



University of  
**Leicester**

**Archaeological Services**

**Beorma Quarter, Digbeth,  
Birmingham (Phase 1)  
Post-Excavation Assessment Report  
And Updated Project Design**

*Roger Kipling, Jennifer Browning,  
James Greig, David Higgins, David  
Kendrick, Anita Radini, Stephanie Ratkai  
and David Smith*



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*Roger Kipling, Jennifer Browning, James Greig, David Higgins, David Kendrick, Anita Radini, Stephanie Ratkai and David Smith*

For: **CgMs Consulting on behalf of Sahlia Investments**

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## **Beorma Quarter, Digbeth, Birmingham (Phase 1) Post-Excavation Assessment Report and Updated Project Design**

Roger Kipling

### ***Project Background***

The purpose of this report is to assess the potential for further analysis of the archaeological archive from the archaeological excavation undertaken at the Beorma Quarter, Digbeth, Birmingham (NGR SP 0749 8655), Birmingham Museums Accession Number EBM 604 between 12th December 2011 and 15th February 2012. The assessment has been prepared in accordance with English Heritage Map 2 (1990) and MoRPHE 2006 and with the ongoing *Archaeological Research Agenda and strategy for the West Midlands* (<http://www.birmingham.ac.uk/schools/historycultures/departments/caha/research/arch-research/wmrrfa/index.aspx>).

### ***Location***

The site is located in the historic core of Birmingham bounded on the northwest by Park Street, on the southwest by Digbeth, on the southeast by Allison Street and Well Lane on the northeast. Orwell Passage extends from Allison Street into the site. The site as a whole was centred on NGR SP 0749 8655, and Phase 1 of the project covers approximately 2600m<sup>2</sup>.

### ***Geology and Topography***

The solid geology below the site consists of a Keuper Sandstone ridge that runs below Birmingham from the southwest to the northwest, a geological fault in this has resulted in a sharp ridge falling away from the centre of the city, to the north of the site, towards the River Rea valley floor to the south of the site. The drift geology consists of sand and gravel boulder clays, with some alluvial deposits on the Rea Valley floor. The current ground level is around 106m OD in the middle of the site.

### ***The Archaeological and Historical Background***

The site has been the subject of an archaeological desk-based assessment document (Ramsey 2007).

The desk-based assessment indicates that the site lies within an area of significant potential, located in close proximity to the core of the medieval town of Birmingham, immediately east of the Parish Church. The south-western sector of the site is likely to have been developed since the medieval period, probably soon after the foundation of the town in 1166, during which same period the street and property pattern appears to have been established. The site is positioned on the Digbeth, High Street Deritend and High Street Bordesley thoroughfare, the major route into the city from the east.

Previous excavations immediately to the north of the study area identified surviving archaeological deposits of medieval to post-medieval date. A substantial ditch identified in the adjacent Park Street excavations is likely to be an original feature of the town, denoting the back boundary to the Digbeth plots. Documentary references to the feature as the Hersum

ditch broadly translates as lord's or lordship ditch (Hodder 2004, 84). The ditch appeared likely to continue into the study area. A second ditch, denoting the back boundaries to the slightly later Park Street plots was also identified. Evidence of post-medieval industrial activity was also identified.

Within the site itself, cartographic evidence suggests that the original burgage plot boundaries were respected until the 19th century. The desk-based assessment also highlighted the importance of natural water resources in the area, with the suggested presence of a pool in the northeast corner of the site during the 16th century, as documented in the Survey of Birmingham 1553 (Hislop & Ramsey 2008: 6) with later wells and springs also documented.

The Digbeth frontage was built up by the end of the 17th century, with 18th century cartographic evidence illustrating the development of the elongated properties. Documentary evidence from trade directories lists the inhabitants with a range of trades, including metalworkers, for which Birmingham had national and international repute. The desk-based assessment highlighted the potential for below-ground archaeological deposits to survive within the study area, notably waterlogged environmental deposits, which have the potential to address issues regarding the origins and development of the city. An archaeological evaluation was undertaken on the site in 2007 by Birmingham Archaeology in order to detail the extent, significance and location of archaeological deposits, and to provide a basis for an informed strategy for archaeological mitigation.

The earliest archaeological deposits encountered comprised a sequence of 12th-13th century waterlain deposits which pre-dated the cutting of the town boundary ditch. The environmental evidence from these deposits suggested that they were laid down prior to development of the surrounding area, although precise dating was not possible. Subsequently a broad town boundary ditch was cut, a feature previously observed in an excavation to the northwest, and which appears to have gone out of use in the 13th century. A group of medieval pits and post-holes were recorded in the backplot area to the rear of the Digbeth frontage. During the medieval-early post-medieval period the site was largely given over to tanning activity, forming part of a wider zone of industrial activity also extending to the northwest. This tanning industry was represented by pits, some containing traces of timber lining. One later tanning pit contained pottery of 16th-17th century date. The latest activity was represented by brick-built structures, of 19th century or later date. Towards the Digbeth frontage these formed courts adjoining the Digbeth frontage.

The results of the evaluation may be summarised as follows:

- Well-preserved archaeological remains survive in all areas sampled by trenching.
- The archaeological remains located in trenching are of medieval and post-medieval date.
- The archaeological remains located in trenching include a medieval boundary ditch, medieval pits and post-holes, pits used in leather tanning in the medieval and post-medieval periods, and 19th century brick structures.
- The archaeological remains located in trenching include intercut features and layers of deposits.
- Organic deposits predating the medieval boundary ditch contain pollen and beetles which provide information on the environment of the site prior to medieval occupation and subsequent urban development.

- Archaeological remains are likely to survive in the areas which were inaccessible for trenching (under existing buildings fronting Park Street, Digbeth, and Allison Street, and under Well Lane car park). Their exact character is unknown but they are likely to be similar to those in the areas trenched.

The 2011-12 excavation formed the first of three planned phases of archaeological investigation on the site, targeting properties fronting Digbeth and Allison Street in the southeast corner of the development area and adjacent to Orwell Passage and the Digbeth Cold Store building.

### ***Original Research Aims and Objectives***

The original aims and objectives presented in the design specification from the excavation were established following completion of initial stages of desk-based assessment (Hislop & Ramsey 2008) and archaeological field evaluation (Duncan 2007), and prior to commencement of the 2011-12 excavation.

RA1 The medieval origins of Birmingham, including the medieval town boundary.

RA2 Medieval craft and industry, in particular water-using industries.

RA3 The local environment 12th-19th century.

Following completion of the excavation, this research agenda will be revisited and modified in light of the results of this fieldwork.

### **Site Summary**

Phase 1 comprised three distinct areas of archaeological investigation. Area 1, located at the corner of Digbeth and Allison Street and south of Orwell Passage, targeted potential deposits beneath the recently-demolished frontage buildings, notably the town ditch. Area 2, north of Orwell Passage, sought to establish the character of archaeology on the Allison Street frontage. Finally, Area 3, located in the northwest corner of the site, north of the Cold Store and south of Orwell Passage, also aimed to trace the course of the town ditch in addition to rear yard activity.

Each of the three excavation area descriptive narratives is preceded by a full context number list in order to facilitate reference back from other sections of the report.

#### ***Area 1***

(Figure 2)

##### ***Medieval town ditch***

[6066] (6055)

[6078/6164] (6076, 6077, 6097, 6113, 6114, 6115, 6116, 6117, 6118, 6119, 6120, 6122, 6123, 6124, 6125, 6126, 6127, 6128, 6129, 6130, 6131, 6132, 6133, 6134, 6135, 6136, 6137, 6138, 6159, 6160, 6161, 6163, 6175, 6176, 6177, 6178, 6179, 6180, 6181, 6182, 6183, 6184, 6185, 6186, 6187, 6188, 6189, 6190, 6191, 6192, 6204, 6205, 6206)

[6139] (6148, 6149, 6150)

[6207] (6208, 6238, 6239)

##### ***17thc pits***

[6042] (6040, 6041, 6055, 6060), [6045] (6046, 6067), [6059] (6058), [6062] (6061), [6064] (6063), [6066] (6065), [6168] (6167), [6170] (6169, 6171)

**17thc post holes**

[6070] (6071), [6100] (6101), [6102] (6103)

**Spreads** (6068, 6069, 6098, 6099, 6172, 6232/6235, 6233, 6234, 6236, 6240)

**17th chimney/hearth**

[6001/6036] (6035, 6037, 6038); associated spreads (6043, 6044, 6165) ?floor (6166)

**19thc brick walls**

[6105] (6104)

[6002]

[6003]

[6162]

**19thc lime tanks**

[6004]

[6005]

In **Area 1**, an initial stage of monitored floor slab breaking and removal proceeding from the demolition of 19th century buildings associated with the Cold Store was followed by hand cleaning and detailed planning and recording of the resultant walls, basements and archaeological features observed to be cutting the natural clay. The earliest and most substantial archaeological survival comprised the well-preserved medieval town boundary ditch **[6078]**, traced entering the site at its southeast corner and extending north beneath Orwell Passage. The feature was subsequently investigated via hand excavation of three sample cross sections. Although having suffered heavy disturbance from the Victorian buildings, the excavation of a near-complete section across the ditch revealed it to have a broad, open v-shaped profile, measuring *c.*7m wide and *c.*2.4m deep and containing substantial, environmentally rich deposits which were the subject of extensive bulk and pollen column sampling. Primary fills of redeposited natural sandy clay suggest partial silting soon after its construction, with a series of overlying richly organic deposits and fills containing animal bone and 12th to 14th century pottery point to a sequence of intermittent natural silting and deliberate refuse dumping. The feature appears to have been deliberately backfilled during the 13th or 14th centuries, whilst the latest, clay-rich fills in the sequence may represent site levelling, possibly to counteract subsidence into the ditch, during the 17th or 18th centuries. The ditch was bisected longitudinally by a substantial wall pertaining to one of the recently-demolished Victorian street frontage buildings, necessitating construction of substantial brickwork footings. The uppermost ditch fills were cut by a brick-lined drain running centrally to the ditch, possibly representing an attempt to channel water along what may have still represented a form of water course despite its earlier backfilling. The western (townward) edge of the ditch was truncated by small pits **[6062, 6064, 6066]** cutting the latest ditch fills, but was otherwise archaeologically blank, suggesting that the general area was subject to later truncation.



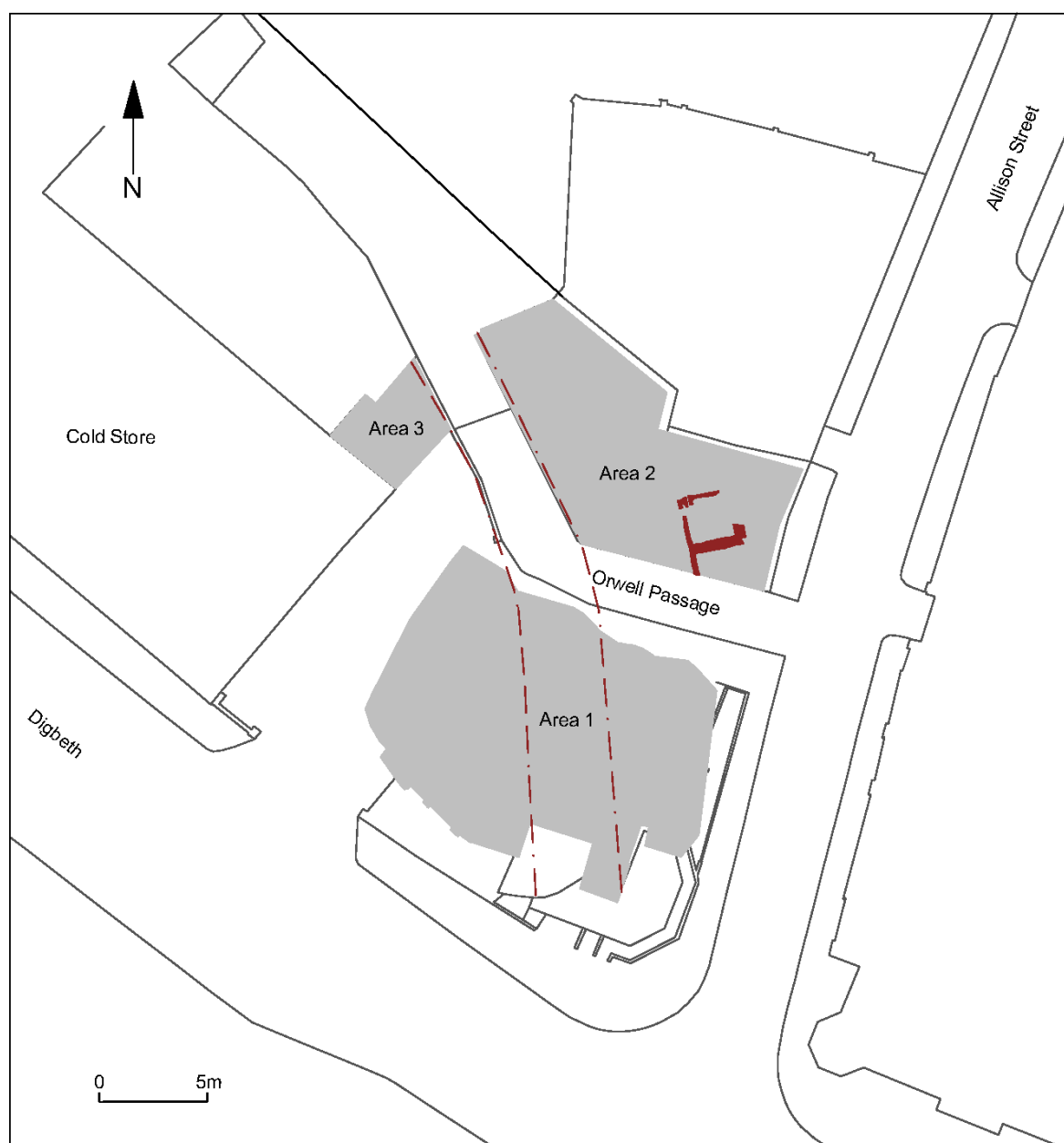


Figure 1: Site location and areas of excavation

This area was, in addition, heavily disturbed by foundations of the Victorian buildings, two of which were associated with fragmentary concrete-based lime tanks [6004, 6005]. The south-western sector of Area 1 produced evidence for small-scale post medieval activity in the form of several oval and rectangular pits, the latter [6042 & 6059] possibly representing clay quarry pits, and post holes of likely 17th date. The northwest corner of Area 1 revealed fragmentary survivals of brick-built walls of probable 17th century date, including a 0.6m square brick-lined hearth [6036] set into a square, truncated stub of brick masonry. A more substantial wall, with brick superstructure set upon sandstone footings, appeared to have been set into the upper fills of the town ditch, with which it shared a general northwest-southeast alignment. Consequently this may represent an instance of the use of the ditch being used as a property boundary line.

## **Area 2**

(Figure 3)

### **Medieval ditch**

[6209] (6210)

### **Undated lime tank bases**

[6213] (6214), [6215] (6216), [6218] (6219), [6220] (6221)

**Undated post holes** [6211] (6212), [6213] (6214)

**17thc pits** [6222] (6223, 6229) [6224] (6225, 6228, 6231), [6226] (6227, 6230)

### **17thc brick building**

wall [6021] (6018/6019/6020)

wall (6022/6018)

wall [6155] 6029/6156)

wall [6024] (6022/6023)

wall [6026] (6027/6028/6029)

wall [6030] (6031/6032)

floor (6034)

drain [6079] brick construction (6108); fills (6072, 6073, 6074, 6075, 6080, 6085, 6086, 6087, 6089, )  
spreads (6084)

?floor make-up (6090)

cobbled wall foundation (6140); bedding layer (6154)

post hole [6141] (6151)

### **?Building partition**

post pads [6142] (6143), [6144] (6145), [6146] (6147)

brick wall foundation [6157] (6153, 6158)

### **17thc-18thc post holes**

[6047] (6048), [6049] (6050), [6051] (6052), [6053] (6054), [6056] (6057), [6096] (6095), [6109] (6092, 6093) [6110] (6082)

**17thc-18thc pits** [6111] (6112), [6173] (6174, 6193, 6194, 6195, 6196, 6201, 6202, 6203), [6197] (6198) [6199] (6200)

### **Post-medieval garden soil**

(6091= 6094) (6013, 6081, 6121)

### **Post-medieval pond/pool (6241)**

Machining of **Area 2**, defined to the south by Orwell Passage and to the east by Allison Street, revealed a 0.4m deep general accumulation of garden soil. A single building of masonry and brick construction was situated at the eastern end of the Area, in close proximity to the street frontage and cutting the garden soil. The square, single-roomed structure was aligned northwest-southeast and measured c.4.7m north-west to south-east by c.5.3m southwest-northeast externally. The north (**6020**) and south (**6029**) wall builds were of sandstone footing construction with a brick superstructure (**6018**) surviving on the former, whilst the western wall (**6022**) was purely of brick build. The latter projected south beyond the building and hence may represent a (rear) property wall against which the building was constructed.

Pottery sherds from a single Blackware pottery drinking vessel recovered from the construction trench of the north wall suggest a c.1600-1800 construction date. The wall

footings incorporated a number of blocks of reused sandstone architectural fragments, including possible 13th or 14th century Decorated style window mouldings, possibly representing material salvaged from either the medieval Manorial Moat site to the south or, alternatively, from the parish church of St. Martins to the northwest. It is possible that the stone wall footings represent the foundation of an earlier, timber constructional phase predating a subsequent masonry rebuild, possibly during the 17th century or later, whilst the brick flooring and capped drain [6079] suggests that the building continued in use well into the modern era. A series of three possible mid-16th to late 17th century post pads [6142, 6144, 6146] running north-south may represent an internal partition. The alignment of the building is noticeably at odds with the 19th century buildings and Allison Street, and suggests that the building occupied a property initially set out when the town boundary ditch was still open. If this is the case, this structure would appear to have occupied the rear of the property, with the brick wall defining its western extent, seemingly reflecting evidence from the locality of early medieval properties being perpetuated into the modern period.

