

Marches Archaeology

The Arts Centre

**Bird Street
Lichfield
Staffordshire**

**Report on an
evaluation excavation**

May 1999

Marches Archaeology Series 066

Archaeological Consultants and Contractors

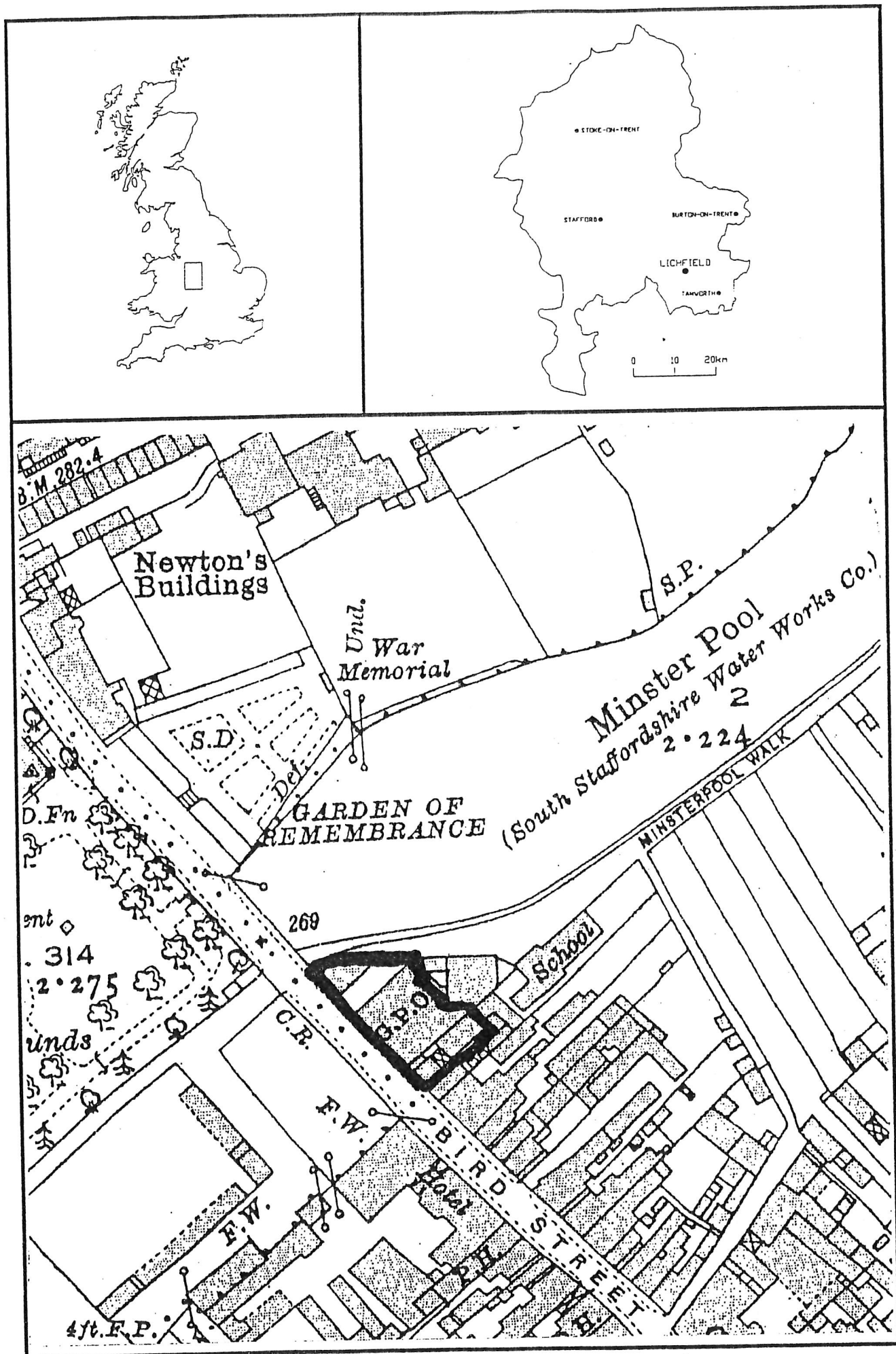


Fig. 1 Location of the site (1923 Ordnance Survey map)

**A report on an evaluation excavation at
The Arts Centre
Bird Street
Lichfield**

NGR: SK 115 096

Report by
Richard Stone

with contributions by
Stephanie Rátkai, Ian Baxter, Lynne Bevan,
Liz Pearson and Phil Parkes

Contents

List of illustrations and tables

Summary

- 1 Introduction
- 2 Scope of the project
- 3 Geological and topographic background
- 4 Archaeological and historical background
- 5 Description of the trenches
 - 5.1 Trench 1
 - 5.2 Trench 2
 - 5.3 Trench 3
- 6 Finds
 - 6.1 Pottery *Stephanie Rátkai* (Freelance)
 - 6.2 Animal Bone *Ian L. Baxter* (Freelance)
 - 6.3 Leather *Lynne Bevan* (Birmingham University Field Archaeology Unit)
 - 6.4 Environmental remains *Liz Pearson* (Worcestershire Archaeological Service)
 - 6.5 The metalwork by *Phil Parkes* (Cardiff University)
 - 6.6 Other material
- 7 Discussion
- 8 Conclusions
- 9 Bibliography
- 10 Site matrix
- Appendix 1 List of contexts
- Appendix 2 List of finds
- Appendix 3 Material discarded
- Appendix 4 Plant remains

April 1999

Marches Archaeology Series 066

List of illustrations and tables

Illustrations

- Fig. 1 Location of the site
- Fig. 2 Location of the trenches
- Fig. 3 Detail of Speed's map of Lichfield, 1610
- Fig. 4 Detail of Snape's map of Lichfield, 1781
- Fig. 5 Tithe map, 1848
- Fig. 6 Detail of Crompton's map, 1862
- Fig. 7 Ordnance Survey 1st edition, 1882
- Fig. 8 Ordnance Survey 2nd edition, 1902
- Fig. 9 Ordnance Survey 3rd edition, 1923
- Fig. 10 West section of Trench 1
- Fig. 11 Plan of Trench 1 - earliest brick structures
- Fig. 12 Plan of Trench 1 - second brick structures
- Fig. 13 Plan of Trench 1 - latest brick structures
- Fig. 14 North section of Trench 2
- Fig. 15 Lower part of east section of Trench 2
- Fig. 16 West section of trench 3

Tables

- 1 Pottery types
- 2 Pottery spot dating by context
- 3 List of environmental samples
- 4 List of metalwork

A report on an evaluation excavation at
The Arts Centre
Bird Street
Lichfield
Staffordshire

Summary

An evaluation excavation consisting of 3 3m² trenches was carried out in The Arts Centre, Bird Street, Lichfield prior to consideration of a planning application.

Evidence was found for use of a twelfth century land surface, followed by the flooding of the area, which is interpreted as part of the creation or enlargement of Minster Pool when Lichfield new town was laid out in the mid-twelfth century.

From the late medieval period the land was gradually reclaimed and there is ample evidence of dumping of material including debris from ironworking, leather-working, butchery, industrial use of bone and perhaps of pottery manufacture as well as the dumping of household refuse.

Part of the site was raised in the mid-seventeenth century, perhaps associated with the Civil War. Several phases of brick buildings of eighteenth and nineteenth century date were present, which are not shown on historic maps.

The remains are considered to be of regional importance and will be in large part destroyed by the proposed development.

1 Introduction

A planning application has been submitted by Lichfield District Council to the local planning authority for permission to demolish the existing Arts centre and erect a new building, to include a basement (ref. 99/00108/FUL). The site lies on the eastern side of Bird Street, directly south of Minster Pool (NGR: SK 115 096) (Fig. 1).

In March 1999 Marches Archaeology carried out and reported on a pre-evaluation assessment based on engineers' site investigation works (Wainwright and Stone, 1999).

The Local Planning Authority's Archaeological Advisor subsequently advised the applicant that further information is required before the archaeological implications of the application can be adequately assessed and has recommended that an archaeological field evaluation be carried out to provide this information.

The Local Planning Authority's Archaeology Advisor produced a 'Standard Brief and Specification for an archaeological evaluation'. The Head of Leisure Services of Lichfield District Council commissioned Marches Archaeology to provide the archaeological services detailed in the Brief, in accordance with a project proposal produced by Marches Archaeology and approved by the Local Planning Authority's Archaeology Advisor.

2 Scope of the project

The evaluation consisted of the excavation of three trenches each 3m long and 3m wide (Fig. 2). Sufficient excavation was carried out to determine the level at which significant archaeological deposits survive. In trenches 1 and 2 smaller areas were excavated to the base of archaeological deposits to test the nature of the stratification. In trench 3 this deeper excavation was impractical due to the presence of modern services.

The Brief stated that 'the purpose of the evaluation is to define the character and extent of the archaeological remains that exist in the area under consideration, and to facilitate discussions regarding the need for preservation or other mitigation measures in any future potential development'.

An archaeological evaluation 'aims to locate archaeological deposits or remains and determine their extent, state of preservation, date, type, vulnerability, documentation, quality of setting and amenity value. This is for the purpose of establishing their significance and enables appropriate decisions to be made on the conservation of these deposits' (Institute of Field Archaeologists Standard and Guidance for Archaeological Field Evaluations).

The objectives of this evaluation, based on the above stated aims, were:

- to determine the likelihood of survival of deposits earlier than the medieval period
- to provide information about the nature of the landscape from the prehistoric period to the present
- to provide information about the medieval origins of the use of the site
- to provide information about the later development of the site
- to assess the environmental potential of the site
- to assess the presence of any craft or industrial activity

3 Geological and topographic background

The medieval core of Lichfield lies on Keuper Sandstone at a height of 81m to 86m above Ordnance Datum (VCH, 1990, 1). The ground slopes down to the south from the cathedral, which is close to the highest point at the north. By the northern end of Bird Street the ground level is approximately 82m.

At least two geotechnical surveys have been carried out at The Arts Centre. These have provided information about the ground conditions (Bolsover, 1992; Martin, 1999). They consistently indicate the presence of deep organic deposits above the natural geological formations. The cursory nature of the archaeological recording of recent observation pits did not explain whether the waterlogging was a natural marsh, a stream course or an impounded pool (Martin 1999; Wainwright and Stone 1999).

The limits of the waterlogging have not been identified by these geotechnical reports, though there has been some suggestion that to the west (near the Bird Street frontage) the natural deposits are much higher (Martin 1999; Wainwright and Stone 1999).

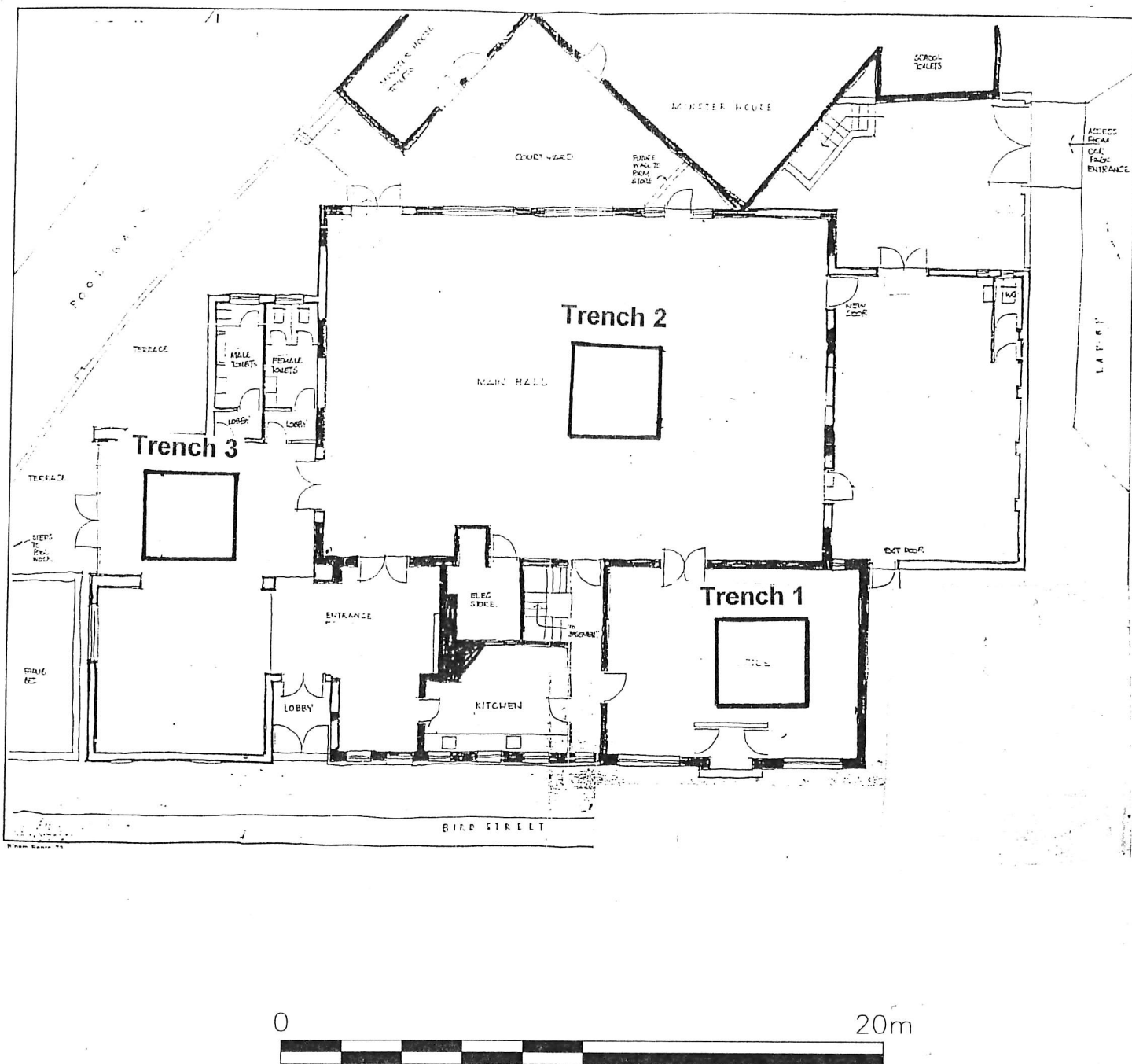


Fig. 2 Location of the trenches

The nature of the ground conditions earlier than the medieval period is unclear, though it has generally been considered that the low-lying site would have been unfavourable for occupation. Certainly, visitors to Lichfield in the seventeenth and eighteenth centuries, noted that the town was generally wet and unappealing. Celia Fiennes, in 1697, wrote that it stands 'low and waterish' and that there is 'a great standing water ... just by the town [presumably either Minster or Stowe Pool] which does often flow the grounds after rains' (Morris, 1949, 111-4). Horace Walpole (VCH, 1990, 3), who visited in 1743, was more disparaging:

the bog in which the cathedral stands stagnates, I believe, midst beds of poppies and makes all its inhabitants as sleepy as its bishops and canons'

This contrasts strongly with Samuel Johnson's eulogising of his home town (VCH, 1990, 1).

