that there were at least two royal visits to the town in the 13th century and that in 1275 the town had burgesses wealthy enough to be summoned to Parliament. On the other hand, the fact that the ring was recovered in the area of the Manorial Moat could suggest that it was associated with the de Birminghams or their household.

A small number of base metal objects of medieval date were recovered, principally from domestic items or dress accessories. Most were found during the excavations at Park Street (**77**). An object of lead, that from the description might well be a pewter spoon, was found in medieval fill of a tank or pond [F714]. A piece of copper alloy loop-in-loop chain, from an item of jewellery or a trinket, was recovered from fill [1220] of a pit [F188] attributed to Period 2. As loop in loop chain was used from at least the Roman period onward it cannot be independently dated, however, as the fill of the pit contained predominantly medieval pottery the chain may be medieval and residual in the pit fill. A double-lobed bar mount of copper alloy, once used to decorate leather, and the head of a spherical copper alloy button were also found occurring residually in later deposits. A narrow leather strap, 15mm wide, decorated with a series of twenty-two dome-headed mounts, apparently of a lead alloy (pewter), came from fill of a pit [F765], again occurring residually. Metal mounts were a popular ornamentation. During the medieval period a narrow strap with ornamental metal mounts might have been used as a girdle, a spur leather or on a horse harness (Bevan *et al* 2008, fig 8.15.2).

Occasional pieces broken from shoes of turnshoe construction dating to the medieval period were found at Edgbaston Street (**70**), Park Street (**77**) and Floodgate Street (**10**) either in Phase 1 deposits or occurring residually in later contexts. Shoes of medieval date were also present among the leather recovered during the salvage excavation of the Moat (**54**). As the leather was not examined by a specialist, only a cursory description of the finds and a very tentative date for them was given (Watts 1980, 62). The leather, now in the ownership of the Birmingham City Museums and Art Gallery, was, therefore, examined as part of this project.

The remains of at least three shoes of medieval date are present. All are turnshoes of adult size, they appear to be discarded domestic refuse having been heavily worn and repaired before being thrown away. As such they represent the working wear of the common man. There is no reason to doubt that they had been made, and later repaired, locally. The best preserved example (Smfd Mkt 174 section 4) is a side-lacing shoe of adult male size that may be dated to the early/mid 13th century by comparison with the well-dated examples from elsewhere.

The Sites and Monuments record also includes a medieval shoe found at 72-80 Bordesley Street in 1955 (MON UID MBM1001; MR No 03295; Birmingham Museum Accession 1955 A 348), however, there is reason to question the dating of the shoe. The shoe could not be located but a photograph showing a view from the left side of the shoe was available for study. From the photograph the shoe appears to be a complete, or near complete, ankle shoe for the left foot and of child size. It is heavily worn, being broken/worn away at the toe. The closed ankle shoe fastens with a series of three, paired, lace holes up the instep. Though no direct evidence of the shoe construction can be gained from the photograph, a sole and a separate heel lift or a seat repair piece are visible. The shoe appears to comprise a vamp and two quarters with a central back seam. The left quarter, which is clearly visible, has a single, straight, sloping, side seam to join to the vamp and a series of three, evenly-spaced, widely-spaced lace holes along the leg opening. The shoe appears to be an open tab front-lacing boot; a practical working shoe likely to date to the 19th century. The shoe has been identified previously as being of medieval date. While the photograph does not show the construction of the shoe, the central back seam is clearly visible indicating that the shoe certainly cannot date earlier than the early 15th century, other stylistic features suggest the 19th century date proposed here. Examination of the shoe, once it is located, would be able to confirm this.

As the above testifies, identifiable medieval finds were very infrequent. When this is compared with the quantity of medieval domestic finds recovered from excavation (published or forthcoming sites), the picture is broadly similar.

Pottery is, of course, much better represented but there is some doubt as to how many groups represent 'genuine' domestic waste ie pottery which was used by a specific household or households, broken and then discarded and how many represent production waste. Clearly the pottery from behind the Old Crown Deritend (**27**, Rátkai 1994, forthcoming d) falls into the latter category as does the pottery from Freeman Street (**43**). The pottery from Heath Mill Lane (**50**) (further behind the Old Crown waster pit) is in all probability production waste also. The Hartwell's garage site (Rep **24**, **25**) may have contained one of the few truly domestic assemblages. Although a small group, it contains both locally made pottery and regional imports. Rare sherds from Bordesley High Street (**39**, **40**, **21**, Rátkai forthcoming c and Manzoni Gardens (**75**) seem to represent either ploughsoil or garden soil scatters and are indicative of a lack of medieval domestic occupation in these areas.

Evidence from published or forthcoming sites indicates again that the greater part of the pottery thus far recovered, is most likely to be production waste. However, good, incontrovertible domestic groups were found associated with Area A, Edgbaston Street (later 12th-mid 13th c?) and Moor Street (late 12th-13th c). The pottery from Park Street contained a large number of Deritend cooking pot wasters and a few reduced Deritend ware and oxidised glazed jug wasters. However, although Deritend wares predominated there were sufficient non-local sherds to suggest some occupation debris, although little to suggest its primary deposition.

The general paucity of 'normal' medieval domestic finds assemblages is puzzling, given all the other indications that Birmingham was a thriving settlement for most of the medieval period. However, several factors deserve consideration. Firstly, all of the evidence has come from a small part of the study area and has been concentrated around Digbeth and the lower part of the town. This area may be atypical of the town as a whole. Secondly, nearly all of the sites (grey literature, published or forthcoming) have evidence of industrial activity (see below). It is therefore a possibility that there was some zoning in the town with a separation of working and domestic activity, although this would be unusual for a medieval settlement. Another possibility is that working areas were kept free of domestic refuse which was either carted away or disposed of in an unexcavated area of the backplots.

At Much Park Street in Coventry (Wright 1987) there was very little medieval pottery found but this can be explained by the fact that most of the excavated areas were within medieval buildings or on areas immediately adjacent to them; both are locations where pottery is least likely to have accumulated. There was extensive evidence for metal-working on the plots. Burgage plots excavated in the centre of Coventry also contained comparatively little pottery of 13th-15th century date (Rátkai 2008a, 2008b). Here, part of the site was occupied by medieval buildings but the rear of the burgage plots appear to have been given over to various industrial processes and craft activity (Halsted 2008; Colls and Hancox 2008). In contrast, at Brook Street, Warwick (Rátkai 1992), over 3,300 sherds were recovered from a series of intercutting pits in burgage plots in the centre of the town. The pit fills dated from the Late Saxon period through to the early 14th century although the majority of the pottery came from the 12th and 13th centuries. The site appears to have been associated with cloth production in the pre-Conquest period and in the post-Conquest period some spillage or casting debris suggests that copper alloy objects were made here. In Hereford, at the St Peter's site (Rátkai forthcoming e). Large quantities of medieval pottery were recovered from clay-lined 'industrial' pits and other features. The excavated area was comparatively small and produced c 3,400 sherds, mainly dating to the 12th-14th centuries. Artefactual evidence for craft activity was limited to bone and antler-working waste (Bevan forthcoming) although some personal items were also present. Clearly, there is no exact correlation between the use to which the backplots were put and the amount of debris which accumulated there and the paucity of substantial groups of domestic waste in Birmingham is something of a mystery.

Artefacts: Industrial/Craft Waste

No artefacts associated with industrial or craft use were recovered from the grey literature sites. The only medieval craft tool identified was a broken iron knife blade with a right-angled tang, originally set into an organic handle, found in 12th-13th century ditch fill at Floodgate Street

(**10**). Such a blade aligned at right angles to the handle may have been used for a number of craft purposes: knives were used for de-fleshing and de-hairing hides prior to tanning whilst draw knives were used widely for a variety of woodworking tasks. If the former interpretation is correct, then this is evidence of the early establishment of tanning by the River Rea. It would appear to be the earliest metal tool identified from the medieval settlement to date. Apart from this, direct evidence of medieval manufacturing is limited. Rather limited evidence of medieval cobbling came from the same site. A leather repair patch for the tread area of a medieval shoe sole, known as a forepart clump repair, was found in the fill of a pit.

A piece of off-cut sheet lead was found in a charcoal rich pit [F556] at Moor Street (**73**), another came from fill of a clay-lined pit [F714] at Park Street (**77**). It would appear that these small pieces were overlooked and escaped re-cycling. Leather off-cuts of unusable areas of hide and trimmings deriving from the cutting out of pattern pieces during the manufacture of leather goods or their repair were found in extremely small numbers in contexts attributed to the medieval period at Park Street (**77**) and Edgbaston Street (**70**). The insignificant amount of off-cuts found suggest that the quantities of waste leather being produced by the leatherworking trades, even if conducted on a small-scale, was being disposed of elsewhere.

An ovoid lead pendant weight came from a layer likely to be of medieval date at Park Street (77). Such an object is difficult to date independently but there is little reason to doubt it being contemporary with the deposit. A small hanging weight may have had a number of uses and might have been used when trading or exchanging goods.

Pottery production waste was found on several sites (see above) and indicates that the industry stretched along most of the historic core of the town, from Deritend, possibly as far as Moor Street. To date no kilns have been discovered and it is a matter of debate as to whether the kilns were situated in the various backplots fronting Digbeth and Deritend High Street, Park Street and Moor Street or whether the kilns themselves were located within Little or Over Park. All but one assemblage of pottery production waste, the exception being Sherlock's (1955) discoveries, have been found on the northern side of Digbeth and Deritend, which may favour kilns located in Little (or Over) Park.

Industry: Archaeological evidence

Apart from the artefacts, several other sources of evidence are available, which throw some light on medieval industry and crafts (see Table 5.2). Four main groups are represented; textiles, tanning and leather working, metal working and potting.

Despite documentary references to the wool industry and wool merchants in Birmingham (Pelham 1950), there is no archaeological evidence connected with these. There is however some evidence of flax and hemp, remains of which were found at Moor Street and Park Street (Ciaraldi 2008; Greig 2008) and possibly at the Manor Moat (Greig, in Watts 1980) and the area of Deritend Bridge (Rep **15**, **19**) although the exact date of the latter three is uncertain. The plant and pollen remains indicate retting ie the rotting down in water of the hemp and flax stems to release the fibres within. Flax was used for linen yarn and cloth, and hemp for cloth, sacking, twine and ropes. Again no archaeological evidence survives as to whether any or all of these items were produced. However, hemp and flax remains do show that there was a ready supply of water available at both Moor Street and Park Street for the retting process. Further evidence of possible textile production was obtained from the Hartwell's Garage site (Rep **24**, **25**) where 'fibres' were found in a waterlogged deposit. No analysis of the fibres was undertaken but their waterlogged find spot may indicate that they too were flax or hemp.

Site	Craft/ Industry	excavated features	artefacts	pottery wasters	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder	Furnace lining	Source
Edgbaston Street	Flax and hemp retting																			
Moor Street	Flax retting											x								The Bull Ring Uncovered
Park Street	Flax and hemp retting											x								The Bull Ring Uncovered
Hartwell's Garage	Textile production?										x					x				72
170 Deritend High Street (date uncertain)	flax retting											x								19
Deritend Bridge (date uncertain)	flax retting											x								15
The Row (date uncertain)	Hemp retting											x								The Bull Ring Uncovered
Edgbaston Street	Stock rearing/management											x			x					The Bull Ring Uncovered
Moor Street	Stock rearing/management											x	x							The Bull Ring Uncovered
Park Street	Stock rearing/management											x	x							The Bull Ring Uncovered
Park Street	Butchery?												x							The Bull Ring Uncovered
Edgbaston Street	Tanning	x																		The Bull Ring Uncovered
Moor Street	Tanning												x							73, The Bull Ring Uncovered

Site	Craft/ Industry	excavated features	artefacts	pottery wasters	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder	Furnace lining	Source
Moor Street	Horning?/Tanning?												x							73
Park Street	Tanning	x																		77, The Bull Ring Uncovered
Floodgate Street	Tanning		x																	Birmingham Waterfront
170 Deritend High Street (date uncertain)	Tanning?													x						19
Floodgate Street	Cobbling		x																	Birmingham Waterfront
Moor Street	Iron smelting						x	x								x	x		x	73
Moor Street	Iron working								x							x				73
Moor Street (date uncertain)	Production of copper alloy objects									x										73
Moor Street	Production of lead objects									x										73
Park Street	Production of lead objects									x										77
Hartwell's Garage	Non-specific metal-working					x										x				72
Gibb Street	Non-specific metal-working							x								x				Birmingham Waterfront
Heath Mill Lane	Clay extraction	x																		Report No
Moor Street	Pottery and ?rooftile production			x																73, The Bull Ring Uncovered
Freeman Street	Pottery production			x																Report No
Park Street	Pottery production			x	x															The Bull Ring Uncovered

Site	Craft/ Industry	excavated features	artefacts	pottery wasters	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder	Furnace lining	Source
Hartwell's Garage	Pottery production?			?												x				Report 72
Floodgate Street	Pottery production?			?																Birmingham Waterfront
The Old Crown	Pottery production			x	x											x		x		Rep No and Ratkai forthcoming
The Old Crown (WBs)	Pottery production			x	x											x		x		Rep No
Heath Mill Lane	Pottery production			x																Rep No
Gibb Street	Pottery production			x																Birmingham Waterfront
Digbeth	Pottery production			x																Sherlock 1957
Edgbaston Street	Bread-making?	x																		The Bull Ring Uncovered
Edgbaston Street	Basket making?											x								The Bull Ring Uncovered
Park Street	Basket making?											x								The Bull Ring Uncovered
Moor Street	Broom making?																			The Bull Ring Uncovered
Moor Street	Brewing?											x								The Bull Ring Uncovered
Park Street	Unspecified		x																	The Bull Ring Uncovered

Table 5.2 Evidence for industrial or craft activity in Period 1 (12th-14th centuries)

All medieval towns are likely to have had a tannery but in the medieval period Birmingham had at least three, situated on Edgbaston Street, Park Street and Floodgate Street, all of which were sited where water was plentiful. Three tanneries suggest more than just catering for local needs and tanning seems to have been one of the industries underpinning the economy of Birmingham. Faunal remains from the Bull Ring can be interpreted as evidence of drove cattle being brought to Birmingham and there is further evidence of stock rearing or stock management on Edgbaston Street, Park Street and Moor Street. Thus, the raw material for tanning is quite clearly present in the archaeological record and the possibly early importance of Birmingham as a stop-over point on the droveways from the north and west to the east and southeast may have acted as a stimulus to the setting up of tanneries. A cattle frontal fragment which had had the horncore sawn off at the base was found at Floodgate Street and may be evidence of hornworking at this date. Cobbling was also being practised at Floodgate Street.

Tanners were a wealthy group of manufacturers because a large capital outlay was required in order to obtain the hides. This outlay could not be recouped for many months because of the time needed to turn the hides into leather. At the other end of the scale were cobblers, who were a poor group at the bottom of the manufacturing and repair chain. McKenna (2005, 14) suggests that the de Birmingham family were responsible for the regeneration of Edgbaston Street after the Black Death with new or vacant properties being taken up by tanners, skinners, graziers, butchers, weavers, flax and yarn dressers, mercers and dealers. However, Baker (this vol), has reservations about this interpretation of the documentary sources.

Metal working also had early origins in Birmingham. The evidence at the moment does not suggest that it was of major importance but this may be because the focus of metal working was sited outside the areas which have been excavated. A small amount of tap slag found at Moor Street indicates that iron-smelting took place in Birmingham but this may have been on a limited scale with the greater proportion of iron brought into the town as pig-iron from the Black Country. However, smelting is a process more likely to be undertaken on higher ground to take advantage of the prevailing winds for the furnaces. This is precisely the same area of Birmingham which has seen the least archaeological intervention and the greatest amount of substantial modern rebuilding, so the true extent of iron-smelting in Birmingham is unlikely to be known. Three of the contexts in which the tap slag was found also contained coal, sometimes in large pieces (**73**). Most of the tap slag was found in the backfill of the recut of the town/park ditch and was therefore likely to have been deposited in the second half of the 13th century. Fragments of furnace lining were reported in the Moor Street evaluation and assessment (**73**). No further information is given in the report but it seems most likely that these are further detritus from metal working or smelting. Small amounts of waste and scrap were found at Moor Street, Park Street, Hartwell's Garage (**24**, **25**) and Gibb Street (**9**). Iron slags are more likely to have come from the smithing of iron and the snippets of sheet copper alloy etc come from manufacture of small items. The association of coal with crucibles and slag confirms the documentary sources for an early industrial use of coal in Birmingham.

The fourth apparently important industry in Birmingham was pottery manufacture. Sites with evidence of potting were located along Deritend, Digbeth and to the north of the Bull Ring. This industry may have begun in the later 12th century and was certainly in operation before the mid-13th century. On typological grounds the latest pottery was probably made in the first quarter of the 14th century. It is interesting to note that pottery waste has been found sealed by or likely to predate structures built in the second half of the 14th century eg St John's Chapel (Sherlock 1957) and The Old Crown, although the standing building dates to the 15th century. Does this indicate that the plots later occupied by St John's Chapel and the Old Crown had been laid out but were vacant or not domestic in character but given over to industrial processes in the early development of the town?

Some slight evidence for flat roof-tile production was found in the form of tile wasters from Moor Street, found within the fills of the town/ park boundary ditch.

Pottery from this industry was widely distributed in the region from Hereford to the west, Stafford to the north, Worcester to the southwest and Warwick to the east and gives some idea of the scale of Birmingham's socio-economic contacts in the 13th and early 14th centuries. Strangely, virtually no Birmingham pottery has been found in Coventry.

The reasons why pottery production in Birmingham apparently ended in the first half of the 14th century are unknown. Although the Black Death was clearly a major destructive force in the mid- 14th century, it seems too glib an explanation here. Clearly the plague caused serious disruption and loss of life but it is also possible that earlier in the 14th century there were better opportunities for the potters and more money to be made in other crafts and industries. The absence of Guild restrictions may have made it rather easier than in most places for the inhabitants to change from one craft to another and evidence from the later medieval period (Gooder 1984) suggests that potting was a lowly trade (although not necessarily without reasonable remuneration) which its practitioners escaped from as soon as they could. The absence of pot production might just, then, be an indication of rising prosperity in the town, rather than of an economic slump.

Evidence for other crafts is more circumstantial. A bread oven at Edgbaston Street may have been purely for domestic use. It is the only one so far discovered in Birmingham for this period. However, Mennell (1985, 47) notes that baking ovens are found only sporadically in the archaeological and documentary record and points to the existence of communal ovens and of specialist bakers. Gottschalk (1984; cited in Mennell (*ibid*), writes "In the towns, the rudimentary [cooking] arrangements …..[made it] necessary to have recourse to the cook shop or the baker."

There is further circumstantial evidence for basket- and broom-making and for brewing, all activities which could have been undertaken in a rural or urban setting and are unlikely to have contributed much to the economic development of the town.

Archaeological work so far in Birmingham has been concentrated in a quite specific area, namely Digbeth and the Bull Ring and its environs. Most of the sites had easy access to water and it should therefore come as no surprise to find industries such as tanning, bast fibre production and potting, all of which require water, pre-eminent. Although the interdependency of these industries and water created, in effect, a craft/industry zone, it is interesting to note that no one industry appears to the exclusion of others. So, for example, flax retting, tanning, stock management, ?butchery, the production of lead objects, pottery production and ?basket-making are all attested at Park Street. The Park Street site was not especially large and some of these crafts and industries may have been coeval. If not, it still suggests a certain amount of flexibility in plot use in this period, a feature which can be seen in subsequent periods. Alternatively, the area of Park Street excavated may have been a rather undeveloped, boggy, marginal area (Rátkai 2008) which was not fully developed into true burgage plots until the post-medieval period.

Health and Diet in the medieval period

Evidence for cereal and plant components in the diet came from the Bull Ring sites (Ciaraldi 2008, Greig 2008). A range of cereals, wheat, oats, barley and rye were present. Rye pollen indicated that rye had been grown very close to Moor Street. Rye is much the hardiest grain and grows in most soils (Hammond 1995). Barley was an important cereal because it could also be used for brewing and sprouted barley and other grains at Moor Street may indicate either brewing or spoiled cereal used for fodder. Cereal crops formed the basis of the medieval diet, particularly so for the lower orders. For those at the bottom of the social scale, bread made entirely from wheat flour, would have been virtually unknown. Rye and barley bread or bread made from mixed grains such as maslin (rye and wheat) would have been the most commonly consumed. Other mixtures such as berevechicorn (barley, oats and vetch) were sometimes used for human consumption, although this was food of the last resort and more normally used as animal fodder (Hammond 1995).

Cereals need not have been consumed as bread alone. A medieval tile-floored oven from Edgbaston Street indicates that there was the facility for making bread but this is the only example of a medieval oven in the study area and it is just as possible that cereals were consumed as a sort of porridge flavoured with vegetables and herbs or with milk and eggs, a dish known as frumenty. Other plants represented on the Bull Ring sites were beet, fig, grape and prunus sp (plum, damson, bullace, sloe). Evidence from Floodgate Street suggests that there may have been managed orchards of pear or apple nearby (Allen forthcoming). Beet was probably cultivated for its leaves (Hammond 1995). Figs were often eaten on fast days and during Lent, at least among more prosperous households, and grapes were associated with the higher echelons of society. The fig and grape remains, represented by single seeds only were found in the town/park boundary ditch at Park Street and may have derived from affluent households living on the Digbeth burgage plots. Plants like watercress (found on Park Street), prunus sp, brambles and elder may have provided additional 'free food' in the medieval diet. Many plants which are not now considered as a foodstuff were consumed as potherbs. Potherbs included plants such as orache (found at Moor Street), pimpernel, primrose and groundsel (Hammond 1995 43). Melissa (lemon balm), self-heal and dandelion found on Park Street may also have been consumed as potherbs or medicinally. Hazel nuts were recorded amongst the plant remains and hazel pollen was well-represented.

The only sites to have produced a significant assemblage of domestic refuse originating from secondary butchery and culinary activity were situated in the Bull Ring development. Beef seems to have been the most frequently consumed meat with some evidence of sheep, most probably eaten as mutton. Pig formed a relatively unimportant part of the diet. Meat from non-domesticates such as fallow deer, rabbit and hare were eaten in the medieval period but not in sufficient quantities to suggest high status or affluence. Likewise although chicken and goose bones were found, they too were in small quantities. Remains of fish and shellfish have not been found in Birmingham to date. From the faunal evidence and plant remains it is not possible to tell how much dairy produce was consumed. Mature sheep might suggest access to ewe's milk and cattle, some of which appeared to have been pastured in and around the town, could also have provided milk.

Documentary evidence from the mid 14th century (Hammond 1995) suggests that the average town dweller might expect to eat meat or fish once a day, milk, cheese, bread, vegetables and ale. There is little to suggest that the average diet of those living in Birmingham differed much from this. Pottery from the Bull Ring sites consisted almost exclusively of sooted cooking pot sherds and jug sherds which would be fairly typical of the preparation and consumption of basic foodstuffs, particularly things like broths and pottages. The exceptions to this were sherds from four pipkins (a type of medieval saucepan) and four dripping trays from Park Street. Dripping trays were used to catch the juices from spit-roasting meats and indicate the consumption of reasonably sized pieces of meat. Roasted meat was also seen as the luxury end of the food chain (Woolgar 1999), the bottom end being represented by boiled meats. Secondly, the pipkins, suggest more specialised food preparation ie something more than just throwing a set of ingredients into a pot and boiling for an hour or two. A possible ceramic mortar fragment – mortars were an essential part of the better off medieval kitchen - from Moor Street is one final piece of evidence for a rather better than average diet.

The evidence for a diet of basic foodstuffs such as bread and boiled food, soups, pottages and broths is to some extent confirmed by the evidence from two skeletons found on Park Street (Brickley, Chapter 6). Both individuals had tooth wear consistent with eating coarse bread made from stone-ground flour. Pitting in the teeth of the female was consistent with a nutritional deficiency in childhood. Signs of trauma or infection on the male skeleton may have been associated with a diet low in vitamin C. Unfortunately, as there have been no other medieval skeletons recovered in Birmingham, and as the circumstances of the deposition of the skeletons is mysterious, it is impossible to say how representative these two skeletons are of the population as a whole.

Period 2 15th to 16th centuries

Artefacts: Pottery

This is the period for which pottery evidence is most lacking. A "gritty orange medieval rim sherd" from St Philip's churchyard probably belongs to this period. It was decorated with a cross stamp (pers. comm., Mike Hodder) typical of pottery made in Wednesbury in this period. Other late oxidised ware sherds were found at 131-148 Bordesley High Street (**39**) and at St Martin's churchyard (Rátkai 2006). Cistercian ware sherds (late 15th-mid 16th-century) were recorded at St Martin's Churchyard and at the 1997 watching brief at the Old Crown (**28**). A further cistercian ware sherd is recorded at Masshouse Circus (**34** or **35**) but given the rest of the assemblage this is more likely to have been a blackware sherd. Midlands purple sherds were found at St Martin's and Hartwell's Garage 1996 (**24** or **25**). In total these sherds represent a very small number indeed, the best group coming from St Martin's.

A much better group was discovered at Floodgate Street where there were late medieval to early post-medieval transitional wares consisting of cistercian ware, late redware. iron-rich and iron-poor transitional wares and Midlands Purple ware.

The coarsewares which formed the bulk of the Phase 2 pottery contained a number of vessels with a sandy well-mixed "bricky" orange fabric. This seems to be an early coarseware fabric dating to the 16th (?and early 17th) century and is quite different from the coarse poorly prepared and streaky clay bodies seen in coarsewares of the mid-late 17th century. In addition some of the iron poor sandy coarsewares with olive-tan glazes can be paralleled by material found in the construction trenches of Building A at Dudley Castle, dated to the 1530s (pers inspection by author). On balance it seems most likely that Phase 2 activity dates from the 16th century and continues into the 17th century.

Site	Source	Late oxidised wares	Midlands Purple ware	Cistercian ware	Other	wasters
St Philip's	Report 74	?				
Moor Street	Ratkai in press	x	x	x	x	
Masshouse Circus	Report 52			?		
City Park	Report 42			?		
Park Street	Ratkai in press	x	x	x	x	
Hartwell's Garage	Report 25		x			
Floodgate Street	Edgeworth et al forthcoming	x	x	x	x	x
Old Crown WBs	Report 28			x		
138-148 Bordesley High Street	Report 40	x				
Green Street Deritend	Report 14		x	x		
St Martin's	Ratkai 2006	x	x	x		
Birmingham Moat	Watts 1980		x		?	
Edgbaston Street	Ratkai in press	x	x	x	x	

Table 5.3 Occurrence of Period 2 pottery

Pottery from this transitional period was recovered from the Bull Ring Sites in Phase 2 (15th-16th centuries) but represented a very small percentage (generally less than 5%) of each site and area groups. At Edgbaston Street, occupation in this phase appears to have been much reduced although it is possible that deposits of this date have been scoured away. The excavated areas

on Moor Street and Park Street may have been given over to non-domestic use such as stock-keeping and tanning. It has been suggested (Hodder *et al,* 2008) that the 15th-16th centuries represented a shift in settlement focus towards the River Rea in order to take advantage of water and water power for Birmingham's industries. The discovery of a good group of 16th century pottery at Floodgate Street, situated close to the river is therefore significant.

From the information given in Watts (1980) pottery of this period was found during investigations at Birmingham Moat and comprised Midlands Purple ware. Pottery possibly dating to the early 15th century is described as '*forms paralleled in Nottingham… a group of grey fabrics similar to and possibly from the Nuneaton kilns… [and] proto-stoneware'* (ibid 54). Any connection with Nottingham can be discounted as no other material of this type has been recovered from other excavations. The sherds may be in a Coal Measure Clay fabric, which fires to a yellowish, salmon pink or light orange hue. Such fabrics are indeed known in Nottingham but are also found in Derbyshire, northern Warwickshire and Staffordshire. A general range of mid-13th to 15th centuries has been given to these fabrics in the Bull Ring sites where they are described as 'iron-poor fabrics' (fabric code prefix ip). Grey fabrics are not generally a component of the Nuneaton repertoire and it may be that further reduced Deritend ware has been misidentified. Proto-stoneware may refer to a hard-fired red or purplish-red fabric termed coarseware/Midlands Purple (cwmp) by the author (Rátkai in press b). If so it is a post-medieval fabric, mainly found in the 17th century. It would seem therefore that there was very little pottery of the 15th to 16th centuries found in the moat. This interpretation is further bolstered by the absence of Tudor Green and cistercian ware. An apparent paucity in the ceramic sequence of pottery dating to the 15th to 16th centuries does seem to mirror the picture seen at other sites in Birmingham, although, of course, it is quite possible that the pottery recovered from the Moat was in some way biased. A small, green-glazed mercury jar, was found in the vicinity of the moat in the late 19th century during construction work in the markets area (pers. inspection by author). These vessels were imported from the Mediterranean area and were originally thought to have originated in Spain, although now a Levantine source is thought more likely. Mercury was used for silvering mirrors and for medicinal purposes.

By this period it is likely that a proportion of the pottery used in Birmingham was manufactured in Wednesbury, a thriving South Staffordshire 'potting village'. Here, Midlands Purple, redwares and other oxidised wares were produced from the 15th century, to be followed by cistercian wares, blackware, yellow ware and coarseware in the following centuries. A ceramic link between Birmingham and this area would, of course, have existed in tandem with that forged by the import of coal and iron into Birmingham. There is no direct evidence for pottery production in Birmingham in this period but the existence of a medieval potting industry and wasters from Periods 3 and 4 (see below) may be construed as indirect evidence for such an industry in Period 2.

Artefacts: Domestic Refuse

A small number of items that may be assigned to the 15th and 16th centuries could be identified from the unpublished documentation. A limited amount of material occurred in contexts attributed to Period 2, while occasional items independently datable to the late medieval/early post-medieval transition were recognised occurring residually in other contexts. Metal finds in deposits attributed to Period 2, principally occurring at Park Street (**77**), comprised chiefly of small dress accessories, frequently and easily lost in the domestic setting. Amongst the small number of independently datable items that could be recognised was a plain scabbard chape of copper alloy sheet found occurring residually at Park Street (**77**). It is comparable with others from late 15th to mid 16th century contexts at Winchester (Hinton 1990, fig. 368; 4033, 4034, 1083). There is no sign from the small finds of the domestic rubbish that might derive from the large number of wealthy residences alluded to by William Camden (1610) when recording his visit to Birmingham in 1586; 'The lower part thereof standeth very waterish, the upper riseth with faire buildings…'.

Artefacts: Industrial/Craft Waste

No single artefact from the grey literature sources could be assigned to this period. In view of the fact that the documentary evidence is unequivocal as to the bustling nature of Digbeth in this period, this is somewhat astonishing. However, published and forthcoming reports are more helpful on the subject.

Amongst the leatherwork found at Floodgate Street (**10**) were shoes of mid and mid/late 16th century date. Some appear to have simply been thrown away when of no further use, others had been cut up to salvage re-usable leather by the cobbler before being discarded. Evidence for the cobbling trade, that is the repair and refurbishment of old shoes for resale, also came from a second site in Digbeth. A waterlogged context at Hartwell (**25**) was sampled during evaluation of the site. The small amount of leather present in the sample, though misidentified in the unpublished documentation (Litherland and Moscrop 1996, 5), was found to comprise shoe parts of 15th or 16th century date, one being clearly cobbling waste. The cobbling trade was considered a 'lowly' occupation, particularly by the shoemakers, suggesting the presence of the working poor in the town perhaps in contrast to the more prosperous workers in the metal trades known to be thriving elsewhere.

A very small amount of waste material from the working of copper alloy was noted at Park Street (**77**). While it is to be presumed that the bulk of the debris from small-scale manufacture of copper alloy 'trinkets' was efficiently recycled, the 'snippets' and trimmings left from the working of copper alloy sheet and drawn wire and the small spillages resulting from the handling of the molten metals that might be swept from the workshop floor and inadvertently disposed of with the rest of the household rubbish is signally lacking here. This is in contrast to the findings at Coventry, for example, where such debris is common in contemporary deposits. Similarly, waste leather offcuts found in contexts attributed to Period 2 at Edgbaston Street (**70**) do provide evidence of manufacturing but the quantities recovered are insignificant.

Potentially the most significant object relating to the history of Birmingham at this period is a knife found in fill [1031] of a lime pit [F115] at Floodgate Street (10) in Digbeth. The knife, datable to the 16th century, appears unworn and, while it might have been dropped into the lime pit unused, it may represent an unfinished item discarded before it was hafted and prior to sale. If the latter, it provides a glimpse of the blade smithing trade; a trade that along with the cutlers was known to be 'booming' at this time and famously described by John Leland (1710) when remembering his journeying through Deritend to the centre of Birmingham in 1538.

Overall, the sites which have been investigated in Birmingham have produced very little pottery of this period, the major exception being Floodgate Street. Pottery of 15th to 16th-century date was also found in St Martin's churchyard (Rátkai 2006), presumably derived from the houses which once clustered around the churchyard. The former ties in quite neatly with the idea of a shift in settlement focus down into Digbeth and towards the River Rea where water and water power could be used. On the other hand, the lack of pottery and artefacts of this date, apart from a single cistercian ware sherd recovered from the 1997 watching brief, from the rear of the Old Crown (**28**), constructed in the 15th century, is hard to explain. This hiatus was manifest on Moor Street and on Park Street, where the excavated area may have been given over to stock-keeping and tanning and on Edgbaston Street, which was mostly given over to tanning. In this period, the picture is broadly similar to that in the medieval periods, probably for much the same reasons.

Industry: Archaeological evidence

There is some slight evidence for hemp and possibly flax retting in this period at Edgbaston Street, although the main industry here was tanning, with some evidence of stock management. Tanning was still a feature of Park Street, possibly in association with stock management and had become an important industry at Floodgate Street. The possible expansion of the tanning industry was evidenced by material from 170 Deritend High Street (**19**), where animal hair was found.

Work on the faunal remains from Floodgate Street and Gibb Street by Ian Baxter (forthcoming) indicates the close relationship in Birmingham, at least, between tanning and horning in the later part of this and in the following period. There was possible evidence of antler working at Edgbaston Street. Cobbling was practised at Floodgate Street, as in the preceding period, and also at Hartwell's Garage (**25**) further down Digbeth towards the Bull Ring.

Site	Craft/Industry	excavated features	artefacts	pottery wasters	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder
Edgbaston Street	Hemp and ?flax retting											x						
170 Deritend High Street (date uncertain)	flax retting											x						
Deritend Bridge (date uncertain)	flax retting											x						
Edgbaston Street	Stock rearing/management												x					
Park Street	Stock rearing/management	x												x	x			
The Row (date uncertain)	Stock rearing/management											x						
Park Street	Butchery												x					
Edgbaston Street	Tanning	x																
Park Street	Tanning	x	x															
Floodgate Street	Tanning		x									x	x	x				
170 High Street Deritend (date uncertain)	Tanning?													x				
Hartwell's Garage	Cobbling		x															
Floodgate Street	Cobbling		x															
Edgbaston Street	Antler working?												x					
Floodgate Street	Horn working		x										x					
Floodgate Street	Bone handle production												x					
Park Street (at very end of 16th c)	Smithing								x									
Floodgate Street	Cutlering		x															
Floodgate Street	Non-specific metal-working							x										
Edgbaston Street	Basket-making?											x						
Park Street	Basket-making?											x						
Park Street	Bread-making	x																
Floodgate Street	Brewing?											x						
Hartwell's Garage (date uncertain)	Wood-working?											x						
149-159 Bordesley High Street (date uncertain)	Unknown industrial activity	x																

Table 5.4 Evidence for industrial or craft activity in Period 2 (15th-16th centuries)

It is in this period that the first real evidence of blade making and cutlering is found. Most of the material associated with this trade came from Floodgate Street, where a 'cutler's pit was found, containing a possibly unfinished discard and hafting waste This ties in quite nicely with Leland's observations of smiths and cutlers lining Digbeth. Hammerscale indicates that smithing was practised on Park Street at the very end of the 16th century ie on the cusp of Periods 2 and 3, and may mark the first movement of smiths away from lower Digbeth and Deritend towards the higher ground to the north of St Martin's.

In this period there is no evidence of pottery production in the centre of Birmingham but given that some pottery waste was recovered from the following period it is possible that pottery was still being made in Birmingham, albeit on a much smaller scale than previously. As in Period 1 there was circumstantial evidence for basket-making, bread-making and wood-working. Plant remains at Floodgate Street suggest that there might have been brewing in the locality. This is of interest since two inns, The Leathern Bottle and the Three Crowns, stood adjacent to the site. These buildings are thought to date to the 17th century but it is possible that there were forerunners to them, although neither establishment is named in Sketchley's Directories of 1767 and 1770.

A further industrial site at 149-159 Bordesley High Street was uncovered in 2005, which contained a large clay lined tank. There was no material directly associated with it which could help elucidate its function apart from a 'black, industrial layer containing clinker and possibly hammerscale' which lay in a thin layer at its base. Although hammerscale and hearth bottoms were found within its fills, they may have been deposited much later in the tank's life and have been totally unconnected with its use. The clay lining suggests that it contained water and in many ways, it finds a parallel with the large tank discovered at Floodgate Street, where both tanning and cutlering were carried out.

The evidence for Period 2 seems to suggest that the town's efforts were concentrated on two industries, smithing/cutlering and tanning. Documentary sources indicate that by this period the wool trade was of minor importance in Birmingham, although still a major concern in outlying settlements such as Kings Norton to the south of the town, where in the 16th century Leland records the fine houses of wool merchants. This is the period when Coventry, which owed its wealth and importance to wool and associated trades, began to decline. Was it just fortuitous that in this period Birmingham's inhabitants concentrated their efforts elsewhere and thus weathered the economic storm or did they sense that they were better able to survive and even thrive by concentrating on blade-making, cutlering, smithing and tanning? Stephens (1964) notes that sheep never entirely ousted arable farming in the Birmingham area and that Birmingham was comparatively unaffected by large scale enclosure that occurred in the more classic open field country in the 15th and 16th centuries.

In the mid 16th century a Tanner's Row was recorded in the town and William Hutton (1783) records the erstwhile importance of tanning.

> *'It may seem singular to a modern eye, to view this place in the light of one vast tan-yard. Though there is no appearance of that necessary article among us, yet Birmingham was once a famous market for leather. Digbeth not only abounded with tanners, but large numbers of hides arrived weekly for sale, where the whole country found a supply. When the weather would allow, they were ranged in columns in the High-street, and at other times deposited in the Leather-hall, at the East end of New-street, appropriated for their reception. This market was of great antiquity, perhaps not less than seven hundred years, and continued till the beginning of the present century. We have two officers, annually chosen, by the name of leather-sealers, from a power given them by ancient charter, to mark the vendible hides; but now the leather-sealers have no duty, but that of taking an elegant dinner'.*

Hutton also offers up the following intriguing insight.

> *'…that the leather-market in Birmingham, for many ages, furnished him [the bellows maker] with sides; and though the manufacture of iron is allowed to be extremely ancient, yet the smith*

could not procure his heat without a blast, nor could that blast be raised without the bellows. Two inferences arise from these remarks, that the antiquarian will frown on this little history; and that bellows-making is one of the oldest trades in Birmingham.'

Period 3 c 1600-1750

Artefacts: Pottery

The advent of the 17th century brought with it an increase in the amount of pottery found. Most of the grey literature sites produced pottery of this period, although it is often difficult, from the often rather general descriptions given, to ascertain whether some of the pottery belongs to Period 3 or Period 4. The presence of yellow ware, mottled ware and various slip-decorated wares (Figure 5.3) has been taken as an indicator of groups dating from before 1750. At the other end of the spectrum it is not easy to decide how much of the pottery belongs to the early 17th century, especially in the absence of good closed groups. So, for example, yellow ware could date from the end of the 16th century up to the early 18th century, blackware could date from the mid 16th century through to the 18th century etc. There is also probably confusion in some of the records with the term 'blackware', under which heading slip-coated wares and coarsewares have, at times, been included.

Figure 5.3 Slipwares recovered from excavations undertaken as part of the Bullring development.

However, the presence of slip-decorated wares in most of the groups might be an indication that the greater part of this post-medieval activity dates from the second half of the 17th century. For example, the two, admittedly rather small groups of pottery from 138-148 and 149-159 Bordesley High Street (**39**, **40**, **21** and Rátkai forthcoming c) do seem to show that domestic occupation did not really get underway until the later 17th century. Most of the assemblages are too small to undertake any sort of functional analysis, although the presence of 'table wares' as well as the utilitarian coarsewares, suggests a reasonable level of prosperity, of the type which would be expected in an urban setting.

At St Martin's the presence of fine table wares eg white salt glazed stoneware (1720-1760/1770) and creamware (*c*1750-1800) demonstrate the revolution in ceramic manufacture and use which occurred in the 18th century. On internal evidence alone it is impossible to know how

quickly after their first manufacture, white salt-glazed stoneware (and later creamware) began to appear in Birmingham (Figure 5.4). This has important implications for the status of the inhabitants in the area of St Martin's, since an early use of these wares would suggest high status whereas their purchase some twenty or thirty years after their initial manufacture, when they were no longer so fashionable, would suggest a much lower status. However, there were a sufficient number of contexts where only white salt glazed ware appeared to suggest that it may have had a period of use before the development of creamware, which could indicate a comparatively early (and thus high status) use. In addition, the presence of at least two teapot fragments in wares which ought to date to before the Commutation Act of 1784 (in which the tax on tea was dramatically reduced, bringing tea consumption to a wider public) would seem to support the idea of higher status inhabitants in the area of St Martins in the 18th century.

Figure 5.4 Creamwares (left) and white salt-glazed stoneware (right) recovered from excavations undertaken during the Bullring development

A rather more substantial group of pottery of this and the following period was found at Birmingham Moat (Watts 1980). Watts suggests (*ibid.* 56) a date range of 1700-c1850 with most pottery fitting into the 1725-1850 range. Although it is not possible to isolate specific ware types, an examination of the illustrations (*ibid.*, figs 25-27) indicates that some pottery pre-dating 1700 may be present. For example fig. 26, 6 (*ibid.*) is a coarseware jar form known from at least the mid-17th century (see Rátkai 1987). A 17th century date seems more likely for fig. 27 5, 14 and 18, and forms such as fig. 27, 4, 6, are just as likely to date to the second half of the 17th century as to the 18th century (see Barker 1986). It would therefore be entirely possibly that material accumulated in the Moat from at least the second half of the 17th century and continued to do so in the following two centuries. The vessel forms are very similar to those in use at Park Street during the 17th and 18th centuries.

Post-medieval pottery was found associated with properties fronting onto Deritend High Street in the block running from Chapel House Street and Alcester Street (Sherlock 1957) and to the rear of these properties (see below), although the latter probably dated mainly to Period 4. No

quantification is available for the pottery found during Sherlock's excavation, although the quantity is described as considerable. From the descriptions in the text (*ibid.* 112 and fig. 3) it is clear that blackware, yellow ware, slip-coated ware, mottled ware and coarsewares were present. Staffordshire slipware is also mentioned by Sherlock but it is not clear whether this refers to trailed slipware or underglaze, white-slipped yellow ware. The illustrated form described as slipware (*ibid.*, figs 3, 5) would be right for either. Of the illustrated vessel forms (*ibid.*, fig. 3) nos. 3-8 would fit quite happily into the period c.1670-1750. Illustration no. 3 is much more likely to be a jar lid than a 'pie-dish'. Clay pipe evidence suggests that material was being deposited here c. 1650-1700, although more recent work on clay pipes in Birmingham (Higgins 2008) suggests that the dating could probably be extended into the 18th century. However, *pace* Sherlock, the two illustrated vessels (*ibid.*, fig. 3, 1-2) which he calls 'jowls' and in more contemporary literature are referred to as 'pans', are likely to date to the later 18th or 19th centuries.

The commonest forms were ordinary table wares such as drinking vessels, bowls and dishes. Of particular interest is the mention of several shallow oval dishes (Sherlock 1957fig. 3, 6). These are dripping trays, a parallel for which can be found at Edgbaston Street in a context dating to the second half of the 17th century. The presence of dripping trays implies two things; firstly that meat was being consumed, since these vessels caught the fat and juices of spit-roasting meat, and secondly that the dwelling was substantial enough to have had a proper cooking range. That more than one of these vessels were found is notable. More than one example of the uncommon lid/'pie-dish' form was also recorded by Sherlock.

Blackware wasters of 17th century date were found at Floodgate Street, and very recently at the Connaught Square excavations, across the road from Floodgate Street, (pers. comm.. Mary Duncan), a coarseware waster in St Martin's churchyard and a possible feathered slipware waster and saggar at Bordesley High Street (**40** and Rátkai forthcoming c). There is thus some tantalising evidence for pottery manufacture on Birmingham itself, although it is unlikely that the output was ever on the same scale as the medieval Deritend ware industry.

Site	Source	blackware	coarseware	yellow ware	mottled ware	slipware	slipware trailed	slipware feathered	slipware embossed	slipware marbled	slipware jewelled	slip-coated ware	tin-glazed earthenware	brown salt-glazed stoneware	white salt-glazed stoneware	scratch blue	misc 17th-18th c pottery	misc 18th c	wasters
Moor Street	Ratkai in press	x	x										x						
Milennium Point	Reports 56, 57	x	?			x						?		?					
Masshouse Circus	Report 52	x	?	x	x				x			?							
Freeman Street	Report 43																x		
Bordesley Street	Report 37		x																
Park Street	Ratkai in press	x	x	x	x		x	x	x	x	x	x	x	x	x		x	x	
Hartwell's Garage	Report 25		x	x			x												
Floodgate Street	Edgeworth et al forthcoming	x	x	x								x			x				x
Gibb Street	Edgeworth et al forthcoming	x	x					x		x			x	x		x			
Old Crown	Report 27																		
Old Crown WBs	Report 28		x					x				x		x					
Heath Mill Lane	Report 50		?									x							
138-148 Bordesley High Street	Reports 39, 40	x	x	x	x	x						?	x		x			x	
149-159 Bordesley High Street	Report 21, Rátkai and Martin Bacon forthcoming	x	x	x	x		x	x			x		x	x	x				
Warwick Street/Warner Street	Report 22		x		x							x		x					
Walker Building			x																
Deritend	Sherlock 1957	x	x	x	x	x		x				x							
Green Street, Deritend	Report 14													x	?				
Deritend Bridge	Report 15																	x	
Deritend	Report 45																x		
St Martin's	Ratkai 2006	x	x				x	x			x		x		x				x
Birmingham Moat	Watts 1980	x	x									x		x			x		
Edgbaston Street	Ratkai in press	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		?

Table 5.5 Occurrence of Period 3/possible Period 3 pottery

In this period it is likely that Wednesbury, continued to supply Birmingham with pottery, particularly with blackware, yellow ware and coarseware. Judging by the size of the waster dumps found in Wednesbury (weighing hundreds of kilos) the output must have been considerable. Later wares, such as white salt-glazed stoneware are likely to have come from The Potteries.

Imported Continental pottery is infrequently encountered in Birmingham. However, Rhenish stoneware (a Bartmann jug with the arms of Amsterdam) was found at Floodgate Street and a small collection of stoneware vessels was found at Edgbaston Street (ranging from the 16th- to early 17th-century in date). Although Rhenish stonewares are not uncommon in Britain as a whole, particularly on coastal sites where virtually any consumer from the lowliest to the highest could purchase them, they can be seen as exotica in a landlocked settlement such as Birmingham and are indicative of status. As Gaimster (1997, 126) notes " …stoneware…..enabled various groups of middle class consumers to … imitate the dining habits of their betters." Rhenish stonewares are much more commonly encountered in Coventry, where the mercantile classes were much better represented than in Birmingham, which lends some weight to Gaimster's observation. It is interesting therefore that the few stoneware vessels found in Birmingham are associated with tanning complexes, since the tanning process requires considerable capital outlay and tanyards were owned by people of means. Strong commercial links between Birmingham and London suggest that these and other imported wares came to Birmingham from the capital.

Martincamp flask sherds were found at Edgbaston Street and from a very recent evaluation behind the upper end of Digbeth High Street, the site of a further tanyard (pers inspection by author). Martincamp flasks were made in Northern France and are often found in Dissolution and in Civil War deposits. Two possible Mediterranean tin-glazed earthenware sherds were found at Moor Street and Edgbaston Street (Figure 5.5). A Spanish olive jar was found at Park Street in a Period 4 context but which may date to this period.