The building appeared to have had a lengthy life, with indications of alterations or adaptive reuse into the modern period. The building was crossed diagonally by a brick-built drain, entering through a possible blocked doorway at the northwest corner and exiting to the northeast beneath the wall footings, suggesting that the building was still standing at the time of the insertion of the drain.



Figure 2: Plan of Area 1 showing principal features

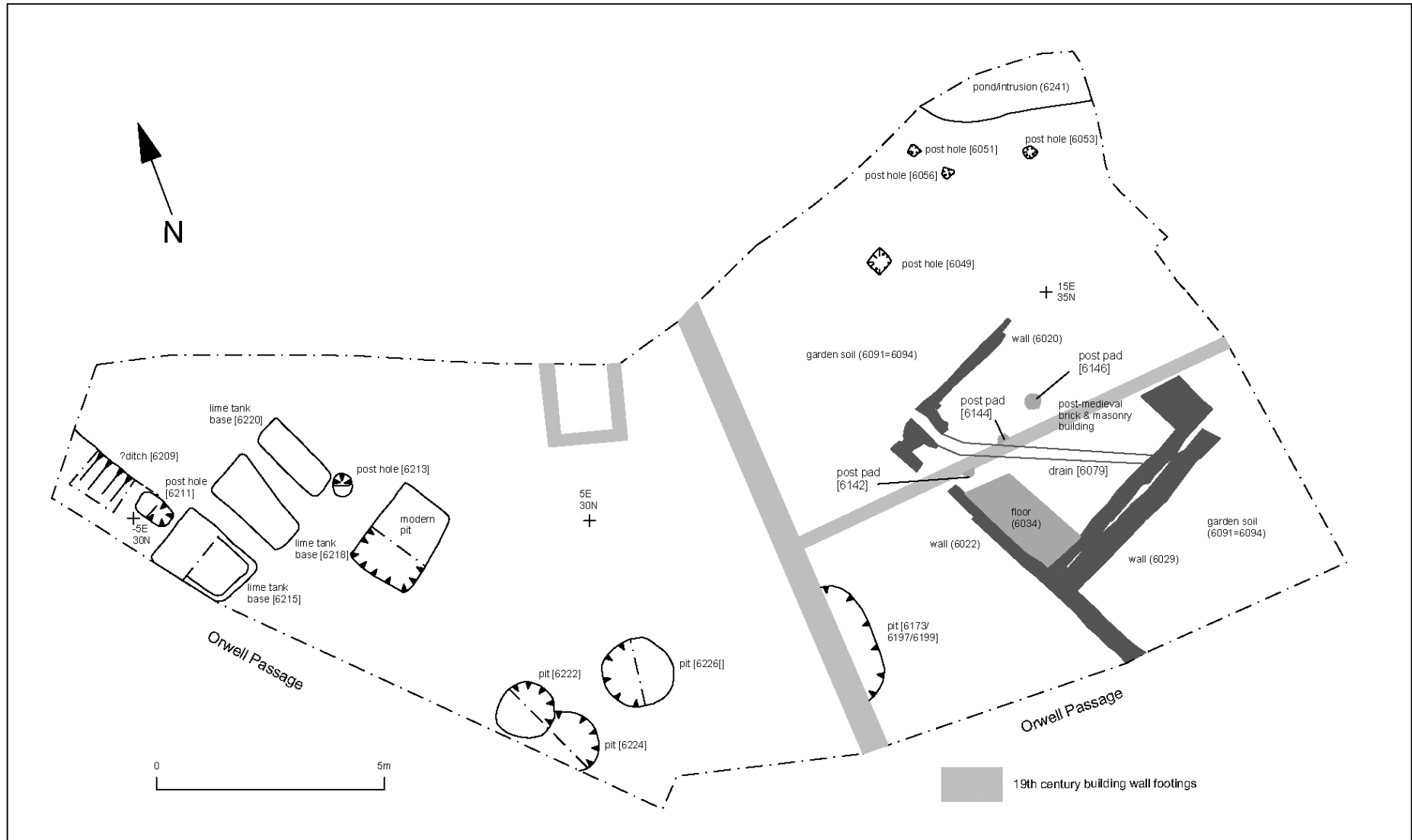


Figure 3: General plan of Area 2

Pottery recovered from the primary silt of the drain produced a broad late 17th to late 18th century date, whilst a possible floor surface of unmortared 19th century bricks set against the western wall represented the only other surviving internal feature, likely due to later truncation. The garden soil (**6091/6094**) extending over the area north of the building was cut by several small, randomly scattered post holes [**6051**, **6053**, **6056**], one of which produced pottery of 17th-18th century date. A single large rectangular pit [**6173**] with two recuts [**6197** & **6199**] located west of the building and cutting the garden soil yielded a substantial assemblage of late 17th or 18th century stoneware and earthenware pottery vessels likely represents backyard refuse disposal associated with the adjacent building. A shallow dark grey clay silt deposit (**6241**) in the northeast corner of the trench and shelving gradually towards the east possibly represented the natural pond or pool attested by documentary evidence in the post-medieval period.

A short length of the probable northern edge of the town ditch was observed as a shallow, sloping cut feature [**6209**] in the southwest corner of Area 2, truncated by modern disturbance beneath Orwell Passage. Further adjacent features included a row of three undated fragmentary rectangular lime tank bases [**6213**, **6215**, **6218**] and two undated post holes [**6211** & **6213**]. The westernmost of the tanks as well as one of the post holes appeared to be cut the upper fills of the ditch. Three small oval pits [**6222**, **6224**, **6226**] of probable 17th century date were situated to the east towards the post-medieval building. All features were sealed by the garden soil (**6091/6094**).

### **Area 3**

(Figure 4)

*?Medieval town ditch* [**6014**] (*6015, 6016, 6017*)

*19thc cold store chimney base* [**6006**] (*fill (6008); walls [6007]*)

*Associated walls* [**6009**], [**6010**], [**6011**]

*Post-medieval garden soil* (*6012*)

**Area 3**, located immediately to the north of the Cold Store and south of Orwell Passage, was a small area measuring *c.*7m x 7m. Initial plans for the machine excavation of a substantial area were revised due to the discovery of a 3m-deep cellar beneath and associated with the recently-demolished Cold Store engine house. Partial opening of this cellar and an inspection beneath its concrete floor indicated that no archaeological deposits had survived. Consequently investigation was restricted to a small area adjacent to the eastern external wall of the engine house, revealing the base of a square, brick-built structure measuring *c.*4m x 4m externally. A centrally placed square central hearth [**6006**] measuring 1.75m square and 0.7m deep was linked to a 1.3m wide, 5.75m long brick-lined flue which extended west to join the Cold Store building at its northeast corner. Both flue and hearth contained the same ashy sand and rubble backfill material. The foundations likely represent the base to a chimney associated with the ice house in its original form, the existence of which has previously been theorised by architectural writers. The northwest corner of the trench was occupied by a 1.4m length of a shallow, sloping linear cut feature [**6014**] which may correspond with the cut observed in Area 2 on the opposite side of Orwell

Passage and hence represent the southern edge of the town ditch. The full dimensions of the feature could not be ascertained, but measured 0.65m deep and 1.6m+ wide, and was sealed by garden soil.

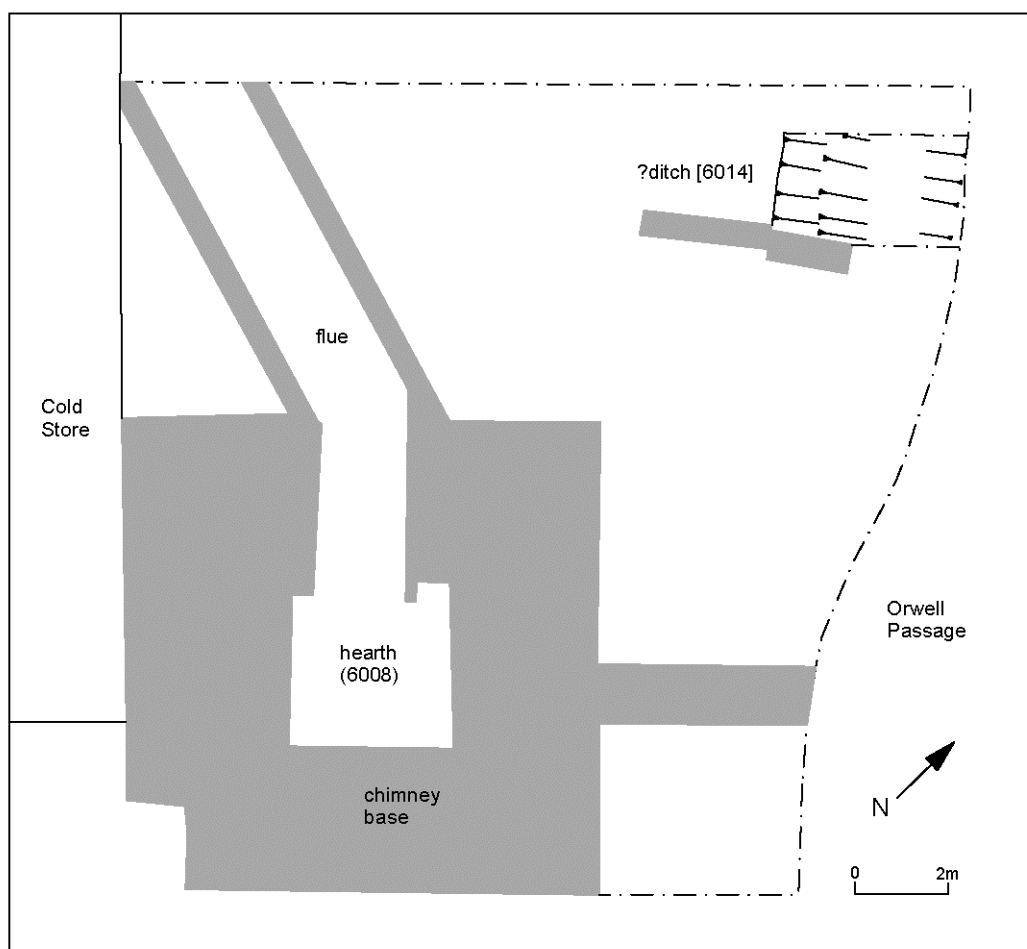


Figure 4: Plan of Area 3

Although no complex urban archaeological stratigraphy was encountered during the course of the excavation, likely due to later levelling or truncation, it has established the presence on site of well-preserved medieval and post-medieval archaeological deposits, notably the 12th century town ditch, the course of which has been successfully traced across the site. This is a markedly more substantial feature, notably in terms of its surviving depth, than has hitherto been encountered in archaeological excavation of surrounding areas.

The same evidence of truncation was visible elsewhere on the site, as evidenced by the tank bases, and suggests that the garden soil identified across Areas 2 and 3 dates to comparatively late in the archaeological sequence. In this respect, the survival of a building of apparent 17th century date beneath the shallow foundations of an overlying Victorian structure, represents a unique survival in this area of the post-medieval town, and one which merits further investigation.

## ***The Assessment***

### **The Stratigraphic and Structural Data**

#### *The Quantity of Material*

The paper site archive consists of:

- 240 context sheets
- 29 plans on A2 permagraph
- 33 section drawings on A2 permagraph
- 479 digital photographs
- 7 x 36 exposure monochrome films

The finds archive consists of:

- 16 small finds ( 1 x glass, 1 x leather, 1 x timber, 13 x masonry architectural fragments)
- 4 boxes bulk finds (pottery, CBM & animal bone)
- 25 x 10kg bags of bricks
- c.115 x 10kg environmental bulk samples

#### **Provenance**

Site records may be broken down approximately into the following periods, which are provisional; consequently certain contexts may be reassigned during analysis. However the breakdown is broadly correct and very little variation is expected.

The contexts break down approximately as follows:

#### ***Medieval 1250-1400***

*Town ditch* 65 contexts  
*Area 1: 59 contexts*  
*Area 2: 2 contexts*  
*Area 3: 4 contexts*

#### ***Early Post Medieval 1500-1650/***

#### ***Late Post Medieval 1650-1750***

*Brick building (Area 2)* 11 contexts  
*Walls* *Area 1: 8 contexts/4 walls*  
*Chimney/hearth* *Area 1: 6 contexts/1 hearth*  
*Pits* *Area 1: 15 contexts/5 pits*  
*Area 2: 15 contexts/4 pits*  
*Post holes* *Area 1: 6 contexts/3 post holes*  
*Area 2: 16 contexts/8 post holes*  
*Spreads/dumps* *Area 1: 15 contexts*  
*Garden soil* *Area 1: 1 context*  
*Area 2: 2 contexts*

#### ***Modern (1750 onwards)***

*Building (Area 2) alterations* 26 contexts  
*Pits* *Area 2: 10 contexts/3 pits*  
*Chimney base (Area 2)* 6 contexts



### **Undated**

*Lime tank bases*                                    *Area 1: 2 contexts/2 tanks*  
*Area 2: 8 contexts/4 tanks*  
*Post holes*    *Area 2: 4 contexts/2 post holes*

### **Range of the Records**

The contexts break down approximately as:

The town ditch	65
Pits	40
Post holes	25
Structural and Surfaces	72
Dumps	18

### **The Research Aims**

The data and material have been critically examined in the light of their potential to answer research aims and/or themes resulting from the fieldwork including local, regional and national priorities, which may be summarised as follows:

- RA1 The medieval origins of Birmingham, including the medieval town boundary.*
- RA2 Medieval craft and industry, in particular water-using industries.*
- RA3 The local environment 12th-19th century.*
- RA4 Medieval diet and economy.*
- RA5 Post-medieval and modern building techniques.*

The specific objectives of the project were as follows:

- To fully investigate the archaeological features and deposits on the site.
- To sample and analyse palaeoecological remains (including pollen, plant macrofossils and beetles from organic deposits located in the evaluation and to date those deposits by radiocarbon assay.
- To recover and analyse remains of past environmental conditions from any other suitable deposits.
- To recover and analyse industrial residues of all kinds.
- To record the 19th century brick structures at an appropriate level of detail to enable them to be related to the documentary record.
- To relate the historic development of the site to that found by excavation on nearby sites.

### **Statement of Potential**

The results of the excavation will enable the majority of the original research objectives to be addressed.

*RA1 The medieval origins of Birmingham, including the medieval town boundary.*  
The excavation of a well-preserved length of the medieval town boundary ditch will reveal important details regarding the date, character of this major medieval landscape feature.

*RA2 Medieval craft and industry, in particular water-using industries.*

The presence of a number of possible cess or rubbish pits pre-dating the Area 1 ditch and from Area 2 away from the Digbeth frontage has the potential to inform knowledge regarding the craft and/or industrial processes during the medieval period. Notably, although much of the industrial material appears to be concentrated in post-medieval deposits, the recovery of suspected ivory offcuts suggests the potential of this material to contribute to knowledge of craft and/or industry.

*RA3 The local environment 12th-19th century.*

An assessment by David Smith of insect remains from the ditch demonstrates good potential to address the issues of medieval environment (RA3) and economy (RA4), with indications of very slow flowing or still water and that the area around the ditches consisted of open grassland containing grazing animals. In view of the absence of archaeoentomological work from central Birmingham, with the exception of the Bull Ring Development at Edgbaston and Park Street, David Smith recommends that a full analysis of these insect faunas takes place.

*RA4 Medieval diet and economy.*

James Greig has stated that the environmental samples from the medieval ditch contain a good range of well-preserved pollen which appears to show an alder carr or similar woodland, with traces from cultivated crops, perhaps from local whole plant remains and processing rather than from locally growing crops. These have the potential to show something of archaeological significance in the interpretation of the site as a whole. The recovery of insect remains from the ditch implies the proximity of the site to open grassland with grazing livestock. As regards the animal bone assemblage, Jennifer Browning has assessed that the material contributes in general terms to RA4 regarding questions of husbandry and stock mortality.

*RA5 Post-medieval and modern building*

Mike Hodder (2003) has highlighted the significance of the replacement of brick with timber as the standard building material in Birmingham and the surrounding area during the 17th century. The discovery of such a building of this period on the Beorma excavation area appears to reflect this and as such represents a rare survival of this building form in this part of the town. As he states, the project has the potential to inform shortcomings in understanding of this period, namely:

- How extensive is the apparent new building or rebuilding in this period?
- How widespread was the use of brick in the early part of this period?
- How many buildings of this period adapt or incorporate earlier structures?

The likelihood that medieval building masonry, possibly deriving from the parish church to the west, was incorporated in the footings of the Area 2 post-medieval structure, as suggested by David Kendrick, is particularly pertinent to the latter point.

As regards specific project research objectives, the potential may now be assessed as follows:

- *To fully investigate the archaeological features and deposits on the site.*

All features encountered during Phase 1 of fieldwork at the Beorma site were subject to excavation in accordance with the written scheme of investigation (ULAS 2012), namely:

<b>Deposit type</b>	<b>Proportion to be excavated</b>
Linear features; Ditches gullies	25%
Discrete features; Pits post holes	50% (100% if significant finds/industrial deposits present)
Hearths	100%
Timber structures	100%

- *To sample and analyse palaeoecological remains (including pollen, plant macrofossils and beetles from organic deposits in order to analyse past environmental conditions.*

Bulk and pollen column sampling provided a near-complete section through the ditch enabling sampling of the full sequence of environmentally-rich fills. The assessment highlights the potential of this material to address issues of environment and economy, supplemented by samples from a number of cess or rubbish pits.

