

**BERMUDA PARK, NUNEATON, COUNTY  
OF WARWICKSHIRE**

**ARCHIVE REPORT**

NGR: SP 3520 8980

on behalf of

**GEORGE WIMPEY MIDLANDS LTD.**

**MARCH 2008**

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**Commissioned by:** George Wimpey Midland Ltd.

**Fieldwork by:** AOC Archaeology Group

**Text by:** Daniel Eddisford  
Melissa Melikian  
Angus Stephenson  
Martin D. Wilson

**Specialist Reports by:** Lucy Whittingham  
Ian M. Betts  
Alan Pipe  
Lynne Keys  
Beth Richardson

**Illustrations by:** Jonathan Moller

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## 1 ABSTRACT

*An archaeological excavation was undertaken by AOC Archaeology Group between August and November 2004 at Bermuda Park, in the County of Warwickshire. Bermuda Park was a brownfield site immediately to the southwest of the village of Bermuda on the southwest side of Nuneaton. The excavation was undertaken to record any archaeological remains prior to the development of the site, which involved the construction of c.300 new houses.*

*The land is known from documentary sources to have been within the demesnes of the monastic military order of the Knights Templar between 1185 and 1308 and subsequently the Knights Hospitallers of St. John of Jerusalem, until the dissolution of monasteries by King Henry VIII in c.1540. At this time the land formed part of the manorial estate of Chilverscoton and was used for farming. Buildings on the site included a hall, chapel, granary and several other agricultural buildings. The site had several subsequent owners until the late 17<sup>th</sup> century, when the buildings were reportedly ruinous.*

*The local clay had been exploited for pottery manufacture since the time of the Knights Templar and later for a 19<sup>th</sup> century brickworks. A modern clay extraction quarry was recorded on the site. From at least the 17<sup>th</sup> century the shallow local coal seams were also extensively exploited. Much of the development area was subject to disturbance and dumping of waste associated with coal mining. The site was derelict for many years before the recent development.*

*The western half of the site was subject to extensive modern industrial activity; the eastern half was less disturbed and had been the subject of several archaeological investigations over the last 40 years. Initial evaluation trenches indicated that some remains of medieval manorial buildings survived in this area.*

*The earliest evidence of activity on the site was in the form of large stone packed postholes and the ephemeral remains of masonry walls, probably associated with the Templar occupation of the site. In a later medieval phase a building with stone foundation replaced this structure, and further structures associated with cobbled yards and a trackway were recorded to the east. Large amounts of 13<sup>th</sup>-14<sup>th</sup> century medieval pottery, probably from the nearby Chilverscoton kilns, were found associated with these remains.*

*A series of stream channels were managed throughout the medieval period, and in the southern part of the site a pond was formed. Timber stakes and a substantial dump of stone, forming what may have been a bridge abutment, revetted one bank of the pond. A further stone feature to the south may have been a related collapsed pier base. In the later medieval period a series of masonry structures, more ephemeral timber structures and cobbled areas are contemporary with the occupation of the site by the Hospitallers.*

*Throughout the post-medieval period the use of the site became increasingly industrial. Early in the post-medieval period the industrial nature of the site*

*presumably made it uninhabitable and the domestic buildings were abandoned. The utilisation of the site for a range of activities, largely associated with mining and brick production, led to extensive truncation of the earlier archaeological remains. In addition to this truncation, widespread robbing of the building stone from the site in antiquity resulted in the poor preservation of many of the structures on the site.*

## **2 INTRODUCTION**

### **2.1 Site Location**

The site lies at the south-western edge of Nuneaton, immediately to the west of the village of Bermuda, in the County of Warwickshire. The site is centred on National Grid Reference (NGR) SP 3520 8980 (Fig 1). The site is bounded on the northeast side by the rear gardens of the houses of the west side of Bermuda Village, on the north by the road known as Harefield Lane, on the west by the new road of Walsingham Drive and on the south by landscaped ponds, where former coal-mining pits used to be. Walsingham Drive connects the site to the Bermuda Park Industrial Estate to the south (Fig 2).

### **2.2 Planning Background**

The Bermuda Park development was undertaken by George Wimpey Midland Ltd. The development plan covered an area of approximately 10 hectares. The permitted scheme was to develop the formerly derelict wasteland for approximately 285 housing units with associated infrastructure and landscaping. Outline planning permission was granted, subject to the attachment of a condition, stating that no development works should take place until the applicant had secured the implementation of a programme and timetable of archaeological work in accordance with a Written Scheme of Investigation (WSI) approved in writing in advance by Nuneaton and Bedworth Borough Council. Full permission was granted in February 2004 subject to the same archaeological condition.

An initial evaluation, of 10 trenches, identified surviving archaeological deposits in the eastern half of the site (Fig 2). Brick, stone and mortar foundations or working surface remains identified in two trenches were believed to be associated with the medieval remains identified in previous excavations. A second phase of archaeological work consisted of an open area excavation targeted on the structural remains identified during the evaluation (Fig 2).

Prior to each phase of work a WSI was submitted by AOC Archaeology Group and approved by the archaeological advisor to the Local Planning Authority (LPA) (AOC 2004a, 2004c). These documents set out the aims, scope of works and methodology for the evaluation and excavation. After each phase of work a summary was produced, in order to allow the archaeological advisor to the LPA to make an informed decision about the need for any further archaeological mitigation (AOC 2004b, 2005). Edward Wilson monitored the site for Warwickshire County Council and Lisa Moffett (Regional Science Advisor for English Heritage) during the later excavation.

In accordance with a Post-Excavation Assessment (AOC 2006) this final report covers all on-site archaeological investigations undertaken by AOC Archaeology Group. The stratigraphy of the archaeological investigations is integrated with information from the specialist finds work undertaken. Where relevant the results are integrated with earlier archaeological investigations of the site, undertaken by the University of Birmingham (1970) and the Atherstone Archaeological Society (1996-7). In accordance with the English Heritage guidelines (1991) guidelines this report provides the research objectives of the project as expressed in the project design; the circumstances and organization of the work and the date it was undertaken; the

identity of the individuals or organization by whom the work was undertaken and an account of the results of the project.

### 2.3 Project Objectives

The main research objectives as set out in the Post Excavation Assessment (AOC 2006) are summarised below:

- To present an account of the known historical development of the site, drawing on documentary and cartographic sources, in order to place the site in context by reference to the organization of similar Knights Templar and Knights Hospitaller sites.
- To produce a plan of the whole site, combining the records of previous archaeological investigations with those of the 2004 excavations; producing digital versions of the plans of the older work from the hand-drawn original records and copies where necessary.
- To present the results of the excavations as a continuous integrated narrative.
- To compare the spatial distribution of features recorded on the site to similar farm or grange establishments, elsewhere in the country.
- To further examine the possible evidence for metalworking and milling found on the site, with reference to other monastic sites.
- Does the pottery assemblage contain any kiln material? If so, how does it relate spatially to known kilns?
- What are the sources of the igneous rock-tempered pottery recovered from the excavation?
- How do the fabric types of the Ceramic building material compare with those known from the Chilvers Coton pottery industry?
- What characteristics of the local meat diet may be interpreted from the animal bone evidence, particularly in terms of carcase-part selection?
- What was the nature of the depositional environment of medieval pond recorded at the southern side of the site?

## 3 TOPOGRAPHY AND GEOLOGY

The site slopes down gradually from north to south, with current ground level at between 90m and 100m OD (Fig. 2). The village of Bermuda lies to the south-west of the Polesworth fault, which runs through the middle of Nuneaton, then along the line of the River Anker and Coventry Canal to Polesworth, about 10 miles to the north-west of Nuneaton. This fault has created a north-facing escarpment, and the outcropping rocks are older than those of the bedrock of southern Leicestershire to the northeast.

In addition to this tectonic activity the underlying geology of the area changes very rapidly from east to west, creating a complex sequence of natural deposits. The underlying bedrock belongs to the Namurian and Westphalian stages of the Upper Carboniferous system. The bedrock is composed of grey mudstones, siltstones and seatearths (ganisters and fireclays), with coal seams between them. The 'Half Yard Seam' runs beneath the site close to the surface.



The western part of the site lies directly above rocks of the Etruria formation, variegated mudstone with subordinate sandstones and volcanoclastic beds. A little further still to the west are the sandstones and mudstones (again with occasional coal seams) of the Halesowen formation. The Halesowen, Etruria and Middle Coal Measure formations are all part of the Coal Measure, and Barren Measure Groups, of the Upper Carboniferous. A short distance to the south-east, older rocks of the Cambrian and Ordovician eras obtrude, in the form of Outwoods Shale, a formation of the Stockingford Shale Group and Lamprophyres, of the quartzite and diorite types. Although these rocks do not outcrop as bedrock on the site they were frequently found as building materials, diorite was quarried at Bedworth until recently.

The sites is in an area of glacial drift deposits, comprising of glacio-fluvial deposits of yellow and orange sand and gravel, and till in the form of brown or reddish brown pebbly clay. As a result the colours and types of the underlying geological strata are exceptionally variegated within short horizontal distances over the whole site. Within the excavation area natural geological layers vary from bright red marl (a type of argillaceous sedimentary rock) to greyish brown sand.

Many of the underlying deposits were exploited for industrial purposes; Bermuda village is a 19<sup>th</sup> century coal-mining pit-village in origin. In addition to coal local clay was used for brick-making and sandstone, locally called “bind rock” or “clod”. The clay was used for “brickle” production; whereby stones were broken into small pieces and soaked in water-filled pits to produce the basic ingredients for hard-wearing bricks. Finally ironstones, fireclays and different types of building stones, were extensively quarried locally.

## **4 HISTORICAL BACKGROUND**

*By Martin D. Wilson*

### **4.1 The Manor of the Knights Templar**

The Order of the Knights Templar was granted approximately a third of the manor of Griff and Coton in 1185, by Ralph de Sudeley who was lord of that manor (Lees 1953: 32, Salzman 1947: 175). A third of his manor had been previously received by the Austin priory of Erdbury (Arbury). Ralph’s seat was in Gloucestershire and there is no documentary or archaeological evidence for a manor house at Griff before c.1230 (West 1968: 84). He did however, rent back the land from the Templars for his own use at a charge of 6½ marks a year (Lees 1953: 32), until his death in 1191. It was probably after this date that they set about building the manor house and chapel, the manor taking the name of Chelverscote (known today as Chilverscoton).

Chelverscote manor became the second most profitable Templar holding in the county of Warwick, the first being the Preceptory at Temple Balsall (Gooder 1995: 139). It received a grant of Free Warren in 1248 (Dugdale 1656: 107, Salzman 1947: 175) and was responsible for the management of several satellite farms and hamlets belonging to it in the north of the county (Arley, Middleton, Over Whitacre, Wishaw and Wolvey (PRO 358/19 Sheet 1, Rot 28, 10.1.1308-20.5.1308)), beyond Watling Street in Leicestershire (Wellsborough, Sharnford, Lindley, Fenny Drayton, Congerstone and Snareston (PRO E358/19, membrane 41, sheet 2, 20.5.1308-29.9.1308)) and in

Staffordshire (Hints) (*ibid.*). The financial success of the manor in part explains why Edward II was reluctant to relinquish control, after he took possession of it on 10<sup>th</sup> January 1308, subsequently ignoring demands from the Pope that former Templar properties were to be handed over to the rival order of the Knights Hospitallers. The accounts of *seneschals* of Chelverscote manor (PRO SC6/1040/18, 10.1.1308 to 1.2.1314) run for six years, until 1<sup>st</sup> February 1314, when it was wound up. Despite most of the Templar charter evidence in Britain being destroyed on the order's suppression in 1307, the annual returns made to the exchequer for Chelverscote during this period are sufficiently detailed to provide a rare window into life at the manor farm.

## 4.2 The Temple Household

The general picture is one of an organised farming community, working to produce a surplus in austere conditions. The household (*famuli*) consisted of the minimum number of hands able to perform the most important day-to-day farm work. It comprised eight to nine waged members: a farm servant (*repreve*) and, or a bailiff (*ballivi*), a reaper whose job also was to look after the woods and fields (*messoris custodientis boscum et campus*) a carter (*carectarii*), two ploughmen (*carucariorum*), two drovers, (*fugatorum*) a chaplain (*capellani*) and a kitchen-garden boy (*garconionis facientis potagium famulorum*). They existed on a simple basic diet of thick vegetable soup. Although, described as *fratres* in the first and final years' accounts this implies that they were lay brothers, or simply monastic serfs. Gooder (pers. comm.) suggests that the presence of a 'chamber' and chapel made it a possibility that a knight had resided at Chelverscote, and that it was not merely overseen by a bailiff on instruction from the headquarters at Balsall.

Variations in the use of job titles during the six years of Crown control may be the result of 'doubling-up' of duties depending on the season; although it might suggest that there was some interchange of staff between manors (*i.e.* Balsall, Wolvey). In the second half-year accounts for 1308 there is listed a bailiff, a reaper, a carter, a shepherd (*bercarii*) four ploughmen, a chaplain and a kitchen boy. Presumably two of the ploughmen were also the drovers. In 1309 to 1310, we find a swineherd (*porcarius*) apparently replacing the shepherd, and the following year, there is a harrower (*occiatoris*), bringing the household tally to nine. Outsiders would be brought in, as and when required, either to undertake specialist work (e.g. carpentry, smithing, additional ploughing) or to do the more labour intensive work of the field, as seasons dictated.

## 4.3 An Impression of the Manor Farm

The cost of upkeep and repairs during the crown years denote the buildings at the core of the ecclesiastical farming unit. The main foci were the great hall (with its adjoining chambers and kitchen) and the chapel for the celebration of divine worship. Nearby buildings would have comprised granary, ox-house (large enough to house two plough-teams), stables, plough-shed, dairy, brew-house, barns, storehouses, pigpens and chicken sheds. It is presumed that these buildings were within a precinct, the main buildings ranged around a courtyard, with the ancillary buildings behind. There would be levels of accommodation and facilities appropriate to the class of household staff and visitors. Guests of high rank were certainly provided with the services to which

they were accustomed, and there is indeed evidence that once such chamber was especially refurbished for a stopover of Edward II on the 23-24th June 1308 (PRO.E. 358/19.Rot.43). The capital equipment of the manor comprised 16 oxen, 2 cart horses, 2 ploughs and a wagon.

The hall would have been constructed of timber, as would the farm buildings. Furnishings and their value, listed in the accounts, give the impression of a frugal interior:

1 wooden table with trestle	value	12d
1 iron tripod	“	4d
1 bench	“	4d
1 chest	“	
1 wooden chair	“	1d
1 leaden basin	“	3d
1 wooden water bucket	“	
1 bronze cooking pot	together	2s.
and 1 bronze olla (pitcher)		

The ornament of the chapel was equally simple:

1 chalice	value	10s
1 vestment with fitting apparatus	“	10s
1 book	“	5s
1 antiphonary	“	3s
2 drapes or canvas canopies ( <i>canevac</i> )	“	6d
1 missel	together	1 mark
1 book of saints lives		
1 ark for the vestments	“	6d
2 lead phials		
1 incense burner	together	18d
2 bronze candelabra		
1 bell	“	2s

There is no mention of windows of stained or painted glass, which were often regarded as items of portable wealth<sup>1</sup>.

#### 4.4 The Manor at Work

In the first two years of crown 'guardianship' there were four consecutive stewards – Galfrido de Segrave, Johannes de Sudleye (Lord of the manor of Griff and Coton), Ricardo de Hertshill (Sheriff), and Alexi de Compton. The reason for this is uncertain, though it may be in part a measure to avert corruption. Accounts were returned to the treasury twice annually in 1308 and 1309 (summer and winter periods, ending 20<sup>th</sup> May and 29<sup>th</sup> September), on the departure of each steward. Henceforth, accounts were rendered annually at Michaelmas, with the exception of the final year's stocktake, which was made on 1<sup>st</sup> February 1314.

One can speculate that productivity suffered as news of the Templar arrests reached the manor and a general wave of apprehension pervaded the household. It is even possible that brothers had fled and discipline and routine had somewhat dissipated. The accounts give the impression that it took the first two years for the manor to reach an optimum level of productivity and profitability. In early 1308, 42½ acres of winter seed of peas, oats and barley were sown, and in late summer, 180 acres of corn reaped, an indication of what the former demesne had been capable of putting under the plough each year<sup>2</sup>. Notably for the first half of 1308, grain (wheat, rye, peas, and oats) was bought in for both consumption and seed. The following year, 148½ acres were sown (40 wheat, 36 rye, 18 peas, 48½ oats and 6 mixed corn). Thereafter, until 1313, an annual productivity rate was maintained between 127 to 132 acres, sown with wheat, peas, oats and mixed corn. The growing of rye and barley was abandoned, perhaps because it was less reliable.

The reaping of 180 acres of corn in 1308 was done by an outside contractor (*per medium alterius*) for the fixed sum of 76s. 8d based on the piece-work rate (*ad tascham*) of 5d per acre (PRO E 358/19, membrane 41, sheet 2, 20.5.1308-29.9.1308). Four carters were acquired to transport the grain for 2 days at a charge of 2s. In addition, ten *falcatorum* (reapers) were hired-in to scythe meadows for 3½ days at 4d per head. The following autumn, 116 acres of diverse grains were harvested on a similar contractual basis, at a cost of 43s.6d, or 4½d per acre. Sixty-six days customary boon-works (*customariorum de precario*) were also used to reap two acres of grain, the cost of which was 3s.6d for the customary meals of the workforce. It is likely that the Temple had previously made full use of forced labour services on the demesne, but it seems that the *seneschals* of Chelverscote, in line with the growing trend, recognised this as a false economy - paid day labourers were more productive and there was no costly expenditure on meals (*c.f.* Duby 1968: 269). Ten customary labour services days were commuted in 1309 (PRO E 358/19, Rot 43, sheet 3, 8.7.1309 – 29.9.1309) and 144 the following year (PRO E 358/19, membrane 44d, sheet 7, 29.9.1310-29.9.1311).

<sup>1</sup> Fragments of stained glass were understood to have been found during the archaeological investigation of 1970, *c.f.* correspondence between: Mr. F. Fawcett (Curator of Nuneaton Museum in 1970) and Mr. S Taylor (site director), 3.8.1970, Nuneaton Museum archive.

<sup>2</sup> Prof. C. Dyer gives a mean of 200 acres of arable for the demesne during the era of high farming in the late thirteenth century. *An Age of Transition? Economy and Society in England in the Later Middle Ages*, 2005 p.89 (Oxford)

The *repreve* (reeve) was on piecework rates (*vadii*) and, at 2d per day he was also responsible for overseeing the manor of Wolvey, which appeared to specialise in pig-farming (PRO E358/19, Rot 43, sheet 3, 8 July- 29 Sept 1309). It is uncertain at which manor the *repreve* resided, but on at least one occasion (PRO E 358/19, membrane 41, sheet 2, 20.5.1308-29.9.1308) appears to have been received two stipends. Annual outgoings, besides wages for the household and contracted-in workers, usually entailed the roofing and repair of houses and frequently the contracting of a skilled carpenter and his assistant.

Much of the grain produced was sold, a fair amount of it on account. Revenue was further augmented by the annual sale of surplus livestock (pigs, hens, cocks and capons), eggs (1300 were sold in 1310-11 (PRO E 358/19, membrane 44d, sheet 7, 29.9.1310-29.9.1311)), grazing, animal fodder and raw materials. Sea coal (*carbonibus maritimis*) was regular source of income, undoubtedly obtained from the vicinity of the Temple farm, beneath which ran a seam close to the surface. Timber and brushwood was sold in varying quantities, including fallen branches of oak. Potting clay (PRO E 358/19, membrane 41, sheet 3a 29.9.1308-15.5.1308) (*terra ad vesa sirgata facienda*), (See also, PRO E 358/19, membrane 45d, sheet 6, 29.9.1312-29.9.1313 “*de agilla et granera venditis*”) was occasionally added to the list, as was sand or gravel (*ibid*) (*granera*) and stone roofing material (*tegulis lapide*), the latter of which is likely to have been Stockingford Shale (PRO E 358/19, membrane 45d, sheet 4, 29.9.1311-29.9.1312). View of Frankpledge presented a further income opportunity, although, with the exception of 3s. 6d in the first year (PRO E 358/19 sheet 1, Rot 28, 10.1.1308-20.5.1308), there is nothing recorded thereafter. Occasionally, surplus stock would be delivered to Balsall, such apples to make cider (PRO E358/19, Rot 43, sheet 3, 8.7– 29. 9.1309).

The sums received by the Treasury throughout the period of custodianship were as follows:

Accounting period	Total per annum
10th Jan – 20 <sup>th</sup> May 1308	£4. 6s. 1½d
20 <sup>th</sup> May – 29 <sup>th</sup> Sept 1308	£29. 17s. 1½d
29 <sup>th</sup> Sept 1308 – 19 <sup>th</sup> May 1309	£11. 16s. 8½d
8 <sup>th</sup> July 1309 - 29 <sup>th</sup> Sept 1309	£17. 19s. 5d
	£34. 3s. 3d
	£31. 0s. 1½d
(Note: accounts are missing for the May-July changeover period)	
29 <sup>th</sup> Sept 1309 - 29 <sup>th</sup> Sept 1310	£48. 17s. 5½d
29 <sup>th</sup> Sept 1310 - 29 <sup>th</sup> Sept 1311	£40. 9s. 8½d
29 <sup>th</sup> Sept 1311 - 29 <sup>th</sup> Sept 1312	£38. 19s. 11½d
29 <sup>th</sup> Sept 1312 - 29 <sup>th</sup> Sept 1313	£36. 9s. 3d
29 <sup>th</sup> Sept 1313 – 1 Feb 1314	£3. 3s. 4d

The headquarters buildings at Balsall suffered greatly during ‘the great wind’ of 1310/1311 (PRO SC6/1040/21) and as a result required extensive repair work (Gooder 1995: 29). The expenditure was kept to a minimum, a significant amount of building material for this purpose being transported from the Chelverscote manor. It is not known whether the Chelverscote farm also suffered storm damage, but, as Gooder noted, there was an absence of a charge for roofing slate (*ibid*), which may suggest that materials were exploited from existing buildings.

The winding up of Chelverscote manor came on February 1<sup>st</sup> 1314. The Hospitallers were to inherit no more than land and abandoned buildings. The household was released, the bailiff sent off to Balsall for the time being, and the chaplain apparently discharged. The inventory was received by Ricardo de Hertshill, Sheriff. Hay and peas were sold off, as were the pigs and smaller livestock – hens, capons, and geese. The ‘dead stock’ sold included four old ploughs without iron fittings, eight yokes, hand tools, a measure and a wagon. All the paraphernalia of the chapel was listed, packed up and driven off with the two teams of oxen, two cart houses, a heifer, a cow and a bull, to the regional headquarters at Balsall (PRO E358/19, membrane 46 sheet 5).

#### 4.5 The Manor of St John

It seems that Chelverscote was not obtained by the Hospitallers until 1324 (*c.f.* Larkins & Kemble: 1885, 179-180), by which time one suspects that they took over a very run down, if not derelict, establishment. The estate henceforth was known by the name of the manor of St John of Jerusalem, or simply, St John’s. References to the manor after this date are sparse, mostly indirect - surnames or field names in connection with the conveyance of small parcels of land. Between 1360 and 1439 a small number of documents of this kind (e.g. NC CR136C 772, C14, CR 136C 777, C14, CR 136C 787 C14) were witnessed either by William of the Temple, or Thomas of the Temple, or a successive William (Haddon) of le Temple. As a witness in a major inter-parish dispute of 1405 involving rights of common, Thomas is described as *Thomas del Temple firmius domini prioris Sancti Johannis de Jerusalem in Anglia infra parochiam de Chilverscoton* (NC CR136 C565a). Despite the tendency for the order to lease their possessions to tenant farmers, the apparent absence of such from the Lay Subsidy Rolls allows us to infer that the former manor of the Templars was farmed under the direct administration of the regional headquarters of the Hospitallers at Balsall. The land was in 1481 subsequently leased by the Order of St. John, jointly, to the neighbouring priory of Erdbury and to Sir Edward Grey (NC CR136.C.310).

The Crown confiscated the manor in 1540 and leased the farm to Robert Akers of Berkeswell, Warwickshire, for the annual sum of £18.00. Elizabeth I granted the manorial rights to Thomas Dabridgecourt in 1562 (NC CR136.C.810). Henry Acres, son and heir to Robert, continued the tenancy of the capital messuage called “the temple”, and received from Dabridgecourt, the right of Performance of Court (NC CR136.V.82.73; CR136.C 806.14).

Mr. Acres’ estate also included a large house in Sea Lane (now Heath End Road<sup>3</sup>) which was also known as Selons House. On Henry’s death in 1567, the estate was bequeathed to his wife Jane for her life, and after her death, to his son and heir Henry; failing which everything would go to his two daughters, Anne and Elizabeth when they reached the age of eighteen (PRO PCC. 16).

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<sup>3</sup> The site of Selons House has not been located, but circumstantial evidence points to the Bull Ring end of Heath End Road, Nuneaton

## 4.6 A Mix-Up of Temples

During his Court of Survey of Chilverscoton between 1681 and 1685 (NC CR136 V101 (Vol. I), V109 (Vol.II), V12 (Vol.III), V122 (Vol.IV), V13 (Vol.V), 1681-85) Sir Richard Newdigate noted:

*'[the] situation of the Mannor House belonging to this Lordship (anciently call'd le Temple in Coton because it did belong to the Knights Templars) is in a certaine ground called the Barn Meadow West of the Pool lately made for the ye Coalpitt Water Wheel which ~~is now~~ [deleted in MS] was in the year 1685 in the possn. of Robert Parker & was sold by Mr. Dabridgecourt to one Mr Acres from whome by marriage of his Daughter one Peter Temple had it with the rest of Mr. Acres' Land, and in his time it was called Temple Hall, and Suffered to fall or was pulled down.'* (NC CR136 V13 (Vol.V), St. John's, 3<sup>rd</sup> Art., p.19)

Sir Richard's information, possibly from local tradition, was somewhat of an oversimplification. Indeed, two men by the name of Peter Temple were to have the 'site' of Mr. Acres house called 'le Temple' in the early 17<sup>th</sup> century. Neither man was to occupy it. The first Peter lived with his wife Anne, daughter of Henry Acres<sup>4</sup>, at Selons House, where he died in 1609 (Lichfield Wills, Peter Temple Gent. May 1609).

The Acres and the Temple families had become very much inter-related by the late 16<sup>th</sup> century. In 1580, Peter's cousin, Anthony Temple (PCC. Darcy, 29 Dec.23 Eliz. (1580) Will of Anthony Temple (proved 1581)), lived with his family at "the Temple House in Coton which [he] held of Mr. Giffard"<sup>5</sup>, which is quite likely to have been in the former possession of Mr. Acres. A lead beneficiary in Anthony's will of 1581 was Elizabeth Akkers, the 17 year old step sister of Anne Temple. Other than this, her relationship to the Temples is unclear. Anthony's wife was also named Elizabeth and Anthony regarded two other beneficiaries, George Acres and Henry Acres as his own brothers<sup>6</sup>.

When the curtain rises again in 1602 there is an ensuing case in chancery (Chancery Proceedings, 1602-06, C.2. Jas. FW53/713 and GW/47) wherein the defendant, Jeffrey Fox, a mining engineer and entrepreneur (and probable relative of the Peter Temple) is accused by Walter Giffard (son of John) of maltreating his property. Fox used the old house called 'le Temple', by then Giffard's barn, to store chains and machinery, but more importantly, he had made a large pool to the east of the house to supply water-power to drain the pit and, in doing so, managed to destroy 'a perfectly good orchard'. The grey slurry, known locally as 'clod', was the first layer encountered by archaeologists in 1970. It is unclear what prompted the abandonment of 'le temple' between 1581 and 1602 but it probably had much to do with Fox and the general increase in mining work around the house. Evidence of a conveyance between the Acres-Temples and John Giffard is absent.

The second Peter Temple, a gentleman of Coventry, formerly of Northamptonshire, came onto the scene in 1642, when he conveyed to Richard Chamberlaine, Clerk of

<sup>4</sup> Anne was daughter by Henry's first marriage to Margaret Gent of Southam, Warwickshire.