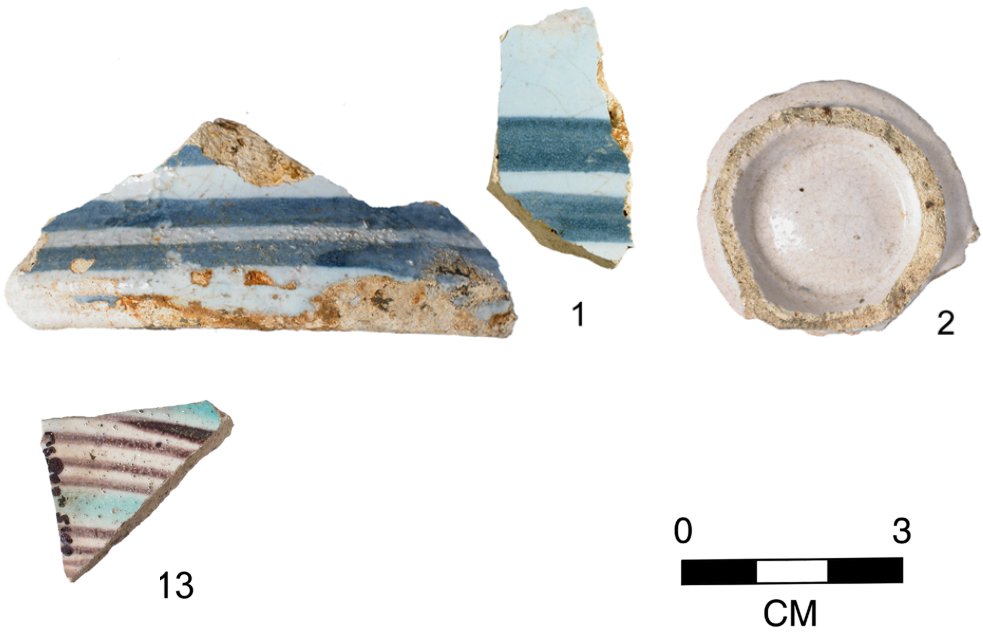

Figure 5.5 Tin-glazed earthenwares; 1 and 2 Albarello fragments, 17th–18th centuries, and 3, Mediterranean maiolica, internal purple and turquoise concentric bands

Artefacts: domestic refuse

Even allowing for the fact that some artefacts recovered from the grey literature sites may belong to this period but are listed as unidentified and/or undated objects, there was a poor showing

for domestic waste of this period. A Georgian shoe buckle was found in the Manor Moat. Some clay pipe was also recovered.

Clay pipe found during Sherlock's (1955) excavation in Deritend, can now be viewed in the light of Higgins' (2008) extensive work on the clay pipe from the Bull Ring. The output of the pipe-maker, Michael Brown, was very much in evidence at the Bull Ring (see below) and also in Deritend (Oswald 1957 in Sherlock). Higgins suggests a floruit for Michael Brown of *c*1680-1730.

A somewhat larger group of domestic finds and personal objects was recorded from the published or forthcoming sites. The best, and possibly earliest, group came from Floodgate Street where personal items and domestic utensils dating to the 16th to 17th centuries were recovered.

Shoes ranging in date from the mid-16th to the first half of the 17th century had been thrown away by a cobbler when beyond further repair. One of the 17th century shoes had been refashioned from a front-tying shoe into a mule and had been very heavily worn before being eventually discarded suggesting it had been worn by one of the poorer members of the population. A copper alloy loop wire earring threaded with decoratively ribbed collars is an unusual find as items of jewellery are rarely found at this period. The earring, being copper alloy, was not a high status item but probably belonged to a woman of middle/merchant class and is in contrast to the evidence of poverty demonstrated by the mule. A second copper alloy earring was found in a pit on Park Street (Bevan *et al* 2008, fig 8.4.1) in a rather mixed deposit containing metal working slag and personal items of bone and copper alloy so that its date is less certain.

A turned alder wood bowl, from Floodgate Street, provides a rare reminder of a common domestic vessel more usually burnt on the fire when it had served its purpose. The interior of the shallow bowl has taken on a glossy dark brown coloration from heavy use (Allen forthcoming). A knife handle of yew wood was found at the same site (*ibid*.). The two handle scales are a matching pair and rather than being evidence of hafting, are the remains of a discarded knife. Burwood was probably selected for the handles because of the attractive grain pattern.

By this period far greater accumulations of domestic pottery were apparent. These generally represent fairly typical urban occupation of middling status, although the presence for example of a Ravenscroft-style wine glass from a Park Street refuse pit indicates that there was sufficient disposable income to purchase luxury goods (Figure 5.6).

Figure 5.6 Ravenscroft-style wine glass from a Park Street refuse pit

Artefacts: miscellaneous

On Bromsgrove Street an iron cannon ball dated AD1600-1699 was found in a well during construction of an outfall sewer in 1974.

Artefacts: industrial/craft waste

Evidence of smithing in the form of hammerscale and hearth bottoms was found at both sites on Bordesley High Street (**39**, **40**, **21** and Rátkai forthcoming c) and on Gibb Street. Three iron rods, potentially pieces of unused bar iron or objects in the early stages of manufacture, noted at Park Street (**77**) may represent a small fraction of the ironwork to be found lying around a blacksmith's forge. The dating for these objects is uncertain but the balance of probabilities is that they belong to the late 17th or early 18th century. The debris one might associate with a thriving centre of manufacture is not visible in the archaeological record in either the medieval or later periods

A broken whetstone found in fill of a well along with a domestic pottery of 18th century date at Gibb Street (**9**) has a groove worn in one face from repeated wear. The groove is not consistent with domestic blade sharpening so that a craft use is suggested.

Tanning and other leatherworking trades

Associated with the tanning pits at Floodgate Street (**10**) was a small amount of other evidence for tanning and the production and repair of leather items. Waste leather was found associated with shoes datable to the mid 16th-mid 17th century. This waste leather included edges cut from a variety of hides and a leg cut from a cow hide directly after tanning but probably before the hide was sold on to a manufacturer of leather goods. The shoes had been cut up to salvage leather for re-use in cobbling repairs.

Cutler's waste

At Floodgate Street (**10**), a piece of sawn antler may possibly be associated with the hafting of domestic knives. It was found with other finds dated to the early/mid 17th century.

More extensive evidence of the production of handles for knives and forks has been found at Park Street and Edgbaston Street. Ivory waste has been recovered from 17th century deposits at Edgbaston Street and includes the rare find of a sawn offcut of elephant tusk. Picture of handle making waste ?17th century bone-working waste from the same industry has been found at Park Street and in 17th-18th century contexts at Edgbaston Street.

Other

Some pottery production is indicated by the presence of a small number of wasters on Floodgate Street and Connaught Square (pers. comm. Mary Duncan), probably dating to the 17th century, a possible wastered sherd and a saggar from Bordesley High Street (**40**, and Rátkai forthcoming c) and a wastered coarseware sherd, found at St Martin's, hints at further local production.

A sawn board of willow, found at Floodgate Street, is not from a structural timber but indicates carpentry, probably furniture-making (Allen forthcoming).

Fragments of a clay pipe muffle kiln and two crucible fragments, similar to those recovered from Park Street, were found in the Manor Moat. The muffle fragment contained pipe fragments of late 17th- or early 18th-century date (see below).

Industry: archaeological evidence

There is very little evidence for textile production in this period and the hemp and flax seeds recovered from The Row and 170 Deritend High Street and Deritend Bridge may belong to the previous period although in the 17th and 18th centuries flax was an important crop in the region and was still grown in considerable quantities in Warwickshire in 1794 (Stephens 1964). Two rope walks are marked on maps, one near Floodgate Street on what was to become Milk Street and a second off Coleshill Street to the north of St Bartholomew's Chapel (Kempson 1781) so some of the hemp fibre at least was being used for rope-making.

Tanning continued to be an important industry, evidence for which comes largely from Edgbaston Street and Digbeth. Tawyering, the preservation of skins by mineral tanning rather than vegetable tanning, may also have been practised on Edgbaston Street.

Faunal evidence from Floodgate Street spanning the 16th and 17th centuries (later Period 2 and Period 3) is open to more than one interpretation (Baxter forthcoming). At Floodgate Street, some cattle crania showed that the animals had probably been poleaxed with a hammer which would be an indication of butchery on or very near to the site. Cutmarks provide evidence of skinning and the removal of horncores and two horncore tips would seem to indicate hornworking. Cuts around the base of the horncore and sawing of the horncore are both methods used to remove the horn as raw material for horn-working. Cuts around the base are thought to indicate that the sheath was cut through and removed after some preliminary rotting of the natural bonding had occurred. The solid tips of the horn was sometimes removed in advance of separation either to facilitate separation of the sheath from the core or to use the tips for the manufacture of articles such as handles and buttons. Some of the horn cylinders were turned directly into items such as beakers or inkwells, while others were subjected to further treatment to produce leaves or sheets for use in lanterns (MacGregor 1989 117; Armitage 1982 98-102). Although horn is seldom used these days, in the past it was an important material and could be seen as the 'plastic' of its time.

Site	Craft/Industry	excavated features	artefacts	pottery wasters/saggar	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder
Park Street	hemp retting											x						
The Row (date uncertain)	hemp retting											x						
170 Deritend High Street (date uncertain)	flax retting											x						
Deritend Bridge (date uncertain)	flax retting											x						
Edgbaston Street	stock rearing/management											x	x					
Park Street	stock rearing/management												x					
Park Street	Butchery?												x					
Edgbaston Street	Tanning and tawyering	x																
Park Street	Tanning?													x				
Gibb Street	Tanning		x									x	x					
Floodgate Street	Tanning		x										x	x				
170 Deritend High Street (date uncertain)	Tanning?													x				
Birmingham Moat (date uncertain)	Manufacture of leather goods		x															
Edgbaston Street	Horn working?												x					
Birmingham Moat (date uncertain)	Horn working												x					
Park Street	Antler working												x					
Edgbaston Street	Bone and ivory working		x															
Park Street	Bone and ivory working		x															
Park Street	Smithing							x	x									
138-148 Bordesley High Street	Smithing							x	x									
149-159 Bordesley High Street	Smithing							x	x							x		
Edbaston Street	Cutlering		x															
Park Street	Cutlering		x						x									
Floodgate Street	Cutlering		x															

Site	Craft/Industry	excavated features	artefacts	pottery wasters/saggar	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder
Gibb Street	Cutlering		x															
Moor Street (date uncertain)	Production of copper alloy objects									x								
Park Street	Production of copper alloy objects									x								
Park Street	Brass founding					x												
Heath Mill Lane (date uncertain)	Brass founding					x												
Edgbaston Street	Production of lead objects									x								
Edgbaston Street	Non-specific metal working	x														x	x	x
Birmingham Moat	Non-specific metal working					x												
Park Street	Non-specific metal working	x														x	x	x
Gibb Street (date uncertain)	Non-specific metal working							x								x		
Gibb Street	Clay extraction	x																
138-148 Bordesley High Street	Clay extraction	x																
149-159 Bordesley High Street	Clay extraction	x																
Floodgate Street	Pottery production			x														
131-148 Bordesley High Street	Pottery production			x														
149-159 Bordesley High Street	Pottery production			x														
Birmingham Moat (date uncertain)	Clay pipe production				x													
Edgbaston Street	Basket making?											x						
Dean House	Basket making	x										x						
Park Street	Basket making?											x						
Edgbaston Street	Brewing											x						
Park Street	Brewing											x						
Edgbaston Street	Bread-making	x																
Edgbaston Street	Wood-working?											x						

Site	Craft/Industry	excavated features	artefacts	pottery wasters/saggar	kiln furniture/structure	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder
Hartwell's Garage	Wood working?											x						
Park Street	Unknown industrial activity	x																

Table 5.6 Evidence for industrial or craft activity in Period 3 (17th-mid 18th centuries)

At Gibb Street there was further evidence, probably dating to the 18th century, for the skinning of animals and the removal and processing of horn cores. Documentary evidence refers to a 17th century bark mill and tannery in the immediate vicinity of Gibb Street and recut pits, interpreted as tanning pits, and quantities of bark and leather fragments, were also identified and recovered through excavation at the site. The horns of cattle were frequently left attached to the hides before processing and cattle hides with horns and tails still attached are illustrated in a German woodcut of 1568 illustrated by both Serjeantson (1989, Figure 5) and Thompson (1981, Figure 2). The cattle horncores from both Floodgate Street and Gibb Street were derived from activities on an industrial scale.

Sawn cattle metapodials (foot bones) and one horse metapodial were recovered from Floodgate Street and indicate bone working on the site. At Floodgate Street a set of inter-related industrial processes can be seen taking place, which are centred around butchery and the exploitation of every aspect of the carcass. Beasts appear to have been slaughtered and butchered on the site and their hides, with the skull and feet still attached, removed for tanning. Prior to tanning the heads and feet were removed from the hides and sold on. The horncores were detached from the skulls and soaked to remove the horn by the horn workers. The foot bones were cleaned and used for making knife handles and other objects. Other remains including the hooves would be sold on for glue. It is interesting to see the debris from several separate but inter-related industries on one site in this way.

By the 17th century metal-working trades are by far the best represented. Remains associated with cutlering or smithing were found at most sites near the Bull Ring and in Digbeth and Bordesley. Brass founding on the other hand seems to have been concentrated on Park Street, although crucible fragments from the Manor Moat and Heath Mill Lane suggest a somewhat wider distribution of this trade. Hutton (1783) suggests that brass-founding was first practised in Birmingham in the reign of William III (1688-1702) and noted:

> *'It is not uncommon to see a man with green hair or a yellow wig, from his constant employment in brass; if he reads, the green vestiges of his occupation remain on every leaf, never to be expunged. The inside of his body, no doubt, receives the same tincture, but is kept clean by being often washed with ale. Some of the fair sex, likewise are subject to the same inconvenience, but find relief in the same remedy.'*

A series of industrial pits found on Edgbaston Street and Park Street are thought to have been associated with metal working, although their exact function and the type of metal work being produced is uncertain. Clearly, from the 17th century, iron, copper alloy and lead objects were being manufactured. By the time of the Civil War, sword manufacture was second only to London and may even have been on a par with it. Other evidence suggests that ironwork was regularly exported to London in large quantities and increased building work, in the aftermath of the Great Fire of London, provided a further stimulus to this trade.

A general up-turn in the economy in the 17th century may also have provided an impetus to pottery production, evidence of which was found at Floodgate Street and on Bordesley High Street. Both sites could be seen as fairly marginal, which might suggest that the better sites were already taken up with other industries. It is from this period, that the only piece of archaeological evidence comes for the manufacture of clay pipes in Birmingham; part of a muffle kiln from the Manor Moat. Although there is no documentary evidence for the early production of clay pipe in Birmingham, the archaeological evidence suggests that this was well established from the early 17th century onwards. The majority of the pipes were unmarked and were probably made locally and it is only when just the marked pipes are considered that there is a significant proportion of Shropshire material. The new suggestion that Browne may have worked locally, reduces even further the possible proportion of 'imported' pipes at this period. The bias in the marked clay pipe to Shropshire sources is of interest since this may hint at very long standing trading patterns oriented to the north and northwest, precisely the area where many of the raw materials eg coal and iron, critical to Birmingham's industrial development was located.

Convincing evidence for brewing was found in this period at both Edgbaston Street and Park Street. Numerous references to maltsters, hop sellers, and brewhouses on these two streets are found in documents belonging to the second half of the 18th century and presumably also reflect the situation in the first half of the century. Other less tangible evidence suggests that basket-making may have been practised in the area of the Moat Watercourse (there are certainly later 18th century references to basket-makers on Edgbaston Street and osier pits are marked on Sheriff's Map of 1808) and possibly on Park Street. Circumstantial evidence for wood-working in the form of sawdust was found at Edgbaston Street and Hartwell's Garage.

Two adjacent tanks, one wood-lined, the other with stake holes suggesting the erstwhile presence of a wooden lining, were found at Park Street. These had been finally backfilled in the late 18th century with what appeared to be a house clearance dump. A reappraisal of the interpretation of these tanks has been given by Rátkai (forthcoming g) who suggests that the tanks may date to the 17th century and be the outliers of a much larger tanning complex.

It is clear that by the 18th century industrial activity was routinely present in many backplots. By the mid 18th century there is evidence that grand houses such as Nos. 10 and 18 Park Street and Sampson Lloyd's house on Edgbaston Street were to the front of plots that had become increasingly industrialised. The houses were increasingly abandoned by their owners, and either turned into workshops or commercial properties; No. 10 Park Street, for example, was used as a shop by merchant John Humphries - or subdivided and sublet for domestic occupation. Tracing the change from domestic property to industrial or commercial use would form a useful avenue for further research.

Remains of industrial structures from this period were not found in any of the grey literature sites and sections of walls found on the excavated sites which date to this period were too ephemeral to determine very much about them. There is some evidence of beam slot structures on Bordesley High Street which may have been forges of the sort illustrated by Dent (1972 Vol 1, 195).

Clay pipe making: archaeological and documentary evidence

Tobacco was a New World introduction that gradually spread through the upper echelons of European society during the course of the sixteenth century. Smoking was particularly taken up by the English during the second half of the century although, by 1600, it was still an expensive luxury. During the first few decades of the seventeenth century, however, the price of tobacco fell rapidly and smoking quickly permeated to all levels of society. Pipemakers established themselves all over the country to meet the new demand for pipes and, by the 1630s or 1640s, most areas were being supplied from local workshops. Smoking remained extremely popular until about the second quarter of the eighteenth century, when a vogue for taking snuff caused a temporary decline in the pipemakers' fortunes. It is against this background that the introduction and use of pipes in Birmingham from *c*1600-1750 must be considered.

So far as the documentary record is concerned, there is no evidence for pipemaking in Birmingham during this period at all. This is surprising given the size and nature of the settlement and the fact that the necessary raw materials in the form of pipe clays, fire clays and coal for fuel are all available in the neighbouring coalfields. Pipemakers were certainly active on the north Warwickshire coalfield to the east of Birmingham from at least the late seventeenth century (Melton 1997), while Plot, in his 1686 *Natural History of Staffordshire* (page 121), notes;

'As for Tobacco-pipe clays they are found all over the County, near Wrottesley House, and Stile Cop in Cannock-wood, whereof they make pipes at Armitage and Lichfield, . . . There is Tobacco-pipe clay also found at Darlaston near Wednesbury, but of late disused, because of better and cheaper found in Monway-field betwixt Wednesbury and Willingsworth, which is of a whitish colour, and makes excellent pipes: as doth also another of the same colour dug near the Salt water poole in Pensnet Chase, about a Mile and ½ South of Dudley.'

This reference makes it clear that not only was suitable clay readily available but also that pipemakers were working in many places near Birmingham by the 1680s. The lack of documentary evidence for pipemaking in Birmingham itself may simply be because the records

do not survive or that they have not been systematically searched for references. The lack of any documentary sources underlines the importance of the artefactual record in establishing the evolution of pipe making and consumption in the city.

The most direct evidence for pipe manufacture itself comes in the form of a fragment of late seventeenth or early eighteenth century pipe muffle, the distinctive chamber in which the pipes themselves were fired, that was recovered from the Bullring area of the city (City Museum, Acc. No. CP 54). This piece was noted by the author during a visit to the museum in 1988 but it is not clear whether this is the one of the two fragments of uncertain date noted by Peacey in his survey of British kiln debris (Peacey 1996, 199). These came from Birmingham Moat and were also recorded in the Birmingham City Museum collections. Either way, it is clear that two or three fragments of muffle kiln have been recovered from the centre of Birmingham, showing that pipe production was certainly established in the city at a date when there are no known documentary references.

As well as actual kiln waste, the local production of pipes from at least the middle of the seventeenth century onwards can be inferred from a study of the pipes themselves. A survey of more than 80 recent PPG 16 reports has shown at least 24 of these projects produced pipe fragments and that most of these pipe groups included material dating from the seventeenth and first half of the eighteenth centuries (Table 5.7). In all, the projects studied produced in excess of 2,781 fragments of pipe of which at least 189 had makers' marks on them, most of which date from the seventeenth or early eighteenth centuries. By far the largest pipe assemblages were recovered from Park Street (1,755 fragments) and the Edgbaston Street (354 fragments). These two sites have been studied in detail by the author, in conjunction with a smaller assemblage of 59 fragments from Moor Street (Higgins, in press). These three sites total 2,168 pieces of pipe, and account for some 78% of all the pipes recovered through PPG 16 work in the study area as a whole. As a result, they provide the benchmark against which other material from the city can be compared.

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
9	CFB 00	Custard Factory (2000)	14	C18th to C19th	none	Examination of the actual finds has shown that the site produced a total of 5 bowl and 9 stem fragments from 1 unstratified and 7 stratified deposits. There are no marked or decorated pieces and, although one of the C18th fragments has 65mm of surviving stem, this is still only a part of what would have been a long-stemmed pipe. The pipes are basically of C18th and C19th types and contribute a couple of examples of bowl forms from this period.
15	DBD 02	Deritend Bridge (2002)	1	1780-1860	none	One fragment of undated clay pipe stem from context 1035 noted. Examination of this piece in May 2008 showed that it is a plain stem, most likely dating from c1780-1860.
17	UDS 03	Birmingham - Dean House, Upper Dean Street (2003)	9	C17th to C19th	none	A table of finds lists the pipe fragments (9 stems) but only provides spot dates of C18th to C19th for all the fragments. While this is generally correct, examination of the finds in May 2008 showed that one piece of residual C17th stem is present in Context 1014. The only bowl fragment recovered is plain and comprises the larger part of a late C18th or early C19th spur bowl from machining.
22	BA 1392	Birmingham - Warwick Street / Warner Street	4	1780-1900	none	No reference to pipes was found in the report, but examination of the finds in May 2008 showed that four plain stem fragments, all of late C18th or C19th date, had been recovered from four different contexts (1003, 1018, 1020 and 1021).
24	HBD 94; HDB 96; HGD 99	Digbeth - Hartwell (Smithfield) Garage, 1994 & 1996/7 & 1999	13	C17th to C19th	WILL / WILK / SON x 1; wheel x 1	The 1997 Watching Brief report does not mention any pipe finds but examination of the finds in May 2008 showed that there was a group of 7 pipe fragments in Trench 1 (HDB 96, Context 1002). These pieces mainly date from c1680-1730 with just one or two later pieces present. There are two Broseley Type 5 bowls of c1680-1730 in this group - one marked with a wheel mark with spikes (probably locally produced). Also from the site is a bag labelled HBD 94 8013 which has two stems and further Broseley Type 5 bowls in it. One of these bowls is of a small form and marked with a square stamp with dividing lines and the lettering WILL / WILK / SON, for William Wilkinson, a Much Wenlock maker who died in 1728 (Higgins 1987, 509). Finally, there is a bag labelled HGB 99 1002 containing a plain stem of c1680-1730 and an C18th burnished bowl fragment.
27	OCD 94	Deritend - Old Crown	4	1790-1900	none	No reference to any pipes could be found in the site report, but an examination of the finds in May 2008 showed that the excavations produced 4 plain fragments of pipe (1 bowl, 2 stems and a mouthpiece). The bowl fragment is a plain spur fragment (only), probably dating from c1790-1850.

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
28	OCD 97	Deritend - Old Crown (1997-8)	7	not stated	IOHN / BRITON x 1	Examination of the finds has shown that there are 5 pieces from Trench 4, which are primarily of C18th date and include a finely engraved roll-stamped stem marked 'IOHN / BRITON' . There are also two unstratified bowls of late C18th-C19th date.
37	Marches Archaeol Rept 111	Bordesley - Park Street	2	late C17th to late C18th	?	The description of Trench 2 in Section 6 includes reference to two pipe bowls having been found, one of late C17th to early C18th date and the other of mid- to late-C18th. It is not clear whether other pipes were recovered from elsewhere on the site.
39	H&WCC Proj 1179	Bordesley - 131-148 High Street (1995)	8	late C17th	?	7 Unstratified fragments and 1 piece from context 101 are tabulated in this report (page 18). A description of the finds on page 9 notes that a late C17th pipe bowl was recovered from pit fill 101 and that the majority of the other pipe finds were stems.
40	H&WCC Proj 1082	Bordesley - 131-148 High Street, Bordesley (1995 assessment)	17	not stated	?	The quantification of finds in Table 2 shows that 4 pieces of pipe were recovered from Trench 1 and 13 pieces from Trench 2. No other details of these pipes could be found in the report.
41	WorcsCC Proj 1791	Hartwell Smithfield Garage, Digbeth (watching brief), 1999	1	not stated	?	One clay pipe stem is noted under the list of finds recovered. No other details of it could be found.
43	Gifford Rept 13510.R02	City Park Gate, 2006	?	not stated	?	This report includes references to pipe fragments being found in up to 8 different contexts (114, 211, 522, 526, 602/603/605 and 714), but the numbers are not given. There is no indication of date, other than the fact that context 529 contained C19th material, and no finds summary to give the overall numbers recovered.
50	HML 04	Deritend - Heath Mill Lane	4	1660-1830	none	The report mentions at least four fragments of clay pipe amongst the finds, but there is ambiguity as to the exact numbers recovered and the dating is inaccurate. When the finds were examined in May 2008 there were only three fragments of pipe present (the report notes at least one piece from the fill of a pit (F207) that was not seen). The three pieces that were seen comprised two plain stems from Contexts 1002 and 2005 and a spur bowl in a local style of c1660-80 from a cleaning layer in Trench 1.
52	BMH 02	Birmingham City Centre - Masshouse Circus	39	C17th to C19th	none	Examination of the finds in May 2008 showed that there were no marked or decorated pieces present, although there are several interesting bowl forms. Context 1007 includes a late C18th spur bowl, while 1009 includes a (residual) heel bowl in a local style of c1670-90. Context 3003 includes a group of 4 late C18th or

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
						very early C19th bowls and there is also a damaged early C19th bowl (unstratified).
70	BRB 97; BRB 99	Bull Ring, Edgbaston Street	354	C17th to C20th	IB x 1; MICH BROWN x 2; BROSLEY x 1; MD x 1; Fiolet x 1; REYNOLDS x 1; TR x 1; IS x 1; WT x 2; AW x 1; TW x 1; EW x 2; wheel x 4; unidentified x 3	A detailed report on the pipes from this site was compiled by D A Higgins in 2005 (2008), when the 354 pieces of pipe recovered were studied in detail. Although the pipes ranged from C17th to early C20th in date, the majority of the finds were of later C17th or early C18th date. The finds included 22 pieces with marks on them (mainly early stamped marks), three with moulded decoration and one with an internal bowl mark. The later (C19th) marks comprised a Fiolet pipe from St Omer, two Reynolds pipes from Birmingham (a named stem and a TR spur mark) and a Broseley stem stamp.
71	RRB 00	The Row, 2000	1	1680-1740	none	A clay pipe stem from context 1006 is noted on page 6 of the report but no other information is provided. Examination of this piece in May 2008 showed that it is a thick, plain stem, dating from c1680-1740.
73	MSB 00	Moor Street, 2000	59	not stated	none	The pipes from this site were included in a detailed study (D A Higgins, 2005), when 59 fragments from 13 different contexts were examined. This material ranged from c1620-1910 in date but it did not include any marked or decorated pieces.
75	MAN 00	Manzoni Gardens, 2000	67	Mainly C17th and C18th	TC x 1; IS or LS x 1	The PPG 16 report notes four pipe stems from a brick-lined well in Trench 2 (p9); 17 pipe fragments, plus 2 bowls, from a pit fill in Trench 3 (p10) and 38 pipe fragments with 6 bowls from a well in Trench 3 (p10). No other notes or dating information on the pipes was provided. A quick scan of the pipes themselves in November 2007 showed that the majority of the fragments date from the C17th with a smaller number of C18th and/or C19th pieces. The pipes from the pit fill (3002) included a milled stem and two stamped bowls, both of which date from c1660-90. One of the bowls is marked TC and the other IS or LS. Most of the finds date from the C17th or C18th with one or two stems possibly as late as the C19th.
76	OMB 00	Birmingham City Centre - Open Markets	1	1700-1800	none	No reference to any pipe finds could be located in the report, but examination of the finds showed that one piece of plain pipe stem, probably of eighteenth century date, had been collected from Context 4007 - a modern service trench (F404) in Trench 4.

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
77	PSB 01	Park Street	1755	C17th to C20th	141 in total - listed in detailed report	A full report on this assemblage was prepared by the D A Higgins in 2005, when 1,755 pieces of pipe were examined and reported on in detail. This assemblage included 141 marked pipes (mainly early stamped marks) and 22 pieces with decoration. The material ranges from C17th to early C20th in date but with a lot of later C17th and early C18th material represented.
79	SMB 01	St Martin's 2001	298	C17th to C19th	MB x 2; JM x 1; RP x 1; WT x 2; EW x 1; wheel x 1; HENIRY HIGH… x 1; PHILOS x 1; IOHN PHIPSON x 2; Dec Stems x 3	Examination of the finds in April 2007 showed that this group includes 15 marked pipes, including several previously unrecorded marks from the area and some interesting and unusual decorated stems. The marks are all stamped apart from an early C19th bowl with the initials JM moulded upright on the heel (almost certainly James Mackay (1), working in Birmingham from +1816-1833+) and a later C19th French stem with a moulded Philos mark. Bowl forms range from the C17th to the C19th and this group represents one of the larger and more interesting to have been recovered from Birmingham since the introduction of the PPG 16 system. Unfortunately no further work on this group was recommended in the assessment and so it has been archived without any detailed study.
-	BIES 07	Ashted Pumping Station and Belmont Row Glassworks, 2007	84	Mid C18th and C19th	none	A brief 2008 report on the pipes suggests that there is a little material dating from the second half of the C18th but that the majority of the assemblage is on C19th date. Only one decorated fragment (with oak leaf seams) is mentioned and there do not seem to be any marked pipes. This appears to be a small assemblage with limited potential and no further work was recommended in this report.
-	BA 1292	Bordesley - 149-159 High Street (2005)	20	1610-1900	MB x 1; EW x 1; wheel x 1	Specialist report prepared Feb 2008 by D A Higgins. Site produced 8 bowl and 12 stem fragments (20 pieces) from 12 contexts (and 1 unstratified group). Material ranges from c1610-1800 but with most of the finds late C17th to early C18th. Finds include three stamped heel marks - a local style bowl with heart shaped EW mark of c1670-1710 and two Broseley Type 5 bowls of c1680-1730. One has a probably local wheel mark and the other an M B mark flanking a gauntlet - attributed to Michael Brown of Much Wenlock.
?	FLG 02	Floodgate Street, Deritend Island, Digbeth, 2002	19	C17th-C19th	WT x 1; IW x 1; wheel x 1	This group was examined by D A Higgins in May 2008 when it was found that the material present ranged from the C17th to the C19th in date. There are no decorated pieces and just 4 bowl fragments, three of which are complete bowls ranging from c1680-1730 in date. There is an unusual spur form of c1680-1710 with an inverted heart-shaped IW stamp on the bowl facing the smoker. The other marks are both on Broseley Type 5 bowls of c1680-1730, both of

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
						which are likely to be local products. One has a wheel stamp and the other a rectangular WT mark with three stars above the initials.
	PPG 16 Tot		*2781*		*189*	
X	-	Aston Hall (1950)	?	C17th	TC x 1	Oswald (1952) mentions various C17th pipe fragments in passing in the excavation report, with at least one marked example (a Broseley type stamped TC).
X	-	Birmingham - Smithfield Market Area	36+	C17th to C20th	HB x 1; IB x 1; IOHN BRITON x 1; MB x 4; MICH BROWNE x 1; TC x 7; J LANGFORD WORCESTER x 1; HENRY LYON x 1; IP x 1; IOHN PHIPSON x 1; S x 1; IS x 10; IOS SIMONS x 1; WT x 2; TW 1690 x 1; Dec stem (stem lattice) x 1; wheel x 1.	Group of pipes collected privately during the redevelopment of the Smithfield Market area by Mr Krawiec and recorded during the 1980s. Mr Krawiec's collection also includes a lot of material from elsewhere in and around Birmingham, which has been listed separately.

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
X	-	Birmingham and surrounding areas (misc sites)	51+	C17th to C20th	BRITON x 1; HB x 1; IOHN BRITON x 2; MB x 3; MICHAELL BROWN x 2; THO BRITIN x 1; TC x 1; TE x 1; L Fiolet x 2; Gambier x 1; WH x 2; RICHARD LEGG x 1; HI x 2; HENRY LYON x 1; IM x 1; RANDLE MORRIS x 1; DO x 1; REYNOLDS MAKER BIRMINGH AM x 2; R SMITHEM AN BROSELEY x 2; E SOUTHOR N BROSELEY x 3; IS x 2; WS x 1; W SOUTHOR N BROSELEY x 5; WT x 4; LW x 1; wheel x 3; Dec Stems x 4.	This only lists only the more complete and legible marks in the Krawiec Collection, as recorded during the 1980s, and excluding the Smithfield Market group. This collection includes material from quite a wide area, including Sandwell, Walsall, Wolverhampton, etc.
X	-	Deritend (1953)	123+	C17th to C20th	MB or MICH BROWN x 15; TC x 3; MD x 1; IOHN IAMS x 1; Rosette x 4; IR x 1; AW x 2; EW x 6; IW x 1; CHALLE… x 1; Fiolet x 1; POLLOCK x 1; O'BRIEN MAYO ST DUBLIN x 1; J. H. TITTLEY / GREAT BRIDGE x 1.	Oswald (1957) lists at least 123 pipes from the 1953 widening of Digbeth and Deritend High Streets, most, if not all, of which are pipe bowls. He records at least 39 of these as having makers' marks on them, plus some that were illegible. 34 of the legible ones were C17th or early C18th stamped marks; the remaining 5 were of C19th or later date (CHALLENGE (pattern name, not a maker); Fiolet; Pollock; O'BRIEN (pattern name, not a maker) and TITTLEY).

Rpt	Code	Site	Pipes	Date	Marked Pipes	Comments
X	HM	Solihull - Hobs Moat	269	C17th to C20th	RN x 1; wheel x 1; illeg x 1; … / PipeMaker / London x 1; S.McLardy / Manchester x 1; CORK x 1	Interim note prepared by D A Higgins in 1988 on pipes recovered from the excavations at Hobs Moat. The C17th finds include three heel stamps (one illegible, one RN and a wheel with spikes between the spokes). The first two are round heels and the third a tailed heel. All three are of general Broseley styles but at least the tailed example is likely to be a local product. The majority of the pipes are C19th or later and include pieces from London and Manchester, as well as Broseley (identified from a recognised bowl type). The stem marked CORK is a pattern type, not an indication of its origin.
X	-	Walsall Moat (1975)	?	C17th to C19th	FLETCHER x 1; TE x 1; plus misc others	Oswald's 1977 report on the pipes from this site do not give numbers but say that the majority of the finds are of C19th date, including a variety of marked and decorated pieces (7 different mark types listed and 7 decorated bowls illustrated). The notable earlier exceptions are a late C17th Broseley style bowl marked WE (although the illustration looks like TE) and an C18th roll-stamped stem marked FLETCHER.
X	-	West Bromwich Manor House	54+	C17th	HB x 2; SD x 1; WH x 18; M x 1; wheel x 1 ; illeg x 1	Oswald (1980) describes at least 54 C17th pipe bowls from the moat, at least 24 of which have stamped makers' marks. Most of these (18) represent an unidentified but presumably local maker (WH), while the majority of the others (four or five out of the six) are Broseley area marks. Amongst the 30 plain bowls are 11 spur forms of c1640-60 - an unusual form in Birmingham and one not found at all in Broseley at this period.
	Other Total		*533+*		*164+*	
	Total		3314+		353+	

Table 5.7 Summaries of clay pipe findings by site

The only other significant assemblage that has not been studied and reported on in detail was recovered from St Martin's (298 fragments). These pipes have now been briefly examined as part of this study. In order to provide a more representative base for the PPG 16 finds, and to set them within their broader context, a number of other collections have also been considered as part of this survey. These include private collections from Birmingham and the surrounding areas, excavated groups from Dudley Castle, Sandwell Priory and Oakeswell Hall as well as other material in the museums at Wednesbury, Walsall, Wolverhampton and at Birmingham itself. The Birmingham City Museum collection is particularly important since Adrian Oswald, widely regarded as the founding father of modern pipe research, was keeper of archaeology there from 1950-64 (Oswald 2003, 4) and did much to build up the pipe collections. Finally, a number of other publications on pipes from the region have been reviewed and, where possible, data on the pipe finds extracted. The previously published data, together with selected material from collections, appears at the foot of Table 5.7. This additional data nearly doubles the number of marked pipes available for comparison to 353 while bringing the total number of fragments considered in some detail to over 3,314. While this is not intended to be a comprehensive survey of all the available material, or to provide a definitive list of pipes from the Birmingham area, it does at least allow the PPG 16 finds to be set in a broader context.

From the artefactual evidence it is clear that smoking was taking place in Birmingham from the at least the 1620s or 1630s (Bull Ring, Edgbaston St), and earlier evidence may be expected from

future work. The first pipes tended to copy London styles but, after the Civil War, regional styles started to develop. Local production had certainly started in the Birmingham area by this period, as is shown by the large number and range of pipes marked WH dating from *c*1630-50 recovered from the West Bromwich manor house, which must have been manufactured nearby (Oswald 1980, 38-40). What is particularly interesting about this group is that although 18 pipes marked WH were recovered from West Bromwich, not one has been noted from Birmingham itself (the two example listed in the Krawiec Collection in Table 5.7 are both from Walsall), showing how local the distribution of these early pipes could be. What do occur in Birmingham are a lot of mid-seventeenth century wheel marks (eg Figure 5.7, 1 and 2). This type of symbol mark, with either a simple spoked wheel or one with short spikes and/or dots between the spokes, persists in Birmingham until the early eighteenth century (Figure 5.7, 3) and must represent one or more local manufacturers. A particularly large number of this type have been found at Bromsgrove (Birmingham City Museum), perhaps indicating a source for at least some of these.

After the Restoration in 1660 there are more marked pipes (around 40% at Park Street and Edgbaston Street) and the main influence seen amongst them is from the Broseley / Much Wenlock region of Shropshire, where a nationally important industry with distinctive styles of bowl form and mark was emerging (Higgins 1987). From the 1660s onwards pipes from Shropshire were being traded much longer distances than for most other comparable centres and pipes in Shropshire styles represent about a half of all the marked pipes found in Birmingham during the second half of the seventeenth century. From the 1680's onwards these Shropshire forms typically have large round heels with a tail running back underneath the stem of the pipe. Although quite a number of different Shropshire makers are represented it is the pipes marked MB or Mich Brown (in various forms) that dominate, comprising more than 70% of the Shropshire style pipes found, and constituting the most common single group of marks found in Birmingham as a whole (e.g. Figures 6.7, 4-5). These pipes are normally attributed to Michael Brown of Much Wenlock and they have turned up on sites in the city centre (Bull Ring, Park Street, Smithfield Market and St Martin's) as well as at Bordesley, Deritend and Sandwell Priory. This shows that they were circulating widely and not just the product of particular use on one site.

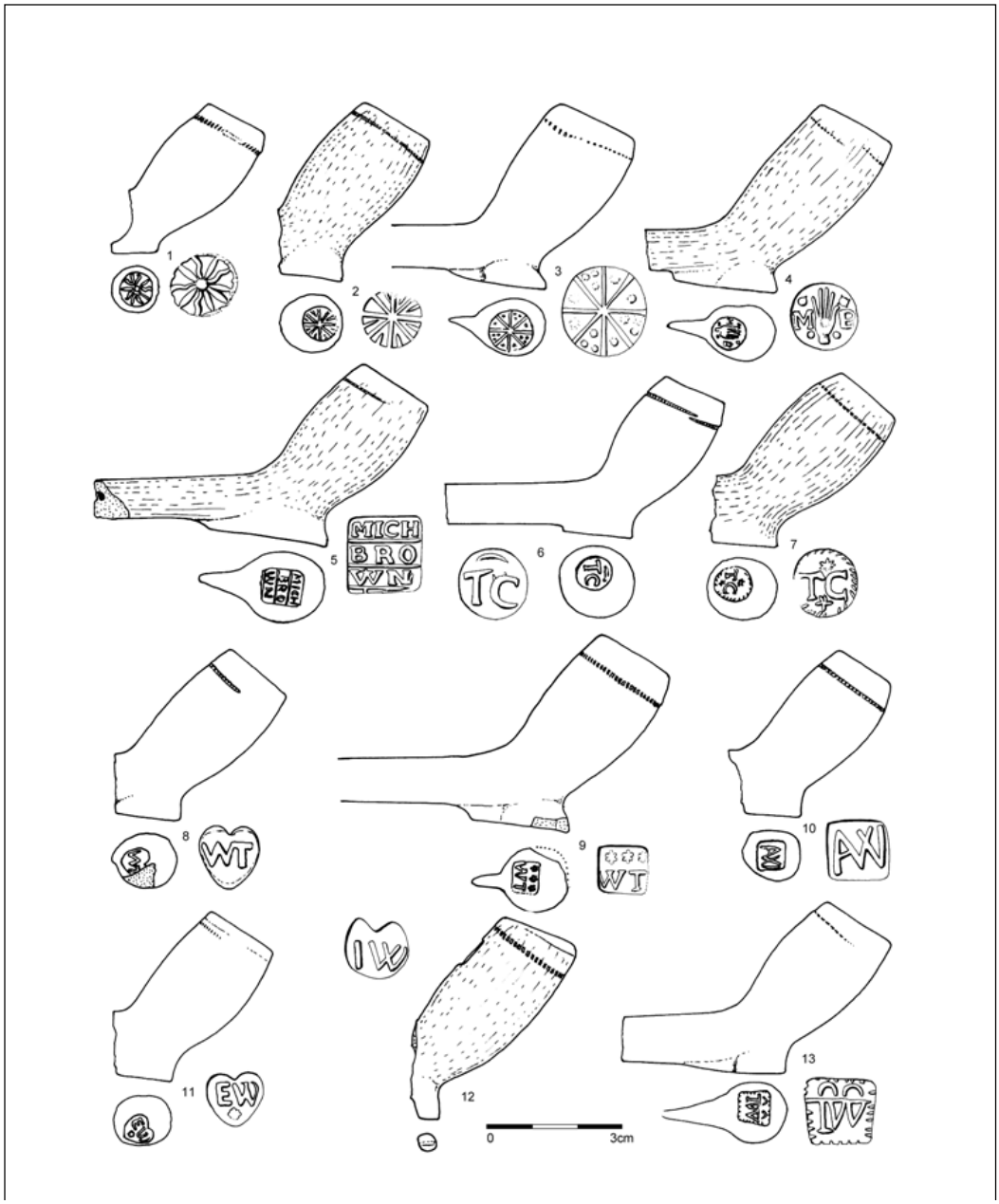

Figure 5.7 Pipes 1 to 13. The bar scale relates to the bowl and base illustration, stamp details are shown at twice this scale.

Although Michael Brown is recorded as a pipemaker in Much Wenlock during the 1680s (Higgins 1987, 504), and his marks are found in the area, he does not stand out as being a particularly prominent maker at that centre. Furthermore, in a detailed survey of north Warwickshire pipes (Melton 1997) not a single Michael Brown mark was recorded from the study area, even though many other Shropshire makers were represented. This suggests that Brown was not selling pipes generally in the region but that he had a specific association with Birmingham itself. Although he could have had a special trading connection with the city, the most likely explanation would seem that he moved to actually work there, bringing his distinctive Shropshire styles of bowl form and mark with him. Parallels for Shropshire makers moving to work elsewhere are already known from Warwickshire, where John and Jane Mats, originally from Benthall, were working in Stoneydelph during the late seventeenth and early eighteenth century (Melton 1997, 210-2) and at Coventry, where Thomas Andrews, the brother of Much Wenlock pipemaker John Andrews, was working in 1714 (Higgins, in press). If, as seems likely, Brown did set up a workshop in the Birmingham area,

then this changes our whole perception of the both the number of actual Shropshire imports to the city and the styles of pipes that were being produced there.

The range of different marks recovered from excavations makes it clear that a number of other pipemakers were working in or near the city during this period. The Broseley style TC marks of *c*1670-1720 represent another common group (e.g., Park Street, Manzoni Gardens, Aston Hall, Smithfield Market and Deritend) where more local production, as opposed to import from Shropshire, should perhaps be considered (eg Figure 5.7, 6 and 7). Local production certainly seems to be the case for the WT marks of the same period that were stamped on local variants of Broseley bowl forms and which have been found on a number of sites (e.g., Bull Ring, Floodgate Street, Park Street, Smithfield Market and St Martin's; Figure 5.7, 8 and 9). Both the TC and WT marks occur on bowl forms that are either exact copies of, or strongly influenced by, Broseley area patterns and they exhibit other Shropshire characteristics, such as the frequent use of a burnished surface.

In contrast, another group of pipes occurs that are more loosely based on Shropshire models and which tend not to have burnished surfaces. These pipes appear to represent local manufacturers working under the influence of Shropshire styles but developing their own local variations of it. One group of marks in particular shares these more local characteristics and seems likely to represent a local pipemaking family that is waiting to be identified. Pipes stamped AW, EW, IW and TW (Figure 5.7, 10-13) have all been found within the study area while LW marks have been recorded from nearby at Dudley (Higgins 1996, fig. 8.2), Wolverhampton (Krawiec Collection) and at Sandwell Priory (SV 2/19 U/S). These marks all share the surname initial W and, given that pipemaking often ran in families, it seems likely that there is a connection between at least some, if not all, of these makers.

At the turn of the eighteenth century there was a change in pipe fashions across the country. The Shropshire pipemakers had exclusively made heel pipes for most of the seventeenth century but they now introduced spur forms, in keeping with these changing fashions. As these only had tiny bases, which were unsuitable for the large, full name marks that had become typical of the area, the mark was moved to be placed across the stem. In other parts of the country, and in particular Chester, the use of roll-stamps to produce ornately decorated stems was also developed. Both of these changes can be seen at Birmingham.

During the first half of the eighteenth century the Birmingham area makers introduced spur forms, although these are of a slightly different form to the Shropshire styles, which continued to be imported alongside the heel types. The locally produced examples are characterised by less curved bowl profiled and, in particular, the use of bowl stamps, which are extremely rare on Broseley spur pipes. There is an early example of a heart-shaped bowl stamp with the initials IW on a bowl from Floodgate Street (Figure 5.7, 12), which is almost certainly a local product, but by far the most common initials found on the spur bowls are IS. These start as relief marks at the beginning of the century with incuse initials coming into use as the century progressed (Figure 5.8, 14). These pipes may have been made by Joseph Simmons, who was working at Wilnecote in north Warwickshire (Melton 1997), although it is worth noting that a Thomas Simmonds was working in Birmingham in 1777 (Pearson & Rollason Directory) and so other members of the family may well have been working in Birmingham as well. Other bowl marks that were probably made locally include IB (another relatively common set, Figure 5.8, 15 and 16), HH and IP (Figure 5.8, 17), the latter probably being made by John Phipson in the Kingswinford / Stourbridge area (Higgins 2008). Both Simmons and Phipson also used square, full name marks placed across the stem in the Broseley manner (Figure 5.8, 18 and 19).

Decorated stems first appear at the end of the seventeenth century in Chester, where the greatest range and most elaborate examples were made during the eighteenth century. Some of these Chester products found their way to Birmingham, for example an Elias Massey stem of *c*1690-1715 from Park Street, where they may have inspired local copies such as a griffin oval and stem border, also from Park Street (Higgins 2008, fig. 9.05, 83). Other decorative stamps and stem borders were certainly used in the Birmingham area during the first half of the eighteenth century, including

lattice borders, examples of which have been recovered from Park Street (Higgins 2008, fig. 9.05, 85-7) and Smithfield Market (Krawiec Collection).

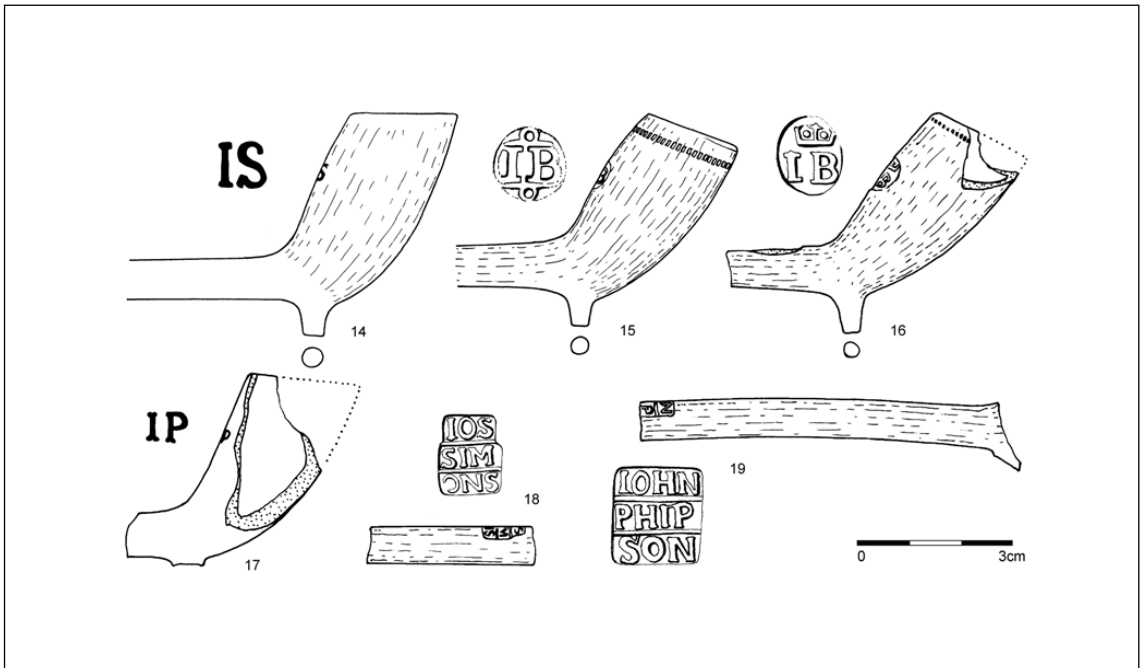

Figure 5.8 Pipes 14 to 19. The bar scale relates to the bowl and base illustration, stamp details are shown at twice this scale.