- *To recover and analyse industrial residues of all kinds.*  
Samples recovered from several post-medieval and modern hearths are likely to provide evidence for domestic and/or industrial processes.
- *To record the 19th century brick structures at an appropriate level of detail to enable them to be related to the documentary record.*  
All brick structures were the subject of detailed recording and planning by EDM in order to relate them to the documentary and historic cartographic record. This revealed a degree of sequential development as well as highlighting the presence of earlier, possibly 18th century structures.
- *To relate the historic development of the site to that found by excavation on nearby sites.*  
The Beorma excavation has direct links with other excavations in the vicinity, including the 2006 evaluation and the earlier Bullring, Park Street Edgbaston Street excavations, both topographically (the ditch and tenements) and functionally (industrial), and clearly further elucidates the developmental process across the area from the medieval period onwards.
- *To recover and analyse pottery and ceramic building material.*  
The pottery and ceramic building material assemblage from Beorma has the potential to provide secure dating for the large medieval ditch in addition to a date range for post-medieval and modern quarry and refuse pitting activity. This information will have the effect of contributing to data previously amassed from previous excavations in the vicinity.
- *To recover and analyse clay tobacco pipes.*  
The sizeable assemblage of late 17th and early 18th century clay tobacco pipes from Beorma fits with material from other Birmingham sites and will further inform the picture of activity in Area 2 prior to the 19th-century re-organisation provided by the pottery and building material evidence.

- *To recover and analyse animal bone.*  
The post-medieval bone assemblage has the potential to contribute to Research Objective *RA2 Medieval craft and industry*, notably regarding water-using industries via a number of suspected ivory offcuts. The proliferation of industries processing horns and bones is well-recognised in this period
- *To recover and analyse worked stone.*  
Further analysis of the worked stone recovered from the footings of the 17th century brick building on the eastern edge of the excavation will likely provide further supporting evidence for the theory that much of this material derived from the nearby church of St. Martins-in-the-Bull Ring.

**Table 1: Proposed post-excavation task list**

	Tasks	Staff	Person days
1	Excavation report: Background, methodology, illustrations, results, discussion	Field Officer	12
2	Pottery and building material analysis and report (2 boxes).	Pottery and building material specialists	4
3	Animal bone analysis and report (3 boxes)	Animal Bone Specialist	5
4	Clay tobacco pipes analysis and report	Clay pipes specialist	0 (report complete)
5	Worked stone analysis and report	Worked stone specialist	1
6a	Environmental plant remains: processing	Environmental Assistant	10
6b	Environmental plant remains analysis and report	Environmental Officer	5
7	Pollen samples analysis	Pollen specialist	3
8	Insect remains	Insect remains specialist	3.5
9	Finds illustrations (pottery, worked stone)	Illustrator	3
10	Edit specialist reports	Field Officer	2
11	Publication (article in <i>Transactions of Birmingham and Warwickshire Archaeology</i> )	Field Officer	8
12a	Dissemination of results to HER and Oasis	Field Officer	1
12b	Prepare and deposit archive	Field Officer	2

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## The Pottery and Ceramic Building Material

Stephanie Rátkai

### *Dating*

The suggested spot dates for each stratified context is given in Table 2, together with quantification by sherd count and weight. Unstratified pottery was weighed only (see Table 3). The breakdown of the pottery by fabric/ware is given in Table 4 while context fabric and date ranges is shown in Table 5.

There was relatively little medieval pottery. This was made up mainly of locally produced Deritend wares, with the utilitarian cooking pots of DeritendR (Reduced Deritend ware) and of Deritendcpj (Deritend cooking pot ware) predominating. Only five Deritend ware jug sherds were recorded. A gritty local ware, Fabric cpj12-14, was noted. These sherds are most likely to pre-date *c.* 1250. The balance of probabilities is that the earliest occupation represented by the pottery dates to the first half of the 13th century. Green-glazed whiteware sherds, of which a small number were found, have a *floruit* of *c.* mid-13th-14th century but there is little pottery which can definitively be said to post-date *c.* 1325, although a couple of iron-poor sherds have a broad date range of 13th-15th century. A facemask, with a suggested date range of *c.* 1250-1325, from a whiteware jug was found in 'garden soil' (6012).

The second ceramic horizon is represented by late medieval oxidised wares, dating to the 15th-16th century, the majority of which were probably made in Wednesbury. Cistercian ware (late 15th-16th century) and Tudor Green-type ware (probably 15th century in Birmingham) also belong to this ceramic horizon. None of these wares was well-represented.

By far the greatest number of sherds were in wares dating to *c.* 1600+. The absence of creamware and only a single sherd of white salt-glazed stoneware may suggest that most of the stratified pottery dates to between 1600-1725/50, although it is possible that it may represent an absence of formal dining and tea wares in the assemblage and is therefore a reflection of functional bias rather than chronological. The four tin-glazed earthenware sherds appear from their decoration to be of 17th century date.

The paucity of earlier medieval residual material in late medieval and post-medieval contexts seems to imply that medieval occupation was limited, at least within the areas excavated.

### *Previous Excavation on Site*

In 2008, a series of evaluation trenches were dug by Birmingham Archaeology. Spot dating of the pottery was carried out by the author in the same year but no report was commissioned. The spot-dating archive reveals that the earliest groups were dated to the ?late 12th or early 13th century. Pottery of the 16th century was rather better represented than at EBM 604 and pottery of 17th, 18th and 19th century was also present. Like EBM 604, crucible fragments were noted and also a number of wasters and possible wasters.

### *The Pottery and the Site*

#### *The 'Town Ditch'*

In comparison to Park Street there was a very much smaller amount of pottery recovered from the Ditch, 6078. Fills, 6076, 6113-6118 and 6190 produced only medieval pottery (with the exception of a small sherd of post-medieval pottery in 6113 which is likely to be intrusive). The pottery suggests that material first started to accumulate in the ditch in the first half of the 13th century and that the backfilling was completed by *c.* 1300, if not earlier. This is in line with the conclusions reached for the ditch sections excavated at Moor Street and Park Street (Rátkai 2009). A very small yellow ware sherd in 6113 probably represents intrusion. Pottery from ditch sections 6139 and 6208 was contemporary with that from 6078. Fill 6180 of 6078 contained pottery dating to the later 17th or early 18th century.

In Area 2 pottery from the garden soil 6121 was more mixed with medieval pottery, 15th to 16th-century pottery and early post-medieval wares. In Area 3 the excavated ditch section 6014, produced two medieval sherds.

#### *The 'Garden Soils'*

Garden soil 6012 was notable for containing medieval and later medieval pottery, including a face mask from a medieval whiteware jug. The latest material was a blackware sherd. Although there were only a few sherds in this deposit they were rather larger than might be expected in an urban backplot. In Area 3 garden soil 6013 also contained medieval pottery, although of much smaller sherd size than 6012; nevertheless the pottery showed no sign of abrasion.

#### *The Building*

Pottery was recovered from construction trench 6018. This consisted of seven burnt, almost waster-like sherds, a yellow ware sherd and a coarseware sherd. The burnt sherds were odd in every aspect; the fabric resembled a hybrid of slip-coated ware and mottled ware and the form was unusual. The fabric suggests a date of *c.* 1670+. The possible internal partition contained a number of small sherds, possibly disturbed from underlying layers, which dated to the 17th or early 18th century.

#### *The Drain*

Three drain fills were identified from 6079. Fill 6080 contained medieval and later medieval (15th-16th century) pottery but also post-medieval wares, the latest of which were probably deposited by *c.* 1750. In this group was a possible coarseware waster and a coarseware sherd with an internal, glaucous, cuprous deposit. The second fill 6075 was deposited after 1720, based on the presence of a white salt-glazed stoneware sherd. The third fill 6075, contained a tiny pearlware sherd, probably indicating a date after 1800.

#### *Pit 6197*

A rather good collection of pottery was recovered from this pit, which seems to represent domestic waste. The group appears relatively free of residual pottery (save a single medieval sherd) and a deposition date of *c.* 1700 is suggested. A possible yellow ware waster was found in the pit and six burnt, waster-like sherds, similar to those found in construction trench 6018.

#### *The Assemblage in Context*

The site lies to the rear of High Street, Digbeth, in an area believed to be in the historic core of Birmingham. The excavated areas lie close to sites excavated in the

Park Street backplots (Patrick and Rátkai 2009), originally situated in Little (or Over) Park.

There is quite a contrast between the pottery from Park Street and that from EBM 604. The most striking difference is seen in the very much greater quantity of medieval pottery at the former, which included pottery production waste (Rátkai 2009). Secondly, at Park Street there was a higher proportion of glazed and decorated Deritend ware jugs. On both sites locally produced Deritend wares formed the main earlier medieval component. Both sites are similar in having comparatively few wares dating to the 15th and 16th centuries. It has been suggested (Rátkai 2011) that certain industries e.g. tanning and smithing are inimical to the deposition of domestic waste in their immediate locale. The relative paucity of medieval pottery over all may therefore indicate that the excavated areas were given over to industry from quite an early date.

The post-medieval pottery is dominated by coarseware (brown- or black-glazed coarseware vessels such as jars and wide-mouthed bowls/pancheons) followed by blackware and yellow ware. Contexts containing just these three wares are normal for the 17th century in Birmingham. Blackware forms are typically mugs and other drinking vessels; the yellow wares are also table wares and contain a mix of bowls, dishes and drinking vessels. Later in the 17th century, from c. 1670, new wares were in use such as mottled ware, slip-coated ware and slip-decorated wares such as feathered slipware and jewelled slipware. From the evidence from the Bull Ring sites (Rátkai 2009), by the 18th century mottled ware and slip-coated ware became more common and blackware rather less well-represented. The relative infrequency of mottled ware and slip-coated ware would therefore tend to suggest that most of the pottery was deposited before c. 1750.

By the late 18th century, formal dining wares and teawares in white salt-glazed stone ware and (particularly) creamware, were well-represented at Park Street, although primarily in two large clearance dumps. As we have seen above, creamware was not present at EBM 604 and there was only a single sherd of white salt-glazed stoneware. Other, often large, groups of late 18th century pottery are known from excavations off Rea Street (personal inspection by author) and at Gibb Street (Hewitson and Rátkai forthcoming) for example. Their absence at EBM 604 is therefore noteworthy. Either there really are no deposits of this date on site, perhaps through truncation, or the status of those living there was much lower than that of the Park Street inhabitants.

### ***Pottery of Note***

Some of the pottery appeared to be at best 'seconds' and quite possibly wasters. These consisted of yellow ware sherds from 6046, 6058 and 6198 (17th century pit fills) and sherds is a strange hybrid fabric somewhere between a coarseware, slip-coated ware and mottled ware from 6019, 6198. Two coarseware sherds from drain fill 6080 and 6046 appeared to be wasters and a definite waster from a 15th or 16th century jug was found in 6232 (post-medieval spread). Stray wasters have been found on other sites on the main route of High Street, Bordesley, Deritend and Digbeth (Hewitson and Rátkai forthcoming). They are never in substantial quantities and it is difficult to interpret their significance. At face value, they seem to indicate continuing pottery production after the demise of the medieval Deritend industry but there is always the possibility that the sherds were inadvertently or deliberately included in packing material or were



in levelling material brought in from elsewhere. However, the hybrid fabric (above) was unlike anything seen in the Birmingham and Black Country area, and in unique forms, which tends to strengthen the case for some local production.

A crucible fragment, similar to those found at Park Street and a possible crucible rim were found in 6151 (17th century post-hole) and 6121 (garden soil) respectively. They are of post-medieval date. A possible drip tray for a flower pot was found in coarseware in post-medieval spread 6232. A sherd from 6080 had a glaucous, cuprous deposit on the interior and a complete late medieval oxidised ware base sherd from 6046 was blackened on the interior and may have had a secondary use as a lid.

Two roof tile fragments were found in 6113 and consisted of a flat tile and a glazed ridge tile. The fabric of both suggests they were made in Birmingham. The flat tile appeared to have had holes drilled in it after firing.

### **Conclusion**

The assemblage shares similarities with other sites in Birmingham but also has differences. Although small, the assemblage deserves further study and closer comparison with other groups from Birmingham, particularly as the pottery can be associated with a given industry, tanning, and a late 17th- or early 18th-century structure in Area 2.

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**Table 2: The Pottery and Ceramic Building material. Spot dating and quantification in context order**

Context	Feature	Count	Weight (g)	Date	Comment
6003	-	5	137	17th c (second half)	
6012	-	7	174	late 16th-17thc	most of the sherds are 13th residual with one 15th-16th c
6013	-	13	419	17th c	residual 13th c and one 15th-16th c
6016	6014	1	3	c 1275-1325	
6017	6014	1	14	13th-14th c	

6019	6018	9	216	late 17th-e 18th c	
6040	6042	15	1024	mid-late 17th c	
6046	6045	9	1044	17th c	residual 15th-16th c
6050	6049	1	2	17th c	
6054	6053	1	21	13th c	
6058	6059	5	207	17th c	
6068	-	33	1213	17th c	
6069	-	9	201	17th c	
6071	6070	3	46	17th c	
6074	6079	5	10	late 18th-e 19th c	
6075	6079	17	90	1720-1750	
6076	6078	2	11	13th c	
6080	6079	36	786	later 17th-18th c	residual 13th c and 15th-16th c
6082	6110	1	28	17th-18th c	
6086	6079	2	61	later 17th -18th c	
6092	6109	2	33	17th c	
6095	6096	4	35	17th c	residual 13th-14th c
6097	6078	3	47	13th c	
6098	-	3	73	17th c	
6103	6102	4	41	17th c	
6112	6111	5	69	later 17th-18th c	residual 15th c
6113	6078	5	186	17th c	residual 13th c and med roof tile
6114	6078	7	110	13th c	
6116	6078	20	595	13th c (?mid)	
6117	6078	16	408	13th c	
6118	6078	1	15	13th c	
6121	-	46	1122	later 17th -18th c	residual 13th-14th and 15th c
6143	6142	1	6	17th c	
6145	6144	1	17	17th-18th c	
6147	6146	3	10	17th c	
6148	6139	4	96	13th c (first half?)	
6151	6141	16	165	later 17th -18th c	
6154	-	2	36	17th c	
6156	6155	2	48	later 17th -18th c	
6167	6168	3	68	17th c	
6169	6170	7	346	17th c	
6180	6078	5	58	later 17th – e 18th c	
6190	6078	2	124	13th c	
6194	6173	6	47	later 17th-18th c (c1670- 1725?)	
6196	6173	4	61	later 17th -18th c	
6198	6197	134	6351	later 17th -e 18th c	
6200	6199	6	64	17th c	
6208	6207	7	238	13th c (first half)	
6228	6224	3	41	13th c	
6232	-	10	514	17th c	
<b>Total</b>		<b>507</b>	<b>16731</b>		

**Table 3: The Pottery and Ceramic Building Material. Summary of unstratified material**

		deritend cpj	whiteware	late medieval oxidised ware	blackware	yellow ware	coarseware	slipware	mottled ware	brown salt-glazed stoneware	slip-coated ware	blue transfer-printed	stoneware bottles	industrial slipware	Flowerpot ?	weight
u/s		x	x													85g
u/s	Phase 1				x	x	x	x				x		x		290g
u/s	Phase 2	x			x		x					x				448g
u/s	Area 1: cleaning	x		x	x	x	x	x	x	x		x		x		528g
u/s	Area 2: cleaning				x	x		x			x	x	x		x	858g

**Table 4: The Pottery and Ceramic Building Material. Quantification and suggested date range of pottery**

Fabric/Ware	Date range	count	weight	% weight
Early Birmingham cooking pot fabrics cpj12-13	12th-13th c	12	435	2.30%
Deritend cooking pot	late 12th-13th c	30	499	2.63%
Reduced Deritend ware	late 12th-e 14th c	48	1076	5.68%
Deritend ware	13th-e 14th c	5	68	<1%
Whiteware	mid 13th-14th c	8	79	<1%
Iron-poor ware	13th-15th c	2	33	<1%
Late medieval oxidised wares	15th-16th c	9	529	2.80%
Midlands Purple ware	15th-16th c	3	31	<1%
Tudor Green ware	15th-?16th c	2	12	<1%
Cistercian ware	late 15th-mid 16th c	5	35	<1%
Blackware	later 16th- e 18th c	77	1602	8.46%
Yellow ware	later 16th- e 18th c	41	774	4.09%
Coarseware	late 16th-19th c	186	10332	54.55%
Tin-glazed earthenware	17th-18th c	4	21	<1%
Slip-decorated wares	mid 17th-18th c	19	409	2.05%
Mottled ware	later 17th-18th c	28	268	1.41%
Slip-coated ware	later 17th-18th c	11	101	<1%
Brown salt-glazed stoneware	later 17th-18th c	4	34	<1%
White salt-glazed stoneware	c.1720-1760/70	1	2	<1%
Shining black	18th c	3	7	<1%
Pearlware	late 18th-19th c	1	1	<1%
Wasters	later 17th-early 18th c?	9	276	1.46%
Crucible	Post-medieval	1	50	<1%

Roof-tile	medieval	2	138	<1%
<b>Total count/weight</b>		<b>512</b>	<b>18940</b>	

Table 5 The Pottery and Ceramic Building Material. Context, Ware, Fabric and Date ranges

Context	Ware	Fabric	Date range
6003	Blackware – later	MB02	c.1600-1800
6003	Slipware – wheel thrown - trailed	SLPW	Mid/late 17th – 18th
6003	Coarse ware		17th C+
6019 [6018]	Blackware – later - drinking vessel	MB02	c.1600-1800
6075 [6079]	Frechen/Cologne stoneware	STG02	15th – 16th C
6075 [6079]	Nottingham salt glaze stoneware	STEO2	c.1750-1900
6075 [6079]	English stoneware –white slip & iron wash	STE	c.1750-1770
6075 [6079]	Manganese mottled	MANG	c.1680-1740
6075 [6079]	Feathered Slipware	SLPW01	c.1680-1730
6075 [6079]	Blackware – later	MB02	c.1600-1800
6075 [6079]	Tin-glazed earthenware	TGE	c.1650-1800
6075 [6079]	Post med brick & clay tobacco pipe stems		
6080 [6079]	Cistercian ware – decorated fragment	CIST	C1475-1550
6080 [6079]	Sandy quartz tempered wares - handmade	SQ	12th – 14th C.
6080 [6079]	Late medieval/early post medieval transitional	SLM	14th – 16th C
6092 [6109]	Blackware - earlier	MBO1	c.1540s - 1700
6092 [6109]	Coarse ware – black glaze internally		?17th – 18th C.
6103 [6102]	Midland Purple jug rim	MP	c.15th – mid 17th C
6103 [6102]	Slipware – wheel thrown	SLPW	?early mid 17th C.
6112 [6111]	Surrey white ware/ Tudor Green type	WW02	c.1350-1500
6112 [6111]	Blackware – earlier - ?tyg rim	MBO1	c.1540s - 1700
6112 [6111]	Manganese mottled	MANG	c.1680-1740
6112 [6111]	Coarse ware		17th C+
6113 [6078]	Late medieval sandy oxidised wares ?ridge tile	SLM	14th – 15th C+
6114 [6078]	Sandy quartz tempered wares - handmade	SQ	12th – 14th C.
6116 [6078]	Reduced unglazed sandy wares – wheel thrown ?jar profile	RS	13th – 14th C.
6117	Sandy quartz tempered wares – handmade	SQ	12th – 14th C.