Excavations to the north of Minster Pool have revealed three successive pond beds, one dated to 'the first millennium', and two to the eleventh to thirteenth centuries (Carver, 1982, 37-8 and Figs. 2, 3 and 6). All were approximately 21-22m north of the present bank and approximately on the line of the parish boundary shown on Snape's map of Lichfield of 1781. The possibility existed for a similar situation to the south of Minster Pool.

4 Archaeological and historical background

South-east Staffordshire is an area rich in prehistoric remains but the area of Lichfield itself has so far revealed only small amounts of evidence for occupation at this time (Hodder, 1982). In the southern part of Lichfield, at St Michael's church (SK 124 095) excavation has revealed five mesolithic flints. Between the cathedral and Minster Pool the remains of a Neolithic occupation site have been found (Carver, 1982b, 37). However, there is scant evidence for settlement in the later prehistoric period.

Similarly, the Roman period has failed to yield substantive evidence of occupation. The proximity of Lichfield to the Roman settlement of Wall (*Letocetum*) has led to stray Roman material being found in Lichfield but only one apparently Roman burial in Beacon Street (found in 1802) and another below the cathedral (found in 1751) give any suggestion of occupation of the area (Harwood, 1802; Carver, 1982a,6). Material excavated in the eighteenth and nineteenth century was not rigorously recorded and there remains uncertainty about the interpretation of these burials. Nonetheless, Bassett has suggested that the medieval settlement originated with a Roman or sub-Roman religious structure as its focus (Bassett, 1982, 98).

In *circa* 670 Bishop Chad founded his episcopal seat at '*lyccidfelth*' Lichfield (Bede, 1968) and a cathedral was built there *circa* 700 by a later bishop, Headda. The settlement associated with this cathedral is believed to have been quite small and centred around the cathedral itself (Studd, 1982, 31). However, Lichfield became an important pilgrimage site to St. Chad during this period and it has been argued that "it seems inconceivable that this scale of activity produced no more than a scattered hamlet about the pre-Norman cathedral" (Slater, 1986, 13-14).

It is not known when Minster Pool was created, or indeed how. Carver argued for a 12th century origin for the pool as part of the layout of the new town (Carver, 1982b, 38). Bassett,

who wrote a detailed article on the topography of Lichfield, was surprisingly non-committal on its origins (Bassett, 1982). Slater, who wrote an article which was effectively a rebuttal of Bassett's work, believes that both it and Stowe Pool existed by 1086 and are possibly 'much older still' as the Domesday Book refers to two mills in the principal manor of Lichfield (Slater, 1985, 15). He continues: 'That is not to say that the pools were of their full, late medieval extent, since the dams may well have been heightened subsequent to their first construction and the pools thereby extended'.

There is also some debate as to the origin of Bird Street. Bassett contends that the road was laid out during the mid twelfth century development of the new town (Bassett, 1982, 104). Later, Bishop Walter Langton (1296-1321) built a stone causeway across the western end of Minster Pool and Bassett suggests that the extension of Bird Street to the north (as Beacon Street) and south (as St John's Street) to this time (*op. cit.* 108). Prior to this the crossing for Minster Pool would have been at its eastern end, on Dam Street. He does, however, accept that there may also have been an earlier crossing at the western end (*ibid.*). Slater, on the other hand, believes that the north-south road which forms St John Street, Bird Street and Beacon Street pre-dated the mid twelfth century development (Slater, 1985, 23). He asserts that the road would have been interrupted by the creation of Minster Pool and that a ferry crossing was set up to replace it. The ferry continued even after 1310 when a causeway was erected adjacent to the site at the northern end of Bird Street, which was the main north-south route (Gould, 1976, 10).

Slater proposed that burgage plots grew up either side of the northern end of Bird Street and that they were in existence before the new town was planned in the 12th century (Slater, 1986, 24). The area of the site may represent one of these burgage plots fronting onto Bird Street or may have been within Minster Pool.

Whatever the origins of the layout, it is likely that the area remained little changed throughout the medieval period. The site may well have been of strategic importance during the Civil War in the mid seventeenth century. The Close was besieged on three occasions and the crossings of Minster Pool on Bird Street and Dam would surely have been significant tactical positions.

Nothing is known from historical evidence of the land use of the area of the proposed development before the seventeenth century. Speed's map of 1610 shows the causeway across Minster Pool with the whole of the Bird Street frontage directly beyond it built up (Fig. 3). Cock Lane is shown and the pool itself appears roughly rectangular. Snape's map of 1781 is much less schematic (Fig. 4). This shows the site as open ground, with Minster House to the east and with an irregular shape to Minster Pool. This map evidence therefore suggests that Minster Pool was narrowed at some time between 1610 and 1781. This evidence is supported by an anonymous account of Lichfield's water courses and features, which claims that the south bank lay 'immediately opposite the Swan Inn' (Anon, 1840, 10). This account also refers to a 'more than ordinary cleansing' by 1693 and again in 1730 (*op. cit.* 11-12). The same author, whose reliability is uncertain, states that the 'upper [i.e. western] corners' were not cleaned and that the silting up led to land being reclaimed:

'Now on the south side the "land waste" was - from strictly natural causes - more than twice as large [as at the north] ...; but of so little worth was it considered, as not adjoining valuable property, that it was, for some time,

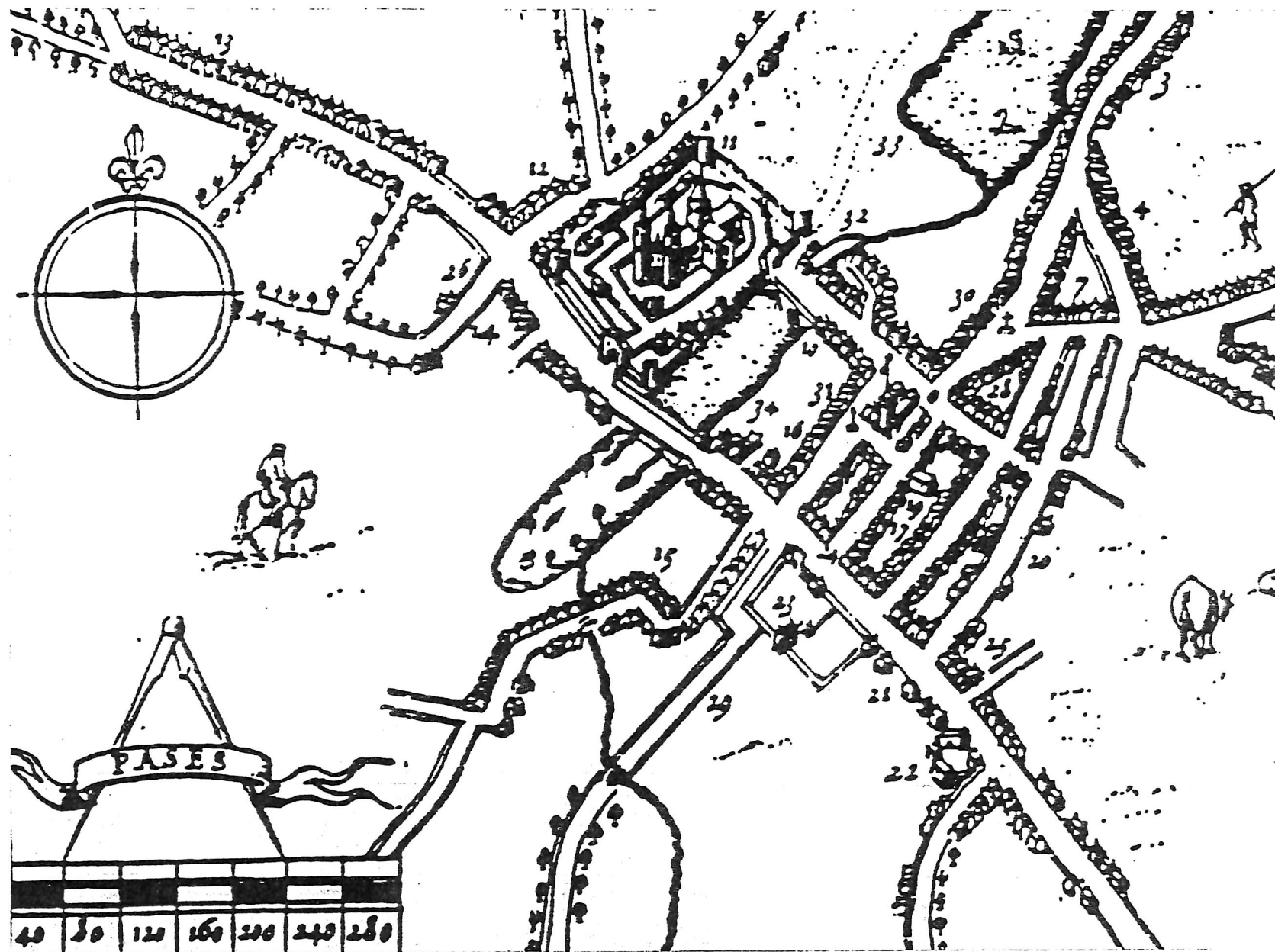


Fig. 3 Detail of Speed's map of Lichfield, 1610

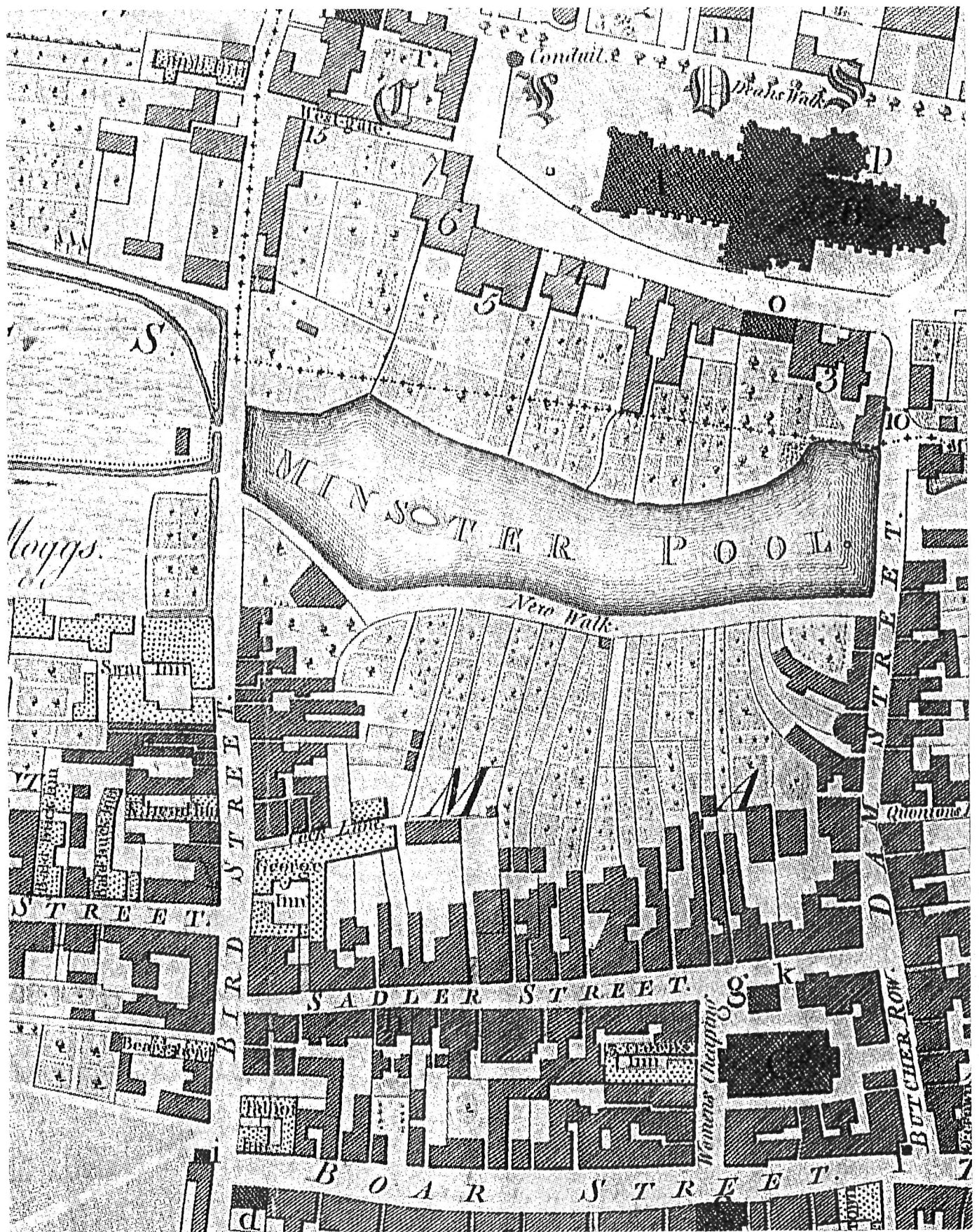


Fig. 4 Detail of Snape's map of Lichfield, 1781

allowed to remain an unenclosed space; since it is noticed that certain hawkers then held stalls there, for the purpose of avoiding the pickage - or toll for breaking up ground - levied on standings in the Market place' (*op. cit.* 12).