<sup>5</sup> John Giffard, at that time, held the manor of Griff and Chilverscoton

<sup>6</sup> Elizabeth Acres married Thomas Thornton of Stowe 3.12.1582, so it is just possible that she was previously married to Anthony Temple

the Court of Wards, the demesne of St John's manor, together with Selons House, which at that time was tenanted (NC CR.136.C.880). The field names listed in the sale correspond to those held by Henry Acres. Newdigate rightly observed that "no manor is pretended to" (NC CR136/C19/C.999), for Dabridgecourt and his heirs retained the manorial rights.

The manor of St John was frequently misinterpreted in conveyances. Thomas Dabridgecourt was granted the manor under the name of Chilverscoton (Cal. Pat. Rolls, 4. Eliz. pt.6). In 1603, Dabridgecourt's daughter and heir, Christian Belcher (widow of William Belcher), and her son Dabridgecourt (Warwickshire Foff, Trin. 7 Jas 1, 1603) sold the same manor to Walter Giffard, who already held manor of Griff and Coton. Walter's father, John bought the 'manor of Griff and Chilverscoton' in 1561 from Thomas Lyfield and Frances, his wife (Warwickshire Foff, Mich. 3-4 Eliz., 1560-1), and later settled it on his son (Chanc. Inq. Post. Mort. (ser 2), CCCCLXX, 41). Walter in 1629, transferred the manor of Griff and Chilverscoton to Richard Chamberlaine (Warwickshire Foff, Trin. Chas I, 1629). Three years later, Walter Giffard, esq. of Chillington and Peter Giffard, his son, sold St John's Manor to Richard Chamberlaine and Hugh Audley, which, to add to the confusion, was called the 'manor of Griff and Coton and Chilverscoton' (Warwickshire Foff, Trin. Chas I, 1632).

Chamberlaine held his manors of Chilverscoton until 1669, when he conveyed them to Sergeant Newdigate (NC CR136/C19/C.999). In the 1680s, the Sergeant's son Sir Richard Newdigate embarked upon a Court of Survey to confirm his title to the manors. It lasted almost five years<sup>7</sup>, during the course of which he managed to unravel the ancient manors of St John and Griff and Coton. A part of the text of the survey takes the form of a perambulation along the bounds of each manor, naming fields and local landmarks.

#### 4.7 The Changing Landscape

The 17<sup>th</sup> century had marked the beginning of a transformation of the Chilverscoton landscape wherein many old local landmarks were replaced by new. The chief reason was the coal outcrop, which passed northwest-southeast under Griff and Nuneaton Common (west of Coton), lay directly beneath the site of the Templars farm. Along with the coal lay the coal-measure clays, extensively exploited for the manufacture of bricks and pottery. To judge from the Templar accounts, this swathe of land is most likely to have been riddled with old shafts, bell pits and linear seam working dating from the medieval period.

By the early 1700s, efforts to extract coal were becoming increasingly concerted,<sup>8</sup> with Sir Richard Newdigate of Arbury, as chief landowner, being the prime mover. His early mining works centred on the former arable fields of St John's manor. Pits were sunk immediately to the north of the Templar farm; in the Ley Field, the First Riding and the southern part of the Temple Park, and wagon haul-ways traversed Barn

<sup>7</sup> This included the other ancient manor of Erdbury-Moorbarn in the parish of Chilverscoton. Mrs. E. A. Gooder gives a summary account of Sir Richard's Survey in *The Squire of Arbury: Sir Richard Newdigate, second baronet (1644-1710) and his family*, pp. 85-9, 1990 (Coventry Historical Association)

<sup>8</sup> A comprehensive account of the main Nuneaton area sources of coal-workings are in A.W.A. White: 'Sixty years of coalmining enterprise on the North Warwickshire Estate of the Newdigates of Arbury 1680-1740 (unpublished M.A Thesis, Birmingham University, 1969)



Meadow and the Temple Park (NC Map 1807, CR 1361), the scars of which may be seen on an aerial photograph (National Monuments Record Air Photographs, 543/RAF,1698, 0094 (F21), 15.3.62, 10,000, MOD/CRW). In the first decade of the 18<sup>th</sup> century, Sir Richard began to construct both horse-drawn tramways and small canals, or “boat ways”, to transport the coal from the pitheads. The Griff Canal Arm, built in 1787 is believed to have replaced a smaller ‘boat-way’, which began about 150m immediately southeast of the Templar farm. The wagon routes and tramways were, in 1850, replaced by a mineral railway, the Griff New Colliery Branch Line<sup>9</sup> which was constructed on a rising gradient diagonally north-west across Barn Meadow and Temple Park, to serve Griff No.4 colliery (1850) and, later, No. 5 (1870) colliery (Lee 1973: 1-19), cleaving as it did so, the 17<sup>th</sup> century feeder pool dug for the water wheel and the substantial stone foundations of a pre-17<sup>th</sup> century building<sup>10</sup>. The railway also was to serve nearby brick and tile works. A second railway track, the New Griff Colliery Branch<sup>11</sup>, followed in 1894, bifurcating at the point it crossed the old feeder pool, then arcing westwards and southwards around the north side of Barn Meadow, towards Griff Clara Pit. This line also served Stanley’s No 5 Brickworks situated immediately west of Barn Meadow. Bermuda Village was built in Temple Park, in 1891, to house the colliers<sup>12</sup>. By 1961, both of the collieries and the brickworks had closed and the lines were dismantled; the land of either side was wasteland until the early 1980s.

#### 4.8 Recent Disturbance to the Site

The Sudeley Open-cast Mine lay just beyond the landscaped pool to the south of the development site. Coal dumping recorded on the site may have come from the Griff Collieries just to the north of, beside Heath End Road. Traces of the 19th century Stanley Brothers Brickyard No. 5 on the western half of the site was recorded when house foundations were being dug. The light railway ran for the most part on a rising gradient, the course of which was identifiable for most of its way across the site. The embankment was probably made by heaping up the soil deposits nearest at hand, and may have resulted in the loss of any archaeological remains previously along its route.

Prior to the archaeological investigations by AOC Archaeology Group some ground preparation had taken place in the form of levelling by bulldozers. This had removed hedges, shrubs and earth, which was deposited along the approximate line of the former embankment. Deposits of industrial debris of different types were seen all over the site, particularly coal slack, the dust and waste “brickle”. As the site had been empty for several years before the development started, parts of it had also been used for general fly-tipping.

<sup>9</sup> SP 352 903; see O.S. 2<sup>nd</sup> edition 1888, 1:2,500

<sup>10</sup> Outlined on the on the 1807 map. Stephen Taylor found the southern most surviving six feet of this building during archaeological trial trenching in 1967. It comprised a flagged floor of sandstone, bounded by a wall of stone blocks some ten inches square in section by two feet in length. He concluded that it may have represented “the last remains of a structure destroyed in the 17<sup>th</sup> century”: see Taylor, S.J: March 1967, ‘Excavations in Bermuda, February 1967’ (unpublished report)

<sup>11</sup> See O.S. 1900, 10:560

<sup>12</sup> Named after Lieut. Gen. Sir Edward Newdigate, Governor of Bermuda, 1888-92

## 5 PREVIOUS ARCHAEOLOGICAL WORK ON THE SITE

### 5.1 Discovery of the Temple Site

*By Martin D. Wilson*

The site came to light in 1966 when Mrs. Eileen A. Gooder (Department of Extra-Mural Studies, University of Birmingham), examining the Newdigate Collection at Warwick Record Office, happened upon Sir Richard's remarks concerning 'le Temple' in Barn Meadow. Furthermore, on Robert Hewitt's map of 1684 (NC Map 95/6, CR 136/764 104) Newdigate had sketched the location of a feeder pool, a 'new level' of a stream controlled by sluices and, straddling the course of the Coledelphie Brook, a cluster of strategically-placed baling 'gins'.

Mrs. Gooder carried out a field-walking survey in Barn Meadow, which located a sparse scatter of 13<sup>th</sup> to 17<sup>th</sup> century pottery in the plough-soil, and in the northern part of the field a considerable spread of broken roof tiles (Taylor 1967). Based on this evidence, and in response to opencast mining proposals, she sought support from the Ministry of Buildings and Public Works to undertake archaeological investigations in an attempt to locate the lost Temple<sup>13</sup>.

### 5.2 The Early Excavations (Figure 3)

The following year, in February and October, extensive trial trenching took place in Barn Meadow, directed by Mr. Stephen Taylor of the University of Birmingham<sup>14</sup>. Two promising areas were located, Taylor subsequently excavated one of these areas in 1970. It was dug in a particularly hot summer, the covering layer of sun-baked mining slurry and dust resulting in slow progress and poor archaeological visibility. The stone footings of a substantial three-bayed timber-framed building were exposed. The structure was aligned northeast-southwest and measured 6.8m x 13m, the east bay being incomplete. In the corner of the west bay a circular buttress-chimney-oven measured 2.5 in diameter and survived to a height c.0.4m. Other substantial remains uncovered, included an extent of cobbled floor belonging a large stable or barn, the circular stone base of a possible dovecote, c.2.5m in diameter, and the stone foundations of a series of outbuildings. In all probability, it was the remains of Henry Acres' house, called 'le Temple'.

Taylor felt reasonably sure that he had found the site of the Templar farm, reporting that "the presence of roofing slates, decorated floor tiles and a quantity of largely 13<sup>th</sup> century pottery in the rubble beneath the timber building indicates that a substantial building in the vicinity had been destroyed or drastically modified before the erection of the timber-framed building in the fourteenth century" (Taylor 1971: 38). The foundations of the 'hall' were on a raised platform of puddled clay, which countered the gentle slope southwards of the original ground surface. Taylor noted 'enigmatic features' and more 13<sup>th</sup> century pottery below beneath the platform (Taylor 1970, 1971). Furthermore, he had previously reported that trenching revealed a large tumble

<sup>13</sup> Copy of letter to J.G.Hurst, MBPW 29<sup>th</sup> December 1966, in Nuneaton Museum

<sup>14</sup> With the assistance of members of staff and students of the Department of Extra-Mural Studies, and of Nuneaton Technical College.

of stones and roofing slates adjacent to a mound by a mineral railway, but restrictions on time precluded its investigation.

### 5.3 Archaeological Work in the 1990s (Figure 3)

Local historian and archaeologist Mr. M. Wilson, in 1996 began to investigate the surviving documentary evidence of the Temple site, undertaking a detailed landscape regression analysis. This revealed with near-exactness the bounds of the ancient manors as bequeathed by Ralph de Sudeley to both Augustinian priors and Templars (Wilson 1997). A key document for confirming the location the Templar farm was the will of Henry Acres<sup>15</sup>, which affords us an insight into the nature of Henry's homestead (which may not have significantly changed since the 14<sup>th</sup> century) and the landscape surrounding it where coal mining already played a part:

*"...my capitall house called the Temple with the barne barne yarde chapel yarde the dovehouse, the Parke, the park furlonge, the Rydinge the two Ferny fields with John Shephardes house, the two Barley Feildes, the two Gascoynes, Six Shillings close, the Le feilde, the Myry Braknolles, the Braknoll Wood and Brakknoll Meadowe, the Marris grounde joyning to the Dove houuse and also the Lanes feilde betwixte the pit and the Lane..."*

Of particular note is the reference to the courtyard or work area, presumably a metallised surface which may have belonged to the Templar chapel. The names 'Parke' and 'the Parke Furlonge' were retained into the 19th century as 'the Temple Park' and the 'Temple Furlong' (Newdigate Collection, CRO 10 CR136.M1 (1807) Map: J. Kempson).

Wilson also consulted the 1970s diggers, who concurred with the common belief that the excavation site was removed during open-cast mine works in the mid-1980s. The original site archive greatly depleted, containing only a few unmarked site drawings without survey references. A site visit proved that all that remained of Barn Meadow was a narrow strip to south of the course of the former mineral railway, which had lain under the bund of the open-cast colliery. It was, however, during this visit that a local resident pointed out the spot where stone footings had been seen almost twenty years before, during the removal of the bund<sup>16</sup>.

A programme of fieldwork was then initiated. A resistance meter survey was followed by test pitting in 1996<sup>17</sup> by members of the Atherstone Archaeological Society (AAS), locating an area of cobbles *in situ*. The decision was then taken to strip an open area, the aims of which were to expose enough to re-survey, geo-reference old site plans, and re-examination the archaeological evidence. An area measuring c.480 m<sup>2</sup> was re-exposed and planned in by M. Wilson in August 1996 (Wilson 1997: 6, Fig.3; Wilson 2005, 415, Fig.11). The cobbled floor and remaining masonry foundations were surveyed in detail and phased, and a petrological analysis was carried out the building stone to determine its source (Cook 1997). This done, a part-excavation of the site was then led by Mr. K. Scott of the ASS, over a period of five months, to clarify the

<sup>15</sup> Note: The Victoria County History assigns this to a moated site called Temple House located in the former manor of Griff and Coton, and now situated on the estate of Arbury Hall, see Salzman L.F: 1947 (ed), *Victoria History of the Counties, Warwickshire, Hemlingford Hundred*, vol. IV, 175

<sup>16</sup> This was Laurence Fretwell, amateur historian of Bermuda Village, Nuneaton

<sup>17</sup> Under the direction of M. Wilson and K. Scott

earliest deposits. The discovery of crushed roofing slates and 13<sup>th</sup> century pottery below the building platform concurred with the results of the earlier excavation. Beneath this layer, there was no conclusive evidence of structures, but six domestic waste pits found dug into natural sand contained quantities of 13th century pottery (*ibid*, 1997 & 2005).

## **6 ARCHAEOLOGICAL INVESTIGATIONS IN 2004**

### **6.1 The 2004 Evaluation (Figure 2)**

Prior to the proposed redevelopment of the site an archaeological evaluation was undertaken by AOC Archaeology Group in 2004 to assess the archaeological potential of the site. This was conducted in accordance with Planning Policy Guidance 16 (PPG16), and the requirements of the Local Planning Authority (LPA). The evaluation was originally designed to consist of 10 trenches 30m long; four in the north-east corner of the site to the north of the overhead electricity cables and six to the south of them. However, for practical reasons Trenches 5 and 9 were abandoned and Trenches 6 and 10 extended by 30m each.

The evaluation trenches were excavated using a mechanical excavator. Trenches were cleaned by hand and a written and drawn record was made of each trench. The evaluation showed the western half of the site to have been severely effected by large-scale modern industrial activity, but the eastern half of the site was less disturbed. Brick, stone and mortar foundations, or working surface remains, identified in two trenches were believed to be associated with the manor buildings recorded in the previously excavations.

### **6.2 The 2004 Excavation (Figure 3)**

It was agreed that archaeological excavation and ‘preservation by record’ would be the appropriate mitigation for the proposed development. The central area of the site was not excavated as live cables electricity cables crossed the site at this point.

Topsoil and modern overburden was removed by mechanical excavator. All of the exposed areas were cleaned by hand and archaeological features were examined and at the least partially excavated by hand. Site recording was carried out in accordance with the systems set out in the Museum of London Archaeology Service Archaeological Site Manual (3<sup>rd</sup> Edition 1994). No further significant archaeological remains were seen beyond either the northern or southern limits of the excavated area. Similarly no further remains were seen during the reconstruction of a deep manhole near the south-west corner of the rear gardens the west side of Bermuda Road or in the deep drain trenches leading to it.

## 7 SUMMARY OF RESULTS

The eastern side of the site sloped naturally from north to south with a sudden drop down of about 1.0m from 93.95m OD to 92.95m OD at the southern end. The original context numbers assigned during the various phase of work on the site are used throughout this report. The number sequence 1-999 was used for the excavations carried out, under the direction of Messrs. Scott and Wilson, in the 1990s. The number sequence 1000-2100 was used for the most recent excavations; all context numbers assigned during the most recent evaluation are prefixed (e101). Square brackets [ ] are used to denote cut features and rounded brackets ( ) to denote deposits.

### 7.1 Report Structure

The occupation of the site is interpreted in relation to five broad periods, reflecting the broad date ranges of the finds.

- Period 1: Natural deposits
- Period 2: Early medieval (c.1150 to 1350)
- Period 3: Late medieval (c.1350 to 1550)
- Period 4: Post-medieval (c.1550 to 1750)
- Period 5: Modern (c.1750 to present day)

These periods correspond roughly to the major historical periods in the life of the site: its occupation by the Knights Templar between 1185 and 1308 and its subsequent royal proprietorship until 1324; its subsequent possession by the Knights Hospitallers between 1324 and 1540; tenancies after the Dissolution of the Monasteries from 1540 until the beginning of the modern period, dated to 1750; and the modern era after that.

### 7.2 Period 1: Natural Deposits

In evaluation Trench 1 the natural consisted of dark red silty clayey fine sand (e103), known locally as red marl. Across much of the site the natural was yellowish brown sandy clay (e205), (e305), (e603), (e703), (e803), or reddish yellow silty clay (Trench 4). In evaluation Trenches 3 and 4 the natural drift deposit was sealed by dark yellow brown silty clay subsoil (e304), (e402). During the excavation there was a similar variation with glacial till sands and clays recorded as (1227), (2026), (2056), (1127), (1034), (1096), (1097) and (1118). These layers were quite variable even within a small area and included dark yellowish brown clays, sands ranging in colour from pale yellow to brown and red, and yellow carboniferous sandstone. The natural deposits were encountered in the excavation area at 93.82-95.23m OD.

### 7.3 Period 2: Early Medieval (c.1150 to 1350) (Figure 4)

Early medieval activity at the site consisted of Building 1 and features associated with water management, both thought to be contemporary with the Knights Templar occupation of the site.

#### *Building 1*

Building 1 was located on a raised natural platform in the west of the site. As elsewhere on the site the building remains appear to have been heavily robbed as well

as truncated by later features, and were therefore found to be in a very fragmentary state. Building 1 consisted of a substantial north-south foundation (1413), an east-west foundation [1449], a hearth comprised of pitched tiles (1153) and an east-west linear beam slot [1417]. The remains of a pitched tile hearth (1153) on the north-east side of the main wall line suggest that this would have been the interior of the building.

The north-south aligned masonry foundation (1413) was trench built within construction cut [1442]. The wall foundation was random coursed, constructed of tile, quartzite sandstone and shale, and measured 6.00m long and 1.60m wide. The wall had been repaired or rebuilt and posthole [1367] truncated an early posthole, apparently representing the replacing of a structural support. A number of postholes [1369], [1425], [1427], [1429], [1431], [1433] and [1446], were cut into the wall foundation. These were filled by (1158)/(1373), (1366), (1368), (1426), (1428), (1430), (1432), (1434) and (1445) respectively. These all appear to represent structural elements within the masonry wall. No datable finds were recovered from this part of the structure.

An east-west aligned foundation was represented by a heavily robbed out cut [1449] filled by mid grey brown sandy clay (1448) with frequent sandstone inclusions. The surviving foundations measured 5.50m by 0.66m and 0.15m deep. The eastern end of the foundation had been heavily disturbed, possibly by robbing in antiquity or by more recent disturbance of the area.

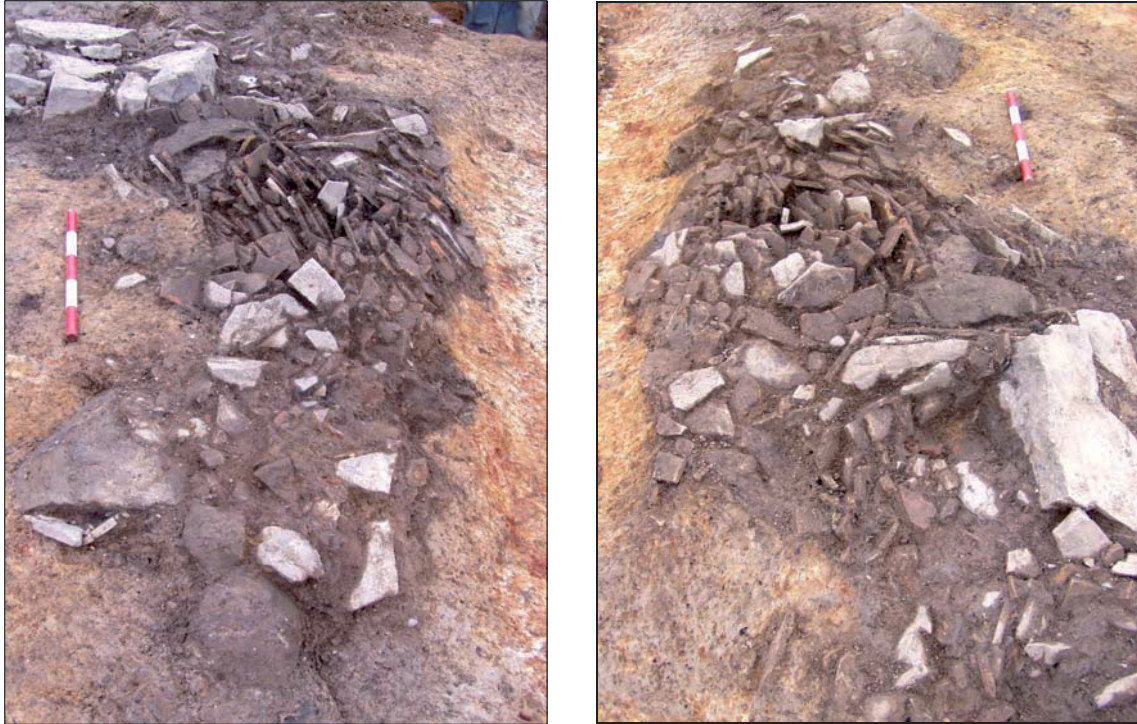
Linear feature [1417] was located to the south of the masonry, on a similar alignment to that of cut [1449]. It measured 1.60m by 0.30m wide and 0.14m deep and continued beyond the edge of the excavation area to the west. The feature was filled by compact dark grey brown clay silt (1416), which contained moderate charcoal flecks and occasional small stones. Along the base of the cut was a line of stake holes [1424] each hole measured 0.10m in diameter and 0.10m in depth. At the eastern end of the feature a posthole [1422] measured 0.40m in diameter and 0.30m in depth, and was filled by firm light grey silty clay (1421). Collectively, these features appear to represent a beam slot, running east-west at the southern side of Building 1. The diminutive scale of the beam slot and postholes, compared to the masonry foundations, suggest they represent a less substantial part of the structure. No dating evidence was recovered from these features; however they are included in Period 2 due to their similar alignment to structures to the north dated to this period.



**Plate 1:** Linear feature [1417] with the stakeholes of [1424] in the base of it. The stone-packed posthole [1422] is in the centre foreground. Looking west.

Associated with Building 1 was a pitched-tile hearth [1153], with the possible remnants of a chimney base to the west. The hearth was built on two layers of bedding sand (1461) and (1462). Some ash had percolated through the tiles and left ashy deposits beneath the tiles themselves, recorded as (1459) and (1460). A piece of early medieval pottery (1150-1250) was recovered from the matrix between the tiles.

The pitch tile hearth [1153] was constructed of an unusual variety of ceramic roofing tile, which had both a nib to hang the tile on to the roof and two peg holes to attach them even more firmly to the roof. The square shape of the holes and their small size, suggests iron nails were employed in the fixing process. Although the tiles in [1153] were not used for roofing, their presence here and in overlaying destruction deposits (see below) may suggest that Building 1 had a ceramic roof made from nib/peg tiles. At the Chilvers Coton tile and pottery manufacturing site nib/peg tiles were found in a 14<sup>th</sup> century kiln dump (Mayes and Scott 1984: 170), although they are of 13<sup>th</sup> century date in Coventry (Wright 1982: 102-3). The examples from Bermuda Park are all in pottery fabric Chilvers Coton type C buff, dated to 1275–1500 (Mayes and Scott 1984: 40-1, 63-4). This may suggest that Building 1 was roofed in peg/nib tile sometime between the late 13<sup>th</sup> and mid 14<sup>th</sup> century.



**Plates 2 & 3:** Tile-built hearth [1153] from west and east.

### ***Water management***

Several ditches were recorded across the site. Repeated re-cutting, and truncation by modern features, however, often complicated the sequence. These ditches are understood to have been associated with a large pond located at the southern end of site.

#### ***Ditch 1***

Ditch 1 consisted of a heavily truncated and undated cut [1268] filled by mid grey brown clay (1267). This feature was truncated on all sides by various features, it was 2.68m in length, 1.71m wide and 0.79m in depth. The feature was recut as [1264]/[1266] was between 1.15m and 1.34m wide, up to 0.45m deep and recorded for a length of 8.05m. Both the primary fill (1263) and secondary fill (1262)/(1265) contained early medieval pottery dated to 1150–1250. To the west this feature continued as ditch cut [1273] and was recorded for 4.55m until it merged with Ditch 2, The ditch was initially partly filled as a result of silting accumulation (1272) and (1271) and later by deliberate backfilling and levelling; the final fill, (1205), measured 3.44m across and extended beyond the limits of the ditch.





**Plate 4:** Section through Ditch 1

### ***Ditch 2***

Ditch 2 [1335] ran roughly parallel to Ditch 1 but on a slightly diverging angle. Several later features truncated the ditch, but it survived for c.30.00m in length and measured between c.0.5m and 1.40m wide and 0.64m deep. Ditch 2 was approximately 1.00 m to the south of Ditch 1 and was filled by a primary fill of firm light grey silty clay (1334) and secondary fills (1332) and (1333). These fills contained pottery dated to 1150-1300, and Ditches 1 and 2 appear to be of a roughly contemporary date.

### ***The Pond*** (Figure 5 and Figure 6)

The buried ground surface sloped naturally from north to south with a sudden drop down of about 1.0m, from 93.95m OD to 92.95m OD, over a horizontal distance of c.1.5m at the southern end of the site. This feature is likely to have been a pond in the medieval period, which appears to have been fed by a channel [1355] from the east. The pond measured approximately 22.00m from east to west and 10.00m from north to south, with a maximum depth of about 1.00m in Section 3. The pond had been truncated east by later industrial activities and extended beyond the excavation to the south. Its waterlain silt fills were recorded and sampled in a series of sections.

Pond [1355] was formed in the early medieval period and continued to be used throughout the later medieval period, when it eventually was allowed to become silted up. At the end of the medieval period it appears there was deliberate dumping into it the pond to level the ground. Layer (1353), one of the lower layers recorded in Section 9 and the primary fill of the pond [1355], produced pieces of pottery dated to 1275-1500. Layers (1342) and (1341), at the western end of the pond, represent waterlain clayey sand and were probably contemporary with its medieval use, whilst the channel at the eastern end (i.e. as seen in Section 9) may have been a later modification, possibly of later medieval or even later date but which contained residual medieval pottery.

Analysis of column samples taken from Section 3 suggests sediment accumulating in a watery environment. The profile of the section from where the monoliths were taken shows a broad, shallow depression where sediments accumulated in irregular bands, which would be indicative of a pond. The apparent irregular nature of the surfaces of the deposits could be because of the dumping in such a shallow environment. All sediments are poorly sorted often mixed with charcoal and coal and iron-rich sands. Context (1339) differs from the other pond deposits through the presence of fine root traces, suggesting that this was once a land surface. This suggests the pond dried out for at least a short period of time in this area, allowing vegetation to take hold.

The deposits within channel [1355] were recorded in Sections 9 and 10. The profile of Section 9 shows the steeply sloping edge to the watercourse. Column samples taken from Section 9 also reflect accumulation of material in a watery environment. Contexts (1351), (1352) and (1353) are clay silts, typical of an alluvial deposit, but containing frequent brick fragments, charcoal and coal inclusions. The underlying deposit (1354), through which channel [1355] was cut, contained no inclusions and may be weathered local boulder clay. Its greenish grey colour also reflects a waterlogged environment, which has suffered fluctuations in the level of the water table causing it to partly oxidise. A similar sequence was recorded in Section 10. This comprised a layer of weathered and partly oxidised clay (1350), equivalent of (1354) in Section 9, a peaty black organic layer (1349) formed at the bottom of the presumed pond, a 1.00m thick dump of clay slurry (1348) formed from waste from the brick production process, and one of the upper coal-dumping layers (1347) seen extensively across the site.



**Plate 5:** The pond, looking west towards Section 3 with stone revetment (1329) on the right and stone feature (1295) on the left.