[6078]			
6117 [6078]	Reduced unglazed sandy wares – wheel thrown ?jar	RS	
6117 [6078]	Sandy Glazed ware + white slip & mica	SG	c.1200-1400
6143 [6142]	Midland Yellow ware - (white slip under glaze)	MY01	c.1550-1720
6148 [6139]	Sandy quartz tempered wares – handmade/wheel finished	SQ	12th – 14th C.
6180 [6078]	Blackware – later	MB02	c.1600-1800
6180 [6078]	Coarse ware		17th C+
6180 [6078]	Slipware – trailed & jewelled	SLPW04	c.1670-1740
6180 [6078]	Anglo Dutch tin glazed earthenware	TGE01	c.17th – 18th C.
6190 [6078]	Sandy quartz tempered wares - handmade	SQ	12th – 14th C.
6198 [6197]	Blackware – earlier - tyg base	MBO1	c.1540s - 1700
6198 [6197]	Blackware – later - jars etc	MB02	c.1600-1800
6198 [6197]	Manganese mottled	MANG	c.1680-1740
6198 [6197]	Coarse ware		17th C+
6198 [6197]	Midland Yellow ware - (white slip under glaze)	MY01	c.1550-1720
6198 [6197]	Slipware – trailed & jewelled	SLPW04	c.1670-1740
6198 [6197]	Anglo Dutch tin glazed earthenware	TGE01	c.17th – 18th C.
6198 [6197]	Stoneware – machine rouletted dec.		?18th C.
6232	Cistercian ware – cup base	CIST	C1475-1550
6232	Midland Purple jug rim	MP	c.15th – mid 17th C
6232	Coarse ware - ?horticultural ware		17th C+

## Beorma Quarter Pottery: Costing for analysis and publication report

### Introduction

To date, the stratified pottery has been recorded by fabric type by count (507 sherds) and by weight (16,731g). These data are stored on an Excel worksheet together with fields for Area, Context, Feature and Comment. For the final report this worksheet needs to be expanded with the addition of data recording Phase, rim count, rim percentage and vessel type and glaze/decoration. Pottery fabric codes used in the Bull Ring reports ([Rátkai 2009](#)) will need to be added to replace those entries where a generic code eg 'whiteware' has been used.

The publication report will need to be expanded by the insertion of a more detailed discussion of the wasters, of vessel function and comparanda from the excavation (Headland Archaeology, August 2013) along Orwell Passage and by the addition of relevant tables.

**Costs**

*Task 1*

Addition of data to worksheet 2 days @ £250 per day (2013-14 prices)  
£500.00

*Task 2*

Write report 2 days @ £250 per day (2013-14 prices) £500.00

**Total Cost** £1,000.00 (2013-14 prices)

Costs *exclude* any return carriage of ceramics to Leicester

## The Clay Tobacco Pipes

David Higgins

### *Introduction*

This report deals with the clay tobacco pipes recovered by Leicester University Archaeological Services from excavations at Digbeth High Street (Beorma Quarter), Birmingham, West Midlands. The site code EBM.604 was used for this work. The pipes from this site were recorded during July and August 2012 using standard procedures for the examination of clay tobacco pipes from archaeological deposits. All of the fragments from each context have been individually assessed and dated, and the information tabulated onto an excel spreadsheet, the layout of which has been based on published guidelines (Higgins & Davey 2004). The Higgins cast reference and die numbers given for the marked pipes refer to the as yet unpublished national catalogue of pipe marks that is being compiled by the author. Where there are several bowls in one context a reference letter (A, B, C, etc.) has been allocated to each to provide a unique identifier so that it can be matched with the digital record. This letter has also been pencilled onto the pipe fragment itself. The Broseley bowl types referred to are as defined by Atkinson (1975) and Higgins (1987). A copy of the Excel spreadsheet has been provided for the site archive, as well as a context summary that provides an overview of the pipes from each context (Appendix 1). Publication quality illustrations have also been prepared of the key pieces and are included with this report.

### *The Pipes*

A total of 80 fragments of pipe were recovered from the excavations. This figure is made up of 17 bowl, 61 stem and two mouthpieces from 18 different context groups and two groups of unstratified material. Overall the material ranges from *c.*1610 to *c.*1900 in date but with the majority of the finds dating from the late seventeenth or early eighteenth centuries, which must reflect a particular phase of depositional activity on this site. There are no decorated fragments amongst the assemblage but ten of the heels have makers marks stamped onto them. There is also one stem of *c.*1660-1730 from context 6080 where one of the broken ends has been ground smooth – either as idle doodling or to reuse the pipe in some form (e.g., for smoking, as a hair curler or as a stick of ‘chalk’ to draw or write with).

*The Bowl Forms* The bowl forms are mainly complete, which makes them useful to compare with previous finds from the Birmingham area, as well as allowing an accurate assessment of their dating and likely origins. The bowls recovered all date from between *c.*1650 and *c.*1730 and so they only provide details of the pipes that were in use during this period.

There a couple of heel forms with round heels dating from around 1660-90, one of which is of a Broseley / Much Wenlock area style (Fig 5.1), while the other is of a local style a rather larger and more flared heel (Fig 5.2). Even by this date it is clear that two different sets of stylistic influences are represented amongst this assemblage. Neither of these pieces is marked but a slightly later form of *c.*1680-1710, also with a large round flared heel, was recovered with a heart-shaped EW stamp on its base (Fig 5.6). This maker has not been identified but the maker must have worked in the Birmingham area, where the mark is locally common on pipes of *c.*1670-1710 (Higgins 2009, 202-3). It is interesting to note that

another of these EW marks was recovered from the excavations, this time on a distinctive Broseley / Much Wenlock area style bowl with a tailed heel, which is not a form that is usually associated with this maker (Fig 5.7). The example with a tailed heel shows that the EW maker was not exclusively making local styles of pipe, but also embracing the new forms that were being developed in Shropshire. It is also noticeable that both of these EW marks have been impressed with the top of the stamp tilted slightly to the left – a recurrent characteristic of this maker's products.

Another 'hybrid style' that consists of a transitional spur bowl shape combined with a Shropshire style tailed heel is shown in Figure 5.5. This unusual form has a small stamped mark, only the surname initial of which is legible (S). A similar but unmarked bowl was found in excavations at Rea Street, Birmingham (Higgins 2010, Fig 5), showing that this was a local bowl style. The majority of the heel bowls, however, have the distinctive large tailed heel that was typical of the Broseley / Much Wenlock area manufacturers from c.1680-1730 (Fig. 5 7-12; Fig 6.14). Most of these are locally produced examples copying the Shropshire style. The local copies are less frequently burnished and they tend to be made of slightly less gritty clay and with subtly different bowl forms. More particularly, the makers marks found on them are common locally but different to those from the Broseley area itself. The EW marks have been mentioned above (Figs 5.6-7), but there are also two pipes marked TW, both with the mark inverted (Fig. 5.8 and 9) and three pipes marked IW (Fig. 5.10-12). All of these initials are locally common and must represent manufacturers working nearby (see below). The only pipes of this style that actually appears to be from Shropshire are the bowl stamped TC (Fig 13) and a finely burnished bowl stamped with the initials TD flanking a gauntlet (Fig. 6. 14). Previous research has shown that pipes from the Broseley / Much Wenlock area formed a small but important element of those being used in the Birmingham area at this time, accounting for perhaps about one sixth of the market (Higgins 2009, 210). The two Shropshire examples fit in with this pattern and the TD mark provides a previously unrecorded example of a Shropshire maker whose was trading to this area.

In contrast to the heel types, there are just four spur forms, all of which were recovered from context 6198. A damaged example of c.1650-80 is of a local style and a little smaller than, but similar to, an example from the Park Street excavations (Higgins 2009, Fig 9.6.94). The other three are all transitional forms of late seventeenth or early eighteenth century date, and of styles that would not be out of place in Shropshire, although none of them is actually marked (the two complete examples are shown in Fig. 5. 3 & 4).

Overall, the late 17th and early 18th century bowl forms fit in with the pattern that has been observed from other sites in the Birmingham area. The forms are quite strongly influenced by Shropshire styles but the majority are clearly of local manufacture, as evidenced by the local characteristics of the bowl form, the generally lower incidence of burnished surfaces, fewer gritty inclusions in the fabric and, in particular, the makers' marks themselves.

**Marked Pipes** The ten marked bowls are illustrated in Figures 5-6 Pipes 5-14. As mentioned above, the majority of these marks represent as yet unidentified makers who were working in the Birmingham area. These marks are listed and described in alphabetical order (by surname) below: -

**TC** (Fig. 6.13) One Broseley style bowl of c1680-1730 was recovered with a poorly impressed TC mark on its tailed heel. Several similar dies used by this maker are known but



this example is too poorly impressed to identify the specific type. This mark is frequently found in the Broseley area, where it is attributed to the pipe maker Thomas Clark, as well as in the Birmingham area, where it is also relatively common (Higgins 2009, 199). This bowl has quite a coarse gritty fabric and it seems likely that this is an actual Shropshire product made by Clark that formed part of an extensive trade from his workshop to the Birmingham area.

**TD** (Fig. 6.14) One pipe was found stamped with a circular mark that has the initials TD flanking a gauntlet on the heel (Higgins Die 68). This mark can be attributed to Thomas Dawley, who was a master pipe maker and innkeeper at Much Wenlock in Shropshire. Thomas married Margaret Penn at Much Wenlock on 23 October 1701 and they had at least four children (one of whom died at about the age of seven) before Thomas himself died in 1714. A later dispute over his will reveals that Thomas usually employed three or four journeymen and as many women as his pipe works (Higgins 1987, 505), which suggests that he operated quite a substantial pipe making enterprise. Examples of this mark have been found in Much Wenlock itself (e.g., Higgins 1987, Fig 69.1) as well as in nearby Ironbridge (Higgins 1985, Fig 9.21).

**-S** (Fig.5.5) There is one example of an unusual transitional bowl form of *c.*1690-1720 with very small tailed heel that has a small circular stamped mark on it. The mark has been applied over an air pocket in the clay so that the Christian name initial is incomplete, but this letter certainly included an upright vertical element – perhaps an ‘I’ or a ‘T’. The surname initial is an ‘S’. Small circular IS marks have previously been recorded from both the Broseley area and the West Midlands, although this combination of initials is relatively common amongst pipe makers in both regions. This unusual bowl form has previously been recorded from the Birmingham area and this example is made of a relatively fine fabric, which suggests that it is more likely to be a local product rather than a Shropshire import.

**WT** (Fig. 5.8-9) Two pipes of *c.*1680-1730 with different stamps reading WT were recovered. Both of these are square or rectangular marks comprising the maker’s initials with three small crosses above them, and both have been applied upside down on the heel. The first (8) occurs on an unusually small bowl form and is very lightly impressed so that the mark is very hard to see, but it is similar to Higgins Die 870. The second (9) is fragmentary but has been identified as Higgins Die 868. This maker has not yet been identified but a wide range of different WT die types is known, and this was the most common mark from the Bull Ring excavations in Birmingham (Higgins 2009, 201-2). These pipes must have been made in a large local workshop where the marks were often applied upside down.

**EW** (Fig. 5.6-7) Two pipes stamped with a heart-shaped EW mark were found (Higgins Die 900), one on a pipe with a round heel (6) and the other tailed (7). This maker has not yet been identified but must have worked in the Birmingham area, where the mark is locally common on pipes of *c.*1670-1710 (Higgins 2009, 202-3).

**IW** (Fig. 5.10-12) Three pipes of *c.*1680-1730 marked IW were found, one with the initials in a large square frame (10) and the other two with them in a smaller circular mark, surrounded by dots (11-12). The large square mark with simple letters is very similar in style to other marks found in the Birmingham area, for example, WF, WT and AW (Higgins 2009), whereas the circular mark with dotted border is not such a common style. The marked difference in styles could indicate that two different makers are represented,

although it is hard to be sure, especially since both marks appear to be previously unrecorded. There are, however, other IW marks known from the Birmingham area (Higgins 2009, 203) and the square IW mark is certainly of a local style, suggesting that there was at least one maker with these initials who worked locally.

**Reworked Stem** There is one stem fragment with a stem bore of 7/64" where the narrower broken end has had its broken edges very lightly smoothed off. The stem has quite a deep oval section and is of the style that would most likely be found on pipes of c.1680-1730. The surviving fragment is 38mm in length and comes from near the bowl junction. The rounding of the edges is so slight as to be barely noticeable and so it does not result from any concerted attempt to modify the pipe fragment.

### **The Pipes in Relation to the Site**

There were 18 contexts that produced pipes but, of these, only one produced more than six fragments of pipe (6198). Taken together (Table 6) the majority of the pipes recovered from this site date from the late 17th or early 18th centuries, which indicates a phase during the post-medieval period when there was a particular deposition of material on this site. This period of activity is particularly evident amongst the finds from the largest group (6198; 38 fragments), which includes some residual mid-seventeenth century material but with the majority of the finds clustering around the end of the seventeenth or early eighteenth century. Although the majority of the pipe bowls from this context fall within a 1680-1730 date range (Fig. 5.3, 4, 7-12 and Fig.6.14) the makers' marks suggest that this can be narrowed a little. In particular, the pipes include two locally produced examples marked EW, which belong to a maker working c.1670-1710 and one made by Thomas Dawley of Much Wenlock, c.1700-1714. Allowing a little time for old stock to find its way into the archaeological record a date range of c.1690-1720 has been suggested for this deposit with the first decade of the eighteenth century seeming most likely within this range.

**Illustrations** Figure 5 Pipes 1-12; Figure 6 Pipes 13-14.

All of the illustrated pipes are shown at 1:1. Broken surfaces are indicated with a stippled finish and burnished surfaces with light broken lines. All drawings are by the author.

Pipe 1 - Pipe bowl of c.1660-1680 with an unburnished surface and a stem bore of 9/64". The rim has been bottered and three-quarters milled. Quite a good Broseley Type 2 form, but made of a relatively fine fabric with just a few coarse inclusions in it and not a typically coarse Broseley area fabric. This piece may be a local copy of a Broseley style, in which case it would be an early example of this practice. EBM.604 Context 6003.

Pipe 2 - Pipe bowl of c.1660-1690 with an unburnished surface and a stem bore of 7/64". The rim has been bottered and fully milled. Local style of heel bowl with a slightly flared heel. Good form and nicely made but not marked. EBM.604 Context 6080.

Pipe 3 - Pipe bowl of c.1680-1730 with a good burnish and a stem bore of 6/64". The rim has been internally trimmed, bottered and fully milled. Nicely finished spur bowl

(different mould to D in this context). Made of quite a fine (inclusion free) fabric, possibly suggesting local manufacture rather than import from Broseley area. EBM.604 Context 6198 (C).

Pipe 4 - Pipe bowl of *c.*1680-1730 with a good burnish and a stem bore of 7/64". The rim has been internally trimmed, bottered and fully milled. Nicely finished spur bowl (different mould to C in this context). Made of quite a fine (inclusion free) fabric, possibly suggesting local manufacture rather than import from Broseley area. EBM.604 Context 6198 (D).

Pipe 5 - Pipe bowl of *c.*1690-1720 with a good burnish and a stem bore of 7/64". The rim has been bottered and one-quarter milled. The relief stamped mark possibly reads IS or TS (Cast Reference 688.32; unidentified die type). Unusual transitional bowl form that would have been a spur type has it not has a Broseley style 'tail' adding to it. Probably a local product. EBM.604 Context 6200.

Pipe 6 - Pipe bowl of *c.*1680-1710 with an unburnished surface and a stem bore of 7/64". The rim has been internally trimmed, bottered and milled. The relief stamped mark reads EW (Cast Reference 688.30; Higgins Die 900). This is a local copy of a Broseley Type 5 form, which was current from *c.*1680-1730. This example, however, is quite a bulbous, early looking example and so may well be towards the start of this range, particularly given the heart shaped EW stamp, which is well known locally on bowls of *c.*1670-1710. EBM.604 Context 6154.

Pipe 7 - Pipe bowl of *c.*1680-1710 with an unburnished surface and a stem bore of 7/64". The rim has been bottered and three-quarters milled. The relief stamped mark reads EW (Cast Reference 688.31; Higgins Die 900). Local copy of a Broseley Type 5 bowl with a heart-shaped EW mark - a local maker working *c.*1670-1710. EBM.604 Context 6198 (H).

Pipe 8 - Pipe bowl of *c.*1680-1730 with a stem bore of 7/64". The rim has been bottered and fully milled. The lightly impressed relief stamped mark is almost illegible, but looks like it is an inverted WT mark with three small crosses above the initials. (Cast Reference 688.28; mark similar to Higgins Die 870). This is a very small Broseley Type 5 form with a badly burnt and lightly encrusted surface obscuring any burnishing. EBM.604 Context 6198 (F).