The accompanying drawings show the pool in 1670, 1770 and 1773. These have the appearance of accuracy, but this may be spurious. If they are to be believed then the site of the Arts Centre was reclaimed by 1770, but the land boundaries only formalised when a further cleaning of the pool was carried out in 1773 (*op. cit.* 15). In 1816 a new bridge was built, replacing the medieval crossing and more cleaning was needed (*op. cit.* 16).

Later maps show the area as open ground (Figs. 5 - 9) until early this century when the General Post Office was built, which is the building which later became the Arts Centre.

Previous archaeological observations in Minster Pool and its vicinity have revealed waterlogged deposits, which have included remains such as a Saxon spiral-headed pin (during draining in 1857), pottery, leather, wood and horn cores (Carver, 1982a, 5-7 [Catalogue 1.1, 1.7, 1.18, 4.1, 5.2, 5.11]). Investigations to the north of the present extent of the Minster Pool recorded the top of the early medieval pool bed at a depth of approximately 79.3m O.D. with the top of the post-Conquest pool bed at a depth of approximately 79.7m O.D. (Carver, 1982b, Figs. 3 and 6, between pages 60 and 61). The top level of Minster Pool at the time of these observations was 80.12m O.D. Carver concluded that "it seems likely that the strip to the south side of the Minster Pool, complementary to that to the north, will play an important part in the future successes of archaeology" (*op. cit.*, 4).

5 Description of the evaluation excavation

A list of contexts with the provisional interpretation is given as Appendix 1.

5.1 Trench 1

Medieval

The natural sands [69] were overlain by a layer of waterlogged brown material rich in plant remains [68] (Fig. 10). This is thought to possibly represent a former land surface and a sample {6} was taken from this. It was overlain by a layer of waterlogged grey silt [67] which also contained plant material and small twigs. Above this was a more mixed layer of light grey sand and dark grey brown sandy silt [66]. Again, this was waterlogged and contained organic material, including small fragments of wood. A further waterlogged layer was above this, consisting of a dark grey plastic sandy silt [65]. As well as plant fibres and wood fragments, small pieces of oyster shell were present, together with occasional pebbles and a large amount of iron slag.

A change occurred above this, with a layer [63] containing much bone and leather, and a small amount of iron slag. This presumably dumped material formed an interface between the waterlogged layers and a further dump above [62] which comprised reddish brown sand and patches of grey brown silt. Within this were areas of burnt clay and further large amounts of iron slag. Another layer rich in ironworking debris overlay this [56]. This consisted of a

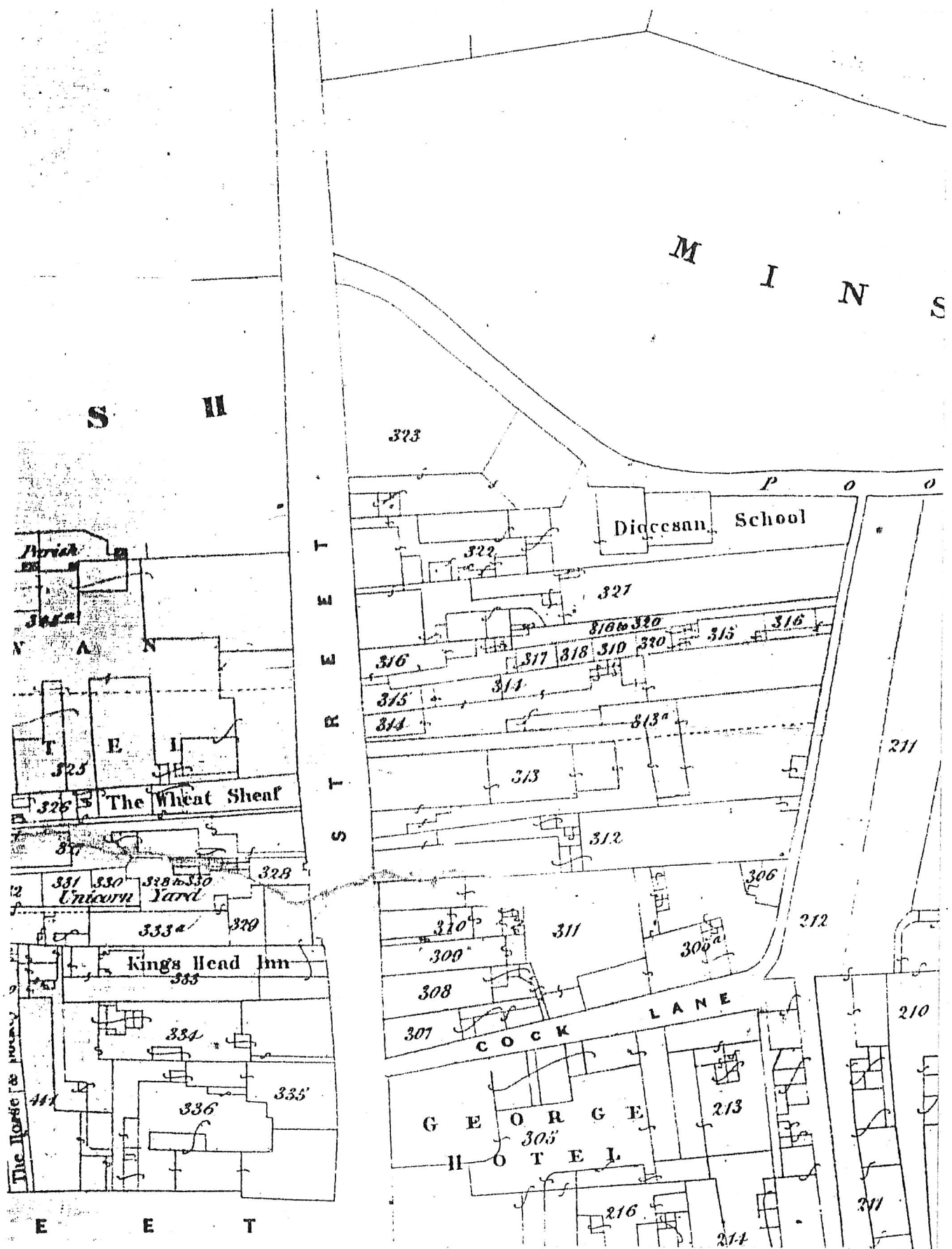


Fig. 5 Tithe map, 1848



Fig. 6 Detail of Crompton's map, 1862

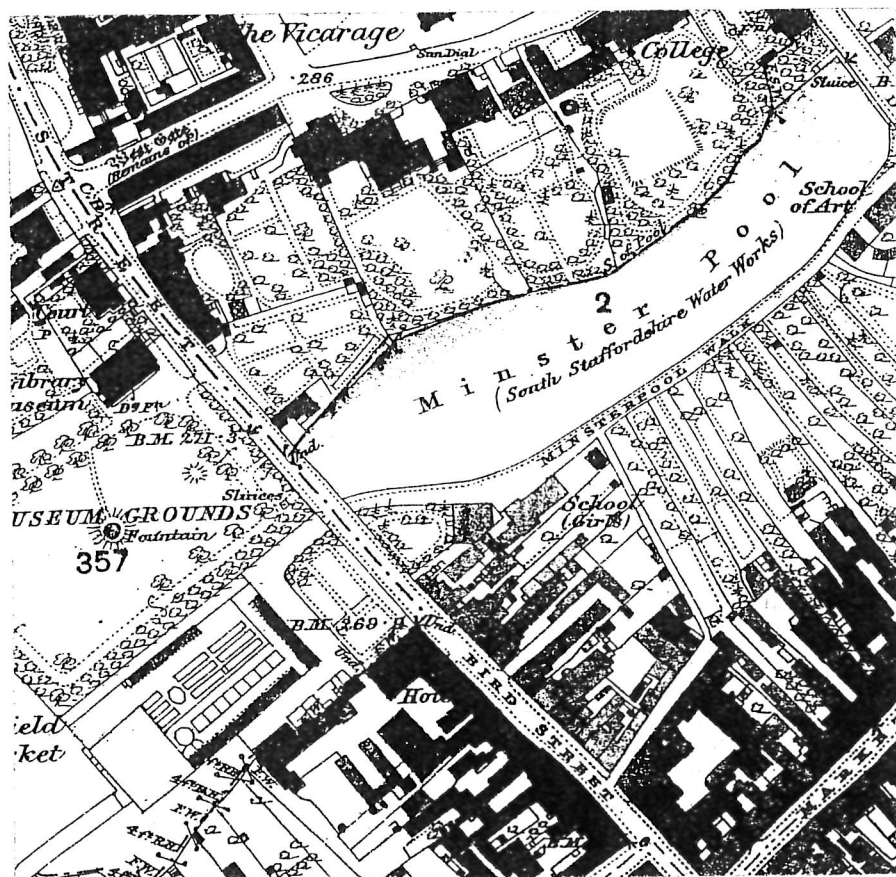


Fig. 7 Ordnance Survey 1st edition, 1882

slightly silty sand, varying in colour from light yellow brown to dark reddish brown. Within it were patches of burning, coal fragments and sandstone fragments.

Post-medieval

A change in land use then occurred, with a layer of humic soil [49] sealing the ironworking deposits. This was itself sealed by a series of layers of dumped material. In general these had a matrix of silty sand containing varying amounts of brick and tile [46, 45, 44, 43, 40]. These raised the ground level by a total of approximately one metre.

A brick structure [35, 36] was built over the top of these dumps (Fig. 11). Wall 36 was 1½ bricks thick and wall 35 was a full 2 bricks thick. A mortar spread [23] was associated with the construction of this and was overlain by a spread of plaster [38]. This suggested that the structure was internally plastered, and was probably therefore a dwelling rather than an outbuilding. This building had been much truncated by later activity and as the evaluation trench was small it is not possible to determine the plan of this structure.

At the south of the trench the northern side of a brick plinth (or similar) was seen [34]. This was probably contemporary with the building represented by walls 35 and 36, but no physical relation was found between them. A layer of mortar and sand make up [30] across the open area of the trench was sealed by a silty sand with flecks of mortar [28]. This may have been a levelling layer for a floor. Its southern side was cut by a construction trench [21] for a further brick structure, represented by walls [20] which perpetuated the line of the earlier building, on which it was founded (Fig. 12). The bricks of this structure were 240 x 110 x 60mm as opposed to the 240 x 120 x 70mm of the earlier building. This later structure had a floor [19] of thin bricks (230 x 120 x 40mm) at the north of the trench, laid on a levelling layer of silty sand and building debris [22]. It is conceivable that the structures 35/36 and 19/20 are in fact contemporary but this is thought unlikely.

A thick deposit of concreted mortar [18] overlay the brick floor, signalling its disuse and presuming some need for mortar in the vicinity. A further layer of building debris [17] overlay this, suggesting further construction or demolition nearby.

A water main [10/11] and a lead feed to an individual property [8/9] were cut through these layers. The individual feed passed under a new brick structure [2] which was founded on a single course large sandstone blocks and had a brick floor (Fig. 13). The construction trench [7] for this structure truncated the earlier brick floor [19] and was backfilled with loose silty sand and building debris [12]. At the south-east of the trench the brick structure continued deeper, apparently as a sump [6], though it is possible that originally it may have been a storage area (perhaps part of a cellar). A drain fed into this and it had been infilled with rubble and household debris [5]. In the north-eastern corner of the trench was a cobbled surface [4]. This is presumed to be an outside area.

These deposits were sealed by a layer of building rubble [3] which probably derives at least in part from the demolition of the latest brick structures in the area. This was covered by a layer of hardcore and concrete [1] which forms the present ground surface.