In summary, although there is no there is no documentary evidence for pipemaking in Birmingham during the period *c*1600-1750, the artefactual evidence makes it clear that pipemaking was in fact taking place. Smoking is likely to have become increasingly common in Birmingham after 1600 and can be demonstrated from the 1620s or 1630s onwards. The earliest local marks are apparent from at least as early as *c*1630-60 and, from *c*1660 onwards, there were clearly quite a number of pipemakers working in or near Birmingham, with the late seventeenth century muffle fragments demonstrating at least some production in the city itself. From *c*1660-1730 there was a lot of influence from the important pipemaking industry centred on the Broseley / Much Wenlock area of Shropshire both in terms of actual imports and also in terms of stylistic influence on bowl forms and marks. A re-evaluation of the marks based on their distribution, however, now suggests that some Shropshire makers may have actually moved to work in the Birmingham area so that the actual volume of Broseley area imports may have been slightly less than was previously thought. Spur forms were introduced around 1690 and were produced alongside heel forms during the first few decades of the eighteenth century. Although some Shropshire features, such as the use of full name marks, was continued, these spur forms developed increasingly local characteristics both in terms of the bowl form and in the use of bowl stamps. Chester inspired stem decoration also appears during this period showing that the local makers were absorbing influences from different parts of the country and adapting them to forge their own regional identity.

Catalogue; seventeenth and early eighteenth century pipes from Birmingham (Figures 6.7 – 6.8)

The following catalogue gives the suggested date for each fragment, together with details of its appearance and attributes. Each entry ends with the reference to the piece illustrated, which usually comprises the site and year code, the excavation area, the context number and any reference letter (in brackets) allocated to identify the specific fragment within the context group. A die number is given where one has been allocated. This identifies a unique die type and relates to the national catalogue of pipe stamps that is being compiled by the author.

1 Fragment of *c*1640-1670 with an unburnished surface and a stem bore of 6/64". The rim has been bottered and fully milled and the pipe is stamped with a wheel mark with alternate straight and wavy spokes (Die 960). PSB01 B 1634 (C).

2 Local style bowl of *c*1670-90 with a fully milled and bottered rim. The pipe is made of a fine fabric with a granular fracture and an average burnish. A neat and well made bowl with a stem bore of 7/64". Eight arm wheel stamp with spikes between the spokes (Die 1247). FLG02 1000.

3 Fragment of *c*1680-1730 with an unburnished surface and a stem bore of 5/64". The rim has been bottered and fully milled. The large relief stamped wheel mark has distinctive dots between the spokes (Die 1154). PSB01 C 1726 (C).

4 Fragment of *c*1680-1730 with a good burnish and a stem bore of 6/64". The rim has been bottered and fully milled. The relief stamped mark reads MB (Die 2017). PSB01 A 1167 (A).

5 Fragment of *c*1680-1730 with an average burnish and a stem bore of 6/64". The rim has been bottered and three-quarters milled. The relief stamped mark reads MICH BROWN (Die 2019). BRB99 C 3000 (I).

6 Fragment of *c*1670-1690 with an unburnished surface and a stem bore of 7/64". The rim has been bottered and fully milled. The relief stamped mark reads TC (Die 2023). PSB01 1101 (B).

7 Fragment of *c*1670-1690 with a good burnish and a stem bore of 6/64". The rim has been bottered and fully milled. The relief stamped mark reads TC (Die 2022). PSB01 C 1752 (A).

8 Fragment of *c*1670-1690 with an unburnished surface and a stem bore of 6/64". The rim has been bottered and three-quarters milled. The relief stamped mark reads WT (Die 466). Heart shaped mark PSB01 1101 (A).

9 Bowl of *c*1680-1730 with a fully milled and bottered rim. The pipe is not burnished and it has a stem bore of 7/64". The relief stamped mark reads WT (Die 869). FLG02 F111 1020.

10 Fragment of *c*1660-1680 with an unburnished surface and a stem bore of 5/64". The rim has been bottered and fully milled. The relief stamped ligatured mark reads AW (Die 2037). BRB99 C 3000 (G).

11 Fragment of *c*1670-1710 with a glossy but slightly abraded surface (so uncertain if it was burnished, but no burnishing lines visible) and a stem bore of 7/64". The rim has been bottered and half milled. The relief stamped mark reads EW (Die 900). PSB01 1101 (H).

12 Spur bowl of c1680-1710 with a poorly burnished surface and an inverted, relief stamped mark reading IW facing the smoker. The rim is bottered and partially milled (chipped but between a half and three-quarters milled originally). Stem bore unmeasureable. FLG02 B 2032.

13 Fragment of *c*1680-1710 with an unburnished surface and a stem bore of 6/64". The rim has been bottered and three-quarters milled. The relief stamped mark reads TW (Die 2041). BRB99 C 3000 (E).

14 Spur bowl of *c*1710-70 with an average burnish. There is a stamped mark with the incuse initials IS facing the smoker (Die 881). Smithfield Market area (SP 0753 8639; Krawiec Collection).

15 Spur bowl of *c*1690-1730 with an average burnish and a fully milled rim, which has been bottered and internally trimmed. There is a stamped mark with the incuse initials IB facing the smoker (Die 879). Smithfield Market area (SP 0753 8639; Krawiec Collection).

16 Fragment of *c*1710-1740 with a good burnish and a stem bore of 5/64". The rim has been bottered and milled. The relief stamped mark reads IB (Die 959). PSB01 1738 (K).

17 Fragment of *c*1730-1780 with an unburnished surface and a stem bore of 5/64". The rim has been internally trimmed and cut. The incuse stamped mark reads IP (Die 2045). PSB01 A 1139 (E).

18 Fragment of *c*1720-1780 with an average burnish and a stem bore of 4/64". The relief stamped mark reads IOS SIMONS (Die 884). Another example of this mark is known from the Smithfield Market site in Birmingham. PSB01 C 1725.

19 Fragment of *c*1740-1800 with a burnt surface (so uncertain if it was burnished) and a stem bore of 5/64". The relief stamped mark reads IOHN PHIPSON (Die 885). The mark is on top of the stem *c*60mm from the bowl and it was found in a deposit that may well date from before *c*1760. Another example of this mark is known from the Smithfield Market site in Birmingham. PSB01 B 1512 (A).

Period 4 c 1750-1900

Artefacts: Pottery

It is in this and the following period that documentary sources make it much easier to link pottery usage with individuals and their trades. This avenue of research has been partly explored for Park Street (Rátkai 2008) and clearly presents a fruitful enterprise, which could be explored for other post-medieval sites.

A number of sites only contained pottery of this period. These were Warwick Street/Warner Street, the Walker Building and Dean House. All of these sites lie in areas known to have been developed late in Birmingham's history. At Heath Mill Lane, there was a massive break in the pottery sequence which began with medieval pottery and then continued with pottery dating from the very end of the 18th century and 19th century. The pottery from Deritend Bridge probably also belongs to this period, although the description is rather vague. Pottery of this period was also found within the Manor Moat (see below and Watts 1980). This is potentially quite an important group since it should represent the typical pottery usage of the working and artisanal classes, which are known from documentary evidence to have lived in this area.

A small pottery assemblage was found in Deritend in a backplot area between Deritend High Street and Alcester Street (SMR 3456). A button-makers workshop was identified in this area (see below) Along this section of Deritend High Street at least four public houses or beer retailers (a lower kind of establishment, brought into leasing by The Beerhouse Act of 1830) were recorded in the 1856 Post Office Directory. These were No. 24, The Golden Lion (dismantled in 1911 and re-erected in Cannon Hill Park, Edgbaston), No. 27, Richard Tate, beer retailer, No. 29 The Nags Head and No. 41 The Green Man. The pottery was retrieved from section only, so was effectively unstratified. As far as it possible to tell from the records, the pottery seems to have been primarily 18th century in date. The absence of yellow ware suggests a terminus post quem of c. 1725. The absence of creamware, industrial slipware or blue transfer-printed wares suggests a date before c. 1780-1800.

There has been some confusion in identifying the ware types but a perusal of the 19 fabric descriptions and accompanying illustrations indicates that blackware, slip-coated ware and coarseware predominate. The vessels are utilitarian in character and comprise kitchen wares (bowls/pancheons and jars) and mundane table wares (mugs, cups, bowls and dishes). Other wares which appear to be present are mottled ware, trailed slipware, brown salt-glazed stoneware (including a rather nice small jar and its lid) and white salt-glazed stoneware plate sherds. The overall composition of the pottery in terms of ware and vessel forms is similar to mid-late 18th century groups from Park Street. The significance of the 'formal' dining wares ie the white salt-glazed stoneware plates is difficult to assess but the absence of tea wares militates against this being a high status group as such. Wine bottle fragments were found with the pottery and a piece of clear ribbed glass (possibly part of a drinking vessel?). It is therefore

possible, wine bottles not being frequently encountered on Birmingham sites (a notable exception being a pit behind the Old Crown Deritend (see above)), that some or all of the pottery and the glass derives from one of the hostelries mentioned above. Plates and other flatwares were a feature of an inn clearance group in Eccleshall, Staffordshire (Boothroyd and Higgins 2005) and the white salt-glazed stoneware plates from Deritend may be further evidence, given the rather mundane nature of the rest of the pottery, of debris from a hostelry.

Site	Source	blackware	coarseware	slip-coated ware	brown salt-glazed stoneware	tin-glazed earthenware	refined body	creamware	pearlware	blue transfer-printed ware	industrial slipware	modern yellow ware/cane ware	porcellaneous' ware	utilitarian whiteware	painted ware	stoneware bottle	white stoneware medicine pot	Unspecified stoneware	misc 18th-19th c	misc. 19th c pottery	wasters/saggar
Moor Street	Ratkai in press		x		x	x		x												x	
Milennium Point	Reports 56, 57	x	?	x	?								x							x	
Masshouse Circus	Report 52							x		x											
Bordesley Street	Report 37									x										x	
Park Street	Ratkai in press	x	x	x	x	x	x	x	x	x	x	x	x							x	
Hartwell's Garage	Report 72		x					x												x	
Hartwell's Garage	Report 25																				
Deritend Bridge	Report 15													x					x		
Floodgate Street	Edgeworth et al forthcoming	x	x	x				x	x	x	x	x	x					x		x	x
Gibb Street	Edgeworth et al forthcoming					x		x		x	x			x							
Old Crown WBs	Report 28		x	x	x					x											
Heath Mill Lane	Report 50		?	x				x	x	x	x	x		x							
138-148 Bordesley High Street	Reports 39, 40							x											x	x	x
149-159 Bordesley High Street	Report 21, Ratkai and Martin forthcoming						x	x								x					
Warwick Street/Warner Street	Report 22							x	x		x			x	x		x				
Walker Building			x					x	x			x				x					
Deritend	Sherlock 1957		x	x																	
St Martin's	Ratkai 2006							x	x	x	x	x		x	x					x	
Birmingham Moat	Watts 1980	x	x	x	x														x	x	
Edgbaston Street	Ratkai in press		x		x	x		x												x	
Manzoni Gardens	Report 75																		?		
Dean House		?	?	?	x			x		x		x		x				x			

Table 5.8 Occurrence of Period 4/ possible Period 4 pottery

On some of the excavated sites, particularly Park Street, there is a quite interesting division between the ceramic groups of c 1750-1800 and those of the 19th century. The earlier groups are made up primarily of utilitarian wares and table wares with an admixture of formal dining wares and tea wares. The formal dining/tea wares suggest some 'bourgeois-gentry' occupation. Dumps of similar wares were also found at Edgbaston Street. However, in the 19th century the pottery is of a much lower status, typically classed as 'artisanal' ie the 'cheap and cheerful' end of the range. This coincides with the increased build-up of court developments in the rear of the burgage plots. Pottery of this period was found at Birmingham Moat (Watts 1980) where she notes the absence of any high quality, expensive ceramics and that the pottery's 'humble character was consistent with what is known about the area from documentary sources' (*ibid*, 56). However, it has to be said that there was no evidence of downgrading of the ceramic assemblage from the 17th and 18th centuries to the 19th century here. The Moat pottery is curiously unremarkable from the medieval period onwards. In contrast, the Old Hall, a similarly downgraded moated site in Wolverhampton, contained some very high status dining and tea wares in the moat backfill (Rátkai forthcoming f). Generally speaking, the higher status pottery found in the second half of the 18th century, does not, on all the excavated sites, translate into similar status ceramics in the 19th century. Thus the ceramic evidence confirms what is known from other sources of the industrial and social development of central Birmingham from the late 18th and early 19th centuries.

Evidence of pottery production was also found in this period at Floodgate Street where black-glazed coarsewares and flowerpots were produced in the ?late 18th century. To date, however, no reference to a potter or potters on Floodgate Street has been found in the Trade Directories or Rate Books, which may indicate that the floruit of the business was before the 1770s. A potter, Luke Rogers, is listed in the 1770 trade directory, on Park Street and rather later in Chapman's 1803 directory, one George Madeley is listed as a China and Earthenware Manufacturer at Ashted. He was bankrupt by August 1807. The former was probably a small scale utilitarian ware producer, whereas the latter's venture was clearly a more significant, if ultimately unsuccessful, endeavour. Wasters from Madeley's potworks, associated with a bottle kiln, originally thought to be a glass cone, were excavated at the Belmont glassworks site (Peachy 2008).

Formal dining and tea wares in, for example, white salt-glazed stoneware and creamware, are most likely to have come from The Potteries. The construction of Brindley's Staffordshire and Worcestershire Canal, which was opened to trade in 1772 provided a ready means of transport for ceramics from The Potteries into Birmingham via the junction from the Birmingham Canal at Aldersley and some of the creamwares and probably all of the pearlwares found in Birmingham were probably transported in this way. By the 19th century the canal system must certainly have facilitated the transport of the 'cheap and cheerful' pottery such as industrial slipware, sponged ware, painted ware and the blue transfer printed wares, which formed the core of the pottery used in the first half of the 19th century.

Artefacts: domestic refuse

A wide range of 'early modern items used in and around the home have been recovered, principally from Edgbaston Street, Park Street etc where more extensive excavation has been undertaken.

A discarded 19th century shoe from Bordesley Street and wine bottle fragments of ?mid-late 18th century date from the rear of the Old Crown were the only identifiable grey literature finds of this period. A tanged blade possibly, a discarded blade blank, was recovered from the same pit as the glass bottles. Three early 19th century sherds found in the pit may indicate the deposition date of the fill or be intrusive.

Welted shoe parts including a man's shoe of 18th century date were present amongst the small group of leatherwork recovered from the Birmingham Moat. A child's shoe found at 72-8 Bordesley Street, previously thought to be of medieval date, has stylistic features that suggest it dates to the 19th century (see above Period 1).

A small hair comb of horn and the bone back of a small button were found unstratified at Gibb Street (**9**). Similar hair combs and button backs were found in burials at St. Martin's-in-the-Bull Ring, Birmingham (Bevan 2006) and modest burials dating to the first half of the 19th century at Barton-upon-Humber, Lincolnshire (Mould forthcoming). The hair combs from St Martin's differed in being made of tortoise shell or bone rather than of horn but are of the same general style.

Unfortunately, although reasonably sized groups of 19th century pottery have been recovered from various sites (both grey literature and published/to be published sites) none of them has been examined in detail.

Artefacts: industrial/craft waste

Hints of craft activities being undertaken during the 18th century were noted at Floodgate Street (**10**) in refuse disposed of in wells located within the probable tanhouse. A small group of ironwork was found in fill [2010] of well F206. Amongst the group were two tangs, one had been snapped off by the smith suggesting it to be waste from manufacture. A second well F213 contained shell waste in the form of the central coils from seven large, spirally-twisted shells. This differs from the flat shell-working waste from which button or bead blanks have been removed that are more usually recovered. The exact use to which these shells had been put is uncertain. Large shells of similar type, commonly known as conch shells, were used for cutting cameos but were not considered ideal for the purpose. It is possible that they represent food debris as the meat of the animals within is eaten as chowder (Scase and Storey 1975, 24). Could this deposit represent the remains of an exotic meal? They were found with oyster shell also a popular food at the time.

The production of shell buttons is attested at Edgbaston Street where amongst early 19th century shell waste was a piece from which hand-cut circular blanks had been removed. A cowrie shell, from tropical waters like the conch shells found at Floodgate Street, also came from Edgbaston Street. Four pieces of shell-working waste with circular and semi-circular blanks cut from them, for the production of bone inlay or possibly buttons, were found unstratified at Gibb Street (**9**). A circular mother-of pearl blank was found unstratified on Warner Street/Walker Street (BA 1392) with pottery of mid 18th-19th century date and clay pipe stems.

There is evidence of pottery production on Floodgate Street, where coarseware and flowerpot wasters were found within the latest tannery complex. The exact date of the pottery production is uncertain. The same sort of flowerpots were found on Park Street in deposits which suggest a date in the final quarter of the 18th century. However, no potters are listed in the Trade Directories for Floodgate Street, Moore's Row or Milk Street. Langford (1868, 18) notes an action by the High Bailiff and Steward in the late 1740s to curb infringement on the Cornmarket '…which has of late been taken up by Persons vending of Earthen Wares, Garden Stuff etc', precisely the vessels represented by the Floodgate Street wasters.

Industry: Archaeological evidence

In the admiring words of the French observer Faujas de Sant Fond who visited in 1784, Birmingham was one of the most curious towns in England because its people were affected with the 'genius of invention' (quoted by Chinn 2003). Unfortunately evidence of the toy trade in which Birmingham's artisans and craftsmen found full expression of their genius has been largely undetectable in the archaeological record. Waste from the manufacture of buttons first appears in this period and has been found at Warner Street, Gibb Street, Edgbaston Street and Park Street. Rescue excavation by Dept of Archaeology, City of Birmingham Museum in 1984 (WMA 1984 [vol. 27], 56) discovered in one area of a site in Deritend (SP080862 site 20614), brick built features that formed part of a 19th century button-maker's workshop. This workshop was situated in the same block of buildings between Chapel House Lane and Alcester Street, where Sherlock (1957) discovered medieval pottery production waste (see above). The main interest in these discoveries lies in the fact that their provenance lies outside the documented 'core' of button-making which was situated around Snow Hill. Exotic Pacific shell was found at Edgbaston Street and Floodgate Street and this may have been used for cameo-making or decorative inlays. A rock crystal swivel seal, found at Park Street, may indicate the presence of a jeweller or watch chain maker in the vicinity. A small cache of ?mid 18th century facetted glass stones, also found at Park Street, may be connected with jewellery manufacture.

Another industry new to this period was glass manufacture (see Figure 5.2). Waste, crucibles and cullet was found at Edgbaston Street and Floodgate Street. The former derived from Hawker's Glasshouse (c.1778-1788) and the latter may represent redeposited material rather than the site of an actual glassworks. Glass cones and glass houses are known from documentary and cartographic sources and the Belmont Glassworks has recently been excavated (Peachy 2008) and traces of a glass cone and associated brick structures discovered. At Belmont Row Glassworks (Peachy 2008) the well-preserved base of a circular structure possibly a second glass cone or more probably a pottery bottle kiln (see above) was found. The Belmont and Belmont Row sites were situated close to the Digbeth Branch Canal. A canal-side situation was normally chosen for glass manufacturing because of the ease with which raw materials could be transported to the works. Hawker's Glasshouse, therefore, is unusual in its location on Edgbaston Street, well away from the canal system, although at least two other glassworks were similarly situated. Hawker did, however, have a second and subsequent glasshouse, The Park Glasshouse, by a canal.

Site	Craft/Industry	excavated features	artefacts	pottery wasters/saggar	kiln furniture/structure frags	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder
Park Street	Hemp retting											x						
Edgbaston Street	Stock rearing/management											x	x					
Park Street	Stock rearing/management												x					
Park Street	Butchery?												x					
Edgbaston Street	Tawyering?	x																
Edgbaston Street	Tanning	x										x						
Park Street	Tanning?													x				
Gibb Street	Tanning		x									x	x					
Floodgate Street	Tanning		x										x	x				
Edgbaston Street	Cobbling		x															
Park Street	Cobbling		x															
Park Street	Bone working?		x															
Park Street	Brush-making		x															
Edgbaston Street	Shell-working/cameo making												x					
Floodgate Street	Shell-working/cameo making												x					
Park Street	Blade making		x															
Moor Street (date uncertain)	Production of copper alloy objects									x								
Park Street	Brass founding					x		x										
Heath Mill Lane (date uncertain)	Brass founding?					x										x	x	x
St Martin's	Brass founding?					x												
Bordesley Street	Brass founding?					x												
Edgbaston Street	Non-specific metal-working		x							x								

Site	Craft/Industry	excavated features	artefacts	pottery wasters/saggar	kiln furniture/structure frags	Crucibles	Tap slag	Slag	hammerscale/hearth bottoms	Waste/scrap	Fibres	plant/pollen	faunal	animal hair	insect	coal	charcoal	ash/cinder
Park Street	Non-specific metal-working	x	x															
Heath Mill Lane (date uncertain)	Non-specific metal-working					x		x									x	x
Floodgate Street	Pottery production			x														
Edgbaston Street	Basket making?											x						
Dean House	Basket making	x										x						
Park Street	Basket making?											x						
Edgbaston Street	Brewing											x						
Park Street	Brewing	x										x						
Edgbaston Street	Button making		x															
Park Street	Button making		x															
Gibb Street	Button making		x															
Warner Street	Button making		x															
Edgbaston Street	Glass making		x			x				x								
Floodgate Street	Glass making					x												
Park Street	Jewellery making?		x															
Park Street	Unknown industrial activities	x																
Edgbaston Street	Woodworking?											x						

Figure 5.9 Evidence for industrial or craft activity in Period 4

Glass manufacture is perhaps not an industry as readily associated with Birmingham as metal working and the toy trade, although by the mid-19th century flint-glass making was concentrated nationwide in Birmingham and Stourbridge. The earliest use of glass in Birmingham was an adjunct of the button trade where 'glass-pinchers' prepared glass for setting in buttons and rings and also manufactured buttons (Cook 2001; **62**). In 1770 six glass-pinchers were listed in Birmingham. It is interesting to note that one of the earliest glassworks, Oppenheim's Glass House was situated in the button-making heartland around Snow Hill. By the 1830s Stourbridge had the greater number of glassworks producing flint-glass but Birmingham achieved a greater output (Cook ibid). Glass manufacture suffered several vicissitudes after the initial boom caused by the repeal of excise duty on glass in 1845 but, in the main, the industry flourished until c. 1880 when an influx of cheaper Continental imports put paid to many businesses. The Brierly Hill Advertiser (March 22 1879) reported,

> *'foreign decanters are being sold in the Midlands, completely finished, at a price which is little if any more than the cost of cutting would amount to in an English [work]shop'*

As would be expected metal working trades are evidenced by crucibles, slag, coal, ash, clinker and artefacts, though the presence of bar iron, blanks and miscastings are rarely noted in the existing literature. Small offcut 'snippets' of copper alloy sheet and wire were frequently encountered in early modern contexts in the city centre. An unfinished button of a white metal with the casting sprue still attached found unstratified at Edgbaston Street provides direct evidence of manufacture at this location, though sadly no date is provided. The same site produced a group of iron tools including a series of four punches of graduated size, rasps and the twist bit from a drill. Grindstones from Park Street and St Martin's (Vault 10 HB 372) indicate the production of edge tools. Deposits of coal, ash and clinker were pretty routinely encountered on the watching briefs. These may indicate numerous small metalworking concerns or may wholly or in part be the remains of ash pits which were usually found in courts. The absence of documentary research on these sites makes interpretation difficult.

A development in the metal working trades was the manufacture of coffin furniture, which is discussed more fully in Hancox (2006 156-160). At 131-148 High Street, Bordesley, there had been a coffin furniture works, the only evidence for which was the Ordnance Survey Map of 1888, the building having been destroyed by the construction of a filling station. There are also references to Hector Richard Cooksey, coffin furniture maker at 148 High Street Bordesley in the post office directories of 1845 and 1856. No artefactual finds associated with the works were recovered (Rep 39).

Tanning continued but at a much reduced scale. Only two tanners are listed in the first two trade directories (Sketchley 1767, Sketchley 1770). The first of these Francis Highway was recorded in Deritend in 1767 but by 1770 his premises are listed as 34 Digbeth. The last reference to Highway as a tanner occurs in the 1780 directory. The second tanner was John Walford who operated until at least 1791, when his name appears for the last time in a trade directory. His premises are listed as in Deritend and it is possible that one of the brick-built tanneries recorded at Floodgate Street is associated with him. John Walford may also be the sole surviving tanner mentioned by Hutton (see above). Deritend Tannery is mentioned in an 1845 Directory and also illustrated on Ackerman's 1847 Panorama situated on the corner of Liverpool Street and Great Barr Street. Again in the 1845 directory, four fellmongers are listed and F. I. Welch is listed as a sealskin tanner on Bromsgrove Street. He is presumably part of the same family of Welch's who had their skinyard on Edgbaston Street in the early 19th century.

This and the other leatherworking trades may have been overlooked in this period because the emphasis has tended to be on metal-working and the toy trade in the published histories of Birmingham. However, their importance should not be underestimated, since fellmongers, skinners, curriers, saddlers and other leather workers abound in the documentary record. Could we perhaps have a copy of a trade directory page here? A plier punch, a small hand tool for punching holes in leather used by various leather trades including boot and shoe making, saddle and harness making, was found at Park Street. Evidence for 19th century shoemaking was found on Edgbaston Street and on Park Street. Discarded shoes of late 18th and 19th century date were found in 19th century fill material on Edgbaston Street.

Brewing appears to have been undertaken at Edgbaston Street and Park Street but judging from the numerous references to brewhouses in the Rate Books and the abundance of public houses, inns and beer retailers, there were clearly many areas where brewing was practised. At Park Street (Rátkai 2008) a later 19th century brick structure, to the rear of the Phoenix Tavern, could be positively identified as a brewhouse.

This period witnessed the increasing build up of courts, containing, houses, workshops, stabling and sheds at the rear of what had been burgage plots. The establishment of courts and similar developments to the rear of existing houses began in the previous period (McKenna 2005) and a general perception that courts were a 19th century occurrence has often led to a less than detailed record of these structural remains when they have been encountered. It has therefore been rather difficult to put various walls and brick paving into any context. In effect there is evidence for the erection of, often very flimsy, buildings in this period but the precise date of their construction and their function is largely unknown. The one exception to this is the button-makers workshop in Deritend (see above).

Clay pipe making: archaeological and documentary evidence

The review of pipemaking between 1600 and 1750 showed that no documentary evidence survived but that there was plenty of archaeological evidence for the production and consumption of pipes during this period. After 1750 the situation is reversed with increasing quantities documentary evidence but comparatively little artefactual evidence. This section starts with a review of the documentary evidence relating to tobacco pipe making in Birmingham before moving on to consider the artefactual evidence itself.

The most recent published list of Birmingham pipemakers contains some 227 named individuals or companies, with dates ranging from 1762-1936 (Gault 1979). There are six late-eighteenth century pipemakers recorded between 1762 and 1793, showing that the trade was already well established in the town by this date. The majority of the recorded pipemakers, however, date from the nineteenth century and these include both masters and employees, since some of the Census information from the returns of 1841, 1851, 1861 and 1871 has clearly been included in Gault's list. In extracting this census information, however, some of the pipemakers must have been missed, since the national statistics listing census occupations for Birmingham suggest that the total should have been even higher. The numbers of pipemakers recorded in the Birmingham census returns, followed by the percentage that this represents of all English pipemakers, are as follows (Gault 1985, Cessford 2004); 1831, 22 makers (2.46%); 1841 60 makers (2.11%); 1851 158 makers (3.63%). Later census figures for pipemakers have not been collated from the published tables but the trend is clear, with growing numbers of pipemakers being recorded during the course of the century. A large part of this increase is probably due to more detailed data collection in the later census returns, although the percentages of all English pipemakers recorded shows that the Birmingham industry was growing in real terms as well.

In national terms, Birmingham had become a very significant pipe production centre by the middle of the nineteenth century, with the third largest number of pipemakers of any town in England after London and Bristol, and fourth only in the United Kingdom as a whole if Glasgow is included. The later census returns have not been studied in detail but, from the number of firms listed in the directories, it seems likely that the industry started to contract from the 1870s with only a small number of firms operating from the 1890s onwards. This contraction of the industry seems to have occurred a little earlier at Birmingham than in some other centres, although the speed of this contraction may have been distorted as a result of larger factory workshops emerging, which mask the total numbers of workers actually employed. For example, in the 1881 census returns, Thomas Reynolds is recorded as a master pipe maker employing 6 men and 6 women. As a result only one name appears in the trade directories whereas some 13 people were actually employed in his business. Further analysis of the later census figures is needed to explore the actual scale of the industry more fully.

The final Birmingham clay pipe manufacturer may well have been E. A. Wood, last listed in a directory of 1914. Messrs E. A. Wood presented various pipemaking tools and 14 moulds to

Birmingham Museum in 1938 and so it is possible that the firm continued pipemaking longer than the directory references would indicate. Other manufacturers are listed until at least 1936, but these were probably producing briar pipes. The other notable and unusual type of pipe production that was carried out in Birmingham was that of asbestos smoking pipes, which were produced by the Jackson Asbestos Manufacturing Co. from at least 1896-1914.

Despite the national significance of the nineteenth century Birmingham pipemaking industry, very little work appears to have been done on the actual location or form of the workshops themselves. The only site that has been studied in detail is in Lancaster street, where the general location of the workshops as well as the possible position of the kiln itself were identified (Melton 1991a). Unfortunately this site now lies under Lancaster Circus (Melton 1991a, Fig 8) and it is unlikely that any remains will survive. The lack of similar information on any of the other pipemaking sites is a serious constraint to understanding and interpreting the industry while the failure to identify workshop locations means that they cannot be monitored or investigated as part of the planning process. There is not even a basic address list of where the known pipemakers operated. In order to try and remedy this situation, a sample of 26 Birmingham trade directories dating from between 1828 and 1914 has been examined and the full details of all the pipemakers extracted (Appendix 4 – a few of the later directories examined did not list any pipemakers). From this information, it has been possible to collate a list of addresses where the pipemakers worked (Appendix 5).

Not all of the directories give a property number and, even when they do, this was prone to being changed at intervals during the course of the century, as streets were re-numbered. This makes the identification of exact workshop locations problematic, but at least this table flags up the areas in which the workshops were located. Other sources of information, for example, leases in the Birmingham City Archives, may well help pinpoint the exact locations of workshops and reveal further information about them. A lease by James Mackay of property in Coventry Street dated 1815 survives (Birmingham City Archives, MS 3449/150), as does another with a plan dated 1841 for property in Sherlock Street leased by William Ashall (MS 3449/300a). Both of these leases are for building land, showing that, in these particular instances, new pipe workshops were being established, which in turn provides a *terminus post quem* for pipemaking activity on these sites. In the case of the Sherlock Street property a plan shows that it had a frontage of 8 yards and a depth of 40 yards, so that it occupied no more than the area of a medium size house plot.

From an examination of the data that has been collated, it is clear that a range of different workshop types is represented. In some instances an address only appears briefly, for example 64 Woodcock Street, which is only listed on two consecutive years (1875-76) in the occupation of Joseph Greatorix. Greatorix was clearly a well-established local manufacturer, being listed overall from 1848-1881 (Melton, Appendix 6), and so this site offers the potential to examine the production of a single prominent manufacturer during a closely dated period of his production. In contrast, some other addresses appear over a long period of time and were clearly passed from one manufacturer to another. The best example is probably 10 Severn Street, where what is presumed to have been a single production site was in use from at least 1828-1880, being passed between a minimum of seven different manufacturers during this period; Mary Lyon 1828-1830, Jonathan Lyon 1835-1839, William Hewitt 1847-1855, Christopher Diffley 1861-1862, Jane Rooney 1867, J. Crowther 1875-1876 and Mary Ann Cleaver 1880. A site like this clearly offers the potential to examine the products of a number of different manufacturers over a period of time. In other areas, more than one kiln appears to have been operating as manufacturers worked in close proximity with one another, for example, at Old Meeting House Yard, Deritend. At this site four different manufacturers are listed between 1828 and 1867, but with overlapping date ranges, which suggests that there are two different workshops represented.

As well as examining the physical remains and layout of the workshops, there is also scope to examine the social history of the industry from documentary sources. One of the striking aspects of the directory entries is the number of women who clearly ran their own pipemaking workshops from the eighteenth century onwards, for example Mary Brittain (1770-80), Ann Chamberlain (1815-35) or Ann Dale (1849-61). In some instances these may well have been the widows of pipemakers who were carrying of the family business, and this is something that could be explored

through analysis of the census returns. In one instance there even appears to have been a woman, Mary Carless, who not only ran a pipemaking business (1828-47) but who also opened a shop as a tobacconist and snuff dealer (1835). Within family units it was common practice for wives and children to help as trimmers and packers but there has not been any real study of how these family units interacted with apprentices and journeymen, or how the living and workshop areas were arranged. Similarly, with the emergence of large factory type production units there must have been changes in the structure and organisation of the workforce, which are at present poorly understood.

The final point of note with regard to the documentary material is in relation to the production of the pipe moulds themselves, an area about which very little is known nationally. The moulds were made of cast iron and the range and quality of pipe designs that could be produced was dependent on the availability and skill of the mould makers. Birmingham was famous for its metalworking trades and so it is interesting to note that S. Hill was listed as a pipe mould maker at 22 New Thomas Street in 1849 (White 1849, 363). Hill is one of only a handful of pipe mould manufacturers who are known nationally. Further evidence for pipe mould making in Birmingham comes from the fact that an elaborate mould for a 'rifleman' design is known to have been made for Edwin Southorn, a prominent Broseley pipemaker, by E. Cotteril of King Street, Birmingham, in 1860 (Higgins 1987, 82). Cotteril is also known to have been a patent lock manufacturer, which shows that he would have had the precision metalworking skills necessary to make a pipe mould. These two references demonstrate that not only did a significant pipemaking industry establish itself in Birmingham during the nineteenth century but that there were also the metalworking skills available to supply it with the specialist tools and equipment that it needed.

Turning to the pipes themselves, there is a relative paucity of information for this period and the collection of more material is clearly a priority. Decorated stems continued to be produced during the second half of the eighteenth century and the scant remains recovered so far hint at the emergence of distinctive and interesting local styles in this genre. Some of the examples recovered so far are just marked with elaborate stem stamps, for example, one with a spread eagle in a shield (Figure 5.9, 20) and another with an elaborately shaped outline and a crown above the first part of the maker's name, which starts RICHARD …. (Figure 5.9, 21). This maker has not been identified, although Oswald (1975, 197) lists a Richard Coope as working in Birmingham *c*1800. This is the only known maker of the period with the Christian name Richard and so this could be one of his late eighteenth century products.

Other stems are marked with broad roll-stamped borders, sometimes purely decorative (e.g., St Martins, Park St) and sometimes incorporating the maker's name. The most common marks are those of the Briton family (variously spelt) and, in particular, John Briton (Figure 5.9, 22-6). This family probably originated as pipemakers in the Wednesbury area (Higgins 1988; Melton 1991b) but with members of the family working in Digbeth and Deritend during the nineteenth century. Further work is needed to pin down exactly where and when all the members of this family were pipemaking. The use of decorative stem borders died out around 1800 but some Birmingham area manufacturers firms, for example, Henry Lyon, continued to use stamped stem marks in the early nineteenth century (Figure 5.9, 27). Henry Lyon has not yet been traced in documentary sources but examples of his marked stems have been found at the Smithfield Market site and in Wolverhampton.

Henry is likely to have been a member of the Birmingham family of Lyon pipemakers, five of whom are recorded as pipemakers in Birmingham between 1797 and 1839, including two Jonathon's (*sic*), who, between them, worked from at least 1808 until 1839. A long, single line stem stamp reading J Lyon, Birmingham is known, which must have been produced by one of these makers (Figure 5.9, 28). What is interesting about this mark is that this is a distinctive Merseyside style and this is the furthest south-east of Liverpool that this particular style is known to have been used. Furthermore, the Lyon family were a well known pipemaking family in the Liverpool/ Rainford area and so it seems almost certain that the one branch of the family moved from Merseyside to Birmingham, bringing their distinctive style of stem marking with them. In the same way that Shropshire pipemakers probably moved to Birmingham in the seventeenth century,

bringing their own styles of pipe and mark with them, the Lyon's probably brought north west styles with them in the late eighteenth or early nineteenth century. It is the fusion of these external influences with existing production that has forged the local styles that developed in Birmingham itself.

Stamped marks continued to be used in Birmingham during the second half of the nineteenth century by the Reynolds family, both on the stems (Figure 5.9, 29) and bowls (Figure 5.9, 30) of their pipes. Alongside the locally produced marks, there are also a few examples from other areas, showing that the city continued to receive some of its pipes as 'imports' from elsewhere. Broseley area marks continue to form the main source of these from the mid eighteenth century onwards although, during the nineteenth century, they are joined by pipes from other areas. These include a J. Langford stem stamp from Worcester dating from *c* 1840-60 (Figure 5.9, 31) and later nineteenth century pipes from the French firms of Fiolet (Figure 5.10, 32), Gambier and Philos. Pipes found at Solihull include examples from London and Manchester and products from a wide variety of sources are likely to have been available in Birmingham from around 1850 onwards. The introduction of the railways was probably one of the key developments that allowed the fragile pipes to be traded more cheaply and securely over longer distances than had previously been the case.

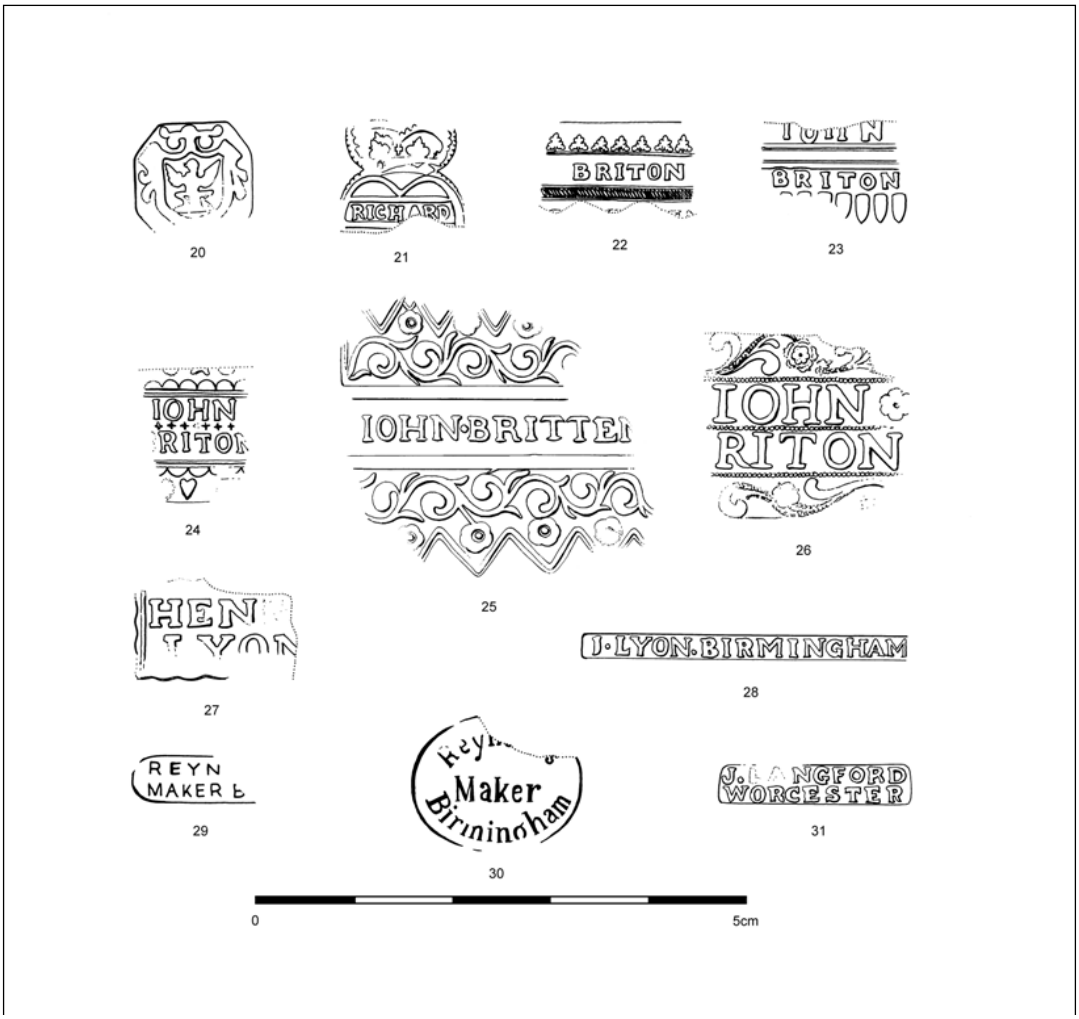

Figure 5.9 Clay pipes 20-31

As noted above, bowl marks came into fashion during the first half of the eighteenth century and these continued in occasional use during the second half of the century, alongside stem marks. Around 1800, however, a new type of mark was introduced that comprised relief moulded initials on the sides of the heel or spur. These had the advantage that they were automatically created

when the pipe was moulded as opposed to having to be manually impressed as another operation afterwards. Normally these initials were arranged parallel with the stem and with the Christian name on the left hand side, as smoked, and the surname on the right. At Birmingham, however, there seems to have been some variation to this convention. There are a number of early nineteenth century examples that have the initials in the normal orientation, but with both initials (IB) on each side of the heel or spur (Figure 5.10, 33-4). These may well have been made by one of the two Joseph Brittain's who worked at Digbeth and Deritend during the first half of the nineteenth century. There is also a pipe from St Martin's with the initials JM moulded individually on the sides of the heel but, in this case, they are upright and not parallel with the stem (Figure 5.10, 35). This piece was almost certainly made by James Mackay (I), who was working in Birmingham from at least 1816-1833. Moulded heel or spur marks were not, however, particularly common at Birmingham and, as noted above, some makers continued to use stamped stem and bowl marks throughout the nineteenth century. There are also some examples of moulded marks on the sides of the stem during the second half of the nineteenth century and later, for example, a Reynolds stem from the Bull Ring site (Figure 5.10, 36). Other maker's who are known to have used moulded stem marks are MacKay (Heaton 1974, fig. 18), H. Cleever (Melton 1991a, figs 3-6) and J. Toole (Melton 1991a, fig. 7).

Perhaps the most interesting change during this period, however, was the widespread adoption of moulded decoration on pipes. This was part of a national trend and it is to be expected that the earliest moulded designs would have appeared at Birmingham towards the end of the eighteenth century. The PPG 16 work, however, has failed to produce any late eighteenth century mould decorated pipes and very few nineteenth century ones. As a result, there is still little indication of what the earliest designs were like (although fluted bowls would be expected) and other collections have had to be used to provide an outline of developments during the early nineteenth century. One of the principal innovations that seems likely to have been peculiar to Birmingham during this period is the production of a series of political union pipes during the 1830s. These were produced in response to the Birmingham Political Union, which was founded in 1830 and lasted until 1839 (Melton 1990, 17-18). One pipe in Birmingham City Museum not only includes the maker's name (J Lucas) but also the date of the formation of the Union (January 1830), a banner proclaiming 'Unity, Liberty and Prosperity' and their slogans 'Union' and 'Reform' (Melton 1990, fig. 1). Similar pipes were made by Ann Chambers and an as yet unidentified maker, most of whose name has been work from the top of the mould ((Figure 5.10, 37-8). Other examples with similar motifs but made from different moulds show that this style of pipe was made by many of the makers locally (Heaton 1974; Hammond 1991).

The political union pipes probably only represent one facet of a lively school of moulded decoration, which included related themes such as 'Commerce' and 'Liberty' (Figure 5.10, 39) as well as local symbols, such as the bear and staff (Figure 5.10, 40). These designs must have been commissioned from local mould makers, who developed their own distinctive range of motifs and themes. Later nineteenth century designs are poorly represented from the artefactual record, and it will be interesting to see how these early designs evolved and developed as more evidence becomes available.

Towards the end of the nineteenth century more general national styles of decoration are likely to have been adopted and this is certainly the impression given by the pipes made by Henry Cleever (Melton 1991a, figs 3-5), who was working from at least 1871-95. These include examples decorated with a thistle design and with the buffalo horns and RAOB moulded on the bowl. Marks on the stem are incuse and either impressed along the top or moulded on the sides. A similar impression is given by the fourteen moulds that survive, along with other tools and pipemaking equipment, in the City Museum. This pipemaking equipment came from the firm of Edward Albert Wood, who had taken over the business of Thomas Reynolds & Son in 1894. The moulds include typical late Victorian designs, including the claw, basket, footballers, thorn, acorn, workman and RAOB patterns. Thomas Reynolds had been working since at least 1855 and was one of the most prominent manufacturers in the city. Reynolds is recorded at 31 Lower Windsor Street from 1855-1872, when he moved to 100 Aston Road and pipes marked with both of these addresses are known. When Wood took over, he continued the long-standing tradition of marking his pipes and

examples are known with incuse stamped lettering on the stem comprising his name and address. E. A. Wood was probably the last clay pipe maker in Birmingham and he brought to a close an industry that archaeological evidence has shown was founded there nearly three centuries before.

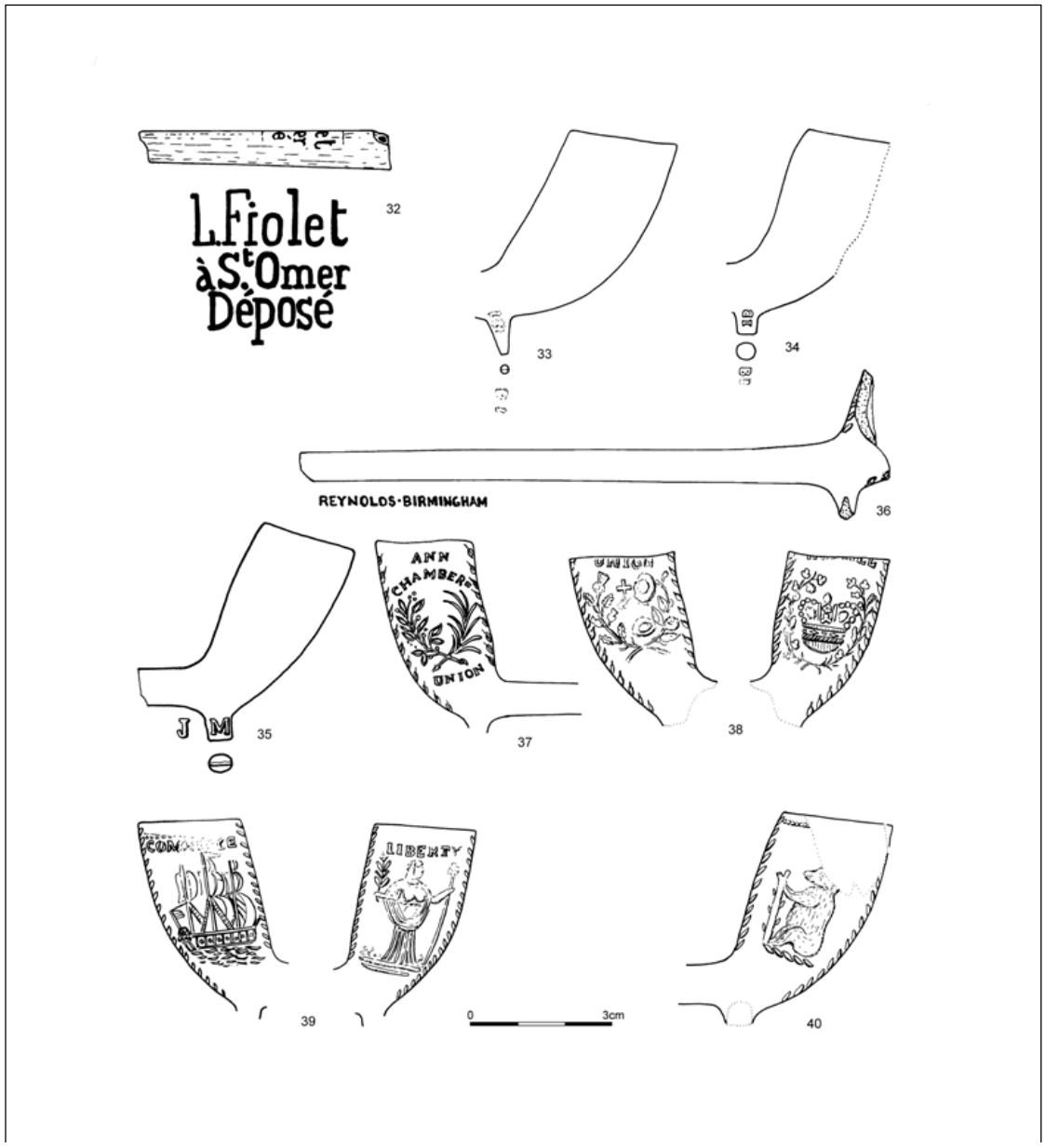

Figure 5.10 Clay pipes 32-40

Catalogue; later eighteenth- and nineteenth century pipes from Birmingham

The following catalogue gives details of each fragment, together with its suggested date. Each entry ends with the reference to the piece illustrated. A die number is given where one has been allocated. This identifies a unique die type and relates to the national catalogue of pipe stamps that is being compiled by the author.

20 Relief stem stamp dating from *c*1750-90 found at SP 0840 8578 (Krawiec Collection). Die 891.

21 Relief stem stamp dating from *c*1740-80 found at SP 0840 8578 (Krawiec Collection). Die 892.

22 Relief roll-stamp dating from *c*1740-90 found at Camphill Corner, Sandy Lane, Deritend (Krawiec Collection). Another example has been found at 86 The Green, Kings Norton (BA 1701 1007). Die 893.