On the northern edge of the pond a large deliberately placed dump of stones (1329) appeared to represent a foundation or revetment; another large dump of stones, (1295),

lay on the base of the pond. Stone feature (1329) measured 7.40m from east to west by 1.70m wide from north to south and stood to a height of 0.90m. It was made from cuboidally-fractured lumps of metamorphosed siltstone and mudstone of the Outwoods Shale Formation. There were two particularly large pieces of stone incorporated into the structure. One of these stones measured 0.95m by 0.45m by 0.16m, whilst an adjacent piece measured 0.42m by 0.40m by 0.15m. These large stones had been laid flat and deliberately balanced on smaller blocks of more yellow sandstone. The feature had been built by placing the stones on top of each other in a technique resembling drystone walling. There was no evidence of any bonding material, but the silty sandy matrix around the stones contained several pieces of pottery, dated to the late 13<sup>th</sup> century. The structure was roughly built to courses of c.0.15m height (the thickness of the bigger stones), although this was obscured by some of the stones tumbling southwards towards the pond. The lowest course was formed of sandstone on the bed of the pond itself, with no evidence of a construction cut. The structure was built behind a series of 15 small stakes measuring c.70mm in diameter, which had been hammered down into the underlying sand.



**Plate 6:** Detail of stone revetment (1329) looking north.

The second stone feature, (1295), comprised a sub-circular spread of large tightly packed large stones measuring 2.00m across. The feature was approximately 6.00m to the south of (1329) and laid directly onto the sand at the bottom of the pond. The feature was constructed of yellow sandstone, different to the shale core of (1329). The feature continued to the south beyond the southern limit of excavation. The southern group of stones appeared to be *in situ*, whilst those to the north appeared to have fallen. There was no sign of any piling or revetting to support the structure.

These two features may have formed part of a bridge or jetty, and may have originally been associated with other structures to the south, which have been removed by subsequent industrial activity.



**Plate 7:** Stone features (1295) and (1329) looking north.

At the western side of the pond a dump of blocks of Outwoods Shale (1392) overlay a larger dump of similar stones (1391), which was oval-shaped in plan and measured 6.00m north-south by 4.00m east-west. Two layers of stone, (1455) and (1456), were below (1391), however they all appear to have been deposited as a single event. The stones were located at the top of a slight rise in the natural red sandstone bedrock and there was no evidence of any bonding material between the stones. Both layers (1391) and (1392) contained pottery and tile fragments that date to 1150-1250, as well as a single intrusive post-medieval sherd. The function of these features is not clear, however they were located on the edge of the pond, similar to (1329) on the northern bank. It is possible that (1391) and (1392) were intended to provide hardstanding on the edge of the pond, and may be associated with a number of channels directly to the east.



**Plate 8:** Box section through stone dump (1391) looking north, with natural red sand at the base of the trench.

### ***Occupation/Activity Layers***

Directly north of the pond were a series of poorly-defined thin trample and occupation layers (1208), (1209), (1210) (1326) and (1337). They comprised bands of sand with occasional stone inclusions, which distinguished them from the natural deposits. Layer (1326) contained pottery of mid 13<sup>th</sup> century date, all appear to be related to activity in the area of revetment (1329).

### ***Early Medieval Pits***

A series of early medieval features were recorded to the north of the ditches and pond. Two shallow parallel northeast-southwest orientated gullies were considered by the excavators as representing the robbed out wall foundations of an early medieval building, beneath Building 3. Flat-bottomed gully [1028] / [137] had steeply sloping sides and measured 0.4m - 0.5m in width, c.0.30m deep and extended c.9.3m towards the southern baulk. It was filled with a homogenous light grey to yellowy brown sandy silt. A large quantity of, adjoining and unabraded sherds of a 13<sup>th</sup> century green glazed pitcher were found in the base of the gully together with small slag nodules. Located immediately east was a second shallow, flat-bottomed gully [122], possibly a continuation of [1026] to the south, which measured 0.80m wide by 1.80m long. The gully contained a fairly homogenous, dark brown silty sand (120) with occasional fragments of quartzite. The gully cut an earlier pit [136]. While it is possible these features represent early building foundations there was little evidence in the later excavations to corroborate this.

To the north and east of these gullies a series of pits cut into the natural and were sealed by layers of the exterior cobbled surface and central bay of the Building 3 (see below). Three smaller pits at the northern side of the group consisted of [123], [125] and [129]. All were sub-circular in plan with steeply sloping sides, level bases, and measured approximately 1.00m in diameter. Pit [123] was 0.38m deep and contained two fills, a primary fill (128) of light grey sand and a secondary fill of compacted

yellow-orange clay (124) that contained two sherds of unglazed 13<sup>th</sup> century cooking pot. Pit [125] was 0.56m deep, filled by a primary fill (127) and was sealed by compacted yellow orange clay (126). This secondary fill contained two fragments of quartzite and a single piece of slag. Directly to the south a second group of inter cutting features consisted of a small circular pit [55]. This truncated a larger sub-circular pit cut [83]. To the east two more circular pits [39] and [87] were recorded and to the west a larger pit [13]. The stratigraphic location of these features suggests they are all of a roughly contemporary date.

Further to the south an inter-cutting group of larger pits were interpreted as rubbish pits, associated with the Templar occupation of the site. Excavations in the 1970s recorded 'enigmatic features' beneath the central bay of Building 3, from which sherds of 13<sup>th</sup> century unglazed sandy ware cooking pots were recovered. The later excavations recorded that the pits were sealed beneath a layer of compacted yellow-brown sandy clay (155), dumped to level the ground after the pits were backfilled.

Pit [161] was irregular in plan, measuring 1.4m in diameter and 0.24m deep, with sloping sides. The pit was filled by (151), a homogenous grey-brown sandy silt with clayey sand lenses and abundant charcoal flecks. The fill deposit produced a quantity of 13<sup>th</sup> century pottery, including unglazed sandy-ware cooking pots and several green glazed fragments of a decorated pitcher, as well as a small amount of animal bone.

Pit [139] was sub-circular in plan, measuring approximately 2.00m in diameter and 0.3m deep, with gently sloping sides. Its fill (138) consisted of alternate lenses of light grey charcoal-rich sandy silt and mottled yellow silty sand, representing dumps of domestic waste and clean sand. The pit fill contained of 13<sup>th</sup> century unglazed cooking potsherds in red and grey sandy fabric and three fragments of animal bone.

Pit [160]/[136] was an irregular shaped pit that had been truncated by both [161] and [139]. It measured up to 2.00m across and 0.68m deep with sloping sides and a level base. The primary fill (152b) was a light grey brown sandy silt which contained occasional fragments of yellow sandstone, a large quantity of unglazed 13<sup>th</sup> century pottery and 15 fragments of animal bone. The upper fill (152a) was a charcoal-rich dark-grey sandy silt with occasional lenses of light grey sand, grit and pebbles. This fill contained 13<sup>th</sup> unglazed and green glazed pottery and five fragments of animal bone. Pit cut [160]/[136] truncated the northern extent of pit [163].

The stratigraphy of their fills showed that pits [163] and [166] were backfilled at the same time. The primary fill of [166] comprised alternating lenses of dirty-grey charcoal-rich clayey sand and light creamy sand (155b). Finds recovered from the darker layers included green-glazed and unglazed 13<sup>th</sup> century pottery and eight fragments of animal bone. The primary fill of [163] comprised alternating bands of charcoal-contaminated, clayey sand and dirty light brown sand (154b). Pottery recovered comprised sherds of unglazed 13<sup>th</sup> century sandy wares and green glazed wares in a white fabric; two fragments of animal bone were also recovered. Both fills (154b) and (155b) contained fragments of the same green glazed pitcher with brown glazed bead-scale decoration. The upper fill of both pits was a leveling spread of mixed yellow-brown mottled sandy clay (154a). Pit cut [166] truncated an irregular shaped pit [156], which extend beyond the section to the east.

Pit [162] was sub-circular in plan, measuring 2.20m in diameter and up to 0.66m deep, with an irregular base and sides. The southern side was gently sloping whilst elsewhere they were steeper. The primary fill (167) consisted of lenses dark grey clayey sand with occasional charcoal flecks, and light yellow sand. A secondary fill consisted of yellow-brown mottled clay, which contained fragments of sandstone measuring up to 0.40m x 0.30m. All were extremely worn and some displayed faint tooling marks. A small number of unglazed reddish sandy ware sherds of c.13<sup>th</sup> century date were recovered from this feature.

To the south sub-circular pit cut [1293] measured 1.80m by 1.40m and 0.61m deep, and was filled by dark orange grey sandy clay (1294), which contained pottery dated 1150-1250. The fill of this pit also contained 22 fragments of animal bone, the largest assemblage recovered from a single feature. The majority of the bone derived from 'ox-sized' longbone fragments with single 'sheep-sized' rib, as well as single examples of ox maxillary tooth, mandible, radius, lunate carpal, astragalus, calcaneum and central tarsal; elements of the head, lower jaw, lower fore leg, 'wrist' and ankle joints.

Nearby pit [1111] measured 1.65m by 1.40m and 0.98m deep was filled by firm mid grey sandy clay (1110). This contained pottery dated 1275-1500 as well as three fragments of longbone of an ox-sized animal. There was evidence that domestic waste was dumped into both pits and they appear to have been associated with the group of inter-cutting pits to the north.

#### ***Other Early Medieval Features***

A circular posthole [1270] measured 0.40m in diameter and 0.27m deep was filled by (1269) which contained a single sherd of pottery dated 1230-1350. Although there were a few small stones in the fill there was no identifiable packing. A truncated gully [1287] was filled by firm grey sandy clay (1286) and contained pottery dated 1150-1250. The gully measured 0.20m long and was truncated by posthole [1285] to the south and a modern intrusion to the north. Posthole [1285] was also filled by grey sandy clay (1284), which contained no finds.

A number of postholes, [1231], [1233], [1236], [1238], [1240], [1242], [1246], [1254] and [1259] were clustered together within an area measuring approximately 5m by 5m in the northwest area of the site. These features were not regularly spaced and may represent several superimposed structures. A number of the postholes are on a north south alignment and may be part of a fenceline defining an area of pitting to the east. Posthole [1246] was filled by soft dark grey silt (1245), dated to 1150-1250 by a single sherd of pottery. Posthole [1240] was filled by loose dark brown silty sand (1239), which contained a single sherd of pottery dated to 1450-1720 that is thought to be intrusive. There is no stratigraphic relationship between any of the postholes, but all have been assigned to Period 2 as they were sealed by a cobbled surface (1022), dated to Period 3.

## **7.4 Period 3: Late Medieval (c.1350 to 1550) (Figure 6)**

### ***Building 2***

In the late medieval period Building 1 was abandoned and demolished and Building 2 constructed over it. The remains of Building 1 were overlaid by mixed demolition

spreads and dumps of stone and tile (1137), (1148), (1149), (1150), (1151), (1397), (1398), (1405) and (1406). These demolition spreads were characterized by charcoal flecking and a frequent stone and tile fragments. The demolition debris is dated c.1350-1500 by the pottery it contained. Layers (1151) and (1397) contained numerous nib/peg tiles, which presumably originally covered the roof of Building 1. These layers also contained pieces of Outwoods Shale, suggesting that either part of Building 1, or another building close by, was covered with this material. Stone rubble found in (1397), comprised of fine and medium grained Carboniferous sandstones; a light grey Cambrian siltstone from the Stockingford Shale Group, possible used for roofing or paving; and a mudstone and indurated sandstone from the same geological formation. Similar destruction debris was recorded as sealing early medieval cut features during excavations in the 1990s. A spread of rubble recorded as (131), (4), (8), (21), (25), (35) and (61) contained shattered roofing slates, medieval roof and abraded 13<sup>th</sup> century pottery sherds. The report interpreted this as representing building debris from the destruction of the Templar Manor.

Building 2 was constructed over Building 1 but on a slightly different alignment. Building 2 was represented by masonry walls [1134] / [1132], [1372], [1160] [1404] and beam slots [1136], [1147] and [1154]. The masonry wall foundation [1160] was constructed of Outwoods Shale directly on natural clay subsoil, and measured 3.00m northeast-southwest and 1.00m wide. The base of the foundations contained fragments of pottery dating to 1450-1550. A tiny amount of flake hammerscale was also found adhering to slag from context [1060]. Two shallow but well defined postholes [1437] and [1439] were located beneath the foundation and probably had a structural function. They were each 0.05m in depth and 0.25m in diameter. Posthole [1439] was filled by compact grey silty clay (1438), which contained a single sherd of pottery dated to 1275-1500. To the east of [1160] were a group of stones [1404] thought to be associated with [1160] and probably part of the same structure. Feature [1404] was very fragmentary and the excavators were unclear whether it was *in-situ*. If the stones do represent a second wall the size of these foundations suggest that it was an external wall.

As with the demolition debris several nib/peg tiles were recovered from the masonry wall foundations of Building 2 [1160], which are thought to have originated from the roof of Building 1. Normal nib tiles were present, some of which have fine moulding sand which is often a late medieval or post-medieval feature. The examples from the wall foundations are associated with pottery of the period 1450 to 1550, which is considered to be also the date of the nib tile. Similar nib tiles were found scattered in other part of the site in Period 3, suggesting that this roofing type may have covered the roof of Building 2.

Running northwest-southeast the remains of a heavily robbed masonry wall foundation were recorded as [1128] / [1129] / [1130] / [1133] / [1134] / [1143] / [1144] / [1152]. The wall extended beyond the limit of excavation to the northwest and was truncated by a channel (Ditch 5) to the southeast. It was within construction cut [1132] / [1134], into the base of which a number of small postholes [1400] were cut. These postholes appeared to be associated with the construction of the overlying wall. A small area of masonry [1372] on the northern face of the foundation may represent the remains of a second wall at right-angles to the main wall, probably an



internal division given the joists (see below). However it is also possible that [1372] may have been reinforcing the foundations, possibly at the junction of the two walls.

Two burnt beams were perpendicular to the remains of this masonry wall foundation. The first, (1135), was within cut [1136] and the second (1145)/(1146)/(1387) was within cut [1147]. These were contemporary with the masonry foundation and probably represent joists for a suspended wooden floor; both were burnt *in-situ*. Fill (1146) contained a single sherd of pottery dated to 1150-1250, however this is presumably residual. A third burnt beam (1154), within cut [1155] ran parallel to the masonry wall and is part of the same floor. Posthole [1382], located stratigraphically beneath beam-slot [1147] and may represent a structural element of a suspended floor or platform.

Postholes (1122), (1343), (1345) and (1398) appear to have been associated with the northern extent of Building 2. Directly to the north a series of bedding layers (1378), (1384) and (1385), were sealed by a small cobbled surface (1362) which continued beyond the area of excavation. No dating evidence was recovered from this feature, however its appearance and location suggests it is probably associated with Building 2.

### ***Building 3***

Building 3 was described in 1970 by Mr. S. Taylor (1971), but unfortunately very little information on the excavations has been published. A sketch-drawing was made but not published. The area was re-excavated in the 1990s and much of the structure was recorded again in greater detail by Mr M Wilson (1997; 2005), thus allowed the original site plans to be accurately located for the first time. Much of the description of this building is based on Mr. Wilson's (2000) site report.

Building 3 represents a structure recorded during the original excavation of the site as a three bayed, timber-framed building. This was thought to be of 14<sup>th</sup> century date, and measured 6.71m by c.14.62m. The footing of the structure incorporated fragments of reused window mouldings of carved sandstone, possibly from robbed earlier Templar buildings. The building had fallen out of use, and was destroyed by the middle of the 17<sup>th</sup> century (Wilson and Moorhouse 1971). Although the exposed remains seem to be that of a 'three-bayed' structure, it is worth noting that its eastern extent was truncated prior to the earliest investigations, and it is possibly the building complex extended further to the east.

The wall foundations were 0.30m-0.50m wide and, on re-excavation, survived to a maximum height of 0.40m. They were constructed of a variety of stone types of assorted shapes and sizes, forming the northern (108) and southern limits (109) of the building. A single course of weathered masonry survived, consisting of a double row of faced blocks and a core of clay, small stones, rubble fragments, broken shale and slates. The northern wall foundation (108) was very heavily disturbed, presumably a result of the earlier excavations as well as robbing in antiquity. The western extent of the structure was defined by north-south aligned wall (110), constructed of large fire cracked sandstone slabs up to 0.10m in thick. These single courses of flat-surfaced stones, which outlined the floor plan of the structure, represented the load-bearing element of its foundations, upon which the timber walls would have stood. The irregular sizes and poor quality of much of the sandstone masonry incorporated in the

foundations of the structure suggested it had been robbed from an earlier building nearby.

A circular structure (112) in the southwest corner of the western bay was constructed into wall (110) and abutted the south wall foundations (109). Both the walls and circular structure were constructed on top of cobbled surface (114). Feature (112) was constructed mainly from angular fragments of quartzite, with occasional sub-rounded fragments of sandstone and very occasional fragments of red medieval tile. It stood to a height of approximately 0.38m and had an internal diameter of 2.50m. On re-excavation it was found to contain backfill from the 1970s excavation and its original contents, and function are unknown. The site plan of 1970s excavations indicates that the base of the feature was lined with stones. This feature was interpreted in the 1970s as a small drying kiln (Wilson and Moorhouse 1971), although it is unclear if this was thought to be associated with the local ceramic industries. No evidence of on-site pottery production has been identified and it is more likely to represent a hearth, bread oven or buttress chimney (Wilson 2005, 415).

On re-excavation little remained of the floor surfaces associated within Building 3, and the original excavators had difficulty identifying internal surfaces (Mrs. B. Phillips to M. Wilson, pers. comm.). The floor make-up of the building (115), consisted of 0.10m-0.35m of compact angular quartzite fragments, rounded diorite cobbles, broken pottery, tiles and shale in a dark grey to black silty sand matrix. This directly overlies natural sand at its western extent, whilst at its eastern extent re-deposited sandy clay (155) was exposed and a thin layer of shattered roofing slates (131) was recorded.

### ***External Surface***

To the west of Building 3 a further metalled area (114), measured between 0.10m and 0.20m thick, and was constructed of weathered rounded diorite cobbles in a dark brown silty matrix. Occasional fragments of very abraded medieval floor tiles and pottery, thought to be of 13-14<sup>th</sup> century date, were included in this material, as well as a small quantity of animal bone fragments. This surface measured approximately 3.5m east-west, and was constructed directly on the sandy natural. The metalling was interpreted in the 1990s as an external yard associated with Building 3. This seems likely as no further stone foundations were encountered to suggest the building continued to the west of wall (110).

A continuation of this surface was recorded in the 2004 excavations as constructed of a layer of bedding sand (1257) overlain by well-rounded cobbles (1022) / (1025) which measured 50mm to 100mm across, as well as some larger stone fragments. The surface is dated to 1480-1550 by the associated pottery and roof tile fragments. The bedding sand (1257) contained three fragments of 'ox-sized' longbone. Irregularities in the surface probably indicated that it had been repaired several times.

### ***Structural Remains***

A number of structural remains were recorded in between Buildings 2 and 3, which may have been associated with the metalled surface (114) / (1022), recorded to the west of Building 3. Beam slot [1061] was 2.50m long, 0.10m wide and up to 0.15m deep. The remains of vertical set timber planks were visible within fill (1060). The fill of this feature contained a single pottery sherd dated to 1480-1600. Postholes [1229]

and [1248] were located at the eastern and western ends of the beam slot and were probably associated with this structure. Posthole [1248] contained the *in situ* remains of a vertical timber post (1247) recorded in post pipe [1244]. The posthole [1229] was filled by (1228). This produced a small quantity of slag, but no dating evidence. The posthole was sealed by a small cobbled surface (1059), which contained pottery dated to 1480-1600. This group of features appear to represent a timber building and external surfaces, similar to those directly to the west of Building 3.

To the south a beam slot [1063] measured 5.00m long and was truncated at the southern end by a modern pipe trench. The fill of the robber trench, (1062), contained a considerable number of tile fragments dated to 1570-1700, a single pottery sherd of a contemporary date and two residual sherds of pottery. The fill also produced a mixture of nib/peg and normal nib tiles along with a ridge tile and what appears to be a carefully cut rectangular shaped fragment of stone flooring made from a grey siltstone (Fig 12.15). This is likely to have come from a stone floor surface in a fairly high status building. The function and extent of this structure is not clear however the fact that it is at right angles to beam slot [1061] may suggest they are part of a single complex of buildings.



**Plate 9:** Postholes [1248] and [1229] with linear feature [1061] between them.

To the east of this feature a large posthole [1077] with stone packing at its base was filled by (1076) which contained pottery dated to 1450-1550 as well as small quantities of slag. No associated postholes were recorded however this is clearly part of a substantial timber building and may have been associated with some of the undated postholes in this area of the site.

To the south linear feature [1051] cut into the underlying subsoil and contained greyish brown fill (1050), with medieval pottery dated to 1380-1500. The feature measured 0.40 - 0.50m wide and 0.15 - 0.20m deep with a rounded base. It ran for 6.00m east to west before being truncated at the west end by a modern water-pipe. The base of the feature was poorly defined and had been disturbed by rooting, suggesting it may represent a hedge-line, or similar feature.

### ***Northern Cobbled Area***

To the north of Building 3, just below the existing ground surface, was an area of cobbles (2) that was first exposed and cleaned in the 1970s, but not drawn: it was planned in detail for the first time in 1996. The surface covered c.40m<sup>2</sup> and measured between 4.00m wide at its southern extent and narrowing to 2.00m to the north, where it terminated at a large in-filled pit. The surface consisted of worn and weathered irregular sized stones, including yellow diorite, red sandstone and mainly grey quartzite. Occasional alignments of larger flat stones were post-pads for a timber structure. A large millstone formed part of the cobbled surface and after trial trenching in 1967 was removed to the museum at Nuneaton. The surface sealed a yellow brown clayey sand layer interpreted as a levelling agent (46), which was up to 0.08m in thick. Below the sand a make-up layer of broken red medieval ceramic tiles (48) / (22), contained a small moulded ceramic clay head of uncertain function, possibly a roof finial. Layer (48) / (22) sealed a spread of crushed red tile and shale roofing demolition material (61) / (4) / (7) / (8) / (21) / (25) / (35) / (131). Also sealed by layer (48) / (22) was a buried ground surface (99), from which a medieval French jetton of late 14<sup>th</sup>-early 15<sup>th</sup> date was recovered. Deposit (61) was sealed by the southern extent of (48) / (22) and contained fragments of Roman *tegulae* and large rounded pebbles.

A series of postholes cutting through the cobbled surface were interpreted as a contemporary timber built structure. Cobbled surface (2) was interpreted by the reporter as representing a working surface, perhaps the floor area of a wooden structure supported on stone post-pads. The relationship of the cobbled surface to Building 3 was not established, however if *in-situ* the Jetton may suggest the two are contemporary. The presence of a Roman *tegulae* in one of these layers is of interest as little other Roman material was recovered from the site.

### ***Building 4***

The plan of Building 4, located to the south of Building 3, is a composite of sketch plans made by S.Taylor in 1970 which were re-drawn and 'best-fit'-aligned by K. ScottM.Wilson in 1996, and plans of masonry exposed during the 2004 excavations by AOC Archaeology Group. Building 4 clearly represents the remains of a substantial and complex structure, possibly on a scale of Building 3. The stratigraphic relationship between Buildings 3 and 4 is not clear, a great deal of building and demolition took place in this area of the site and the two buildings may have had different life histories. Pottery recovered from Building 4 does suggest the foundations are roughly contemporary with Building 3. A later medieval date is supported by the stratigraphic location of Building 4; parts of the foundations overlay Period 2 Ditches 1 and 2 (see above).

The main structural elements of Building 4 were: a cobbled surface (1003) to the south; the foundations of what was probably originally a square room (1004), which was modified by the insertion of walls (1321) and (1322). The wall foundations of Building 4 were constructed of sandstone, with puddled clay foundations and were truncated by post-medieval intrusive features. Found associated with Building 4 were a few fragments of nib/peg tiles, probably from Building 1 or other similar earlier structures, and a number of ordinary nib tiles. The nib tiles are in the same fabrics as those in Building 2, suggesting that Building 3 may also have had a nib tiled roof.

The cobbled surface (1003) measured a maximum of 2.80m east-west and 1.40m north-south, but had been heavily truncated by later features. The surface was constructed on a levelling layer of yellow brown clay (1313), into which sandstone cobbles (1003) were set. Pottery recovered from (1003) is dated to 1275-1500. This area of cobbles appears to represent an external activity area between Building 4 and the pond to the south, however the function of this area remains unclear.



**Plate 10:** Remains of Building 4, looking south

Stone foundations (1004), located to the north of this cobbled surface, appear to represent the exterior walls of a square room. The east-west wall measured 4.40m by 0.70m wide and the north-south return measured 3.20m by 0.80m wide. The size of foundations suggest they were the exterior load-bearing walls of the structure. Later features to the north and east had heavily truncated the structure, however the size of the surviving room appears to be similar to those of Building 3. The construction technique was also the same as that used for Building 3; the wall foundations were trench-built, roughly dressed stones faced both sides of the walls and smaller, undressed, irregular stones formed a central core. The irregular sizes and worn nature of stone from the building again suggests much of it was robbed from an earlier structure.

The interior surface of the surviving room consisted of a well-worn cobbled surface (1194) / (1323) / (1325) constructed of sub-rounded stones set into soft yellow brown clay (1319) / (1324) / (1328). An earlier floor or levelling dump (1336) suggests at least parts of the surface had been repaired, and indicates the building may have been in use for a considerable period of time, the floors of Building 4 produced 14<sup>th</sup> century pottery.

The room was sub-divided by two parallel east-west walls, the first consisting of (1320) and (1321), the second of (1322). Both were built of a mixture of large dressed masonry and smaller undressed stones, in a similar manner to the exterior walls. Two courses of masonry survived and the walls measured 0.50-0.60m wide. The walls were poorly preserved having been partially robbed out, disturbed by post-medieval industrial activity and previously excavated on two separate occasions. Two possible kiln bricks were reused in the construction of wall (1322) (Fig 12.10). Both bricks are perforated by multiple holes, which suggests they were used in the floor of some kind of oven or kiln structure, the holes allowing hot air to pass into a chamber above. Similar perforated floor bricks were found associated with the pottery and tile kilns at Chilvers Coton (Mayes and Scott 1984, 167–70, kilns 28, 29, 32a-b), although these are thinner.

The gap between walls [1320] / [1321] and [1322] measured only 0.60m, and appears to be too narrow to be a passageway. Evidence of burning on the cobbled surface led the excavators to suggest that this masonry may represent a fireplace; however from the size and location of the features this seems unlikely.



**Plate 11:** Cobbled Surface (1323) and wall foundations (1321) and (1322) looking west

### ***Building Rubble***

To the east of Building 4 an area of masonry was interpreted by the excavators as representing wall foundations (2002) / (2060). These foundations were heavily disturbed but were originally thought to be within a construction cut [2003] / [2059]. Significant quantities of later medieval pottery (1275-1550), Outwoods Shale roofing slate and a glazed ridge tile were recovered from these features. However, no alignment to the masonry can be ascertained and it seems likely this masonry is not *in-situ*, and represents disturbance or upcast material from the brickle pit to the north.



**Plate 12:** Building rubble (2002) / (2060). The rainwater on the right marks the edge of the modern brickle pit. Looking north.

### ***Trackway***

In the centre of the site the remains of a linear cobbled surface (2029) was recorded for a distance of c.10.00m, then for another 1.00m as (2049) after a gap of c.4.00m. At its widest the track was 2.00m wide, although it was heavily truncated; to the south and west it was truncated by the modern brickle pit. Towards the western end it was cut by shallow stream channels and at the farthest point of the east end it was truncated by modern disturbance. The feature comprised a cambered surface with two distinct deposits of stones beside each other, (2040) and (2029); with (2049) set a short distance to the east. Although no dating evidence was recovered from this feature, it was cut by a late medieval water channel. Considering the other activity in the vicinity it has been tentatively dated to the late medieval period. To the north of the trackway posthole [2044] contained pottery dating to 1380-1500 and is likely to have been associated with the cobbled trackway beside which it lay. Pit [2052] contained one sherd of pottery dating to 1275-1500 but the function of the feature was unclear.



**Plate 13:** Cobbled trackway (2029) looking west. The archaeologist is excavating the ditch along the north side of the trackway. The lower-lying waterlogged area in the background is the modern backfilled brickle pit.