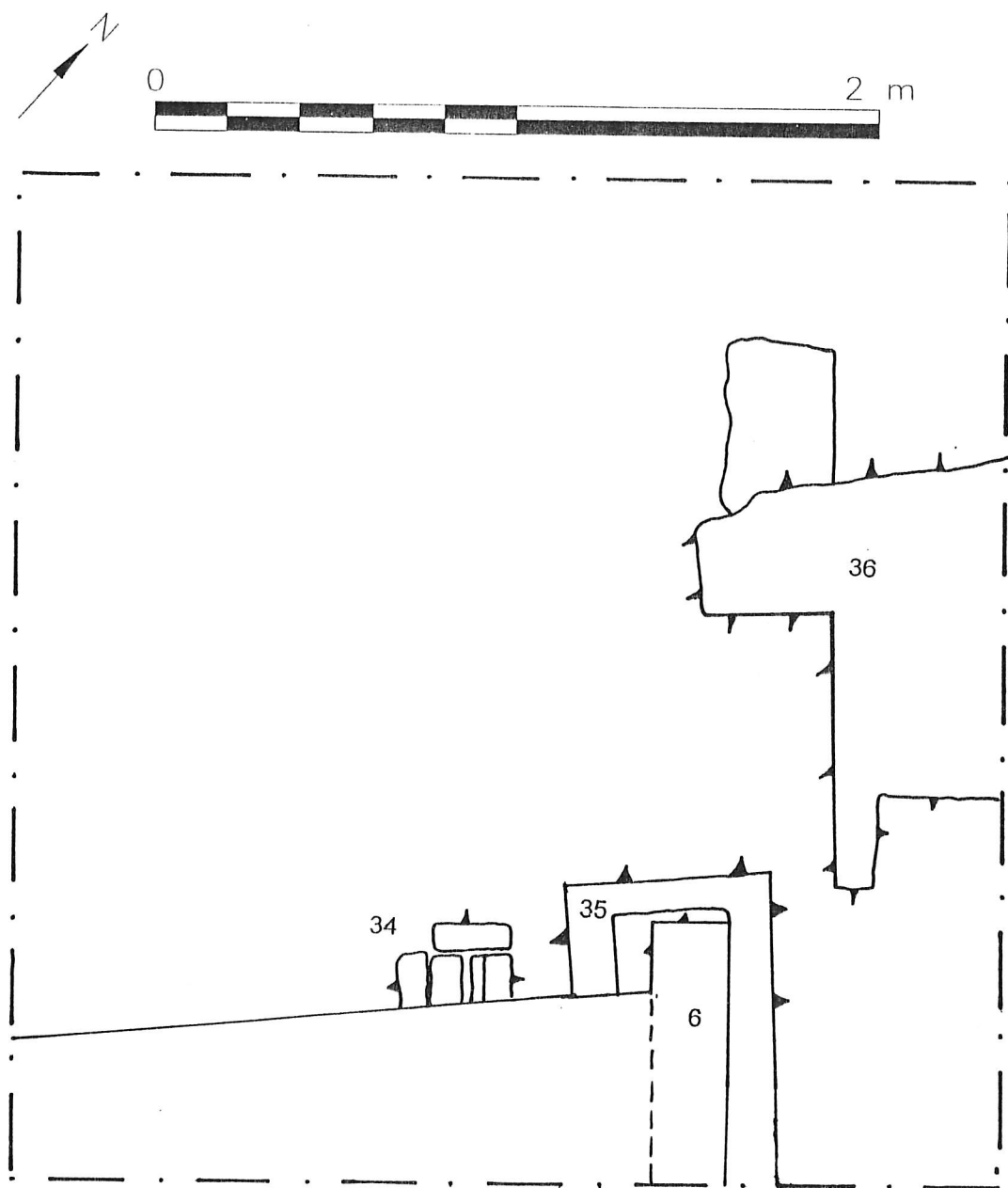


Fig. 11 Plan of Trench 1 - earliest brick structures

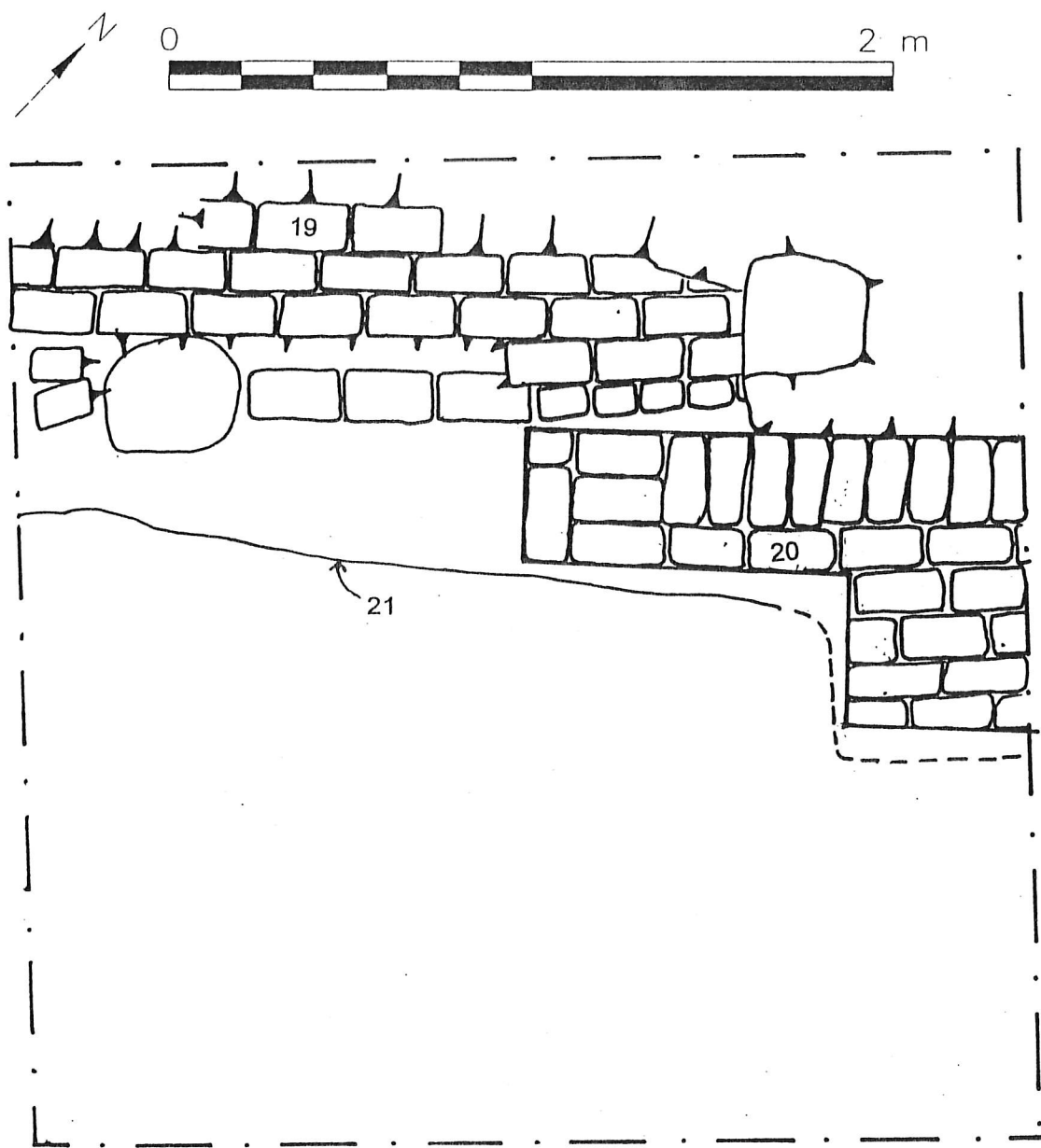


Fig. 12 Plan of Trench 1 - second brick structures

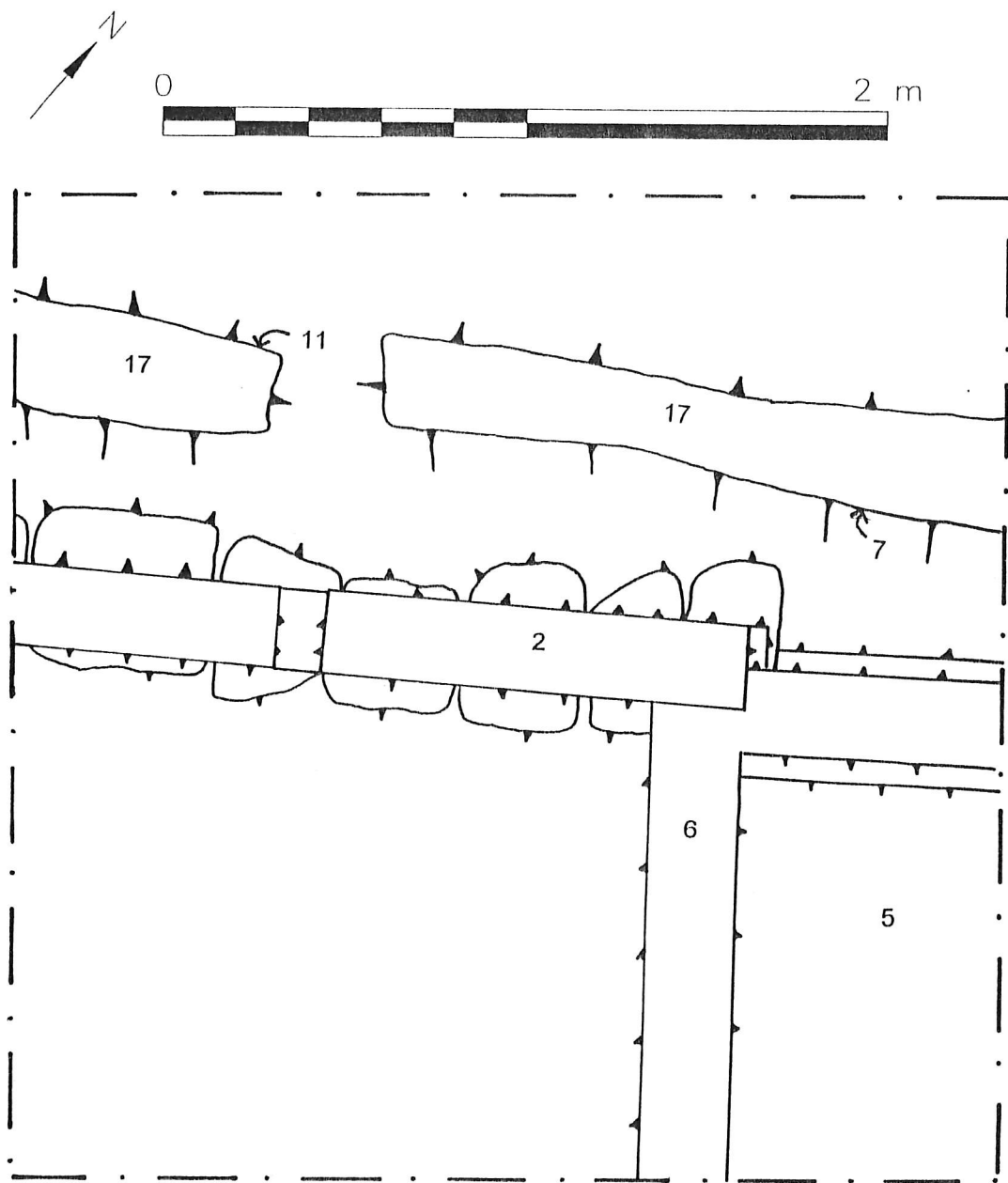


Fig. 13 Plan of Trench 1 - latest brick structures

5.2 Trench 2

Medieval

The natural sands and gravels [64] were tested for a depth of 0.2m. After a depth of 0.1m the water table was reached and further testing was abandoned. These deposits were overlain by a waterlogged medium coarse grey sandy silt [59] containing occasional rounded pebbles and twigs/roots (Fig. 14). This is thought to be a former land surface and a sample {4} was taken from this as well as from the natural sand {5}. A shallow sub-circular flat-bottomed pit [60] was dug through this (Fig. 15). A series of pieces of wood with cut marks were found around the edge of the pit. They were not standing but the cut marks give the impression of roughly sharpened ends, as though for stakes. The pit was filled with waterlogged dark grey brown sand/silt [61] which also extended all over the trench [70]. This may represent an initial flooding of the area. A sample {3} of the pit fill was taken.

The layers which accumulated above this consisted of a series of waterlogged grey silts which were hard to differentiate and were dug as spits [58, 57, 55, 54, 51, 50, 48]. The upper spits included occasional fragments of ceramic roof tile, which were absent from the lower spits which, conversely, included occasional cobbles. Throughout there were fragments of plant material and occasional pieces of oyster shell. Fragments of coal were also found down to all but the bottom spit. Samples were taken from the top {1} and bottom {2} spits.

At the top of the waterlogging was a mottled layer [47] which was the interface between the waterlogged layers and later deposits.

The first of these later deposits was an accumulation of reddish brown sandy silt [41] with 20% broken roof tiles. A light grey clay silt [39] covered this. A layer of building debris in soil [37] and a further soil with brick and tile debris at the top [16] sealed these deposits. Further dumps of brick rubble [42] and mortar [15] then accumulated and a final dark brown humic loam [14] capped this accumulation before the building debris was laid which forms the hard core for the concrete [13] which forms the present ground surface.

5.3 Trench 3

Medieval

The earliest deposit exposed was the top of waterlogged silts [53], which was not excavated. Above this was a thin band of grey sand [52], possibly water laid (Fig. 16).

Post-medieval

A light grey brown sandy silt [31] overlay this and was cut by an irregular pit which continued south beyond the area excavated. It was filled by a charcoal rich brown silty soil [32]. A similar soil [29], with less charcoal, sealed this to a depth of 0.4m and was succeeded by a dark grey brown humic loam [27]. This was cut by service trenches associated with the present building on the site, together with their backfills [26]. A concrete yard surface [25] sealed this and was later superseded by a layer of hardcore on which a reinforced concrete surface was laid.