Pipe 9 - Pipe bowl of *c.*1680-1730 with an unburnished surface and a stem bore of 8/64". The rim has been bottered and three-quarters milled. The inverted relief stamped mark reads WT (Cast Reference 688.29; Higgins Die 868). This is a local copy of a Broseley Type 5 bowl. EBM.604 Context 6198 (G).

Pipe 10 - Pipe bowl of *c.*1680-1730 with a good burnish and a stem bore of 6/64". The rim has been bottered and three-quarters milled. The large relief stamped mark reads IW (Cast Reference 688.33; previously unrecorded die type). Although stylistically very similar to other marks produced locally, this particular die does not appear to have been recorded previously. EBM.604 Context 6198 (K).

Pipe 11 - Pipe heel of *c.*1680-1730 with a good burnish and a stem bore of 6/64". The relief stamped mark reads IW (Cast Reference 688.34; previously unrecorded die type).

The mark has dots surrounding the letters and is the same mark as J in this context (Fig 12), but on a different mould type - this heel is smaller. Nicely finished fragment although the fabric has quite a lot of sandy inclusions in it. EBM.604 Context 6198 (I).

Pipe 12 - Pipe bowl of c.1680-1730 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 IW (Cast Reference 688.35; previously unrecorded die type). This is the same mark as I in this context (Fig 11), but on a different mould type - this heel is larger. Quite a good form, but not burnished. This fabric looks less sandy than I. EBM.604 Context 6198 (J).

Pipe 13 - Pipe bowl of c.1680-1730 with an unburnished surface and a stem bore of 6/64". The rim has been internally trimmed and bottered and there is a plain groove around one quarter of the rim. The poorly impressed relief stamped mark reads TC (Cast Reference 688.26; the impression is too poor to identify to individual die type), possibly for Thomas Clark, who worked in the Broseley area. Several similar dies used by this maker are known. Made of quite a coarse gritty fabric. EBM.604 Context 6112.

Pipe 14 - Pipe bowl of c.1700-1715 with a fine burnish and a stem bore of 7/64". The rim has been bottered and half milled. The relief stamped mark reads TD (Cast Reference 688.27; Higgins Die 68). Good quality Broseley Type 5 pipe - well finished. The circular mark with the initials TD flanking a gauntlet can be attributed to Thomas Dawley of Much Wenlock, who was working from c.1700 until his death in 1714. EBM.604 Context 6198 (E).

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**Table 6 The Clay Pipes**

Context summary showing the numbers of bowl (B), stem (S) and mouthpiece fragments (M) from each context, the total number of fragments recovered (Tot) and then two date ranges. The first gives the overall date range of pipe fragments recovered and the second the likely deposition date for that particular group, based on the latest closely datable pipe fragments present. Marked or decorated pipes are noted in their respective columns as the figure numbers of illustrated examples.

Cxt	B	S	M	Tot	Range	Deposit	Marks	Decoration, etc	Pipe No.	Comments
6003	1			1	1660-1680	1660-1680			1	Quite a good Broseley Type 2 form, but not burnished and without a mark. Also, its made of a relatively fine fabric with a few coarse inclusions in it - but not a typically coarse Broseley area fabric. May be a more local copy of a Broseley style, in which case it would be an early example.
6040		1		1	1610-1710	1610-1710				Seventeenth century stem fragment - not burnished.
6050		1		1	1620-1740	1620-1740				Stem fragment - hard to date accurately but most likely to be late C17th or early C18th in date.
6068		1		1	1610-1710	1610-1710				Hard fired stem fragment of C17th type.
6074		1		1	1680-1900	1680-1900				One chunky stem is of late C17th or early C18th date, but the other is a very small relatively thin fragment and hard to date more closely than the C18th or C19th. Could be anywhere within this range.
6092		1		1	1680-1750	1680-1750				Most likely c1680-1750 - could possibly be earlier.
6154	1			1	1680-1730	1680-1730	EW x 1		6	Local copy of a Broseley Type 5 form, which was current from c1680-1730. This example, however, is quite a bulbous, early looking form and so may well be towards the start of this range. Heart shaped EW stamp - well known locally.
6156		1		1	1610-1750	1610-1750				
6112	1	1		2	1680-1750	1680-1730	TC x 1		13	The stem dates from c1680-1750 while the Broseley Type 5 bowl has a poorly impressed TC mark on the heel and a plain groove around one quarter of the rim facing the smoker. Possible maker is Thomas Clark, who worked in the Broseley area.
6143		1	1	2	1610-1730	1610-1730				Two joining fragments (freshly broken) from a C17th or early C18th pipe with a simple cut mouthpiece.
6080	1	2		3	1660-1750	1700-1750		ground end	2	The stems range from c1660-1750 in style, with the earlier having a ground end and the later probably dating from the first half of the C18th. The bowl is a local style of c1660-90 with a slightly flared heel. The deposit date has been put as c1700-50 but this is not very reliable, being based on the assessment of a single stem fragment, and a late C17th date is possible.
6151		3		3	1610-1800	1610-1800				Two stems of C17th or early C18th date and one piece that is probably C18th in date (but could possibly be even later). A date of c1720-1800 seems most likely for this later piece.
6194		3		3	1610-1740	1610-1740				Stems of C17th or early C18th type with the latest probably c1680-1740.
6180		4		4	1610-1740	1610-1740				Stems of C17th or early C18th type with the latest probably c1680-1740.
6200	1	3		4	1660-1730	1690-1720	-S x 1		5	Three stems of late C17th or early C18th date and an unusual transitional bowl form that would have been a spur type has it not has a Broseley style 'tail' adding to it. Small circular stamped mark with the surname initial S. Probably a local product of c1690-1720, which provides the most likely date for the deposit as a whole.

6075		4	1	5	1610-1880	1610-1880				Three small pieces of C17th or early C18th date, including a mouthpiece with a simple cut end, and two stems dating from c1730 or later - and most likely late C18th or early C19th in date. All rather small and battered looking pieces, suggesting a mixed context.
6196		6		6	1680-1730	1680-1730				Six relatively large pieces of stem which, together, look like a consistent group of c1680-1730.
6198	11	27		38	1610-1760	1690-1720	TD x 1; W?T? x 1; WT x 1; EW x 1; IW x 3		3-4; 7-12 and 14	Although the overall range of the stems could be as wide as c1610-1760 they are mainly of late C17th or early C18th types and this is the likely date of the deposit - with just one or two battered residual pieces. About half of the stems are burnished and many are made of coarse local fabrics. No joins with the associated bowls were found, despite many of the fragments being quite large and fresh looking (up to 7cm long). One of the stems has a heel scar from a Broseley Type 5 bowl. The bowl fragments comprise four spur types and seven heel types. There are one or two residual pieces dating from the second half of the C17th but the majority are forms that were current from c1680-1730. These provide good dating evidence for the deposit, with a date of c1690-1720 perhaps being most likely for the group as a whole.
U/S	1	1		2	1680-1730	1680-1730				Fragmentary Broseley Type 5 bowl - probably a local copy as its not burnished or marked and its quite roughly made - and a long section (105mm) of fairly cylindrical burnished stem with a bore of 7/64".
<b>TOT</b>	<b>17</b>	<b>61</b>	<b>2</b>	<b>80</b>						

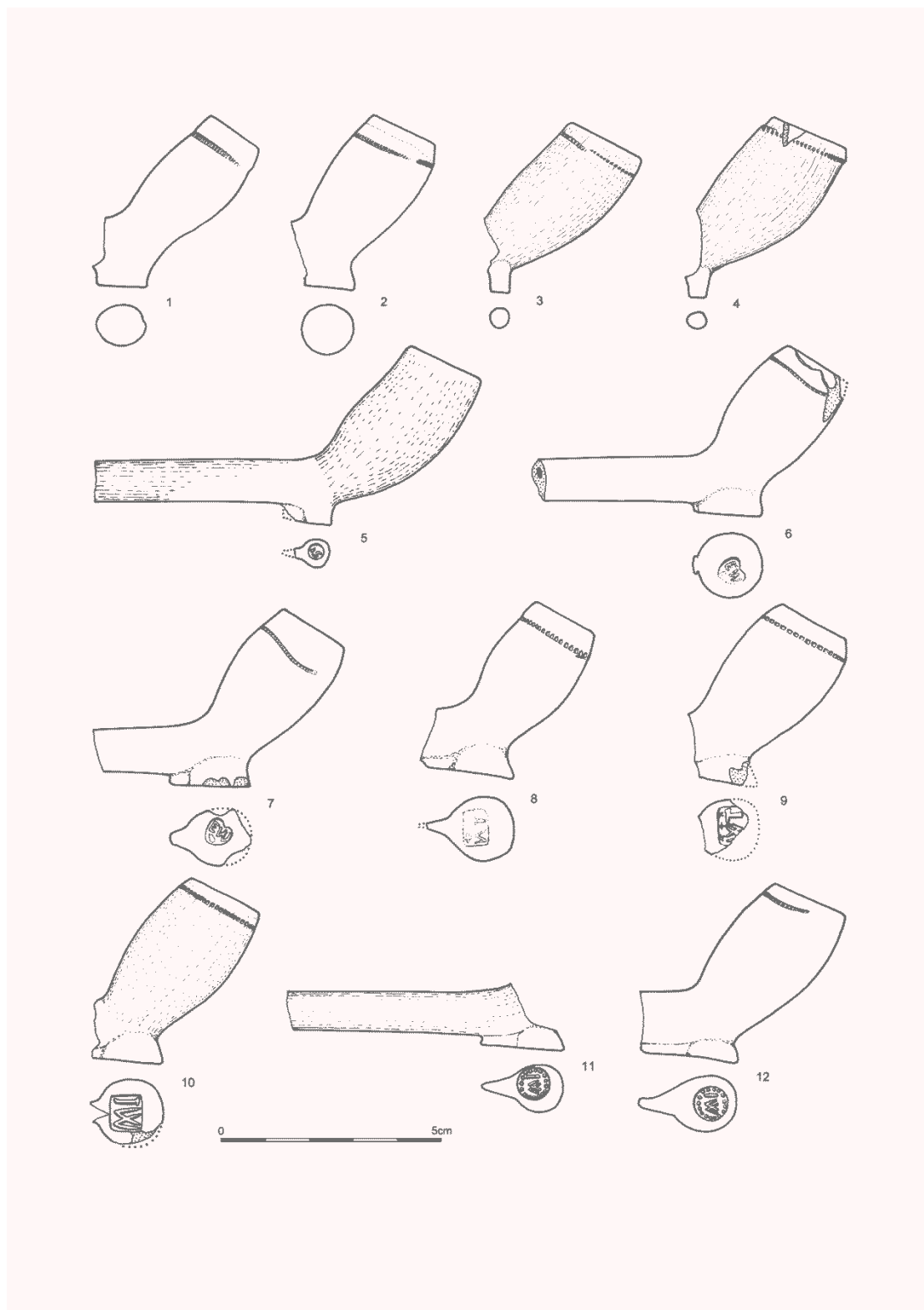


Figure 5: Pipes 1-12

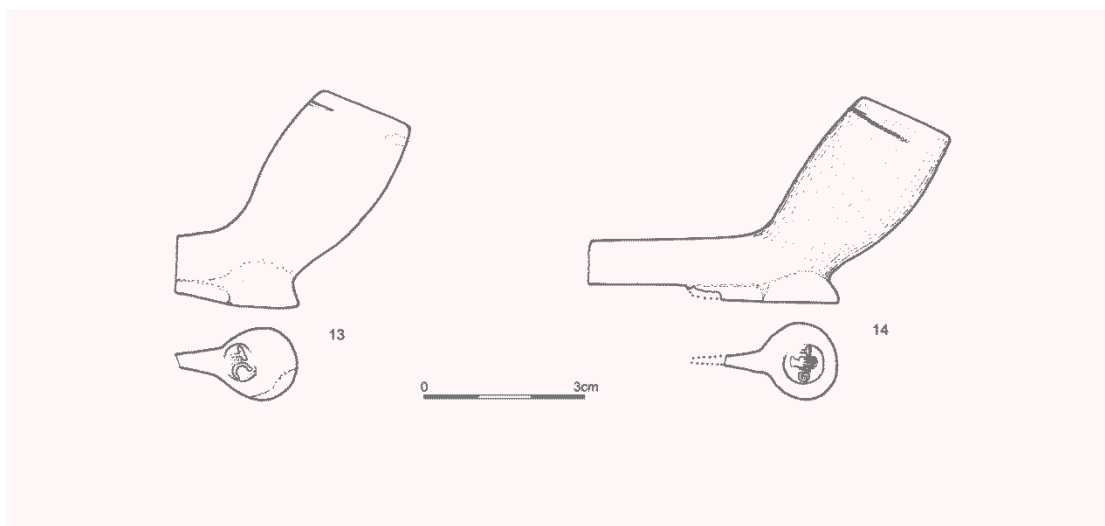


Figure 6: Pipes 13-14



## **The Worked Stone**

David J. Kendrick

### ***Background***

Following an archaeological evaluation by Birmingham Archaeology in 2007, in 2011 the first of three planned archaeological excavations was carried out by the University of Leicester Archaeology Service (ULAS) for CgMS Consulting acting on behalf of Sahlia Investments at the Beorma Quarter near the junction of Digbeth and Allison Street in central Birmingham. The initial evaluation had established the presence of medieval and post-medieval deposits.

In April 2012 David Kendrick was contracted by ULAS to examine, and produce an informed inventory for, ten sandstone architectural fragments found in the footings of a small square building in Area 2 of the site, east of Allison Street and south of Orwell Passage. The stones underlay the north and south walls of a c.1600 -1800 brick superstructure that may itself have been preceded by a timber structure standing on the same footings.

### ***Methodology***

The ten stones were examined at the laboratories of ULAS on 19<sup>th</sup> April 2012. Digital images of each of the stones were taken, together with details of maximum remaining dimensions, notes of any marks, inclusions or polychromy, and general comments. The identification (using both Simple Name and Generic Name) and original period of the stones' carving was estimated within the limits of the evidence available. Opinion was given as to the condition of each stone using a 'Very Good, Good, Fair, Poor and Very Poor' categorization. The stones were numbered with the Small Finds numbers originally allocated by ULAS and where these and/or the Context number were missing a Temporary number prefixed 'T' was allocated by the recorder. Images were taken using a Canon Eos 350D digital SLR camera with a Canon ef-s 18-55mm lens. A scale rod of 25cm divided into 50mm sections was used in all the images. Back-up images taken on an Olympus D700 compact digital camera. The images were initially processed and copied to CDRW at the ULAS laboratory on an Advent laptop and later edited and adjusted on a desktop Packard Bell iMax 3414. All images were in jpeg format. Images not selected for inclusion in the inventory were retained in a separate folder that is copied to the complete archive delivered in digital format to ULAS. Back up images, together with all other parts of the archive, are retained by the recorder on a hard drive and on CDRW.

### ***Summary***

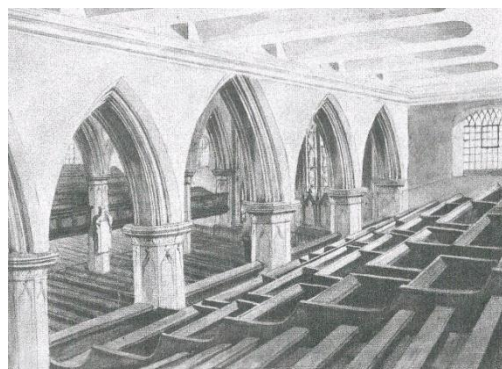
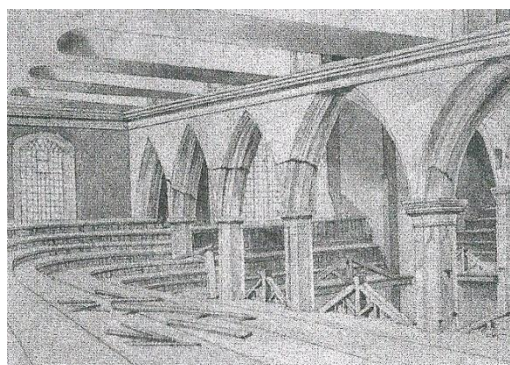
The assemblage consisted of ten stones, all of a pinkish-brown sandstone, possibly from the Birmingham Ridge of new red sandstone (Keuper sandstone) that runs north to south from Lichfield, through Birmingham city centre and down to Bromsgrove. The stone is easy to cut for building but it wears badly.

Of the ten stones eight have worked or moulded surfaces, and appear to be the remains of a fairly substantial church window (or windows), possibly of aisle or side chapel dimensions, with what appears to be basic Decorated period tracery (13<sup>th</sup>-14<sup>th</sup> century). Only one piece (SF11) has moulding, that being of a simple form of shallow

roll and shallow hollow separated by a quirk. Two pieces of mullion (SF09 and SF06) are of the same overall form and have what may be glazing grooves; however the grooves are not parallel with the leading edges of the stones thus indicating a later re-cut or accidental scarring. One of these stones (SF09) also has a deep lateral cut into one (?upper) surface that may be from re-use or possibly the seat of an original glazing bar. A further stone (T02) has a glazing groove that seems to be original with the groove running correctly. The cusped tracery fragments (SF07, SF10 & SF12) have some original white paint or wash and well defined cusping. A larger block (SF13) with a shallow double hollow moulding to the soffit may be a *tas-de-charge* or springer. The overall size of the pieces suggests that they are from a window (or windows) of the same size and form. Without more certain evidence of origin the term 'Gothic' has been used in the inventory to describe the period of these eight stones.

The two other stones are an L-shaped block (T01) and a small very sooty wedge-shaped stone (SF16 - contained in a 'wet' polybag.) The L-shaped stone is likely to be from a flue or chimney as it has scorching to the inner surface only. The small soot-covered stone may be associated in that it could be a mould (it has a definitely well cut circular depression with two smaller drilled holes therein from which something may have been cast) but they come from different contexts. To allocate a period to these two stones would be extremely difficult, so 'Unknown' is recorded on the inventory Period field.