### *Ditch 3*

Evidence of later medieval water management was seen across the site. Ditch 3 was located in south of Building 4. The ditch [1107] ran from south-east to northwest for c.9.00m and was truncated by later features at both ends. Its original width as recorded in section was approximately 2.50m and its depth was approximately 1.10m below machine truncation. Its lower fills (1106) and (1303), contained early medieval pottery, which is thought to be residual. This feature continued as [1309] / [1314] / [1318], which ran for a curving distance of c. 18m across the site, with a width of 0.90-1.00m and a depth varying between 0.28m and 0.48m. Its fill (1308) / (1313) / (1317) contained late medieval pottery dated to 1275-1500.

### *Alluvial Deposits*

Shallow depression [1408] extended beyond the excavation area to the west and was truncated by Ditch 4 to the east. The feature measured 0.20m deep and was filled by an alluvial deposit of compact mid grey clay (1407). Feature [1408] was cut by a large sub-circular hollow [1183] / [1412], which measured 6.80m in diameter and 0.55m deep. It was filled by a primary fill of mid grey clay (1411) / (1393) and as secondary fill (1409) / (1179) of red brown silty clay, dated 1350-1550 by the pottery it contained. The function of the feature was unclear, however it appears to have been associated with the water management in this area of the site.

A timber stake (1169) was set in a post-pit [1403] cut into natural sand deposits at the edge of one of hollow [1183] / [1412]. The stake tip survived 0.38m long by 0.13mm



by 0.10m and had a sub-rectangular cross-section. Made of oak the stake was originally larger and had been sculpted by serious decay and erosion. It was probably shaped by hewing with an axe, although no clear tool-marks survived. It had a decayed void down the middle and had been cut from a fast grown log having only 20 surviving annual rings. The excavators suggested the position of this stake suggests that it may have been part of a water-management system in this area, and despite considerable care to locate any evidence of further such timbers in this area, none was found.

#### ***Ditch 4*** (Figure 6)

In the late medieval period substantial ditches crossed the western side of the site from north to south. Ditch 4 ran in a slightly south-easterly direction and Ditch 5 was more directly aligned north-south along the site grid. These channels were linked at the northern end, and were recorded as a complex series of inter-digitating alluvial deposits. In places Ditches 4 and 5 were cut through a few residual patches of waterlain material (1216) and (1189), lying immediately above natural geological sand and clay deposits.

Feature [1183] / [1412] was truncated by Ditch 4, which was aligned north-south and was recorded as [1174] / [1185] / [1264]. The northern extent of Ditch 4 was very poorly defined but appeared to continue beyond the limit of excavation to the north. Ditch 4 was in close proximity to Building 2 and may have been associated with this structure. The southern extent of the ditch was again hard to define; it passed to the west of the pond and may have flowed into this feature to the south of the excavation area.

The sequence of fills within Ditches 4 and 5 were complicated and appeared to have been recut several times, probably largely as a result of natural erosion. Section 25 (Fig 7), across the northern extent of Ditch 4, indicated channel [1157] was c. 2.00m wide and 0.50m deep at this point. To the south of this point the channel was seen to have changed its course slightly. It was filled with a primary grey clay fill (1156), which contained a single fragment of ox mandible. Secondary fills (1447) and (1440) contained fragments of late medieval pottery were dated 1350-1500. Thin layers of silt (1184), (1186), (1221) spread beyond the edges of the original channels.

To the south, recorded in Section 15 (Figure 7), Ditch 5 measured 1.40m across and 0.50m deep. It contained a soft light grey clay primary fill (1263), which contained pottery dated to 1380-1500. A secondary fill of mid grey brown sandy silt (1262) / (1394) contained a very similar pottery assemblage also dated 1380-1500, suggesting the feature silted up fairly rapidly.

#### ***Ditch 5*** (Figure 7)

Ditches 4 and 5 were of a contemporary date but it was not possible to ascertain their stratigraphic relationship on site; either they represent a single feature, or one rapidly became silted up and was replaced by the other. The southern extent of Ditch 5 was truncated by a modern water pipe. The ditch was recorded both in plan and in Sections 11 as [1157] / [1191] / [1383]. At its southern extent the Ditch 5 was recorded as cut [1383] and measured 1.56m across and 0.20m deep. It was filled by mid grey sandy clay (1176), which contained pottery dated to 1350-1550. To the north the ditch

narrowed slightly and was by soft mid-grey clay (1156), which contained no datable material.

A levelling deposit of yellow-brown silty clay (1447) dumped over Ditch 5 contained flecks of charcoal and pottery dating to 1350-1550. This was overlain by a dump of coal (1440), which contained no datable material but is dated to this period by its stratigraphic location. This was in turn overlaid by a large dump of stone (1370), dated by the pottery it contained to 1380-1500.



**Plate 14:** South-facing section across Ditch 5

#### ***Other Late Medieval Features***

Pit [1095], filled by (1275) and (1094), was located to the south of Building 3. The pit measured 1.27m in diameter by 0.57m deep and was dated to 1450-1500 by the pottery it contained. The fills included several stony and sandy lenses implying deliberate episodic backfilling. Directly to the north pit [1024] was oval-shaped in plan and measured 1.54m by 0.90m and 0.25m deep. The pit was filled by (1023), which contained pottery dated to 1275-1500, and had been truncated by a smaller pit [1283] at the eastern side. To the west pit [1277] measured 0.80m by 0.94m by 0.17m deep, its fill (1276) contained pottery and tile fragments dated 1380-1500. The fill of this feature also contained a distal fragment of ox astragalus that had been chopped transversely with a cleaver or heavy-bladed knife, this is the only evidence of butchery from the animal bone assemblage. These pits may have been cess or rubbish pits associated with Building 3.



**Plate 15:** Pit [1095] with fill (1094) part-excavated.

Posthole [1299] measured 0.36m in diameter and 0.28m deep. Its fill (1298) contained a sherd of pottery dated to 1350-1550. The fill was subsequently cut by a stake [1297] being driven into it, this had probably rotted *in-situ* resulting in fill (1296). This latter fill also contained contemporary pottery as well as a sherd of intrusive post-medieval pottery. A second possible posthole [1300] with fill (1301) lay to the south measuring 0.52m by 0.64m and 0.22m deep.

On the eastern side of the site pit [2005] was irregular shaped in plan and profile and appear to have been a tree bowl. The feature contained late medieval pottery and tile fragments. These may be related to the orchard which is known from documentary sources to have existed somewhere in this vicinity in the late medieval / early post-medieval period.

Excavation conducted by Mr K Scott in 1997 to the east of Building 3 and 4 revealed a portion of structure (301) in poor state of preservation. The structure was c.4.50m wide and the full length of the building was not exposed. It was constructed of a single course of assorted stones of various in shapes and sizes that appeared to have originally supported a timber structure. The interior of the feature was filled with clay, over which lay a light scatter of c.14th century pottery sherds. The structure was on the same alignment as the Period 3 buildings to the west.

#### **7.5 Period 4: Post-medieval (c.1550-1750) (Figure 8)**

Across the eastern half of the site much of the earlier medieval stratigraphy had been truncated by post-medieval features, many associated with the industrial exploitation of the site. The extent of this post-medieval truncation was recorded as cut [51].

### ***Possible Structure***

A short section of a robbed out wall [196] was recorded at the northern extent of the site. This fairly substantial shallow flat-bottomed robber cut was on an E-W alignment. This feature appears to have been associated with a north-south aligned robber cut [52], which had a similar flat bottomed profile. This second feature was filled by a compact yellowy-brown sandy fill (53), which contained frequent thin bands of charcoal and orange-red tile fragments and animal bone. Both features had a few flat stones in the base and traces of where stones had been removed. Collectively [196] and [52] may represent the robbed out foundations of a fairly substantial building. Although the robbing had occurred in the post-medieval period the excavators believed this might represent a much earlier structure. The dating of the structure is problematic, the excavation report (Wilson 2000 29-30) suggests that these features may be associated with a perimeter wall to the Templar complex, and links them to a cropmark visible on an aerial photograph of the site. It is also possible they are associated with later activity on the site, the Period 4 date assigned reflects the date of the robber trenches recorded.

### ***Early Industrial Features***

In the centre of the site a large north-south aligned feature was defined by an irregular, linear cut [1099]. The feature contained timbers (1289) and (1290), sealed by a primary fill (1102) and secondary fill (1098). Cut [1099] measured 14.00m long, 2.60m wide and 0.96m deep and had a stepped profile. The lowest part of the feature formed a trough measuring 0.45 to 0.50m deep and 0.80m wide. The timbers survived and along the western edge of the feature, their form was still detectable as a stain where they had decayed. On the east side of the trough a shallower cut measured 0.45m to 0.50m deep but 1.70m wide with a slightly more gentle slope down into it than on the western side. The primary fill (1102) was stained by organic material, suggesting that the whole of the base of the feature had been plank-lined. The backfill (1098) contained large quantities of late medieval pottery and tile fragments, dated to 1450-1550, as well as residual early medieval pottery and one intrusive post medieval sherd. The fill also contained fragments of left femur midshaft and thoracic vertebra of an ox.

Timber (1290) was an eroded section of a roughly rectangular oak-beam. The core of the beam, which was cut from a whole oak log of moderate growth-rate, was hollow. However, if the heart was originally gouged or bored out it had also been much altered by decay. The lifted timber survived for 0.23m long by 0.23m wide by 210mm thick. No evidence of sapwood or toolmarks survived. It is possible that timber (1290), and the timber stain abutting it, were originally part of a tapering timber shoot, perhaps a mill shoot (cf. Watts 2002). The main problem with this interpretation is that there appears to be no exit channel for any water flowing down the shoot. It is also possible the timbers are part of a shoot but are not *in-situ*, having been re-deposited the feature after use elsewhere.

A large quantity of ceramic roofing tile was recovered from fills (1098) and (1102). This included a mixture of nib/peg and standard nib roofing tiles, glazed ridge tile and at least one, probably two, plain glazed floor tiles. One floor tile has a slightly worn plain green glaze, a second floor tile has a yellowish-brown glaze.



**Plate 16:** Timbers and organically-stained fill in cut [1099]. Looking northwest

### ***Ditch 6***

A further water channel was recorded in section as [1038] / [1046], located near the southern limit of the site on a north-south alignment. It cut a series of late medieval building foundations to the north. This channel was recorded in east-west section containing fills (1045), (1035), (1036) and (1037). No dating evidence was recovered from the feature. However, its stratigraphic location and the inclusions within its fills, including coal, suggest it was associated with the post-medieval industrial use of the site.

### ***Ditch 7***

At the eastern side of the site a series of inter-cutting water channels [2015], [2033], [2036], [2046] and [2053] were recorded as Ditch 7. Ditch 7 was filled by a primary fill (2031) / (2048) of waterlain mid-brown clay silt. This was sealed by a secondary fill of mid brown sandy clay fill (2014) / (2032) / (2030) / (2045) / (2047), with frequent coal, occasional sandstone shale, tile and animal bone inclusions. The filling of the ditch is dated to c.1570-1720 by the pottery it contained within the final fill. Nib, nib/peg tile, a decorated green glazed ridge tile and Outwoods Shale roofing stone were recovered from ditch fill (2030). The ridge tile is in the same fabric (WH1) as the nib/peg tiles and was presumably used together on the same medieval tiled roof. It has a green glaze and the remains of decoration along the tile crest (Fig 12.8). Fill (2030) also contained later nib tile and three small pieces of red and orange coloured brick, probably contemporary with the associated pottery.

### ***Other ditches***

At the northern side of the site several small ditches were recorded running north-south in this period of occupation. Cut [34] measured 0.80m wide and extended beyond the limit of excavation to the north. The southern extent of the feature was

truncated by a second ditch recorded as [29] / [33]. This measured up to 1.20m wide and again extended beyond the limit of excavation to the north. A third ditch [52] ran parallel to [29] / [33] and measured up to 1.50m wide.

### ***Post-Medieval Stone Robbing***

Much of the masonry of Building 2 appears to have been robbed out in the early post-medieval period. Poorly defined robber trenches were recorded in association with wall (1132). These were filled by (1131) / (1152) which contained pottery and tile fragments dating to 1570-1725. Fill (1131) also produced a large number of nib/peg tiles and part of a triangular shaped stone roofing slate cut from light grey Outwoods Shale, with a 13mm diameter nail hole situated near the apex (Fig 12.14).

## **7.6 Period 5: Modern (1750 to present day) (Figure 9)**

A circular brick-lined well [1199] was constructed of red frogged bricks (1198) and then backfill by (1197). This feature was linked to a similar well to the east by a brick-lined conduit [1196], which measured 1.0m wide and 1.0m deep. The second well, [2066], was built of modern local ‘Ansley Hall’ bricks (2065) and backfilled by (2064). Well [2066] was excavated by machine to a depth of c. 2.5m below existing ground level. These two features were designed to be operated in tandem and may have been used for water extraction in connection with mining activities, possibly for drainage to make the mining easier or as a source of water supply for the industrial processes.

Areas of previous excavation were identified across the site and their location planned. These were recorded as [1006], [1010], [1012], [1014], [1017], [1019], [1085], [1087], [1089] and [1091], [1093] and [1251]. Also in this area were two previously excavated geotechnical pits [1032] and [1030] and the trench from the 1967 excavations [1204]. The site was visited by M. Wilson, who confirmed the location and nature of the intrusions. On the eastern side of the site pit [2063] was irregular shaped in plan and profile and relates to modern disturbance in this area, probably associated with the excavation of structure (301). This structure had been completely removed prior to the excavation undertaken by AOC Archaeology Group. At the north of the site a rectangular modern intrusion was recorded as pit [54].

A substantial modern intervention was recorded during the 1996-1997 excavations as a “modern disturbance infilled with mining clod” (Wilson 2000). This feature was fully exposed in plan in 2004 and found to be roughly circular and just over 6.00m in diameter. It was recorded in the more recent excavations as a “modern brickle pit”<sup>18</sup>.

Around the southern edge of the stripped area, large spreads of coal slack were seen, and again only partially excavated, as they were clearly of very recent date. These extended with an increasing thickness down the slope to the south and are thought to have been the product of dumping of mining waste from the Griff Colliery during the 19<sup>th</sup> and 20<sup>th</sup> centuries. Similar deposits were seen in thinner layers along the eastern boundary of the site and extensive modern dumping was also seen in the evaluation trenches excavated in the earlier part of 2004 to the north of the excavation areas.

<sup>18</sup> The words “clod” and “brickle” are used interchangeably in this report and are understood to mean the waste material left over from soaking clay in pits with water to produce the raw material for brick-making. The practice is widespread in post-medieval Britain, although the words appear to have a very limited local usage.

A modern railway crossed the site from the southeast to the northwest to service the brickyard. This railway line ran on a raised embankment, which was machined out within living memory. The twin action of raising up the mound from the surrounding layers and ground reduction had removed any archaeological remains in the immediate vicinity.

Context (1001) / (2001) was allocated to unstratified finds recovered during machine stripping. Context (1002) was the number allocated to the topsoil and upper subsoil. Context 1001 contained the remains of a number of unusual socketed circular water pipes. The most complete would have measures just over 238mm in length and has a diameter of 75-95mm (Fig 12.11). A number of partially complete nib tiles were recovered from the topsoil (1002), together with a few ridge tiles (Fig 12.9) and Outwoods Shale stone roofing. Unstratified finds (2001) included a probable nib/peg tile, a quartzite pebble that may have been deliberately cut to form a crude 42-44mm disc and a fired ceramic object. The latter has an appearance of a Roman *tegula*, but the presence of a possible glaze splash would indicate a medieval date.

## 7.7 Undated Features (Figure 10)

Posthole [1292] stood somewhat apart from any others and could not be seen to be part of any definable structure. Posthole [1292] was truncated on the north side by a modern linear feature, but its original dimensions appear to have been 0.36m in diameter by 0.12m deep.

A small pit [1283], filled by (1282), truncated late medieval deposits, but contained no dating evidence. A single posthole [1331] lay to the south and measured 0.38m by 0.32m and was 0.11m deep. It was filled by (1330), which contained no dating material. Pit [1109] with fills (1288) and (1108) measured 0.65m by 0.45m and 0.17m deep but the eastern half was truncated by [1099].

A group of postholes [1065], [1067], [1069], [1071], [1073], [1075] and [1079] were all located directly to the east of robber cut [1063]. None of the postholes contained any dating evidence however postholes [1065] and [1071] cut a robbed out wall and must post-date the robbing of the wall in Period 4. The postholes had similar fills and several contained packing stones in the base. All these postholes appear to relate to a timber structure in this area of the site, probably dating to late Period 4 or early Period 5 based on its stratigraphic location.

Pit [1159] measured 0.80m in diameter and 0.46m deep and was filled by firm a primary fill mid brown clay (1373), with freq stone inclusions, and a secondary fill (1158) of mid grey silt. Neither contained any datable material.



**Plate 17:** Postholes [1071], [1073], [1075] and [1079] looking south

To the north postholes [1057], [1226], [1261], [1279] and [1281] were also undated, whether they were associated with the Period 3 building in this area, or a later structure, is not clear. Pit [1047] pit was oval-shaped, measuring 3.00m by 1.94m and 0.63m deep. It was filled by soft dark grey silty clay (1033) and was of unknown function. To the east undated postholes [2007], [2009], [2017] were cut into the natural clay.



## **8 DISCUSSION**

### **8.1 On-Site Preservation and Recording**

The archaeological remains at Bermuda Park had been very heavily disturbed, both by deliberate robbing of building stone, and later industrial disturbance. Archaeological survival on the site was still sufficient to give some indication of the range of activities being carried out on the site. In some areas of the site a thick layer of material dumped during the industrial exploitation of the site helped preserve the underlying archaeological remains.

The partial nature of the archaeological remains has been compounded by the fragmentary, and sometimes troubled, nature of the archaeological investigations. The original excavation of the site, undertaken in the 1970s was conducted during an unusually hot summer. The site was covered with a layer of sun-baked mining slurry, which combined with dust on the site, resulted in poor archaeological visibility. Almost nothing of this original excavation was published, and few records of the work survive. Archaeological work in the 1990s was able to re-locate some of the features identified. More recent work by M. Wilson (2000 and in this report) has successfully collated much of the available information of the earlier excavation.

The excavation undertaken by AOC Archaeology Group in 2004 suffered from a very different range of problems. The excavation was conducted in very wet weather and the adverse weather conditions and flooding seriously hindered on site work. Time pressures also limited the scope of the work undertaken in some areas of the site. During the investigation of the site in the 1990s a number of bulk samples were taken (and analysed by James Gregg of Birmingham University) in order to recover environmental and botanical remains. No environmental remains were recovered from these samples, and it was concluded that the nature of the soils were unsuitable for the preservation of such material. The poor preservation of environmental remains on the site means there is little environmental data available, a fact that limits the interpretation of some of the features.

### **8.2 The Extent of the Archaeological Remains**

Archaeological excavations were undertaken to as close to the eastern limit of the recent development of the site as possible. The eastern area of the excavation contained few features, and it appears archaeological survival in this area of the site was poor. This was probably a result of the activities associated with the construction of the 19<sup>th</sup> century industrial railway and subsequent 20<sup>th</sup> century disturbance. It seems likely however the eastern area of the excavation would have been beyond the main area of medieval activity.

During the 2004 archaeological investigations a number of infrastructure works, in the form of drainage and road construction, around the excavation area were conducted under archaeological observation. The results of these observations supported the results of the 2004 evaluation, that there were no archaeological remains in the northern area of the site. The structural remains of Buildings 1 and 2 extended beyond the northern and western extent of the excavation area. No evaluation trench was

excavated in this area, and it is likely that archaeological remains survive beneath these relatively shallow road construction works to the west of the excavation area.

To the south and southwest of the excavation area a watching brief was carried out during summer 2004, along the line of the new foul water drainage trenches. No archaeological remains were observed in this area. Modern activity, believed to be clay-extraction for the brickworks, had resulted in truncation of all deposits to a depth of c.4.00m below existing ground level.

### 8.3 Early Occupation of the Site

No evidence of prehistoric occupation of the site was identified. A Romano-British tile kiln was excavated by Mr. K. Scott on land to the west of the site, to the southeast of Dennis Farm. Excavations on the site in the 1990's recovered 4.20 kg of Roman tile, thought to be from these kilns. No evidence of Roman occupation was identified on the site, and the small amount of Roman material identified in the most recent investigations is all residual, brought onto the site in association with the later dumping of material.

### 8.4 The Knights Templar Manor

Documentary sources indicate the Templar occupation of the site lasted from 1191 until the first decade of the 14<sup>th</sup> century; recorded archaeologically as Period 2. The earliest archaeological features recorded on the site were Building 1, several ditches and a pond. The documentary sources indicate a more substantial complex of buildings on the Templar site than were attested to archaeologically. There are potentially several reasons for this discrepancy. Many of the buildings associated with the Templar occupation of the site may have been constructed of timber and left little trace archaeologically. Equally to robbing of masonry and post-depositional disturbance of the site may have erased much of the evidence of the early occupation.

The chapel is likely to have been seen as the most important building on the site, and was perhaps the only stone-built structure on the site at this time. This could imply Building 1 represents an ecclesiastical structure, although there is little to substantiate this suggestion. Other Templar chapels, such as Old Holborn; Garway, Herefordshire, Temple Bruer, Lincolnshire; and Dover<sup>19</sup>, were round in plan but this is clearly not the case with Building 1.

As well as the masonry of Building 1 significant quantities of building stone was reused in later phases of occupation. The main stone types were Attleborough and Halesowen Sandstone, and Tuttle Hill and Park Hill Quartzite. This is potentially significant as these stone types are used locally in other important stone buildings during the 12<sup>th</sup>-13<sup>th</sup> centuries, for example at Nuneaton Priory and Hartshill Castle, where walls are constructed of quartzite rubble with sandstone dressings are known. The small Norman chapel within the enclosure castle of Hartshill, dates to the 12<sup>th</sup>-13<sup>th</sup> century, and provides a possible analogy for the former Templar chapel at Chelverscote (Chatwin 1928: 206-10). In the later phases of the site reused sandstone blocks comprised of fragments of roughly cut dressed blocks, occasionally bearing

<sup>19</sup>A general classification of round churches and chapels is in Marshall, G: 1927: *The Church of the Knights Templars at Garway, Herefordshire*, *Trans. Woolhope Naturalists Field Club*, pp.86-101

tool-markings. There were no identifiable architectural fragments other than a single segment from a hexagonal-sectioned pillar. Many pieces of sandstone had been re-used for sill-beam foundations of the large three-bayed Building 3, and adjacent Building 4. They were well worn and would probably have been originally incorporated in a Period 2 building.

The function of the stonework, (1329) and (1325), on the edge of the pond was not clear. It was interpreted on site as being associated with possible mill workings, however the documentary sources suggest this is unlikely as no reference to a mill is made. Trample deposits to the north of the stones, associated with early medieval pottery, suggest a focus of activity in this area, the nature of the activity remains elusive however.

A series of ephemeral occupation layers, refuse pits and postholes were associated with Period 2. The date of the pottery from these features indicates occupation of the site by the Templars towards the end of the 13<sup>th</sup> century. A series of pits in the centre of the site contained early medieval pottery and were sealed by later (Period 3) medieval building activity. This appears to represent an area designated for the disposal of household waste and rubbish. Although used as rubbish pits at the end of their lives it is possible these features had a different primary function, such as quarry pits.

The fills of these features produces a number of small animal bone assemblages, which allow tentative suggestions to be made about the diet of the early medieval occupants of the site. The impression given is of a meat diet dominated by beef and taken from carcase areas of good and moderate meat bearing quality. There is a noticeable absence of elements indicative of poor quality meat or of primary carcase processing. It is important to note however that bone preservation on the site was poor, and this may have introduced bias into the bone assemblage. Poor bone preservation is illustrated by the recovery of horse teeth, without any fragments of maxilla or mandible. The lack of smaller and more fragile bones, such as poultry, and the scarcity of 'sheep-sized' mammal and pig may reflect dietary preference, or be merely an artefact of preservation and relative robustness. The largest bone group, from fill (1294), provides the only evidence for consumption of calf as well as young adult cattle. There is no evidence for old animals and no evidence for pathological change; therefore no reason to suggest consumption of cattle slaughtered at the end of a working life rather than of purpose-reared beef cattle.

The area of inter-cutting pits appears to represent an area of possible quarrying that was also used for dumping midden material. This area of the site does not appear to have been built on until the construction of Building 3, probably in the 14<sup>th</sup> century. No early medieval structures were present on the eastern half of the site, raising further questions about the location of the Templar farmstead, thought to consist of a great hall, chapel, granary, ox-house, stables, plough-shed and auxiliary buildings. If Building 1 is part of the Templar farmstead ranged around a courtyard, it seems likely the complex would have extended beyond the excavation area to the west.

In general the Period 2 pottery assemblage is very mundane, comprising of standard cooking pots, jars and a few glazed jugs. There is in fact little evidence of the affluence of Knights Templar order in any of the artefacts recovered from the site.

Given the importance of the site suggest by the documentary evidence, including the possibility of a Royal visit the lack of higher status artefacts needs some explanation. Many of the more valuable, high status objects, such as tableware or chapel paraphernalia, may have been made of metal and therefore recycled as opposed to discarded. The short period of Crown administration following the Templars persecution ended with the site being abandoned. There is documentary evidence of the Templars' possessions being sold or taken to Temple Balsall (see Section 4.4). As a result a whole range of more valuable objects would not have entered the archaeological record.

The Period 2 pottery assemblage is primarily one of local ceramic products with only a small number of imported wares bought from other regional markets. From the medieval period Warwickshire had a thriving ceramic industry. The production of ceramics at Chilvers Coton throughout the medieval and into the post-medieval periods is well known (eg. Mayes, P and Scott 1984). The earliest pottery on site is represented by fabric group IGN and dated to c.1150-1250. There are no clear parallels to this fabric from local kiln sites, however it is not clear whether these wares were imported to Nuneaton before the local industry developed, or produced at Chilvers Coton/Nuneaton using imported clay in kilns that predate the known industry.

Excavations on granges, preceptories and manor houses of the Knights Templar have been infrequent. An extensive programme of excavation was carried out in the late 1960s at South Witham, Lincolnshire (Mayes 2002). The South Witham site was abandoned in the late 13<sup>th</sup> century and never reoccupied. This combined with a lack of post-abandonment agricultural disturbance resulted in good preservation of the archaeological deposits. Although stone robbing removed much of the above ground stone an extensive plan of the preceptory layout exists for this site. Phase 1 at South Witham consisted of a small, nucleated group of buildings, consisting of an aisled hall, two small ancillary buildings and a waterwheel. The moderate scale of the site at this time may prove a useful analogy for the earliest Templar structures recorded at Bermuda Park. The Phase 1 hall at South Witham consisted of a heavily robbed external masonry wall and internal timber supports and earth floors.

Phase 2 at South Witham saw the transformation of the site into a more substantial farming establishment. A new range of structures was constructed, and domestic and agricultural buildings were clearly separated for the first time. A metalled access road was constructed and fishponds established. The buildings were ranged around a central open area or courtyard (Mayes 2002: 56). This scale of construction is not seen until Period 3 at Bermuda Park.

The standing buildings and archaeological excavations conducted at Cressing Temple, Essex (Andrews 1993) suggests a preceptory of not dissimilar layout and size to that at South Witham. Two great barns and a well from the Templar period still survive on the site. Archaeological excavation has revealed further early structures, however only six broadly contemporary structures have been identified. Several of these have been rebuilt a number of times, with stone structures replacing timber ones; a sign of both the Templars growing affluence and the increasing importance of the Cressing Temple site. As a Bermuda Park however the surviving archaeological remains are not as extensive as is expected from the documentary records of the site. This suggests that

either the earlier structures have been obscured by later site use, or that early ephemeral structures left little trace in the archaeological record.

## 8.5 The Crown Administration

Following the dissolution of the Templar order in 1307 the manor fell under the administration of the crown. The manor continued to operate as a profitable farm until 1314, when the household was released and the livestock, ploughs and tools sold. All the paraphernalia of the chapel appears to have removed to the former regional headquarters at Balsall. The Knights Hospitaller did not take charge of the manor until 1324 and it is likely to have been in a poor state of repair, following a decade of abandonment. The lack of structural evidence of the early Templar occupation may be in part be associated with this occupational hiatus. Abandoned by both the Templar and the Crown is possible the site was heavily robbed of any useful or valuable building material. Archaeologically this is represented by the layers of demolition material, crushed roof-tile and roofing slate fragments both sealing Building 1 and lying above the natural ground surface over parts of the site.