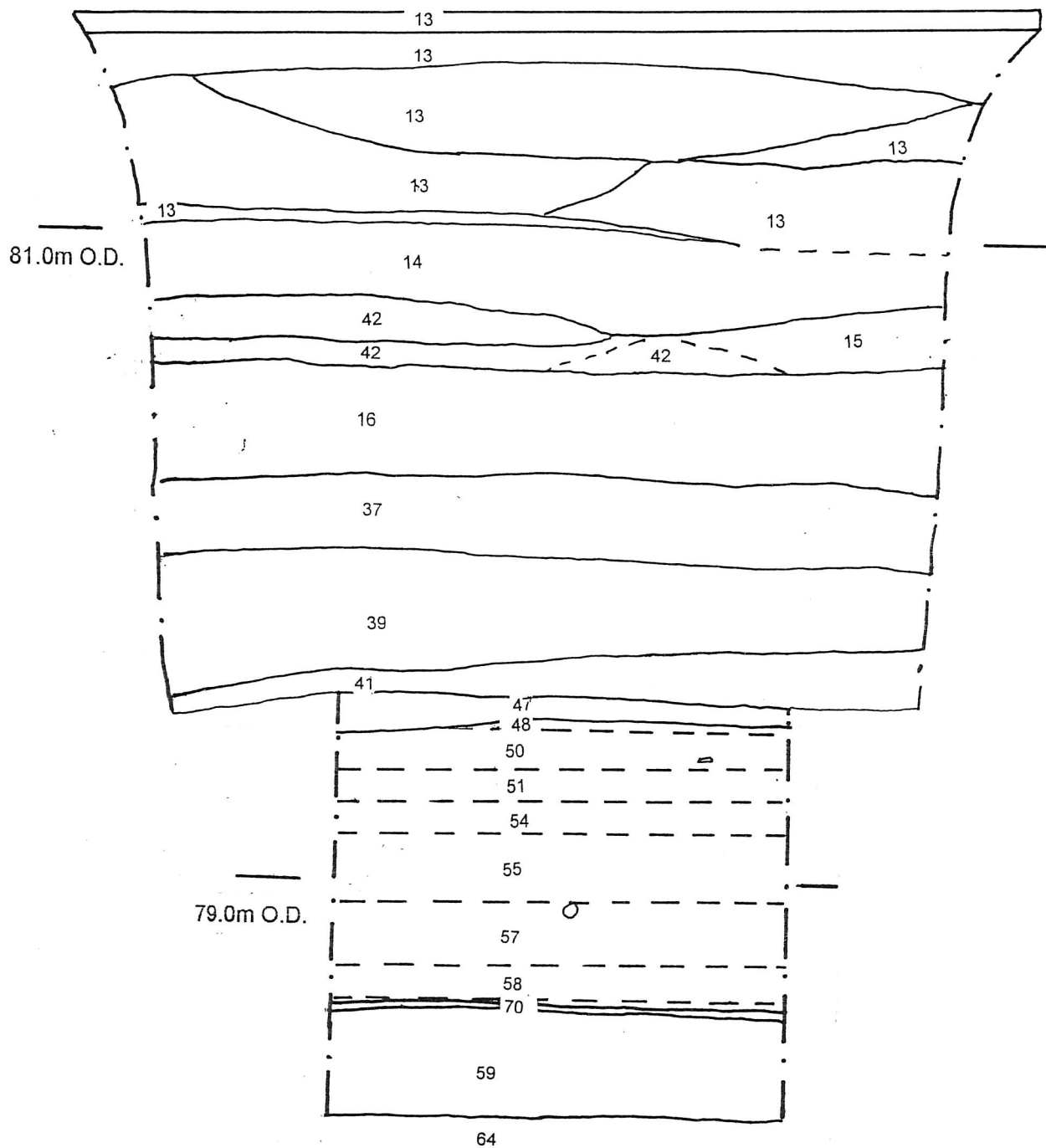


Fig. 14 North section of Trench 2

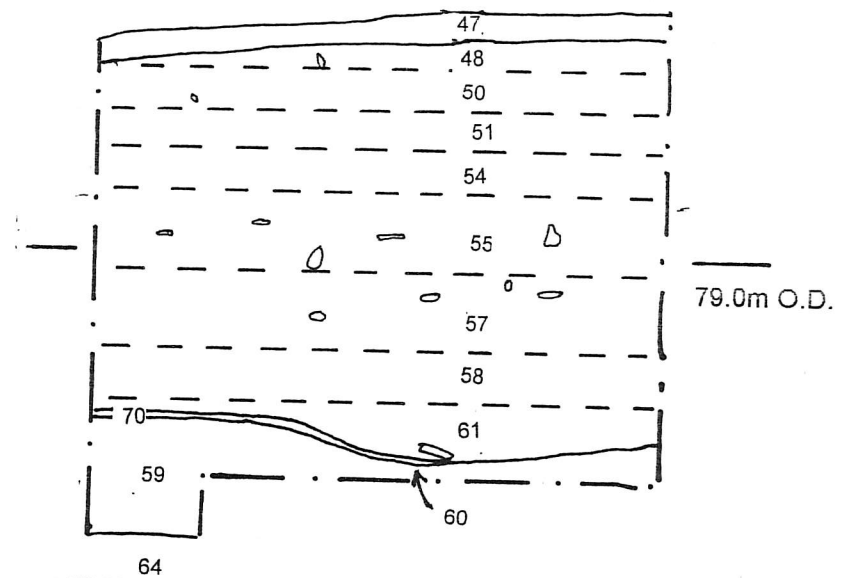
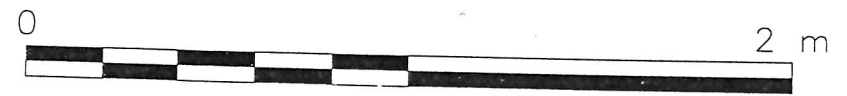


Fig. 15 Lower part of east section of Trench 2

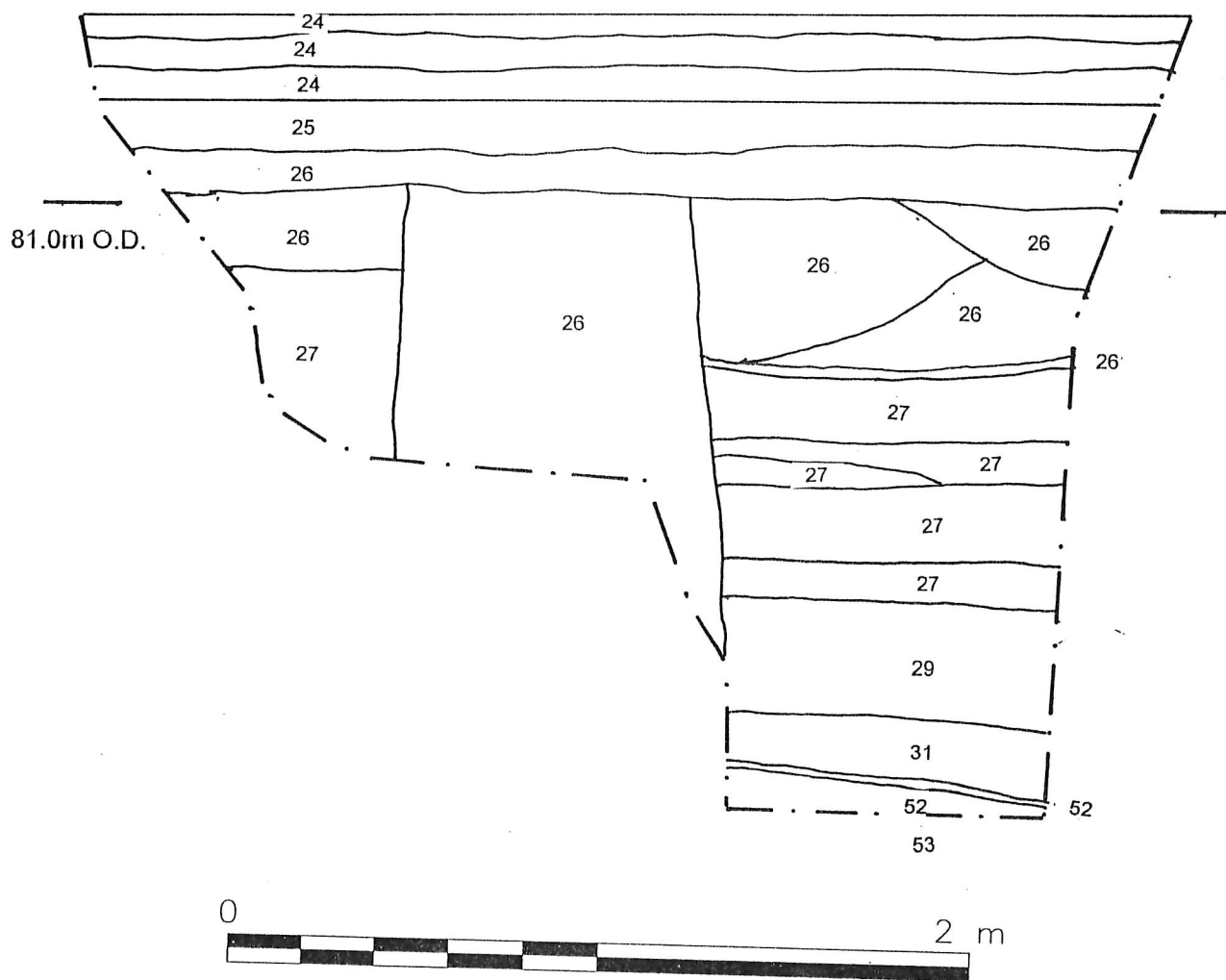


Fig. 16 West section of trench 3

6 Finds

A summary of the finds is given as Appendix 2. Material discarded is catalogued in Appendix 3.

Note: specialists were provided with a site summary. At this time it was thought that the waterlogged deposits in Trench 2 continued until the eighteenth century. Any references to material from contexts 47, 48, 50 and 51 as post-medieval should be revised to the medieval period.

6.1 Pottery by Stephanie Rátkai

The medieval and early post-medieval pottery was examined macroscopically and divided into broad fabric groups following Ford (1995). The pottery was quantified by sherd count and by minimum number of rims present. Diagnostic sherds were sketched. The later post-medieval and modern pottery i.e. eighteenth to twentieth centuries, was quantified by sherd count only, under the general heading of “modern glazed wares” (code MGW) or coarseware (code CW).

Fabric	Date	Sherd count	Rim count
Reduced sandy cooking pot	?12th c	1	1
Iron-rich table ware	13th-14th c	1	
Iron-rich utilitarian sandy wares	12th-14th c	1	1
Midlands white wares	13th-14th c	23	
Hard-fired buff ware	14th-15th c	7	
Late medieval oxidised wares	15th-16th c	28	5
Proto-Midlands purple	15th c	9	1
Midlands purple	15th-16th c	9	2
Late redware/coarseware	16th c	1	
Cistercian ware	late15th-m16th c	4	1
Cistercian/late red ware	late 15th-16th c	2	
Blackwares	mid16th-e18th c	38	5
Yellow ware	late16th-e18th c	8	3
Coarsewares	?mid16th-18th c	74	12
German stoneware	17th c	4	
Slipwares	mid17th-e18th c	12	5
Manganese mottled ware	later17th-e18th c	14	
Tin glazed earthenware	18th c	2	
Modern glazed wares	mid18th-20th c	76	
<i>Total</i>		<i>313</i>	<i>36</i>

Table 1 - Pottery types

6.1.1 *The Pottery*

In total there were 313 sherds, representing a minimum of 36 medieval or early post-medieval vessels. The pottery was in good condition, with little sign of abrasion. There was also, surprisingly, no sign of waterlogging e.g. metallic lustre to glazes, deposits of vivianite etc., on any of the sherds of any period.

Medieval pottery (12th-14th centuries)

There was little diagnostic material among the medieval sherds. There were two grey reduced rim sherds: one residual from (39) of thirteenth - fourteenth century date, the other from (59). The latter was in a well made sandy fabric and was heavily sooted. The rim was a simple everted type with a slightly expanded terminal and may be twelfth century in date.

There were no white ware rim sherds. There were, however, two handles, one a deep strap handle with a central scored groove along its length, the other a rod handle with a deep central scored groove. The latter was heavily sooted, particularly on the underside of the handle. The top of the handle had originally been attached to the vessel by a clay "dowel" projecting from the handle into the body of the pot. Both handles were unglazed. Two base sherds were present. The first was from a baluster jug with shallow vertical grooves running from the lower part of the vessel to the base. The second base sherd was unglazed with a stubby projection at the base similar to Ford (1995) Fig 18, 135. Most of the white ware sherds were glazed which suggests that they were primarily from jugs and bowls. The hard fired buff ware, a fabric which has also been found at Sandford Street, Lichfield, contained the lower half of a squat jug. The exterior of the jug had two large patches of brownish material adhering to its surface. The jug was poorly made, the base particularly so, with deep gouges on the exterior and cracking on the inside. It is possible that this jug was a waster or it may have been sold as a second. However, the small piece of ceramic and slag debris found unstratified nearby (ALC99A) may also hint at pottery production in Lichfield, although not necessarily in the immediate area.

Late medieval/early post medieval pottery. (15th-16th centuries)

The pottery in this group consisted of late medieval oxidised wares (Ford's late medieval orange ware), proto-Midlands purple ware, Midlands purple ware and Cistercian ware. A limited range of forms was identified, all mainly storage vessels e.g. jars/cisterns or jugs. The late medieval oxidised wares were often heavily sooted (see below, Trench 1). In this fabric group there were, in addition, two bowl rim sherds and a lid. Table wares were represented by Cistercian ware cups and a late medieval oxidised ware chafing dish, with a red fabric and toffee coloured glaze. There were two rims in Midland purple ware. One was from a burnt lid seated jar, the other was from an unglazed jar with a pronounced internal projection at the junction of rim and body, with a smaller external bead or ridge at shoulder height. This latter vessel may possibly have served some "industrial" purpose.