23 Relief roll-stamp dating from *c*1750-90 found at Camp Hill, Birmingham (Krawiec Collection). Die 894.

24 Relief roll-stamp dating from *c*1750-90 found at Camp Hill, Birmingham (Krawiec Collection). Die 895.

25 Relief roll-stamp dating from *c*1750-90 found at the Smithfield Market site, Birmingham (Krawiec Collection). An identical example has been found at the Old Crown Inn, Deritend (OCD 1998). Die 896.

26 Relief roll-stamp dating from *c*1720-70, several examples of which are known (2 examples from the Hartshorne Inn, Lichfield (LH I 86 excavations), 3 examples form Oakeswell Hall, Wednesbury (OH 83 excavations) and one from Park Street, Birmingham (PSB01 B 1512)). Die 246.

27 Relief stem stamp dating from *c*1780-1840, examples of which have been found at Wolverhampton and at the Smithfield Market site - SP 0753 8639 (both Krawiec Collection). Die 887.

28 Relief stem stamp dating from *c*1770-1830 found at the High Street, Polesworth. Die 1096.

29 Incuse stem stamp dating from between 1855 and 1894. Found at Camp Hill, Birmingham (Krawiec Collection). Die 888.

30 Incuse bowl stamp dating from between 1855 and 1894. Found SP 0708 8937 (Krawiec Collection). Die 883.

31 Relief stem stamp dating from *c*1840-60, an example of found has been found at at the Smithfield Market site - SP 0753 8639 (Krawiec Collection). Die 1100.

32 Incuse stem stamp dating from c1850-1920, several examples of which have been found at sites in Birmingham. This example comes from the Bull Ring (BRB97 Trans A 5107). Die 2013.

33-4 Two bowls of *c*1800-1840 with the relief moulded initials IB on each side of their heel or spur from the Smithfield Market site. Probably made by one of the two Joseph Brittain's who worked at Digbeth and Deritend during the first half of the nineteenth century (Krawiec Collection).

35 Bowl of *c*1820-1840 with the initials JM moulded upright in relief on the sides of the heel. Almost certainly made by James Mackay (I), who was working in Birmingham from at least 1816-1833. From St Martin's, Bull Ring (SMB01 F127 1070).

36 Stem with an incuse moulded mark on one side of the stem only and traces of leaf decorated seams on the bowl. From a deposit of *c*1850-70 at the Bull Ring (BRB97 Trans A 5107). Three members of the Reynolds family were pipemaking in Birmingham at this period but Thomas Reynolds of Lower Windsor Street was the principal amongst them and likely to have made this pipe.

37 Bowl with a foliage design on the left hand side with the lettering 'ANN / CHAMBERN' above and 'UNION' below. On the right hand side is a crown surrounded by a wreath of roses and thistles with the lettering 'REFORM' above and 'WMIV' below. The maker is Ann Chamberlain, who is known to have been working in Birmingham from at least 1815-35, and 'WMIV' is for King William IV (1830-37). The other slogans relate

to the Birmingham Political Union of 1830-39 (Melton 1990). Unprovenanced (Oswald collection).

38 Decorated bowl of *c*1830-40 with what appears to be a rose and thistle motif on the left hand side with 'UNION' above and, on the right hand side, a crown motif with illegible lettering above, which would probably have been the maker's name. The top of the bowl is very uneven and the truncated lettering suggests that the mould was heavily used and had become very worn. Found in the Wolverhampton area (Krawiec Collection).

39 Bowl with elaborated moulded decoration depicting a ship on the left hand side with 'COMMERCE' relief moulded above and a standing figure with 'LIBERTY' above on the right hand side. This bowl dates from *c*1830-50 and was found at the Smithfield Market site (SP 0753 8639; Krawiec Collection).

40 Bowl of *c*1820-40 with an unclear motif on the left hand side, flanked with ears of barley, and a bear and ragged staff (the symbols of both Walsall and Warwickshire) on the right hand side. There is a very similar example from excavations in Stafford with (NI)CHOLLS / WA(LSALL) moulded above the decoration (Higgins 1987, fig 94.12). Nicholls is recorded working from 1818-1822/23. The Birmingham example was found at SP 0749 8636 (Krawiec Collection).

Transport and Communications: Standing structures *by Shane Kelleher*

The influence of the canals

It was the development of the transport infrastructure which proved to be one of the major catalysts for the boom in industrial and commercial expansion in Birmingham from the late 18th-century, which saw Birmingham labelled the 'Workshop of the World'. The construction of the canal system brought access to new markets and raw materials, and encouraged industrial development outwards from the centre. The canal became the most important factor in the dynamics of industrial location in the city. This is reflected in the location and types of industries that developed from the early 19th-century particularly gasworks and glassworks. The lack of previous development on what were effectively green-field sites on the banks of the canal network allowed these industries to be ambitious in the design of their purpose built manufactories. In addition to these industrial buildings other buildings and engineering features came to be associated with the canal, these included wharfs, basins, and pumping stations. The recent trend in developing Birmingham's canal side areas has seen the identification and recording of some very significant vestiges of these types of development.

Figure 5.11. Recent regeneration works along the canal near the Mailbox.

Adjacent to the Worcester canal two separate programmes of historic building recording were carried out at Birmingham's first gasworks at Gas Street (**4**, **5**, and **8**). The works were established in 1818 with a retort house constructed in 1822, and designed by engineer Alexander Smith (Foster 2005, 156). The surviving structures form "an important relic of Birmingham's industrial history" (**4**, 2). The earliest surviving structure is the retort house. This grade II* listed building was in an excellent state of completion considering that it had been utilised for many different purposes throughout its existence, and "is unique in the architectural record" (**4**, 2). The earliest phase of this consisted of a reversed 'L'-shaped building with no internal walls. Its roof structure, which is thought to have been manufactured by the Phoenix Foundry, Snow Hill, was formed of cast iron trusses with a complex of iron struts reinforcing and tying together the trusses. This roof was originally further supported by a run of cast iron pillars in the south wall. The walls were constructed in plain brickwork and were much patched with modern repair. Three further structures were recorded on site; these include a building abutting the retort house to the west which was constructed in 1828. This was constructed in red brick laid in English garden wall bond, and is almost square shaped in plan. It had a similar roof structure to that of the retort house and had been much altered throughout the course of its life. The third structure occupied the space between the retort house and the building above etc. the fourth building was constructed in 1857 when the site converted for use as a metalworking manufactory.

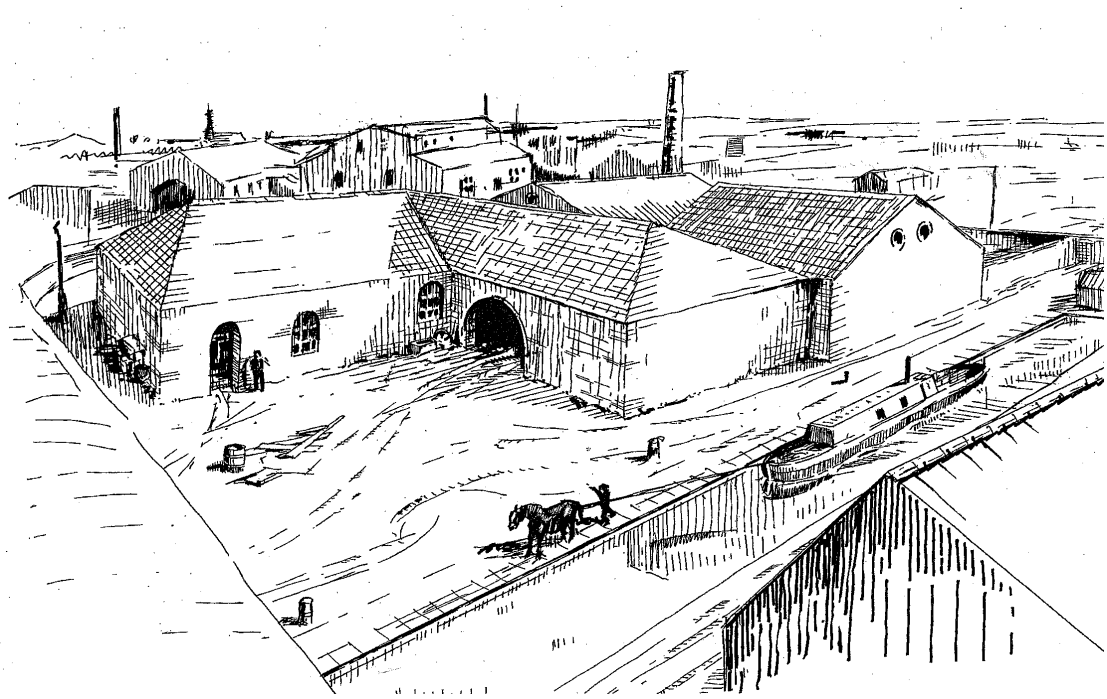

Figure 5.12. Artists reconstruction of Gas Street Gasworks (Source; N Dodds).

In the Warwick and Birmingham branch of the canal network the regeneration of the Warwick Bar area under the Warwick Bar Townscape Heritage Initiative saw a number of historic building recording projects which helped to illuminate the important history of this canal side area. The aim of this initiative was to improve the area's heritage with landscaping, improved towpaths and footpaths and the restoration of its historic buildings in such a way as to ensure that they were not adversely affected. The earliest surviving standing remains recorded in this area were recorded at Ashted on the site of the former Belmont Glass Works. The Belmont Glassworks was set up in *c.*1804 by a Thomas Harris, this was still in operation in 1896 (**62**, 3) however by the time of the 3rd edition Ordnance Survey map of 1918 the factory was demolished and the site vacant. The only surviving above ground vestige of this glassworks is the southern boundary to the site, which remained to a height of c.1m, the oldest parts of this wall, identified by the poor quality of bricks are likely to be contemporary with the early phase of glassworks buildings. Trial pits carried out as part of the same programme of works uncovered foundations and massive brickwork masonry indicating that there is a high potential of survival of the glassworks buildings underground.

The success of the canal saw a number of associated ancillary structures being built; one of the best examples of this type of building was the Ashted Pumping Station (**62**). Once the Warwick and Birmingham Canal was open the increased use of the locks at Farmer's Bridge made additional demands upon the water supply and suggestions were made to pump water from Ashted locks to the Hospital Pond at their top. This course was adopted and the Ashted engine began pumping in 1812. The Ashted Pumping Station Engine represented an important development by James Watt. It had "Watt's well-known straight-line linkage for the piston rod and it was a double acting machine: steam being admitted to both ends of the cylinder alternately" (**62**, 6), providing a very effective method for pumping water onto the canal. The 1st edition Ordnance Survey map 1889 portrays the pumping station as a small rectangular building with a chimney near the middle of its northeast side. The only part of this pumping station to have survived above ground is part of the north-east wall of the corridor which probably provided access to the canal towpath. The pumping station was demolished in 1930 and the beam engine was bought by the Henry Ford Museum, Detroit, USA.

Another important building recorded in this area was the Fazeley Street Gasworks (**85**). This was constructed in 1842 by the Birmingham Gas Light and Coke Company and comprised

three gasometers and an 'L' shaped building adjacent to the canal. The works provided gas for gas street lighting for parts of the city. Attached to a wing of the works building was a smithy. Historic building recording revealed that only partial above-ground remains survived. This took the form of parts of two of the elevations both were constructed in red brick laid in English Garden Wall bond. Archaeological analysis demonstrated that the smithy was constructed prior to the adjacent retort house.

Further work under the Townscape Heritage Initiative identified and recorded structures in the Warwick Bar area. These included the canal side wall of Scammel's Engineering works, of which the earliest phase dated to c. mid 1840s (**59**). The Warwick Bar Stoplock and Dock (**60**), the above-ground remains of which comprised the lock chamber, the dock, which appears complete and a blue brick-built warehouse with a wooden dockside platform and over-dock awning also dates from the mid-19th century. Whilst recording work at the site of the former Warwick Wharf (**61**) revealed the former warehouse of Fellows Morton and Clayton which was built in 1935, and sections of walling relating to earlier structures in the vicinity.

A further programme of recording was carried out on a number of sites in the Warwick Bar Conservation Area (**16**), these include a tunnel portal facing north towards Curzon Street, built in the Classical style, of brick with rusticated ashlar stonework, and consisting of five separate phases of construction dating between the late 1830s and late 19th-century. Adjacent to the tunnel were early 19th-century lock and interchange basin of red brick laid in English Bond, and a late 19th-century pumping station of classical proportion built in red brick laid in English bond with blue brick bands. Also recorded in this work was the Gun Barrel Proof house canal wall, which is a brick built multiphase brick wall. The Corporation Wharf was also partially recorded during this scheme of works, including a curving wall present on the 1889 OS map, and late 19th-century brick bridge abutments.

The coming of the railways

If the construction of the canals encouraged industrial development on the outskirts of the city, the cutting of the railways brought new infrastructure and industry into the heart of the city. Nowhere in Birmingham was the optimism, grandeur, and sheer confidence of the early railways expressed more architecturally than in the 'heroic classicism' of Curzon Street Station which was built as the Birmingham terminus for the first main line in Britain.

Ongoing redevelopment at the Millennium Point or Eastside area of the city has necessitated a number of programmes of historic building recording at the Curzon Street Station site (**84**). The first major structural development in this area took place when Curzon Street Station was opened in 1838. The significance of this Grade I listed building lies in "its status as an important milestone in the treatment of station architecture" (**84**, 3). It was constructed as part of a pair of termini designed by Philip Hardwick for the London and Birmingham Railway. The result was a pair of monumental entrance fronts of considerable architectural merit, the destruction of the Euston (London) entrance has made the preservation of the Curzon Street building all the more important. In addition to this it is "one of the most important historic and iconic buildings in Birmingham" (**84**, 3). It was this significance which prompted the implementation of a Conservation Management Plan when the issue of the future use of the building was mooted. This included an in-depth recording of the building and its subsidiary structures. The station building is executed in ashlar with banded rustication at ground level, and faces west fronting New Canal Street. The basis of the design is a three storey, three bay on basement, with a giant ionic portico, tetrastyle prostyle, dominating the western front. The listed buildings description describes it as "austerely cubic". The columns stand on a stone stylobate broken to accommodate the central doorway, above which is a semi-circular overlight with a web of radiating and concentric glazing bars. The cornice is dentilled to a plain coped parapet. Hardwick's original concept was for the existing building to be flanked to the north and south by a pair of entrances. A northern arch was constructed, but was demolished to make way for an extension to the station hotel in 1839. The rear elevation has a giant Ionic order of engaged three-quarter columns and pilasters on a stylobate broken by three openings at ground level,

whilst the south elevation has three bays. Scarring and blocked windows on the north wall signify where the former station hotel extension once stood.

Figure 5.13. Curzon Street Station with Millennium Point in the background, 2007.

Figure 5.14. Historic photograph of former hotel building at Curzon Street Station.

Internally the main western entrance leads to a large entrance lobby which forms an atrium rising to the full height of the interior and containing the main staircase. This hall "forms the architectural focus of the interior and the lynchpin of its circulatory system. The roof has been subject to a large amount of change throughout its lifetime. At the time of the conservation plan planning permission had already been granted for its removal. The pace of change in this era was excellently exhibited when Curzon Street was superseded by the construction of New Street Station in 1852 and became a goods station.

Previous programmes of archaeological work have also been carried out at the Curzon Street Station site prior to construction of the Millennium Point complex (**57**). This mainly involved archaeological evaluation and building recording on the former goods yard. Two former stable blocks dating from the 1880s and 1897 respectively were recorded, as well as a two-storey

structure built in 1845 and identified as an accommodation office for Gloucester Goods Warehouse, though later used as a stable. This 1840s structure forms an 'L' shape with its frontal façade facing southwards, and was in a bad state of preservation due to fire. The principal elevation is of red brick laid in Flemish bond, with the remainder in English bond. The 1880s building was also 'L' shaped in plan and was the largest remaining building in the goods yard and is likely to have been purpose built as a stables or horse sanatorium. It was constructed in red brick laid in English bond and had been much altered by time of the recording work. Internally the only original features remaining were the ornate iron pillars which formed a central aisle along the spine of the building, an intricate drainage system, and a stairwell. The 1897 building is another stable block, and was constructed by Pickfords. Three evaluation trenches were excavated, two of which confirmed the respective positions of two demolished 19th-century buildings. A subsequent watching brief (**56**) uncovered the evidence of pre-railway activity on the goods yard site and found the remains of two railway turntables dating from the 19th century.

Curzon Street Station: Continuing Significance and Technological Innovation *by Shane Kelleher*

When Curzon Street Station opened in 1837 it was the Birmingham terminus of the first long-distance railway out of Birmingham. This was a very exciting time of industrial and transportation innovation and optimism. It was also a time when railway architecture was used to its fullest extent as an outward expression of this new found optimism, wealth, and status. The directors of the London and Birmingham Railway were "proud of building the first main line out of London and were not afraid to show it" (Biddle 1973, 21). Like the Euston Arch, which stood at the London terminus of the line, Curzon Street Station should be seen as a monument, commemorating railways at their inception. It was perhaps a monument to the dynamic expanding midlands or to a new age of mechanical high-speed transport, "a combination of usefulness and outward showiness perhaps befitting Birmingham" (Lloyd and Insall 1978, 4). Money was no object, and architectural display was the objective. Since the onset of PPG16 in 1990 new vehicles and implements for the understanding, realising, and managing the significance of such important buildings have been enshrined in legislation. In addition, new cutting edge techniques for the accurate recording of such historic buildings have also been developed. The accurate recording of such buildings helps in our acquiring an understanding of the significance and historic development of historic structures and greatly aids in protecting and sympathetically managing their significance. Curzon Street Station has benefited from such developments in that it was subject to a Conservation Management Plan, and that it was archaeologically recorded using 3D laser scanners.

Understanding and Managing Significance

Being a Grade I listed building the significance of Curzon Street Station is without question. It is one of the most important historic and iconic buildings in Birmingham. In addition, the destruction of the Euston Arch in the 1960s has made its preservation all the more important. The continuing redevelopment of this part of Birmingham over the last twenty or so years has completely altered the character of the area. Once the centrepiece of a historic industrial and transportation landscape, Curzon Street Station now stands alone, almost devoid of historic context, an island of railway and industrial history amongst a modern, largely concrete, steel, and glass locale. Therefore it is cogent that the future use, development, alteration, and conservation are appropriately and sympathetically managed with due regard to the significance of and the development pressures on the building and its immediate curtilage and context. The best way to achieve this was to instigate a conservation management plan.

Figure 6.15. Curzon Street Station in its modern setting (2007).

A conservation management plan is a comprehensive document which helps explain the significance of the structure; it delineates how this significance is vulnerable or sensitive to change, and puts forward policies for the retention of this significance. The purpose of such a plan is to prepare and outline management proposals, to assist in planning major repairs, conservation, or new development. It also outlines the future management issues of the structure, such as regular maintenance, public access, the interpretation of the site, and aims to enhance the public appreciation of the site. Conservation management plans are fundamental tool in the management of our heritage where timeframes, costings, and each individual part of the plan are taken into account and usually displayed in the document itself. It is an integrated approach to the conservation and management of a historic building, it is made up of many parts, and can include a number of skilled specialists in its study team headed up by a project manager who co-ordinates works on the structure and ensures that each team member is clear in what their role is. The built heritage of a place is a valuable non-renewable resource which must be sustained for the enjoyment of both present and future generations. A conservation management plan can help focus on these values, spell out how the sympathetic conservation should be implemented, and how this conservation should be managed.

Laser Scanning Historic Buildings

In many ways Curzon Street Station is a monument to and a celebration of technical innovation. It is therefore fitting that one of the new cutting edge techniques employed for recording historic buildings has been employed on the building. As part of realising and understanding the historic development of Curzon Street Station a programme of archaeological recording was carried out. As part of this recording the structure was subject to 3D laser scanning. Laser scanning is a rapidly advancing technology whose applications to cultural heritage and archaeology are continually being developed. Used as part of a 'toolkit' now available to archaeologists and surveyors for recording historic buildings the laser scanner records three-dimensional positions at a predetermined resolution over a chosen area, generating thousands of high-accuracy coordinates. The surface of a scanned area is therefore represented as a 'point cloud' which three-dimensionally represents its form including areas which previously may have been inaccessible with traditional method due to height or Health and Safety restrictions.

Figure 5.16. Laser Scanning Curzon Street Station

There are a number of advantages for adapting this method. It is extremely rapid, thus vastly reducing time on site. It generates huge quantities of data meaning that the archaeologist is not restricted to the skeleton measurements traditionally taken, providing an extremely valuable and highly objective archive and record of the structure for future generations who can access the whole 'virtual structure' whilst also enabling the production of traditional elevation and plan drawings if required. The scanner also records colour through its in-built digital camera, providing a colour-rendered cloud of 3D data. From a conservation point of view the laser scanner provides the facility to record reflectance intensity which is able to highlight differences between different materials such as brick, stone, or mortar, meaning that it is possible to identify different phases of repair. The 3D point cloud also enables the production of highly accurate 3D and virtual reality models of the buildings which can be used as the basis for architectural

design, to explore how new buildings may fit with the current environment. In addition to this the laser scanner also serves to create a highly accurate point-in-time record of the building enabling the continual monitoring of the building for conservation purposes.

Figure 5.17. 3D model of Curzon Street Station following laser scanning

Industry and Commerce: Standing buildings

Buildings of Industry in 19th-century Birmingham

In the 19th century Birmingham became known as the "city of a thousand trades" not least because of its geographical location close to essential raw materials in Staffordshire, the hard work and industrial ingenuity of its inhabitants, and the extensive and impressive transport infrastructure it developed and possessed from the late 18th-century. These multifarious industries and trades are well represented in the archaeological record and in the historic built environment. In addition to those large-scale industrial buildings which grew up around the transport infrastructure such as the gasworks, glassworks and ancillary buildings mentioned above, Birmingham became characterised by its small-scale industrial communities and buildings. These small-scale industrial works were often part of an accretive development which also included domestic and shopping arrangements particularly in the early to mid-part of the century. What is clear from those industrial buildings recorded under the remit of PPG16 is that there is a distinct division between the development and arrangement of such sites in the early/mid 19th-century and the late 19th-century. Those earlier sites take the form of industrial communities where domestic, commercial, and industrial buildings were combined to form a mixed architectural environment, in which the local populace lived, worked, and sold their wares. These often had domestic or commercial frontages pierced by carriage entrances, leading to rear yards containing industrial premises. In many cases extant domestic residences were purchased and industrial workshops were added to the rear, which was akin to developments in the well preserved industrial enclave of the Jewellery Quarter (Cattell *et al* 2002,

9). The later industrial premises tend to be more purpose built, and retain some commercial role, but are largely devoid of any domestic function. Some fine examples of each type of industrial enterprise have been recorded in Birmingham in recent years.

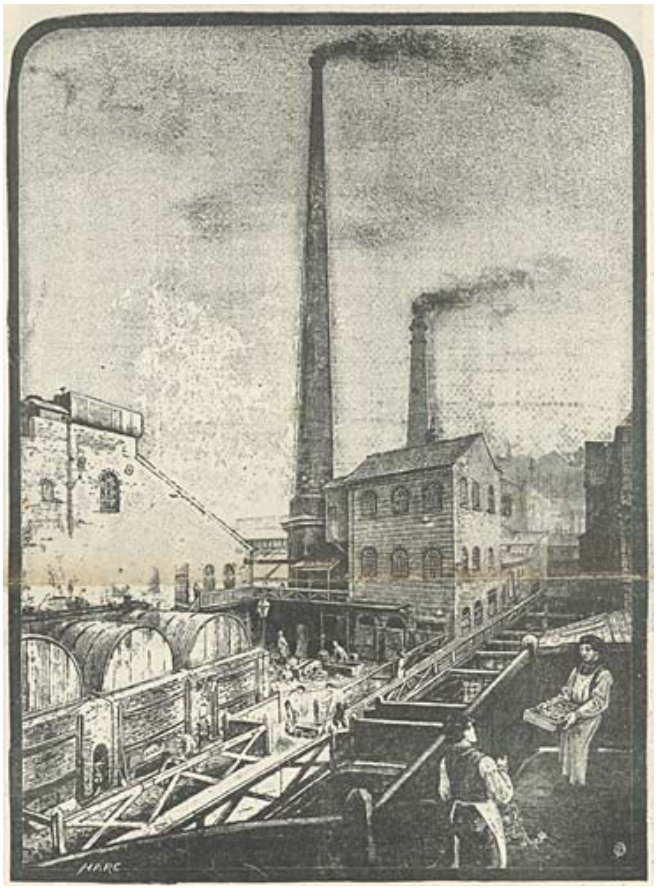

Figure 5.18. Industrial scene from Winfield's Brassworks, Birmingham.

Early 19th-century industrial buildings in Birmingham

Two programmes of archaeological building recording at 7, 8, and 8A Freeman Street (**46** and **47**) revealed a complex of buildings typical of the early type of accretive multi-purpose industrial community. The complex also contains the earliest standing structure recorded in Birmingham under the remit of PPG 16. Freeman St. which lies on the east side of the medieval thoroughfare of Park Street was not laid out until the early 18th-century, and is first seen in Westley's map of 1731. 7 to 8A Freeman Street are first seen in Bradford's map of 1750, and thus must have been constructed in the interim period. Trade directories in the mid to late 18th-century provide an excellent insight into the function of this street at this time. Several tradesmen had premises on this street, including button makers, a jeweller, a brass founder, a plate printer, a snuff maker, a buckle maker, and a toy maker. Major redevelopment in 1865 greatly altered the buildings, and despite preserving the outline of the plots laid out in the 18th century, effectively obscured any early fabric, creating a complex which is typical of a "19th century industrial community where domestic and industrial buildings were intermingled to form a mixed architectural environment, in which the local populace both lived and worked" (**46**a, 13). Trades known to have occupied these buildings included leatherworks, a builder, and a bookbinder. This mid 19th-century phase of building was further altered and partially clad over in the 20th century and was generally of three storeys, and was constructed in red brick laid in Flemish stretcher bond with blue brick dressings. Targeted stripping of this and later phases of construction led to a further programme of historic building recording (**47**). This revealed sections of the 18th century boundary wall, and 19th century vaulted brick cellars which may have contained some 18th century fabric. The 18th-century boundary wall rose to a single storey in height and was

constructed in red brick laid in stretcher bond with occasional rows of headers. The uppermost section of this wall was delineated by a row of oversail brick in the interior. Nos 7-8A Freeman Street forms a rare survival characteristic of the locality (Figure 5.19). Despite the existing buildings having minimal architectural interest, being comparatively late in date, and having undergone substantial alterations that have seriously compromised any architectural significance they might have had originally, the group is still of considerable significance in a local context. Its principal interest, perhaps, lies in the contribution it makes to the historic streetscape. In addition to preserving the 18th-century property boundaries, it retains, in its proportions, and its combination of structures, the essence of the 19th-century thoroughfare. However, "the removal of much of its context, through demolition of the surrounding buildings, has diminished this significance, and left it a rather isolated shadow of a previous age. It is notable that Nos 7-8a Freeman Street are not statutorily listed, nor locally listed, nor within a conservation area" (**46**, 14).

Figure 5.19. Nos 7-8 Freeman Street following targeted stripping under archaeological supervision.

This accretive pattern was also seen at 42-46 Upper Dean Street, Deritend (**51**). This was recorded as part of a wider desk-based assessment of the area. In this case, it appears that the primary phase had a commercial function with rear shopping/industrial wings being added at a later date. These two sets of buildings, one of which is a Grade II listed building, represented the original phase of development on their plots towards the middle of the 19th-century. The street frontage elevations consisted of a series of three-storied facades, each of different character, but nonetheless retaining "a stylistic unity based on classically-inspired detailing" (**51**, 9). This stylistic scheme was probably part of the provisions laid down by the Gooch Estate regarding development on their land. The frontage building of nos. 42-45 Upper Dean Street is the Grade II listed building. This was constructed in the early to mid 19th-century and was of painted clamped red brickwork laid in Flemish bond with stucco dressings and a slate roof. It was of three storeys with eight bays, the third of which containing a cart entrance. Above the cart entrance is a first floor segmental arch headed casement window flanked by pilasters. The remainder of the windows were mostly blocked, but were probably former sashes. The ground floor had been heavily altered by the insertion of various shop fronts. Internally the building was shallow, being only one room deep. Although altered the interior retained original features such staircases and fireplaces. It is likely that a corridor once ran the entire length of the

building. It is argued that the existence of this corridor, the shallow depth of the building, and the high proportion of window-glass to walling within the façade signify a commercial rather domestic function. Two shopping or industrial wings were constructed to the rear, both of which were much truncated in length by the 1970s. Both of these were probably later additions to the rear of the block. The easternmost of the pair was constructed in red brick with the features picked out in Staffordshire Blue engineering brick, and lit by rows of balanced sash windows. The other wing was "unusual" (**51**, 11) in that it was based around a prominent timber frame with red brick infill with blue brick detailing. The building was lit by rows of twelve pane sash windows. Both appear on the Piggot Smith map of 1850 and were thus built soon after the initial phase of construction, and may have been housed a leatherworks. This pattern of constructing such workshops or what was to become known as shopping to the rear of domestic premises was not uncommon in Birmingham with numerous examples seen in the Jewellery Quarter (Cattell *et al* 2002, 4).

No. 46 Upper Dean Street was similar in style and decoration, it too was classically inspired, and it was a painted, stucco-finished, brick built three storey structure of three bays and was typical of many later Regency period buildings in Birmingham. Many of the architectural features were of carved limestone, whilst the ground storey elevation was also much altered to accommodate shop fronts. The original doorway did survive, this was flanked by a pair of Doric columns supporting a rectangular pediment with a plain architrave, a Tudor Rose decorated frieze, and moulded cornice. Internally the structure had been converted into office space, which had destroyed much of the original features and subdivision of space. Two warehouses to the rear were not recorded in detail due to health and safety issues. The structures were deemed significant for a number of reasons; they were either listed or in the curtilage of a listed building, and they were industrially important as a group (**51**, 22).

Late 19th-century industrial buildings in Birmingham

Clearance and demolition prior to the construction of The Cube near the Mailbox led to the recording of a number of interesting industrial and commercial buildings. 37-45 Commercial Street (**48**, Figure 5.20 and 5.21) is an excellent example of both the early and late 19th-century industrial site types, and also demonstrates the continued importance of a canalside location. This initially included some domestic units which were later replaced with a commercial/industrial function. The recording work revealed a site first developed in the 1850s as a foundry. It continued to exercise this function down to the late 1880s when it became the premises of the Adamant Company lime cement manufacturers. In 1895 the Birmingham architects Bateman and Bateman undertook to erect shopping at the site and in 1897 the architect William Henman, also of Birmingham was engaged to make alterations, which included the remodelling of the Commercial Street range. These changes in function and of fabric culminated in a site with a complex building history. The earliest buildings were arranged around a courtyard at the eastern end of the site, and probably incorporated dwellings along the street frontage. In the 1860s or 1870s the earliest of the buildings to have survived was erected to the west of the 1850s structures. This was a three storey building with open arcade and brick vaulting at ground level, and it seems to have been intended as a free standing structure. The function of this building is unknown however the presence of brick vaulting implies that it was designed to carry a heavy weight or to provide fire proofing (**48**, 13).

Figure 5.20. Archaeological recording 37-45 Commercial Street.

Figure 5.21. Principal elevation of 37-45 Commercial Street.

The cartographic evidence suggests that this was part of a wider redevelopment which involved the replacement of the first buildings. By 1888 several more of the extant structures were probably already in existence. The most significant and principal interest of the building complex is in the early use of concrete technology, the bulk of which probably dates from the 1890s. The main entrance block which seems to have been remodelled by William Henman, is the principal elevation, it is of red brick and has two storeys, with blue brick-coped plinth, wide mid-height fascias defined by brick dentils and cyma-recta moulded strings, brick dentilled and moulded terracotta cornice, and stone openwork parapet. The front is articulated vertically by pedimented pilaster buttresses into ten bays containing semi-circular-arched windows. Structurally this block incorporates pre-cast concrete panels used in conjunction with steel joists and a flat concrete roof with asphalt covering. The use of concrete at such an early date "endows the Adamant Co. works with a special significance as one of the key structures in Birmingham's architectural development" (**48**, 1).

Further historic building recording was required at 25 to 29 Commercial Street (**48**b) as part of The Cube development. This in addition to the adjacent 31 Commercial Street, which itself was subject to a Desk-based assessment (**23**), appears to have been developed as a saw mill and timber yard c.1862. It continued in this function until 1907 when it became the premises of the Asphalte and Cement Co. asphalt makers, a division of the Adamant Company mentioned above. Three main phases of construction were identified at the site dating from the late 19th to early 20th-centuries. Amongst the principal components of the complex was a late 19th-

century sawmill building. The other main building was the street range of 1899, a mainly three-storey structure of open-plan shopping and first-floor office, designed by the Birmingham architect G.R. Faulkner. A small cellar had an early concrete ceiling reminiscent of those found at the Adamant Works above. Associated industrial structures were found to the rear. The street range is of three storeys and ten bays, is of red brick laid in English bond, the upper storey windows retain their moulded terracotta sill strings and hood moulds, and segmental arches. Much of the earlier building was obscured by the surrounding structures; this was constructed in red brick laid in Flemish stretcher bond. Apart from its significance as a rare survival of a type that was once commonplace, the sawmill is one of the last surviving reminders of the impact of the canal on the development of the area. Visually, the complex has an important role in maintaining the historic context of the area, and, aesthetically, the 1899 building is one of the main assets of the streetscape.

The late 19th-century type industrial complex is well demonstrated by two sites in the Eastside area of the city which were purpose built with a solely industrial function. Nos 15 and 16 Penn Street (Figure 5.22) formed a small industrial complex, latterly a wire works, which had its origins in the 1880s as stabling, warehousing and shopping. This complex was expanded soon afterwards, and was thereafter largely given over to manufacturing, and included the premises of a fireproof safe manufacturer, a cycle and later motor component manufacturer, and a number of metal industry enterprises. The earliest buildings on the site were three separate ranges of stabling and shopping grouped around two yards, the blue brick dressings, segmental arches and small-pane iron-framed windows being typical of many of the workshops and industrial premises being raised in the West Midlands conurbation during the later 19th century. At the time of the recording the exterior of the building had been almost completely obscured by the addition of a thick cement render, which presumably was purported to have been added in the mid-20th century at the time of a window refit. The principal (east facing) elevation consisted of four gable ends of four distinct blocks separated by an external yard between the two most southerly blocks one of which retained its original segmental arch windows. In places plinth level reveals blue engineering brick. Internally it was apparent that the building was constructed during three distinct phases of construction between 1880 and 1950, dividing the interior into four blocks, all but one being two storeys in height. Floor surfaces range from brick paviours, timber planking, and concrete, whilst many of the original walls were exposed to the brickwork. This complex represents a late 19th-century development of a virgin site, and is therefore an interesting survival of the primary expansion of this part of the city.

Figure 5.22. Nos 15 and 16 Penn Street with Millennium Point in the background.

Nos 48-49 Grosvenor Street represent an 1890s redevelopment of a late 18th/early 19th-century area. In common with the Penn Street site, the main elements of the original buildings survive, despite having undergone considerable alteration. In essence, there were three main blocks served by two yards with gateways onto Grosvenor Street. Documentary evidence points to the early structures having contained stabling and possibly warehousing, including the premises of a hide and skin merchant. A later occupier, from 1929, was the Duckham Oil Company, which remained at this address until being taken over by the BP group c. 1970. Few significant architectural details survive. The structure was divided into five distinct blocks which were constructed in two separate phases. Each block is red brick built of varying bond types; the most interesting elevation was the north east elevation which was composed of red brick laid in Flemish bond. This was decorated with courses of dentilated and ovolo-moulded terracotta and had a central oculus mid gable. The earliest buildings on site date from the 1890s, and only the southern range retains any architectural interest, but this is largely limited to the terracotta mouldings. The late date, substantial alterations and lack of surviving detail mean that these buildings are only of local significance, as another piece in the jigsaw of the late 19th-century redevelopment of this part of Birmingham.

The architecture of commerce

Paralleled to the development of this transport and industrial infrastructure was the growth of commerce in Birmingham. Nowhere was this better architecturally expressed in the city than in the banks and offices of the Central Business District. Here it seemed that image was everything, no expense was spared in producing the building which would be the physical manifestation of the image of the company. The best architects, materials, and en vogue styles were employed in an industry where image, style, and substance were entwined. The Central Business District grew up on the lands of the former Inge and Newhall estates to the northwest of the medieval and 17th-century town. The development of these areas was swift and steady from the early to mid 19th-century with the area predominately made up of merchants warehouses, banks, and shops.

The Grade II listed former offices of the Birmingham Banking Company at 26-33 Bennett's Hill (Figure 5.23) excellently exhibit the type of building being constructed here in the 1830s. Recording work was carried out on this in order to assess the archaeological implications of restoration work on the building and its adaptation for reuse (**64**). The bank which was designed by the architectural practice of Thomas Rickman and Henry Hutchinson in a neoclassical style, opened in 1831 as the office of the Birmingham Banking Company. Foster (2005, 127) describes this as the best surviving example of their work in Birmingham, and notes that its isolated formal quality is unusual in a commercial building. The original design is a classical box, five bays by seven articulated by plain pilasters. It is ashlar-built with five bays and an entrance bay on the corner which was inserted by Charles Edge in 1868, who also remodelled the interior at this time. The original porticos were intact; the northwest facing elevation featuring a Corinthian style tetrastyle portico to the entablature and pediment. The inserted corner entrance is flanked by bold Corinthian pilasters with a pedimented doorway with a leaf decorated frieze over the entrance incorporating the letters 'BBC' for the Birmingham Banking Company. A further three storey extension in a heavy French renaissance style was added to the south in the 1880s, probably by the firm Harris and Marten. The site is surrounded by original iron railings.

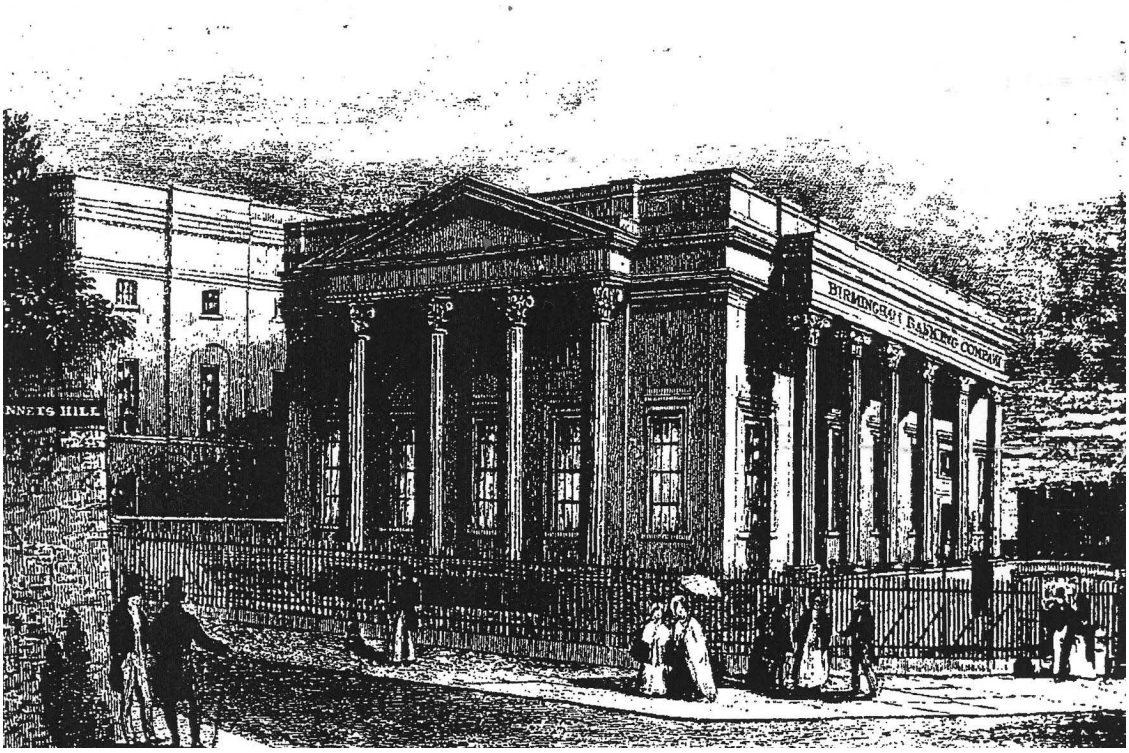

Figure 5.23. 26-33 Bennett's Hill in 1834.

The impressive interior features red brick barrel-vaulted cellars (Figure 5.24), and a ground storey classical interior by Yeoville Thomason who carried out substantial alterations in 1877. This interior includes a north-south colonnade of paired Corinthian columns with gilt capitals, and a decorative plaster ceiling. The walls have a Greek frieze, and the ceiling itself is based on a framework of boxed-in riveted steel I-beams, the sides of which are decorated with rosettes. Between the beams are double coved and coffered ceiling panels with moulded borders including stylized leaf as well as egg and dart. The upper storey was added in the 1930s in an Art Deco style.

Figure 5.24. Interior detailing at 26-33 Bennett's Hill.

The varied and impressive built heritage of the Central Business District was illustrated further in a historic building survey of 134 to 138 Edmund Street (**63**, Figure 5.25). Edmund Street was formally adopted by the council in 1871 following the end of 120 year leases on the Newhall Estate, and the redevelopment of the street was part of a broader attempt to transform late-Victorian Birmingham into a respectable, rational, and gentrified town. Architecture and the buildings constructed here became "an expression of this change with solid Gothic commercial structures existing cheek-by-jowl with terracotta-clad Arts and Crafts chambers or consulting rooms and offices" (**63**, 1). The recording consisted of two distinct Grade II listed buildings lying on the north side of Edmund Street behind Colmore Row. 136/138 was built by Flower and Sons brewers of Stratford-upon-Avon, as a beer distribution centre and offices in 1878. It is of four storeys and was built of pale red bricks laid in English bond, moulded brickwork, and terracotta in a Venetian Gothic style. It exudes mass and robustness "as well as a certain muted grandeur, compared with its younger, more playful, and relatively lightweight neighbour" (**63**, 9). Internally the basements and ground floor levels are supported on cast-iron columns linked with heavily bolted I-sections that in the basements support brick barrel vaulting, and at first floor level support a wooden floor. The rest of the internal structure is comprised of traditional mass brick walling and there is a mixture of king-post and queen post assemblies that incorporate iron fixings and ties. Detailing, such as Maw and Company tiles were used to decorate the long corridor to the Flowers office, and even the scale of the rooms is very much status orientated, and each storey diminishes in size and status as you progress up the building.

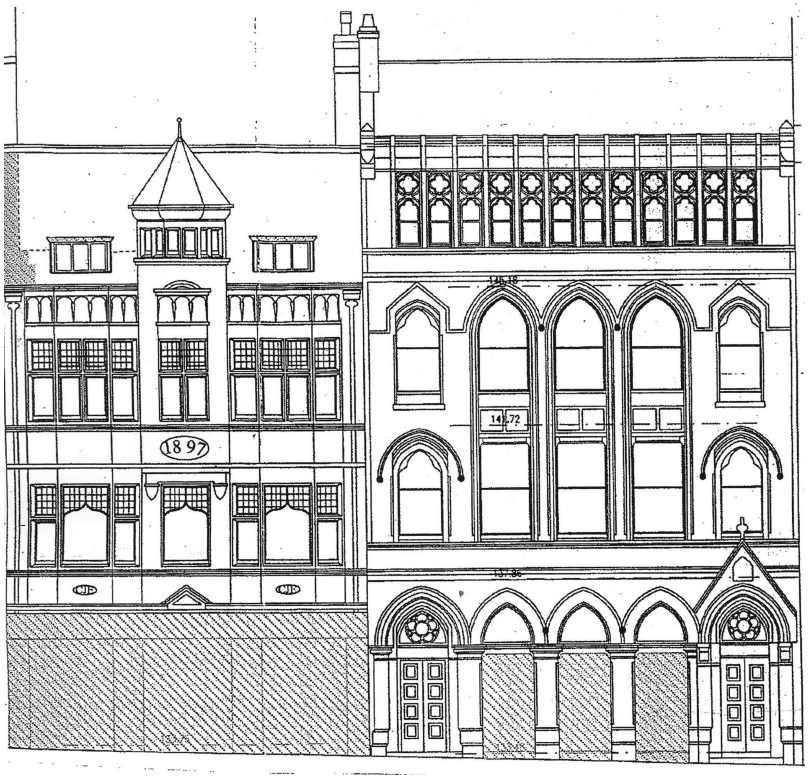

Figure 5.25. Principal elevation of 134-138 Edmund Street.

134/135 was built by George James Eveson head of the Eveson Coal and Coke Company Limited, as a suite of offices in 1897. It is of three storeys with an attic and a basement and was built in an Arts and Crafts Gothic Style. The materials used in the frontage include thin red-facing brick, buff terracotta and distinctive diminishing courses of green-grey slate on the roof, with common brick everywhere else. The building style is traditional but does incorporate more modern elements such as Portland cement mortar, sawn deal timber, and electric rather than gas lighting. The basic plan of the building consists of two sets of rooms arranged front and rear around the central entrance at ground floor and slightly off centred staircase to the floors above. The building is essentially a "straightforward traditional design that incorporates stylistic and constructional detail that we have come to characterise as Edwardian, although the design was made some four years before the end of Victoria's reign. Its also forms an important part of a class of terracotta building in central Birmingham that is representative of a particular school of architecture that was exciting and original in colour and profile and was particularly prevalent between 1880 and 1910" (**63**, 9).

Doing Time in Birmingham *by Shane Kelleher*

The large increase in Birmingham's population in the 18th-century, prompted by the Industrial Revolution, obviously had numerous positive effects on the city. However, it also had a negative pallor. Crime levels inevitably increased; the rise in trade no doubt led to bad debt, and as ever, where there was extreme wealth there was also extreme poverty, destitution, jealousy, and want. The chief implement for dealing with miscreants and thieves was incarceration in gaols which were quite different to the prisons of today.

Gaols have a long history in Birmingham with references to them being made as early as the 13th century (VCH). In 1733 there is a reference to a building near Pinfold Street as Bridewell House, and in that year a new building, described as a 'dungeon' was built on or near that site. This is presumably the prison described by Hutton (1783), who was far from impressed and wrote 'the town of all bad places chose the worst, the bottom of Peck-lane; dark, narrow, and unwholesome within; crowded with dwellings, filth and distress without, the circulation of air … prevented.' Hutton ended with '… our prison is wretched, and we want a better.' In the 1770s it housed "both felons and debtors and comprised two cells below ground, two night rooms for women, a day room, a free ward for debtors, a tiny yard, and a keeper's house" (VCH). Prison reformer John Howard found it 'very offensive' and remarked that it was sometimes greatly overcrowded. It is thought that this was replaced by a new gaol in Moor St in 1807, which itself was deemed inadequate in the late 1830s and closed in 1849. In addition, there was a prison for Debtors at High Street until the late 1840s.

Figure 6.26. Historic Photograph of H.M. Prison Birmingham (Winson Green)

Excavations at 131 to 148 High Street, Bordesley (**39** and **40**) provided an interesting insight into this less salubrious side of Birmingham society in the late 18th-century. Between the late 18th and early 19th-century part of this site was occupied by Aston Gaol and the Lamp Tavern. There is no known date for the founding of the gaol but it is known to have been in existence from at least 1787. The excavations uncovered the remains of two small cubicles thought to have been the subterranean cells of the gaol. These cells, which measured approximately 3.40m by 2.75m, were originally thought by the excavators to be cellarage associated with the nearby Lamp Tavern. However the size and repetitive form of the individual rooms combined with sockets in the wall, presumably for a bench or bed, suggested that these were the cells of the former gaol. These were of brick construction with a simple earthen floor and a brick vaulted ceiling. Cartographic evidence (1831 Gardner Survey) shows that the gaol was located in a long narrow public building. Traditionally the gaol keeper was also the landlord of the adjacent Lamp Tavern. It was found that these cells were backfilled in 1809 and that the gaol was shut down in the early 1840s.

There is no coincidence in that Aston Gaol and these other Birmingham gaols ceased operating in the late 1840s. From the late 1830s prisons in Birmingham were deemed inadequate for inmates on long sentences were sent to the County Gaol in Warwick, which was an expensive and troublesome procedure" (VCH). The early 19th-century was a time of much experimentation in prison design culminating in the construction of Pentonville Model Prison in the early 1840s. Pentonville employed a radial plan and was the product of utilitarian and disciplinarian ideas in the 1830s with its main aim being the strict maintenance of security and ease of control.

Pentonville was such a success that it became the model for British prisons for decades to come. One such prison was Birmingham Borough Gaol (Later HMP Birmingham, Winson Green, Figure 5.26 and 5.27), which was built in 1845-9 by architect Daniel Rowlinson Hill. It was a radial prison with a Tudor fortress-style frontage. Based on the Pentonville Model, it initially held 321 inmates made up of men, women, debtors, and juveniles with plans for accommodating up to 500. This new type of prison meant that all other gaols in Birmingham became obsolete including that found under 131-148 High Street, Bordesley which lay forgotten until redevelopment of the site in the mid 1990s.

Figure 5.27. H.M. Prison Winson Green in 2007.