## 8.6 The Knights Hospitaller

The manor appears to have been under the control of the Hospitallers from 1324 until the crown seized the manor in 1540, following the Dissolution of the Monasteries. This equates to the archaeological remains recorded in Period 3. Several masonry structures as well numerous more ephemeral post holes and beam slots were recorded in this period of occupation. Extensive water management was undertaken on the site with east-west and north-south orientated ditches as well as the pond in the south of the site continuing in use.

Building 2 was poorly preserved and it is difficult to interpret both the original floor plan and function. It is possible the building represents more than one construction event. The location of Building 2 in close proximity to north-south Ditches 4 and 5 may suggest it had a specialist or industrial function, which required running water. Several wooden joists were recorded, suggesting Building 2 may have had some form of suspend floor. To the east there was an indication that this would have originally continued over the top of Ditches 4 and 5.

A small amount of flake hammerscale was found adhering to slag recovered from masonry associated with Building 2 (1060), and the fill of Ditch 4 (1184). This indicates that these pieces had been produced during secondary smithing, hot working by a smith, using a hammer, of one or more pieces of iron to create an object or repair it. Slag was also recovered from the fills of later medieval Ditches 3 (1106), 4 (1184), and 5 (1262) as well as from feature [1412]. None of the slag was recovered from a primary context; all had re-deposited and were generally broken up and worn. None of the slag is diagnostic of smelting. However, the shape of some of the slag recovered indicates that it may once have formed part of a smithing hearth bottom. These plano-convex shaped slag pieces form as a result of high temperature reactions between the iron, iron-scale and silica from either a clay furnace lining or the silica flux used by the smith. It is not surprising that such material has been removed from the hearth and re-deposited, as hearths would have to be regularly cleaned out.

The smithing hearth bottoms and broken fragments of slag from Ditches 3, 4 and 5 are large, and so heavy that it is unlikely that they would have been transported any great distance. This indicates that smithing activity was taking place very near to the features into which the slag was dumped. The slag recovered, particularly the smithing hearth bottoms, is larger and more common in Period 3 than at any other time on the site. This suggests that metal working in this period was more intense and prolonged than at other periods of occupation. Excavations at Bordesley Abbey have revealed a well preserved example of a mill that powered bellows, which maintained the temperature of hearths used for iron working (Astill et al 2004: 133-8). This much better preserved structure is slightly early than Building 2. However the construction of Building 2, its proximity to Ditches 4 and 5 and evidence of metal working in this area of the site suggest this is one possible explanation of the function of this structure.

It is clear that some water management was required on site throughout the medieval period. Ditches 4 and 5 represent a complex sequence of inter-cutting channels and fills, suggesting they were maintained over a considerable period of time. This water management may relate to an industrial process on site, as well as simply to drain water from the land to make it habitable. The build-up of silty clay in the base of these features implies they were allowed to silt up naturally and that the flow was relatively slow.

At the southern extent of the site a pond [1355] appears to have been in use from Period 2, and continued to be used through the Hospitaller occupation of the site. The soil micromorphology, soil chemistry and diatom analyses of the pond deposits suggest the depositional environment was either still water or an area of very slow water movement. The pond deposits seem to have been subject to constant management, and were frequently re-cut. The pond would have been consistently shallow and prone to drying out, possibly in part due to it silting up and requiring maintenance. All the evidence points to generally a shallow but clear freshwater pond. Occasional pollution by waste dumping was often contained fragments of coal, charcoal and brick. Variations in phosphate levels indicate latrine or animal waste was also being dumped in the watercourses. Despite the presence of coal and charcoal waste, the lack of any magnetic susceptibility enhancement and heavy metal concentrations, or micro-inclusions indicative of high temperature burning, may suggest a lack of local industrial activity. However, this does not necessarily indicate that the original sediments entering the pond had not been subject to heating or burning, since natural gleying processes (leading to loss of Fe) within the pond may have diluted the anthropogenic signature (Crowther, 2003). Equally later re-cutting of the pond and associated ditches may have removed evidence of earlier iron working activity on the site

Building 3 represented the fragmentary remains of a three-bayed structure. The size and layout of the structure may suggest a domestic dwelling, however it was not possible to identify specific activity areas. "No floors levels of the three-bayed structure were present in 1996 and indeed, it appears that upper levels had been removed by farming activity, prior to 1970" (Wilson 2000: 40). The layout of the Period 3 buildings represents a departure from the early Templar farmstead; Building 3 and its associated cobbled surfaces sealed a number of inter-cutting pits dated to Period 2.

Cobbling to the north and west of Building 3 formed a rough surface overlaying earlier (Period 2) postholes. These cobbled surfaces appear to have been associated with more ephemeral timber buildings, the foundations of which were represented by to beam slots [1061], [1063] and associated postholes. The cobbling appears to represent external yard areas and the timber buildings may have been workshops or arm buildings. The northern cobbled area contained a large millstone, this may have been brought to the site and there is no evidence that it was associated with any of the structures excavated on the site.

To the south Building 4 had been heavily disturbed by repeated stone robbing and later intrusions. The stratigraphic relationship between Buildings 3 and 4 was not clear but it seems likely they would have been part of one continuous range. There was no evidence of pottery production on the site, however two kiln breaks had been incorporated into a possible heath or internal wall of Building 4. The bricks are perforated by multiple holes, and would have originally been used in the floor of an oven or kiln structure, the holes allowing hot air to pass into a chamber above. Similar bricks were found associated with the pottery and tile kilns at Chilvers Coton (Mayes and Scott 1984, 167–70, kilns 28, 29, 32a-b). It appears small numbers of kiln bricks were being recycled as building material on the site,

Throughout the medieval period the southern edges of the area of habitation appear to have been defined by a series of east-west aligned ditches (Ditches 1-3), directly to the north of the pond. Linear feature [1051] may represent a hedgeline, which would again act as an east-west aligned division. An area of cobbles (2029) was recorded to the east of Building 3, with areas of tree-rooting on either side of it. This appears to have been a track or driveway in the later medieval period, possibly representing the main entrance to the site at this time.

Most of the medieval pottery appears to have been produced locally as part of the Chilvers Coton industry. Small quantity of Chilvers Coton fabric C kiln waste and poor quality vessels, which are seconds are being used on the site. Vessels which are seconds include a jar with warped everted rim and a jar base on which the glaze has crawled and shrunk. Unstratified finds include clay waste and a Cistercian ware mug fragment with kiln scar on the base. A mug base in Midlands purple ware from [1098] has kiln scars on the underside of the base and is chipped at the base angle as if it had to be separated from the other pot post-firing. Two fine whiteware bases from [1062] and [1098] that were recorded as Midlands yellow ware but have a kiln scars and traces of brown glaze on the underside of the base, suggesting that they too were locally made.

The fabrics of the medieval ceramic building material recovered from the site have been compared to pottery fabrics in the regional reference collections from Warwickshire, Coventry and Birmingham. Only one definite match was identified, tile fabric WH1 clearly comes from the same source as the pottery in fabric CCC (Chilvers Coton type C), indicating manufacture of both tile and pottery at Chilvers Coton.

## 8.7 The Later Medieval and Early Post-Medieval Period

By the 16<sup>th</sup> century the manor land, while still owned the Knights Hospitallers, was leased to other parties, specifically the Augustinian house of Erbury Priory and Sir Edward Grey<sup>20</sup>. In a conveyance of 1567 the manor is now referred to as the “Capital Messuage known as the Temple”. In 1540 after the dissolution of the monasteries, the land was taken over again by the crown and sold on. The property continued in use as a substantial farm until the early 17<sup>th</sup> century, although many of the original building were probably in a fairly derelict state by this time. During the second half of the 16<sup>th</sup> century successive occupants, tenants and owners of Temple Hall were farmers of considerable wealth and substance, although this is not necessarily reflected in the archaeological record. It may be inferred from the documentary evidence that Temple Hall farm and St. John’s manor began to regain status and prosperity in the late 15<sup>th</sup> century, which was maintained until the late 16<sup>th</sup> century, at which time it was the court house of the manor. (Wilson forthcoming).

In the centre of the site an enigmatic feature consisted of a large north-south aligned linear cut [1099], which contained timbers (1289) and (1290) as well as staining associated with decayed timbers. The feature included in Period 4 on due to its stratigraphic location. The pottery and tile recovered from the feature was of late medieval or early post-medieval date. The feature appears to have been associated with the increasingly industrial use of the site in the post-medieval period. It is likely that this feature is associated with water management, possible a timber shoot or sluice gate. The lack of any channels running into or out of the feature is frustrating, however it is possible, given the variegated nature of the natural deposits, that ephemeral channels were missed during the excavation. A timber drain at Bordesley Abbey (Astill et al 2004: 128-9) provides a possible analogy for this feature, but is of 12<sup>th</sup> century date.

## 8.8 Early (17<sup>th</sup> Century) Industrial Disturbance

In the early 17<sup>th</sup> century it is likely that further building material robbing took place among the buildings of the derelict farm. A timber-lined trough in cut (1099) dates from this period, and relates to the increasing industrial exploitation of the meadow. In his Court of Survey document Sir Richard Newdigate describes the extent of his estates in the late 17<sup>th</sup> century. The Manor formally owned by the Templars is described, and the Manor house is derelict, or even demolished by this time. To the east of the site of the Templar manor house a pool has been recently made to run a “coalpit water wheel”

Archaeologically this was recorded as Period 4 and is represented by a series of north-south aligned ditches recorded on the eastern half of the site. A watching brief to the south of the excavation area recorded extensive truncation, some of which may have been associated with the mine and millpond of this period.

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<sup>20</sup> See also “The manor House of the Knights Templars at Chilvers Coton, North Warwickshire: New Identification” by M.D. Wilson, in *West Midlands Archaeology*, Volume 40, 1997.



## 8.9 Modern Industrial Disturbance

A wide range of modern industrial disturbance was recorded on the site. The most obvious of these were an extraction pit along the southern edge of the site, the brickworks in the western part of the site, the industrial light railway and its embankment crossing the eastern part of the site. In addition there were large dumps of coalmining and brick-making waste over many parts of the site. Some of these activities, such as clay extraction and coal mining, had their origins in the earlier medieval and post-medieval periods.

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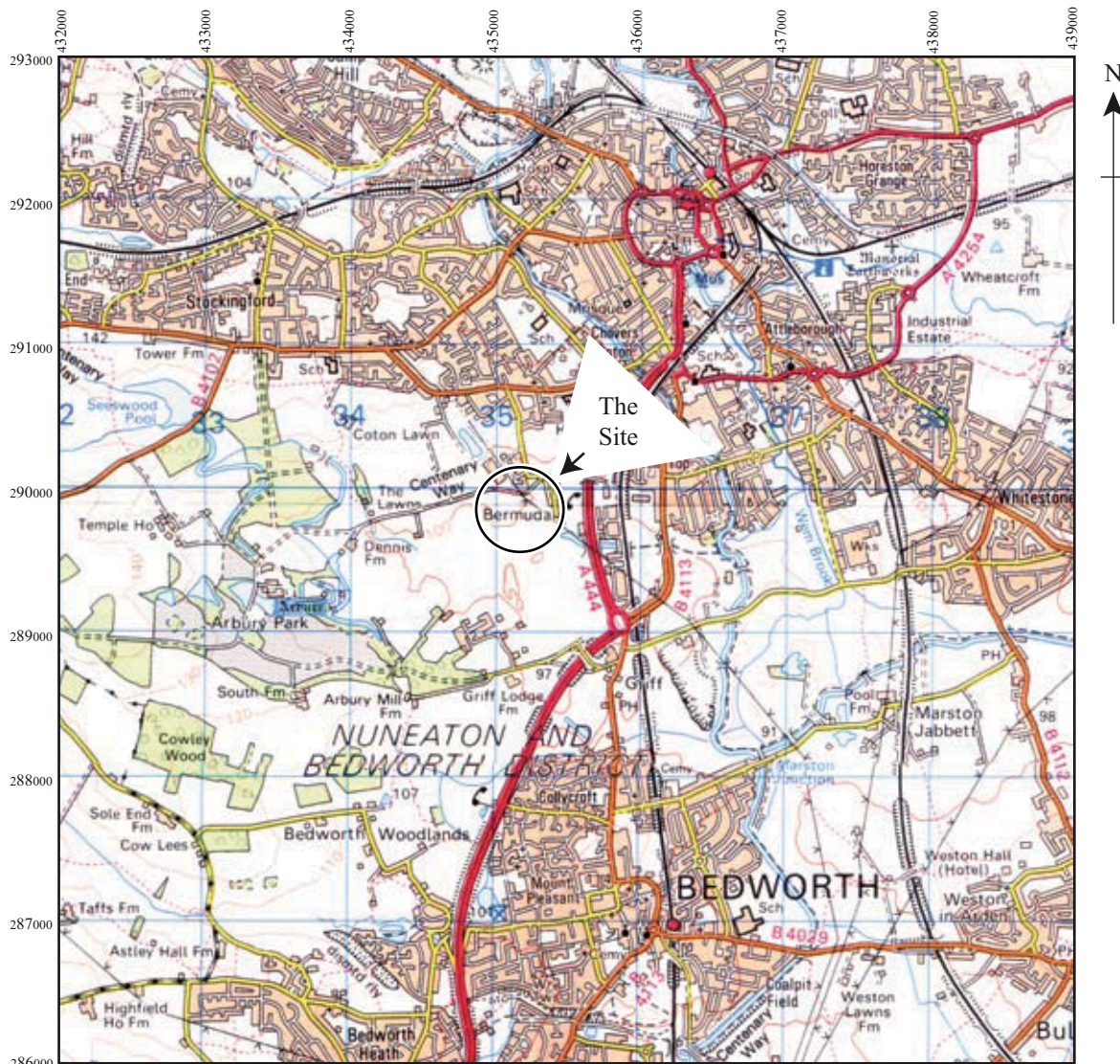
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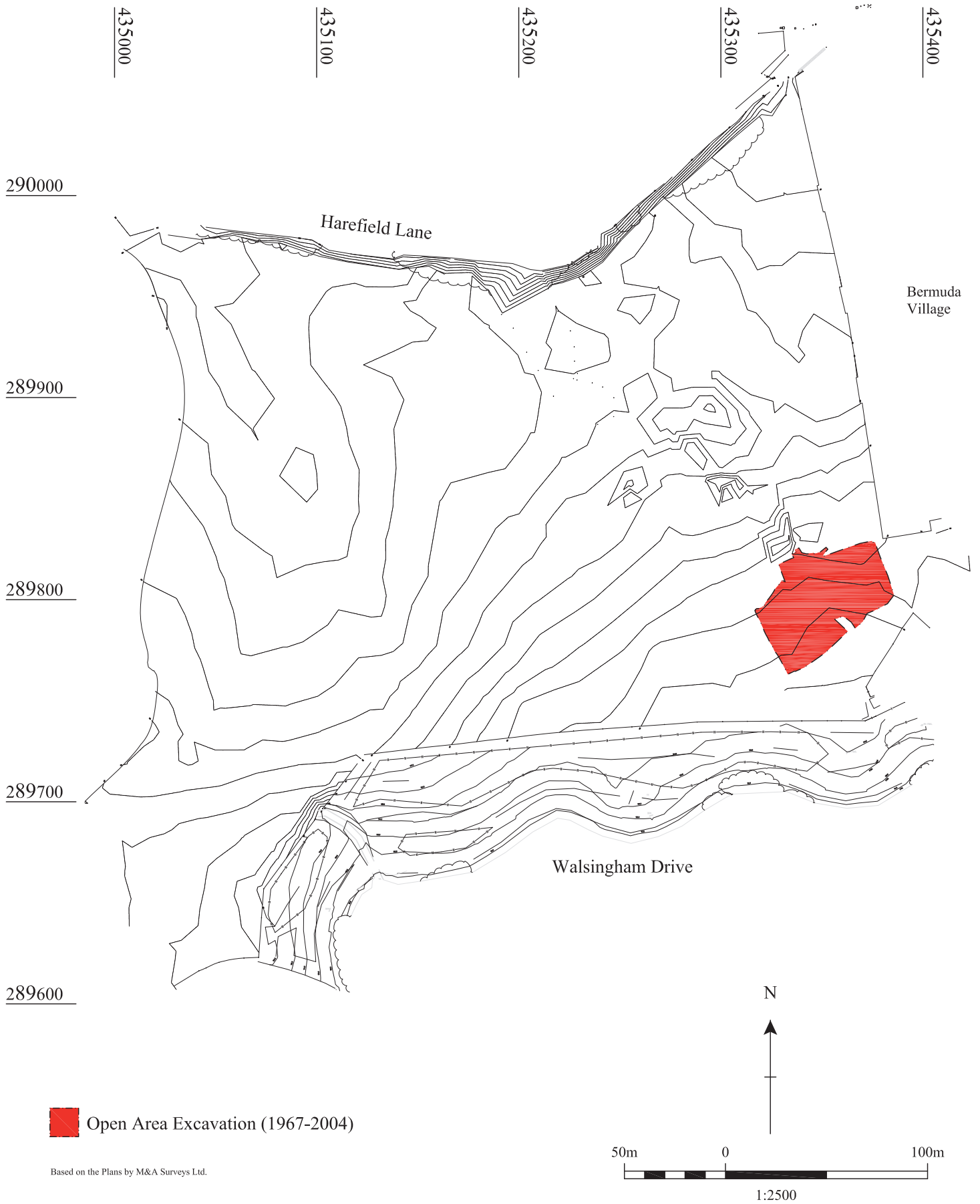
#### Abbreviations used

<b>WRCO</b>	Warwick County Records Office
<b>NC</b>	Newdigate Collection (held by the Warwick County Records Office)
<b>PRO</b>	The National Archives, Kew
<b>Cal. Pat. Rolls</b>	Calendar of Patent Rolls
<b>Foff</b>	Feet of Fines
<b>Chanc. Inq. Post. Mort</b>	Inquisitions post mortem
<b>Trin.</b>	Trinity Term or Sessions
<b>Mich.</b>	Michaelmas Term or Sessions

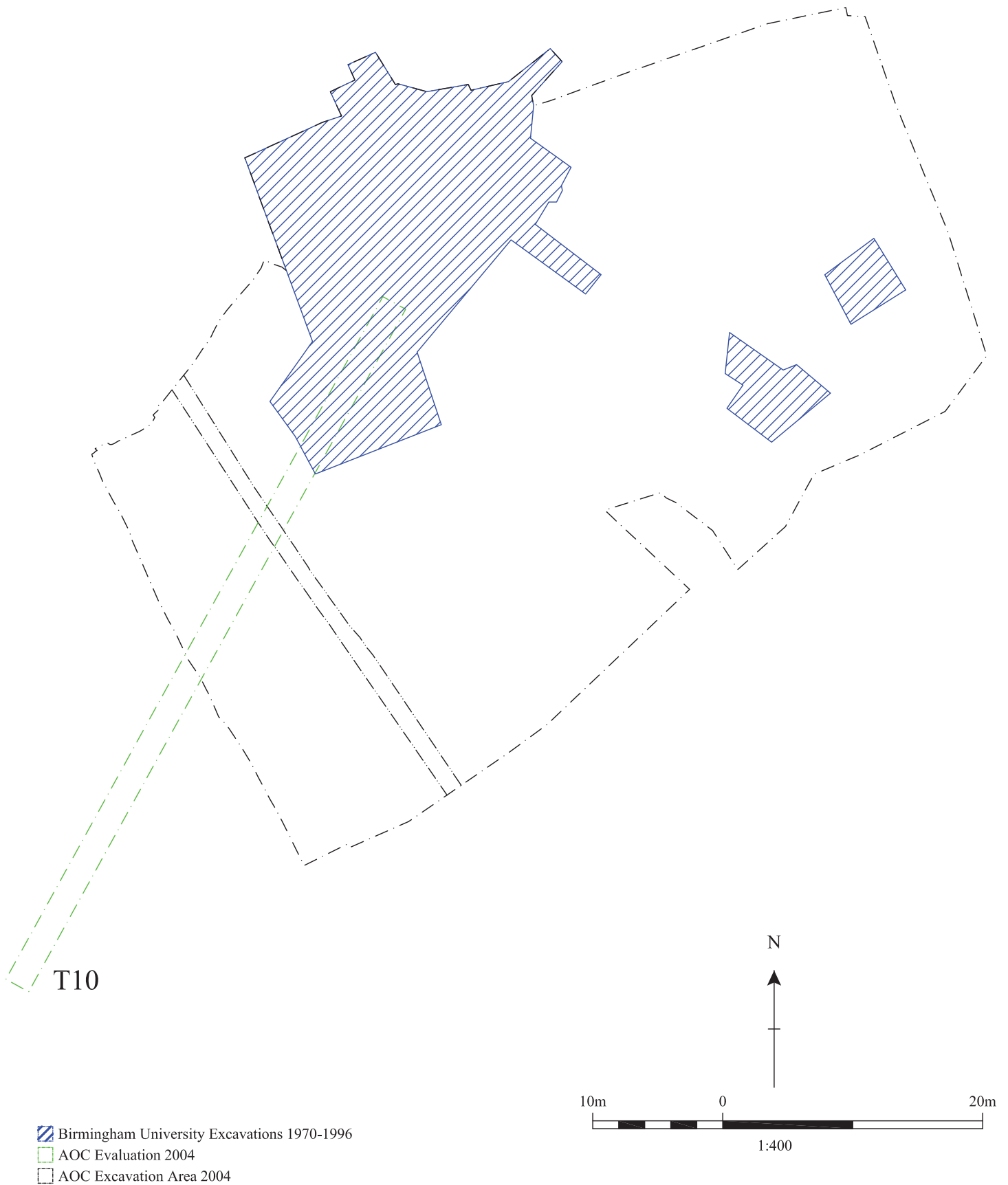


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**Figure 1:** Site Location



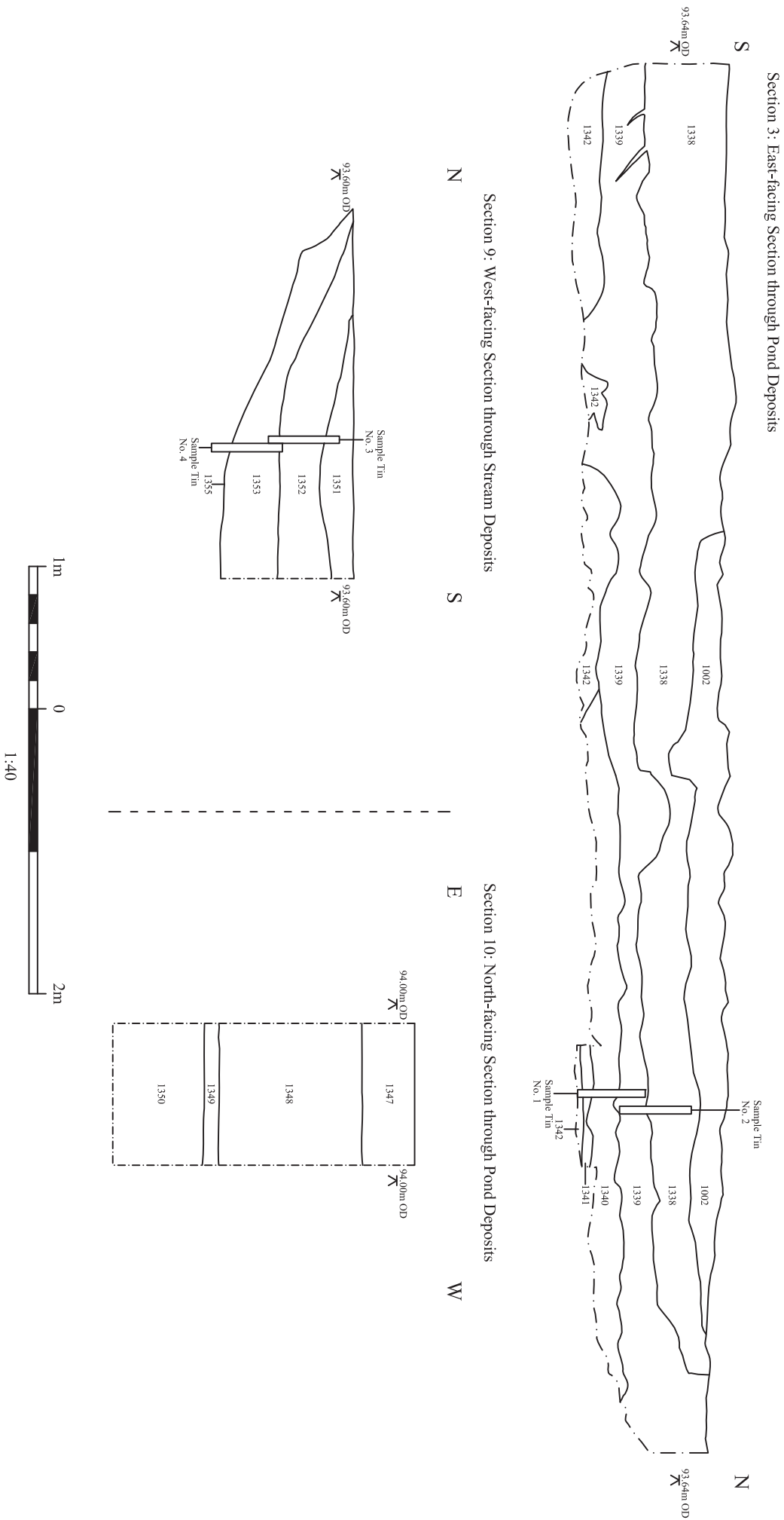
**Figure 2:** Detailed Excavation Areas Location



**Figure 3:** Phases of Archaeological Excavation Location Plan

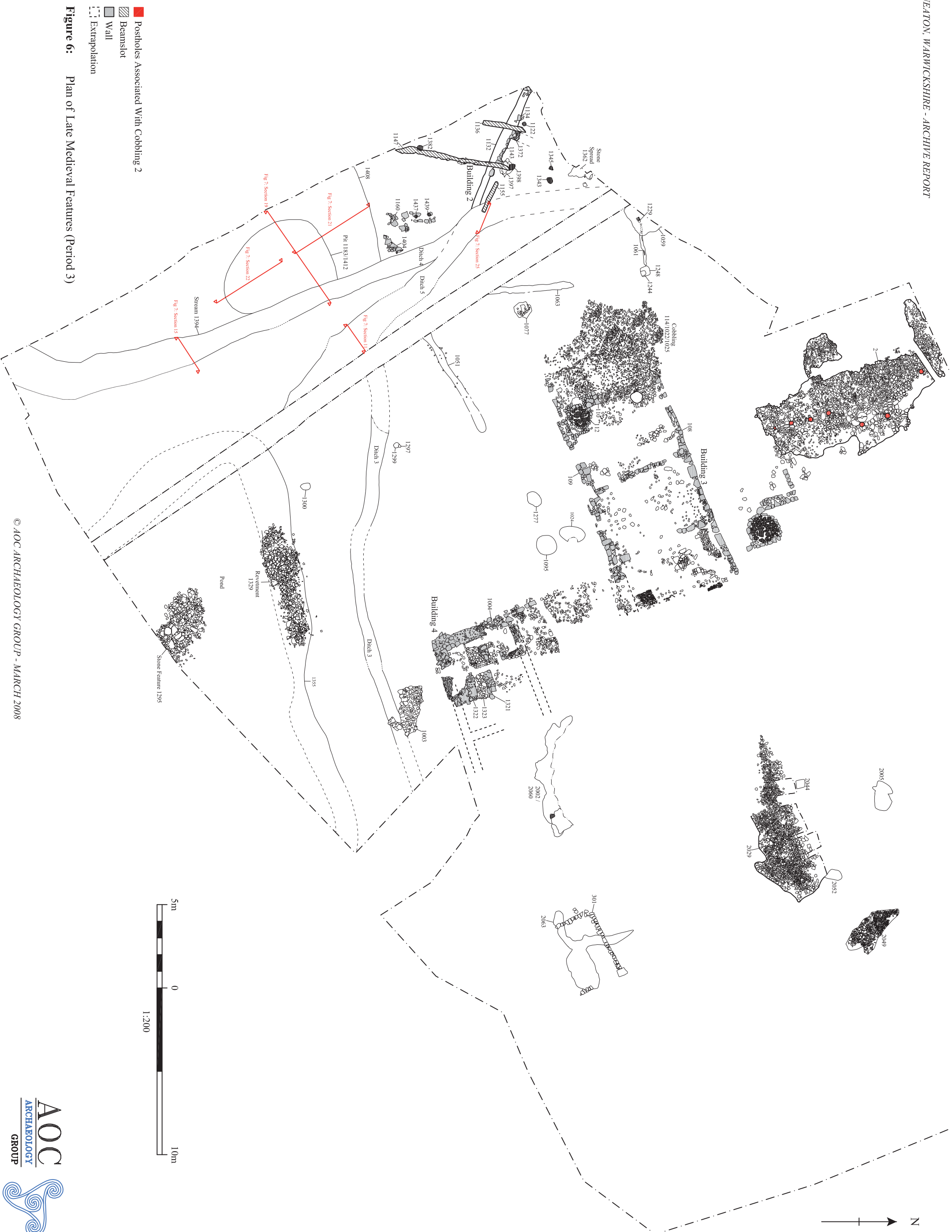


Figure 4: Plan of Early Medieval Features (Period 2)