Early post-medieval pottery (later 16th - late 17th/early 18th centuries)

The pottery in this group was made up of coarseware, blackware, yellow ware, German stoneware, slipwares and manganese mottled ware. Hollow wares were found in the coarsewares, blackwares and manganese mottled ware. The yellow ware consisted mainly of

flat ware vessels e.g. dishes or platters. All the yellow ware sherds had a pink fabric overlain with a white slip. The slipware vessels were made up of dishes or bowls. The dominant slipware was that with light-on-dark trailed decoration and looked, for the most part, to be a Staffordshire product. The German stoneware consisted of the base of a drinking jug and a face mask from a Bartmann jug.

6.1.2 *Chronology*

Trench 1

The deposits within the waterlogging, (56), (62) and (63) appeared to be of fourteenth to sixteenth century date. The lowest of these deposits (63) contained Midlands white ware and hard-fired buff ware and could therefore be dated to the fourteenth - fifteenth centuries. The two deposits above this contained Midlands Purple ware and this therefore dates to the fifteenth century at the earliest. There was some residual white ware in these two deposits, the remainder of the pottery being made up of red sandy ware which belongs to the late medieval oxidised ware group. These latest waterlogged deposits would therefore seem to date to the fifteenth or sixteenth centuries. All three of these deposits contained vessels with very heavy sooting. There was one lid seated vessel, two bowls and a lid from (56). All were heavily sooted and it may be significant that the context contained a lid, never a very common medieval find, and a lid seated jar.

Above (56) was a layer of soil (49). The presence of blackware and yellow ware in this layer suggested a 17th century date, probably the first half of that century. There was some residual pottery and a cross-joining sherd from (56).

Over (49) were a series of dump layers, (40), (43), (44), (45) and (46). These were all very similar in character, containing a mixture of coarsewares, blackwares, yellow wares, trailed slipwares and German stoneware. The vessel forms and proportion of the various wares were very similar to Civil War destruction deposits from Dudley Castle and it therefore seems likely that this phase of dumping dates to the Civil War.

There is some late sixteenth - seventeenth century pottery associated with (28) and (22), presumably disturbed when building work was in progress. After this point most of the pottery is of nineteenth century date although there is a small quantity of residual later eighteenth century pottery.

Trench 2

A single sooted rim sherd was found in a layer (59) which pre-dated the construction of the pool. The rim sherd was in a fine grey sandy ware. The rim form was simple, being everted and slightly expanded at the end and could date to the twelfth century. Closely dated early medieval contexts are infrequent in the county. In this case it seems most likely that the layer and the rim sherd are of twelfth century date.

At the bottom of the waterlogging (57) were five red painted white ware sherds from the same vessel, dating to the thirteenth - fourteenth centuries. Above (57) were several layers containing pottery of the fifteenth to seventeenth century. The most striking find from these layers was a sixteenth century chafing dish from (50). Context (39), which lay above them,

contained, amongst other pottery, two coarseware jars which can be paralleled by jars of Civil War date from Dudley Castle (Ratkai 1987). The remainder of the pottery from this context agrees with this date. Some late seventeenth century pottery was recovered from (16) and (37) above (39) after which the pottery, as in Trench 1 appeared to be of nineteenth century date.

Trench 3

The layers contained a mix of sixteenth and seventeenth century pottery. The latest pottery, dating to the late seventeenth or early eighteenth century, was to be found in (29) and (27) at the top of the sequence.

Context	Date		Context	Date
2	nineteenth century		40	mid seventeenth century
3	nineteenth century		41	sixteenth century
4	later seventeenth century		43	mid seventeenth century
5	nineteenth century		44	mid seventeenth century
8	early - mid nineteenth century		45	mid seventeenth century
10	nineteenth century		46	mid seventeenth century
12	late eighteenth - nineteenth		47	late sixteenth - early
14	nineteenth century		48	sixteenth - seventeenth
16	late eighteenth century		49	?early seventeenth century
17	?early nineteenth century		50	sixteenth century
22	?seventeenth century		51	sixteenth century
27	?early eighteenth century		54	fifteenth - sixteenth century
28	?late sixteenth - mid seventeenth		56	fifteenth - sixteenth century
29	late seventeenth - early eighteenth		57	thirteenth - fourteenth
31	late sixteenth -seventeenth century		59	thirteenth - fourteenth
37	late seventeenth - early eighteenth		62	fifteenth - sixteenth century
39	mid seventeenth century		63	fourteenth - fifteenth century

Table 2 - Pottery spot dating by context

6.1.3 Discussion

The pottery from the site seems to encompass several occupation phases in the vicinity of the Minster pool. The first of these is represented by the rim sherd from (59) and seems to date to the twelfth century. There is comparatively little pottery thereafter until the fifteenth and sixteenth centuries. This late medieval/early post-medieval pottery appears to be associated with industrial activity in the area and provides useful data on vessel function and use. The next major period of activity appears to be in the seventeenth century most probably at about the time of the Civil War. Precisely how the pottery relates to the development of this area and to the three sieges known to have occurred at Lichfield in this period is as yet undetermined. However the group seems to be derived from normal domestic occupation, possibly, in view of the trailed slipware vessels, of fairly high status. There is then something

of a hiatus until the end of the eighteenth century or beginning of the nineteenth century. This would be in accord with the development of “New Walk” shown on the map of 1781.

The assemblage forms a useful component in the understanding of the ceramic history of Lichfield. Near-by sites at Bird Street and Sandford Street have provided earlier sequences so that with the three sites together there is a continuous sequence from the twelfth century until the late seventeenth - early eighteenth centuries.

6.2 *Animal Bone by Ian L. Baxter*

6.2.1 Introduction

This assessment is based on one box of animal bone with a weight of just under 6kg containing 114 fragments. All but 5 fragments, representing 96% of the total, have been identified in general terms, and 80 fragments comprising 70% identified to species. Unstratified bone from the three trial pits (ACL99A) represents less than 8% of the total and medieval bone 57%. Most of the medieval bone was recovered in Trench 1. Post-medieval bone dating from the eighteenth and twentieth centuries comprises the remainder of the assemblage. The Number of identifiable fragments of bones of each Species (NISP) is presented in Table 1. The condition of the bone in general is good and from the waterlogged deposits excellent.

6.2.2 Methodology

Bone was identified by comparison with published descriptions (in particular Schmid 1972, Boessneck 1969, Sisson and Grossman 1953, Cohen and Serjeantson 1986, Prummel 1989), and reference material in the collection of the author. Long bone, rib and vertebra fragments without diagnostic features are recorded as Large Mammal and Medium Mammal. All those seen in the present assemblage are consistent with cattle and sheep/goat respectively.

6.2.3 Species representation

The following species are represented: Horse (*Equus caballus* L.); Cattle (*Bos* f. domestic); Pig (*Sus* f. domestic); Sheep (*Ovis* f. domestic); Dog (*Canis familiaris* L.); Cat (*Felis catus* L.); Duck (*Anas platyrhynchos* L.); Domestic Fowl (*Gallus* f. domestic).

6.2.4 Notes on the species

Horse

The cranium of a horse was found in waterlogged layer (65) in Trench 1. This is largely intact although the back of the cranium and most of the teeth are missing. The surviving teeth are exceedingly worn suggesting that the animal died of old age. Horses can live up to thirty years but rarely achieved such ages in the medieval period. The presence of canine sockets suggests that this individual was male, only 6 to 7 per cent. of mares have canines in the upper jaw (Sisson and Grossman 1953:399). The cranium is small and the muzzle short. In life the animal is unlikely to have stood much over 12 hands at the withers. Although the crown patterns of the surviving cheek teeth are obliterated, it was not a donkey but most

probably a pony. However, the possibility that the cranium derives from a mule cannot be ruled out at this stage.

Cattle

The remains of cattle account for over 74% of fragments identified to species from the medieval deposits. Fragments of three horn cores were recovered. All belonged to adult or adult cows or oxen. A complete unstratified horn core from one of the Test Pits derives from a waterlogged deposit and may be medieval. This came from an old short horned cow. There is a relatively high proportion of fragments from non-meat bearing elements of the skeleton, particularly the head, in the medieval layers. Butchery marks occur on the mandible, distal humerus, and vertebrae. A complete metacarpus III+IV from medieval occupation deposit (56) in Trench 1 came from a beast approximately 109.7cm at the withers based on the multiplication factors of Matolcsi (1970). A mandible from medieval layer (62) has the third pillar or hypoconulid missing from the lower third molar. This is a genetic anomaly which occurs frequently at some sites during various periods of occupation and is otherwise rare or absent (Davis 1997:425). Cattle account for 46% of post-medieval fragments.

Pig

The remains of pig are infrequent accounting for less than 6% of medieval fragments identified to species and 11½% of post-medieval fragments.

Sheep/Goat

No sheep/goat remains were recovered from the medieval deposits. Sheep/goat account for nearly 35% of post-medieval fragments identified to species. Nothing identifiable as goat was seen. A radius from demolition make-up Layer (40) came from an animal 58.6cm high at the withers based on the multiplication factor of Teichert (1975). A horn core from a ewe found in waterlogged layer (54) has been chopped from the skull. Layer (39) contained fragments of three metapodials, including a metatarsus III+IV shaft from a neonate. Two mandibles from the Test Pits belonged to adult animals over two years old. These appear to be from a waterlogged deposit and may be medieval or early post-medieval.

Dog

The left maxilla of a small dog with P³-M² still in place was found in medieval layer (63) of Trench 1.

Cat

A posterior cranium and post-cranial bones belonging to at least four cats were found in medieval layer (63) of Trench 1. One individual, represented by an ulna, femur and tibia, was sub-adult but the others were adults. Such a concentration of bones from several individuals, counted as skeletons cats still account for nearly 11½% of medieval fragments identified to species, suggests that these cats may have been skinned for their fur, a practice common in the medieval period (Gidney 1999:327). No cut marks were seen on any of the bones, but these are frequently only found on the mandible, none of which were recovered from this deposit.

Birds

A humerus fragment of mallard or domestic duck (*Anas platyrhynchos* L.) was found in medieval layer (62). Two bones of domestic fowl were found in post-medieval waterlogged Layer (55). The two indeterminate shaft fragments in the same layer probably also derive from domestic fowl.

6.2.5 Summary and recommendations

The bone recovered from this site is of good quality and well preserved, particularly in the waterlogged deposits. The medieval bone in particular may be very informative regarding the economy and activities engaged in during the medieval period if a full excavation of the site were to take place.

6.3 Leather by Lynne Bevan

6.3.1 Introduction

An assemblage of approximately 50 pieces of leather was assessed in order to identify any shoe fragments and waste from the manufacturing process. In view of the protective effects of adhering mud (see below), it was considered unwise to remove more than a small amount at the assessment stage, although its presence precluded the identification of stitching techniques.

6.3.2 Condition

The condition of the leather is fairly dry, despite the protective effects of the adhering mud, and remedial conservation work will be required to stabilise its condition. A decision should be made soon regarding the long-term conservation and storage requirements for the material. Full cleaning will be required prior to further analysis.

6.3.3 Summary by context

Context 5

1. A waisted mid-section of a shoe sole, with finished outer edges, broken at both ends. Width at waist: 35mm, length: 90mm, thickness: 4mm.
2. Fragments from a leather patten with *in situ* iron nails. Length of longest piece: 170mm, thickness: 10mm.
- 3.-11. Nine other small fragments of leather, five of which have sewn edges.

Context 51

12. Fragment of leather, with one finished edge and two torn edges, possibly part of a shoe. Length: 120mm, width: 36mm, thickness: 3mm.

Context 56

- 13.-14. Two small leather offcuts, one of which is 'waisted' (but is not part of a sole), the other triangular. Dimensions of 'waisted' offcut: length: 32mm, width: 20mm, thickness: 2mm. Length of triangular piece: 30mm, thickness: 2mm.

Context 63

15.-40. Approximately twenty-six offcuts, the largest of which measures 210mm x 120mm x 3mm. At least one of the offcuts has a stitched edge. The bag also contains a burnt bone.

Context 65

41. One large, folded offcut. Length: 240mm, maximum width: 130mm, thickness: 1mm.

Unstratified

42. Sole from an adult's shoe. Length: 250mm, maximum width: 90mm, thickness: 4-5mm.

43.-45. Three curved fragments from two other, larger soles, the largest of which measures 180mm x 100mm x 2mm.

46.-49. Four fragments of folded leather without stitching, probably offcuts from shoe manufacture, the largest of which measures 290mm in length by 100mm at the widest part with a thickness of 2-5mm.

50. One small, stitched fragment (a rand) from the side of a sole. Length: 85mm, width: 7-10mm, thickness: 2mm.

6.3.4 Discussion

The collection comprised one complete sole from a small adult shoe (No. 42), fragments from at least three other soles (Nos. 1 and 43-45) and a number of fragments, several of which appear to be offcuts from shoe manufacture, including stitched rands. Approximate measurements have been given for the largest fragments. The general shape of the complete, unstratified sole suggests a later Medieval date, late fourteenth - early fifteenth century, which would accord with the dating of the leather patten (No. 2), a protective overshoe made from several layers of leather.