Chapter 6 Death and Burial in Birmingham

Martin Smith, Josephine Adams and Megan Brickley

The development of Birmingham's burial grounds

For thousands of years the disposal of the dead has been associated with special ceremony and burial grounds have become very visible aspects of any settlement. They have provided not only the practical means of disposal, but a focal point for mourning and commemoration, a contribution to the historic and archaeological records. During more recent times burial grounds have also served to provide much needed green spaces within otherwise built up urban environments. The burial grounds of Birmingham were no exception and from the 13th century people were buried at St. Martin's Church, considered by many to be the focal part of the town. There is a suggestion that there may have been another burial ground predating St. Martin's associated with the Priory of St. Thomas on the north east of the town. Bassett (2001, 21) suggests that St. Thomas was originally the mother church to St. Martin's and it had a large burial ground that served the town until the mid 16th century. The evidence for this is drawn from various sources and in some cases, is circumstantial; nevertheless the possibility of a large burial ground having existed at St Thomas should be included in any discussion. The only archaeological evidence that may suggest that a burial ground existed in the area was the discovery of human remains during re-development in the 19th century (**1**, 67; Hill and Dent 1897).

The population of the town increased dramatically in the 18th and 19th centuries initiating concern that the religious accommodation then available was inadequate (Robson 2002, 18; see Figure 6.1). St. Martin's with its large parish had served the town until 1715 when St. Phillip's was built. In 1774 an Act of Parliament enabled four more churches to be established in the centre of the town. Thus St. Mary's, St. Paul's, Christ Church and St. Batholomew's were built (Field in Chinn 2003, 78). Amongst these four new churches only St. Bartholomews has been the subject of archaeological investigation.

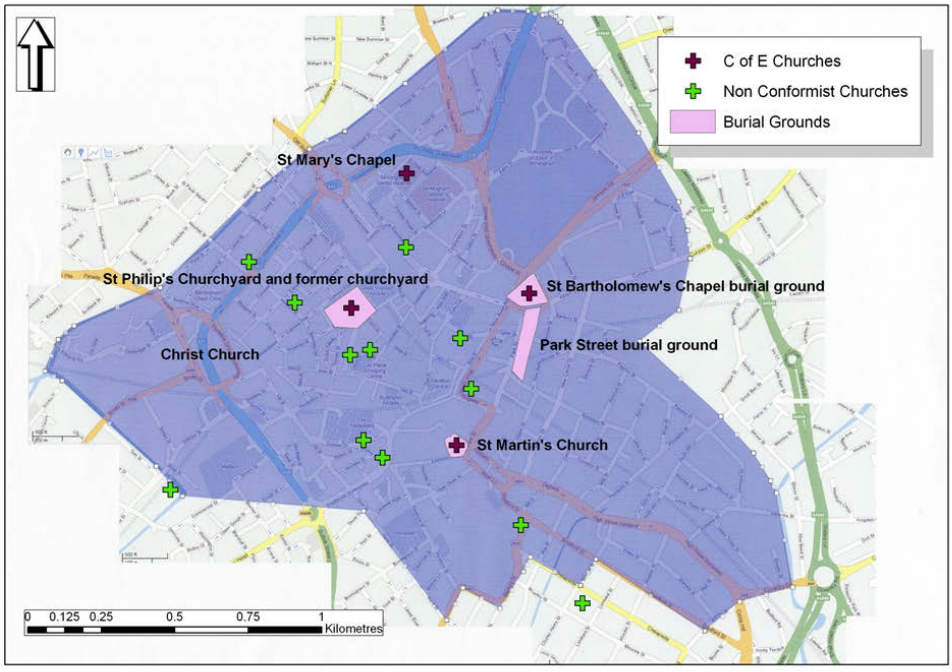

Figure 6.1. Burial grounds and churches within the study area

The burial grounds that have been investigated archaeologically within the study area are all associated with the Established Church, but in a town where the influence of Dissent was tremendously important, it should be noted that there were at least 20 other small burial grounds in the town, the majority associated with the strong dissenting community. Many of these were closed in the 19th century either because of the town's redevelopment or establishment of the railway system, necessitating the removal of human remains to other burial grounds on many occasions. Park Street, the overflow burial ground of St. Martin's was also affected by rail development, but St. Martin's and St. Philip's were altered only by small boundary changes and landscaping until 2001 when the churchyard of the former was redeveloped for the new Bullring development.

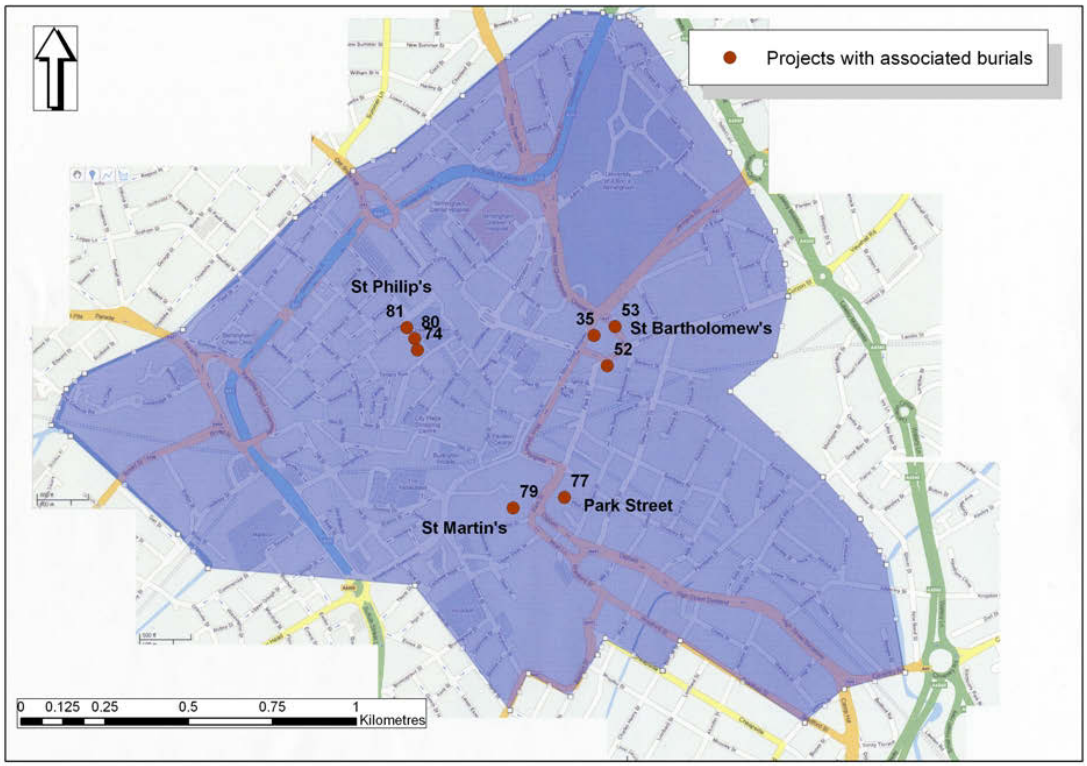

Figure 6.2. Developer-funded work undertaken relevant to this chapter

St. Martin's Church

SMR 01673, Report **79**

St. Martin's churchyard has undergone many changes over the centuries. Its location near the market areas and manorial moat and at the intersection of important roads meant that the boundary was altered several times, both to accommodate the needs of the church and the redevelopment of the surrounding area. These changes have involved both the expansion of the churchyard and the removal of burials on various occasions, until finally the western and northern parts of the remaining churchyard were landscaped to create St. Martin's Square as part of the Bullring redevelopment in 2001.

Burial records for the church begin in 1556 but documentary sources suggest that both the church and churchyard had been used for burial since at least the 13th century, although the various structural changes that took place over the years destroyed the many grave memorials that covered the floor of the church (Wilkinson 1875, 7). Beneath the chancel was a crypt that was used for burials (*ibid* 13), and during the 1872 rebuilding, vaults full of crumbling coffins were discovered under the church floor (Jenkins 1925, 36). Burial in a church ('intramural

burial') is the most high-status location – the nearer to the altar the better – with burial in the churchyard ('extramural burial') generally coming a poor second. Various members of the de Birmingham family, the lord's of the manor, were buried in the church throughout the medieval period, along with other local notables, and were commemorated with stone effigies, a few of which survive and are on display in the church today. Other tablets in the church suggest that rectors and their families may also have been granted the privilege of intramural burial, together with parish clerks and others who had made special bequests to the church (Jenkins 1925, 53-57. Parish records note that as late as 13th April 1811 the practice of intramural burial continued, with one Joseph Guest being listed as 'buried in the church'. It is of interest here that a Joseph Guest (and son) threadmaker and factor is listed in the Trade Directory at No 19 Park Street from 1767 to 1803 (Stephanie Rátkai, pers. comm.). A scale of charges for burials at St. Martin's from 1848 (Brickley and Buteux 2006, 228), provides details of the fees both for the building of a vault in the church and for each fresh interment in the same, implying that the practice – at least in theory – continued up to this date. These fees were the most expensive that could be incurred for a burial at St. Martin's.

For the less exalted burial took place in the churchyard. Given the growth of Birmingham's population from the 17th century onwards, the pressure on the churchyard was relentless. In 1665 the churchyard was found to be too small to bury all the victims of the plague so many were buried in a large pit in Ladywood Green (Jenkins 1925, 22). In the 1800s the number of funerals grew dramatically, resulting in a gradual increase in ground level. An early engraving illustrates the problem, with a view of St. Martin's Lane showing the very high wall which was necessary to revet the southeast corner of the churchyard (although the natural topography of the site, which slopes down from north to south, also contributed to the need for a wall of this height here). Hutton (1835, 244) remarked that:

> *"the dead are raised up, and instead of the church burying the dead, the dead would in time, have buried the church".*

In 1781 the serious consequences of this gradual increase in the height of the churchyard became apparent as:

> *"the ancient walls therof on the south side and south east sides had in several parts bulged and given way and became dangerous to such as passed along a certain street or land adjoining the said churchyard" (uncatalogued document in Birmingham Archives, Box 6)*

So under the auspices of the Act for Lightening and Cleansing the Streets, it became necessary to:

> *"take down and rebuild the Ancient Wall with the Buttresses or supporters thereof and to strengthen the said wall by widening the same and make it substantial and durable…three feet and six inches or thereabouts in breadth" (uncatalogued document in Birmingham Archives, Box 6).*

Several of the houses in St. Martin's Lane had outbuildings and yards that actually encroached into the churchyard, and this land was purchased in 1781 to enlarge the area available for burials in the southern part of the churchyard (Bunce 1873, 77). This new area was then enclosed by a new boundary wall, which was topped with iron railings. A more substantial measure to create more space for burials was the purchase in 1807 of 2½ acres of land in nearby Park Street, which was to become a detached burial ground for St. Martin's (Allen 1849, 38).

As the number of burials continued to increase, a further extension was made to the churchyard itself. On 2nd May 1810, a faculty was granted to enlarge the churchyard by the purchase of land in Spiceal Street that was "abutting on the back part thereof to St. Martins's Churchyard" (un-catalogued document at Birmingham Archives, Box 6). This extension is of particular interest here as it involved the northern part of the churchyard which was the subject of the 2001 excavations. It also needs to be understood in the context of the work of clearance of old buildings from the market place and from around the church which was described in the previous section. It was the clearance of the buildings from around the perimeter of the churchyard, through the actions of the Street Commissioners, which provided the space that made the extension possible. Prior to the clearance of these buildings, the churchyard was very

tightly hemmed in on its eastern, northern, western and much of its southern side. The extremely constricted space for burials is very evident, as is the high density of inter-cutting graves in the northern part of the churchyard. No burials are shown in the eastern or southern parts of the churchyard as these were built over during the rebuilding of the church in 1872, which extended the church 50ft to the east, and by the construction of the church hall and vestry on the south side of the church in the 1950s and 1960s.

Prior to their demolition, the existence of these buildings will have determined much of the character of the churchyard. Illustrations of the 18th century show them to have been timber-framed shops and houses, two stories high. Given the height of the church and the surrounding buildings and the smallness of the space available for burial, the northern part of the churchyard in particular, where the church cast its shadow, must have been very gloomy. With the number of burials that were taking place by the 18th century it cannot have been pleasant and almost certainly posed a health hazard.

The demolition of the buildings surrounding the churchyard, which began with those on the south side in 1781 and was finished by 1810, will have transformed the appearance of both the church and churchyard. The churchyard on one side of the church is surrounded by a low stone wall surmounted by iron railings, and where the passage through to the Bull Ring once had been there is an elaborate iron gate. In the middle ground, the church and churchyard are overlooked by the statue of Nelson. The extent of the transformation can hardly be exaggerated, and several wealthy families now took the opportunity to build vaults in this part of the churchyard.

The parish burial records show that in the years following the extension to the churchyard burials took place at a rate of between 300 and 800 per year, but the records do not specify as to whether they were buried in the churchyard, in the overflow burial ground in Park Street or in nearby St. Bartholomew's, chapel of ease to St. Martin's. In 1863 the numbers dropped dramatically to single figures, coinciding with the opening of Witton Cemetery, an out-of-town Town Council amenity built to serve the whole community. It is unclear whether a decision was made to cease burials in the churchyard after that date because it was full, or because it became the vogue to patronise the newer cemeteries. In addition to Witton Cemetery a private Anglican cemetery was opened at Warstone Lane in 1848 (a private cemetery for nonconformists had already been established on adjacent land at Key Hill in 1836). Warstone Lane Cemetery was very grand and catered for those who could afford it. Certainly after 1863 the majority of burials in the churchyard took place in the family vaults, suggesting that some sort of restriction had been brought in to limit burials at St. Martin's.

During the rebuilding of the church in 1872 the churchyard was disturbed again, and the Bishop of Worcester wrote:

> *"that when it shall be found necessary in carrying out this work to interfere with any graves or vaults the coffins and remains therein deposited shall be carefully and decently removed and forthwith re-interred without being more exposed than is absolutely necessary" (BDR/DI/13/9a).*

In 1873 the Secretary of State issued an Order in Council stating that burials should be discontinued at churches throughout the city, including St. Martin's, except in vaults and walled graves with an air-tight coffin (Cox 1892, 87). All the graveyards were becoming overcrowded, creating some public health concern, and with the opening of the council-owned cemeteries slightly further from the centre of the town, more people chose to be buried in these. At St. Martin's, the burial records show that this trend in fact began rather earlier: 544 burials took place in 1863, in sharp contrast to the total of 52 for the whole of the following period up to 1915.

During the years that followed the churchyard at St. Martin's was effectively converted to a public park along with other burial grounds in the city that had been taken out of use (see box feature). In 1960 an Act of Parliament was passed to allow removal and re-burial of human remains from the south side of the churchyard to an existing area of consecrated ground within the churchyard. This was to accommodate the construction of the new church hall and vestry.

The order was in fact issued in retrospect, having been overlooked when the building work took place in 1953 (MS 661948). During the redevelopment of the Bull Ring in the 1960s the surrounding roads were altered again, encroaching on the churchyard, and many monuments and remains were transferred to Witton Cemetery (Crowe 1975, 50).

Over the centuries, and despite changes to its boundary, the churchyard remained consecrated land until 1998. At that time it became the subject of an appropriation order by the Birmingham City Corporation, under the Town and Country Planning Act 1990, and was thus de-consecrated. This meant that the Church no longer exercised any control over the land, which was then deemed the property of the Corporation. The churchyard remained undisturbed until 2001 when it was excavated in advance of the landscaping works for St. Martin's Square.

Figure 6.3 St Martins Church in the centre of the new Bullring development

Fig 6.4 Funeral service when the named individuals were re-buried in St. Martin's Square.

Park Street Burial Ground

Report No. **52**, **53**

In 1807 in an effort to address the problem of the overcrowding in St. Martin's churchyard, 2.5 acres of land was purchased in nearby Park Street (Allen 1849, 38). This detached burial ground was opened in 1810 and the first burial was recorded in the parish records:

> *'On Saturday the 16th of June 1810 was interred in the new burial ground in Park St by the Rev Edward Hill, John Sims, being the first for whom a grave was opened after the consecrating of the land which took place on the first day of June preceeding' (St. Martins's burial records).*

However, in time the burial ground became uncared for and was described as

> *'…only fit for the poorest of the poor, until after being divided by the railway, this 'God's Acre' was cared for by none, and was well called the 'black spot' of the town' (Showell's Dictionary of Birmingham 1885, 32).*

In 1846 the burial ground suffered as a result of railway development when the London & North Western Railway company purchased part of the land for £2,210 13s 7d. In 1857 the burial ground was closed but interment continued in existing vaults until 1873. Six years later the area was laid out as a park and in 1894, 1151 burials were exhumed and re-interred.

Archaeological investigation undertaken during development at Masshouse Circus recorded remains of five *in situ* adult inhumations recorded in Trenches 1B and 2B which can be attributed to the Park Street burial ground (**52**, **53**). Of the five inhumations discovered during the excavations it was decided that only one individual would be studied in detail. The individual selected appeared of particular interest due to the presence of an amputated left leg and a number of other pathological conditions (see Brickley below).

Figure 6.5 A view of the Park Street burial ground as it survives today (Source; A Forster)

St. Bartholomew's Chapel

SMR 20676

Reports **35**, **52**, **53**, **82**

Built as a 'chapel of ease' to St. Martin's, St. Bartholomew's Chapel was built on land donated by the wealthy Birmingham iron-master John Jennens. His wife also gave £1000 towards the building of the church, which was opened in 1749. The church was originally known as the New Chapel and its burial ground as the Chapelyard. It achieved parish status in 1847 acquiring some land from the former mother church. The living had the status of a perpetual curacy until 1868 when it became a vicarage, the patronage, formerly in the hands of the Rector of St. Martin, was transferred to the Bishop of Birmingham in 1905. The parish was reduced in size in 1860 when part of it was re-assigned to St. Gabriel, Deritend. The church, probably designed by William and David Hiorne, was restored in 1893.

Whilst burials took place from 1752, all the records were kept at the mother church of St. Martin until 1847 when it became a full parish. The churchyard closed in 1861, although interments in family vaults continued until 1899. The church itself was closed in 1937 and was subsequently demolished. In 1939, the benefice was united with that of Bishop Ryder to form a new united benefice. The parish of St. Bartholomew was split between the parishes of St. Philip, St. Martin. St Gabriel and Bishop Ryder (McKenna 1992, 40, City Archives).

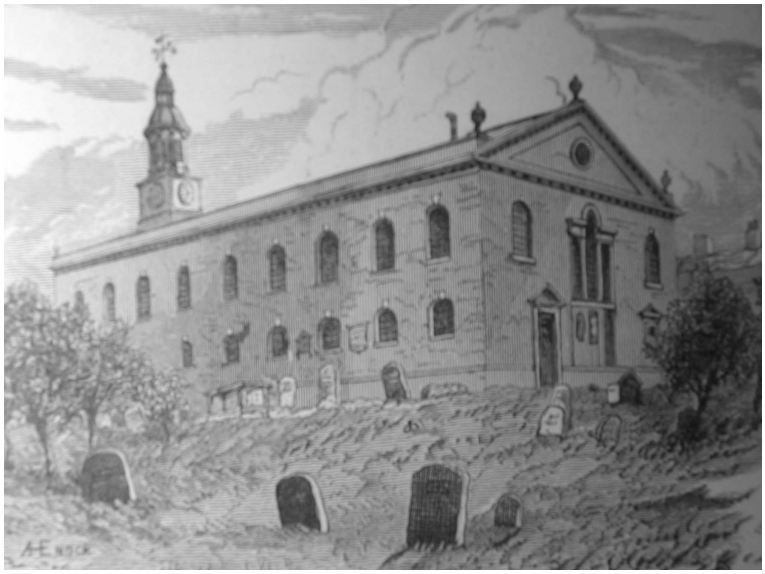

Figure 6.6 St. Bartholomew's Chapel (Birmingham City Library Local studies ref WK/B111/3901)

Figure 6.7 The church in 1932. (Birmingham City Library Local Studies ref WK/B11/5735)

St. Philip's Cathedral

SMR 20707

Reports **80**, **3**, **81**, **74**

As the city's population increased it became apparent that more religious provision was required, not just for worshippers but also for the burial of the dead. So in 1709 the parish was divided and an Act of Parliament was passed for the establishment of a new church. The site chosen was an unoccupied piece of meadowland known as Horse Close, purchased from Elizabeth Philips, the widow of a local landowner. It was on the highest part of Birmingham lying to the northwest of the medieval town (**74**) (Upton 1993).

The church was built between 1709 and 1715 and was designed by Thomas Archer and was laid out with a walled churchyard and parsonage built on the corner of what is now St. Philip's Place and Temple Row. The church was on the southwest side of Newhall Lane, now Colmore Row, which at the time represented the northeastern boundary of the town. Westley's map of 1731 shows that the site was enclosed by a wall with an internal perimeter path flanked by trees on either side. There are paths that lead from the church to the surrounding streets.

Figure 6.8 St Phillips today

The Birmingham historian William Hutton described St. Philip's Church as he first saw it in 1741:

> *'When I first saw St. Philip's in the year 1741, at a proper distance, uncrowned with houses, for there were none to the north, New Hall excepted, untarnished with smoke and illuminated in a western sun, I was delighted with its appearance, and thought it then, what I do now, and what others will in future the pride of the place.*

If we assembled the beauties of the edifice, which covers a rood of ground; the spacious area of the churchyard, occupying four acres; ornamented with walks in great perfection; shaded with trees in double and treble ranks; and surrounded with buildings in elegant taste; perhaps its equal cannot be found in the British Dominions'.

Westley's view of the north prospect of the church of 1732 illustrates a very orderly, although probably somewhat stylised scene showing the church and churchyard with a funeral taking place (see Upton 1993, inside cover). To the left of the illustration on the corner of St. Philip's Place and Colmore Row is the Blue Coat Charity School designed by local architect John Rawsterne. Along Temple Row are ten, grand townhouses divided into two blocks by Cherry Street. These demonstrate how the area was attracting new wealthy residents. The writer William Toldervey refers to Temple or Tory Row in a letter published in 1762. He describes St Philip's Church standing

> *'……in the middle of a large Churchyard, around which is a beautiful walk, adorned with trees like those in Lincoln's Inn Gardens. On one side of this churchyard the buildings are as lofty, elegant and uniform as those of Bedford Row, and inhabited by people of fortune, who are great wholesale dealers in the manufactures of this town…… These buildings have the Appellation of Tory Row; and this is the highest and genteelest part of the town of Birmingham'.*

Amongst the burials depicted on Westley's map of 1732, there are table top tombs representing interments of the wealthier members of society. In some cases these lead down to a vault, which were often purchased by families (**3**). This was another way of demonstrating a person's success and reflected a contemporary desire to unite the family in death as in life.

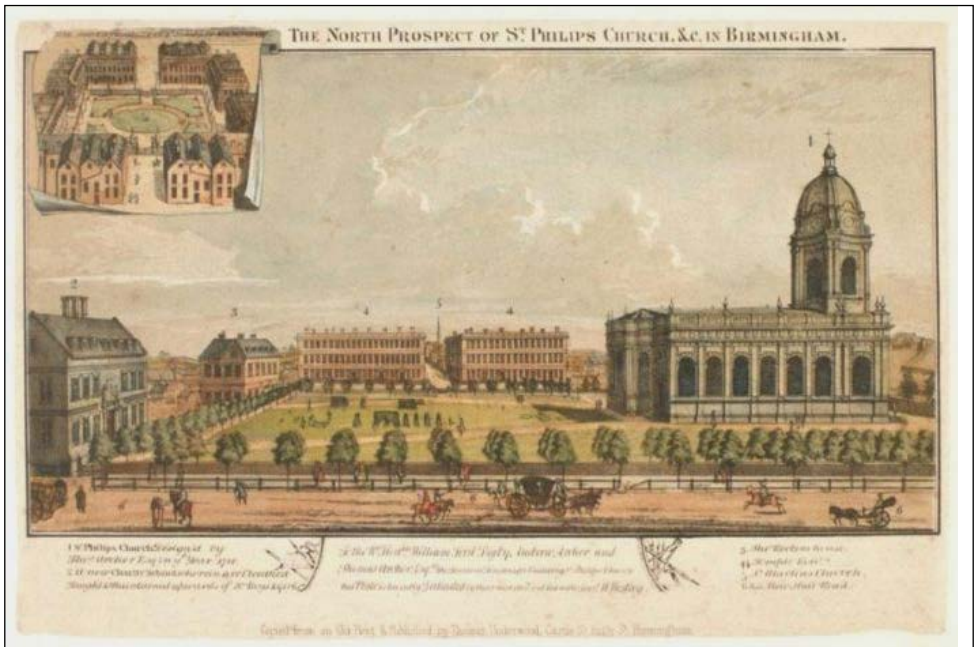

Figure 6.9 Lithograph of Westley's 1732 North Prospect of St Phillips (BMAG Accession 1937V841)

However, by the mid-19th century the once underdeveloped area around the church has become overpopulated. This, combined with poor water supply and inadequate sanitation, resulted in disease and a high mortality rate. The population of Birmingham had almost quadrupled between 1775 and 1831 while, like many fast growing industrial towns of this period, the provision of burial space had failed to keep up. This resulted in the foul condition often found in many urban graveyards.

In the Birmingham Aris Gazette of 29th July 1834 concern was expressed at a public meeting about St. Philip's Church when 'the ruinous state of fences, desecration of graves and injurious monuments' were discussed.

By 1849, all nine of Birmingham's Anglican graveyards were closely surrounded by housing and all but one, All Saints, were full. Robert Rawlinson, who reported on the sanitary condition of Birmingham in 1849 described St. Philip's thus:

> *'St. Philip's Church stands near the centre of the town, and the graveyard surrounds the Church, and is itself entirely surrounded by houses. This yard has been partially closed, and it certainly should be closed as soon as possible, as the effluvia from the yard and graves is said to be very offensive to the surrounding neighbourhood, especially in the summer months; the surface of the yard has been considerably raised by the vast number of interments which have taken place there'.*

The high concentration of burials is demonstrated by an illustration of circa 1840 with a great density of headstones, jumbled and pitched at various angles. As well as endangering the health and comfort of the living, these overcrowded graveyards frequently offended the dignity of the dead. Since no record of internments was kept, graves were frequently disturbed and remains disinterred even when a boring rod was used to find space beneath the ground (Patrick 2001). This was a particular problem in an area of the churchyard that was reserved for the poor who had died in the workhouse, where the coffins were buried only a foot below the surface and were therefore frequently disturbed by the excavation of fresh graves (**3**). However, such indignities were no longer confined to the poor. The fear and disgust of the urban middle classes at the prospect of such a grisly fate gave considerable impetus to the movement for decent and permanent burial. A secure and spacious plot with a fine tombstone or monument could also provide confirmation of status, an issue in death as in life. As at St. Martin's the pressure on the churchyard at St. Philip's was partially relieved by the opening of the new cemeteries at Key Hill in 1835 and at Warstone Lane in 1848. The latter coincided with the closure of the southern and eastern areas of St. Philip's in the same year. The closure of these areas suggests a higher concentration of burials there consistent with the common preference for burial in the southern areas of a churchyard, away from the shadow of the church. The churchyard at St. Philip's finally closed to earth burials on 15th August 1858, with Henry Barker of Temple Street being the last interment. Burials in existing vaults and brick-lined graves continued after this date (Morriss 1996), although the lack of documentation means that all but a few are anonymous. The problem of burial for the masses was only resolved by the opening of the corporation cemetery at Witton in 1863.

While the pathways within the churchyard have remained broadly the same, changes to the boundaries have taken place. The original perimeter path, known as Bachelor's Walk, was closed to the public in 1839, and the space was probably used for additional burials. Copies of letters held in the archive collated by the Landscape Practice Group suggest that Temple Row was widened in the 1840s after objections had been received concerning the unsuitable alignment of the original perimeter brick wall. A comparison of the map of 1824 with the 1889 Ordnance Survey Map shows that Temple Row is considerably wider on the later map. This suggests that most of the churchyard boundary alterations occurred between these dates. Further alterations to the boundaries took place in 1900 with the widening of Temple Row West and St Philip's Place at the expense of the burial ground. Letters from both 1839 and 1899 concerning the boundary alterations gave instructions as to what to do with any remains that were disturbed during the work, and how arrangements were to be made for their re-interment.

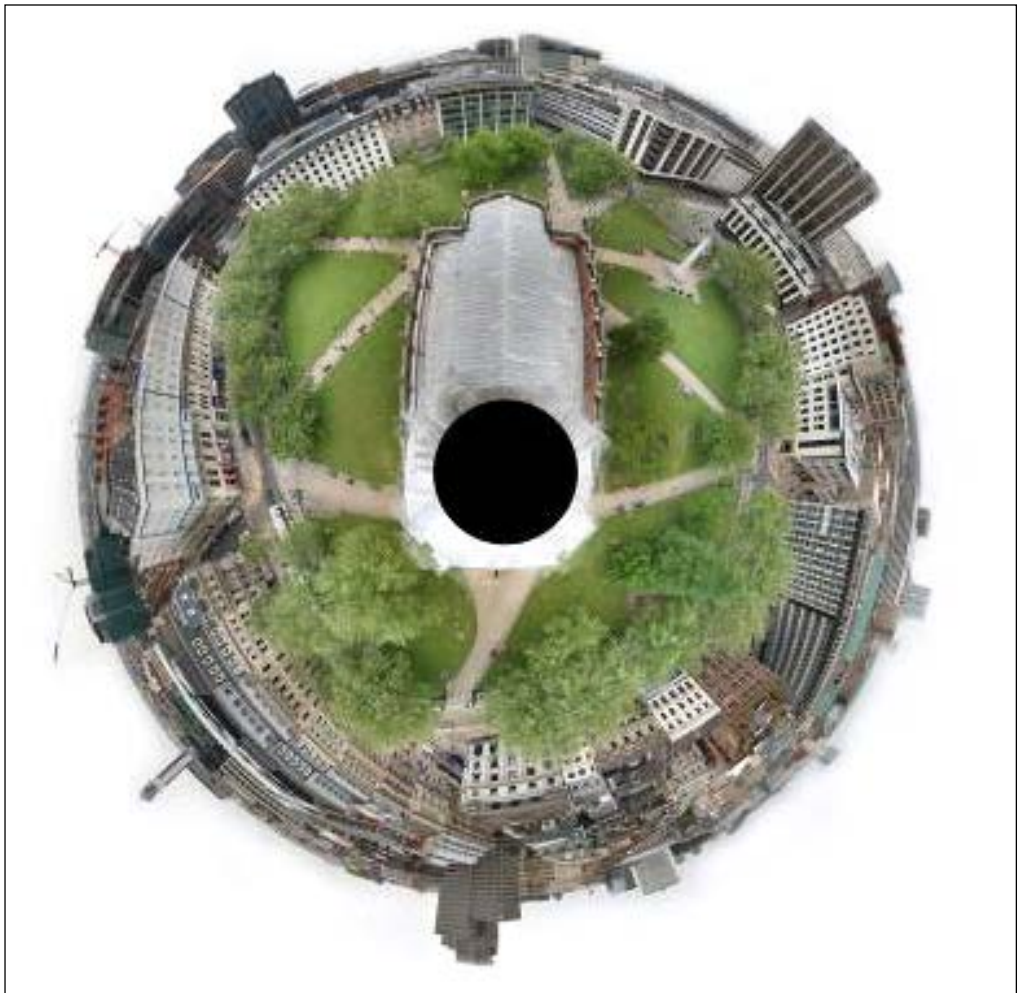

Figure 6.10 A view from above, a compiled fisheye panorama showing St Phillips today, retaining its footpaths and grounds and surrounded by the developed city (Source: A Forster).

'Lost' Burial Grounds

In addition to the graveyard of St. Thomas' Priory other burial grounds are recorded as having existed in Birmingham about which relatively little is now known. One example is the plague pit described as having been sited in Ladywood Green (Jenkins 1925, 22). Another is the burial ground attached to St. John's Chapel, Deritend (SMR 02993, Reports **31**, **14**). The inhabitants of Deritend and Bordesley were allowed to establish a chapel of ease to spare the long journey to their parish church at Aston in 1381. The inhabitants established the Guild of St. John to support the chapel and the guild was sufficiently wealthy to support two priests and a school. However, the inhabitants of Deritend and Bordesley were still required to attend services at the parish church of St Peter and St Paul at Christmas, Easter and other specified times. This continued until 1890 when a parish was formed out of Aston. The patronage of the chapel was transferred by Act of Parliament to the Bishop, the vicar of Aston and three trustees and the benefice became a vicarage (**14**).

The 14th century St John's Chapel (SMR 02993) situated on the south side of Deritend High Street was demolished and completely re-built in 1736 and this was restored between 1881 and 1891. The inhabitants of Deritend and Bordesley were allowed to establish a chapel of ease to spare the long journey to their parish church at Aston in 1381. The inhabitants established the Guild of St. John to support the chapel and the guild was sufficiently wealthy to support two priests and a school. However, the inhabitants of Deritend and Bordesley were still required to attend services at the parish church of St Peter and St Paul at Christmas, Easter and other

specified times. This continued until 1890 when a parish was formed out of Aston. The patronage of the chapel was transferred by Act of Parliament to the Bishop, the vicar of Aston and three trustees and the benefice became a vicarage (**31**, **14**).

Figure 6.12 St. John's Chapel Deritend, as rebuilt in 1735 from Old and New Birmingham. Originally published in weekly numbers between 1878 and 1880 by Houghton and Hammond, Scotland Passage, Birmingham.

In 1938 the parish and benefice united with those of St. Basil and St Basil's became the parish church (City Archives). In 1940 the church was closed and subsequently demolished in 1947. St. John's possessed a churchyard from 1381 but the only documentary evidence of any associated burials are registers for the associated Deritend burial ground between 1791 and 1812 (McKenna 1992, 43).

From Graveyards to Public Parks

As in other large cities, living conditions and their effects on the health of Birmingham residents became a cause of increasing concern as the 19th century wore on. In 1873 it was decided that more open spaces were needed for recreation within the city. Since the burial grounds that were no longer used for interments were becoming neglected and overgrown the Corporation obtained an Act, with the consent of the Bishop of Worcester, to acquire the land and turn them into parks. A notable example of this was the Park Street burial ground, which was transformed into Park Street Gardens and opened to the public in 1883, having been closed to earthen burials for a quarter of century. Following its closure to earthen burial in 1861, the burial ground at St. Bartholomew's was also laid out as a recreation ground.

At around the same time the churchyard around St. Martin's was landscaped, with new trees planted and turf laid, and the surrounding iron railings renovated. The combined cost of improvements to the St. Martin's and Park Street sites was £10,263. In 1879, just prior to this work in the churchyard, a plan was drawn up (MS 943/13/2) illustrating the location of vaults and grave memorials. Viewed in conjunction with a contemporary vault record book (MS 943/13/1) this gives some indication of the surviving grave memorials that may have been moved during the renovation. The churchyard became even more accessible in February 1927, when the City Council passed a new by-law stating that St. Martin's churchyard, together with other closed burial grounds in the city, would be open to the public. The churchyard then became a public park that linked the markets to the other city centre shops.

The churchyard at St. Philip's was refurbished in the mid-1860s, having become neglected and filled with rubbish since its closure. A new, lower, boundary wall topped with railings was erected, along with railings lining the paths to the church from the streets. Many of the headstones were laid flat at this time and a contemporary illustration depicts the southern area of the graveyard as more of a public space. Many of the stones were later buried in these locations and grassed over. In 1910 the churchyard was laid out as a public garden and, apart from losing its railings as a contribution to the war effort, remained largely unchanged until restoration work conducted in 2001.

Figure 6.11 A sunny afternoon in the locally named Pigeon Park – the burial ground around St Phillips Cathedral (Source; J Adams)

Birmingham Dissent: Non-conformist burial grounds

By Jo Adams

The churches and burial grounds discussed so far are all associated with the Church of England but it is important to remember that there was a proportion of people in Birmingham who worshipped outside the Established Church. They were known as Dissenters or Nonconformists and the high numbers in Birmingham meant that they made a significant contribution to life of the town.

The origins of the Dissenters can be traced back to the 16th century when, in 1559 the Act of Uniformity placed the reigning monarch at the head of the English church. The resultant Church of England, or Established Church, with its network of parishes all over the country, counted each person as one of its parishioners, despite an individual's beliefs, or indeed whether they attended the local parish church or not (McLeod 1996, 11). However amongst the population were those who, for a variety of reasons, did not wish to be affiliated to the Established Church and who attended other places of worship. During the turbulent years of the Civil War various religious groups emerged that were seen as a threat to the Established Church and membership of such a group was often dangerous, resulting in imprisonment, persecution and death (Parry & Taylor 2000, 4). To combat this perceived threat the Cavalier Parliament of 1661 passed the Clarendon Code, a series of Acts designed to strengthen the position of the Church. Amongst these was the Five Mile Act of 1665 that forbade any Nonconformist preacher within five miles of any city or corporate town (Jones 1979, 166). Since Birmingham was not incorporated until 1838 this resulted in the town becoming a safer environment for members of the Dissenting communities. The Quakers had a presence first in 1654, although they did not open a Meeting House until 10 years later (Field 2003, 80). Following the Declaration of Indulgence in 1672 nine Presbyterian houses and one Independent house was licensed for dissenters' meetings (VCH Vol. VII. 1964, 414). The first Presbyterian group, that later became Unitarians opened a chapel in 1689, followed by the Baptists in 1737 and the Congregationalists in 1748. Whilst there were some Methodist groups in the area, they were less prevalent than in the nearby Black Country.

Ironically, despite the apparent safety of being in an unincorporated town the Dissenters still encountered some hostility with attacks on some meeting houses in 1714-15 and the more serious Church and King riots of 1791 where New Meeting was attacked and the home of its Minister, Joseph Priestley, destroyed, forcing him to flee the country (Field 2003, 80).

Despite the risk of such opposition, numbers of Dissenters continued to grow. They seemed better able to address the needs of the people than their Anglican counterparts, adapting to the social problems arising out of the rapid population growth and increasing industrialisation. Some chapels founded slum mission rooms that focussed on evangelical work and bible study while others concentrated on social work and education (VCH Vol. VII. 1964, 420). In 1800 for example, there were seventeen places of worship in the town of eight different nonconformist denominations (VCH Vol. VII. 1964, 418). The diversification continued in the mid 19th century with the arrival of, amongst others, the Mormons, Churches of Christ and Christadelphians. The 1851 religious census revealed that in Birmingham numbers of Anglicans and Dissenting worshippers were about equal, representing about 47% each of the adult and child churchgoers (Field 2003, 80).

However, as the century progressed the character of the centre of the town changed as housing made way for industrial and commercial premises. The population of the centre of the town dropped and many chapels closed or amalgamated while new places of worship were built in the surrounding suburbs (VCH Vol. VII. 1964, 422).

The strength of the Nonconformist movement in the town was demonstrated by the many adherents who became prominent in both local and national politics. Notably amongst them were the Quaker families of Baker, Cadbury, Lloyd and Sturge and the Unitarian families of Beale, Chamberlain, Crosskey, Kenrick, Lee, Martineau and Nettlefold. Amongst the church leaders John Angell James and Robert Dale of the Carrs Lane Congregational Church, became

national figures, whilst the Unitarian William Crosskey and George Dawson of the Church of the Messiah were renowned for their 'civic gospel' (Field 2003, 80). Apart from the more well known, there were many more successful businessmen and industrialists in the town who benefited from the unity and strong family ties that existed within the Nonconformist groups. Many of the upper middle class merchants and bankers were associated with Unitarians, a traditionally high status group, while many successful tradesmen and manufacturers were drawn from Independent and Quaker roots (Davidoff & Hall 1994, 81).

With the high numbers of Nonconformists in the town the problem of burial became a pertinent issue. The usual place of burial for most people was the parish churchyard, an area of consecrated ground usually adjacent to the church, or in a nearby overflow burial ground. Every parishioner had an equal right to be buried there, unless they were unbaptized or a suicide, in which case there was often a small unconsecrated area close by (Morgan 1989, 95). Indeed the 68th Canon of 1603 of the Church of England stated that "No Minister shall refuse or delay…to bury any corpse that is brought to the church or church yard (convenient warning being given before hereof) in such manner and form as is prescribed in the said Book of Common Prayer".

However, in the nineteenth century, many clergymen were reluctant to bury Nonconformists whom they considered unfit to be interred in consecrated ground. Only ordained clergy could conduct the burial service since chapel ministers had no authority in the churchyard and it was compulsory that the 'Order of Burial' from the Common Prayer Book should be read (Stevens 2002, 331-332). In addition, Church of England law prevented ministers from burying the unbaptised, which would have excluded the Baptists and Unitarians, the latter not being baptised according to the Trinity (Rugg 1998, 46). The payment of the church tithes, (always a subject of contention amongst Nonconformists), was a source of dispute, with Nonconformists arguing that if they did contribute rates to maintain the parish churchyard they had a right to use them (Manning 1952, 302).

In Birmingham, the existence of many small Nonconformist chapels, some with their own burial ground, meant that most could be buried in their own tradition with a Minister and service of their choice. In addition, 1836 saw the establishment of Key Hill, an unconsecrated burial ground that provided Nonconformists with the alternative of a cemetery burial. However, few of these chapels and burial grounds remain as the increasing re-development of the town centre together with the establishment of the railway network meant that most of the chapels were demolished and the burial grounds cleared with the remains being transferred to nearby cemeteries.

Presbyterian or Unitarian

The first Unitarian chapel in the town built in Phillip Street must have had a small burial ground attached, since one of the founders was buried there in 1696 (Beale 1882, 30). Subsequently when the chapel was rebuilt in 1795 the plans reveal that there were 7 vaults under the building that were used by specific families, and additional vaults in the adjacent burial ground. It was used by both the Old and the New Meeting congregations. It was enlarged by public subscription in 1779, and then in 1869 and 1870 by buying two pieces of land from the London and North Western Railway Company (Beale 1882, 61). In 1870 the Birmingham Daily Post reported that a great deal of work had been carried out to renovate and landscape the burial ground resulting in it being described as 'an oasis of green amidst a wilderness of brick' (L.S. MS 690/14a). The burial ground was cleared in 1882 by the London and North-Western Railway Company to enlarge New Street station and the remains reburied at Witton cemetery (L.S.MS 604/26a and b).

Baptist

The Cannon Street chapel was demolished in 1879 and the land around it, including the burial ground, was cleared for the construction of Corporation Street. The human remains and gravestones were moved to Witton cemetery, apart from those whose relatives made separate arrangements. Memorial tablets from the chapel commemorating five ministers and one

member of the Baptist congregation were saved when it was demolished and kept in store for a while with a view to replacing them in the new Graham Street Chapel. However, this did not happen and they were eventually salvaged and placed in the chapel at Key Hill Cemetery (Langley 1939, 52).

The Newhall Street chapel also had a burial ground. The last recorded burial there was that of Rev. B Cave in 1844, and it was thought that the area contained only 30 or 40 other interments. However, in 1903 when the burial ground was cleared, the City Medical Officer of Health ordered that the ground should be excavated to a depth of 12 feet and 300 human remains were found. Special funds had to be raised to cope with this and they were subsequently re-buried at Witton Cemetery (Langley 1939, 153).

There is no indication of the quantity of burials removed from the Cannon Street ground but since it was in use from 1738 until 1879, the number may well have been considerable. This, together with the fact that if the Newhall Street ground had been excavated to a greater depth, even more than 300 burials would probably have been found, meant that the two burial grounds could well have accounted for the majority of the Baptist burials in the centre of Birmingham in the nineteenth century.

Congregationalist or Independent

There is no evidence of a formal burial ground around the Carrs Lane Chapel although the first Pastor of Carrs Lane Chapel, Rev Gervais Wilde was "interred the precincts of the Meeting House" on November 17th 1766 (James 1849, 112). Ninety-three years later in 1859 another minister Rev. J.A. James was also buried in the chapel in a vault under the pulpit. The local newspaper states that permission was granted from the Home Secretary for this since burial in building was by then forbidden (Aris Gazette 9th October 1859).

There may well have been other vaults under the Chapel where burials may have taken place, but when it was demolished in 1970 for rebuilding, only the Rev. James's remains were found, suggesting that perhaps only he was afforded the privilege of being buried below his chapel. At that time however, evidence of additional burials at Carrs Lane was found, when eleven burials were discovered in tombs under a path that led from the street to the vestries (Firmin 2005, 8). No records survive of who these people were so it is impossible to know whether burial near the Chapel was restricted to people of note or not.

Quaker

The first Quaker burial ground in the town was on the land around the first meeting house in Colmore Lane, subsequently referred to as Newhall Lane, Bull Lane and finally Monmouth Street, and known as the 'old burying-ground' (Lloyd 1975, 83). It continued to be used as a burial ground even after the original house had ceased to operate as a place of worship and the building had been demolished. The last burial took place there in 1821, and in 1851 the land was sold to the Oxford and Birmingham Railway Company for £2000 (Butler 1999, 617). Charles Lloyd supervised the transfer, re-interment and recording of the 300 burials to a vault in the new burial ground at the Bull Street Meeting House. One of his sons describes the event thus:

> *"My father undertook the task of watching the disinterment and removal of the remains to a large vault in the burial ground adjoining the Friends meeting house in Bull Street. My grandfather had left a plan which shewed the position of the graves of members of our family from the year 1698, when Charles Lloyd of Dolobran who had been imprisoned in Welshpool was buried there. The lead coffins were still perfect, but many ghastly sights were presented of those who had not been so buried and whose remains were only partially decayed. Charles Lloyd's skeleton was found in an almost perfect state, having been protected from rain by a projecting corner of building and I had the melancholy interest of holding his skull in my hand" (Lloyd 1975, 270).*

A plaque commemorating members of the Lloyd family and their next of kin (whom were moved) was placed in the new vault.

When the Bull Street Meeting House was rebuilt in 1857 it was recorded that the burial ground, known as the 'new burying ground', was 3,324 square yards in three distinct units (Butler 1999, 619). One hundred years later part of this Bull Street burial ground was redeveloped and the burials plus many subsequent ones were disturbed once again. The aforementioned plaque now hangs in the entrance of the existing Meeting House in Bull Street (Lloyd 1975, back cover).

It is likely that the early Quaker burial ground would have looked different to other graveyards since one of the central tenets of the Quaker ideology is that no man is considered to be of a greater worth than another, so everyone should be treated the same in life and in death. As a result of this, in the early days of the society there were no fixed burial rites and people were buried in a plain coffin with no memorial (Abbott *et al* 2003, 68-69). However by the early 18th century some Quakers were erecting grave memorials to the consternation of the Society who issued guidelines in the Book of Extracts of 1738 and 1783 in an attempt to address the problem. The subject of grave memorials became a source of great debate and controversy within the Society and in 1864 the situation was clarified in the Rules and Advices of London Meeting detailed in Clarkson (1864). This allowed the use of small plain stone markers detailing the name, age and date of death only, in an effort to preserve the equality of each burial and maintain a uniform appearance. The early Birmingham burial grounds have disappeared but some small square stones have been re-located around the present Meeting House indicating that at least some of the Quakers followed the Society's guidelines.

The Southall family were successful chemists in the town who could have demonstrated their family's wealth by erecting a large grave memorial but instead laid a stone in keeping with the Quaker tradition (see Figure 6.13). Quaker burial practice also differed in that burials were usually placed in the ground in the order in which they died, to maximise space and to avoid the danger of opening a grave before decomposition was complete (Clarkson 1869, 118). This is another contrast to Anglican custom where families may be buried together in large graves or vaults.

However, whilst the Quaker Books of Discipline laid down rules and guidelines as to behaviour and customs to be carried out on the death of a member, research on Birmingham Quakers suggests that, these guidelines were not always adhered to. In 1859 for example documentary evidence records that Joseph Sturge, a well-known businessman and social reformer was buried in a family vault at Bull Street (Richard 1864, 572), and many other local Quakers had grand funerals and were buried beneath elaborate grave memorials at the local cemeteries (Adams 2007).

Figure 6.13 Eliza Southall's grave memorial at Friends Meeting House, Bull Street, Birmingham (Source: J Adams).

Judaism

The first burial ground of the Jewish community was said to have existed in 1730, although there is no documentary evidence to substantiate this. In the 1780s burials took place in the garden of a private house converted for Jewish worship in The Froggery, a marshy area just to the north of St. Martin's church (Josephs 1984, 7). In 1791 a new Synagogue was built on the site and burials continued until 1849, when the land was purchased by the Railway Company for the construction of New Street Station ((McKenna 1992, 32; Josephs 1984, 7). The burials were then moved to Betholom (Beth Olom) Row, another Jewish burial ground which was situated close by. This site comprised a quarter of an acre of land between Bath Row and Islington Row, adjacent to the Worcester canal that had been opened on 6th June 1823. A small chapel had been built and burials continued there until 1873. Many of the later burials were those of Jews from hospitals, workhouses or visitors to the town with an official residence (Josephs 1984, 20).

The Betholom burial ground was threatened the railway development on two occasions but the local Jewish congregation took legal action against the Midland Railway Company that culminated in an Act of Parliament that saved the site (Josephs 1984, 20). As a result, the site still exists today, bordered by the railway and canal and surrounded by high walls (see Figure 6.14). The ground is overgrown with only a few memorial stones remaining and piles of brick where the chapel used to stand. A view of the Jewish cemetery at Wolverhampton gives some idea of what the burial ground may have looked like (Figure 6.15).

Figure 6.14 Views of Betholom Row burial ground today (Source; A Adams)

Finally, there was another Jewish burial ground in Granville Street that did not survive railway expansion. This was acquired in October 1766 and used until 1825 when Bethlom Row was opened. In 1874 the Birmingham West Suburban Railway Company raised the level of Granville Street to construct a bridge. This made the cemetery wall so low that vandals caused extensive damage in. Legal action followed and the railway company agreed to pay damages together with the cost of removing the burials and memorial stones to Witton cemetery (Josephs 1984, 20).