As there appears to have been no known church on the Allison Street/Digbeth site the chance of the stones originating from the nearby church of St Martins-in-the-Bull Ring, the Parish Church of Birmingham, during alterations in the medieval/post-medieval periods (before the 19th century complete demolition and rebuild) is a strong one, but not provable. However the size of the stones would suggest a church of that type and 'St Martin's was a major church in the middle ages' (pers. comm. Dr R.K.Morris.) The present Victorian church still contains the tombs of four of the medieval de Bermingham family, the earliest being Sir William de Bermingham d. 1325, the latest 1390, whose manor stood nearby. This also indicates an important church in the 14th century. The entire medieval church, save for the spire, was encased in brick in 1690, and drawings of the interior from the period immediately prior to its demolition in 1873 show that the fenestration then contained no tracery (Figs 7 and 8.)



**Fig 7. St Martin's interior looking west November 1872 Fig 8. St Martin's interior looking east October 1872 © Birmingham Museum & Art Gallery**

It may therefore be reasonable to believe that the medieval tracery was removed at the same time as the brick casing was erected and this would fit with the time scale of c.1600-1800 proposed in the ULAS report for the erection of the building on the excavation site under which the stones were found. Alternatively it could be that they were first re-used to reinforce the Town ditch embankments before eventually being placed as foundation materials in the post-medieval building if later in the 200 year time scale proposed. In either case the stones are substantial and their removal several hundred metres would surely have been purposeful. Most of the stones show signs of secondary mortar and some re-cutting so they may even have had more than one re-use on or around the excavation site before their final function.

### ***Recommendations***

Further analysis is required to address the project objectives (p. 13). Further analysis including illustrations of the worked stone recovered from the footings of the 17th century brick building on the eastern edge of the excavation will likely provide further supporting evidence for the theory that much of this material derived from the nearby church of St. Martins-in-the-Bull Ring.

The main part of the assemblage is in 'Fair' to 'Poor' condition and its retention or disposal now the images and measurements have been recorded is a decision to be taken by ULAS and the receiving museum. The recorder would recommend retention at least during the next two excavation phases, in case anything more is found to which these stones may relate.

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## **Worked Stone: Inventory**

### **Notes on the Inventory**

1. The scale rod shown in all images is 25cm, divided into 50mm units.
2. Extra images with identifying labels are to illustrate details or give alternative angles.
3. Extra images without identifying labels are in case the Temporary Number allocated in the absence of SF and/or Context numbers is not suitable.
4. Other images taken, but not used in the Inventory, are included on the CD.

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 09

**CONTEXT** 6028

**SIMPLE NAME** Mullion

**GENERIC NAME** Window

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 340

**w.** 120

**d.** 300

### **PERIOD**

Gothic

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Fair

### **COMMENTS & NOTES**

A mullion with chamfers measuring 100mm and a facing surface of 30mm. The remaining complete leading edge has traces of white paint or wash that are probably original. There are what appear to be thin glazing grooves but they do not run parallel with the stone's leading edges, so probably for a later purpose or accidental scarring. Mortar, together with cuts across the top and bottom surfaces, suggests a secondary use. Traces of rust staining may indicate that the cuts were for iron cramps. Relates to SF 06.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

### **CONTINUATIONS**

Extra images

**RECORDED BY** DJK

**DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 09

**CONTEXT** 6028

**SIMPLE NAME** Mullion

**GENERIC NAME** Window

**EXTRA IMAGES**



**RECORDED BY** DJK

**DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** Temporary No T01

**CONTEXT** 6003

**SIMPLE NAME** Block

**GENERIC NAME** Not known

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 130      **w.** 300      **d.** 280

### **PERIOD**

Unknown

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Fair

### **COMMENTS & NOTES**

An 'L' shaped block with internal dimensions of **h:** 140 **w:** 160 **d:** 145. There are heavy scorch marks to both inner faces. Mortar to one side only. This is probably the corner section of a chimney or flue, possibly part of a furnace. The scorching slightly overlies the mortar suggesting this may be from a secondary use.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** Extra image without i/d label    **RECORDED BY** DJK    **DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** Temporary No T01

**CONTEXT** 6028

**SIMPLE NAME** Block

**GENERIC NAME** Unknown

**EXTRA IMAGE WITHOUT LABEL**



**RECORDED BY** DJK

**DATE** 19/4/12



## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 11

**CONTEXT** 6020

**SIMPLE NAME** Jamb

**GENERIC NAME** Window

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 300

**w.** 200

**d.** 210

### **PERIOD**

Gothic

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Fair

### **COMMENTS & NOTES**

Mouldings run around two sides, the other two sides are broken. It appears to be a vertical feature and probably a window jamb section. The moulding is a flat surface leading into a shallow hollow, then a quirk and shallow roll with a trace of a possible further quirk or fillet before the break. Mortar overlying the moulding shows a secondary use.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** None

**RECORDED BY** DJK

**DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 07

**CONTEXT** 6028

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 340

**w.** 270

**d.** 230

### **PERIOD**

Gothic

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Poor

### **COMMENTS & NOTES**

A 'Y' section of tracery, badly damaged to all surfaces but with a hollow cusp remaining. Faint traces of white paint or wash. Secondary mortar in the valley of the 'Y'.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** Extra image **RECORDED BY** DJK **DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 07

**CONTEXT** 6028

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

**EXTRA IMAGE**



**RECORDED BY** DJK

**DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 12

**CONTEXT** 6020

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 355

**w.** 250

**d.** 230

### **PERIOD**

Gothic

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Poor

### **COMMENTS & NOTES**

A tracery piece with two cusps one retaining its white paint or wash. The flat, broad upper surface suggests it came from high up in the window and surviving paint or wash on this top surface indicates further reticulation followed, the side surface has mortar so possibly engaged to further tracery to the side or to the voussoirs.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** Extra images **RECORDED BY** DJK **DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 12

**CONTEXT** 6020

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

**EXTRA IMAGES**



**RECORDED BY** DJK

**DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 10

**CONTEXT** 6028

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 370

**w.** 360

**d.** 240

### **PERIOD**

Gothic

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Poor

### **COMMENTS & NOTES**

A tracery piece with cusp and a hollow that retains its white paint or wash. All surfaces are damaged. There is mortar, possibly original, to the joint surfaces There is also residual paint to the left edge that may have led into a further feature now lost.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** None **RECORDED BY** DJK **DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** SF 06

**CONTEXT** 6028

**SIMPLE NAME** Mullion

**GENERIC NAME** Window

**IMAGE**



**MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 240

**w.** 130

**d.** 290

**PERIOD**

Gothic

**MATERIAL**

Pinkish brown sandstone

**CONDITION**

Poor

**COMMENTS & NOTES**

This chamfered mullion stone has the same overall shape and proportions to SF 09 but is more damaged. Residual white paint or wash to the remaining chamfered edge.

**MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** Extra images **RECORDED BY** DJK **DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 06

**CONTEXT** 6028

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

**EXTRA IMAGES**



**RECORDED BY** DJK

**DATE** 19/4/12



**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 06

**CONTEXT** 6028

**SIMPLE NAME** Tracery

**GENERIC NAME** Window

**EXTRA IMAGES**



**RECORDED BY** DJK

**DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

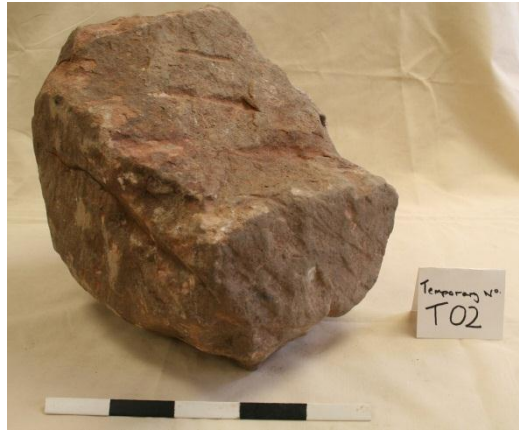
**STONE No.** Temporary Number T02

**CONTEXT** -

**SIMPLE NAME** Tracery or Voussoir

**GENERIC NAME** Window

**EXTRA IMAGE**



**EXTRA IMAGES WITHOUT LABELS**



**RECORDED BY** DJK

**DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 13

**CONTEXT** 6020

**SIMPLE NAME** Block

**GENERIC NAME** Unknown

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 330

**w.** 220

**d.** 360

### **PERIOD**

Gothic

### **MATERIAL**

Pinkish brown sandstone

### **CONDITION**

Fair to Poor

### **COMMENTS & NOTES**

A block with a concave surface formed from two hollow chamfered faces, one broader than the other. Both back surfaces are tooled. There is a (?packing) tile mortared to the lower surface, possibly from secondary use. This block may be a *tas-de-charge* or springer and relate to the other tracery fragments.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** Extra images **RECORDED BY** DJK

**DATE** 19/4/12

**DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 13

**CONTEXT** 6020

**SIMPLE NAME** Block

**GENERIC NAME** Unknown

**EXTRA IMAGE**



**RECORDED BY** DJK

**DATE** 19/4/12

## **DIGBETH, BIRMINGHAM (EBM 604) : WORKED STONES**

**STONE No.** 16

**CONTEXT** 6235

**SIMPLE NAME** Block

**GENERIC NAME** Unknown

### **IMAGE**



### **MAXIMUM EXISTING DIMENSIONS (in mm)**

**h.** 80                      **w.** 130 tapering to 75 **d.** 130

**PERIOD**

Unknown

**MATERIAL**

Pinkish brown sandstone

**CONDITION**

Poor

### **COMMENTS & NOTES**

A wedge shaped small stone covered overall with a damp sooty coating, and having signs of scorching. One surface is carefully carved into a circular depression of 70mm diameter in which are drilled two small holes of *c.* 8 – 10mm diameter. Possibly a mould that may relate to Stone Temporary No T01 (also scorched) although they have different context numbers.

### **MASONS & CONSTRUCTION MARKS, POLYCHROMY, FERRAMENTA etc.**

None

**CONTINUATIONS** None.

**RECORDED BY** DJK

**DATE** 19/4/12

## The Animal Bone

Jennifer Browning

### *Introduction*

This report presents the results of an assessment of the faunal remains recovered during archaeological excavation undertaken at the Beorma Quarter, Digbeth, Birmingham (NGR SP 0749 8655) in late 2011 and early 2012. The site is located in the medieval historic core of Birmingham on the Digbeth, Deritend and Bordesley thoroughfare, the major route into the city from the east. The southwest part of the site is likely to have been developed soon after the foundation of the town in 1166 during which time the street and property pattern appears to have been established.

The 2011-12 excavation targeted properties fronting onto Digbeth and Allison Street in the southeast corner of the development area and adjacent to Orwell Passage and the Digbeth Cold Store building. Activity on the site can be provisionally divided into three broad phases (medieval, post-medieval and modern), which are defined below and in Table 7. The first phase of occupation dated to the 12th-13th century and included deposits which pre-dated the cutting of the broad town boundary ditch and the ditch itself, which appears to have gone out of use in the 13th century (R. Kipling pers. comm.). A group of medieval pits and post-holes recorded in the backyard area to the rear of the Digbeth frontage are also part of this phase. During the medieval-early post-medieval period the site was largely given over to tanning activity, forming part of a wider zone of industrial activity also extending to the northwest. One late tanning pit contained pottery of 16th-17th century date. The latest activity was represented by brick-built structures, of 19th century or later date, joining the Digbeth frontage.

### *Methodology*

The aims of the assessment are to provide a basic quantification of the available data, to help characterise the assemblage and to help identify the focus of potential future work. Identifications are provisional only at this stage and will need to be confirmed during analysis.

Information on taxa present was recorded by context onto a *pro forma* spreadsheet. Species representation has been assessed using a simple fragment count of identified fragments, with no allowance for articulated material (Table 7). Notes were made of the number of whole measurable bones, mandibles or loose third molars or deciduous fourth molars that would provide useful ageing data and fused and un-fused bones. This data was recorded in order to fully assess the potential of the assemblage to provide ageing and biometrical information (Table 10). Notes were also made on the occurrence of butchery marks, burning, gnawing and pathological conditions; however these were not formally recorded at this stage (Table 11).

### *Phasing*

Activity on the site was provisionally assigned to phases ranging from the early medieval to the post-medieval periods (Table 7). The majority of bones were

recovered from post-medieval features, comprising a mixture of pits, postholes and spreads. The medieval deposits which produced bones were all associated with the town ditch, while among the later deposits only garden soil produced bones.

**Table 7 The Animal Bone: Phases of activity identified on the site and the proportion of the assemblage recovered from each.**

Phase	Period	Nature of Archaeology	No. Contexts	No. Frags	% of Assemblage
EM/M	<i>Early Medieval (1100-1250)/ Medieval 1250-1400</i>	Pre-ditch pitting, town ditch	12	58	18
PM	<i>Early Post Medieval 1500-1650/ Late Post Medieval 1650-1750</i>	Building (Area 2), with chimney/hearth, pits and post-holes, spreads, dumps and garden soil.	38	214	68
Mod	<i>Modern (1750-present)</i>	Alteration of Building, lime tank bases, pits, chimney base and post holes.	6	43	14
<b>Total</b>			56	315	

### *Quantity*

A total of three boxes of hand-collected animal bone fragments weighing 10.28kg, was assessed, comprising material from 56 different contexts. The environmental samples sieved for the assessment did not produce any bones (*A. Radini pers. comm.*). The stratified assemblage therefore comprised 315 bone fragments of which 58% was identifiable to taxon. In addition, part of a human femur was noted among five bones from unstratified contexts.

### *Preservation*

Surface preservation was predominantly ‘good’, providing the opportunity to examine the surfaces for butchery, burning, pathologies and other modifications (Table 11). A smaller proportion of the modern material was regarded as ‘excellent’ and generally appeared to be in worse condition than the bones from the earlier phases, perhaps reflecting the fact that it was recovered from garden soil and may have been subject to disturbance which could have caused abrasion.

**Table 8 The Animal Bone: Preservation of the assemblage (%)**

Preservation	EM/M	PM	Mod	All Phases
Excellent	25	34	17	30
Good	67	63	67	64
Fair	0	3	17	4
Poor	8	0	0	2
	100	100	100	56

### *Range and variety of species*

Cattle were most common among the material from the medieval ditch but cattle and sheep/goat were equally represented among the post-medieval bones, particularly in Area 2 (Table 9). Sheep/goat bones were most common in the modern phase. Other mammal species were rare and bird bones were only recovered from post-medieval features. The greater species variety noted in the post-medieval assemblage could be related to the larger size of the assemblage.

**Table 9 The Animal Bone: Species represented in each area and phase**

Area	EM/M				PM			Mod				Grand Total
	1	2	3	Total	1	2	Total	1	2	3	Total	
Cattle	38	1		39	11	32	43	2	1	1	4	86
Sheep	4		3	7	9	38	47	17	1		18	72
Pig					2	8	10	1			1	11
Horse	1			1	1	3	4					5
Deer						1	1	1			1	2
Fowl/goose					1	3	4	1			1	5
Bird						1	1					1
<i>Total Identified</i>	43	1	3	47	24	86	110	22	2	1	25	182
Lge mml	10			10	11	42	53	7	1		8	71
Med mml	1			1	12	18	30	1			1	32
Indeterminate					4	17	21	9			9	30
<b>Total</b>	<b>54</b>	<b>1</b>	<b>3</b>	<b>58</b>	<b>51</b>	<b>163</b>	<b>214</b>	<b>39</b>	<b>3</b>	<b>1</b>	<b>43</b>	<b>315</b>

### *Age structures and biometrical information*

During analysis, the usual methods to assess age at death are tooth eruption and wear and the state of epiphyseal fusion for post-cranial bones. However (Table 10) shows that the number of mandibles is low and is insufficient to allow full analysis in any phase. Similarly, there are too few epiphyses to permit more than general comments about the age structure of the animals deposited at the site.

Whole bones are rare in all phases. However, in addition to the measurable bones listed in

Table 9, it will be possible to take breadth and depth measurements of distal ends, as well as teeth, which will increase the dataset. There may be sufficient information to allow limited but useful comparisons with other nearby assemblages, such as those recovered during the Bull Ring excavations (Baxter 2009).

**Table 10 The Animal Bone: Available ageing and biometrical data for the main domesticates**

Taxa		EM/M	PM	Mod	Total
Cattle	Mandible	1	1	0	2
	Fused epiphyses	3	10	1	14
	Unfused epiphyses	3	5	0	8
	Measurable bones	8	9	1	18
Sheep/goat	Mandible	0	0	0	0



	Fused epiphyses	0	23	10	33
	Unfused epiphyses	0	2	1	3
	Measurable bones	0	6	7	13
Pig	Mandible	0	0	0	0
	Fused epiphyses	0	3	0	3
	Unfused epiphyses	0	0	0	0
	Measurable bones	0	0	0	0

### ***Modifications***

The incidence of butchery, burning, gnawing and pathological bones was noted during the assessment (Table 11). Butchery and burnt bones were most common in the post-medieval and modern assemblages. The burnt bones noted appeared to be coated in a sooty substance, which may require analysis, rather than actually burnt all the way through. Gnawed bones occurred sporadically in all phases. Small numbers of bones with pathologies were present in the post-medieval and modern assemblages but were not analysed at this stage.

**Table 11 The Animal Bone: Modifications observed during the assessment**

	EM/M		PM		Mod	
	n	%	n	%	n	%
Butchery	1	2	40	19	14	33
Burnt Bones	0	0	36	17	0	0
Gnawing	3	5	9	4	1	2
Pathology	0	0	4	2	2	5

Distinctive worked fragments were noted in thirteen contexts in Areas 1 and 2, ten of which were from post-medieval deposits, particularly associated with the building (Table 12). They were also seen in garden soil, dating to the post-medieval period and in one context associated with the town ditch (6180). Many of these specimens strongly resemble ivory offcuts recovered from the Bull Ring ((Hamilton-Dyer 2009, 181), although this identification is currently provisional and will require proper examination to confirm. The fragments appeared to be fairly regular in length, c. 75mm, and were cleanly sawn. They were almost always found in association with other bones, particularly metapodials. With the exception of the garden soil, these never occur in concentrations greater than two.