The sole fragment from Context 5 (No. 1), is exactly the same shape as the complete small, unstratified sole, which indicates a similarly late date for this piece. The offcuts are not chronologically diagnostic (although cleaning might reveal further information), but the general appearance and condition of the leather suggests contemporaneity between the shoe fragments and waste.

This is not a large assemblage, and the most diagnostic pieces come from horizons where they can be assumed to be residual. However, offcuts in Contexts 56 and 63 (designated as medieval on the site matrix) suggest small-scale manufacture or repair of shoes and/or leather garments at this time. An exchange of information between specialists (i.e. if needles are present among copper alloy objects, punches or awls with the ironwork and so on) may help to determine the exact nature of this activity, as will reference to previous work in this area and around the fringes of the Minster Pool, Lichfield. Carver (1982) lists fifteenth - sixteenth century leather being recovered in Bird Street (Carver 1982, 7 No. 5.9) and at another location by the pool (No. 5.2), and reference will need to be made to the records of other excavations in Lichfield post-dating the compilation of Carver's gazetteer for comparative purposes, should further study be undertaken.

Nevertheless this is an interesting and locally/regionally important group of material which will repay further study after cleaning and targetted conservation of the leather. The exploration of small-scale craft and industrial activity in towns (Patterns of Industry and

Craftsmanship) was highlighted by English Heritage (Exploring Our Past 1991, pp. 42-43) as a national research priority, and this included very specifically medieval leather-working.

Any further study will also require the material to be assessed against that in published corpora from, for example, London (Grew and de Neergaard 1996) and Coventry (Thomas 1986a and 1986b) and other sites. Recovery of further leather, should there be more archaeological work on the site, will only enhance the value of the group.

6.4 *Environmental remains by Liz Pearson*

6.4.1 Methods

Sampling policy

Samples were taken by Marches Archaeology from deposits of high potential for recovery of environmental remains.

Processing and analysis

The samples (see table) were processed by the wash-over technique as follows. A sub-sample of 500mls to 1 litre was broken up in a bowl of water to separate the light organic remains from the mineral fraction and heavier residue. The water, with the light organic fraction was decanted onto a 300µm sieve and the residue washed through a 1mm sieve.

The residues (consisting of a small quantity of sand) were briefly examined for the presence of finds or environmental remains. The flots were scanned using a low power EMT stereo light microscope and remains identified using modern reference collections housed at the County Archaeological Service. Results of the analysis are summarised in Appendix 4.

6.4.2 Analysis

Organic remains were well preserved by waterlogging in all six samples, and were generally species rich. Insect remains were also present although these have not been identified here. Throughout the period of silting of the pond and dumping in the post-medieval period, the site appears to have been relatively open, although, at one time surrounded by neglected damp grassy vegetation (see Appendix 3). The description and dating of these deposits are preliminary, resulting from the fieldwork (Marches Archaeology 1999).

Context 68, sample 6: bottom of pond. This assemblage was dominated by seeds of plants that would have been growing at the muddy edges of the pond, for example celery-leaved crowfoot (*Ranunculus sceleratus*), lesser spearwort (*R flammula*), water-plantain (*Alisma plantago-aquatica*), and sedges (*Carex* spp). There were some dry land species suggesting the presence of cultivated or disturbed ground (corn marigold and charlock/wild radish) and damp grassy areas (violet and hemlock).

Context 64, sample 5: ?natural sand: There was less evidence for plants growing at the water's edge in this sample, although this may be a consequence of the smaller range of species overall. Weeds of disturbed or cultivated ground are represented by knotgrass (*Polygonum avicularia* agg), chickweed (*Stellaria media*) and fat hen (*Chenopodium album*).

Context 59, sample 4: natural or medieval sand. Despite being very sandy, this sample was the most rich in waterlogged plant remains. It was dominated by dry land species, particularly weeds of cultivated or disturbed ground. Seeds of corn spurrey (*Spergula arvensis*) and chickweed (*Stellaria media*) were particularly abundant. There was some evidence for undisturbed woody or grassy areas, suggested by hedge woundwort (*Stachys sylvatica*), blackberry (*Rubus fruticosus* agg), cowslip (*Primula veris*) and hemlock (*Conium maculatum*). The latter is common in damp areas. The only evidence that the location was close to the waters edge was the presence of crowfoot (*Ranunculus* sb gen *Batrachium*) and celery-leaved crowfoot (*Ranunculus sceleratus*). Charred cereal crop remains indicated the disposal of domestic or agricultural waste. These included charred grains of rye (*Secale cereale*), club wheat (*Triticum aestivum-compactum*), oat (cf *Avena* sp), other grasses (*Gramineae* sp indet) and one possible cultivated cherry stone (*Prunus* cf *cerasus*).

Context 61, sample 3: medieval or earlier silting. There was no evidence for debris from human activities in this sample. There was a smaller range of plant species which would have grown at the muddy edges of the pond and on surrounding dry land.

Context 58, sample 2: ?medieval silting: As described above, there was evidence for shallow water, although seeds of pondweed (*Potamogeton* sp) found in open water are moderately abundant. The abundance of corn spurrey (*Spergula arvensis*) suggests the presence of arable fields in the near vicinity, or that straw waste was dumped into the pond.

Context 48, sample 1 17th/19th century silt - This assemblage suggests that the edge of the pond was nearby, although cultivated or disturbed ground lay in the near vicinity.

Sampl e	Context	Description	Date	Sample size	Sub-sample
1	48	dark grey waterlogged silt	17th/19th century	20	0.5
2	58	dark-mid grey waterlogged silt	medieval?	20	1
3	61	dark-mid grey waterlogged silt	medieval or earlier	20	0.5
4	59	dark grey coarse sand	medieval / natural?	10	1
5	64	sand	natural?	10	1
6	68	fibrous waterlogged silt	natural?	10	0.5

Table 3 - List of environmental samples

6.4.3 Discussion

The waterlogged organic remains from these samples demonstrate a change in conditions within the area of the pond and its surroundings from the earliest to latest phases. Silts at the bottom of the pond are likely to have formed in shallow water within its margins. Sands of a later phase are less dominated by marginal aquatic plants and possibly formed on or near the edge of the pond. Sample 4 shows particularly strong evidence for surrounding weedy disturbed or cultivated ground, while a small amount of domestic or agricultural waste was recovered. Moreover, the charred grains of club wheat and rye from this sample are characteristic of medieval deposits, and would tend to support the archaeological

interpretation that the silt was of this date. The later deposits (contexts 61, 58 and 48) show evidence for marginal aquatic vegetation, although context 58 may have been closer to open water colonised by pondweed. Here, the abundant corn spurrey may originate from nearby cornfields, or from straw waste deposited in the pond.

6.5 *The metalwork by Phil Parkes*

All the objects were x-rayed using a Faxitron 43805 x-ray system and Kodak CX-5 x-ray film. A range of kilovoltage and time exposures was used which are noted on the x-ray plate.

Context	Small find	Description
5	3	Copper alloy thimble (part)
5	4	Brooch with flower and leaf type decoration and a border of dots
16		Nail
22	1	Copper alloy pin with wound wire? head
40		Nail
56	5	Copper alloy strip/disc
56		Chain? link
62		Bone piece with iron accretion

Table 4 - List of metalwork

Only one object was conserved, small find 5, to determine whether it might be a coin. Cleaning revealed an uneven corroded surface, but nothing which might suggest a coin. The x-ray also revealed nothing which might indicate an identifiable coin.

6.6 *Other materials*

Only two small finds were not of metal: a post-medieval bone spoon handle (SF2, context 5) and two fragments of undecorated window glass, of medieval date (SF6, context 63).

Clay pipe, slag, vessel glass, window glass and wood have also been retained from the evaluation excavation (Appendix 2). The clay pipe included one bowl from context 46 which was stamped IG and is of a form likely to be seventeenth century. The remainder of the diagnostic clay pipe bowls were eighteenth or nineteenth century. The slag all appeared to be from ironworking and was not found in substantial enough quantities to warrant further study.

One fragment of waterlogged wood, which was similar to the others and was thought to be of the same species, was examined by Steve Potter of Staffordshire County Council. He noted that it was elliptical in section, which is characteristic of hornbeam. It was not, however, possible to identify it to species with any certainty, though it was not a conifer, oak or elm.

Other categories of material were also recovered but were discarded after recording. These include oyster shell, coal, clinker, brick and roof tile (Appendix 3).

7 **Discussion**

Medieval

The earliest land surfaces above the natural sands and gravel date from the twelfth century. The possibility is acknowledged, however, that the apparently natural sands and gravels may in fact seal prehistoric remains. As the sands were below the water table it was not possible to test this. The environmental evidence (samples 4 and 5) supports the belief that in the twelfth century this was dry land, with weeds of cultivated or disturbed ground and evidence for undisturbed woody or grassy areas. Also charred cereal grains suggested that the area was occupied at this time. The presence of a pit (60) in Trench 2 at this time is further evidence of this occupation. Occasional plant remains did, however, suggest water nearby, particularly in Trench 1 (sample 6).

After this initial phase the area became covered in water. The sample (3) from this level contained no evidence for human activities and had a smaller range of species, from both the edge of water features and dry land, suggesting a sudden change, such as flooding. It is suggested that this was the flooding of the area to create or enlarge Minster Pool and that it was associated with the creation of the new town in the middle years of the twelfth century. From then on the pottery record becomes slight and the environmental remains indicate a wet environment (samples 1 and 2) with evidence for both shallow and open water as well as arable fields and cultivated or disturbed ground nearby. This situation continued until the late medieval period.

In the fifteenth century the area of Trench 1 was reclaimed, perhaps simply as silting up of the banks of the pool. There was clearly industrial activity in the area at the time, as ironworking and leather manufacture are evidenced along with possible pottery production, although none of this has so far been shown on the site itself. Similarly, the animal bones suggest the use of cat fur for trimmings, butchery and industrial processing of the hides of cattle and fleeces of sheep. The dog maxilla may also be of industrial origin as dog skins were used for glove making (Ian Baxter, *pers. comm.*). Overall, it seems most likely that in the late medieval period the edge of the pool was used as a general dumping ground for the various trades which were carried on nearby. The presence of a small amount of window glass is of interest but is more likely to be from dumping of household debris than industrial. The same is likely to be true of most of the pottery and perhaps some of the leather and bone.

In the middle years of the seventeenth century there was a further change in the use of the site. The area of Trench 1 was built up and by this time the area of Trench 2 had been reclaimed. This may well relate to activity associated with the Civil War, perhaps to do with one of the sieges at this time. However, at this stage this is unsubstantiated hypothesis.

There is little evidence for any use of the site for at least a hundred years from the later seventeenth century until the end of the eighteenth century or beginning of the nineteenth. The brick buildings in Trench 1 are not shown on any maps and remain undated except in general terms. The earliest phase is presumably eighteenth century and the latest is later nineteenth. The development may have been associated with the land holding of Minster House, though it remains puzzling that parts of the road frontage were built up at various times in the eighteenth and nineteenth centuries and yet maps failed to indicate this. The present building, initially the General Post Office, swept away all earlier uses of the site.

The evaluation did not establish whether any deposits earlier than the medieval period survive on the site. Should there be any, however, they are likely to be below the water table, which would present great logistical difficulties for excavation.

By the twelfth century the site was land, albeit perhaps damp and even marshy rather than dry land. It has not been conclusively proved that the twelfth century flooding was part of the deliberate creation/extension of Minster Pool, but the weight of evidence supports this in favour of an accidental occurrence. After the area was flooded there was little activity on the site, with the exception of dumping. The fact that most of the dumping was in Trench 1 and of the later medieval period may indicate that earlier remains were removed by periodic cleaning. The silting up of the pool from the end of the medieval period led to the reclaiming of the land, and its reuse, perhaps even featuring in the Civil War. The eighteenth and nineteenth brick remains are of relatively little value, except in that their tantalising absence from the cartographic record.

The site clearly has good environmental survival and the potential to increase knowledge about the nature and extent of several industries, particularly in the late medieval period.

The proposed development includes a basement. The vast majority of archaeological remains within the area of this basement will be destroyed if the development proceeds. A thin layer may survive below the basement. However, this would be divorced from its context and it is arguable whether this would constitute preservation *in situ* in an intelligible sense. Similarly, the deposits around the perimeter of the site are likely to be threatened by the proposed piles which form the basis of the foundation design. The remains on the Bird Street frontage are of particular significance, as the artefactual remains were richest here and as there is possible evidence of the use of the site as part of the Civil War campaigns.

The archaeological resource of the site is clearly of regional importance and a strategy for the preservation of the remains, whether by record, *in situ*, or a combination, should be carefully considered.