Figure 6.15 The Jewish cemetery in Wolverhampton (Source: J Adams).

Burial Archaeology

By Martin Smith

No burials of prehistoric, Roman, Anglo-Saxon or Norman date have been identified from the study area. Undated graves seen in Bull Street and described in the 18th century may have been medieval, or possibly earlier in date (Hodder 2004, 93). Clearances are known to been carried out to varying extents at a number of burial grounds in the city during the 19th and early 20th centuries, although little or no recording was undertaken during these endeavours (Adams, this volume). Archaeological excavation of burials within the study area has taken place at four sites during recent years in advance of various redevelopments within the city centre (Table 7.1). These investigations have varied considerably in scale with the largest and most complex of these being the excavation that took place at St. Martin's churchyard in 2001. This was a major project involving a large number of staff with a wide array of skills. A broad range of specialist analyses were conducted including study of artefactual finds such as coffin fittings, architectural study of funerary structures, and rigorous scientific analyses of the human remains. This work was complemented by careful study of documentary evidence with subsequent publication of this project as a full technical monograph (Brickley and Buteux, 2006). Smaller quantities of human remains have also been excavated from three other burial grounds in the city, St. Phillip's Cathedral, Park Street Gardens Burial Ground and St. Bartholomew's Chapel. In addition, two burials of probable medieval date from Park Street which are unlikely to be associated with a formal burial ground. Despite being conducted on a much smaller scale than the work at St. Martin's these investigations have made valuable further contributions to existing knowledge of life and death in early modern Birmingham.

St. Martins Church

The funerary remains uncovered during the excavation of St. Martin's churchyard by BUFAU in 2001 prior to the redevelopment of the Bull Ring have now been presented in detail by

Brickley and Buteux (2006). What follows is therefore a relatively brief summary drawn largely from this full account and particularly the chapter by Buteux and Cherrington (2006). As part of the redevelopment, the former burial ground was converted to a paved square forming part of the pedestrianised shopping centre. The churchyard was cleared by excavation to different levels according to the projected impact of the planned landscaping. These were depths of 0.8m and 1.5m below the pre-excavation ground level. Consequently, whilst a large number of burials were uncovered during this work many more are likely to have been untouched by the excavations because they were buried below these depths. The excavations also enabled recording of the Victorian and Medieval foundations of the church.

Site	Faith	Earliest known burials	Last known burial(s)	Clearance	Archaeological investigation	N. excavated/ exhumed**	SMR No
Park Street Burial Ground	C of E	1810	1857, vaults used until 1873	Transformed to a public park in 1883, Burials exhumed and reinterred 1894		1151	
St. Bartholomew's Chapel	C of E	1749	1861, vaults used until 1899	Church closed 1937, Demolished 1939	Watching brief	12	20676
St. Martins Church	C of E	c.13th century	1915	Clearance of southern parts of churchyard during 1960s Bullring redevelopment -remains reburied in Witton cemetery	Churchyard excavated 2001	857	1673
St. Phillip's Cathedral	C of E	c. 1715	1858, vault burials continued after this date	Evidence of some clearance in earlier landscaping activity	Evaluation/ Test pitting 1999, Watching Brief 2001	25	20707
St. Thomas' Priory	Cath	Not known, priory extant by 1286	Priory dissolved 1549	Burials discovered during redevelopment (19th century)			
Phillip Street	P/ U	One of founders buried 1696	? Late 19th Century	Burials exhumed and reburied Witton cemetery prior to enlargement New St. Station 1882			
Cannon Street	Bapt	1738	1879	Demolished 1879 to make way for Corporation Street			
Newhall Street	Bapt		1844	Burial ground cleared 1903		300+	
Carrs Lane	C/ I	1766	1859	Demolished 1970		12	
Colmore Lane	Qu	1698	1821	Burials exhumed and reinterred at Bull Street (?date)		300	
Bull Street	Qu	1857		Parts of burial ground redeveloped post 1945			
The Froggery	Jud	c.1791	1849	Cleared 1854 to make way for New Street Station, burials reinterred at Betholom Row			
Betholom Row	Jud	1823	1873	Building demolished, site remains undeveloped/ derelict			
Granville Street	Jud	1766	1825	Burials exhumed and reinterred at Witton Cemetery (?date)			

C of E: church of England; Cath: Catholicism; P/U: Presbyterianism/ Unitarianism; C/I: Congregationalist/ Independent; Bapt: Baptist; Qu: Quaker; Jud: Judaism
*Other churches with burial grounds within the study area have been excluded either because no further information is known about any burials there, such as St. John's Chapel, Deritend, or because no excavation or other disturbance of burials is known to have taken place, such as at St. Paul's.
**MNI figures for articulated burials -excludes disarticulated bone.

*Table 7.1 Birmingham burial grounds in which human remains are known to have been exhumed /excavated or reburied**

With a single exception no gravestones or other memorials remained in their initial positions at the start of the excavations. During earlier landscaping work these had been laid flat and many were now in a fragmentary state. The majority had also been moved from their original locations and thus it was impossible to relate memorials to graves during excavation. Forty memorials had legible inscriptions ranging in date from 1698 to 1862, although the vast majority were from the first half of the 19th century. Many of the finds which were made in the churchyard in the course of the excavations are likely to be refuse from the occupation of the buildings that surrounded it. A total of 921 sherds of pottery was recovered (Rátkai 2006). There were 29 medieval sherds but the majority of the assemblage was made up of blackware and coarseware dating to the 17th and 18th centuries, with a strongly utilitarian aspect. There was little 19th century pottery and what there was largely dated to the first half of the century and represented the lower end of the market. The dating of the pottery is thus consistent with it having derived from houses and shops demolished at the beginning of the 19th century, and the character of the pottery gives some indication of the status of the inhabitants of these buildings. Many of the other finds from the churchyard, such as clay tobacco pipes, coins, bottle and window glass, window leading and lead shot (Bevan 2006, 179) also probably relate to the occupation of these buildings.

During the project 857 burials were excavated with detailed analysis carried out on 505 of these at the University of Birmingham (Brickley 2006, also this volume). The majority of burials encountered (734 -86%) were from simple earth-cut graves, whilst the remainder were from various brick-built structures lying below the ground surface. A large quantity of disarticulated bone was also encountered throughout the excavation. Following analysis the un-named individuals were reburied at Quinton cemetery, whilst the named individuals from the vaults (below) were re-buried in a remaining vault (Vault 10) under St. Martin's square. The majority of excavated burials dated from between c.1750 and 1850, documentary sources indicate that very few interments took place at St. Martin's after 1863, when burial in earth-cut graves seems to have ceased.

The most common type of burial encountered during the excavations was a single inhumation in a supine position buried in a simple, single break wooden coffin with metal fittings. Some burials varied slightly from this arrangement, for example some individuals had their arms tightly folded suggestive of burial in shrouds or winding sheets. Other burials involved multiple individuals, either laid side-by-side, or stacked on top of each other with the coffins having subsequently decayed. Coffin stacks are a common feature of post-medieval burial grounds and relate to the money an individual had and who else died at the same time; they have nothing to do with families. There were six instances of infants buried with adults, likely to have been mothers and infants who died during childbirth. There were also five incidences where foetal remains were found *in situ* within the abdomens of female burials. There was a high density of earth-cut graves over much of the excavated area with frequent truncation of earlier burials by later ones. Such intercutting was particularly common in the area directly to the north of the church, consistent with this being one of the older parts of the graveyard that had been in use for burials prior to its extension in 1810.

Vaults

Thirty five brick-built structures housing burials were uncovered at excavation; these are referred to collectively as vaults. Twenty four of these were relatively simple brick-lined graves, whilst ten were vaults with chambers which have been shown by burial records and depositum inscriptions to have been used by particular families. There was also a larger, more complex vault (Vault 10) comprising four chambers accessed via a corridor. Table 7.2 shows the numbers of burials encountered and analysed within the different types of vault uncovered. The vaults were cleared and the burials they contained were analysed with one exception (Vault 9, the Jenkins vault –see below). In this case it was possible to cap the vault and preserve it *in situ* leaving its contents intact except for three infant burials which were analysed as their coffins were severely damaged.

Vault type	Structures	Burials	Analysed	Identified from depositum	Total Identified
Brick-lined Graves	24	43	41	3	4
Family Vaults	10	60	40	21	44
Multiple chambered Vault (Vault 10)	1	20	17	2	3
Totals	35	123	98	26	51

Table 7.2 Types of burial structure and numbers of burial at St. Martin's (From Buteux and Cherrington, 2006, 29).

The quality of preservation of coffins and human remains varied between vaults, partly due to variations in the type and quality of coffin construction. Survival of inscriptions on depositum plates was generally better amongst the family vaults, five of which could be precisely dated, as opposed to only two of the brick-lined graves. From studying inscriptions, and burial records the multiple chambered vault was found to be earliest having been constructed around 1785 and used until the 1830s. The family vaults were most heavily used between 1810 and 1830, although burials continued in some vaults until as late as 1904. The brick-lined graves appear to have been constructed and used throughout the 19th century.

Vault 10 exhibited several differences from the slightly later family vaults. For example coffins were simply stacked on top of each other rather than resting on supports built into the chamber walls. Consequently a number of the less substantial coffins had simply collapsed in on each other after decomposing. Unlike the other vaults the interior of vault 10 was not whitewashed which would again appear to have been a slightly later innovation.

The ten family vaults uncovered varied from each other in minor respects but all followed a roughly similar design. This involved a vaulted roof resting on two supporting walls with two further non-load bearing walls added to seal the structure. There was some variation in size with vaults measuring between 2.6 and 4.2m in length, 2-2.8 m in width and up to 3.5 m deep, the largest examples being notably bigger than those at St. Philip's (below). These vaults had been designed to house multiple layers of coffins on timber supports projecting from the walls although these had generally rotted away causing coffins to collapse onto each other.

In addition to the multiple chambered vault it was possible to identify named individuals in five family vaults, these belonged to the Ainsworth, Home, Jenkins, Warden and Harrison families respectively. There was a marked gender bias in these vaults and particularly in those of the Jenkins and Harrison families which may be partly explained by women 'marrying out' into other families and therefore being buried elsewhere (Buteux and Cherrington, 2006, 67). Another notable feature of the burials in the family vaults was that they were not necessarily placed in the chambers in chronological order. Often a degree of re-arrangement was apparent; in particular changes had often been made so that the coffins of husbands and wives could lie together.

Documentary sources show that the otherwise continuous ring of buildings which previously surrounded the eastern, western and northern sides of the churchyard was broken in the middle of its northern side by a wide passageway that lead out into the Bull Ring. This was the multiple chambered Vault 10. The need to build a vault in this location – a project apparently initiated by the church and not private enterprise – is further testimony to the intense pressure on space in the churchyard in the later 18th century. It was noted that there was a lower density of earth-cut burials in the area to the north and west where the churchyard was extended in 1810. This coincided with a concentration of vaults which may have been sited here due to the lack of earlier graves. It is also possible that various earlier landscaping episodes may have contributed to the current distribution of burials.

St. Phillip's Cathedral

An archaeological evaluation and watching brief were carried out in the churchyard of St. Philip's by BUFAU during 1999 and 2001 in relation to landscaping work to replant and enhance the former burial ground. In the main this work involved the planting of new trees and attention to features around the perimeter such as the gateway to the burial ground opening into Colmore Row. Consequently, ground disturbance was confined to a number of small areas distributed across the site including holes for tree planting, bore holes for the erection of new railings and the construction of a pump house on what had formerly been car parking spaces at the south-eastern edge of the churchyard. Unlike the 'open' excavation at St. Martin's the work at St. Philip's afforded only small glimpses of the buried remains with a very small sample of the total area uncovered. Where burials were encountered the overall strategy employed was to minimise disturbance except where it was unavoidable. However, in spite of these limitations a substantial quantity of new information was obtained through this work which has served to further enhance the image of 18th and 19th century Birmingham gained from documentary sources and archaeology elsewhere in the city.

Remains of burials were encountered throughout the site during this work, consistent with documentary records from which it is estimated that over 80,000 burials were made in the churchyard during its use (Moscrop 1997, 1; also Adams this volume). During the 1999 evaluation 14 test pits were excavated in Temple Row and Temple Row West to assess the density and survival of burials (Patrick 1999). Of these 10 produced human remains varying from articulated skeletons to small fragments of disarticulated bone. These remains were from a minimum of 22 individuals and appeared to support the view of there being a high density of burials in at least some parts of the site. Intercutting of graves was apparent in one of the test pits where remains of three coffins were identified.

During the subsequent watching brief in 2001 (Patrick 2001) a range of types of burial was encountered including earth cut graves, brick-lined graves and chamber vaults. At depths of less than a metre human remains uncovered tended to be disarticulated. The horizon containing intact burials was encountered at depths of a metre and more with burials as deep as three metres identified in places. In addition this work demonstrated that the original boundaries of the graveyard extended for 4-6m beneath the current pavement and road surfaces surrounding the site. This was particularly the case along Temple Row which is recorded as having been widened during the 19th century (Adams, this volume). Given the intensity of burial activity at the site and the lack of documentary evidence for earlier use it is perhaps unsurprising that the only finds predating the churchyard were a single medieval potsherd and a medieval coin. An 18th c view from St Philips shows the area towards Christchurch to have been a sort of urban farm – presumably the site for St Phillip's was more of the same originally.

Stripping of topsoil revealed 26 headstones in addition to fragments of more elaborate burial monuments (Patrick 2001, 9). Those with legible inscriptions ranged in date from 1736 to 1858, with the majority dated from after 1800. Twelve headstones bore inscriptions relating to two individuals buried at different dates, whilst one named three individuals. The dates on this stone were 1809, 1857 and 1909. Rather than implying an additional burial decades after the churchyard had been closed, the 1909 inscription may refer to an individual that was actually buried elsewhere but whose name was still inscribed on the family memorial. These memorials were distributed throughout the site with the headstones having been laid flat. The stones were uncovered approximately 0.2m below the current ground surface, consistent with written and pictorial sources which show that after having lain flat for some time they were deliberately buried and grassed over as the churchyard was converted to a public park. Evidence for earlier clearance of some burials was also apparent in places with both some chamber vaults and brick-lined graves having been cleared and backfilled. The number and date of such episodes was unclear although some appeared to be relatively recent indicated by a quantity of disarticulated bone encountered buried in plastic bags at Area H.

Excavation of a grassed area that had formerly been used for car parking spaces prior to the construction of a pump house in Area E was of particular interest. This exposed a slightly larger

area than the majority of invasive groundworks during the project which were otherwise confined mainly to bore holes and service trenches. Eight adult inhumations in earth-cut graves (HB 14-21) were exposed approximately one metre below the current ground surface. All eight had been buried in coffins, thin traces of metal on the bones of six of the buried individuals indicated that these had apparently been lead-lined. The burials were orientated east-west and were spaced very closely together intercutting each other at various points.

Vaults

A total of 29 brick-built structures interpreted as vaults were identified beneath the current ground level. Whilst some of these related to table top monuments visible above ground the majority were not previously known about. Vaults appeared to be distributed throughout the churchyard rather than confined to any particular area, although there were some apparent concentrations along the lines of walls and boundaries such as a row of vaults detected along Temple Row West (F109-F119). The extent to which these structures were explored varied, with fourteen identified as chamber vaults and ten as brick-lined shaft graves whilst the remainder were not investigated in sufficient detail to be able distinguish which type of construction they were.

A chamber vault is defined as a subterranean compartment built of brick or stone capable of accommodating a minimum of two coffins side by side (Litten 1991). The vaults of this variety at St. Philip's were roughly square in plan with sides measuring between 2 and 2.75m and with floor to roof heights of x-2.55m at the apex. The interior walls of vaults with chambers had been whitewashed apparently in order to maximize the amount of light available when depositing new burials. A brick-lined grave is generally narrower being only wide enough to house a single coffin although they were often used to contain multiple burials in a stacking system. This type of grave appears constructed specifically to protect burials from the possibility of truncation by subsequent graves, implying that the likelihood of a burial being disturbed by later interments was both well known and a cause for concern at the time. A further anxiety that may have been exaggerated at the time but was nonetheless real was the fear of grave robbers. Brick-lined graves of this type would appear to be a compromise for those able to afford a more expensive burial than a standard earth-cut grave but not wealthy enough to purchase a 'full' family vault. Such structures also served to maximize the use of the space available and so would have been an attractive strategy from the point of view of the church authorities. The brick-lined graves at St. Philip's varied in depth with some as deep as three metres, with slots built into the walls to hold wooden or iron joists to support subsequent coffins as they were added.

A number of the vaults were found to have been previously cleared. The largely intact condition of others warranted only limited archaeological investigation according to the project objectives, prior to making these structures safe, for example by resealing them with concrete. The contents of two chamber vaults were examined and recorded in greater detail, those of the Baldwin and the Harrison families. In the Baldwin family vault (F193) partial collapse of the vaulted brick roof had left a hole through which coffins were visible. Following removal of the roof in case of further collapse the contents of the chamber were recorded *in situ* before the vault was backfilled. The vault contained four coffins and a single articulated burial without a coffin. It is possible that the coffin belonging to the latter may have been a simple wooden casing without lead lining that had subsequently decayed. There was evidence of previous flooding of the chamber up to approximately a metre high, with the coffins having apparently moved from their original positions during such episodes. The presence of legible depositum plates permitted the identification of named individuals from the vault.

Excavations prior to the installation of new gates to the churchyard at the entrance on Colmore Row revealed the roof of a brick-built vault (F124). In order to accommodate the weight of the gate pillars it was necessary to remove the roof and clear the contents of the vault which were largely undisturbed. The vault was accessed from the side via a trench dug to expose the eastern wall of the vault. This trench exposed three burials (HB3, 4 and 5) which apparently postdated the vault as their graves were cut against the wall. Inside the vault burials had been placed in an east-west orientation, on two levels, the first on the brick floor, whilst the second layer rested on a slate shelf supported on iron joists. Eight coffins were present in total, five of which lay on the brick floor with the remainder resting on the upper level. Inscriptions on depositum plates

ranging in date from 1845 to 1890, enabled the identification of individuals from the Harrison family.

St. Bartholomew's Chapel

A watching brief was conducted in Masshouse Circus car park in 2001 during work to re-align a roadway running through the area (Neilson and Duncan 2001). This location was known to be the former site of St. Bartholomew's Chapel, with the line of the new roadway cutting the east side of the Chapels' burial ground. During this watching brief no grave cuts were observed, although 150kg of disarticulated bone was recovered in addition to a quantity of coffin furnishings (mostly handles). The boundary wall of the graveyard was identified with no bone found outside this perimeter. Several gravestones were recovered with inscriptions dating from the mid 19th century. Following this a further recording exercise was conducted in which four trenches were excavated (Krakowicz and Rudge 2002). Earth-cut graves were encountered in two of these in addition to a quantity of disarticulated bone. In total twelve burials were uncovered (ten in Trench 1B and two in Trench 2B) with remains left *in-situ* wherever possible. The excavated burials were well spaced with no intercutting of graves. This may suggest that the burial ground at St. Bartholomew's did not become as crowded as those at St. Martin's and St. Philip's although it is not possible to know the extent to which the small area excavated is representative of the churchyard as a whole. Additional evaluation work on other parts of the site (Patrick 2002) found only small amounts of disarticulated bone despite digging to depths of 2.4m, prompting the suggestion that previous clearance of the site prior to building the car park in 1961 appeared to have been generally thorough.

Park Street

Excavations were conducted by BUFAU in the area to the east of Park Street between February and July 2001, prior to the construction of a multi-storey car park. No remains deriving from the 19th century burial ground at Park Street were identified, however, two skeletons of apparent medieval date were discovered beneath the floor and walls of a 19th century building in the north-east corner of the site close to the street frontage (see box feature). Both were in earth-cut graves, laid on their backs with arms folded, one burial (a middle adult female) was orientated approximately east-west, whilst the other (a young adult male) lay roughly north-south. Whilst there remains the possibility that these may relate to a burial ground not mentioned in the available documentary sources (cf. Burrows and Martin 2002, 4), it is perhaps more likely that these individuals were not buried within any kind of formal burial ground - raising questions about the nature of these interments and also possibly about the manner of their deaths. One possibility is that these were clandestine burials with the two individuals having died in suspicious circumstances. No signs of traumatic injury that occurred at around the time of death were noted on either individual, although it should be born in mind that many such injuries leave no evidence on the skeleton. Whilst no pins or other burial accessories were noted, the position of the corpses implies a degree of ceremony and possibly the use of shrouds or winding sheets. This apparent formality might suggest against an interpretation of murder, in favour of a more socially sanctioned if unusual form of burial. In the past certain individuals were often denied burial in churchyards including suicides, criminals and heretics and it is possible that these two individuals may have fallen into such categories. Conversely, Buteux (2003) has suggested a further possibility on the basis that the burials could in fact be as late as the 17th century with the consideration that they might date from the time of the Civil War when Birmingham and its inhabitants came under considerable stress and normal use of burial grounds may have been hampered.

The Park Street Burials *by Megan Brickley*

During excavations at Park Street two articulated burials and a small quantity of disarticulated human bone were discovered. Placement of the burials and various associated features enabled a broad Medieval date from the eleventh century up to the end of the fifteenth century, to be assigned. It is not clear if these burials formed part of a formal burial ground, and the two burials remain anomalous.

Full analysis of these individuals was undertaken by Rachel Ives (see Rátkai and Patrick 2008), all the information presented here is derived from this work. Both individuals were well preserved and were largely complete. Analysis undertaken indicated that the individuals were a young adult (20-34 years) male, and a middle adult (35-49 years) female.

You are what you eat, and as a result dental health can help say a lot about the lives of individuals in the past. The female had relatively good dental health, with just two teeth affected by caries, but the majority of the teeth present in the young man were affected. Rates of caries increase with age, and so it is not clear if the young man was more prone to developing caries, or if he had consumed a diet that was high in sugars and items that can cause tooth decay. Both individuals had high levels of dental calculus (or tartar – hardened mineral deposits that form on teeth), and this has been noted in other medieval groups. Levels of dental calculus are probably related to relatively poor levels of oral hygiene.

Figure 6.16 Left, teeth from the left upper jaw (maxilla) of F743, the older adult female. Severe wear can be seen on all teeth present, particularly the incisors. The missing teeth were probably lost post mortem.

Figure 6.17 Right, the young man, F753, had extensive dental caries. In this picture caries can be seen to have completely destroyed the tooth crowns of the two molars present, one was lost during the life of the individual, and a premolar.

Hypoplastic defects, which are visible as either linear bands or pits in the tooth enamel, result from various types of stress experienced during growth and development. The large number of hypoplastic defects apparent throughout the teeth of the young male suggests that a severe health insult, or a number of repeated insults, affected him during childhood. However, we cannot know exactly what these were as there could be a number of causes of such defects, including illness, dietary deficiencies, or other stress. Although the older female also displayed poor dental health, most likely related to diet, as well as a childhood health insults this was markedly less severe than the male's.

Pathological changes were noted in the skeletons of these two individuals, and in the young man there were a number of changes linked to trauma. Large Schmorl's nodes, depressions in the vertebrae caused due to herniation of disk material, were present throughout the lower spine of the young adult male. In younger individuals Schmorl's nodes have frequently been associated with trauma, and in the present population physical activities such as contact sports have been linked to nodes. It is possible that this man was involved in heavy manual labour, or that he engaged in some kind of recreational activity that could have produced these changes. On the right lower leg of the young man there was also an area of periosteal new bone formation, which was now well remodelled. Periosteal new bone formation has a number of causes, but trauma is a frequent cause of this type of change, and in this location it is likely that it was due to minor trauma to the lower leg.

Although these two burials are not clearly placed in terms of date and burial context, they do provide an interesting insight into the life and health of people in the Medieval period.

The Impedimenta of Death

By Quita Mould

St Martin's Church

Following the extensive research and publication regarding burials from St. Martin's (Brickley and Buteux, 2006) it is to these burials, the vast majority dating from the third quarter of the 18th century to the middle of the 19th century, that other early modern funerary remains in the city may be compared. A selection of the better-preserved coffins and their fittings are illustrated and details of the dated burials, all from burial structures, are provided in tabular form (Hancox in Brickley *et al.* 2006, table 122). The fittings from earth-cut graves were not studied and problems of poor survival and recovery of those from burial structures, only a sample of which were retained, have resulted in it being difficult to gain an idea of the range of styles of coffin furniture present at St. Martin's. The coffin furniture seen in the earth-cut graves was of black-painted iron, with inscriptions on the depositum plates executed in white-painted lettering. While the grips (handles) from the earth-cut graves were of iron those from burials within brick structures were principally of copper alloy, brass. The copper alloy grips occurred in a variety of designs and sizes (Cherrington and Buteux, in Buteux 2003, 128), but their range does not appear to have been described in print and so is unavailable to a wider audience. A late 19th century style with a twisted bar with pointed terminals is illustrated (*ibid.* fig. 115). Similarly the grip plates were principally of copper alloy but others of iron, lead and tin/nickel were also noted (Hancox in Brickley *et al* 2006, 204). An oval grip-plate of stamped metal with a paired, winged cherub motifs and a cast iron grip with similar decorative motif, from an early 19th century burial (*ibid.* fig 113), and the 'flaming urn' lid motif, from a burial dated 1834 (ibid. fig 114), are both common designs found elsewhere.

The highly fragmentary nature of some of the fittings, particularly much of the pressed metal coffin furniture (grip plates, depositum plates and lid motifs) made the range hard to establish and the highly corroded nature of the iron grips (handles) masked their shape and features. X-radiography of the sampled grips would have revealed the range of iron grip designs present and been most useful in establishing a date range for those recovered from undated burials elsewhere. The styles of all the categories of coffin furniture that could be identified might usefully have been shown using simple diagrams, as has been done for the shield-shaped depositum plates of brass (Brickley *et al* 2006, fig 116). Coffin furniture from burials of later 18th and 19th century date in the capital and the provinces has been studied. Material from Christ Church, Spitalfields (Reeve and Adams 1993), and St Pancras Church, in London (in prep.), and St. Augustine the Less, Bristol (Boore 1998) and St Peter's Church, Barton-upon-Humber (Rodwell in prep.) are comparable. Never the less, a simple illustrated corpus of the coffin furniture excavated from burials in Birmingham would be of interest and provide an easily accessed reference for future work both in the city and further afield.

In contrast to the coffin furniture from St. Martin's, textiles associated with the coffin covers, linings and internal furnishings and grave clothing have been fully described and considered within the wider context of contemporary burials from around the country (Walton Rogers in Brickley *et al* 2006, 217-234). Similarly, plant offerings placed within the burials (Ciaraldi in Brickley *et al* 2006, 247-249) and the jewellery, hair and dress accessories worn by the deceased, along with other items accidentally incorporated into the grave fills (Bevan in *et al*, 2006, 235-246) have been described and examples illustrated.

St Philip's Cathedral

Coffins found in four test pits dug along Temple Row during a watching brief in 1999 (Patrick 1999) could be dated to c. 1750-1820 by comparison with others present in dated vaults on the north side of the Cathedral. The lead lined wooden coffins had fabric covers held in place with brass studs (known as nails to the funeral trade). These coffins are described has having 'several' types of coffin grips (handles), the most commonly found being of cast iron decorated with a pair of winged cherub heads. This design was highly popular throughout the country at the time. The other grip types are not mentioned but were all made of iron; no description of the grip plates are given. Similar coffins were found in a vault on the north east corner of the

Cathedral revealed in four text pits along the northern wall. The furniture from coffins found in other areas were frequently heavily corroded and few details other than the presence of coffin grips are provided. A lead depositum plate was noted on one coffin (HB20), a possible lid motif on another (HB19) and 'fine lead decoration on the edges and central end panel' of a coffin in a brick-lined shaft (F134) on the eastern edge of Area G.

Work undertaken during a second watching brief (Patrick with Brickley 2001) again investigated only a very small sample of the total area of burials. The contents of two intact vaults were excavated during the project, those of the Baldwin and the Harrison families, and coffin remains were found in nearly every test pit dug.

Figure 6.18 View from St Phillips showing the burial ground in the 1850s. The Town Hall and Christ Church can be seen on the far right of the image, and St Martins on the near horizon to the left of centre.

The coffins in the burial vault of the Baldwin family

The dated burials in the vault ranged from 1846 to 1858. Four lead coffin shells of 'fish-tail' shape, originally with a wooden outer case that had suffered much decay, and a wooden board from a small wooden coffin were present in the burial vault of the Baldwin family. Wooden coffins with distinctive 'fish-tail' shaped lead shells within were also a feature of the burials in brick-built burial structures (vaults) at St. Martin's. The coffin furniture originally attached to the wooden outer cases was of brass and included a set of six grips and a shield-shaped depositum plate. Strictly speaking, heraldry dictated that shield shaped depositum plates should only be used for boys or young men (Litten 2002, 109) but at St. Philip's, as at St. Martin's and frequently elsewhere, this does not appear to have been followed. One burial had a lead depositum plate lying directly beneath one of the brass. The best-preserved wooden shell had a fabric coffin cover surviving; it was dark in colour and felt-like, likely to be baize, see below.

The coffins in the burial vault of the Harrison family

Six burials, those that could be dated ranging from 1846-1870, within the Harrison family vault were also in coffins with fish-tail' shaped shells with wooden outer cases with fabric covers. Some had the fabric secured by brass studs (HB12, HB13), two examples dated to 1846 (HB11) and 1870 (HB7) respectively had the fabric covers held by coffin lace of pressed metal. The fabric was brown in colour but was thought to have faded from black. Where described it was said to have been felt-like, though this has been interpreted as being velvet (Patrick with Brickley 2001, 51) it is, perhaps, more likely to be baize. Fragments of coffin covers from the eight burials at St. Martin's that were analysed were of medium weight wool cloth, a 'dark velvet-like material'

was noted on at least one coffin (HB304, Brickley *et al* 2006, 258) but no examples were seen in analysis. The coffin of William Harrison, a two-year old boy, was notable in having a small glass window at the head end of the lid, however, it was deliberately covered by a lid motif so that the child's face was not on view. The latest burials that of Samuel Harrison (HB6) and Hannah Harrison (HB8) who died in 1879 and 1890 respectively, were in wooden coffins that had been French polished (Patrick with Brickley 2001, 51), or possibly waxed, as was then the new fashion (Litten 2002, 117).

Coffin furniture comprised a set of grips with plates, a depositum plate and lid motifs. The coffin of two-year-old William (HB11) had a set of four small grips on the small coffin rather than the usual set of six of standard size. The grips on two burials were of iron (HB7, HB9) those on two others (HB6, HB8) were of brass; the composition of those on the remainder was not specified. In addition to a central depositum plate, lids were decorated with a pressed metal motif at the head and the foot. The two designs, one a pedestal urn and palm, the other of a weeping woman leaning on an urn, are both common motifs seen on contemporary burials elsewhere in the country. Five coffins had these lid motifs, those that were dated had been interred in 1846 (HB11), 1853 (HB9) and 1870 (HB7). The shield-shaped depositum plate on one burial with lid motifs (HB13) could be seen beneath the corrosion to have a silver coloured reflective surface (Patrick with Brickley 2001, 33) possibly suggesting a tin-dipped iron or a silvered tin composition.

The lack of description precludes anything other than the broadest comparison between the coffin furniture from St. Philip's with that from St. Martin's or elsewhere. We do not know which of the two types of shield-shaped depositum plates found at St. Martin's were present at St. Philip's or whether both were found. The two designs of lid motifs found at St. Philip's do not appear to have figured prominently at St. Martin's but this cannot be known for certain from the information available. While the popularity of cast iron grips with cherub head motifs and the occasional use of pressed metal coffin lace was noted at each location, black painted coffin furniture was a consistent feature of the earth-cut graves noted only at St. Martin's. Whether the differences in coffin furniture reflect slight differences in date or the social status of the parishioners cannot be judged. Any bias due to differential survival, collection policies or degree of subsequent analysis cannot be easily gauged.

Burial clothing

One burial dating to 1870, that of Catherine Harrison (HB7), had fragments of the burial clothing preserved (Patrick with Brickley 2001, 28), apparently an elaborate, pleated shroud of linen and a cap. The shroud with a pleated bodice was gathered around the waist, tied with a bow and decorated with a double row of rosettes from shoulder to ankle. A single brass button found in one burial was probably incorporated into the grave fill accidentally.

Items placed with the burials

The latest burial (1890) that of Hannah Harrison (HB8), appears to have been buried with floral tributes. Two spirals of wire found amongst the ribs were interpreted as the remains of floral tributes placed inside the coffin while a wreath, an iron ring with wire wrapped around it with some foliage surviving, had been laid on top of the closed coffin. Plant remains, thought to have been of symbolic significance, were also found placed within a small number of burials at St. Martin's, and traces of two wreaths were noted on a coffin, within a vault, believed to date to 1904 (Ciaraldi in Brickley *et al* 2006, 249). The presence of wood shavings or similar material within the coffins to absorb leaking fluid found at St. Philip's and at St. Martin's is also commonly recorded in contemporary burials elsewhere.

One adult burial (HB15) had a George III penny dated 1806 placed in the coffin on the right hand side of the head (Patrick with Brickley 2001, 20). While it would seem that the coin had been deliberately placed in the coffin other interpretations are possible. Georgian pennies have also been found within coffins at St. Peter's Church, Barton upon Humber (Rodwell in prep.). On this occasion, two pennies of George III, dated 1797, one coin placed one on top of the other, were found within two adult burials (365, 3650). The burials were located either side of the north wall of the church, one (365) inside the building, the other (3650) outside, lying below

the same window. It was suggested that the coins might have been placed on the eyes of the corpses originally but later moved aside, and subsequently forgotten. The coins may have been removed either for the mourners to view the corpses at the burial services, or when the coffins were closed ready for the journey to the church. This might be the case with the coin accompanying the burial at St. Philip's. Nine coins and tokens were found at St. Martin's-in-the-Bull Ring, three certainly associated with burials, but their locations were not recorded. They were also thought to have been on the eyelids of the deceased or possibly lost by mourners or undertakers (Bevan in Brickley *et al* 2006, 242).

There is no reason to doubt that the water worn pebble in the burial of Selina Harrison (HB10) was not intentionally buried with her for the nine-year girl is said to have been clutching it in her right hand (Patrick with Brickley 2001, 31). The stone must have been of strong significance to the little girl and her family.

St Bartholomew's Chapel

Coffin furniture was recovered from excavations at Masshouse Circus in Birmingham City centre that revealed burials from the burial ground of St. Bartholomew's Chapel. Coffin furniture was recovered during the watching brief in 2001 (Neilson and Duncan 2001) and the observation and recording exercise of the following year (Krakowicz and Rudge 2004). A small amount of coffin furniture was recovered unstratified during both exercises. Coffin nails were found associated with four of the ten in situ burials (HB2, HB4, HB5, HB6) uncovered in excavation Trench 1b. Potentially more usefully, coffin grips (handles) were found accompanying three of the ten in situ burials (HB2, HB5, HB8), however, these are not described or illustrated so no information regarding style and, therefore, date range can be gathered from the documentation.

A very small quantity of other items was recovered from 'non-burial' contexts spot dated to the 18th/19th centuries and 19th/20th centuries. An iron nail and a mother-of-pearl button came from a deposit in Trench A [1005] whilst 'much modern metalwork' was recovered from heavily disturbed layers (Krakowicz and Rudge 2004, 7). The finds from Trench 1b and elsewhere are presented by count and material in tabular form (ibid. table 3). Trench 1b contained a bone and an iron object from context 1005 and an object of copper alloy from context 1004. An item of shell, presumably a second button, was found in a deposit [3003] spot dated to the 19th/20th century. Without identifications of these objects little information can be gained from this.

Only a very small number of small finds were recorded from these excavations. Despite this there appears to be some confusion as to their provenance and potentially useful tables appear to contradict each other. Table 4 giving details of coffin furniture omits that from HB5 given in table 1, and table 3, while appearing to summarise all the 'non-burial' finds, does not include material recovered from Trench A.

Conclusion

Status and wealth is reflected not only in the choice of coffin and its furniture but also in the coffin covering and burial clothing of those interred in earth-cut graves and those in brick-built vaults seen at St. Martin's-in-the-Bull Ring. Silks, a choice of material suggesting some prosperity, were used exclusively in burials within vaults (Walton Rogers in Brickley *et al*, 2006, 224). In this churchyard social status was strictly observed as, although undoubtedly wealthy as some of them were, the middle classes chose wool baize coffin covers rather than velvet which was restricted to the higher ranks of society. Regional differences are also suggested in the coffin design and the choice of textiles used by the funeral industry. The popularity of 'fish-tail' shaped lead coffin shells at both St. Martin's and St. Philip's has been remarked on (Hancox in Brickley *et al* 2006, 202). It has also been suggested that some of the coffin furniture from St. Martin's-in-the-Bull Ring may be 'particular to the local scene' (Hancox in Brickley *et al* 2006, 209), but without adequate description or illustration this aspect cannot be investigated further. In future work on burial archaeology in Birmingham, provision should be made to allow these topics to be addressed. It is impossible to add to the debate unless the coffins and their contents are adequately described and illustrated so that the information may be easily accessed. Study of the coffin fittings from St. Martin's was restricted by the nature of the project and then

hampered by the limited sample of coffin fittings that could be recovered for assessment and analysis (*ibid*. 198).

Investigation of the burials at St. Philip's and St. Bartholomew's churchyards also had their difficulties. That is often the nature of such a sensitive area of archaeological research. All the more reason to describe and illustrate the finds to an appropriate level to enable the dissemination of the results of such difficult work as fully as possible.

Dowell's Retreat and Chapel *by Jo Adams*

Dowell's Retreat (**22**) comprised almshouses and a chapel at the corner of Warwick Street and Warner Street providing accommodation 'For the benefit and comfort of such poor women as having lived respectably and seen good days are reduced by misfortune to want' (Epitome of Deeds Re Dowells Retreat' MS1125).

The lease for the retreat was written on 29th September 1819, for land to be held for 107 years and 6 months, less 6 days. The buildings were erected by James Dowell and endowed by his widow Elizabeth in 1831. The cottages were built in a Gothic style on two sides of a courtyard and consisted of a sitting room on the ground floor with a bedroom over the top. At the end of the courtyard was a two-storey building with rooms for the Matron on the ground floor and a chapel above. The windows of the chapel were painted with views of Birmingham buildings and of English cathedrals and churches. In the centre of the courtyard was an enclosed garden and a high brick wall surrounded the whole area. The cottages doors were surmounted by ogee-shaped panels of cast-iron decorated with symbols of Faith and Hope, with Charity represented by the almshouses themselves.

Figure 6.22 Left, Dowell' Retreat 1932 (Local Studies ref WK/B12/7)

The Retreat had strict rules on the eligibility of the 'objects' - as the ladies who occupied the cottages were described - in the Epitome of Deeds, now held in Birmingham Archives. Widows or spinsters who lived in the vicinity of Bordesley or Deritend were allowed to occupy twenty of the cottages. Failing that the 'objects' could come from the wider parish of Aston providing that they had been born in the parish or lived there for the last seven years of their life. They had to be aged between 55 and 70 and be free from disease, of good disposition and conversation and capable of reading the scriptures. They had to be 'sound members of the Church of England and partakers of its Sacraments and of good character for honesty, sobriety and chastity'. Proof of this had to be obtained by production of two written references from respectable members of the parish. The only exception to this was for relatives of the founders should they fall on hard times. The remaining cottage was for the Superintendent who had to be aged between 40 and 55, or for the widow or daughter of a clergyman. She had to be single, capable and responsible and was paid 3s a week in addition to her other income, for subsistence and her 'general responsibility'. She was also given one ton of coal each quarter to warm the chapel and provide a small fire at night in case of sickness.

Once accepted into the Retreat the 'objects' were referred to as 'sisters'. They had to be in receipt of parish aid and bring with them a good clean bed, linen, a constant supply of clothes, a bible and a prayer book. In addition they would receive 1s 6d from the Retreat together with fuel for a fire. They were given two small garden plots on which they could only grow herbs. The cottages were inspected weekly to check on the cleanliness, health and behaviour

of the residents. They were encouraged to do knitting, spinning, sewing or quilting for friends or to sell, but forbidden to work 'for a manufactory'. A bench vice or any fixture for noisy work was not permitted.

Figure 6.22 Right, one of the sisters sitting outside a cottage (WK/B12/7)

Religious observance was strict, and firmly based within the Established Church tradition. The trustees themselves had to be from the Church of England, and the sisters had to attend the Chapel to hear readings from the Book of Common Prayer twice a day. In addition, those who were able were expected to attend Holy Trinity Chapel in Deritend on Sunday mornings and St. John's Chapel Bordesley in the afternoon, together with extra attendance for any other special festivals. A register of each sister's church visits was kept by the Superintendent. The sisters were not allowed visitors on Sundays and were forbidden to keep any pets. If a sister married they faced immediate expulsion, or if they inherited £20 a year were asked to leave with a months notice. Having signed the list of conditions on entrance, sisters who failed to observe the rules were subject to a fine or expulsion (Epitome of Deeds Re Dowells Retreat' MS1125).

Dowell's retreat provided respite and care for a very particular group of disadvantaged people in 19th century Birmingham society. Their care was extended to women aged over 55, not destitute or poor but those who had in the past been respectable and of good character. They may have been widowed, unable able to cope without their husband's support, or servants who were no longer able to work because of age or infirmity. Others may just have been victims of unfortunate circumstances. The cottages suffered bomb damage during World War II when many of the stained glass windows were destroyed. After the war the cottages were repaired and the deserving ladies returned (Transactions of the Birmingham Archaeological Society 1943 & 1944, 142). The cottages were demolished in the 1970s, but there is still a care facility for senior citizens relating to the Elizabeth Dowell's Almshouse Charity existing in the city today.

The People, the Physical Anthropology: Post Medieval Human Remains

By Megan Brickley

Recent analysis of the human remains recovered during the excavations undertaken at St. Martin's provided a wealth of information about many aspects of the lives and deaths of Birmingham's inhabitants during the post medieval period. Human remains dating to this period have been recovered from a number of other locations around the city and the information obtained from these remains provides a useful comparison to information derived from St. Martin's.

During excavations undertaken at St. Philip's cathedral approximately 25 individuals were recovered as articulated burials along with disarticulated human bone (basic information on these human remains is contained in Appendix 4). Basic skeletal analysis was undertaken prior to re-burial and these data provide an interesting comparison to information from St. Martin's.

Excavations at St. Philip's produced fewer juveniles than would be expected given the levels of infant mortality that are known to have occurred at this time. Analysis of data in the burial registers for St Martin's (Brickley and Buteux 2006) demonstrated that 53.8% of those recorded in burial registers were juveniles. At St. Martin's juveniles accounted for 32.8% of earth-cut burial and 20.2% of vault burials. At St. Philip's juveniles accounted for just 17.4% of the articulated individuals analysed. Research on the recovery of infant remains from archaeological sites is on-going, but the lower than expected numbers of juveniles from two different archaeological sites in the city indicates that this is a real problem that requires further investigation. Infant morbidity and mortality are areas that have considerable potential to contribute to a full understanding of past communities.

Levels of completeness and preservation of the skeleton, both areas that have the potential to contribute to the amount of information that can be obtained from human skeletal remains, were both worse at St. Philip's than St. Martin's. Both these factors have an impact on the number of pathological conditions that are likely to be recorded. As at St. Martin's the human bone that had been buried in metal coffins in the vaults was very variably preserved, with bone that had sat in fluids at the base of the coffin being the least well preserved. From previous findings in the crypt at Christ Church Spitalfields (Molleson and Cox, 2003) and St. Martin's in Birmingham (Brickley and Buteux, 2006) such preservation appears to be a consistent feature of human bone buried within metal coffins.

Despite the poorer preservation some interesting points were noted during the analysis. For example, a case of rickets (a condition caused by vitamin D deficiency) was identified in one of the articulated juvenile burials. There were also a number of juvenile bones in the disarticulated human bone that had evidence of bending deformities characteristic of those found with rickets. Recent work has expanded the range of features attributable to rickets, and identified features that can be used to say if the condition was active or healed at the time of death (Mays *et al.*, 2006), but these recording criteria were not available when the bone analysis at St. Philip's was undertaken. The finding of rickets at St. Philip's does however confirm that vitamin D deficiency was a widespread problem during this time period. Although nutritional factors may have played a role, the overriding cause was almost certainly lack of exposure of skin sunshine. Building types, industrial pollution, working practices and clothing would all have contributed to limited availability of sunshine. Analysis of the individuals buried in the vaults at St. Philip's indicated that one of the adults had bone deformities indicating that they had suffered from rickets as a child. Quite a number of adults analysed at St Martin's also had residual deformities linked to childhood vitamin D deficiency.

A probable case of ankylosing spondylitis (AS) was recorded in an adult male from St. Philip's. Ankylosing spondylitis is an inflammatory disorder that leads to the progressive fusion of the sacro-iliac joints and those of the spine. The exact cause of this condition is not currently known, but it may be genetic. The impact on affected individuals depends on the extent of fusion of the joints, it can be severe, but during its early stages it often goes unnoticed. The case from St Philip's remains probable, because much of the skeleton of this individual was missing

and so the full range of features that would have allowed a clearer diagnosis could not be recorded. Only one case of AS was found during analysis of all the individuals from St. Martin's, and the possible case from St. Philip's serves to illustrate that interesting and unusual pathological cases can be found even during analysis of relatively small numbers of individuals. Analysis of one of the individuals excavated from Masshouse, discussed later, also illustrates this point.

The of human remains from St Martin's produced few clear cases of osteomyelitis, pathological changes that often result from infections agents entering bones. The changes are not specific to a particular disease and can be produced by a wide range of causes. What osteomyelitic changes to bones do indicate is the presence of a severe and long standing infection. Few cases of osteomyelitic changes were found during the recording of the human remains from St. Martin's. The case of osteomyelitis found at St Philip's was recorded in an older adult male from the vault. There was considerable swelling of the lower end of the right femur, and the top of the tibia and fibula from this leg were also affected. Prior to the availability of antibiotics osteomyelitis could result in the death of an affected individual, although as with all chronic conditions people can live with them for some time and it is not possible to be sure if osteomyelitis was linked to the cause of death of this man. He will however have certainly experienced discomfort and pain in the affected leg and would probably have had an associated ulcer.

There was also one individual, an adult male, in which fusion of some of the finger bones had occurred. Although there are a number of possible causes of fused phalanges, trauma is a strong possible cause and such an injury could be linked to work-related activity. At St. Martin's males in particular had high levels of trauma, backing up information derived from contemporary accounts on work-related injuries and violence in the community (see below). Another pathological change almost certainly linked to trauma was a case of osteochondritis dessicans on the medial condyle of the left femur was recorded in one of the adults.

A Hard Knock Life: Birmingham Violence *by Martin Smith*

Life in the city appears to have been tough for many of Birmingham's inhabitants. A number of the individuals excavated from Birmingham's 18th and 19th Century burial grounds had suffered injuries during their lives which were apparent as healed fractures. The majority of these injuries are likely to have been incurred accidentally, many probably being work-related, however a proportion of the fractures apparent amongst the analysed sample from St. Martin's were of a type more consistent with interpersonal violence. These included fractured nasal bones, fractured mandibles and injuries to hand bones (the metacarpals) Brickley and Buteux (2006, 127). When this sample of trauma was analysed more closely it was suggested by Brickley and Smith (2006) that the facial and hand injuries may relate to hand-to-hand fighting in a style consistent with early boxing techniques. A similar pattern of injuries was also noted in individuals from St. Peter's Church, Wolverhampton (Adams and Colls 2007, 52).

Boxing was certainly popular within the city during the time the burials at St. Martin's were made. Early boxing histories cite Birmingham as the largest centre for the sport outside London with a number of champion boxers originating in and around the city. For example, Isaac Perrins (1750–1800), who became champion of England, worked as a foreman and engineer in one of the city's new steam-powered brass foundries. Perrins was an employee of Boulton and Watt and in 1789 he erected the first Boulton and Watt engine in Manchester, before moving permanently to the city and becoming landlord of a public house (the Fire Engine, Leigh Street) in 1793 (Musson and Robinson 1960, 215). There is no reason to suggest that any of the individuals excavated from St. Martin's were boxers as such. Rather, the growing popularity of the sport during the 18th and 19th centuries may have prompted the wider adoption of boxing methods as the 'accepted' style of settling interpersonal disputes as suggested by Walker (1997) and Brickley and Smith (2006).