**Table 12. The Animal Bone: location of ivory\* offcuts (\*provisional identification only)**

Context	Feature	Area	Phase
6003	wall	1	PM
6068	Spread	1	PM
6075	brick drain fill	2	PM
6080	brick drain fill	2	PM
6086	brick drain fill	2	PM

6121	garden soil	1	PM
6121	garden soil	1	PM
6143	post pad	2	PM
6154	wall foundation	2	PM
6180	town ditch	1	EM/M
6200	pit	2	PM
6212	post hole	2	PM
6232	spread	1	PM

### ***Analytical potential of the data***

The faunal assemblage from Digbeth numbers 315 specimens of which 58% were identifiable. However, this amounts to 182 bones, falling short of the 300 which is suggested to be a minimum for reliable analysis (Hambleton 1999). The numbers of epiphyses and mandibles are insufficient to allow more than a rudimentary analysis of the age of the animals brought to the site. Cattle bones were most common in medieval deposits, but there are more even proportions of sheep/goat and cattle in the post-medieval features. Therefore, on questions of husbandry and stock mortality profiles the assemblage can only contribute general information to Research Objective *RA4 Medieval diet and economy*.

However, the assemblage has value because of its industrial character and may add further information to what is already known about nearby archaeology. Research Objective *RA2 Medieval craft and industry, in particular water-using industries* may be applicable here, although much of the industrial material appears to be concentrated in the post-medieval deposits. A number of suspected ivory offcuts were noted. Although bone elements were not quantified at this stage, it was observed that much of the faunal material consisted of metapodials, particularly of sheep, and cattle horncores. The proliferation of industries which processed horns and bones is well-recognised in this period and the potential of horn core and bone measurements to provide information on the size, breed, age and sex of the animals used was highlighted by Pearson (2003).

The industrial nature of the assemblage is unsurprising in view of its location and the assemblage should be placed in the context of nearby activities. Rátkai (2011, 149, 151) notes the inter-related nature of many of the crafts utilising animal carcasses, from the tanners to the horners to the cutlery makers. Cutlers and smiths were known to have had premises on the frontages of Digbeth High Street from the 15th and 16th centuries (2011, 149). Several large faunal assemblages were recovered during the excavations at the Bull Ring (Baxter 2009), including a medieval and earlier post-medieval assemblage dominated by cattle horn-cores and foot bones at Park Street. At Gibb Street, the assemblage consisted primarily of cattle horncores, with a predominance of longhorn cattle represented. Floodgate Street contained large quantities of sheep/goat metapodials, suggesting that tawyering and the manufacture of knife handles took place at this location (Baxter 2009).

### ***Recommendations for Further Analysis***

A catalogue of all stratified bones to the level of element and taxon should be produced as a basis for any further analysis. Information on ageing indicators (epiphysial fusion and toothwear) and pathologies will be recorded. Data on butchery, burning, preservation and gnawing will help provide a taphonomic history. Whole bones, as well as fused articular ends and teeth, should be measured to provide comparison with other sites and potentially contribute to wider studies on size and population.

A list and description of modified bones should be produced to provide information on the types of activities taking place at the site. Identification of the possible ivory offcuts could provide information on object manufacture and trade.

## References

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- Hamilton-Dyer, S., 2009 'Ivory Offcuts' in C. Patrick and S. Ratkái *The Bull Ring Uncovered: Excavations at Edgbaston Street, Moor Street, Park Street and The Row, Birmingham, 1997-2001* Oxford: Oxbow Books, 181-183
- Pearson, L., 2003 'Environmental archaeology in the West-Midlands in the early post-medieval period: Do we really need environmental archaeology?' West Midlands Regional Research Framework for Archaeology: Seminar 6
- Rátkai, S., 2011 'Tanning and related industries in Birmingham, 1200-1800' in R. Thompson and Q. Mould *Leather Tanneries: The Archaeological Evidence*, London: Archetype Publications, 131-152

## The Environmental Samples

Anita Radini

### Introduction

During archaeological excavations at the Beorma development, Birmingham, conducted by the University of Leicester Archaeological Services, samples were taken for the recovery of plant remains and other remains which can give evidence of diet or activities on the site, and of the environment in the past. Samples from a waterlogged ditch and other features, 'dry' and possibly waterlogged, were assessed for their potential to provide evidence about the site from both organic and charred remains.

### Provenance, Dating and Quantity

Samples were taken from features with the potential to contain waterlogged and charred plant remains and from context types representative of the site. Of a total of 57 samples, 48 environmental soil samples, between 10 to 60 litres of soil each, were taken from features on the site. Of the total samples, 27 samples were processed for the assessment. The features sampled include ditches, burnt layers, pits, garden soil and a drain fill, the samples are shown by phase in Table 13.

**Table 13: The Environmental Samples: The total numbers of samples processed and analysed by feature type and date.**

Feature Types	Samples processed
Pits	One sample 12 <sup>th</sup> -13 <sup>th</sup> Century, one sample 1600-1700s, one sample 1700-1800s. All samples were waterlogged
Charcoal deposits	Two bulk samples from a 17 <sup>th</sup> Century hearth
Ditches	20 samples, waterlogged, all dating the 12 <sup>th</sup> -13 <sup>th</sup> century AD
Drain fills	One sample, waterlogged 19 <sup>th</sup> Century AD
Total	27 samples

**Table 14: The Environmental Samples: Waterlogged and Charred Plant Macrofossils from representative samples.**

Feature	6207	6207	6078	-	6064	6045	
Context	6208	6210	6190	6086	6063	6064	
Type	D	D	D	Drn	Pit	Pit	
Sample number	42	52	56	24	15	5	
CHARRED PLANT REMAINS							CHARRED PLANTS
<i>Triticum aestivum/durum</i>					1	1	Bread wheat grains
<i>Triticum spp.</i>					1		Wheat grains
<i>Hordeum vulgare</i> L.		1			1	1	Barley grains
<i>Chenopodium sp.</i>					1	1	Goosefoot
<i>Rumex sp</i>					1	1	Docks
Charcoal flecks	1	1	1	2	3	3	Charcoal flecks
MARSH OR WETLAND							MARSH/WETLAND
<i>Juncus sp</i>	1	1	1	1			Rushes
<i>Eleocharis palustris</i> L.	1	1	1	1	1	1	Spike-rush

WOOD FRAGMENTS							WOOD/SCRUB
<i>Corylus avellana</i> L.	1	1	1				Hazel
<i>Quercus</i> spp.			1			+	Oak
<i>Salix/Populus</i>	1	1	1				Willow/poplar
<i>Betula</i> spp.			1				Birch
OTHER PLANTS							OTHER PLANTS
<i>Ranunculus</i> subgen. <i>Ranunculus</i>			1		1		Buttercups
<i>Urtica dioica</i> L.			1		1		Nettle
<i>Chenopodium</i> sp.					1		Goosefoot
<i>Rumex</i> sp					1		Docks
<i>Cirsium</i> sp.	1	1	1	1			Thistles
<i>Leontodon</i> sp			1				Hawk-bit
<i>Sonchus asper</i> (L.) Hill	1	1	1		1		Prickly sow-thistle
<i>Carex</i> spp.	1	1	1	1	1		Sedges
Poaceae	1	1	2	1	1		Grasses
OTHER REMAINS							
<i>Trichiuris</i> sp. ova	1	1	1				Whipworm eggs
Leaf fragments, Dicot.	3	3	3	1	1	1	Leaf
Insects remains	1	1	1				Beetle thorax
Volume in Litres	2	2	1	1	1	1	

Key: Abundance scale; 1 = scarce <15 items, 2 = moderate 15-20 items, 3 = frequent >50 items. + = present.

Feature type D = ditch, Drn = drain.

## Methods

### *Processing of waterlogged plant remains*

Sub-samples between 1 to 2 litres of sediment, depending on concentration of remains, were measured out from each of the waterlogged samples. They were broken down in water, and the lighter, organic, fraction washed over to separate it from the inorganic material, was caught in a 630 µm sieve. This wash-over was further cleaned and sieved, then sorted in water under a x10 to x40 stereo-microscope. The results from six representative samples are given in Table 14. Other scanned samples are described in the text.

### *Processing of bulk samples for charred plant remains*

Samples were wet-sieved in a sieving tank using a 0.5mm mesh with flotation through a 0.30 mm mesh sieve. The residue in the tank mesh was air dried and large stones removed and sorted for all finds. The residue was then divided and half of it sorted for 'organic remains' submitted for this assessment. The flotation fractions (flots) were air dried and packed carefully in self-seal polythene bags and submitted for assessment.

### *Identification of seeds, wood and charcoal*

Morphological criteria were used for the identification of seeds and fruits, based on modern reference material and seed identification manuals (e.g. Berggren 1981; Anderberg 1994; Cappers *et al.* 2006). Plant names follow Stace (1997). The abundance (1 = scarce <15; 2 = moderate 15-50; 3 = frequent >50) of each

archaeobotanical type was estimated on the basis of the minimum number of characteristic plant parts.

The identification of the wood was conducted using thin sections of the wood, cut with a sharp razor, and observing them under a microscope with magnification range between x40 to x200. Identification keys and reference collection were also consulted.

Many species of wood do not have anatomical features that allow precise identification; for example, oak (*Quercus* spp.) and birch (*Betula* spp.). Moreover, the identification between willows and poplars is based on the differences existing between rays, which were not clearly visible in tangential sections of the species found (Schweingruber, 1982) therefore the wood has been described as willow/poplar (*Salix/Populus*).

Nomenclature adopted for this report is shown below:

<i>Corylus avellana</i> L.	Hazel
<i>Quercus</i> spp.	Oak
<i>Salix/Populus</i>	Willow/Poplar
<i>Betula</i> spp.	Birch

### ***Results of the assessment***

#### *Preservation of the material*

The majority of remains were preserved in the form of waterlogged remains in ditches and pit fills; while charred remains were recovered in few features only (see table 2). Moreover deposits of vivianite (bright blue in colour) were observed in most samples in waterlogged condition, indicating that the soil had been rich of phosphate in the water for long period of time in the past. This could have come from sewage being washed in or from phosphate coming from bones and phosphate rich organic matter.

#### *General overview*

All the macrofossil samples were generally similar, and all the samples were rich in organic matter, with some silt and sand, but the majority of the organic residue was not of diagnostic nature being mainly amorphous and unidentifiable organic debris. This allowed a fast sorting process, often several samples or larger volume from the same feature to be scanned in the time allocated for this assessment, so a large amount of material was scanned.

In many cases the bulk of the organic debris was represented by very small fragments of wood, roots or bark, and tree leaf remains. The numbers of charred plant remains were very small and generally concentrated in features such as pits and burnt layer from the chimney, only randomly found in ditch fills. Moreover, the quantity of seeds and diagnostic plant remains preserved was very small. This is unusual for waterlogged remains from deposits rich in organic matter; the same type of remains and poor preservation have been found in other areas of Birmingham before (Ciral di,

2009), and may be due to the acidic nature of the soil, which could be natural or due to human activities conducted on site.

#### *Plant macrofossils by feature type*

##### 1 ) Ditches dating 12th-13th century AD

Samples from four ditches were selected and analysed for this assessment. All dated the 12th and 13th century AD. Results are summarized below.

Ditch **6014**, sample **1** (6017); sample **2** (6016) and sample **3** (6015). The ditch fills were brown to light brown in colour and the fills had all similar composition, being very poor in preserved diagnostic plant remains. Plant remains consisted mainly of decomposed root, a few leaf nervatures and some fragments of unidentified wood and wood bark. Only a few charcoal flecks were recovered and they may have been transported by wind or water. No other remains such insects or parasites were observed during the scanning of these material. The feature has no further potential for analysis.

Ditch **6207**, sample **42** (6208) and ditch **6209** sample **52** (6210), appeared darker in color than ditch **6014**, and contained a larger amount of organic matter and preserved diagnostic plant remains (Table 14). They both also have traces of vivianite suggesting phosphate was present in the ground in high concentrations. Both sample **42** and **52** had a small number of seeds of wild species, mainly rushes (*Juncus* sp), spike rush (*Eleocharis palustris*) and sedges (*Carex* spp) all commonly found at watersides. A few seeds of species from pasture land were also found, but in very small numbers, these were sow-thistles (*Sonchus* spp), thistles (*Cirsium* sp.) and grasses (Poaceae), Wood remains were poorly preserved, but it was possible to identify willow/poplar and hazel among them. Only a few charred remains were present, consisting of a few charcoal flecks found in both samples, together with two charred cereal grains of barley (*Hordeum vulgare* L.) found in sample **52**. A small number of *Trichuris* sp. ova (whipworm eggs) were also recovered from these two samples.

Ditch **6078** was found to be the richest in organic matter. Fifteen samples were taken from the features and were analysed for this report. They were all found to have similar characteristics. No differences were found a part that sample **56** (6190) had the largest amount of diagnostic plant material; for this reason this sample was chosen to be representative of the feature and was tabulated (see table 2). The fills had different quantities of the same species, most of which were very fragile and fragmentary as they were poorly preserved. Both ditches **6207** and **6209** contained seeds of rushes, sedges and spike rush, while the fills of ditch **6078** also contained a wider range of seeds of species of a grassland environment. These included hawkbit (*Leontodon* sp.), sow-thistle (*Sonchus* spp), buttercups (*Ranunculus* sp.), thistles (*Cirsium* sp.), grasses (Poaceae), and nettles (*Urtica dioica*). Moreover, all the samples from this ditch contained abundant tree leaves, with birch remains and few wood fragments. Leaves survived manly as ‘impressions’ in vivianite deposits, and were almost destroyed as soon as they were put in water for processing, and in the majority of the cases only the nervatures of the leaves survived intact. The wood identified was oak, willow/poplar and birch, but only few fragments were identifiable because they were mainly present as wood vessels and bark. A small number of *Trichuris* sp. ova (whipworm eggs)

were also recovered together with a few insect remains, rare but more common than in ditches **6207** and **6209**. See Table 14 for results.

## 2) The 19th century drain

A sample from a 19th century drain was analysed for this assessment, sample **24** (6086). This was taken from a walled brick drain that contained bones and pottery fragments. Despite the presence of bone and pottery the content of plant remains was very low. It consisted of similar species found in the ditches, but in low diversity. These were seeds of grasses, thistles and sedges. The few charred plant remains consisted of poorly preserved wheat grains recovered in very low numbers.

## 3) Pits

Tree pit were selected for this assessment in order to evaluate survival and typology of the material in these features. Moreover, samples were selected from pits of different age to assess the possibility of detecting changes between phases on site.

Medieval pit **6064**, sample **15** (6063), dating 12th-14th Century AD, was found to be the richest in diagnostic plant remains. These consisted of several waterlogged species of wild plants, in small numbers for each species. These were taxa belonged to plants normally found in pastures and were similar to those found in the ditches. In particular seeds of grasses, sow-thistle (*Sonchus* spp), buttercups (*Ranunculus* sp.) and nettles (*Urtica dioica* L.) were recovered. A few seeds of docks (*Rumex* spp.) and goosefoot seeds (*Chenopodium* spp.) were also found. These are commonly found on waste and disturbed ground and/or cultivated plots. Small numbers of charred remains were found in all the samples, representing food plants. These included a single charred grain of free-threshing wheat (*Triticum aestivum/durum*), wheat (*Triticum* ssp) and a few grains of barley (*Hordeum vulgare* L.), both are common cereals in the medieval period, however no chaff was found to identify the type of wheat present so it was assumed to be bread wheat. Unidentified material consisted of deteriorated fragments of wood and leaves, too badly preserved to be identified. See Table 14 for results.

A possible tanning pit **6045** was represented by a single sample **5** (6046), with waterlogged preservation and dated the 1600-1700s. Few charcoal flecks were recovered and no diagnostic plant remains were found apart from some wood fragments identified as oak (table 2). These remains, despite low number, may suggest the nature of the pit as 'tanning' or 'hide curing' pit, as oak was commonly used in leather tanning.

Pit **6199**, represented by a single sample **41** (6200), dating the 17th -18th Century AD was also analyzed. While organic matter was present, no waterlogged plant remains were identified. Most of the identified material was charred, and consisted mainly of charred cereal grains of barley (*Hordeum vulgare* L.) and free-threshing wheat (*Triticum aestivum/durum*). A few charred seeds of seeds of docks (*Rumex* spp.) and goosefoot seeds (*Chenopodium* spp.) were also found, and they could represent weeds associated with the crop or plants growing nearby that were accidentally burnt.

No parasite ova or insect remains were noted in any of the pit fills, so there was no evidence suggesting that sewage or latrine waste was disposed of in these features although such remains may not have survived. See table 2 for results.



#### 4) Chimney 6063

Two samples were examined for this assessment, from chimney **6063**: sample **6** (6035), consisting of the heart fill, and sample **38** (6038), from the flue fill. Both samples appeared black in colour and were wet, not allowing to establish if the material was waterlogged or became wet later on the site. The charcoal appeared almost in very fine fragments, almost 'dust'. These samples were treated as bulk samples to simplify and maximize the retrieving of any charcoal fragment large enough to be identified. Both samples were very similar, and consisted only of charcoal flecks and small carbon spheres which may be from soot. Despite the whole volume of the samples being processed, it was not possible to find any charcoal fragments above 4 mm in diameter. Most of the remains in fact were almost washed through the sieve and even the larger fragment deteriorated quickly if attempt was made to separate them from the samples before sieving. None of the fragments were identifiable, this was probably due to the high temperature at which they may have burnt and to the prolonged period of time of exposure to the heat. It should be considered that if the fuel was coal the soot produced would not leave identifiable fragments.