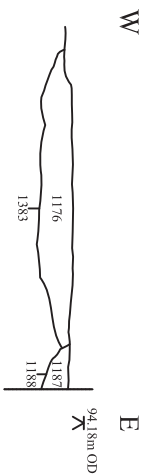


**Figure 5:** Sections through Pond and Stream Deposits





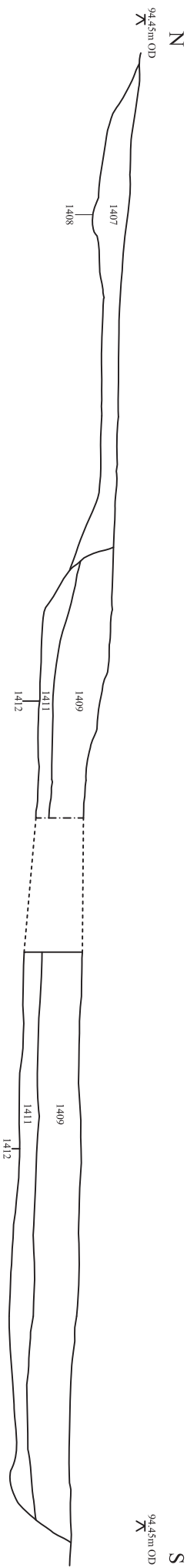
Section 11: South-facing Section Ditch 5



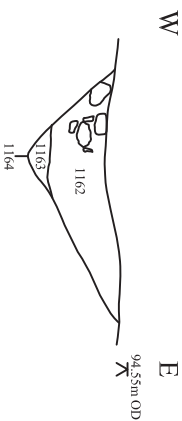
Section 19: South-facing Section through Pit 1183 & Ditch 5



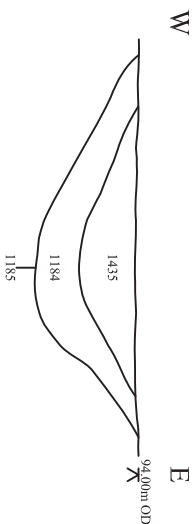
Sections 21 & 22: West-facing Sections through Pit 1408, 1412



Section 15: South-facing Section across Channel 1164



Section 24: South-facing Section across Channel 1185



Section 25: South-facing Section through Pit 1157

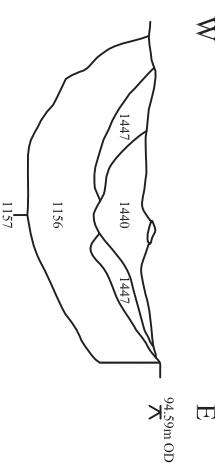


Figure 7: Sections through Ditches 4 & 5

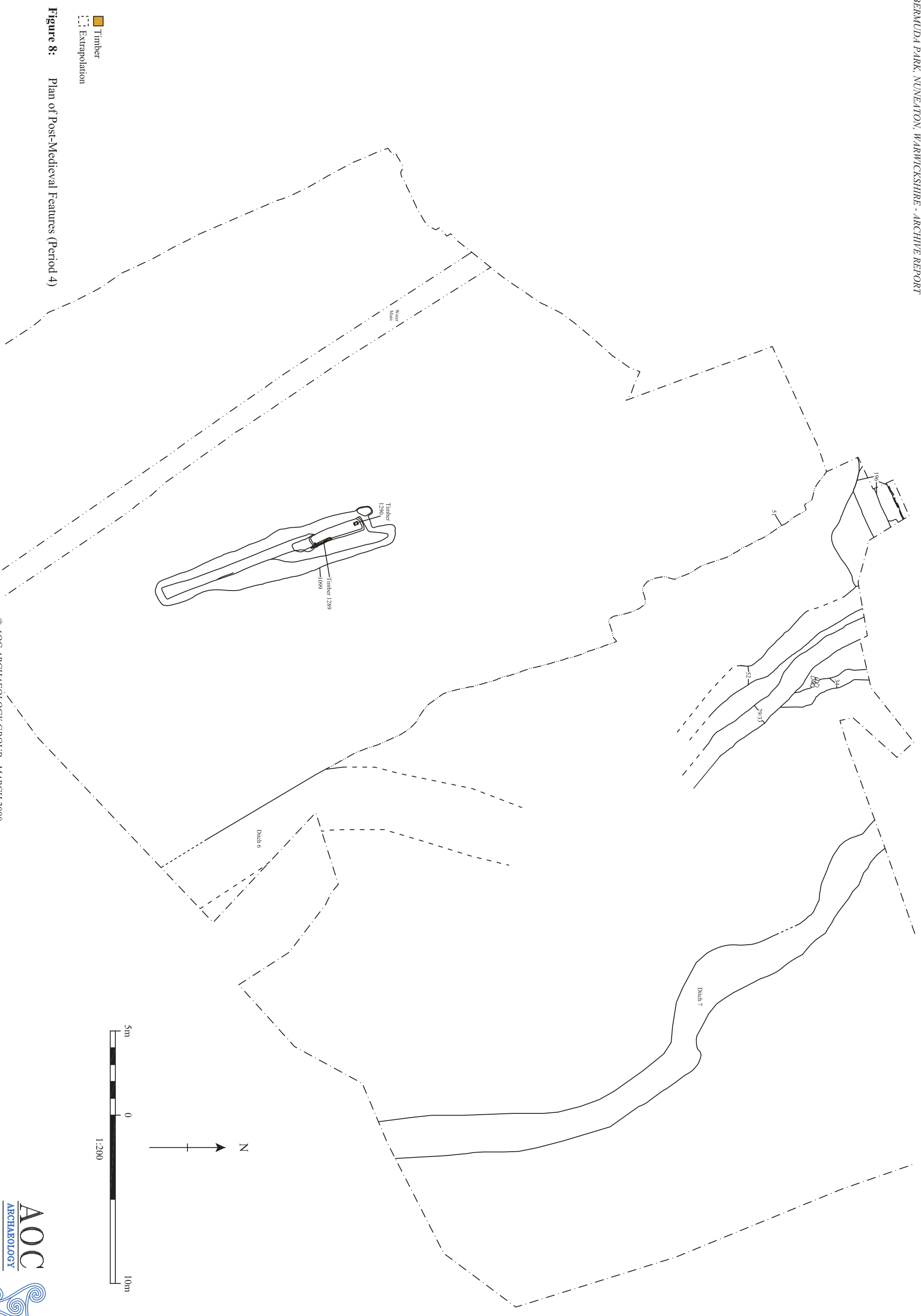
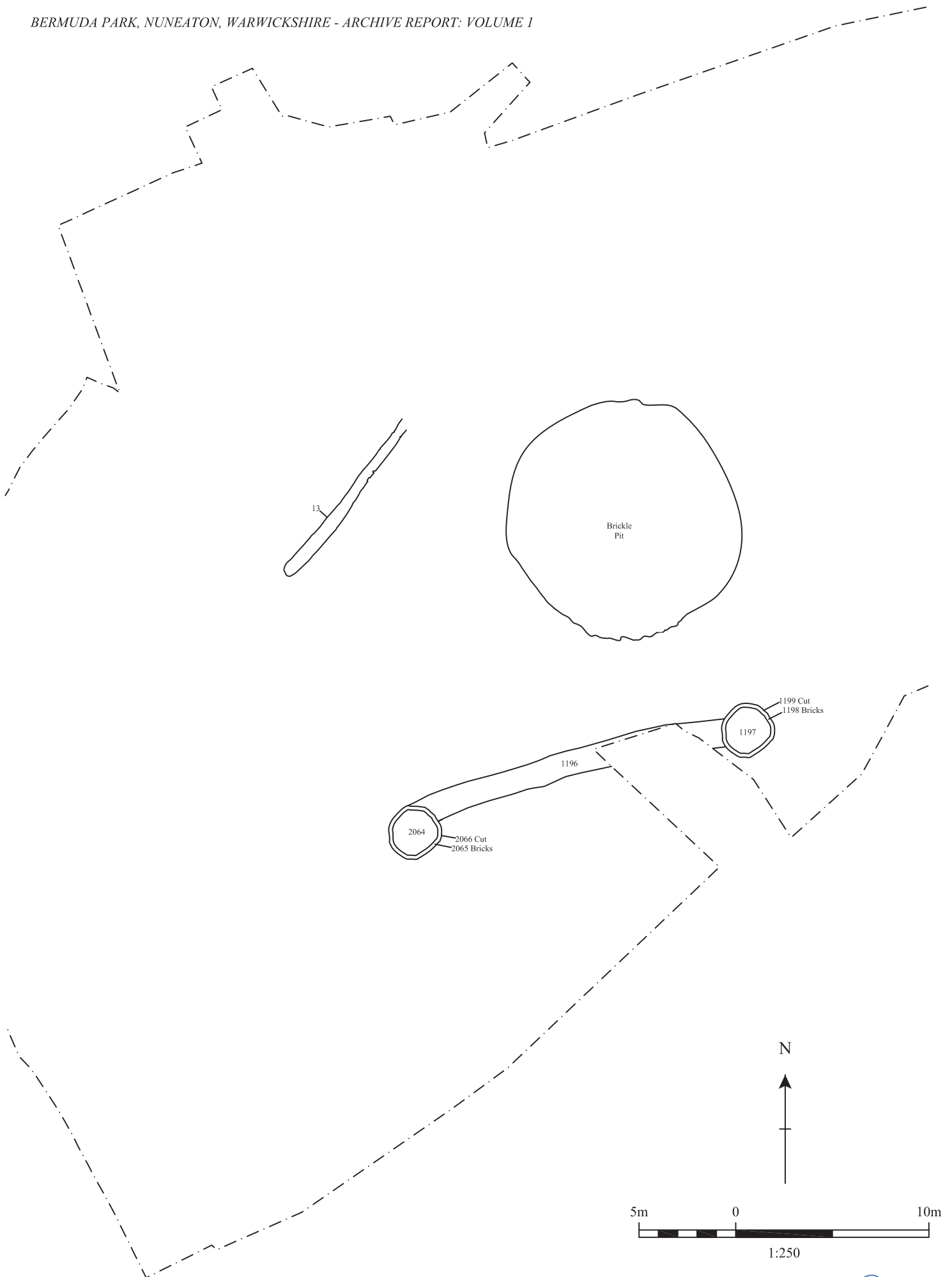


Figure 8: Plan of Post-Medieval Features (Period 4)



**Figure 9:** Plan of Modern Features (Phase 5)

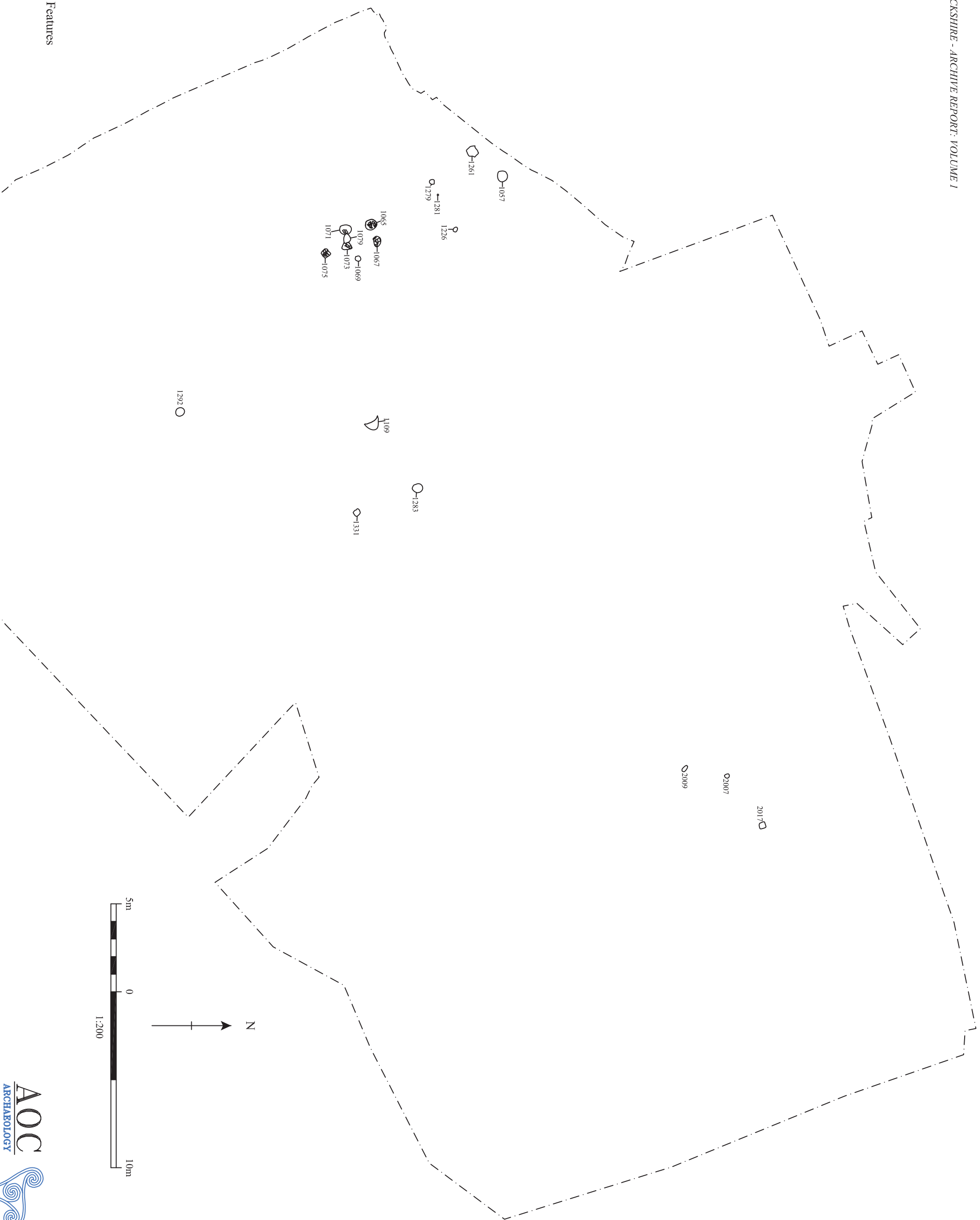


Figure 10: Plan of Undated Features

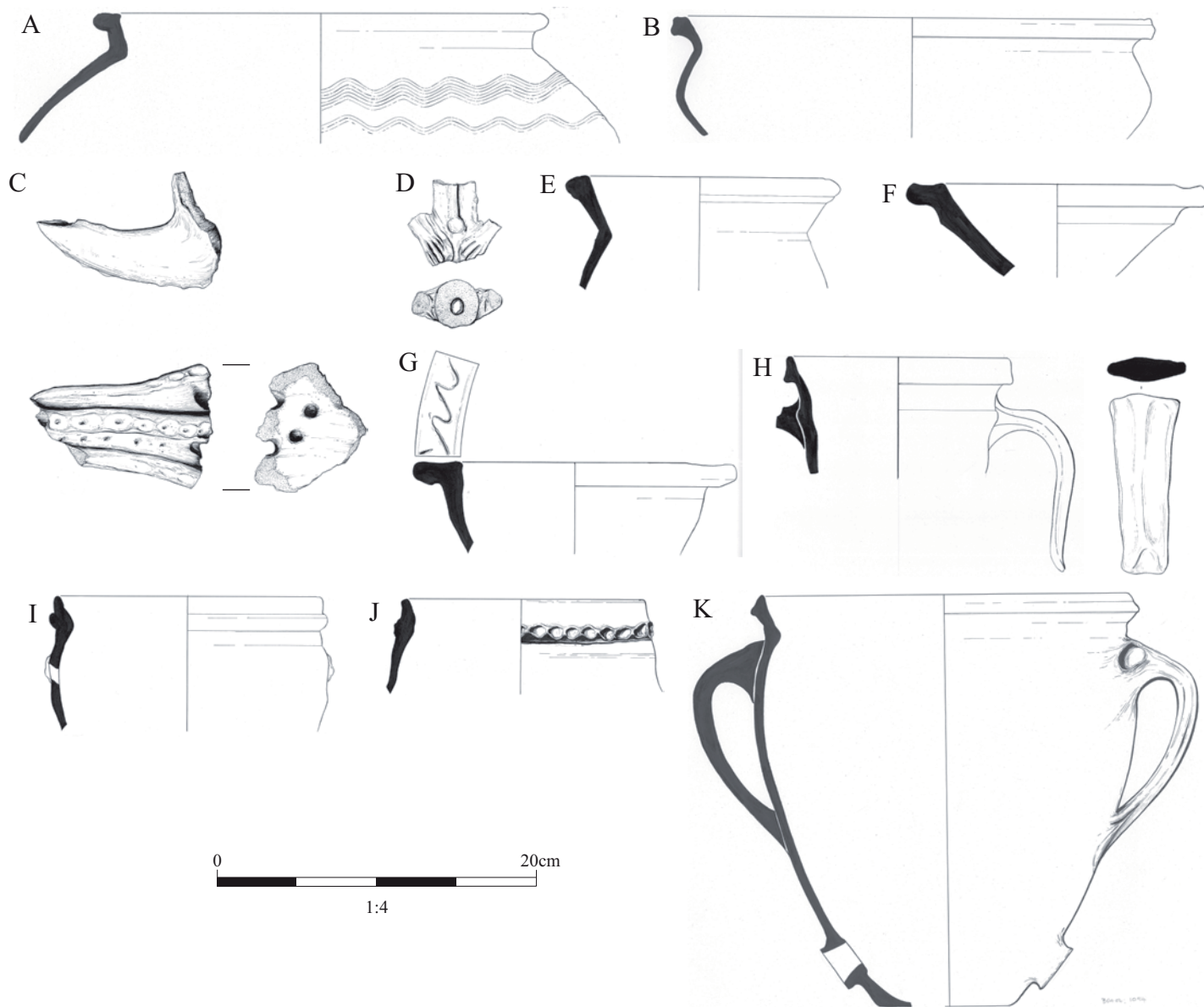


Fig A: Cooking pot in fabric IGN1, with combed wavy line decoration. Context [1332].

Fig B: Globular cooking pot in fabric IGN2. Context [1329].

Fig C: Decorated Curfew handle in fabric IGN2. Context [2002].

Fig D: Tubular spout from an anthropomorphic jug in fabric WW3. Context [1327].

Fig E: Wide mouthed bowl in Chilvers Coton fabric C. Context [1098].

Fig F: Wide mouthed bowl in Chilvers Coton fabric C. Context [2001].

Fig G: Wide mouthed bowl in Chilvers Coton fabric C, with incised line decoration. Context [1022].

Fig H: Rounded jug with tall neck and collared rim in Chilvers Coton fabric C. Context [1076].

Fig I: Handled jar in Chilvers Coton fabric D. Context [1098].

Fig J: Butterpot/jar in Chilvers Coton fabric D, with thumb cord on the rim exterior. Context [1022]

Fig K: Handled jar in Chilvers Coton fabric D. Context [1094].

**Figure 11:** Pottery Illustrations

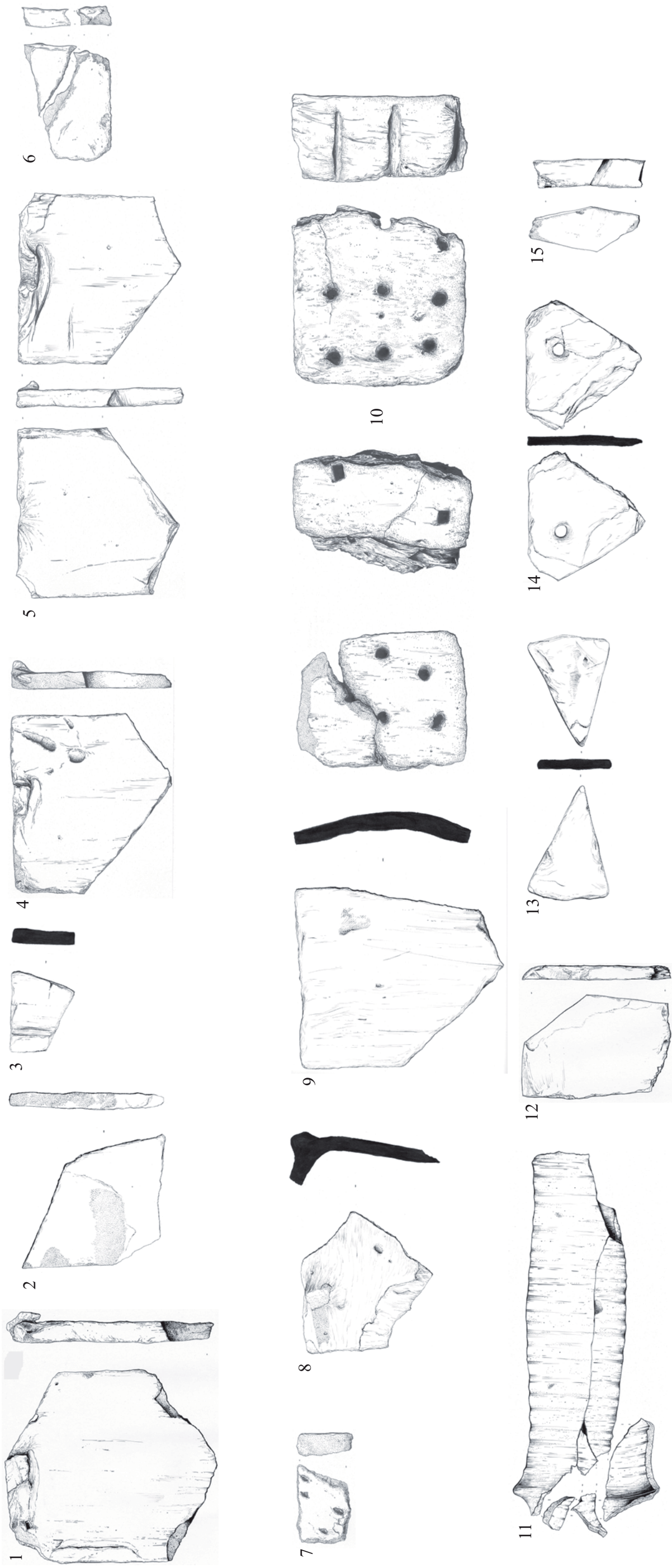


Fig 1: Nib/peg tile with nib and square nail holes in fabric WH1. Context (1153)  
 Fig 2: Nib/peg tile with light brown glaze 'runs' on the top and edge. Context (1153).  
 Fig 3: Probable nib/peg tile in fabric WH1, with possible batch mark. Context (1001)  
 Fig 5: Partly complete nib tile in fabric WH3, with probable bird foot print. Context (1329)  
 Fig 4: Partly complete nib tile in fabric WH3, with deep groove along base of the nib. Context (2030)  
 Fig 6: Green glazed ridge tile in fabric WH5. Context (1391)  
 Fig 7: Green glazed ridge tile in fabric WH5, with slab marks. Context (1001)  
 Fig 8: Decorated green glazed ridge tile in fabric WH1. Context (2030)  
 Fig 9: Ridge tile in fabric WH2. Context (1002)  
 Fig 10: Two perforated kiln bricks. Context (1322)  
 Fig 11: Socketed water Pipe in fabric WH2. Context (1001)  
 Fig 12: Grey siltstone flooring with cut edges. Context (1001)  
 Fig 13: Triangular grey and dark red siltstone roofing. Context (2030)  
 Fig 14: Triangular grey siltstone roofing with nail hole. Context (1131)  
 Fig 15: Probable paving stone cut from grey siltstone. Context (1062)

**Figure 12:** Ceramic Building Materials Illustrations

## APPENDIX A: CONTEXT REGISTER

Context No.	Context Description	Length	Width	Depth
1001	Unstratified finds	All trench	All trench	*
1002	Topsoil	All trench	All trench	0.30-0.80m
1003	Layer, cobbled surface associated with (1004)	490mm	420mm	120mm
1004	Wall foundation	420mm	330mm	190mm
1005	Backfill of test trench	*	*	1.00m
1006	Remains of test trench cut	4.50m	*	*
1007	Natural deposit, light gray sand	NFE	NFE	NFE
1008	Interface between natural deposits, recorded as a cut	1.20m	0.70m	NFE
1009	Backfill of (1010)	1.20m	0.38m	*
1010	Cut of feature dug in trial trench	1.20m	0.38m	*
1011	Backfill of modern cut	0.70m	0.30m	*
1012	Cut of modern feature	0.70m	0.30m	*
1013	Cut of modern feature	1.20m	0.50m	*
1014	Cut of modern feature	1.20m	0.50m	*
1015	Natural deposit, mid-brownish grey clayey sand	4.00m	2.00m	*
1016	Backfill of several modern features	3.20m	4.00m	*
1017	Cuts for trial trench dug features	3.20m	4.00m	*
1018	Backfill of modern cut feature	1.45m	0.50m	*
1019	Cut of modern feature	1.45m	0.50m	*
1020	Possible fill/variation in natural	9.00m	1.20m	*
1021	Interface between natural deposits, recorded as a cut	9.00m	1.20m	*
1022	Layer, Cobbled surface	200mm	100mm	50mm
1023	Pit fill	1.10m	0.90m	0.28m
1024	Cut of pit	1.10m	0.90m	0.28m
1025	Layer, leveling surface	2.70m	2.20m	0.09m
1026	Linear feature running NE-SW	*	*	*
1027	Fill of linear gully	8.10m	0.50m	0.18m
1028	Cut of linear gully	8.10m	0.50m	0.18m
1029	Pit fill	*	*	*
1030	Cut of pit	*	*	*
1031	Modern pit fill	*	*	*
1032	Modern cut of pit	*	*	*
1033	Fill of linear feature	3.00m	0.94m	0.63m
1034	Natural clay deposit	*	*	*
1035	Tertiary fill of linear feature	*	*	*
1036	Secondary fill of linear feature	0.75m	0.25m	0.17m
1037	Primary fill of linear feature	*	*	*
1038	Cut of ditch	*	*	*
1039	Fill of posthole	0.15m	0.10m	0.08m
1040	Cut of Posthole	0.45m	0.24m	0.33m
1041	Fill	0.45m	0.47m	0.25m
1042	Cut	0.45m	0.47m	0.25m
1043	Fill	*	*	0.25m
1044	Cut	*	*	0.25m
1045	Fill	0.20m	0.32m	*
1046	Cut	0.20m	0.32m	*
1047	Post-Medieval pit cut	3.00m	1.94m	0.63m
1048	Variation in natural drift deposits	*	1.00m	*
1049	Interface between natural deposits	*	1.00m	*
1050	Fill of hedge-line	6.60m	0.50m	0.30m
1051	Possible hedge-line	6.60m	0.50m	0.30m
1052	Shallow variation in natural clay	0.40m	0.32m	*
1053	Undulation / cut	0.40m	0.32m	0.04m
1054	Fill of pit	1.60m	1.08m	0.28m
1055	Cut of pit	1.60m	1.08m	0.28m
1056	Fill of posthole	0.60m	0.55m	0.08m