9 Bibliography

- Bassett, S, 1982, 'Medieval Lichfield: A Topographical Review Lichfield', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 93-121
- Bede, 1968, *A History of the English Church and People*
- Beresford, M, 1967, *New Towns of the Middle Ages*
- Boessneck, J, 1969, 'Osteological Differences between Sheep (*Ovis aries* Linne) and Goat (*Capra hircus* Linne)'. In: Brothwell, D.R. and Higgs, E. (eds.). *Science in Archaeology* London: Thames and Hudson, pp. 331-359.
- Bolsolver, R, 1992, *Structural Report: Lichfield Arts Centre, Bird Street, Lichfield*, Roy Bolsover and Associates. Unpublished client report for Lichfield District Council
- Carver, M O H, 1982a, 'The Archaeology of Early Lichfield: an Inventory and Some Recent Results', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 1-12
- Carver, M O H, 1982b, 'Excavations South of Lichfield Cathedral, 1976-77', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 35-69
- Cohen, A, and Serjeantson, D, 1986, *A Manual for the Identification of Bird Bones from Archaeological Sites*, London: A. Cohen.
- Davis, S J M, 1997, 'The Agricultural Revolution in England: some zoo-archaeological evidence' in *Anthropozoologica* 25/26:413-428.
- Exploring Our Past: Strategies for the Archaeology of England* 1991. English Heritage.
- Ford D A 1995 Medieval Pottery in Staffordshire, AD800-1600: A Review Staffs Archaeol Studies No 7 1995
- Gidney, L, 1999, 'The Animal Bones', In: Connor, A. and Buckley, R. *Roman and Medieval Occupation in Causeway Lane, Leicester: Excavations 1980 and 1991*, Leicester Archaeology Monographs No.5. Leicester: Leicester University Press, pp. 310-329.
- Gould, J, 1976, 'The 12th-century water-supply to Lichfield', *Antiquaries Journal*, 56, 73-9
- Grew, F. and de Neergaard, M. 1988, *Medieval Shoes from Excavations in London: 2. Shoes and Pattens*. HMSO, London.
- Harwood, T, 1802, *The History and Antiquities of the Church and City of Lichfield*
- Hodder, M A, 'The Prehistory of the Lichfield Area', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 13-23

Martin, C, 1999, Unpublished site notes on observation pits at Lichfield Arts Centre, Ove Arup and Partners

Matolcsi, J, 1970, 'Historische Eforschung der Körpergröße des Rindes auf Grund von ungarischem Knochenmaterial', *Zeitschr. f. Tierzüchtg. U. Zuchtungsbiol. Hamburg*, 87:89-137.

Morris, C, (ed.) 1949, *Journeys of Celia Fiennes*

Prummel, W, 1989, 'Appendix to Atlas for identification of foetal skeletal elements of Cattle, Horse, Sheep and Pig', *Archaeozoologia* 3(1/2):71-78.

Schmid, E, 1972, *Atlas of Animal Bones for Prehistorians, Archaeologists and Quaternary Geologists*, Amsterdam, London & New York: Elsevier.

Sisson, S, and Grossman, J D, 1953, *The Anatomy of the Domestic Animals*, Philadelphia and London: W.B. Saunders.

Studd, R, 1982, 'Pre-Conquest Lichfield', *Transactions of the South Staffordshire Archaeological and Historical Society*, XXII, 24-34

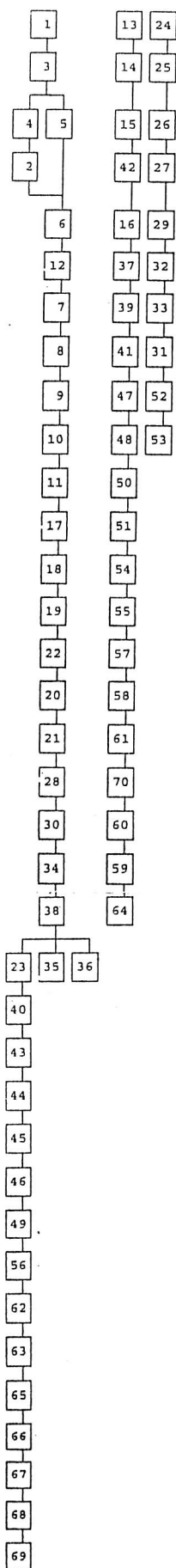
Teichert, M, 1975, 'Osteometrische Untersuchungen zur Berechnung der Widerristhöhe bei Schafen', In: Clason, A.T. (ed.). *Archaeozoological studies*, Amsterdam & Oxford: North-Holland/New York: Elsevier, pp. 51-69.

Thomas, S. 1986a *Leather Report* in J. Bateman and M. Redknap, Coventry: Excavations on the Town Wall 1976-78. *Coventry Museums Monograph Series* No. 2, 78-91.

Thomas, S. 1986b *Leather* in M. Rylatt and M.A. Stokes, The Excavations on Broadgate East, Coventry. *Coventry Museums Monograph Series* No. 5, 115-121.

VCH, 1990, VCH, 1990, *Victoria History of the Counties of England, Staffordshire: Lichfield*, vol. XIV

10 Site Matrix



Appendix 1

List of contexts

The Arts Centre, Lichfield Evaluation excavation (ACL99B) List of contexts

Context	Category	Interpretation
1	Layer	Concrete floor and make up
2	Masonry	Brick building and floors, foundation of walls are of large blocks of sandstone.
3	Layer	Build up after brick structure 2 went out of use
4	Layer	Cobbled surface associated with brick building 2
5	Fill	Rubble backfill of cellar of building 2
6	Masonry	Probably a sump. Initially thought to be a brick cellar, part of building 2 (foundation cut 7)
7	Cut	Construction cut for brick walls/floor and cellar/sump 2 and 6
8	Fill	Trench dug for services - water pipe
9	Cut	Cut for water pipe trench
10	Fill	Fill of cut 11, mains water pipe. Post-medieval
11	Cut	Cut for water pipe, though not seen
12	Fill	Fill of construction cut 7
13	Layer	Modern surface and make up
14	Layer	18th-19th century buried soil / garden soil layer
15	Layer	Mortar spread/dump
16	Layer	Building debris mixed with garden? soil
17	Layer	Make up layer or demolition layer
18	Layer	Mortar spread - heavily truncated.
19	Layer	Brick floor associated with brick walls 20 and construction cut 21.
20	Masonry	Brick wall/walls. Associated with surface/floor 19.
21	Cut	Construction cut for wall 20 and floor 19 and make up for floor 22
22	Fill	Backfill after sandstone foundation built - to build floor onto
23	Layer	Mortar spread associated with building 36 and 35
24	Layer	Modern surface and make up
25	Layer	Modern floor, possibly external yard
26	Layer	Make up layer and services
27	Layer	Probable 18th-19th century garden soil
28	Layer	Could be surface associated with 20 or earlier layer truncated by construction cut 21
29	Layer	Soil and demolition debris
30	Layer	Rubble demolition, make up
31	Layer	Garden (?) soil
32	Fill	Fill of 33
33	Cut	Pit
34	Masonry	Brick plinth? Later than mortar/plaster spread 38
35	Masonry	Wall running N-S. Hollow centre associated with wall 36
36	Masonry	Part of building? associated with 35, Mortared/plastered over with 23
37	Layer	Soil and demolition debris
38	Layer	Mortar/plaster spread associated with building after construction.
39	Layer	Garden(?) soil
40	Layer	Demolition material used as make up layer possibly used to fill hollow in north

The Arts Centre, Lichfield Evaluation excavation (ACL99B) List of contexts

Context	Category	Interpretation
41	Layer	Accumulation of soil
42	Layer	Demolition dump
43	Layer	Dump of mixed material - some demolition - used as make up.
44	Layer	Dump of material dumped from south. Contemporary with 40 and 43.
45	Layer	Probably dumping material
46	Layer	Dump of material or possibly a garden/cultivation soil though quite a lot of tile present.
47	Layer	Horizon between 41 and 48. Possible flood horizon
48	Layer	First - top - spit of waterlogged material
49	Layer	Garden/cultivation soil or accumulation over area
50	Layer	Silting up in a wet environment - second spit
51	Layer	Third spit of waterlogged material
52	Layer	Water laid (?) sand
53	Layer	Top of waterlogging
54	Layer	Fourth spit of waterlogged material
55	Layer	Fifth spit of waterlogging
56	Layer	Medieval occupation deposit containing much medieval pot and iron slag
57	Layer	Sixth spit of waterlogging
58	Layer	Seventh spit of waterlogging
59	Layer	Former land surface or bed of water feature
60	Cut	Pit
61	Fill	Fill of pit 60
62	Layer	Dump of material probably iron working waste. Dumped over waterlogged remains
63	Layer	Interface between 62 AND 65. Much leather and bone
64	Layer	Probably natural
65	Layer	Waterlogged deposit. Possible flood horizon
66	Layer	Waterlogged deposit. Much coarser than in Trench 2
67	Layer	Lower level of waterlogging
68	Layer	Waterlogging - possibly an original land surface which was flooded
69	Layer	Natural
70	Layer	Possible initial flooding which created the waterlogged environment

Appendix 2

List of finds

Weight and quantity of finds by context

Context number	Weight	Quantity
----------------	--------	----------

2

0

0

Animal bone

12	70	1
----	----	---

16	570	3
----	-----	---

37	10	1
----	----	---

39	460	17
----	-----	----

40	50	3
----	----	---

44	20	1
----	----	---

47	520	6
----	-----	---

48	210	3
----	-----	---

54	10	1
----	----	---

55	160	4
----	-----	---

56	240	15
----	-----	----

61	30	1
----	----	---

62	1200	16
----	------	----

63	375	13
----	-----	----

65	950	1
----	-----	---

66	40	1
----	----	---

4915

87

Bird bone

55	10	4
----	----	---

63	50	14
----	----	----

60

18

Weight and quantity of finds by context

Context number	Weight	Quantity
----------------	--------	----------

Clay pipe

12	5	1
27	10	3
39	10	3
45	5	1
16	50	15
46	30	4
29	3	20
14	10	4
	<hr/>	
	123	51

Horn

54	20	1
56	40	1
62	80	4
63	100	2
	<hr/>	
	240	8

Leather

5	150	2
51	40	1
56	10	2
63	1200	10
65	325	1
	<hr/>	
	1725	16

Nails

16	10	1
40	50	3

Weight and quantity of finds by context

Context number	Weight	Quantity
----------------	--------	----------

56	30	1
----	----	---

	<hr/> 90	5
--	----------	---

Other iron objects

62	10	1
----	----	---

0	5	1
---	---	---

	<hr/> 15	2
--	----------	---

Pottery

2	650	28
---	-----	----

4	50	2
---	----	---

3	80	5
---	----	---

5	1500	24
---	------	----

8	60	3
---	----	---

10	100	4
----	-----	---

12	120	6
----	-----	---

14	200	15
----	-----	----

16	460	30
----	-----	----

17	110	5
----	-----	---

22	190	2
----	-----	---

27	170	3
----	-----	---

28	20	1
----	----	---

29	200	6
----	-----	---

31	140	3
----	-----	---

37	100	6
----	-----	---

39	680	25
----	-----	----

40	40	4
----	----	---

41	450	13
----	-----	----

43	40	4
----	----	---

Weight and quantity of finds by context

Context number	Weight	Quantity
----------------	--------	----------

44	340	6
45	50	6
46	1200	25
47	100	3
48	980	2
49	660	16
50	155	5
51	10	1
54	30	3
56	750	24
57	40	2
59	20	1
62	240	8
63	350	3
	10285	294

Slag

12	425	2
41	3000	3
51	175	1
54	250	1
56	6500	10
62	2250	10
63	150	2
65	4750	10
	17500	39

Vessel glass

2	520	7
---	-----	---

Weight and quantity of finds by context

Context number	Weight	Quantity
----------------	--------	----------

5	240	4
---	-----	---

12	140	2
----	-----	---

37	240	3
----	-----	---

49	5	1
----	---	---

16	70	3
----	----	---

14	10	1
----	----	---

57	10	1
----	----	---

3	10	1
---	----	---

15	10	1
----	----	---

	<hr/> 1255	24
--	------------	----

Window glass

44	5	3
----	---	---

45	5	1
----	---	---

46	10	3
----	----	---

	<hr/> 20	7
--	----------	---

Wood

61	320	13
----	-----	----

63	120	8
----	-----	---

65	70	3
----	----	---

	<hr/> 510	24
--	-----------	----

36738

Appendix 3

Material discarded

Oyster shell

Context 14 1 fragment

Clinker

Context 57 1 fragment 60 x 50 x 30 mm.

Tile

All hand made and unglazed unless noted. Only complete dimensions given.

Context	No of pieces	Comments and dimensions
3	1	Hard fired - reduced externally. Fragment 15mm thick.
10	1	Half width with lug - 50mm to centre of lug. 15mm thick
22	5	One half width with lug - 95mm to centre of lug. Others fragments. All 15mm thick
27	1	Fragment 15mm thick
39	1	Ridge tile with thumbed lug at top. Half width is 35mm of flat top, then 65 mm on 50 degree angle to edge. 15mm thick
40	3	Two are half width, with lugs. Both 95mm wide to centre of lug,. Length incomplete. One fragment with cat paw imprint on underside. All 15mm thick
41	3	All fragment 15mm thick. One fragment overfired
43	1	Fragment 15mm thick, with lug and imprint of thumb from lug formation
47	3	Two are fragments 15mm thick. One is a curving ridge tile 24mm thick
50	3	One full width, 180mm, with lug. One half width - 97mm to centre of lug. One curving fragment of unglazed ridge tile. All 15mm thick
54	2	Fragments 15mm thick
55	2	Fragments 15mm thick
56	7	Fragments 15mm thick. One with lug but no edge to give width
62	1	Fragment 15mm thick
65	1	Fragment 15mm thick

Brick

All hand made unless noted. Only complete dimensions given.

Context	No. of pieces	Comments and dimensions (mm)
2	2	Both complete. One is: length 225mm, width 112, thickness 60. The other is: length 235mm, width 120, thickness 50
19	1	Complete. Length 230-235, width 115-120, thickness 42-45
40	2	One is 240 x 120 x 55. The other is a fragment 55mm thick
41	1	Fragment 50mm thick. 10% light brown patches (up to 10mm)

Coal

Context	No. of pieces	Comments and weight (g)
39	1	10
47	1	80
55	2	50

Appendix 4

Plant remains

[illegible]