#### **Discussion and comparison with other sites**

Despite the rather large number of environmental samples, few of them contained diagnostic plant material and even less had charred plant material.

The medieval assemblages from the ditches and the pit are all very similar in character, with a variety of wild species related to open and natural environment. As suggested by Ciraldi (2009) it is possible that wild species in pits entered the record due to water from ditches and nearby watercourse being brought in. The few charred remains may have been results of some domestic activities or again could have been transported from other areas by the water, possibly slow flowing in the ditches and/or during flooding. Wood species growing nearby have also been detected by pollen analysis (see Greig, below), and in addition a wild open environment insect fauna was found (see Smith, below).

Archaeobotanical analysis did not provide any further evidence for flax processing on site as suggested by Greig during pollen analysis of the ditches. This may be due to the low rate of survival of diagnostic plant remains in the features analyzed. It is important to note that evidence of hemp (*Cannabis sativa* L.) was recovered by Ciraldi at Edgbaston St. (Ciraldi, 2009), dating the post medieval period. Therefore it is possible that some bast fibre retting took place between the medieval and early modern periods in ditches and pits, but the evidence did not survive.

Both samples dating from the early and modern period, include cereals with those identifiable being free-threshing wheat. This is typical wheat of the medieval period too. Free-threshing wheat, that is relatively easy to process, as its grains separate freely from their husks after threshing (e.g. Hillman 1981; Jones 1984). The early modern samples have a small amount of cereal remains and no other food plants, and this cannot provide much evidence for diet except to say that these cereals were available for consumption throughout the phases of the site. Moreover, all plant

assemblages from the medieval to the modern period, had a similar composition of wild species, many of which could be considered as typical of pastures and open ground, together with few species associated with disturbed ground, possibly due to the human activity on site.

Thus, the evidence so far strongly suggests area of pasture possibly surrounded by trees and some industrial activities being carried out in the area through the ages. The presence of parasite ova of the genus *Trichuris* suggests that human and/or animal waste was disposed of in ditches. The genus has two common species: *T. trichiura*, which is parasite of the human large intestine known as whipworm, and *T. suis*, which is a parasite normally found in pigs known as swine whipworm and which can also affect humans. This could possibly mean that the land nearby was used as pasture as suggested by the few surviving plant remains.

The species composition present shows similarities with medieval and post-medieval plant assemblages described by Ciaraldi (2009), recovered from domestic and industrial feature in Edgbaston street, Moor Street., Park Street and the Row. In particular, like in Edgbaston Street, the assemblages had low numbers of plant remains. Moreover, the plant assemblages from the Beorma development were much poorer in terms of survival of diagnostic plant material, which possibly resulted in the lower diversity of plant species here.

The overall the paucity of food plant remains on the site could be explained as a shift from open and pasture land in the medieval times to a more 'industrial' use of the land towards modern times, with features possibly regularly cleaned and ditches filling with transported material from slow flowing water. Repeated flooding episodes throughout time could have also caused dispersal of accumulated material contributing to the sparse remains in the pits.

### ***Statement of Potential***

The samples include some rich in organic material and few charred plant remains, but the diagnostic material recovered is in small amounts and very consistent across site and time. This shows lower than expected potential of the site to produce further environmental evidence.

If more material is processed the remains have some potential to show additional species and possibly further charred remains related to the crops grown and consumed nearby, while the wild species may provide evidence about land use and environment.

### ***Recommendations***

Further archaeobotanical analysis could include full recording of the results in a table and further processing of the remaining pits.

Samples from pits could be processed as for the assessment (see methods above).

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## The Pollen

James Greig

### *Summary*

The samples from the Beorma Birmingham site had a good range of well-preserved pollen which seemed to show an alder carr or similar woodland, with traces from cultivated crops, perhaps from local whole plant remains and processing rather than from locally growing crops. They have the potential to show something of archaeological significance in the interpretation of the site as a whole.

### *Objectives*

Pollen was investigated to obtain further evidence for the interpretation of the two sites and their surroundings at the time of their occupation, together with other environmental work.

### *The site*

Beorma is an urban site in Birmingham, and samples were taken from the former town ditch, and the three samples from the latter represent part of a monolith which was sampled there by the excavators.

### *Samples*

The three samples formed a series from the column samples in the excavated ditch section at Beorma representing the top, middle and base of the organic deposits.

### *Laboratory work*

#### *Pollen analysis*

The three pollen samples were processed using the standard method; about 1 cm<sup>3</sup> subsamples were dispersed in dilute NaOH and filtered through a 70µm mesh to remove coarser material, which was then scanned under a stereo microscope. The finer organic part of the sample was concentrated by swirl separation on a shallow dish. Fine material was removed by filtration on a 10µm mesh. The material was acetolysed to remove cellulose, stained with safranin and mounted on microscope slides in glycerol jelly. Counting was done with a Leitz Dialux microscope, using phase contrast illumination where needed, to about 100-150 grains. The slides were also scanned with three traverses at lower power to detect rarer taxa, which have been recorded as "+" for presence. Identification was using the writer's pollen reference collection. Standard reference works were used, notably Fægri and Iversen (1989) and Andrew (1984).

The pollen types have been listed in taxonomic order according to Kent (1992), in Table 15.

### *Results*

#### *Birmingham, Beorma*

The three Beorma samples were all a dark brown organic debris and silt, and charcoal was noticed in sample 56. The pollen was generally abundant and well preserved, with a few corroded grains

The pollen samples from Beorma showed fairly similar spectra as far as can be seen from these small assessment counts. Trees, mainly alder, were the main component, followed by oak, birch and hazel. There was quite a large range of small records of

other trees such as elm, lime, holly and elder and the climber ivy. Such a dominance of trees is unusual for an urban site, but it can usefully be compared with other, similar, results from Birmingham.

Grassland plants (which usually give a good pollen record) were present in small amounts. There were also small records from crops and weeds (which are usually less well represented), including cornflower, cereals including rye, and flax. Many of these taxa were present in small amounts, and they were only detected when the slides were scanned at low power. As such crops (and especially flax) have a low productivity and dispersal of pollen, and the surroundings of Birmingham are not known for their agricultural richness, these pollen records may be the result of whole plant material having been deposited such as animal dung, processing waste or even from flax retting in the ditch. Pollen from crops which grew nearby seems a less likely option. Rye and cornflower are typically medieval and post-medieval crops. An ovum of *Trichuris* (whipworm) shows some sewage in the sediment.

Work on the Birmingham Bull Ring sites provided a similar picture of the surroundings (Greig 2009). The evidence from a number of sites was mainly of woodland, with trees and shrubs amounting to about 70% of the pollen. These signs of woodland have been linked with shifting and perhaps declining population from perhaps the 14th to the 18th century. There were also signs of grassland plants, and a large range of typical medieval crops, including flax and rye, as at Beorma, and parasite ova. The evidence from the silted up ditch of Metchley Roman fort also showed the development of woodland after the fort's abandonment, in what seems to have been a poor area for farming (Greig 2004). The question with ditches such as Beorma is whether the alder carr and other woodland was an essentially local vegetation which just grew around the site itself, or whether the general landscape was rather well wooded; the number of sites showing woodland-rich pollen spectra suggests the latter. Another question is whether there was much woodland and scrub formerly present but undetected, from taxa which give a poor pollen record, such as *Crataegus* (hawthorn) and *Populus* (poplar), both of which were recorded at Edgbaston (Greig 2009).

Modern pollen work connected with Metchley showed that dense hawthorn scrub can be nearly invisible in the pollen record, leaving only a trace of *Crataegus* pollen beneath it.

The potential for Beorma would be to increase the three assessment counts and to study more samples from other parts of the column to see if there is detectable change with time, and to detect further taxa which could be significant for interpreting the results.

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**Table 15: The Pollen. Beorma EBM 6078**

spores	50, 6182	% pollen	53, 6185	% pollen	56, 6190	% pollen	
<i>Pteridium</i>	1		-		1		bracken
<i>Polypodium</i>	-		+		2		polypody
<i>Sphagnum</i>					2		sphagnum moss
Filicales	3		2		3		spores undiff.
pollen							
<i>Pinus</i>	1	+	3	2	3	2	pine
<i>Ulmus</i>	2	1	-		1	+	elm
<i>Quercus</i>	8	6	22	12	17	10	oak
<i>Betula</i>	9	7	8	4	11	6	birch
<i>Alnus</i>	71	52	95	51	104	60	alder
<i>Corylus</i>	11	8	20	11	11	6	hazel
Chenopodiaceae	-		-		+	+	goosefoot
Caryophyllaceae	-		-		+	+	stitchwort family
<i>Rumex</i> -tp.	1	+	-		-		docks and sorrels
<i>Tilia</i>	-		2	1	1	+	lime
Ericales	2	1	-		1	+	heathers
<i>Ilex</i>	2	1	1	+	2	1	holly
<i>Linum</i>	-		-		+	+	flax
<i>Hedera</i>	-		1	+	-		ivy
cf. Apiaceae	-		1	+	-		umbellifers
<i>Plantago lanceolata</i>	-		1	+	1	+	ribwort plantain
<i>Fraxinus</i>	-		+	+	-		ash
<i>Sambucus nigra</i>	-		-		1	+	elder
Dipsacaceae	-		-		1	+	scabioues
<i>Cirsium</i> -tp	-		-		+	+	thistles
<i>Centaurea cyanus</i>	+	+	+	+	+	+	cornflower

Lactuceae	-		3	2	1	+	a group of comp osites
<i>Aster-tp</i>	2	1	3	2	-		daisies etc
<i>Artemisia</i>	1	+	-		-		mugwort
Cyperaceae	-		-		1	+	sedges
Poaceae	23	17	22	12	16	9	grasses
cf. <i>Cerealina-tp.</i>	-		3	2	1	+	cereals
cf. <i>Secale</i>	-		-		+	+	rye
cf. <i>Potamogeton</i>	1	+	-		-		possible pond weed
unidentified	6		6		6		
total pollen	137	100	185		174		
<i>Trichuris</i>	-		-		+	+	whipworm

## The Insect Remains

David Smith

### *Introduction*

This assessment of the potential for insect remains reports on three samples taken from a 12th to 16th century ditch from the Beorma Development near to Park Street and Digbeth, Birmingham.

It was hoped that an assessment of the insect remains from these samples would provide information on the following:

- 1) Are insects present?
- 2) Are the insect faunas of interpretative value and warrant further investigation?
- 3) Do the insects suggest the nature of the environment in the area around the ditch?
- 4) Do insects suggest that settlement material was dumped into the ditch?
- 5) How similar are these faunas to those recovered from the adjacent and similarly dated sites from the Bullring excavations, Birmingham?

### *Methods*

The samples were processed using the standard method of paraffin flotation as outlined in Kenward *et al.* (1980). The system for 'scanning' faunas as outlined by Kenward *et al.* (1985) was followed in this assessment.

When discussing the faunas recovered, the following considerations should be taken into account:

- 1) Identifications of the insects present are provisional. In addition, many of the taxa present could be identified down to species level during a full analysis, producing more detailed information.
- 2) The various proportions of insects suggested are very notional and subjective. As a result, these faunas should be regarded as incomplete and possibly biased.

### *Results*

The insect taxa recovered are listed in Table 16. The taxonomy follows that of Lucht (1987) for the Coleoptera (beetles).

The numbers of individuals present for each taxa is estimated using the following scale: + = 1-2 individuals, ++ = 2-5 individuals, +++ = 5-10 individuals, ++++ = 10-20 individuals, +++++ = 100s of individuals. The nature of the preservation and the potential for archaeological interpretation is outlined in Table 16.

The majority of the insect fauna recovered were Coleoptera (beetles). The faunas examined were all well preserved and produced faunas of small to moderate size.

### *Discussion*



The three faunas recovered are very similar in their nature suggesting that similar conditions applied throughout the period of time represented by the infilling of the ditch.

The faunas contain a large proportion of species of water beetle, such as *Hydroporus*, *Limnebius*, *Hydraena* and *Helophorus* spp. which are associated with very slow flowing or still water (Hansen 1987; Foster and Friday 2011). Apart from the recovery of a single specimen of *Notaris acridulus*, a weevil associated with reed sweet grass (*Glyceria maxima* (Hartm.) Holmb. – Koch 1992), in Sample 50 there are no indications for stands of waterside vegetation.

There is evidence that the area around the ditches consisted of open grassland containing grazing animals. This is clearly suggested by the recovery of comparatively large numbers of a range of *Aphodius* and *Geotrupes* ‘dung’ beetles which are normally associated with the dung of herbivores lying in open grassland (Jessop 1986). Grassland may also be indicated by the recovery of a range of weevils such as *Apion*, *Sitona* and *Ceutorhynchus* spp..

All three samples also contain a small number of taxa, such as *Cryptophagus*, *Lathridius* and *Monotoma* spp. which, though they can occur in dry matter naturally, these are more often associated with settlement waste and materials. It is unclear if this material may have been directly dumped into the ditch or if they only indicate that settlement or fodder was nearby.

### ***Comparisons And Recommendations***

The insects from this ditch on the Beorma site are very similar to the insect assemblages from the ditch features encountered at Edgbaston Street excavations, particularly those associated with the Manorial and Parsonage ditches (Smith 2009). The Beorma samples are most similar to the insect faunas recovered from the boundary ditch that lay along the back of the plots running along Digbeth encountered during the Park Street excavations to which the watercourse at the Beorma site may be connected. Apart from the work associated with the Bull Ring Development at Edgbaston and Park Street there is no other archaeoentomological results from this, or indeed any other period, from the centre of Birmingham. It is therefore recommended that a full analysis of these insect faunas takes place.

### ***Further Costing***

Laying out of 3 insect faunas (1.5 days at £ 120.00)	= £ 187.50
Identification of 3 insect faunas (1 day at £ 501.00)	= £ 501.00
Report preparation (1 day at £ 501.00)	= £ 501.00
Total	= £ 1189.50.

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**Table 16. Insect fauna recovered from the Beorma site**

	(6182)	(6185)	(6190)
Context number	6	607	6
	0	0	0
	7		7
	8		8
Sample number	50	53	56
Sample weight kg	5	4	5
Sample volume l	6	5	6

**COLEOPTERA****Carabidae**

<i>Pterostichus spp.</i>	-	+	-
<i>Amara spp.</i>	+	-	-

**Dytiscidae**

<i>Hydroporus spp.</i>	+	-	-
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**Hydraenidae**

<i>Hydraena spp.</i>	++	-	-
<i>Limnebius spp.</i>	+	+	+
<i>Helophorus spp.</i>	+++	-	+

**Hydrophilidae**

<i>Sphaeridium</i>	-	+	-
<i>scarabaeoides</i> (L.)			
<i>Cercyon spp.</i>	+++	-	+
<i>Megasternum</i>	-	-	++
<i>boletophagum</i> (Marsh.)			

**Staphylinidae**

<i>Omalium spp.</i>	-	-	+
<i>Lesteva spp.</i>	+	-	-
<i>Trogophloeus spp.</i>	-	-	+
<i>Philonthus spp.</i>	+	++	+
<i>Tachinus spp.</i>	+++	+	
Aleocharinidae			
Genus & spp. Indet.			

**Elateridae**

<i>Agriotes spp.</i>	-	+	-
<i>Athous spp.</i>	+	-	+

**Cantharidae**

<i>Cantharis spp.</i>	-	-	+
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**Cucujidae**

<i>Monotoma</i> spp.	+	-	++
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**Cryptophagidae**

<i>Cryptophagus</i> spp.	++	++	-
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<i>Atomaria</i> spp.	+	-	-
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**Lathridiidae**

<i>Lathridius minutus</i> (Group)	+	+	-
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**Anobiidae**

<i>Anobium punctatum</i> (Geer)		+	-
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**Scarabaeidae**

<i>Aphodius</i> spp.	+++	++	++
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<i>Geotrupes</i> spp.	-	+	-
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**Chrysomelidae**

<i>Phyllotreta</i> spp.	+	++	+
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**Scolytidae**

<i>Scolytus</i> spp.	+	-	-
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**Curculionidae**

<i>Rhynchites</i> spp.			
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<i>Apion</i> spp.	++	++	++
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<i>Sitona</i> spp.		++	-
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<i>Notaris acridulus</i> (L.)		-	-
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<i>Ceutorhynchus</i> spp.	+	+	-
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<i>Rhamphus</i> spp.	+	+	-
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**DIPTERA****Sphaeroceridae**

<i>Thoracochaeta</i> <i>zosteriae</i> (Hal.)	+	-	-
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**Table 17. Summary of the nature of the insect faunas from the Beorma site**

Sample number	Degree of preservation	Comparative size of faunas	Water conditions	Landscape	Overall potential of sample	Estimate of time needed for full analysis (laying out / ID days)
50	good	small / moderate	<i>Hydroporus</i> , <i>Hydraena</i> , <i>Ochthebius</i> , <i>Cercyon</i> suggest slow flowing water.	<i>Aphodius</i> 'dung beetle' suggest the presence of grazing animals and grassland. Small numbers of <i>Cryptophagus</i> and <i>Lathridius</i> may suggest settlement waste. <i>Rhamphus</i> is associated with willow.	moderate	one third of a day
53	good	moderate/ large	no indication	<i>Aphodius</i> 'dung beetle' and <i>Geotrupes</i> suggest grassland and pasture as does <i>Sitona</i> and <i>Apion</i> spp. <i>Cryptophagus</i> and <i>Lathridius</i> and <i>Anobium punctatum</i> may suggest settlement waste. <i>Rhamphus</i> is associated with willow.	moderate	one third of a day
56	good	Small/ moderate	no indication	<i>Aphodius</i> 'dung beetle' suggests. <i>Cryptophagus</i> and <i>Lathridius</i> and <i>Monotoma</i> may suggest settlement waste.	moderate	one third of a day

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