Context No.	Context Description	Length	Width	Depth
1057	Cut of posthole	0.60m	0.55m	0.08m
1058	Top layer of cobbled surface	1.80m	1.40m	*
1059	Edge of cobbled surface	1.80m	1.40m	*
1060	Fill of plank-built wall trench	2.55m	0.19m	0.20m
1061	Cut of plank-built wall trench	2.55m	0.19m	0.20m
1062	Fill of possible beam slot	5.00m	0.40m	0.24m
1063	Cut of possible beam slot	5.00m	0.40m	0.24m
1064	Fill of posthole	0.62m	0.54m	0.26m
1065	Cut of posthole	0.62m	0.54m	0.26m
1066	Fill of posthole	0.49m	0.28m	0.28m
1067	Cut of posthole	0.49m	0.28m	0.28m
1068	Fill of posthole	0.37m	0.30m	0.08m
1069	Cut of posthole	0.37m	0.30m	0.08m
1070	Fill of posthole	0.69m	0.57m	0.20m
1071	Cut of posthole	0.69m	0.57m	0.20m
1072	Fill of posthole	0.55m	0.48m	0.36m
1073	Cut of posthole	0.55m	0.48m	0.36m
1074	Fill of posthole	0.48m	0.42m	0.12m
1075	Cut of posthole	0.48m	0.42m	0.12m
1076	Fill of irregular pit	0.98m	0.83m	0.44m
1077	Cut of irregular pit	0.98m	0.83m	0.44m
1078	Fill of posthole	0.32m	0.28m	0.15m
1079	Cut of posthole	0.32m	0.28m	0.15m
1080	Modern backfill	0.60m	0.30m	0.07m
1081	Cut of modern feature	0.60m	0.30m	0.07m
1082	Fill of posthole	0.33m	0.23m	0.12m
1083	Cut of posthole	0.33m	0.23m	0.12m
1084	Backfill of cut feature	1.00m	0.60m	*
1085	Cut of feature	1.00m	0.60m	*
1086	Backfill of cut feature	1.20m	1.00m	*
1087	Cut of feature	1.20m	1.00m	*
1088	Backfill of cut feature	1.00m	0.50m	*
1089	Cut of feature	1.00m	0.50m	*
1090	Backfill of linear cut feature	3.50m	0.65m	*
1091	Cut of linear feature	3.50m	0.65m	*
1092	Fill of linear gully	8.10m	0.50m	0.18m
1093	Cut of linear gully	8.10m	0.50m	0.18m
1094	Fill of posthole	1.25m	*	0.40m
1095	Cut of posthole	1.27m	*	0.57m
1096	Geomorphological anomaly	2.00m	1.20m	*
1097	Geomorphological anomaly	2.00m	1.20m	*
1098	Fill of ditch	14.00m	2.60m	0.45m
1099	Ditch cut	14.00m	2.60m	0.96m
1100	Upper fill of ditch	3.20m	1.00m	*
1101	Cut of ditch	3.20m	1.00m	*
1102	Primary fill of ditch	12.10m	0.80m	0.50m
1103	Cut of ditch	2.50m	0.70m	*
1104	Fill of ditch	1.60m	1.00m	*
1105	Cut of ditch	1.60m	1.00m	*
1106	Fill of ditch	1.50m	*	0.27m
1107	Cut of ditch	*	2.20m	0.65m
1108	Secondary fill of pit	0.65m	0.45m	0.15m
1109	Cut of pit	*	*	*
1110	Fill of pit	1.65m	1.40m	0.98m
1111	Cut of pit	1.65m	1.40m	0.98m
1112	Deposit associated with (1002)	1.40m	1.20m	*
1113	Natural depression in subsoil	1.40m	1.20m	0.02m
1114	Topsoil remnant	0.60m	0.30m	*
1115	Depression in natural clay	0.60m	0.30m	*
1116	Fill of ditch	0.90m	2.30m	*
1117	Interface between natural deposits, recorded as a cut	0.90m	2.30m	*

Context No.	Context Description	Length	Width	Depth
1118	Variation in natural layer	4.20m	2.2m	*
1119	Overburden remnant	0.60m	0.60m	*
1120	Depression in natural layers	0.60m	0.60m	*
1121	Fill of posthole	0.20m	0.20m	*
1122	Cut of posthole	0.20m	0.20m	*
1123	Clay deposit	0.60m	1.10m	*
1124	Spread interface, recorded as cut	0.60m	1.10m	*
1125	Fill of tree-root hole	0.98m	2.54m	0.10m
1126	Cut of tree-root hole	0.98m	2.54m	0.10m
1127	Natural clay deposit	*	*	*
1128	Wall foundation	1.80m	0.50m	*
1129	Deposit associated with (1128)	0.30m	0.25m	0.10m
1130	Interface recorded as cut	*	*	*
1131	Fill of wall-foundation cut	6.78m	1.30m	0.35m
1132	Wall foundation cut	6.78m	1.30m	0.35m
1133	Deposit	1.00m	0.40m	0.10m
1134	Deposit	1.00m	0.60m	0.10m
1135	Fill of linear feature	1.56m	0.14m	0.07m
1136	Cut of linear feature	1.56m	0.14m	0.07m
1137	Deposit of mixed demolition	3.20m	1.40m	0.10m
1138	Natural clay deposit	*	*	*
1139	Subsoil overburden remnant	1.80m	1.00m	*
1140	Subsoil remnant recorded as having cut	1.80m	1.00m	*
1141	Natural clay deposits	2.60m	3.20m	*
1142	Natural deposit variant	5.60m	2.40m	*
1143	Sandstone wall foundation	*	*	*
1144	Robbed sandstone wall foundation	4.40m	0.80m	*
1145	Deposit	2.80m	0.26m	0.20m
1146	Secondary fill of linear feature	6.10m	0.30m	0.19m
1147	Linear cut	6.10m	0.30m	0.20m
1148	Subsoil deposit	4.00m	2.00m	*
1149	Subsoil deposit	7.00m	5.00m	*
1150	Natural deposit	0.90m	0.90m	*
1151	Demolition deposit	2.30m	2.50m	0.30m
1152	Deposit	2.50m	0.44m	0.30m
1153	Hearth / tile structure	1.50m	1.60m	*
1154	Fill of linear feature / beam slot	1.80m	0.22m	*
1155	Linear cut	1.80m	0.22m	*
1156	Primary fill of ditch	0.30m	1.73m	0.67m
1157	Cut of ditch	0.30m	1.73m	0.67m
1158	Fill of post hole	0.68m	0.76m	0.46m
1159	Cut of posthole	0.68m	0.76m	0.46m
1160	Masonry: wall foundation	3.00m	0.80m	0.40m
1161	Layer	7.50m	*	0.25m
1162	Coal deposit	1.80m	0.45m	0.05m
1163	Waterlain deposit	4.50m	1.60m	*
1164	Coal deposit	2.00m	0.54m	*
1165	Cut: impression left by (1164)	2.00m	0.54m	*
1166	Dumped deposit	2.40m	3.20m	0.20m
1167	Natural sand	1.00m	1.00m	*
1168	Cut: depression left by (1167)	1.00m	1.00m	*
1169	Timber stake	0.37m	0.10m	0.90m
1170	Clay deposit	7.50m	2.20m	*
1171	Backfill of evaluation trench	2.20m	0.20m	*
1172	Backfill variant, recorded as cut	2.20m	0.22m	0.10m
1173	Fill of channel	5.40m	1.20m	0.23m
1174	Cut of channel	5.40m	1.20m	0.23m
1175	Clay deposit	3.00m	0.60m	0.10m
1176	Fill of water channel	*	1.60m	0.20m
1177	Fill of modern water main	38.00m	1.30m	1.20m
1178	Cut of water main trench	38.00m	1.30m	1.20m
1179	Dumped deposit	2.70m	1.50m	0.35m

Context No.	Context Description	Length	Width	Depth
1180	Fill of water trench	4.50m	1.15m	0.12m
1181	Cut of water channel	4.50m	1.15m	*
1182	Variable waterlain deposit	3.50m	0.90m	0.35m
1183	Cut of water channel	1.50m	6.60m	0.48m
1184	Fill of channel	1.90m	1.00m	0.22m
1185	Cut of channel	1.90m	1.00m	0.22m
1186	Channel overflow deposit	15.00m +	1.20m	0.50m
1187	Fill of channel	10.00m	1.00m	0.40m
1188	Cut of channel	10.00m	1.00m	0.40m
1189	Clay deposit	2.00m	0.40m	0.10m
1190	Fill of channel	3.90m	1.50m	*
1191	Cut of channel	3.90m	1.50m	1.00m
1192	Fill of channel	10.00m	1.00m	0.40m
1193	Cut of channel	10.00m	1.00m	0.40m
1194	Cobbled surface	2.46m	1.46m	*
1195	Fill of brick-lined trough	9.00m	1.20m	*
1196	Cut of modern feature	9.00m	1.20m	*
1197	Backfill of modern well	2.60m	2.60m	*
1198	Modern backfill	2.60m	2.60m	2.00m
1199	Cut of modern feature	2.60m	2.60m	2.00m
1200	Dumped deposit	1.60m	1.50m	0.50m
1201	Fill of modern cut	0.90m	0.45m	*
1202	Cut of modern feature	0.90m	0.45m	*
1203	Backfill of evaluation trench	10.00m	0.50m	*
1204	Cut of evaluation trench	10.00m	0.50m	*
1205	Fill of linear feature	4.55m	3.44m	0.44m
1206	Modern deposit	1.00m	0.60m	*
1207	Depression left by (1206)	1.00m	0.60m	*
1208	External occupation surface	3.80m	1.30m	0.10m
1209	External occupation surface	2.40m	1.70m	0.10m
1210	External occupation surface	2.00m	1.60m	0.10m
1211	External occupation surface	2.20m	0.50m	0.10m
1212	Occupation deposit, recorded as fill	0.90m	0.25m	*
1213	Depression left by (1212)	0.90m	0.25m	*
1214	Deposit, recorded as fill	0.90m	0.30m	0.05m
1215	Depression left by (1214)	0.90m	0.30m	0.05m
1216	Layer	*	*	0.10m
1217	Fill of stream channel	3.00m	0.80m	0.50m
1218	Cut of stream channel	3.00m	0.80m	0.50m
1219	Fill of stream channel	3.40m	1.00m	0.50m
1220	Cut of stream channel	3.40m	1.00m	0.50m
1221	Fill of stream channel	3.00m	1.00m	*
1222	Cut of stream channel	3.00m	1.00m	*
1223	(Context not validated)	*	*	*
1224	(Context not validated)	*	*	*
1225	Fill of posthole	0.32m	0.22m	0.37m
1226	Cut of posthole	0.32m	0.22m	0.37m
1227	Natural sand / clay: glacial till	-	-	-
1228	Fill of posthole and post remnants	0.17m	0.10m	0.43m
1229	Cut of postpipe	0.17m	0.10m	0.43m
1230	Fill of posthole	0.38m	0.34m	0.30m
1231	Cut of posthole	0.38m	0.34m	0.30m
1232	Fill of posthole	0.49m	0.47m	0.37m
1233	Cut of posthole	0.49m	0.47m	0.37m
1234	(Context not validated)	*	*	*
1235	Fill of pit	0.56m	0.46m	0.11m
1236	Cut of pit	0.56m	0.46m	0.11m
1237	Fill of posthole	0.20m	0.14m	0.05m
1238	Cut of posthole	0.20m	0.14m	0.05m
1239	Fill of posthole	0.30m	0.30m	0.08m
1240	Cut of posthole	0.30m	0.30m	0.08m
1241	Fill of posthole	0.36m	0.36m	0.32m

Context No.	Context Description	Length	Width	Depth
1242	Cut of posthole	0.36m	0.36m	0.32m
1243	Fill of postpipe	0.27m	0.24m	0.23m
1244	Cut of postpipe	0.27m	0.24m	0.23m
1245	Fill of posthole	0.28m	0.27m	0.41m
1246	Cut of posthole	0.28m	0.27m	0.41m
1247	Fill of posthole	0.72m	0.64m	0.40m
1248	Cut of posthole	0.72m	0.64m	0.40m
1249	Remains of timber post	0.20m	0.20m	0.20m
1250	Fill of gully (1026)	5.90m	0.60m	0.10m
1251	Cut of gully	5.90m	0.60m	0.10m
1252	Cut and fill of tree-root holes	0.15m	0.15m	0.10m
1253	Fill of posthole	0.19m	0.18m	0.18m
1254	Cut of posthole	0.19m	0.18m	0.18m
1255	Fill of posthole	0.30m	0.20m	0.06m
1256	Cut of posthole	0.30m	0.20m	0.06m
1257	Layer	14.40m	3.40m	0.12m
1258	Fill of posthole	0.14m	0.18m	0.12m
1259	Cut of posthole	0.14m	0.18m	0.12m
1260	Fill of pit	0.68m	0.63m	0.11m
1261	Cut of pit	0.68m	0.63m	0.11m
1262	Secondary fill of ditch	8.05m	1.34m	0.38m
1263	Primary fill of ditch	5.47m	0.39m	0.13m
1264	Cut of ditch	8.05m	1.34m	0.45m
1265	Fill of shallow ditch	8.05m	1.15m	0.30m
1266	Cut of shallow ditch	8.05m	1.15m	0.30m
1267	Fill of ditch	1.71m	2.68m	0.79m
1268	Cut of ditch	1.71m	2.68m	0.79m
1269	Fill of posthole	0.40m	0.40m	0.27m
1270	Cut of posthole	0.40m	0.40m	0.27m
1271	Primary fill of linear feature, associated with (1333)	*	0.70m	0.31m
1272	Secondary fill of linear, associated with (1334)	*	0.30m	0.08m
1273	Cut of linear feature	4.55m	1.08m	0.44m
1274	Timber post	0.22m	0.13m	0.13m
1275	Primary fill of pit	0.70m	0.70m	0.20m
1276	Fill of pit	0.80m	0.94m	0.17m
1277	Cut of pit	0.80m	0.94m	0.17m
1278	Fill of posthole	0.30m	0.30m	0.14m
1279	Cut of posthole	0.30m	0.30m	0.14m
1280	Fill of stakehole	0.08m	0.08m	0.07m
1281	Cut of stakehole	0.08m	0.08m	0.07m
1282	Fill of posthole	0.55m	0.55m	0.30m
1283	Cut of posthole	0.55m	0.55m	0.30m
1284	Fill of posthole	0.35m	0.35m	0.11m
1285	Cut of posthole	0.35m	0.35m	0.11m
1286	Fill of gully	0.20m	0.30m	0.15m
1287	Cut of gully	0.20m	0.30m	0.15m
1288	Primary fill of pit	0.85m	0.65m	0.10m
1289	Timber plank	1.33m	1.50m	0.40m
1290	Timber plank	0.20m	0.22m	0.16m
1291	Fill of posthole	0.36m	0.27m	0.12m
1292	Cut of posthole	0.36m	0.27m	0.12m
1293	Cut of pit	2.32m	1.48m	0.61m
1294	Fill of pit	2.32m	1.48m	0.61m
1295	Deposit of rocks	4.00m	3.00m	*
1296	Fill of stakehole	0.12m	0.12m	0.43m
1297	Cut of stakehole	0.12m	0.12m	0.43m
1298	Fill of posthole	0.36m	0.36m	0.28m
1299	Cut of posthole	0.36m	0.36m	0.28m
1300	Cut of posthole	0.64m	0.52m	0.22m
1301	Fill of posthole	0.64m	0.52m	0.22m
1302	Fill of ditch	0.80m	1.00m	0.12m
1303	Fill of ditch	1.70m	1.80m	0.18m

Context No.	Context Description	Length	Width	Depth
1304	Secondary fill of ditch	2.46m	1.80m	0.13m
1305	Primary fill of ditch	0.70m	1.80m	0.05m
1306	Primary fill of ditch	3.80m	1.00m	0.15m
1307	Cut of shallow ditch	3.80m	1.00m	0.15m
1308	Fill of ditch	3.64m	0.96m	0.48m
1309	Cut of ditch	3.64m	0.96m	0.48m
1310	(Context not validated)	*	*	*
1311	(Context not validated)	*	*	*
1312	Layer	2.48m	1.59m	*
1313	Fill of ditch	1.20m	0.56m	0.52m
1314	Cut of ditch	1.20m	0.56m	0.52m
1315	Fill of linear feature	1.86m	1.25m	0.10m
1316	Cut of linear feature	1.86m	1.25m	0.10m
1317	Fill of ditch	12.58m	0.90m	0.28m
1318	Cut of ditch	12.58m	0.90m	0.28m
1319	Layer	1.80m	1.20m	*
1320	Wall foundation	1.22m	1.19m	*
1321	Wall foundation	1.73m	0.59m	0.58m
1322	Internal wall foundation	1.83m	0.49m	*
1323	Cobbled surface of passageway	1.54m	0.57m	*
1324	Layer	1.54m	0.57m	0.35m
1325	Cobbled floor surface	1.26m	0.75m	*
1326	Occupation layer	1.26m	0.75m	0.30m
1327	Burnt deposit	0.82m	0.64m	0.03m
1328	Make-up layer for cobbled surface	2.46m	1.46m	0.05m
1329	Dumped rock deposit	7.40m	1.70m	0.90m
1330	Fill of posthole	0.38m	0.37m	0.11m
1331	Cut of posthole	0.38m	0.37m	0.11m
1332	Fill of ditch	8.80m	1.46m	0.36m
1333	Secondary fill of ditch	*	0.70m	0.31m
1334	Primary fill of ditch	*	0.30m	0.08m
1335	Cut of ditch	8.80m	1.40m	0.64m
1336	Make-up layer for structure interior	*	*	0.35m
1337	Layer	*	*	0.04m
1338	Modern dumped soils	*	*	0.26m
1339	Alluvial deposit	*	*	0.28m
1340	Alluvial deposit	*	*	0.20m
1341	Alluvial deposit	*	*	0.70m
1342	Natural layer	*	*	0.20m
1343	Cut of posthole	0.44m	0.32m	0.16m
1344	Fill of posthole	0.44m	0.32m	0.16m
1345	Cut of posthole	0.28m	0.26m	0.19m
1346	Fill of posthole	0.28m	0.26m	0.19m
1347	Coal waste deposit	*	*	0.40m
1348	Dumped clay deposit: "clod"	*	*	1.00m
1349	Decayed organic deposit	2.00m	*	0.15m
1350	Natural blue-grey clay	2.00m	*	-
1351	Dumped deposit	2.50m	*	0.30m
1352	Dumped deposit	2.50m	*	0.40m
1353	Fill of stream channel	2.50m	*	0.40m
1354	Natural waterlogged clay	2.50m	*	2.50m
1355	Cut of stream channel		*	1.00m
1356	Coal-rich backfill of (1357)	0.21m	0.22m	0.13m
1357	Very modern cut	0.21m	0.22m	0.13m
1358	Fill of posthole	0.42m	0.32m	0.18m
1359	Cut of posthole	1.05m	0.75m	0.23m
1360	Fill of series of root holes	2.10m	1.60m	0.08m
1361	Cuts for series of root holes	2.10m	1.60m	0.08m
1362	Deposit: floor surface	0.94m	0.94m	0.06m
1363	Fill of drain feature	0.30m	0.30m	0.70m
1364	Stonework fill of drain feature	0.50m	0.40m	0.33m
1365	Cut of drain feature	0.30m	0.30m	0.70m

Context No.	Context Description	Length	Width	Depth
1366	Fill of feature	0.46m	0.18m	0.06m
1367	Cut of feature	0.46m	0.18m	0.06m
1368	Fill of posthole	0.38m	0.40m	0.18m
1369	Cut of posthole	0.38m	0.40m	0.18m
1370	Dumped rock deposit	2.40m	1.8m	0.25m
1371	Variant within (1374), recorded as cut	0.61m	0.48m	0.10m
1372	Demolition spread, recorded as fill	0.61m	0.48m	*
1373	Fill of posthole	0.18m	0.20m	0.46m
1374	Fill of wall cut, same as (1450)	2.20m	0.45m	0.12m
1375	Wall cut, same as (1451)	2.20m	0.45m	0.12m
1376	Fill of pit	0.70m	0.65m	0.22m
1377	Cut of pit	0.70m	0.65m	0.22m
1378	Bedding layer of floor surface	0.94m	0.94m	0.06m
1379	Timber drain lining	0.27m	0.23m	*
1380	Fill of posthole	0.46m	0.42m	0.20m
1381	Fill of posthole	0.30m	0.24m	0.16m
1382	Cut of posthole	0.24m	0.16m	0.30m
1383	Cut of stream channel	20.0m	1.60m	0.20m
1384	Spread of stones	1.15m	0.80m	0.13m
1385	Layer of sand	1.30m	0.92m	0.05m
1386	Cut of pit	1.43m	1.10m	0.30m
1387	Fill of cut (1147)	6.10m	0.30m	0.20m
1388	Cut for 1389	0.52m	0.29m	0.14m
1389	Burnt fill of 1388	0.52m	0.29m	0.14m
1390	Tile hearth	0.45m	0.35m	0.06m
1391	Rubble deposit	4.06m	6.80m	0.39m
1392	Burnt deposit	2.02m	2.16m	0.11m
1393	Fill of channel	1.50m	0.90m	0.37m
1394	Clay deposit	1.50m	1.20m	0.23m
1395	Cut of posthole	0.20m	0.30m	0.20m
1396	Fill of posthole	0.20m	0.30m	0.20m
1397	Burnt demolition deposit	0.65m	0.44m	0.08m
1398	Clay deposit with charcoal	*	*	*
1399	Fill for several stake holes, recorded as one context	4.80m	4.10m	0.09m
1400	Cut for several stake holes, recorded as one context	4.80m	4.10m	0.09m
1401	Wall foundation	*	*	*
1402	Fill of stakehole	0.30m	0.33m	0.32m
1403	Cut of stakehole	0.30m	0.33m	0.32m
1404	Demolition	1.40m	0.55m	0.10m
1405	Deposit of broken tiles	0.48m	0.35m	*
1406	Deposit, same phase as (1404)	3.0m	1.5m	0.10m
1407	Fill of channel	1.70m	1.0m	0.25m
1408	Cut of natural channel	1.70m	1.0m	0.25m
1409	Fill of channel	1.85m	*	0.35m
1410	Interface between two fills, recorded as cut	5.70m	6.70m	0.35m
1411	Fill of channel	1.75m	5.60m	0.15m
1412	Cut of channel	1.75m	5.60m	0.48m
1413	Wall foundation	6.0m	1.60m	*
1414	Fill of water channel	*	1.15m	0.12m
1415	Cut of water channel	*	1.15m	0.12m
1416	Fill of beamslot	3.60m	0.30m	0.14m
1417	Cut of beamslot	3.60m	0.30m	0.14m
1418	Fill of posthole	0.90m	0.40m	0.20m
1419	Cut of posthole	0.90m	0.40m	0.20m
1420	Fill of posthole	0.50m	0.30m	0.29m
1421	Fill of posthole	0.40m	0.40m	0.30m
1422	Cut of posthole	0.40m	0.40m	0.30m
1423	Fill of several stakeholes, recorded as one number	0.10m	0.09m	0.10m
1424	Cut of several stakeholes, recorded as one number	0.10m	0.09m	0.10m
1425	Cut of posthole	0.42m	0.38m	0.10m
1426	Fill of posthole	0.42m	0.42m	0.10m
1427	Cut of posthole	0.44m	0.34m	0.18m

Context No.	Context Description	Length	Width	Depth
1428	Fill of posthole	0.40m	0.38m	0.18m
1429	Cut of posthole	0.20m	0.12m	0.09m
1430	Fill of posthole	0.19m	0.11m	0.10m
1431	Cut of posthole	0.48m	0.44m	0.10m
1432	Fill of posthole	0.43m	0.47m	0.10m
1433	Cut of posthole	0.27m	0.18m	0.05m
1434	Fill of posthole	0.21m	0.18m	0.10m
1435	Secondary fill of water channel	1.42m	1.0m	0.31m
1436	Fill of possible posthole	0.25m	0.25m	0.05m
1437	Cut of possible posthole	0.25m	0.25m	0.05m
1438	Fill of depression in ground	0.25m	0.25m	0.04m
1439	Cut of depression	0.25m	0.25m	0.04m
1440	Coal spread	1.20m	1.20m	0.06m
1441	Fill of wall cut	6.30m	1.50m	0.35m
1442	Cut for wall	6.30m	1.50m	0.35m
1443	Fill of posthole	0.40m	0.46m	0.26m
1444	Cut of posthole	0.40m	0.46m	0.26m
1445	Fill of posthole	0.46m	0.38m	0.17m
1446	Cut of posthole	0.46m	0.38m	0.17m
1447	Fill of channel	3.0m	1.55m	2.10m
1448	Fill of linear	5.50m	0.66m	0.15m
1449	Cut of linear	5.50m	0.66m	0.15m
1450	Fill of foundation cut (1132)	2.20m	0.45m	0.12m
1451	Foundation cut	2.20m	0.45m	0.12m
1452	Fill of hearth-type cut	0.65m	0.62m	*
1453	Cut of possible hearth	0.65m	0.62m	*
1454	Fill of linear	0.80m	0.50m	*
1455	Natural sandstone deposit	*	*	*
1456	Deposit	*	*	0.17m
1457	Fill of posthole	0.30m	0.20m	0.32m
1458	Cut of posthole	0.30m	0.20m	0.32m
1459	Ash deposit	1.0m	0.66m	0.03m
1460	Carbonised deposit from hearth	1.0m	0.66m	0.30m
1461	Secondary bedding deposit for hearth	1.0m	0.66m	0.60m
1462	Primary bedding deposit for hearth	1.0m	0.66m	0.60m
1463	Fill of pit	0.80m	0.50m	0.15m
1464	Cut of pit	0.80m	0.50m	0.15m
2001	Unstratified finds from Area 2	N/A	N/A	N/A
2002	Fill of possible foundation cut	3.94m	4.76m	0.12m
2003	Foundation cut	3.94m	4.76m	0.12m
2004	Fill of tree-root hole	1.10m	1.75m	0.14m
2005	Cut of tree-root hole	1.10m	1.75m	0.14m
2006	Fill of posthole	0.25m	0.25m	0.15m
2007	Cut of posthole	0.25m	0.25m	0.15m
2008	Fill of posthole	0.40m	0.20m	0.08m
2009	Cut of posthole	0.40m	0.20m	0.08m
2010	Various fills of unexcavated modern extraction pit	4.40m	5.40m	*
2011	Cut of extraction pit	4.40m	5.40m	*
2012	Various fills of unexcavated modern pit.	5.20m	3.20m	*
2013	Cut of pit	5.20m	3.20m	*
2014	Fill of water channel	8.10m	1.50m	0.38m
2015	Cut of water channel	8.10m	1.50m	0.38m
2016	Fill of posthole	0.40m	0.40m	0.20m
2017	Cut of posthole	0.40m	0.40m	0.20m
2018	Fill of linear feature	7.0m	0.58m	0.29m
2019	Cut of linear feature	7.0m	0.58m	0.29m
2020	Fill of linear feature	4.20m	1.10m	*
2021	Cut of linear feature	4.20m	1.10m	*
2022	Fill of water channel	*	*	0.52m
2023	Cut of water channel	9.0m	3.0m	0.52m
2024	Cut of modern pit	5.2m	4.5m	*
2025	Subsoil deposit	15m	10m	*

Context No.	Context Description	Length	Width	Depth
2026	Natural drift deposit	*	*	*
2027	Fill of small clay feature	0.70m	0.60m	*
2028	Cut of small clay feature	0.70m	0.60m	*
2029	Stone surface	9.86m	3.52m	*
2030	Fill of ditch	12.0m	4.0m	0.35m
2031	Fill of ditch	1.0m	0.85m	0.15m
2032	Fill of channel	4.60m	0.28m	*
2033	Cut of channel	4.60m	0.28m	*
2034	Fill of channel	5.5m	0.60m	*
2035	Cut of channel	5.5m	0.60m	*
2036	Cut of ditch	12.0m	1.18m	0.84m
2037	Deposit: bedding for stone surface 2029	12.0m	2.10m	0.12m
2038	Cut of linear feature	3.0m	1.15m	*
2039	Deposit: padding for 2040	3.0m	1.15m	0.34m
2040	Stone surface	3.06m	1.42m	0.14m
2041	Interface between (2026) and (2037)	1.70m	1.0m	0.15m
2042	Cut of modern pit	0.80m	0.80m	*
2043	Fill of small pit / large posthole	0.54m	0.48m	0.26m
2044	Cut of small pit / large posthole	0.54m	0.48m	0.26m
2045	Fill of water channel	1.0m	1.8m	0.42m
2046	Cut of water channel	1.0m	1.8m	0.42m
2047	Fill of water channel	1.0m	1.8m	0.07m
2048	Primary fill of water channel	1.0m	1.8m	0.07m
2049	Metalled surface	3.65m	1.66m	0.26m
2050	Bedding for stone surface (2049)	3.65m	1.66m	0.26m
2051	Fill of pit	1.33m	0.98m	0.28m
2052	Cut of pit	1.33m	0.98m	0.28m
2053	Cut of water channel	1.0m	1.3m	0.58m
2054	Fill of pit	5.5m	1.2m	0.27m
2055	Cut of pit	5.5m	1.2m	0.27m
2056	Natural clay deposit	3.4m	1.0m	0.45m
2057	Cut of pit	*	0.80m	0.52m
2058	Fill of pit	*	0.80m	0.52m
2059	Foundation cut, same as (2003)	0.62m	0.84m	0.06m
2060	Fill of cut, same as (2002)	0.62m	0.84m	0.06m
2061	Fill of pit [2057]	*	0.80m	0.52m
2062	Fill of tree root hole	*	*	*
2063	Cut of tree root hole	*	*	*



## APPENDIX B: POTTERY REPORT

*Lucy Whittingham*

### Introduction

The assemblage comprises 1262 sherds, (695 ENV, 32 kg) ranging from 12th to late 17th/early 18th century and comes from in 56 contexts. Of these, 60% are medieval/late medieval products of the Chilvers Cotton pottery industry (767 sherds, 421 ENV, 23 kg). The remainder are local early medieval coarsewares and early post-medieval regional wares.