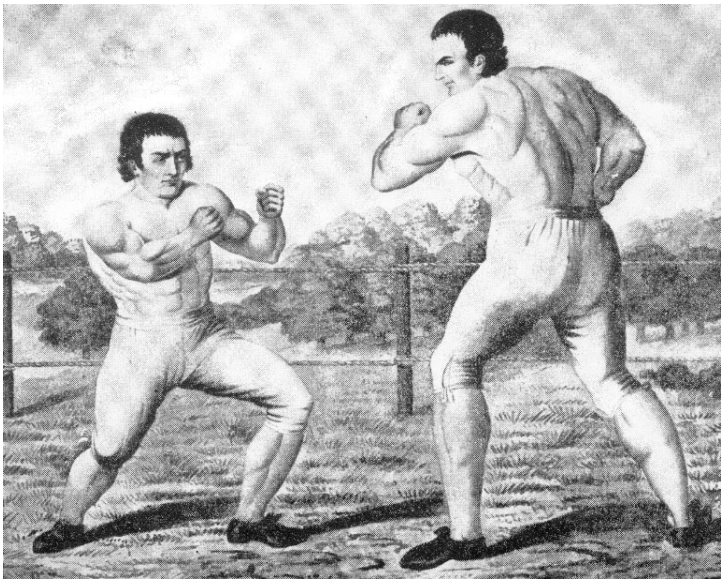

Figure 6.19 *Issac Perrins v. Tom Johnson 1789*

Figure 6.20 *Isaac Perrins commemorative medal*

In addition, two individuals from St. Martin's had healed head injuries consistent with the use of weapons. One of these had resulted from a blow with a blunt object whilst the other was consistent with the use of an edged weapon such as a sword. A suggestion raised by this latter injury is that this trauma could have been sustained during military service (Brickley and Buteux, 2006, 127). For much of the period in which the excavated burials were made Britain was at war in various parts of the globe. Consequently, these injuries need not have necessarily occurred in Birmingham. Another possibility however is that these head injuries might relate to law enforcement. Certainly, the police used both blunt and edged weapons during this period, whilst it may also be relevant that civil disturbances and rioting occurred on various occasions in Birmingham during the 18th and 19th centuries. Such incidences include the Priestley riot of 1791, which lasted a week (Cherry 1994, 54), and the Chartist riot, which took place in the Bull Ring in 1839. One account of the latter describes the use of a variety of weapons both by rioters and by the police and army detachments that were sent in to deal with them. These

include swords, guns, and police "staves" as well as the rioters' improvised weapons including cleavers, stones, and the iron railings surrounding St. Martin's church and Nelson's statue (Edwards 1877, 25–29).

Excavations at Park Street Burial Ground (**52**) revealed around 12 articulated human burials. Due to restrictions on resources, only one of these individuals (HB 2) was analysed fully. HB 2 was an older adult male, who had suffered from a number of pathological conditions and traumatic injuries during his life, one of which the amputation of his left leg is detailed in Box Feature. During his lifetime this man had suffered from a number of traumatic accidents that had left evidence on his bones in the form of healed fractures. Osteoarthritis (OA) that had developed around some of the joints was almost certainly at least partially linked to the trauma experienced by this man. Osteoarthritis was also a common finding in individuals analysed from St. Philip's. This condition is frequently noted as being one of the most commonly recorded conditions in archaeological human remains and so finding evidence for its presence at all sites investigated is not unexpected. There are a range of factors that can contribute to the development of OA, including genetics, trauma, lifestyle factors – including those linked to the amounts and types of activities undertaken during the working lives of individuals. Small numbers and incompleteness of the skeletons make drawing any comparisons between data obtained from each of these unpublished excavations difficult. It would be expected that the prevalence and sex distribution of these conditions should broadly match those reported for St. Martin's, where 24.6% of females and 21.7% of males had skeletal changes linked to OA (Brickley and Buteux, 2006).

The Amputation *by Megan Brickley*

One of the accidents suffered by the older man who was analysed from Park St Burial grounds (**52**), resulted in the amputation of most of his left leg. The amputated limb was not buried with this individual and so it was not possible to be sure about the exact nature of the injuries suffered. However, contemporary accounts make it clear that amputations were frequently carried out following traumatic accidents that often involved machinery in factories and workshops.

Analysis of the cut marks on the femur revealed a number of interesting things. First, it was noted that two attempts were made to remove the leg, and secondly analysis of the cut surface of the bone in the scanning electron microscope (SEM) demonstrated evidence of bone cell activity. It was clear that this man had lived for at least a couple of weeks following the operation, it is likely that his death was linked to an infection introduced during the amputation.

The left leg was amputated in the top third, leaving a stump 223mm in length. The first cut was made from the superior, inner (medial) surface of the femur, but penetrated just 1.9mm. The second, successful cut was just under 1mm from the first, with the last 2.87mm of bone having been snapped off rather than cut through. From visual examination it was very difficult to discern any marks related to cutting on the bone surface, and examination using SEM demonstrated that this individual had lived for a short period following the amputation. Small areas of new bone growth were apparent on the cut surface, along with other features indicative of bone remodelling. It is impossible to say how long this individual lived following the operation, but it could have been several weeks.

The amputation examined in the individual from Park St Burial Grounds is interesting as it provides direct evidence for this medical procedure in Birmingham during the nineteenth century. No amputations were recorded during the examination of the human remains excavated from St. Martin's (Brickley and Buteux, 2006). Cases are reported in medical literature from this period, for example the report in the British Medical Journal by Pemberton (1853) in which details are given of an accident suffered by a 17-year-old girl in factory machinery in Birmingham. As in the case of the man examined from Masshouse, the girl died shortly afterwards, in this case 18 days after the amputation. Although there would have been a high risk of infection resulting from amputation, some individuals who had limbs amputated at this date did survive. Three individuals who had a limb amputated were identified during the

analysis of human remains from St. Peter's, Wolverhampton (Arabaolaza et al., 2007). All these individuals survived the amputation and two of them had probably lived for a considerable period.

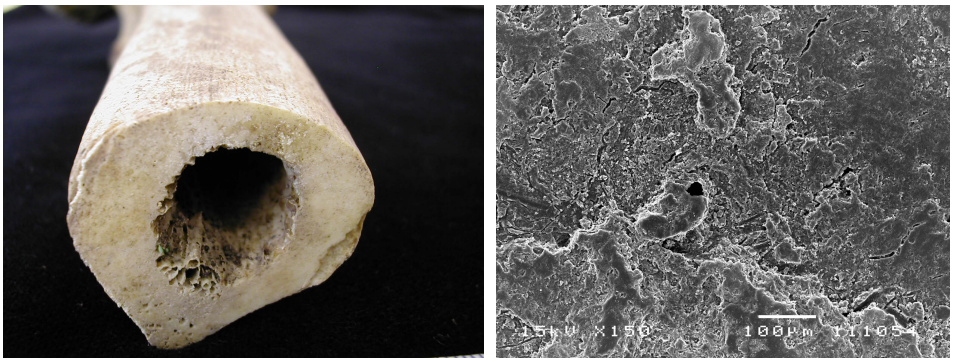

Figure 6.21 Left, the severed end of the femoral shaft. On the left the false start can be seen and on the right the final piece of bone which broke away rather than being cut through is visible. Right, Image of the cut surface of the femur taken using a scanning electron microscope. Raised areas of new bone formation are visible on the surface

Overall the information obtained indicated that trauma was a problem, particularly for men working in the city, and that far more traumatic injury than those recorded for St Martin's did occur. The trauma came from a wide range of possible causes and its effects on the skeleton were very varied. Conditions such as OA were probably at least in part linked to trauma and work related activities. Information derived from all of the burial grounds excavated from this period in the city indicates that burial sites were extensively used, and that many burials were soon disturbed by later interments. The very large quantities of disarticulated bone present at each of the sites bear witness to the extensive use of these burial grounds (basic information on the disarticulated human bone from St. Philip's is available in Appendix 6). Whilst for some periods considerable quantities of information can be derived from disarticulated human bone, disarticulated assemblages, 'loose' bone of this date produces little information and is only worth giving a brief scan.

The unpublished sources relating to human remains from Birmingham sites demonstrate that it is possible to find valuable additional information even from small assemblages of human remains. Although analysis of the human bone from St Martin's provided a considerable quantity of information on a wide range of aspects of life work and death in Birmingham, even small assemblages have to potential to contribute further information if analysed carefully. Little is currently known about the possible patterns of health that might be recorded from the population of rural areas from this period. Many areas that would have been outside of Birmingham, and other cities, at this time have since become incorporated into urban areas. If the possibility arose of analysing a collection of human remains that came from a rural context, this would provide very valuable information. As such a site would probably have been less extensively used it might also be possible to recover articulated burials from slightly earlier time period which would also provide an interesting comparison and information on changes in health through time.

Discussion

Recent excavations within the study area have produced wealth of new information independent from, but complementary to, the written record regarding life and death in the expanding post-medieval town. The vast majority of burials excavated date from the time when Birmingham was becoming increasingly important as one of the world's principal centres of manufacturing and innovation. In addition to the town's successes during this period the rapid rate of change also brought a variety of problems and challenges. Consequently, the burial

evidence reflects both the degree to which an emergent class of individuals had grown wealthy through the town's principal industries and also the extent of overcrowding and poor living and working conditions that had become simultaneously inherent. The period in which the excavated burial grounds within the study area saw their most intensive and final use bears witness to the rapid growth of large towns in general following the industrial revolution. The attempts to cope with the growing needs for burial provision in the town also coincide with the rise of new forms of local government as the old system of parishes proved increasingly inadequate for dealing with the pressures and challenges presented by dense urban living.

Given the distinctly hierarchical character of Victorian society it is perhaps unsurprising that this fact of life should be reflected in funerary remains from the time. Burial structures in particular were designed as conscious reflections of socio-economic status, serving to distinguish people in death as visibly as they might have been picked out in life. As noted previously, such differentiations were particularly apparent in the quality and style of coffins and their associated fittings. It has also been pointed out by Buteux and Cherrington (2006, 88) that whilst the underground structures such as vaults often appeared relatively similar on excavation, the associated memorials visible above ground, such as table–top tombs were often much more expensive and may have showed considerably greater variation.

At St. Philip's a high proportion of the excavated earth-cut burials were apparently interred in lead-lined coffins. Also it was noted that a high proportion of the headstones were those of children (Patrick 2001, 43). These features may both suggest the churchyard to have been preferred by slightly wealthier people than many of those buried in earth-cut graves at St. Martin's. This suggestion would also be consistent with earlier written sources denoting St. Philip's as being situated within the most prestigious part of the city (Adams, this volume). On the other hand, it is also possible that the small overall area investigated at St. Philip's may be unrepresentative of the site as a whole. Certainly some parts of the site are known to have been used for burials deriving from the local workhouse. Further comparison with the Park Street burial ground where other members of the poorest sections of society are likely to have been buried was not possible. However, the recent excavation of the overflow burial ground of St. Peter's Church, Wolverhampton (Adams and Colls 2007) may provide a useful alternative. Similar to Park Street, this cemetery was used for the burials of the least wealthy individuals in a district that is recorded as having been particularly impoverished with unsanitary living conditions. Here there were even lower numbers of lead lined coffins in evidence than amongst the earth-cut graves at St. Martin's with most burials interred in simple wooden coffins. Further comparisons with other midlands cemeteries would be particularly desirable in future addition to comparison with rural cemeteries of 18th and 19th century date.

Both St. Martin's and St. Philips exhibited substantial evidence for overcrowding consistent with contemporary written sources with considerable intercutting of graves. The extent to which many earlier burials were disturbed by later interments in Birmingham appears to have been commonplace in the crowded urban churchyards of 19th century Britain. After being employed to assist in the exhumation of over 7,000 burials from a similarly crowded graveyard prior to the construction of St. Pancras station in the 1860's, Thomas Hardy wrote in his poem "The Levelled Churchyard":

'We late lamented, resting here,

are mixed to human jam,

and each to each exclaims in fear,

I know not which I am!'

(Thomas Hardy, in Gibson 1976)

The later use of paths at St. Philip's both for earth-cut burials and vaults and also the location of the Harrison vault directly beneath the gateway on Colmore Row is further evidence of the extent of overcrowding with the churchyard. As the older burial ground St. Martin's would appear to have become similarly full at an even earlier date. The chambered vault (Vault 10)

was constructed in the passageway between buildings leading to the churchyard, and therefore not even inside the churchyard itself.

The degree of overcrowding and intercutting of graves apparent at St. Martin's and St. Philip's need not necessarily be seen as common to all 18th and 19th century urban burial grounds, although recent work does suggest that overcrowding is entirely characteristic of the period (Brickley, pers. comm.). The excavated area at St. Bartholomew's certainly gives an impression of being less crowded by the time it went out of use although this remains uncertain due to the small area excavated at this site. Little is known about the density of burials in Birmingham's various non-conformist burial grounds, although Quaker burial grounds are certainly known to have been characterised by a desire to avoid disturbing earlier burials with plots laid out in a regular fashion specifically to avoid truncating previous graves. However, it should also be born in mind that other non-conformist groups may not necessarily have shared such concerns. The recent excavation of an 18th -19th century Baptist cemetery in Poole (West Butts Street) demonstrated a high density of burials similar to other excavated burial grounds of the period with frequent intercutting of graves (McKinley 2008). Consequently, it may be the case that unlike the Quakers, the burial grounds of many non-conformist groups may be largely undistinguished in archaeological terms from those of the Established Church. A further point of note relating to West Butts Street was the fact that the respective congregation also failed to conform in that they kept no records of burials (or at least none survive). If this proves to be the case for other non-conformist burial grounds investigated in the future, such a lack of documentation is only likely to add to the challenges already inherent in post-medieval cemetery excavations.

Investigations within the study area have shown repeatedly that earlier episodes of landscaping in disused burial grounds may affect the amount of information that can later be extracted from them. At all three of the Birmingham burial grounds investigated archaeologically it was not generally possible to relate either earth-cut burials or brick-lined vaults to above ground memorials. Also, whilst some of the table-top monuments above vaults at St. Philip's had remained *in-situ* others had evidently been moved from their original locations.

Chapter 7 Life, Work and Death in Birmingham City Centre; future strategies

Amanda Forster and Stephanie Rátkai

Project outcomes

The overarching aim of this project (as outlined in the project brief) were to provide a holistic overview of the archaeological remains recorded in the City centre and to broaden knowledge of archaeological evidence in order to inform future decisions about below and above ground archaeology (Patrick 2006, 2). In this, the project has been highly successful; it has collated and integrated data from all work undertaken within the remit of PPG16 and, in addition, provides a summary gazetteer of all the relevant sites. This report provides a synthesis of all that information and will provide the basis for further dissemination. The recommendation of the editors is to publish aspects of this data in the most appropriate forum, including online platforms, and to use this report as a resource from which to do that.

A key outcome of this project is the recognition of the contribution that developer-funded work undertaken within Birmingham City Centre has made towards the wider understanding of its growth and development. That contribution to knowledge has been outstanding and cannot be underestimated. The 85 projects included in this report (see Gazetteer, Chapter 8) represent nearly 100% of the archaeological work undertaken in the city centre. Preservation of archaeological deposits has in many cases excelled expectation and the various data collated provide surprisingly extensive evidence of the dynamic town that existed in Birmingham prior to 1300 (cf. Dyer 2003, 3) and of its subsequent growth. Furthermore, the opportunity given by developer-led archaeological investigation to explore these deposits is something which could not be attained through any other means. Research councils and other funding organisations, for example, are unlikely to have been able fund large-scale excavations on a scale similar to that seen with the Bullring development. Moreover, the needs of ongoing urban redevelopment provide the impetus for necessary disturbance of deposits and features to which access purely for research purposes simply could not be justified. In Birmingham, such issues are most apparent in relation to the city's urban burial grounds where recent excavations have permitted access and insights regarding the population of 18th and 19th century Birmingham that could not have been attained through any other means.

The project has allowed the overview and synthesis of work that PPG16, by its necessarily site-focused approach, cannot facilitate. Collation of the archaeological projects within one GIS database has allowed far fuller appreciation of the geography and chronology of investigations to date. Of the 313 hectares included within the study area, roughly 132 have been subject to some kind of archaeological work, predominantly concentrating on the south and west (see Chapter 3, Figures 3.1 and 3.2). It is perhaps serendipitous that a large portion of modern development in and around the city's historic roots (not least the Bull Ring) has resulted in large areas of open-area investigation at the core of the early town. Arguably, the areas of Digbeth and Deritend have benefited most positively from archaeological intervention, but other large areas of the city (such as Dale End, Eastside, Snow Hill and St Phillips) have been the subject of desk-based assessment adding to our knowledge of certain pockets within the study area. In addition, the above ground archaeology of the city – the historic buildings – have also been the subject of developer funded investigation. Revealing the background to individual buildings and groups of buildings has shed light on the city's industrial and commercial nature, adding a third dimension to the archaeological story. The nature of the city's infrastructure – its railways and canals – can be seen to have had a huge effect on its built heritage and commercial development.

Despite the extensive development of Birmingham's centre, the concentration of investigation around its medieval core has meant that there are large areas where no work has been undertaken. Some of these gaps may be filled to some extent by non-PPG16 generated work. The extensive survey of the Jewellery Quarter by English Heritage covers a large area of the

city to the north and northwest of St Phillip's Square (Cattell *et al*, 2002) and research into Birmingham's history has also been undertaken by independent scholars, such as Ray Shill, Joseph McKenna and Chris Upton. Restoration of Hurst Street's back-to-back housing provided a catalyst for investigations into Birmingham's social history (see Upton 2005) and Chinn's *Bibliography of a City* provides an excellent signpost to work undertaken within the city and its environs up to its publication date of 2003.

While development has afforded a substantial opportunity to investigate the archaeology of the city, the nature of planning work does have its downsides. Areas tend to be investigated within the boundaries of an individual development site and, as such, there has been a lack of synthesis over the 25 or so years of PPG16. The aim of this project has been to provide that overview, but also to comment on the contribution made by developer-funded archaeological research. One of the concerns which led to this project being undertaken was that key evidence was being missed, lost within a pile of unpublished and hard to access reports. What has been found is that, in reality, much of the work undertaken is accessible and in the public domain, and that key sites have tended to be fully published. The missed opportunity is the lack of large and research-driven synthesis of the results. The big projects are well known, but the significance of the whole story has risked being lost in amongst a series of small (and on-the-surface unimportant) individual reports. This piece of work has been able to highlight some of the potential avenues for future research (see below), but the observation has wider implications. The question of who, if anyone, may hold responsibility to see that more synthetic research is undertaken is natural to ask. However, it is probably unlikely that any one body or organisation can take on such as role. It is surely unrealistic to burden developers and the planning sector with the cost, meaning that archaeological organisations would need to find alternative funding to pay for that work. Independent researchers, academic staff and students might be in a better position in some respects, but they would need access to (and knowledge of) the raw materials – as well as inspiration. The section below provides some thoughts on potential research projects, and this report hopefully provides some insight into the potential Birmingham has to offer anyone interested in understanding more about 'this dirty great leviathan'.

Birmingham before PPG16

Sherlock's work in Deritend in the 1950s was the first real glimmer of expectation that archaeology might survive in Birmingham and the first archaeological evidence of medieval industry in the City. Later salvage recording at the site of Birmingham's moated manor (Watts 1980) provided evidence for a well-constructed ashlar building – hinting at the early centre of power which previously occupied the areas around the historic bullring. Despite this, a view of Birmingham as limited in terms of archaeological survival and both poor and insignificant place until the mid 18th century had prevailed. If nothing else, the work undertaken as part of the planning process has acted to dispel the idea of limited archaeological survival, as well as the negligible and isolated status of Birmingham before the Industrial Revolution. In truth, the latter should really have been open to question from the outset, since, although documentary evidence is scarce, there were sufficient references to suggest that Birmingham was a place of some importance in Warwickshire, even if massively overshadowed by Coventry. There are many areas where archaeological work undertaken in planning has added previously unknown detail, but some are particularly worth noting. These have been discussed in detail within the previous chapters, and are summarised below.

The Environmental Evidence

A very limited perspective on Birmingham's palaeoenvironment existed prior to work undertaken after PPG16, with only one study having been undertaken. During the rescue excavation of the moated manor site, James Greig sampled some of the Manor Moat deposits (1980). This work was very much expanded upon with the sampling of the Parsonage Moat-Manor Moat Watercourse (Greig 2008). The earliest alluvial levels contain a record of the environment well before the establishment of a settlement at the site of Birmingham. Environmental work has also confirmed the waterlogged nature of Digbeth, Deritend and the Bull Ring area and has provided tangible evidence of watercourses, pools and ponds. Further environmental sampling has revealed that throughout the medieval and post-medieval period

up to the mid or late 18th century, there was significant tree cover in and around the town, including tantalising evidence of an apple or pear orchard close to Floodgate Street (Allen forthcoming). Archaeological evidence for the exploitation of water resources for tanning and retting throughout the medieval and post-medieval periods provides substantive details of past industrial activities to which only very scare historical references have previously been made (such as Hutton 1783, though retting was not mentioned). There seems to have been pasturing of animals within the town itself, for which only a passing reference had previously been made (relating to Moor Street, pers. comm. Mike Hodder). An increasing body of evidence also provides evidence of cultivated crops – oats, barley, wheat, rye, buckwheat, pea and bean – where there had previously been none. The archaeological evidence thus constitutes a completely new insight into Birmingham's industrial past, as well as a tantalising window into everyday life in the town.

Town Development

It has been possible within the framework of PPG16 to identify the remains of medieval plot boundaries, a surprising survival in a city which has seen so much industry and 19th and 20th century redevelopment. To some extent, archaeological deposits (or the lack of them) have enabled Baker's town plan analyses (1995 and Chapter 5, this volume) to be tested and some chronological indicators included. So for example most of Park Street probably represents a late development, although the street has its origins in the medieval period. Likewise, the archaeological evidence seems to suggest that development along the north side of the High Street Bordesley is late, and that normal domestic occupation was not a feature here until the later 17th century. We can now tell that development along Digbeth and probably Deritend occurred quite early. Again this was largely a matter of conjecture before archaeological intervention.

Everyday Life and Work

Evidence of flax and hemp fibre production, iron smelting (although the evidence is rather limited) on Moor Street were all previously unknown and unrecorded industries in Birmingham. In addition a whole host of industries, smithing, cutlering, lead working, copper alloy working, brass founding, pottery, rooftile and clay pipe manufacture, glass-making, bone and shell button manufacture, ivory working, tanning, leatherworking and cobbling, brush-making, basket and wicker production, wood-working, brewing, clay extraction and possible broom-making are all attested in the archaeological record. Some of these industries have been previously recorded in some detail but the archaeological evidence has made it possible to look at the distribution of the industries in the town or has provided evidence for the earlier occurrence of these industries than was previously expected. Other details, such as the find of part of an elephant tusk at Edgbaston Street, have thrown an unexpected light on the way industries, such as ivory working, were carried out. Another surprise was the discovery of an early 19th century bottle kiln at Ashted (Peachy 2008) in an area where hitherto only glass cones had been recovered. Archaeology has provided corroborative evidence for the early industrial use of coal in Birmingham and rather more surprisingly, the probable domestic use of peat.

The most salient aspect of Birmingham's past revealed by archaeology is the shortage of good domestic assemblages. Although this can be seen as a 'negative' result, especially when compared with the rich array of finds recovered from recent work in Coventry, developer-funded work has opened up a very valid research question as to why Birmingham is so different and why, in an apparently flourishing community, domestic and material remains are so poorly represented. Indeed, negative evidence is still evidence, so we can now say with some certainty that there was no Anglo-Saxon occupation in the area around the Bull Ring, in Digbeth or Deritend. Although there are, of course, still gaps in our knowledge (see below), the contribution to our understanding of Birmingham made by developer-funded work is enormous. However, within this plethora of information, it is still the people of Birmingham and their daily lines that remain something of a mystery and despite so much data it is still difficult to pinpoint a typical medieval or early post-medieval domestic assemblage with any certainty. Evidence of diet is scant but was previously non-existent. In this context osteological work on the burials from St

Martin's, St Philip's etc (see below) has proved invaluable and has, ironically, fleshed out the history of the townsfolk in the 18th and 19th centuries.

Death

Work on the aspects of death and burial has, once again, highlighted the insight that can be gleaned from a more synthetic and multi-disciplinary approach to the osteological material. The excavated burials at St. Martin's, in particular, constitute an assemblage of both national and international importance, as evidenced by the forthcoming inclusion of data in the Global History of Health international database project (Steckel *et al.*, 2002).

Analysis of the human remains recovered during recent excavations in the study area has produced a large quantity of new information relating to a variety of aspects of life in the early modern city. These new data include insights into areas such as health, disease, living and working conditions, medical treatment, diet and social stratification. Through taking a comprehensive, holistic approach to the written and excavated skeletal and dental defects, the resultant data can be linked to issues such as diet, as seen in the faunal and plant remains, and to working practices and conditions, and housing. For example, the occurrence of rickets in the population can be more easily understood when viewed in relation to styles of contemporary local architecture and particularly housing. Much of the housing that was available to the poorer sections of society in the town consisted of 'court' style accommodation. Buildings within the courts were usually tall and crammed closely together, so that it would have been extremely difficult for sunlight ever to have penetrated. Levels of sunlight in Birmingham during the 19th century would never have been that great due to high levels of atmospheric pollution produced by various industries. The tendency for working families in Birmingham to enrol their children in paid work, often within the courts themselves, would have further reduced the opportunity for youngsters to escape into the fresh air and sunshine.

Future strategies

Throughout the course of the project, investigations into different areas of the Birmingham's archaeology have thrown up areas that would benefit from closer research and investigation if the opportunity arose. The following section discusses these under the themes included in the report.

Palaeoenvironment

Although only a handful of sites to date have been able to contribute significantly to our understanding of the palaeoenvironment of Birmingham and the timing and nature of human impact on the landscape. Increased awareness of the potential of environmental archaeology to address a range of questions is paramount in future work.

— **The River Rea** will have meandered across its floodplain over time and plotting this course through the built up centre of Birmingham is problematic. Where deposits associated with the river and its environment are identified, accurate recording and sampling should at least begin to shed some light both on natural changes in channel position and morphology but also the way in which the River Rea has been managed and utilised by human communities.

— **Woodland clearance**; the nature of the original vegetation cover of Birmingham and the pattern and timing of clearance of woodland by human communities for settlement and agriculture remains frustratingly unclear, although the palaeoecological record has provided 'snapshots' of past environmental changes. Targeted sampling strategies for pollen, beetles and plant macrofossils with associated radiocarbon dating programmes aimed at recovering data from those waterlogged deposits which are discovered must be considered a priority.

Agriculture and gardens

Perhaps the result of a geographical bias in the areas of developer-led investigation, our knowledge of production of foods in Birmingham is extremely limited. Historically we have good evidence for market gardens and, to a lesser extent, to the production of crops in the city's environs. Archeologically we have recovered very little evidence for either. In addition, the many gardens of Birmingham's middle and upper classes, well evidenced on historic maps, have also remained elusive in the archaeological record.

— **Agricultural soils and cereal crops**; the agricultural potential of the area immediately surrounding Birmingham is poorly understood. Greater and more in-depth research into historical accounts and resource potential (perhaps based on geological information) would provide a much more substantial platform from which to discuss associated archaeological evidence. Such work should combine the use of the landscape analysis from an historical perspective with other environmental techniques, such as soil micro-morphology and pollen, beetle and plant macrofossil evidence.

— **Market gardens and orchards**; Evidence from historical sources suggests that there were plenty of gardens and orchards located within the city, yet archaeological evidence has produced little evidence for such production. A quote from Hutton (1783) serves to illustrate this point well; '*Health and amusement are found in the prodigious number of private gardens scattered round Birmingham, from which we often behold the father returning with a cabbage, and the daughter with a nosegay*.' Where there may be potential for any domestic evidence of consumption of locally produced goods, it would be useful to implement an intensive sampling strategy to maximise potential of deposits with the question of this very local production in mind. Likewise, and as previously mentioned, the combination of historical evidence with environmental techniques may shed light as the presence of producing plants and trees within the locality.

— **Gardening**; a further aspect of the city-scape which has largely escaped the archaeological record are the many gardens which can be seen littering the map evidence. Again, Hutton (1783) provides us with a small insight into gardens designed more for amusement than produce; '*A small part of the land near the town, is parcelled out into little gardens, at ten or twenty shillings each, amounting to about sixteen pounds per acre. These are not intended so much for profit, as health and amusement. Others are let in detached pieces for private use, at about four pounds per acre'*. Artefactual evidence, such as plant pots recorded at Park St and the manufacture of plant pots recorded at Floodgate Street, provide only fragmentary insight into this more recreational aspect of the medieval and post-medieval city.

Industry and economic growth

— **Development of water-based industries**; unlike some aspects of Birmingham's archaeology, the presence of industries operating within the city has been recorded in more than one of the larger excavations undertaken. Increased awareness of the value of targeted sampling strategies will, again, vastly increase our knowledge and ability to discuss in greater depth water-based industries such as tanning, retting etc. Samples recovered from Floodgate St and Deritend Bridge included finds of animal hair and bark and fragments from Upper Dean Street and show the value of thorough sampling, assessment and reporting. The need to tie together a good sampling strategy with datable material is essential to document the growth of such industries in the city.

— **Non water-based industry;** The location of archaeological projects to the south and east of the town centre and the Birmingham Fault has put particular emphasis on the importance of the River Rea and other watercourses, and their associated industries. Further research needs to acknowledge the potential non-water dependant industries that may have characterised the industry to the north of the medieval town. The may be quite different, and thus leads to a different industrial character in areas not yet covered by PPG16 work.

— **Cloth production;** to date, no single item associated with cloth production has been found, even though textiles were important to Birmingham in the medieval period and the continued importance of flax in Warwickshire is attested almost to the end of the 18th century and in this and the preceding century penalties for enclosing flax plecks are frequently mentioned in deeds and court rolls (Stephens 1964). Remains of flax (and hemp) have been routinely found in Birmingham in medieval and post-medieval contexts and flax dressers, thread-makers, sacking weavers, linen drapers and dyers are found in the 18th century and as late as the 19th century.

— **Clay pipe industry**; prior to the mid-18th century, evidence suggests that suitable clay was readily available in and around Birmingham for early production and that pipemakers were working in many places near Birmingham as early as the 1680s. The lack of any documentary sources underlines the importance of the artefactual record in establishing the evolution of pipe making and tobacco consumption in the city. From the mid-eighteenth century onwards further analysis examination of the documentary record including the later census returns is needed to explore the actual scale of the industry more fully. As well as examining the physical remains and layout of the workshops, there is also scope to examine the social history of the industry from documentary sources. Turning to the pipes themselves, there is a relative paucity of information for this period and the collection of more material is clearly a priority. Despite the national significance of the nineteenth century Birmingham pipemaking industry, very little work appears to have been done on the actual location or form of the workshops themselves. The lack of information on pipemaking sites is a serious constraint to understanding and interpreting the industry, whilst the failure to identify workshop locations means that they cannot be monitored or investigated as part of the planning process. In order to try to remedy this situation, a sample of 26 Birmingham trade directories dating from between 1828 and 1914 has been examined and the full details of all the pipemakers extracted (Appendix 4 – a few of the later directories examined did not list any pipemakers). From this information, it has been possible to collate a list of addresses where the pipemakers worked (Appendix 5). From this it is evidence that just one site offers the potential to examine the products of a number of different manufacturers over a period of time.

Domestic and social life

One of the key findings of this project has been the confirmation that there is a genuine lack of artefactual evidence for domestic life within the city centre's archaeological remains (to date). As to why there is such a sparse showing for domestic groups before the 17th century, is a question worthy of more detailed consideration. A simplistic connection between industrial function and paucity of pottery, for example, would seem untenable in the face of other urban sites (see Life and Work Chapter) and the situation in the 17th and 18th centuries where industrial sites did contain domestic groups. However, the type of industry may just have a bearing on this problem. Many of the sites were associated with tanning or skin-working. Shaw (1996) notes that the Northampton tanneries may have been in a derelict area, which Denham's (1996) pottery analysis goes some way to support. In the two centuries or so in which the tanneries were operating only 879 sherds were contemporary with them. Denham (*ibid.*, 86) notes that the pottery assemblage associated with the tanneries was 'idiosyncratic' and suggests that rather than representing permanent domestic occupation, it reflects ceramics brought onto the site on something like a daily basis by the tannery workers. This attractive theory might go some way to explain the situation in Birmingham, where most of the medieval and early post-medieval sites appear to be connected with tanning or pottery production (another industry which is unlikely to generate much domestic waste).

One area that has given an insight into domestic life, especially for the post medieval period, has been burial archaeology. There are various things here for consideration. The use of historical research maximises knowledge prior to any excavation and in relation to those at St Martins has proven its necessity as part of the archaeological investigations. In addition, making provision for scientific analyses both in terms of funding and also as regards the amount of time

permitted for investigation of human remains prior to reburial, would substantially increase the potential of such assemblages for answering some key questions.

— **Structural evidence** None of the work so far has uncovered physical evidence of domestic structures in the medieval period, with the exception of the possible sandstone wall on Freeman Street. This is clearly an area which needs to be addressed. Some of this evidence may, of course, lie beneath modern roads and buildings, and be either inaccessible or destroyed. By the 17th century there are traces of buildings, for example, a construction trench pre-dating the Area C skinyard on Edgbaston Street, but it is not until the 18th century that buildings can be more certainly identified. Even so, there has been a tendency to assume that all brick-built structures date to the 19th century, although the first courts were constructed in the later 17th century (McKenna 2005) and 18th century maps show that backplot infilling was visible quite early in the century.

— **Social buildings**; despite the wide variety of topics covered by this volume several aspects of Birmingham's past have not been covered by any of the work so far. With the exception of Dowell's Retreat, there has been no archaeological work on almshouses, hospitals and workhouses nor on the Dissenting Schools and Board Schools, all vital parts of the social fabric of Birmingham.

— **Personal possessions**; one of the most salient facts which has emerged from this project is just how poor the artefactual assemblages are generally. The lack of personal items commonly found on other urban sites is difficult to explain. It could be argued that the importance of metal-working trades has resulted in many of the metal items being more assiduously recycled than elsewhere but this cannot be the whole story, since, for example, items of bone are also infrequent. Of the artefacts which have survived, nearly all are associated with crafts or industries.

— **Domestic pottery assemblages**; in tandem with the paucity of good artefactual assemblages, there is a surprising shortage of good groups of domestic pottery before the 17th century. Many of the larger medieval groups appear to contain primarily pottery production waste and the domestic groups which do exist are often very small. As a result, it has been quite difficult to gauge what would constitute 'normal' domestic pottery usage. The even greater infrequency of pottery of the 15th and 16th centuries compounds the issue. The only real exception to this is the assemblage from 'the pool' at Floodgate Street, seemingly deposited in the 16th and 17th centuries. This group has yet to be fully studied (Rátkai forthcoming a) but the presence of some wasters in the group indicates it is certainly not all domestic.

  By the 17th century fairly typical domestic assemblages are present and this trend continues into the following two centuries. To date, the 19th century ceramics have not been studied in detail and this should be rectified in future work. The period offers an opportunity to link material culture directly with people, through documentary research, utilising the Rate Books, trade directories and census returns. At Park Street, a small group of 19th century ceramics was studied in detail (Barker and Rátkai in press), providing evidence for an apparent reduction in the quality of pottery used which was found to be matched by the documentary evidence suggesting the area itself was seeing a downturn.

— **Health and diet;** whilst the multi-disciplinary work on sites such as St Martin's constitutes a considerable achievement, future projects of this nature should take account of developments seen within the field of biological anthropology during recent years. In particular, important advances have been made in DNA analysis, geochemical profiling using stable isotopes, and improvements in radiocarbon dating. Imaging techniques at gross and microscopic levels now permit improved recording and visualisation of remains in addition to histological analyses of disease processes. Consideration should be given to making provision for such analyses in terms of funding and also regarding the amount of time permitted for investigation of human remains prior to reburial. This last point is iterated by Mays *et al.* (2002) who point out that it is

impossible to anticipate all the likely questions that may arise during future research and consequently the long term retention of excavated remains or at least provision for longer periods between excavation and reburial are highly desirable.

— **Prosperity and depression**; the ebb and flow in Birmingham's prosperity may be traceable in the archaeological record. Many writers of the 18th and early 19th century comment on the high wages paid in Birmingham and any slump in the economy was keenly felt, since income could fall massively. Many Birmingham men during the time of the Napoleonic Wars, a time of severe economic depression, were forced to choose between the army or destitution. This may explain the comment by Thomas Morris; '*The male population of Birmingham contains a greater number of old soldiers than any other town in the kingdom, and in war time they furnished double the quantity of recruits of any town in the kingdom*'. It would seem that economic necessity rather than patriotism drove them to it. This reversal in fortune may partly explain the apparent difference between the 'gentry' ceramics of the later 18th century and the abrupt change to ceramics typical of the artisanal classes in the early 19th century. What might be assumed to be a sign of wealthier inhabitants moving away from the centre of Birmingham, could in fact be an indication the circumstances were changing and the apparent increase in material culture linked to poorer people is simply an indication of the wealthy falling on hadrer times.

— **Public disorder**; during the 18th and 19th centuries there were several instances of public disorder. In 1766 there were food riots, in 1791 the notorious Priestly Riots, in 1816 further disturbance through economic hardship and in 1867, the Murphy Riots. All of these are well documented and although the riots of 1766 resulted in little more than breaches of the peace, those of 1791 and 1867 resulted in quite serious violence to both person and property. Of the 1816 riots Morris notes,

  'There happened at Birmingham this time a rather serious riot in Birmingham, owing to the prevailing distress of the people, many of whom, who, to my knowledge, had been in the habit of earning two and three pounds a week, were then reduced to the necessity of sweeping the streets, for a shilling a day, and the riot was produced by a tradesman, who had the superintendence of some relief fund, saying that seven shillings a day was enough for a man and his family to subsist on. The first operation of the mob, was the demolition of his house and furniture.'

  The effect of the Murphy Riots could be seen tangentially in the Park Street excavations (Rátkai in press b) where the dismantling by the mob of several houses led to their demolition. The site was subsequently used for a Board School. Widespread destruction accompanied the Priestly Riots. These examples of civil disorder, with burning, looting and dismantling of properties may well be detectable in the archaeological record.

Cultural resource management (CRM) and the use of GIS

This strength of GIS, the ability to view and analyse disparate datasets, can be used to better understand the information we already have, and to address gaps in our knowledge through the use of predictive modelling. Key to this is the collation and presentation of data in compatible formats, and of its deposition not only with archives but also to the Local Planning Authority. This would result in a greater integration of results from individual sites and allow work undertaken to begin to fulfil much wider objectives.

— **Desk based analysis** should be recognised as not only an exercise in establishing potential for archaeological survival but also as a report which itself may merit publication. Whilst desk-based assessment is often seen as an analytical unveiling of the likely heritage histories of a given area, these site-by-site histories are rarely published or amalgamated into more research driven papers. This is in comparison to excavation results where publication would usually be a requirement of work undertaken. Although some historical data is perhaps just waiting in the sidelines (such as research undertaken for the forthcoming *Birmingham's Waterfront* volume, Edgeworth *et al*), much of the detailed analysis may well reside in grey literature reports accessible only through OASIS and rarely integrated within wider regional areas.

— **Comparability**; in using GIS it is possible to view site locations over historic mapping, to better understand the distribution of archaeology previously identified and to predict the archaeology at new sites. It is also possible to compare site locations in relation to topography, to map historic flood plains for instance, and to reconstruct past environments. In using GIS, the visualisation and communication of this data is also enhanced.

— **Mapping landscapes**; in terms of predictive modelling, it is possible to attempt to map landscapes potentially lost to us forever through the urbanisation process. In mapping topographic elements of the landscape, such as slope, aspect, elevation and proximity to resources there is the potential to in some ways create a past landscape based on the probability of sites or woodland etc being present at any point.

— **Use of GIS** for the mapping and analysis of DBA reports holds the potential to not only aid the illustration of reports, but to aid interpretation and provide a catalyst for new ideas. For example, incorporation of historical information alongside archaeological data, palaeoenvironmental data and artefactual evidence would be a quick and relatively easy step towards a more integrated approach to the archaeology of the city centre.

— **Site location modelling** may be categorised into three themes; recording, protection and management. Bringing GIS into the arena of curation and management allows the management of large quantities of data. The protection of sites involves the prediction of potential archaeology within one area based on empirical data from other areas, or from other sources of information. One aspect of this could be highlighting anomalous finds, such as the Park St burials. Documentary research conducted regarding Birmingham burial grounds proved extremely valuable in placing the excavated evidence in context. However, the two anomalous burials at Park Street serve as reminders of the fact that not all of the city's early burial grounds may be known about. Conversely others may be known in name only with no more than approximate information available regarding their actual location such as the plague pit at Ladywood Green (Jenkins 1925, 22).

— **Informing new work;** the use of GIS for future work, if implemented properly, enables two objectives to be met. The first is to inform new work with the most accurate and comprehensive information to date from a range of sources, and the second is to 'future proof' this new work, to ensure its accurate dissemination to a wide audience so it can be available for a broad range of new uses. While the use of GIS will not solve all problems (see below), it can certainly solve many encountered during this project.

Professional practice

Many of the problems we have encountered are not specific to the archaeology of Birmingham, but more tied up in legislation, statutory requirement and professional practice.

— **Site location methodology**; up until recently, site location plans have comprised outlines over Ordnance Survey mapping, or redrawn mapping if necessary for copyright reasons. National grid references are also normally included (as a point, accurate to 10m to 100m). Whilst the majority of these plans were sufficient to locate the individual sites, there were many instances where this was not possible, either at all, or to a reasonable degree of accuracy. Factors that prohibit the accurate location of sites include basic plan inaccuracy possibly through redrawing or photocopying, lack of clear site boundaries on the location plan, and on occasion, substantial alteration to the area in question, such as new road systems so that defining landmarks are no longer present. In using GIS to create a georectified site outline, projected to the national grid, this would minimise the problem (though potentially not eradicate it fully). This is also true for trenches and excavated areas within sites, and features within trenches and excavated areas using intra-site GIS mapping.

— **Accessibility**; the accessibility of grey literature reports is a constant gripe in archaeological research circles and, to some extent, this is a well-founded criticism of

commercial archaeology. However, it should perhaps be emphasised that much work undertaken may not merit full publication – there does seem to be a misconception that unpublished developer-led work is a hidden treasure trove of archaeological sites. Rather, what has been shown here is not so much the lack of publication of important data but more the inaccessibility of information. All reports are, for example, deposited with the local SMR and required (for Birmingham, at least but for other counties also) to be made available on the OASIS database (http://ads.ahds.ac.uk/project/oasis). In addition, there are already many archaeological databases, both regional and national that comprise a GIS element, such as OASIS, the HLC and the Sites and Monuments Record. Future work should ensure that the correct information is included as rapidly as possible into these databases (OASIS), which will only ever be as good as the data they hold. Accessibility is not only linked to the presence of information but also to the ease at which it can be found, used and how portable it may be.

— **Dissemination**; from a wider perspective, the need for flexibility is also important. For example, identification of clay pipe manufacturers from the trade directories was originally intended to be presented in table form. As the manufacturers were listed by Street, however, it was possible to create shapefiles for each street which included all the information for all entries in that area. This information can be presently disseminated via the LWD website. However, this structure may not particularly compatible with the Sites and Monuments Record in its current form.

— **Material culture**; of key importance for understanding both chronology and regional significance of artefact groups in Birmingham is having the ability to discuss, analyse and record in both broadly standard and academically valid terms. Where type series already exist, specialist researchers and contractors should be advised to make reference to them and use the classification series relevant to the region. In addition, a prime strategy for future research should be the development of a widely accessible type series for the region, including relevant artefact types, fabrics and reference material. This is especially important considering the increasing number of specialists working within the area. Essentially this would be a collection of artefacts of local/ regional significance and include several sites within the current metropolitan boundary whilst acknowledging affinities with neighbouring counties (eg Warwickshire, Staffordshire and Worcestershire). Important sites to the study area where artefact assemblages have not been fully recorded or should be reassessed in the light of more recent work (such as those from Manor House) should also be considered. Pottery distribution within a region can be a particularly productive avenue of study since it highlights socio-economic relationships not otherwise visible in the archaeological record. Secure and consistent datasets of the type provided by a properly curated pottery type series is essential for such research.

— **Post excavation analysis;** it is common for development-led archaeological projects to be hampered by temporal and financial constraints, especially in the area of post-excavation analysis. Such issues are particularly apparent in the area of small finds recording, where the levels of description and visual recording necessary for individual reports, and possible within the time and budget, have limited the extent of subsequent comparisons that were possible between sites. Consequently, effort should be made at the project planning stage to ensure adequate provision for rigorous and comprehensive recording of small finds. This is especially relevant in a burial context where finds may be reburied and, consequently unavailable for later reassessment. For example, study of the coffin fittings from St. Martin's was restricted by the nature of the project and then hampered by the limited sample of coffin fittings that could be recovered for assessment and analysis (see above). A simple illustrated corpus of the coffin furniture excavated from burials in Birmingham would be of interest and provide an easily accessed reference for future work both in the city and further afield.

— **Practicalities of burial archaeology;** Both at St. Martin's and St. Philip's a number of burial features included brick-lined graves and vaults, which were unexpectedly encountered as underground voids, since their position was unknown prior to the commencement of invasive groundworks. At St. Philip's, the use of heavy

plant within and near to the churchyard repeatedly caused the roofs of burial vaults to collapse. Such collapses constitute a risk both to those working on the site and to the archaeology and should be considered during the initial planning stages of any future project. Steps taken to minimise the possibility of damage to such buried remains might include geophysical survey to establish the position of vaults so that any such features at risk might be investigated and made safe prior to the use of heavy machinery nearby.

Identifying an archaeological strategy for Birmingham city centre

The above discussion has identified some of the key points contributors to this volume have highlighted as areas worthy of extra study, of methodologies which should be adopted to aid future work and of gaps that have become apparent in our archaeological knowledge. It is a point of discussion, however, how much such observations can be successfully incorporated into a coherent strategy for Birmingham's archaeology. Rather, this document should be seen as a starting point for identifying possible research avenues and highlighting areas of which little is currently known. In addition, there are some areas which perhaps transcend the archaeology of Birmingham alone, and can be seen as standards which can be applied to archaeology anywhere.

Essential in the encouragement of those living and working around Birmingham is the recognition of heritage within the city centre and the provision of access to it. Giving people the opportunity to become involved by some means with that heritage has proven hugely successful already for the midlands, with the old Grammar School in Kings Norton winning the 2004 run of BBC Two's *Restoration*. More centrally in Birmingham, public interest in the everyday heritage and archaeology of the city has been sparked by the National Trust's restoration of back-to-back housing in Hurst Street/ Inge Street, and the Newman Brothers Coffin Works has been recently saved by Advantage West Midlands. These projects are protecting and restoring buildings that would otherwise have gone into disrepair and disappeared had it not for public interest providing the catalyst for outside intervention. The recognition of other areas within the centre which may not prove so attractive to save or restore would contribute greatly to a more detailed record of the use of Birmingham's many smaller workshops and buildings which may go unnoticed until they have all but disappeared. This could include, for example, use-histories of buildings that can be constructed whilst memories still exist.

Although developer-funded work cannot be influenced with regards to its location and extent, in order to avoid missed opportunities, it could be a priority to identity areas in the city currently under-represented by archaeological investigation. The themes discussed above are some of those seen as vital in order to maximise the potential of works undertaken. A combination of accessible information and GIS based representation and interaction should allow contractors the ability to be fully aware of the implications of work being undertaken in the city centre. If known gaps in knowledge are illustrated, from both a chronological, geographical and themed perspective, they can be acknowledged early on in the project planning stage. It is easy to see where in past investigations, with hindsight, things might have been done differently.

The importance of developer-funded work within Birmingham city centre cannot be underestimated – only one of the 85 investigations included in this report was undertaken outside of PPG16. Other than some building recording works (such as English Heritage's work on the Jewellery Quarter, Cattell *et al*, 2002) investigations undertaken in the city have been exclusively done in response to development. It is therefore critical that such work is not only accessible in an empirical format for the professional (in the sense of numbers, dates, areas), but also available at an interpretive level to the public and non-specialist. Interpretive panels, leaflets and plaques are all ways in which individual projects could (where appropriate) communicate their findings to a far wider audience. Although it could be said that projects such as OASIS are ensuring availability of grey literature reports to all, the majority of such reports will not be interesting and informative to anyone other than the clients that funded them or the archaeologists working in those areas. Occasionally, however, such reports may hold the odd piece of information that is of interest to all – and should be communicated on a wider level other than just to archaeologists. There is an underlying assumption that grey literature reports

are of interest to archaeologists alone. Although developers are primarily concerned with discharging planning conditions, it should not be assumed that they will necessarily have no interest in the final report – nor that this exempts archaeologists from trying to produce a document that is both accurate, readable and interesting.

Chapter 8 PPG16 work in Birmingham city centre; a gazetteer

This gazetteer includes summary information of all projects included in the study. Each of these has an individual identifier (Project Number), which has been used in bold throughout the text.

Project Number 1 **External Identifier** 479

Report Type
DBA

Report Name
An Archaeological Desk-Based Assessment of the Proposed Martineau Galleries Development

Author(s) Steve Litherland, Catharine Mould

Date 1997 **Unit/ Organisation** BUFAU

Report summary
Desk-based assessment of the area defined by Corporation St, Priory Queensway, Dale End and Union Street.

Project Number 2 **External Identifier** 479.02

Report Type
WB

Report Name
An Archaeological Watching Brief of the Proposed Martineau Galleries Development

Author(s) BUFAU

Date 1997 **Unit/ Organisation** BUFAU

Report summary
Archaeological watching brief recording work undertaken on area defined covered by DBA (ID 1). Work included 6 boreholes and 15 trial pits and recognised potential survival of islands of archaeological material across the development area.

Project Number 3 **External Identifier** 455

Report Type
DBA

Report Name
The Churchyard of St Philips Cathedral: An Archaeological Desk-Based Assessment

Author(s) BUFAU

Date 1997 **Unit/ Organisation** BUFAU

Report summary
Desk based assessment of the churchyard at St Phillips. The churchyard was used as a burial ground since the cathedral was built in the early 18th century.

Project Number 4 **External Identifier** 550

Report Type
BREC

Report Name
Early Gas Works, Gas Street: Architectural Recording and Analysis, an interim report

Author(s) Steve J. Linnane

Date 1998 **Unit/ Organisation** BUFAU

Report summary
Remains of Birmingham's first gasworks. The earliest surviving structure being a Grade II* listed retort house constructed in 1822 and designed by engineer Alexander Smith. This retort house was in an excellent state of completion and is "unique in the architectural record" (4, 2). The earliest phase of this consisted of a reversed 'L'-shaped building with no internal walls. Its roof structure, which is thought to have been manufactured by the Phoenix Foundry, Snow Hill, was formed of cast iron trusses with a complex of iron struts reinforcing and tying together the trusses. This roof was originally further supported by a run of cast iron pillars in the south wall. The walls were constructed in plain brickwork and were much patched with modern repair. Three further structures were recorded on site; these include a building abutting the retort house to the west which was constructed in 1828. This was constructed in red brick laid in English garden wall bond, and is almost square shaped in plan. It had a similar roof structure to that of the retort house and had been much altered throughout the course of its life. The third structure occupied the space between the retort house and the building above etc. the fourth building was constructed in 1857 when the site converted for use as a metalworking manufactory.

Project Number 5 **External Identifier** 550.01

Report Type
BREC

Report Name
Early Gas Works, Gas Street: Architectural Recording and Analysis - addition to Report No. 550

Author(s) John Halsted, Mark Breedon

Date 1999 **Unit/ Organisation** BUFAU

Report summary
Evaluation to locate evidence for original entrances in the wall fronting Gas Street and details of original surface treatment. No evidence for the original entrance was found, although one opening may have been a window. Also see ID4.

Project Number 6 **External Identifier** 603.01

Report Type
WB

Report Name
An Archaeological Watching Brief at The Row Market, Edgbaston Street, Birmingham City Centre

Author(s) Eleanor Ramsey

Date 2000 **Unit/ Organisation** BUFAU

Report summary
No medieval artefacts or deposits were recovered during this watching brief as cellaring has erased any earlier archaeology.

Project Number 7 **External Identifier** 603

Report Type
EVAL

Report Name
An Archaeological Evaluation at The Row Market, Edgbaston Street, Birmingham City Centre

Author(s) John Hovey

Date 1999 **Unit/ Organisation** BUFAU

Report summary
The evaluation confrimed the presence of 'islands' of a medieval archaeology , despite major truncation by cellaring. In this case, the survival of a medieval pit was recorded.

Project Number 8 **External Identifier** 618.02

Report Type
WB

Report Name
Salvage Recording on the site of the former gasworks, Gas Street

Author(s) Stephen Litherland

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Involved the architectural recording of walls of Retort house and a watching brief on groundwork on land to the south of Retort House. The work enhanced knowledge of the layout of the early gasworks and also identified some archaeological survival. See ID4.

Project Number 9 **External Identifier** 664

Report Type
EXC

Report Name
The Custard Factory, Phase Two, Digbeth: Archaeological Excavation 2000 Post-Exc Ass Research Design

Author(s) Catharine Mould

Date 2000 **Unit/ Organisation** BUFAU

Report summary
Post Excavation Assessment report for excavations at Gibb Street, Digbeth. Report outlines the site archive and programme for project completion. This will obviously be superseded by the full report.

Project Number 10 **External Identifier** 768

Report Type
DBA

Report Name
Floodgate Street/Milk Street, Digbeth: An Archaeological Desk-Based Assessment

Author(s) Sarah Watt

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Post Excavation Assessment report for excavations at Floodgate Street, Digbeth. Report outlines the site archive and programme for project completion. This will obviously be superseded by the full report.

Project Number 11 **External Identifier** 835

Report Type
DBA

Report Name
An Archaeological Desk-Based Assessment of Oppenheim's Glassworks, Snow Hill

Author(s) Melissa Conway

Date 2001 **Unit/ Organisation** BUFAU

Report summary
DBA focusing on areas around Snow Hill Station, in between the station and Snow Hill Queensway. The area is thought to have covered the site of Majer Oppenheim's Glassworks (1757), although any remains would in fact be located beneath the station itself.

Project Number 12 **External Identifier** 939

Report Type
DBA

Report Name
The Typhoo Wharf, Bordesley Street, Digbeth: An Archaeological Desk-Based Assessment

Author(s) Malcolm Hislop

Date 2002 **Unit/ Organisation** BUFAU

Report summary
DBA of area bounded by Bordesley St, Pickford St, Fazeley St and New Canal St. This area was agricultural land until 1790 when the Digbeth Branch Canal was constructed. Subsequent industrial development included Typhoo's 1924 bonded warehouse.

Project Number 13 **External Identifier** 960

Report Type
BREC

Report Name

Historic Building Recording at 210 High Street, Deritend

Author(s) Malcolm Hislop

Date 2002 **Unit/ Organisation** BUFAU

Report summary

Four late 19th and early 20th-century additions to the Devonshire Custard Powder Works. The two late 19th-century buildings have been cartographically dated from between 1889 and 1905. These are both constructed in red brick laid in English bond with blue brick dressings, one of which possibly retaining elements of an 1855 structure. These buildings had asymmetrical roof lines, one of which had modified king post trusses. The original purpose of these was obscure; however they did appear to be workshops of some kind.

Project Number **External Identifier**
14 973

Report Type
DBA

Report Name
170 High Street, Deritend: An Archaeological Desk-Based Assessment

Author(s) Melissa Conway

Date 2002 **Unit/ Organisation** BUFAU

Report summary

The DBA demonstrated that the area had been subject to a complex sequence of industrial development from the end of the 18th century onwards. However, the potential survival of various archaeological deposits was regarded as high.

Project Number **External Identifier**
15 1007

Report Type
EVAL

Report Name
Deritend Bridge, Digbeth: An Archaeological Evaluation

Author(s) Josh Williams

Date 2003 **Unit/ Organisation** BUFAU

Report summary

Trial trenching demonstrated survival of a possible 17th century channel or pool containing waterlogged deposits. The presence of hemp stem within samples may indicate hemp retting took place on or near the site.

Project Number 16 **External Identifier** 1034

Report Type
DBA/BREC

Report Name
The Warwick Bar Conservation Area, further archaeological DBA and building recording

Author(s) Malcolm Hislop, Steve Litherland

Date 2003 **Unit/ Organisation** BUFAU

Report summary
A number of sites were recorded in the Warwick Bar Conservation Area, these include a tunnel portal facing north towards Curzon Street, built in the Classical style, of brick with rusticated ashlar stonework, and consisting of five separate phases of construction dating between the late 1830s and late 19th-century. Adjacent to the tunnel were early 19th-century lock and interchange basin of red brick laid in English Bond, and a late 19th-century pumping station of classical proportion built in red brick laid in English bond with blue brick bands. Also recorded in this work was the Gun Barrel Proof house canal wall, which is a brick built multiphase brick wall. The Corporation Wharf was also partially recorded during this scheme of works, including a curving wall present on the 1889 OS map, and late 19th-century brick bridge abutments.

Project Number 17 **External Identifier** 1053

Report Type
EXC

Report Name
Dean House, Upper Dean Street: PX Ass and Research Design 2003

Author(s) Helen Martin

Date 2003 **Unit/ Organisation** BUFAU

Report summary
Post Excavation Assessment of the excavations at Dean House, Upper Dean Street, recorded post medieval structural remains and palaeo channels. The latter is most likely associated with two former water courses, Dirty Brook and Pudding Brook.

Project Number 18 **External Identifier** 1100

Report Type
DBA

Report Name
The Proposed City Park Site: Desk-Based Assessment 2003

Author(s) Malcolm Hislop

Date 2003 **Unit/ Organisation** Birmingham Archaeology

Report summary
DBA covering the area of the eastern part of the city. The area was rural until the C18th, with housing built from 1750 and the Digbeth Branch Canal constructed in 1790. Huge impact occurred when the Bham and Ldn Railway was built in 1838.

Project Number 19 **External Identifier** 1143

Report Type
EVAL

Report Name
170 High Street, Deritend: An Archaeological Evaluation 2004

Author(s) Helen Martin

Date 2004 **Unit/ Organisation** Birmingham Archaeology

Report summary
This evaluation recorded the survival of alluvial deposits at 170, High Street, Deritend, within which environmental evidence for hemp retting was recovered. The meander of the C18th River Rea was picked up, allowing it to be mapped more accurately.

Project Number 20 **External Identifier** 1161

Report Type
DBA

Report Name
27-28 Park Street, Digbeth: An Archaeological DBA 2004

Author(s) Malcolm Hislop

Date 2004 **Unit/ Organisation** Birmingham Archaeology

Report summary
The DBA covered an area at the core of the medieval settlement of Birmingham. Existing buildings were dated to the later C19th where Thomas Butler ran a cutter and paper knifemaking business.

Project Number 21 **External Identifier** 1285

Report Type
DBA/EVAL

Report Name
149-159 High Street, Bordesley: An Archaeological DBA and Field Evaluation 2005

Author(s) Helen Martin

Date 2005 **Unit/ Organisation** BUFAU

Report summary
DBA and evaluation covering area of 149-159 High Street, Bordesley. Cartographic evidence suggested the site had been built up since the C18th. Evaluation trenches recorded structural evidence dating to the 17th and 18th centuries.

Project Number 22 **External Identifier** 1392

Report Type
DBA

Report Name
Warwick Street/ Warner Street: An Archaeological Desk-Based Assessment 2006

Author(s) Eleanor Ramsey

Date 2006 **Unit/ Organisation** Birmingham Archaeology

Report summary
DBA of the area to the southwest of High Street, Bordesley. Cartographic evidnece suggests that subsequent to medieval occupation, the site was largely unoccupied until the development of almshouses and a chapel, as well as some industrial occupation.

Project Number 23 **External Identifier** 1545

Report Type
DBA

Report Name
31 Commercial Street: A Desk-Based Assessment

Author(s) Malcolm Hislop

Date 2007 **Unit/ Organisation** Birmingham Archaeology

Report summary
The site of a sawmill and timber yard during the C18th, the site was put to various industrial uses from then on; Foundry, lime cement manufacturers, motor accessories manufactory. Aerial photographs show several phases of structure survival.

Project Number 24 **External Identifier** 336.03

Report Type
WB

Report Name
An archaeological watching brief at Hartwell (Smithfield) Garage, Digbeth

Author(s) Steve Litherland

Date 1997 **Unit/ Organisation** BUFAU

Report summary
The watching brief recorded no significant archaeological horizons as the depth of excavations was relatively shallow.

Project Number 25 **External Identifier** 336.02

Report Type
EVAL

Report Name
Hartwell (Smithfield) Garage Site, Digbeth: An Archaeological Evaluation

Author(s) Steve Litherland, Derek Moscrop

Date 1996 **Unit/ Organisation** BUFAU

Report summary
The evaluation demonstrated significant survival of archaeology in islands, including waterlogged deposits. Ceramics recovered were dated to between 1500 and 1800. The structural remains of C18th and C19th brick buildings were also recorded.

Project Number 26 **External Identifier** 336

Report Type
DBA

Report Name
An Archaeological Assessment of the Hartwell (Smithfield) Garage Site

Author(s) BUFAU

Date 1995 **Unit/ Organisation** BUFAU

Report summary
DBA of the Hartwell Garage site. Potential for archaeological survival was classed as wide and varied. The scope of the potential covered a broad period from medieval development of Digbeth to the C19th industrial gasworks.

Project Number 27 **External Identifier** 310

Report Type
EVAL

Report Name
The Old Crown Inn, Deritend: An Archaeological Evaluation

Author(s) Steve Litherland, Catharine Mould, Stephanie Ratkai

Date 1994 **Unit/ Organisation** BUFAU

Report summary
Evaluation located in the back-plot of the Old Crown. Although there were few structural features recorded, the presence of large quantities of pottery indicated the presence on the site of a possible C14th kiln.

Project Number 28 **External Identifier** 310.01

Report Type
WB

Report Name
An Archaeological Watching Brief at the Old Crown, Deritend

Author(s) BUFAU

Date 1998 **Unit/ Organisation** BUFAU

Report summary
The watching brief record no kiln structures but recovered fragments of Deritend ware. A number of features were recorded which may have been medieval, such a ditch running parallel to Heath Mill Lane and two foundation blocks in the old Stable Block.

Project Number 29 **External Identifier** 353

Report Type
DBA

Report Name
A Preliminary Archaeological Assessment of the area of Moor Street, Bull Ring and Park Street

Author(s) Catharine Mould, Steve Litherland

Date 1995 **Unit/ Organisation** BUFAU

Report summary
The DBA covers the area later excavated under the auspices of the Bullring development. The report provides an historical profile of the area as well as a description of its then present character.

Project Number 30 **External Identifier** 354

Report Type
DBA

Report Name
Edgbaston Street, Pershore Street, Upper Dean Street and Moat Lane: Preliminary Assessment

Author(s) Catharine Mould, Steve Litherland

Date 1995 **Unit/ Organisation** BUFAU

Report summary
This report provides an historical and archaeological profile of the area.

Project Number 31 **External Identifier** 337

Report Type
DBA

Report Name
An Archaeological Assessment of the Digbeth Economic Regeneration Area and Cheapside Industrial Area

Author(s) BUFAU

Date 1995 **Unit/ Organisation** BUFAU

Report summary
Archaeological assessment of the are including an historical background by Dr Richard Holt and a town plan analysis by Dr Nigel Baker.

Project Number 32 **External Identifier** 575

Report Type
DBA

Report Name
An Archaeological Desk-Based Assessment of Part of the Digbeth Millenium Quarter

Author(s) Catharine Mould

Date 1999 **Unit/ Organisation** BUFAU

Report summary
The assessment demonstrated not only the presence of below-ground survival but also refers to the large number of standing buildings dating to the C19th industrial era, discussed by Dr Nigel Baker.

Project Number 33 **External Identifier** SMR 20614

Report Type
EXC

Report Name
Deritend Salvage excavation, archive

Author(s)

Date 1984 **Unit/ Organisation** City of Birmingham Museum

Report summary
Note in WMA 27, 1984. Rescue excvation on the site of a former factory. Despite a general paucity in medieval archaeology, the excavation did reveal a C19th button maker's workshop, although there is no detail of this in the entry.

Project Number 34 **External Identifier** SMR 20676

Report Type
EVAL

Report Name
An Archaeological Evaluation at Plot 7, Masshouse, Birmingham

Author(s) James Goad

Date 2003 **Unit/ Organisation** HEAS, Worcester CC

Report summary
The evaluation did not detect any significant archaeology. Traces of a possible ditch were detected but the feature was not dateable.

Project Number 35 **External Identifier** SMR 20676

Report Type
EVAL

Report Name
An Archaeological Evaluation at Plot 3, Masshouse, Birmingham

Author(s) Chris Patrick

Date 2002 **Unit/ Organisation** HEAS, Worcester CC

Report summary
Evaluation on the site of St Bartholomew's and its burial ground to test for the survival of human remains. The ground seems to have been disturbed to a depth of 3m, the only evidence for the chapel and was rubble and a collapsed wall.

Project Number 36 **External Identifier** SMR 03014

Report Type
WB

Report Name
Archaeological Observation at Wrottesley Street, Birmingham

Author(s) Warwickshire Museum Field Archaeology Projects Group

Date 2000 **Unit/ Organisation** Warwickshire Museum Field Servies

Report summary
Archaeological observations at Wrottersley Street revealed no evidence for the Parsonage Moat. Th earliest recorded deposit was an agricultural soil of poaaible late C17th/ early C18th date. The area had been extensively disturbed by C19th/ 20th cellars.

Project Number 37 **External Identifier** SMR 20619

Report Type
EVAL

Report Name
Land on the southern corner of Park Street and Bordesley Street, Digbeth, Birmingham EVAL

Author(s) Nick Tavener

Date 2000 **Unit/ Organisation** Marches Archaeology

Report summary
The site covered an area identified as having been medieval burgage plots and, although buried soils were recorded, these were dated to C18th.

Project Number 38 **External Identifier** SMR 20744

Report Type
DBA

Report Name
Birmingham Machine Tool Services Ltd, 312-314 Bradford Street, Birmingham DBA

Author(s) Dave Hodgkinson, Louise Edmondson

Date 2004 **Unit/ Organisation** Wardell Armstrong

Report summary
Archaeological desk based assessment on the Bradford Street site identified the potential for archaeological features associated with the medieval and post medieval mill surviving intact.

Project Number 39 **External Identifier** SMR 20060

Report Type
EXC

Report Name
Excavation at 131-148 High Street, Bordesley, Birmingham

Author(s) Martin Cook, Stephanie Ratkai

Date 1995 **Unit/ Organisation** County Archaeological Service, Hereford

Report summary
The excavation identified a number of archaeological features, including a quarry pit (perhaps fro bricks) and hammerscale indicating forging and working of metal nearby. The possible remains of some subterranean cells of Aston Gaol were also located.

Project Number 40 **External Identifier** SMR 20060

Report Type
EVAL

Report Name
Evaluation at 131-148 High Street, Bordesley, Birmingham

Author(s) Robin Jackson, Stephanie Ratkai

Date 1995 **Unit/ Organisation** County Archaerological Service, Hereford

Report summary
The evaluation identified deposits of the C17th/ C18th which may relate to industrial activity along the High Street frontage. In particular, possible evidence of a continuation of local ceramic production and iron working link to the city's local trades.

Project Number 41 **External Identifier** SMR 20427

Report Type
WB

Report Name
Watching Brief at Hartwell Smithfield Garage, Digbeth, Birmingham

Author(s) Darren Miller, Laura Jones

Date 2000 **Unit/ Organisation** Archaeological Service, Worcestershire CC

Report summary
Building remains and deposits of late post-medieval date identified, including an C18th wall and a cobbled surface. No deposits/ structures of pre-post-medieval date were identified.

Project Number 42 **External Identifier**

Report Type
EVAL

Report Name
An Archaeological Evaluation of Land Adjacent to Park Street Gardens, Birmingham

Author(s) ULAS

Date ???? **Unit/ Organisation** ULAS, for Patel Taylor Architectural

Report summary
Trenches uncovered extensive cellarage across the whole of the proposed development. Evidence of buried soils and a post medieval ditch was recorded.

Project Number 43 **External Identifier** 13510.R02.Rev1

Report Type
EVAL

Report Name
City Park Gate, Birmingham: Report on an Archaeological Evaluation (Freeman Street Evaluation)

Author(s) Laurence Hayes

Date 2006 **Unit/ Organisation** Gifford

Report summary
Trenches revealed medieval cultivation soils & possible structural feature; post-medieval pits & gullies; C17th/18th cultivation soil; structures dating to C18th-19th. Deposits dating from C13th onwards. Some severe truncation through cellaring reported.

Project Number 44 **External Identifier** C1016231061OUT

Report Type
DBA

Report Name
Digbeth Coach Station Desk Based Assessment. Appendix A and Addendum: Mill Lane Site

Author(s) Cathy Patrick

Date **Unit/ Organisation** CgMs Consulting

Report summary
Extract from Birmingham City Council Archaeology Strategy, plus Mill Lane DBA. Despite disturbance, the potential for earlier post-medieval deposits, below-ground remains of the mill buildings, & some waterlogged deposits is considered moderate to high.

Project Number 45 **External Identifier** SMR 20614

Report Type
WB

Report Name
Summary of WB here

Author(s) J. I. McCallum, A. Roe

Date 1983 **Unit/ Organisation** BUFAU

Report summary
Salvage excavation. Deep foundations and cellars on site. All deposits, including those immediately above the natural, contained C17th-18th pottery and no evidence found for earlier medieval occupation.

Project Number 46 **External Identifier** 1418

Report Type
BREC

Report Name
7-8a Freeman Street, Birmingham: Historic Building Recording

Author(s) Malcolm Hislop, Michael Lobb

Date 2006 **Unit/ Organisation** BA

Report summary

Complex of industrial buildings originally constructed in the early 18th-century but almost totally obscured by a major redevelopment on the site in 1865. Trades known to have occupied these buildings included leatherworks, a builder, and a bookbinder. This mid 19th-century phase of building was further altered and partially clad over in the 20th century and was generally of three storeys, and was constructed in red brick laid in Flemish stretcher bond with blue brick dressings.

Project Number 47 **External Identifier** 1528

Report Type
BREC

Report Name
7, 8 and 8a Freeman Street, Birmingham Supplementary Historic Building Recording

Author(s) Shane Kelleher

Date 2006 **Unit/ Organisation** BA

Report summary

Supplementary report to report 46. Targeted stripping of the mid 19th-century and later phases of construction led to a further programme of historic building recording. This revealed sections of the 18th century boundary wall, and 19th century vaulted brick cellars which may have contained some 18th century fabric. The 18th-century boundary wall rose to a single storey in height and was constructed in red brick laid in stretcher bond with occasional rows of headers. The uppermost section of this wall was delineated by a row of oversail brick in the interior.

Project Number 48 **External Identifier** 1448

Report Type
DBA/BREC

Report Name
Former Adamant Co. Works 37-45 Commercial Street Buiding Recording and Documentary Record

Author(s) Malcolm Hislop

Date 2006 **Unit/ Organisation** BA

Report summary

This is an excellent example of both the early and late 19th-century industrial site types, and also demonstrates the continued importance of a canalside location. This initially included some domestic units which were later replaced with a commercial/industrial function. The site was first developed in the 1850s as a foundry. It continued to exercise this function down to the late 1880s when it became the premises of the Adamant Company lime cement manufacturers. In 1895 the Birmingham architects Bateman and Bateman undertook to erect shopping at the site and in 1897 the architect William Henman, also of Birmingham was engaged to make alterations, which included the remodelling of the Commercial Street range. These changes in function and of fabric culminated in a site with a complex building history. The earliest buildings were arranged around a courtyard at the eastern end of the site, and probably incorporated dwellings along the street frontage. In the 1860s or 1870s the earliest of the buildings to have survived was erected to the west of the 1850s structures. This was a three storey building with open arcade and brick vaulting at ground level, and it seems to have been intended as a

free standing structure. The function of this building is unknown however the presence of brick vaulting implies that it was designed to carry a heavy weight or to provide fire proofing. The cartographic evidence suggests that this was part of a wider redevelopment which involved the replacement of the first buildings. By 1888 several more of the extant structures were probably already in existence. The most significant and principal interest of the building complex is in the early use of concrete technology, the bulk of which probably dates from the 1890s. The main entrance block which seems to have been remodelled by William Henman, is the principal elevation, it is of red brick and has two storeys, with blue brick-coped plinth, wide mid-height fascias defined by brick dentils and cyma-recta moulded strings, brick dentilled and moulded terracotta cornice, and stone openwork parapet. The front is articulated vertically by pedimented pilaster buttresses into ten bays containing semi-circular-arched windows. Structurally this block incorporates pre-cast concrete panels used in conjunction with steel joists and a flat concrete roof with asphalt covering. The use of concrete at such an early date "endows the Adamant Co. works with a special significance as one of the key structures in Birmingham's architectural development" (**48**, 1).

Project Number 49 **External Identifier** 1540

Report Type
BREC

Report Name
Eastside Birmingham, Historic Building Recording

Author(s) Michael Lobb

Date 2007 **Unit/ Organisation** BA

Report summary

Nos 15 and 16 Penn Street formed a small industrial complex, latterly a wire works, which had its origins in the 1880s as stabling, warehousing and shopping. This complex was expanded soon afterwards, and was thereafter largely given over to manufacturing, and included the premises of a fireproof safe manufacturer, a cycle and later motor component manufacturer, and a number of metal industry enterprises. The earliest buildings on the site were three separate ranges of stabling and shopping grouped around two yards, the blue brick dressings, segmental arches and small-pane iron-framed windows being typical of many of the workshops and industrial premises being raised in the West Midlands conurbation during the later 19th century. The exterior of the building had been almost completely obscured by the addition of a thick cement render, which presumably was purported to have been added in the mid-20th century at the time of a window refit. The principal elevation consisted of four gable ends of four distinct blocks separated by an external yard between the two most southerly blocks one of which retained its original segmental arch windows. In places plinth level reveals blue engineering brick. Internally it was apparent that the building was constructed during three distinct phases of construction between 1880 and 1950, dividing the interior into four blocks, all but one being two storeys in height. Floor surfaces range from brick paviours, timber planking, and concrete, whilst many of the original walls were exposed to the brickwork. This complex represents a late 19th-century development of a virgin site, and is therefore an interesting survival of the primary expansion of this part of the city.

Nos 48-49 Grosvenor Street represent an 1890s redevelopment of a late 18th/early 19th-century area. In common with the Penn Street site, the main elements of the original buildings survive, despite having undergone considerable alteration. In essence, there were three main blocks served by two yards with gateways onto Grosvenor Street. Documentary evidence points to the early structures having contained stabling and possibly warehousing, including the premises of a hide and skin merchant. A later occupier, from 1929, was the Duckham Oil Company, which remained at this address until being taken over by the BP group c. 1970. Few significant architectural details survive. The structure was divided into five distinct blocks which were constructed in two separate phases. Each block is red brick built of varying bond types; the most interesting elevation was the north east elevation which was composed of red brick laid in Flemish bond. This was decorated with courses of dentilated and ovolo-moulded terracotta and had a central oculus mid gable. The earliest buildings on site date from the 1890s, and only the southern range retains any architectural interest, but this is largely limited to the terracotta mouldings. The late date, substantial alterations and lack of surviving detail mean that these buildings are only of local significance, as another piece in the jigsaw of the late 19th-century redevelopment of this part of Birmingham.

Project Number 50 **External Identifier** 1168

Report Type
EVAL

Report Name
25-27 Heath Mill Lane, Deritend Archaeological Evaluation 2004

Author(s) Eleanor Ramsey

Date 2004 **Unit/ Organisation** BA

Report summary

Possible clay pit & ditch yielded locally produced Deritend ware & cooking pots dating to C13th-14th. Truncated pits & post holes beneath grey cobbled layer, which possibly dates to C17th. Good & extensive survival of medieval & post-medieval deposits.

Project Number 51 **External Identifier** 730

Report Type
DBA/BREC

Report Name
Upper Dean Street, Desk Based Assessment and Building Recording

Author(s) Steve Litherland, Sarah Watt

Date 2000 **Unit/ Organisation** BUFAU

Report summary

The primary phase of 42-46 Upper Dean Street, Deritend had a commercial function with rear shopping/industrial wings being added at a later date. These two sets of buildings, one of which is a Grade II listed building, represented the original phase of development on their plots towards the middle of the 19th-century. The street frontage elevations consisted of a series of three-storied facades, each of different character, but nonetheless retaining "a stylistic unity based on classically-inspired detailing" (51, 9). This stylistic scheme was probably part of the provisions laid down by the Gooch Estate regarding development on their land. The frontage building of nos. 42-45 is the Grade II listed building. This was constructed in the early to mid 19th-century and was of painted clamped red brickwork laid in Flemish bond with stucco dressings and a slate roof. It was of three storeys with eight bays, the third of which containing a cart entrance. Above the cart entrance is a first floor segmental arch headed casement window flanked by pilasters. The remainder of the windows were mostly blocked, but were probably former sashes. The ground floor had been heavily altered by the insertion of various shop fronts. Internally the building was shallow, being only one room deep. Although altered the interior retained original features such staircases and fireplaces. It is likely that a corridor once ran the entire length of the building. It is argued that the existence of this corridor, the shallow depth of the building, and the high proportion of window-glass to walling within the façade signify a commercial rather domestic function. Two shopping or industrial wings were constructed to the rear, both of which were much truncated in length by the 1970s. Both of these were probably later additions to the rear of the block. The easternmost of the pair was constructed in red brick with the features picked out in Staffordshire Blue engineering brick, and lit by rows of balanced sash windows. The other wing was "unusual" (51, 11) in that it was based around a prominent timber frame with red brick infill with blue brick detailing. The building was lit by rows of twelve pane sash windows. Both appear on the Piggot Smith map of 1850 and were thus built soon after the initial phase of construction, and may have been housed a leatherworks. This pattern of constructing such workshops or what was to become known as shopping to the rear of domestic premises was not uncommon in Birmingham with numerous examples seen in the Jewellery Quarter (Cattel, Ely et al 2002, 4). No. 46 Upper Dean Street was similar in style and decoration, it too was classically inspired, and it was a painted, stucco-finished, brick built three storey structure of three bays and was typical of many later Regency period buildings in Birmingham. Many of the architectural features were of carved limestone, whilst the ground storey elevation was also much altered to accommodate shop fronts. The original doorway did survive, this was flanked by a pair of Doric columns supporting a rectangular pediment with a plain architrave, a Tudor Rose decorated frieze, and moulded cornice. Internally the structure had been converted into office space, which had destroyed much of the original features and subdivision of space. Two warehouses to the rear were not recorded in detail due to health and safety issues.

Project Number 52 **External Identifier** 923

Report Type
WB

Report Name
Masshouse Circus, Archaeological Recording

Author(s) Roy Krakowicz, Andy Rudge

Date 2002 **Unit/ Organisation** BA

Report summary
Machine-cut trenches revealed well-preserved brick structures dating to C18th or later. Second stage revealed articulated & disarticulated human remains. One adult individual with amputated leg. Evidence of C18th brick-built structures.

Project Number 53 **External Identifier** 773

Report Type
WB

Report Name
Masshouse Circus: An Archaeological Watching Brief

Author(s) Charlotte Neilson, Mary Duncan

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Site of east side of St Bartholomew's Chapel burial ground, cleared after WWII. Disarticulated human bones recovered. Some coffin furniture & broken gravestones. Some post-medieval pottery noted but not collected.

Project Number 54 **External Identifier** SMR 03015

Report Type
PUBLICATION

Report Name
Birmingham Moat: its history, topography and destruction

Author(s) Lorna Watts

Date **Unit/ Organisation** Birmingham City Museums and Art Gallery

Report summary
Transactions 89. Results of salvage watching brief. Low density of medieval material due to later disturbance. No finds earlier than C13th. Complex of finely-chamfered sandstone walling recorded for first time. Environmental analysis included.

Project Number 55 **External Identifier** 03015

Report Type
DBA

Report Name
Land between Park Street and Allison Street DBA

Author(s) Oxford Archaeological Unit

Date 1999 **Unit/ Organisation** Oxford Archaeological Unit

Report summary
DBA concludes that many of the archaeological deposists relating to the medieval period may have been destroyed by C18th-C19th cellars, and viaduct constructed in early C20th. Sites noted in SMR for area are listed in gazetteer.

Project Number 56 **External Identifier** SMR 20432

Report Type
WB

Report Name
Report of an Archaeological Watching Brief at Millennium Point, Curzon Street

Author(s) Gifford

Date 1998 **Unit/ Organisation** Gifford

Report summary
Site chosen for Grand Railway Junction in 1838. Remains of brick-built buildings with basements, a cobbled surface and two railway turntables dating to C19th. Ceramics dating to C19th. Charcoal and ceramics dating to C16th & C17th in cultivation soils.

Project Number 57 **External Identifier** SMR 20432

Report Type
EVAL/BREC

Report Name
Report on Archaeological Recording and Evaluation at Millennium Point, Curzon Street

Author(s) Gifford

Date 1997 **Unit/ Organisation** Gifford

Report summary
Mostly structural, relating to stables and possibly office space. This included two former stable blocks dating from the 1880s and 1897 respectively were recorded, as well as a two-storey structure built in 1845 and identified as an accommodation office for Gloucester Goods Warehouse, though later used as a stable. This 1840s structure forms an 'L' shape with its frontal façade facing southwards, and was in a bad state of preservation due to fire. The principal elevation is of red brick laid in Flemish bond, with the remainder in English bond. The 1880s building was also 'L' shaped in plan and was the largest remaining building in the goods yard and is likely to have been purpose built as a stables or horse sanatorium. It was constructed in red brick laid in English bond and had been much altered by time of the recording work. Internally the only original features remaining were the ornate iron pillars which formed a central aisle along the spine of the building, an intricate drainage system, and a stairwell. The 1897 building is another stable block, and was constructed by Pickfords. Three evaluation trenches were excavated, two of which confirmed the respective positions of two demolished 19th-century buildings.

Project Number 58 **External Identifier** SMR 20499

Report Type
WB

Report Name
Archaeological Watching Brief: Aetna Glassworks, Broad Street

Author(s) Paul Belford

Date 2003 **Unit/ Organisation** Ironbridge Archaeology

Report summary
Early C19th brick & firebrick structures, possible annealing furnace at eastern end. Possible fragment of canal wharfage. Late C19th remodelling of site. Construction of multi-story building with boiler. Only traces of pre-industrial landscape.

Project Number 59 **External Identifier**

Report Type
DBA/BREC

Report Name
DBA and Survey of standing structure: Scammels Engineering Works and former smithy of the former Fazeley Street Gas Works

Author(s) Martin Cook

Date 2002 **Unit/ Organisation**

Report summary
Great Barr St. end of Scammels wall dates to c.1850-55, possibly mid 1840s. Opposite end of wall dates at latest to 1889, and central section 1937. Comparative study between Fazeley & other gasworks. Only partial remains of smithy above ground level.

Project Number 60 **External Identifier**

Report Type
DBA/BREC

Report Name
DBA and survey of land and standing structures: Warwick Bar Stoplock and Dock

Author(s) Martin Cook

Date 2001 **Unit/ Organisation**

Report summary
Above-ground remains comprise lock chamber, dock and warehouse, wooden dockside platform & over-awning. Possible survival of other related buildings, 2 basins below ground-level. Likely the basins not sealed off from canal and organic remains preserved.

Project Number 61 **External Identifier**

Report Type
DBA/BREC

Report Name
DBA and survey of land and standing structures: Warwick Wharf

Author(s) Martin Cook

Date 2002 **Unit/ Organisation**

Report summary
Above-ground remains of Fellows Morton & Clayton Warehouse and adjacent buildings recorded. Noted little changed since end of C19th. Backfilling of adjacent 'L' shaped basin noted. Circumstances of backfilling of 'finger basin' unknown.

Project Number 62 **External Identifier** SMR 20500

Report Type
DBA/BREC

Report Name
DBA and Sruvey: Former Belmont Glassworks and Ashted Pumping Station

Author(s) Martin Cook

Date 2001 **Unit/ Organisation**

Report summary
The earliest surviving standing remains recorded in this area were recorded at Ashted on the site of the former Belmont Glass Works. The Belmont Glassworks was set up in c.1804 by a Thomas Harris, this was still in operation in 1896 (**62**, 3) however by the time of the 3rd edition Ordnance Survey map of 1918 the factory was demolished and the site vacant. The only surviving above ground vestige of this glassworks is the southern boundary to the site, which remained to a height of c.1m, the oldest parts of this wall, identified by the poor quality of bricks are likely to be contemporary with the early phase of glassworks buildings. Trial pits carried out as part of the same programme of works uncovered foundations and massive brickwork masonry indicating that there is a high potential of survival of the glassworks buildings underground.

The success of the canal saw a number of associated ancillary structures being built; one of the best examples of this type of building was the Ashted Pumping Station (**62**). Once the Warwick and Birmingham Canal was open the increased use of the locks at Farmer's Bridge made additional demands upon the water supply and suggestions were made to pump water from Ashted locks to the Hospital Pond at their top. This course was adopted and the Ashted engine began pumping in 1812. The Ashted Pumping Station Engine represented an important development by James Watt. It had "Watt's well-known straight-line linkage for the piston rod and it was a double acting machine: steam being admitted to both ends of the cylinder alternately" (62, 6), providing a very effective method for pumping water onto the canal. The 1st edition Ordnance Survey map 1889 portrays the pumping station as a small rectangular building with a chimney near the middle of its northeast side. The only part of this pumping station to have survived above ground is part of the north-east wall of the corridor which probably provided access to the canal towpath. The pumping station was demolished in 1930 and the beam engine was bought by the Henry Ford Museum, Detroit, USA

Project Number 63 **External Identifier** 1041

Report Type
DBA/BREC

Report Name
Historic building survey of 134 to 138 Edmund Street, Birmingham City Centre

Author(s) Steve Litherland

Date 2003 **Unit/ Organisation** BUFAU

Report summary
136/138 was built by Flower and Sons brewers of Stratford-upon-Avon, as a beer distribution centre and offices in 1878. It is of four storeys and was built of pale red bricks laid in English bond, moulded brickwork, and terracotta in a Venetian Gothic style. It exudes mass and robustness "as well as a certain muted grandeur, compared with its younger, more playful, and relatively lightweight neighbour" (63, 9). Internally the basements and ground floor levels are supported on cast-iron columns linked with heavily bolted I-sections that in the basements support brick barrel vaulting, and at first floor level support a wooden floor. The rest of the internal structure is comprised of traditional mass brick walling and there is a mixture of king-post and queen post assemblies that incorporate iron fixings and ties. Detailing, such as Maw and Company tiles were used to decorate the long corridor to the Flowers office, and even the scale of the rooms is very much status orientated, and each storey diminishes in size and status as you progress up the building.

134/135 was built by George James Eveson head of the Eveson Coal and Coke Company Limited, as a suite of offices in 1897. It is of three storeys with an attic and a basement and was built in an Arts and Crafts Gothic Style. The materials used in the frontage include thin red-facing brick, buff terracotta and distinctive diminishing courses of green-grey slate on the roof, with common brick everywhere else. The building style is traditional but does incorporate more modern elements such as Portland cement mortar, sawn deal timber, and electric rather than gas lighting. The basic plan of the building consists of two sets of rooms arranged front and rear around the central entrance at ground floor and slightly off centred staircase to the floors above. The building is essentially a "straightforward traditional design that incorporates stylistic and constructional detail that we have come to characterise as Edwardian, although the design was made some four years before the end of Victoria's reign. Its also forms an important part of a class of terracotta building in central Birmingham that is representative of a particular school of architecture that was exciting and original in colour and profile and was particularly prevalent between 1880 and 1910" (63, 9).

Project Number 64 **External Identifier** 1057

Report Type
BREC

Report Name
An Historic Building Assessment of the HSBC Bank, 26-33 Bennetts Hill, Birmingham

Author(s) Malcolm Hislop

Date 2003 **Unit/ Organisation** BUFAU

Report summary
The Grade II listed former offices of the Birmingham Banking Company at 26-33 Bennett's Hill excellently exhibit the type of building being constructed here in the 1830s. Recording work was carried out on this in order to assess the archaeological implications of restoration work on the building and its adaptation for reuse (**64**). The bank which was designed by the architectural practice of Thomas Rickman and Henry Hutchinson in a neoclassical style, opened in 1831 as the office of the Birmingham Banking Company. Foster (2004, 127) describes this as the best surviving example of their work in Birmingham, and notes that its isolated formal quality is unusual in a commercial building. The original design is a classical box, five bays by seven articulated by plain pilasters. It is ashlar-built with five bays and an entrance bay on the corner which was inserted by Charles Edge in 1868, who also remodelled the interior at this time. The original porticos were intact; the northwest facing elevation featuring a Corinthian style tetrastyle portico to the entablature and pediment. The inserted corner entrance is flanked by bold Corinthian pilasters with a pedimented doorway with a leaf decorated frieze over the entrance incorporating the letters 'BBC' for the Birmingham Banking Company. A further three storey extension in a heavy French renaissance style was added to the south in the 1880s, probably by the

firm Harris and Marten. The site is surrounded by original iron railings. The impressive interior features red brick barrel-vaulted cellars, and a ground storey classical interior by Yeoville Thomason who carried out substantial alterations in 1877. This interior includes a north-south colonnade of paired Corinthian columns with gilt capitals, and a decorative plaster ceiling. The walls have a Greek frieze, and the ceiling itself is based on a framework of boxed-in riveted steel I-beams, the sides of which are decorated with rosettes. Between the beams are double coved and coffered ceiling panels with moulded borders including stylized leaf as well as egg and dart. The upper storey was added in the 1930s in an Art Deco style.

Project Number 65 **External Identifier** 1124

Report Type
EXC

Report Name
Town Hall, Chamberlain Square, Birmingham: Archaeological observation and recording 2003

Author(s) Chris Hewitson

Date 2003 **Unit/ Organisation** BA

Report summary
Monitoring revealed limited evidence of the construction of the Town Hall (brick basement wall) but no other significant archaeological features or deposits. Evidence of repair to the masonry of the exterior façade of the building was noted.

Project Number 66 **External Identifier** 1196

Report Type
WB

Report Name
Birmingham Town Hall: An Archaeologcial Watching Brief (Phase 2) 2004

Author(s) John Halsted

Date 2004 **Unit/ Organisation** BA

Report summary
Grade I listed. Phases of alteration to north face of building observed. Bricks with makers stamps suggest 1860s-1890s. Well pre-dating the Town Hall recorded in the basement, cut into natural sandstone, likely relates to late C18th buildings on site.

Project Number 67 **External Identifier** 1200

Report Type
DBA

Report Name
Martineau Galleries, Birmingham: An archaeological desk based assessment

Author(s) Kevin Colls

Date 2004 **Unit/ Organisation** BA

Report summary
Potential for 'islands' of archaeology. Site identified as having clear potential for investigating early settlement & expansion of the medieval town, the Priory of St. Thomas, & progression from medieval market to Chamberlain's C19th shopping boulevard.

Project Number 68 **External Identifier** 1467

Report Type
EXC/WB

Report Name
Snow Hill Queensway, Birmingham: An Archaeological Excavation and Watching Brief 2006

Author(s) Eleanor Ramsey

Date 2006 **Unit/ Organisation** BA

Report summary
Site of Oppenheim's Glassworks, earliest known in Birmingham. Site heavily truncated by construction of large foundations, construction. Part of wall identified as possibly associated with the early glassworks not associated with features or structures.

Project Number 70 **External Identifier** 473

Report Type
EXC

Report Name
Land to the south of Edgbaston Street, Birmingham City Centre: Archaeological Investigations 1997-99

Author(s) Cathy Mould

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Medieval deposits well-preserved. Earliest phase C12th-C14th, including tannery. C15th/16th expansion of tannery, decline in domestic occupation. Resurgence of activity in C17th-early C18th. Large pottery assemblage, tanning tools.

Project Number 71 **External Identifier** 635

Report Type
WB

Report Name
The Row, Birmingham City Centre, West Midlands: An Archaeological Watching Brief

Author(s) Chris Patrick

Date 2000 **Unit/ Organisation** BUFAU

Report summary
Located the northern edge of the medieval moat which once surrounded Birmingham's manorial site. Pottery recovered from the lower fills of the moat were dated to the 12th/ 13th centuries.

Project Number 72 **External Identifier** 638

Report Type
EVAL

Report Name
Further Archaeological Investigations at Hartwell Smithfield Garage site, Digbeth, Birmingham

Author(s) Bob Burrows, Lucie Dingwall, Josh Williams

Date 2000 **Unit/ Organisation** BUFAU

Report summary
Trial trenching showed discrete survival of medieval pits, alongside 19th century cellars. Finds included medieval ceramics dating to the 13th and early 14th centuries.

Project Number 73 **External Identifier** 687

Report Type
EXC

Report Name
The Archaeological Evaluation and Excavation at Moor Street, Birmingham City Centre 2000

Author(s) Cathy Mould

Date 2000 **Unit/ Organisation** BUFAU

Report summary
Excavations at Moor Street recorded archaeology dating from 12th through to the 20th century. The site has been fully published as part of Birmingham Integrated.

Project Number 74 **External Identifier** 701

Report Type
WB

Report Name
The churchyard of St Philips Cathedral, Birmingham; an archaeological watching brief

Author(s) Chris Patrick

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Evidence recorded for high density burial across the churchyard, which was in use from the early C19th to the mid C19th. Both articulated and disarticulated remains were noted, and excavated burials and vaults are fully reported.

Project Number 75 **External Identifier** 703

Report Type
DBA/EVAL

Report Name
Historic Town Plan Analysis and Archaeological Evaluation of Manzoni Gardens, Birmingham City Centre

Author(s) Bob Burrows, Cathy Mould

Date 2000 **Unit/ Organisation** BUFAU

Report summary
The area of Manzoni Gardens would have played an important rolwe in the early development of Birmingham, however, trenching revealed that archaeology relating to this period has been truncated by the C19th market hall and 1960s Bullring.

Project Number 76 **External Identifier** 712

Report Type
DBA/EVAL

Report Name
Historic Town Plan Analysis and Archaeological Evaluation of the Open Markets, Birmingham City Centre

Author(s) Bob Burrows, Cathy Mould

Date 2000 **Unit/ Organisation** BUFAU

Report summary
Trenching demonstrated that the only surviving feature of the site's medieval role was a well, cut into the sandstone, located near the boundary of St Martins churchyard. It is suggested this would have been a communal well due to its size and location.

Project Number 77 **External Identifier** 776

Report Type
EXC

Report Name
Park Street, Birmingham City Centre: Archaeological Investigations 2001

Author(s) Bob Burrows, Helen Martin

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Excavations at Park St recorded a wealth of archaeology relating to the medieval and post medieval periods. The large artefact assemblage and archaeology is fully published as part of the Birmingham integrated monograph.

Project Number 78 **External Identifier** 787

Report Type
EVAL

Report Name
Floodgate Street, Digbeth, Birmingham: An Archaeological Evaluation

Author(s) Josh Williams

Date 2001 **Unit/ Organisation** BUFAU

Report summary
Trenching at Floodgate St recorded the survival of C17th waterlogged deposits, structural features dating the C19th and C20th deposits were also recorded.

Project Number 79 **External Identifier** 798

Report Type
EXC

Report Name
Excavations at St Martins Churchyard 2001: Post-Excavation Assessment and Reserach Design

Author(s) Jo Adams, Richard Cherrington

Date 2001 **Unit/ Organisation** BUFAU

Report summary
The report outlines the findings from the extensive excavations of St Martins churchyard, which include the excavation of 857 burials, mainly of the late 18th and 19th centuries. The report has since been fully published.

Project Number 80 **External Identifier** 845

Report Type
WB

Report Name
An Archaeological Watching Brief during groundworks at St Philips Place, Temple Row, Birmingham

Author(s) Richard Cherrington

Date 2001 **Unit/ Organisation** BUFAU

Report summary
No archaeologial deposits or human remains were recorded during the watching brief.

Project Number 81 **External Identifier** 876

Report Type
WB

Report Name
An Archaeological WB during cable trench excavation at the junction of Colmore Row and St Philips Pl

Author(s) Stephan Williams

Date 2001 **Unit/ Organisation** BUFAU

Report summary
The roofs of two possible Victorian brick-built vaults were recorded, but no other archaeological remains were identified.

Project Number 82 **External Identifier** 964

Report Type
DBA

Report Name
Proposed New Library, Albert Street/Fazeley Street, Birmingham City Centre

Author(s) Sarah Watt

Date 2002 **Unit/ Organisation** BUFAU

Report summary
This area would have comprised part of the Little Park in the C16th, then was developed in the late C18th/ early C19th with domestic structures probably incorporating small industry. C19th use broadened to include commercial and industrial use.

Project Number 83 **External Identifier** 1274

Report Type
DBA

Report Name
Site Bounded by Digbeth, Allison Street, Well Lane and Park Street, Birmingham City Centre

Author(s) Malcolm Hislop

Date 2005 **Unit/ Organisation** BA

Report summary

Project Number **External Identifier**
84 1181

Report Type
BREC

Report Name
Refurbishment of Curzon Street Station, Stage II HLF Submission Conservation Management Plan

Author(s) Malcolm Hislop

Date 2005 **Unit/ Organisation** BA

Report Summary
Curzon Street Station was opened in 1838. The significance of this Grade I listed building lies in "its status as an important milestone in the treatment of station architecture" (84, 3). It was constructed as part of a pair of termini designed by Philip Hardwick for the London and Birmingham Railway. The result was a pair of monumental entrance fronts of considerable architectural merit, the destruction of the Euston (London) entrance has made the preservation of the Curzon Street building all the more important. In addition to this it is "one of the most important historic and iconic buildings in Birmingham" (84, 3). It was this significance which prompted the implementation of a Conservation Management Plan when the issue of the future use of the building was mooted. This included an in-depth recording of the building and its subsidiary structures. The station building is executed in ashlar with banded rustication at ground level, and faces west fronting New Canal Street. The basis of the design is a three storey, three bay on basement, with a giant ionic portico, tetrastyle prostyle, dominating the western front. The listed buildings description describes it as "austerely cubic". The columns stand on a stone stylobate broken to accommodate the central doorway, above which is a semi-circular overlight with a web of radiating and concentric glazing bars. The cornice is dentilled to a plain coped parapet. Hardwick's original concept was for the existing building to be flanked to the north and south by a pair of entrances. A northern arch was constructed, but was demolished to make way for an extension to the station hotel in 1839. The rear elevation has a giant Ionic order of engaged three-quarter columns and pilasters on a stylobate broken by three openings at ground level, whilst the south elevation has three bays. Scarring and blocked windows on the north wall signify where the former station hotel extension once stood.

Internally the main western entrance leads to a large entrance lobby which forms an atrium rising to the full height of the interior and containing the main staircase. This hall "forms the architectural focus of the interior and the lynchpin of its circulatory system. The roof has been subject to a large amount of change throughout its lifetime. At the time of the conservation plan planning permission had already been granted for its removal. The pace of change in this era was excellently exhibited when Curzon Street was superseded by the construction of New Street Station in 1852 and became a goods station.

Project Number **External Identifier**
85

Report Type
DBA/BREC

Report Name
DBA and Survey of land and standing structures of the former smithy of the Fazeley Street Gas Works

Author(s) Martin Cook

Date 2002 **Unit/ Organisation**

Report Summary
This was constructed in 1842 by the Birmingham Gas Light and Coke Company and comprised three gasometers and an 'L' shaped building adjacent to the canal. The works provided gas for gas street lighting for parts of the city. Attached to a wing of the works building was a smithy. Historic building recording revealed that only partial above-ground remains survived. This took the form of parts of two of the elevations both were constructed in red brick laid in English Garden Wall bond. Archaeological analysis demonstrated that the smithy was constructed prior to the adjacent retort house.

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