### Methodology

The pottery has been fully quantified recording sherd count, weight, estimated vessel number (ENV), form and decorative attributes. These details are recorded on an Excel database spreadsheet and can be consulted with the site archive. Each fabric type has been dated and a spot date established subsequently for each context. Fabric codes have been allocated following the Warwickshire County fabric type series (WCTS) for which the author is indebted to Stephanie Ratkai for her assistance (see Table 1). Reference is also made to the system of fabric codes devised by Mayes and Scott for the Chilvers Cotton kiln material (1984, 40-1) (see Table 2). The author is extremely grateful to Lyn Blackmore for the thorough record of the material undertaken in the MOLAS assessment of this material. As the material in Context [1001] and [2001] was recovered by machine stripping and recorded as unstratified these finds have been excluded from any further identification for publication.

### Fabrics Types

#### *Igneous rock-tempered wares (IGN1, IGN2)*

Coarse pottery recorded as Igneous type 1 (IGN1) contains granitic and/or other igneous rock fragments (eg grano-diorite), sub-rectangular fragments of a grey stone-like material, probably mudstone, as well as sandstone and shale-like rock. The stone-like inclusions vary both in size and frequency from sparse to abundant and from small (2mm) to large, but are usually around 5mm across. This fabric corresponds with WCTS StR11 at Wolvey and Burton Dasset (Ratkai and Soden 1988) where it is thought to date from the 12th and possibly early 13th century. At Wolvey it was suggested that the igneous rock inclusions in this fabric might originate in the Caldecote volcanic series (Ratkai 1998). A similar source was suggested for finds from Coventry (Gryspeerd and Le Bas 1982, 129-30) but there seems to be a variety of fabrics and their origins are debated as these wares have a widespread distribution in Warwickshire (Ratkai in prep). This fabric is relatively common at Bermuda Park, comprising 11% of the assemblage (145 sherds, 95 ENV, 3.2 kg) found primarily as cooking pots and jars. These vessels are simple rounded jars with an everted round or squared rim (Fig 11.1) ranging from 200mm to 260mm in diameter. Combed decoration is quite common on sherds in this fabric as demonstrated in Fig 11.1 occurring in bands around the body of the vessel and frequently on rims. Sooting and burning marks are clearly visible on the everted part of the cooking pot rims covering the interior rim section and extending over the rim surface to the outer edge. Two examples of strap handles with stabbed decoration indicate that jugs were also produced in this ware but are a less significant product. One sherd with applied thumb decoration may be from a curfew.

A similar coarseware fabric containing more sand has been recorded as Igneous type 2 (IGN2). The matrix is silty with sparse and fine opaque white/grey rock fragments with slag-

like inclusions, fine black glassy inclusions and other volcanic material. This ware could be a relatively local product, but may be from another source, such as Potters Marston, Leicestershire, where the pottery contains syenite (McCarthy and Brooks 1988, 273-4), a coarse-grained igneous rock that in some cases resembles granite. This fabric can also be paralleled with WCTS StR12 at Wolvey where it is thought to date from the 12th and possibly early 13th century (Ratkai and Soden 1988). This fabric is found in a similar proportion to IGN1 at Bermuda Park, comprising 15% of the assemblage (184 sherds, 88 ENV, 3.5 kg) and occurs primarily as similar rounded cooking pots and jars with simple everted rim forms (Fig 11.2) decorated with combed or incised wavy lines. A particularly large strap handle with applied thumbed strip in the centre and stabbed decoration on either side may be from a curfew (Fig 11.3). A single strap handle again indicates the production of jugs in this fabric but suggests they are an insignificant purchase on this site.

At Bermuda Park 60% of fabric IGN1 occurs in the medieval Periods 2 and 3; 33% in Period 2 (1150-1350) and 28% in Period 3 (1350-1550). Likewise in fabric IGN2 70% occurs in Period 2 and 17% in Period 3. At Wolvey the igneous rock-tempered fabrics StR11 and StR12 are dated as 12th and possibly early 13th century and thought to pre-date the Chilvers Coton products (Ratkai and Soden 1988). Although the distribution of these wares at Bermuda Park is not able to refine this date there is strong evidence of a bias towards the Period 2 stratigraphy indicating that these wares are early medieval (1150-1350) and may predate the Chilvers Coton industry

#### *Potters Marston ware*

Fifteen sherds in a coarse earthenware fabric are characterised by abundant medium to large angular quartz grits and sparse to moderate limestone inclusions. These wares are likely to be the late 11th/early 12th to 13th-century products of Potters Marston, Leicestershire which used an iron-rich boulder clay, firing light red or reddish yellow, with large igneous rock inclusions of syenite (McCarthy and Brooks 1988, 273). Vessels are rarely glazed and the most common forms are hand or coil-built cooking pots/storage jars. All of the sherds at Bermuda Park are from jars, two of which have combed decoration. With the exception of two sherds in Period 2 these sherds are likely to be residual at Bermuda Park.

#### *Sandy Calcareous wares*

Three very abraded sherds are tempered with sand and calcareous inclusions. One of the sherds is vesicular, where the calcareous content has leached out, but the other two contain abundant fine sand and are an iron-rich fabric. Further identification of these sherds is limited by their abraded, small size and their lack of stratification in context [1001], but it is thought that these are from a source more likely to be in Leicestershire than Warwickshire.

#### *Shell-tempered Stanion/Lyveden ware*

Two small, abraded sherds containing abundant fine plate-like voids that are presumed to be the remains of fossil shell are likely to be the products of the extensive Stanion/Lyveden industry in Northamptonshire. Similar shelly wares are more common at Wolvey (Ratkai 1998), but are not noted at Nuneaton Priory. This industry operated from the end of the 13th century through to the early 15th century (McCarthy and Brooks 1988, 285). The sherds at Bermuda Park are from the unstratified collection in Context [1001].

#### *Coventry ware (COVD)*

Fifteen sherds from six vessels can be paralleled with type sherds of Coventry D ware (WCTS Sq21) and would appear to equate with sand-tempered fabric 4 at Much Park Street,

Coventry, dated 12th to early 13th century (Wright 1982, 119) and fabric 136 at Warwick (Ratkai 1987, 55). The fabric has a fine matrix with abundant fine sand, and is characterised by rounded iron-rich inclusions. Diagnostic sherds include the everted rim of a small jar/cooking pot with oxidised surfaces (possibly Coventry A ware: WCTS Sq20.3) and a jug with thin green glaze, lattice decoration on the body and a strap handle decorated with an applied thumbed strip down the spine. The Coventry A cooking pots occur in Period 2 (1150-1350) whereas the Coventry glazed ware which predate the Chilvers Coton industry at Coventry (*ibid*), occur at Bermuda Park in Period 3, (1350-1550).

#### *Chilvers Coton ware*

The various products of the Chilvers Coton industry account for 60% of the pottery vessels found at Bermuda Park. These wares fit with the broad divisions established by Mayes and Scott (1984, 41) for the Chilvers Coton products, ranging from the late 12th to the late 16th/early 17th centuries. The fabric inclusions are described from the results of thin section analysis carried out by David Williams (*ibid*, 196). The fabric groups from such a large production centre working over a long period are somewhat blurred where the end of one tradition overlaps with the advent of another. In these cases the vessel forms are as significant as the fabric identification in defining some of the Chilvers Coton products.

#### *Chilvers Coton fabric A*

At Bermuda Park four grades of whiteware have been recorded. These fabrics are the finer wares producing decorated jugs in glazed fabrics with decoration.

Whiteware type 1 (WW1; WCTS WW03)) has sparse to moderate angular quartz and a fine white matrix whilst Type 2 (WW2; WCTS WW01) has more abundant angular quartz. Both can have a grey core and are sometimes quite thick walled. The majority of sherds in this fabric are undiagnostic, but jugs, small drinking jugs, jars, bunghole jars and dishes can be identified. Whiteware type 1 forms include baluster type jugs identified from bases that are flared and decorated with continuous thumbing around the lower edge. Decorated sherds from jugs have vertical applied thumbed strips in the north French style (as in Mayes and Scott 1984 fig 105 no. 212) and combed incised decoration. Small drinking jugs are represented by two upright rims of 80mm diameter. Bunghole jars are represented by the decorated collar from around the bunghole, which has been stabbed in a similar style to an example from Chilvers Coton Kiln10a (*ibid*, fig 22 no. 54). The base sherds of a large open vessel are likely to be from a dish. A greater variety of jugs are found in Whiteware type 2 with a small number of jars, wide mouthed bowls and some possible dripping dishes. The primary form in this fabric are jugs found in baluster-type jugs with continuous thumbing around the base edge (*ibid*, fig 46 no.331 and fig 99, no.97), with a rilled external surface, jugs with applied trailing decoration or horizontal incised decorative lines, a herringbone pattern of incised lines and one sherd, which may be a waster, in which the outer surface is partly covered by a layer of grey clay into which two rows of notches have been rouletted under a thin green glaze. Strap handles have simple oblique slashed decoration (*ibid*, fig 93 no.14). Some jars are decorated with applied thumbed strips. Single examples of a glazed, possible dripping dish and a skillet with pulled handle (as in Mayes and Scott 1984 fig 93 no.8) also survive. Wide mouthed bowls are poorly represented by a few sherds, one of which has external thumbing just below the rim (see *ibid*, fig 21, no.45).

Whiteware type 3 (WW3; WCTS WW01.7)) contains abundant very fine quartz sand and appears to correspond with Warwick fabric F154 (Ratkai 1987, 56). Jugs with green glaze are again the predominant form in this fabric but individual examples of a jar, wide mouthed

bowl with internal glaze, a skillet/pipkin handle and cup are also found with green glaze. Jugs with a tall neck and cordon are exclusive to this fabric. Other highly decorated jugs are represented by a copper glazed strap handle with groups of four and five incised longitudinal lines separated by single transverse lines and the tubular spout of an anthropomorphic jug held by two applied hands. Down the centre of the tubular spout are further applied decorative elements in the form of a red clay pad and a long strip with incised decoration (Fig 11.4).

Whiteware type 4 (WW4; WCTS WW03)) contains abundant fine yellow quartz sand and moderate red iron ore inclusions similar to Chilvers Cotton fabric Ai (Mayes and Scott 1984, 40). This ware produced the most complete example of a jug from the site in the form of 22 sherds from a large rounded jug with applied stabbed, vertical strips under a copper green glaze. Six further sherds in this fabric are possibly from an unglazed jar, a second glazed jug and glazed sherds from a pipkin.

All four medieval whiteware fabrics are associated with the same contexts in particular association with Buildings 2 and 4; in B2 wall foundation [1160], B2 external dumps [1025], [1406] and [1397], in B3 floor [1022] and B4 cobbled surface [2002] as well as in pits [1095] and [1277] and in the demolition spread associated with Building 4, presumed to date from the dissolution of the monasteries in *c* 1540. This is of interest as it suggests that whitewares were still in use in the 15th century. There is no distinction in the dating of these various wares at Bermuda Park. #

#### *Chilvers Coton fabrics B and Bi*

Twenty-one sherds (8 ENV, 612g) have been recorded as IGN1 FINE and correspond with igneous fabric (WCTS StR 20.3; Chilvers Cotton fabric Bi) found at Wolvey (Ratkai 1998). There are no diagnostic sherds but all appear to be from cooking pots/jars, two of which have combed wavy decoration (as in Mayes and Scott 1984, fig 50, no.365). Some sherds also have traces of green glaze, suggesting that they are the products of Chilvers Coton. In addition there are 17 sherds (5ENV, 167g) recorded as Chilvers Cotton fabric B, one of which is glazed. These are very abraded coarse, sandy sherds, which are undiagnostic. Both fabrics B and Bi are dated by Mayes and Scott as 13th century and are predominantly associated with Period 2 (1150-1350) at Bermuda Park.

#### *Chilvers Coton fabric C*

A large proportion of the assemblage (37%) belongs to the Chilvers Coton group C (WCTS Sq30); a hard sandy orange-red ware with a lighter coloured variant recorded as CCCBUF. The latter merges with fabric A (probably in the earlier stages), while the redder wares share common form typologies with fabric D (in the later stages). The large discrepancy between sherd count (413 sherds) and estimated number of vessels (232 ENV) demonstrates the abraded nature of these sherds, a large number of which are undiagnostic. However, those that can be attributed to a vessel form come from a limited range of basic forms; wide mouthed bowls being the most common form, followed by a small number of jars and jugs all of which can be dated typologically to different periods of production at Chilvers Coton.

Wide mouthed bowls in fabric CCCBUF with squared rims (280mm diameter) on a straight-sided body can be paralleled by 13th century forms from Site 13, Kiln 32a-b (Mayes and Scott 1984, fig 83 no.630.376.222, fabric A). Further 14th-century examples of wide mouthed bowls in fabric CCCBUF include examples with simple flared rims with a rounded edge paralleled at Chilvers Cotton by examples from Site 2, Kiln 10c (*ibid*, fig 67 no.96.70.425). Bowls in fabrics C and D, with flared rims of 280mm (Fig 11.5) to 400mm diameter (Fig

11.6), can be paralleled with 14th-century forms from Site 9, feature 43 (ibid, fig 80 no.521.323.386) as well as 15th-century forms from Site 15, Kiln 34 (ibid, fig 55 no.440, fig 86 no.720.437.474 and 726.0.374). Flattened everted rims (440mm diameter) on a slightly carinated rounded body (Fig 11.7) can be paralleled in 15th-century forms from Site 15, Kiln 34 (ibid, fig 86 nos. 731.0.334 and 734.0.306). This particular example has incised wavy decoration on the upper surface of the rim. Other decorative motifs found on the rim of a possible wide mouthed bowl or cauldron are applied pellets.

Cooking pots in the form of globular jars with simple everted rims (120mm) can be paralleled by 14th-century examples at Chilvers Cotton Site 2 Kiln 10e (Mayes and Scott 1984, fig 68 no. 132.100.220). Rounded cooking pots which occur with squared rims of *c* 200 to 280mm diameter, could be either 13th but more likely 14th-century forms as at Site 15 Feature 74 (ibid, fig 87 nos. 764.0.194 and 765.0.226). The smaller examples with incised wavy line decoration on the top surface of the rim are possibly 13th century (cf ibid, fig 88 no 804.0.156, Site 16, Kiln 36a-b). Some sherds with applied thumbed decoration in fabric CCCBUF maybe from cooking pots. A sherd from a large jar in fabric C has an applied circular stamp or medallion, possibly a crude version of the rosette stamped pads seen on 15th-century jars and jug from Chilvers Cotton Site 18, Kilns 40 and 42 (ibid, fig 59 nos. 492-4).

Several lids in fabric C are typical of 15th-century examples produced at Chilvers Cotton with a central raised flat dome in the middle (Mayes and Scott 1984, fig 40 no.259). These must have been wheel-thrown vessels which are used effectively upside down.

Jugs are more common in fabric CCCBUF than in CCC. The best preserved example is a large jug with a lipped rim and strap handle decorated with oblique slashes. Other examples of jugs are suggested by lead-glazed sherds with incised horizontal lines, combed decoration or rilled surfaces. In the hard-fired, dense fabric C rounded jugs are represented by a tall cylindrical neck with a central cordon and a small collared rim (120mm diameter) (Fig 11.8). This particular example has a simple handle with raised central spine tapering to a small base which is attached with one central thumbed imprint. Further examples of jugs are represented by strap handles with a central raised spine which is stabbed in a vertical line and also stabbed into on either side of the central raised section. Similar 13th-century examples are illustrated from Site 3, Kiln 15 at Chilvers Cotton (Mayes and Scott 1984, fig 98 no. 82).

One possible example of a dripping dish in fabric C is represented by sherds from the rim and base. A small percentage of the fabric C wares are glazed in a pale lead green glaze. Some sherds have a darker brown/orange glaze which may be an indicator of a later date in the 15th or 16th century (Ratkai pers comm.). Unfortunately this cannot be substantiated at Bermuda Park as both glaze types occur in Period 3 (1350-1550).

#### *Chilvers Cotton fabric D*

Fabric D has a smooth, dense matrix. Most of the vessels range from red to grey in colour and are unglazed. The high firing temperature and sometimes overfired quality of sherds in fabric D are very similar in appearance to Midlands Purple products. Jars, cisterns, wide mouthed bowls and the occasional jug are all produced in fabric D which is suggested by Mayes and Scott to date from the late 14th to late 15th century (Mayes and Scott 1984, 40).

The two most common forms in fabric D are rounded jars with an inturned rim and handled jars with a very short, squared rim. The handled jar also serves as a cistern where there is a

bunghole at the base. The distinction between the two is therefore impossible without the lower half of the vessel present. Jars with a slightly rounded body have inturned lid-seated rims with a cordon the exterior edge (Fig 11.9). These vessels have a small rim diameter (160mm) and where there is no handle present are similar to butterpots as illustrated from the 15th-century products at Site 15, Kiln 34 (Mayes and Scott 1984, fig 55 no.445 and fig 86 no.741.445.138). At Bermuda Park some of these vessels (Fig 11.10) have an applied thumbed cordon around the base of the small rim (120mm). Larger and more globular handled cisterns have a small rim in comparison to the size of the vessel. These rims can be rounded (Fig 11.11) (*ibid*, fig 85 nos. 699.422.180 and 700.423.194), chamfered (*ibid*, fig 87 no. 758.457.172) or lid-seated (*ibid*, fig 87 no. 763.0.196) ranging in size from the smallest at 100mm diameter to the more common vessels of 240mm in diameter. Some of the rims have scalloped cut edges on the top which may be a crude form of decoration. The handles are large grooved strap handles or have a raised central spine which has been attached to the body of the vessel with a plugged hole, the plug is clearly visible on the inside of the vessel. These vessels are similar to the 15th-century products at Site 15, Kiln 34 (*ibid*, fig 54 no.422-3). A sherd with rouletted decoration may be from a jar or cistern.

A small number of wide-mouthed bowls are also found in similar forms to those in fabric C (see Figs 11.2 and 11.5) frequently with incised wavy line decoration on the rim and internal glaze.

Very few jugs are found in fabric D but are of a similar style to those with a tall neck and collared rim found in fabric C (Fig 11.3). Strap handles with oblique slashed decoration and a thumbed base are assumed to be from jugs rather than cisterns.

#### *Midlands Purple (MPUR)*

Nineteen sherds of highly-fired Midlands Purple ware are found in an estimated 16 vessels, the majority of which are thick-walled, glazed jars and butterpots with collared rims. The most complete vessel is a bunghole jar/cistern found in a pit in Period 3. Midlands Purple ware dates from the late 14th/early 15th century and continued in the manufacture of butterpots into the 18th century (Ford 1995, 35).

#### *Midlands Blackware (MB)*

Fourteen sherds in a red earthenware with lead glaze which varies from brown to black are found in classic Midlands Blackware forms; a mug, tyg and jar. These wares compare with the late 16th/mid-late 17th-century Warwick sample (WCTS MB01) (Ratkai pers comm.), though Midlands Blackware continues into the early 18th century (Barker 1986, 59).

#### *Midlands yellow ware (MY)*

Ten sherds from seven vessel include lead glazed mugs, cups, a possible jar, and pipkin. There are no diagnostic sherds except for the mug and cup bases which have the typical thick lead glaze over a buff fabric. Midlands yellow ware was produced from the mid 16th century in small quantities in local regional centres and became much more popular in the early to mid 17th century. In Coventry the earliest occurrence is in a deposit dated from 1574 and it is most common thereafter in the 17th century (Ratkai pers comm.). By the late 17th century Staffordshire became the major producer (Brears 1971, 32). With the exception of one sherd in Period 3, all of the Midlands Yellow ware at Bermuda Park is associated with Period 4 (1550-1750).

#### *Cistercian ware (CIST)*

True Cistercian ware is very rare on the site. The one definite find is a small mug with decoration in the form of an applied pad of white-firing clay found in Period 4 (1550-1750). Six other black-glazed sherds from five vessels are from the bases of mugs/cups. Cistercian ware, though noted as produced from the 14th century onwards at Chilvers Cotton is usually found in the late 15th to mid 17th centuries (Barker 1986, 53). There is no evidence for Cistercian ware in the West Midlands before the late 15th century (Ratkai pers comm).

*Post-medieval coarseware (CW(IP) or CW (IR))*

Forty seven sherds from 23 vessels in post-medieval coarseware have a characteristic red slip applied under a manganese glaze, usually on the inner wall. The ware has been studied in detail at Dudley Castle and published as 16th to 17th-century post-medieval coarseware with an iron-rich (IR) or iron-poor (IP) fabric (Ratkai 1987b). All of the sherds at Bermuda Park are body sherds from large open bowls/pancheons and jars.

*Staffordshire-type red-slipped ware (STRS)*

A single example of post-medieval slipware is a late 17th/early 18th-century Staffordshire red slipped earthenware, decorated with white slip on the interior. This is intrusive in a floor in Period 3, context [1022].

## Discussion

The various distinctive fabric types within this assemblage can be used to indicate a division between early and late medieval activity and a transitional late medieval/early post-medieval period at Bermuda Park. The earliest wares are those with igneous rock temper and shell temper (IGN1, IGN2, Chilvers Cotton Bi, Stanion/Lyveden,) and sand-tempered wares from Potters Marston, Coventry oxidised cooking pots (type A) and Chilvers Cotton fabric B, which are predominantly associated with Period 2 (1150-1350). All of these wares are primarily associated with domestic features in Area 1 of a provisional 12th and 13th century date; posthole [1246], pits [1111] and [1293], pitched tile hearth [1153] in Building 1, occupational debris [1326] and [1161], ditches [1264] and [1335], gully [1287] and a pond [1329]. These features are therefore an indicator of domestic activity on this site by the late 12th century or early 13th century, if not earlier.

Medieval activity from c 1350 to 1550 (Period 3) can be traced through the presence of the Chilvers Cotton products and Coventry glazed ware (type D) on the site. The few sherds of Coventry glazed ware (type D) occur only in Period 3 on this site and cannot be related to specific buildings. The longevity of some of the Chilvers Cotton fabric types compromises the ability to date some of the archaeological features closely. It is, however, noticeable that Chilvers Cotton fabric B (dated by Mayes and Scott as 13th century), which occurred as 6% of the Period 2 assemblage, is only 0.2% of the Period 3 assemblage confirming that its popularity is over by c 1350. Similarly there is a difference in the presence of Chilvers Cotton fabric D that is virtually non-existent in Period 2 (0.3%) but is 20% of the Period 3 assemblage, indicating that it is most popular after c 1350. Chilvers Cotton fabrics A and C are longer lasting traditions, both present in Period 2 (as 7% and 11%) but doubling in popularity (as 15% and 40%) in the post-1350 assemblage in Period 3. Glazed and decorated jugs are consistently the most popular form in fabric A (in both Periods 2 and 3) whereas the 14th and 15th-century wide mouthed bowls and cooking pot/jars are the most popular products in fabric C in Period 3. Similarly in Chilvers Cotton fabric D 15th-century handled jars and bunghole cisterns are the most popular products in use at Bermuda Park.

Chilvers Coton fabrics C and D are found together in particular association with Buildings 2 and 4 and; in B2 wall foundation [1160], B2 external dumps [1025] and [1406], in B3 floor [1022] and B4 cobbled surface [2002] as well as in pits [1095] and [1277]. Chilvers Coton fabric A jugs are found in similar contexts in Buildings 2 and 4 and in addition in Building 2 external dump [1397] and in the demolition spread associated with Building 4, presumed to date from the dissolution of the monasteries in *c* 1540. This is of interest as it suggests the whitewares were still in use in the 15th century confirming a long-held suspicion that the original 1250-1300 date for later medieval whitewares is too narrow (Ratkai 1987, 56; pers comm). Building 2 is contemporary with the ownership of the land by the Knights Hospitallers between *c* 1308 and *c* 1540. It is not known what the function of the building was but is thought to be directly associated with the other buildings of this period.

By 1550 (Period 4) the introduction of late medieval wares such as Midland purple ware and the introduction of early post-medieval traditions (CIST, MY, MB) denotes which features are of a late 15th/16th-century transitional date. These four wares are significant introductions to the ceramic assemblage in this period and are all associated with post-medieval levelling [2030] in ditch [2031]. In addition Midlands Yellow ware and Midlands Purple ware are found in ditch [1099] and robbed out wall foundation [1063]. Post-medieval coarsewares (CW (IP/IR) are also introduced into the ceramic sequence during this period. These coarseware bowls and dishes are a local product dating from the 16th and 17th centuries and are found also in post-medieval levelling [2030] in ditch [2031] and in ditch [1099].

The 195 sherds in Period 5 are nearly all sherds collected from the machine stripping of Area 2 and are therefore not archaeologically stratified.

In general this assemblage is very mundane and comprised of standard cooking pots and jars, a few glazed jugs and no imports. The Knights Templar may have been an affluent order but there is little sign of it in this pottery assemblage. The earlier assemblage is primarily one of local ceramic products in fabrics IGN1, IGN2, Chilvers Coton fabric B and Chilvers Cotton Bi with a small number of imported wares bought from other regional markets, for example the Stanion/Lyveden wares from Northampton and the Potters Marston wares from Leicestershire. Given the local geology it is quite possible that fabrics IGN1, IGN2 and IGN1 FINE/CCBi were made locally. From the forms and from the evidence gained on other sites, it would appear that the IGN group dates to *c* 1150-1250. It is possible that these wares were made outside the area and imported to Nuneaton before the local industry developed. It is equally possible, however, that they were made at Chilvers Coton/Nuneaton using imported clay/ingredients in kilns that predate the known industry and which remain to be discovered.

The bulk of the late 13th- to 15th-century pottery in Period 4 is locally supplied by products of the Chilvers Coton industry. The local convenience of purchasing these wares is witnessed by a small quantity of Chilvers Coton fabric C kiln waste and poor quality vessels which are seconds being used on the site. Waster material is present in [1317] and vessels which are seconds are found in the form of a jar with warped everted rim and a jar base on which the glaze has crawled and shrunk. Clay waste was also found in the machine excavated material in [1001]. A Cistercian ware mug fragment found in [2001] is probably a second, with kiln scar on the base. A mug base in Midlands purple ware from [1098] has kiln scars on the underside of the base and is chipped at the base angle as if it had to be separated from the other pot post-firing. Of interest are two fine whiteware bases from [1062] and [1098] that were recorded as Midlands yellow ware but have a kiln scars and traces of brown glaze on the underside of the base, suggesting that they too were locally made.



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Period	Code	From	To	Expansion	Regional equivalents
M	CCB	1150	1300	Chilvers Coton type B	
M	CCC	1275	1500	Chilvers Coton type C	WCTS Sq30
M	CCCBUF	1275	1500	Chilvers Coton type C buff	
M	CCCLM	1400	1500	Chilvers Coton type C later medieval	
M	CCD	1380	1500	Chilvers Coton type D (early Midlands purple)	
M	COVA	1150	1250	Coventry ware, oxidised	
M	COVD	1150	1250	Coventry ware, glazed jugs	WCTS Sq21
M	CS	1150	1250	Calcareous shelly ware	Stanion/Lyveden
M	IGN1	1150	1250	Igneous rock-tempered type 1	StR11 at Wolvey & Burton Dasset (Ratkai 1998)
M	IGN1 FINE/CCBi	1150	1250	Igneous rock-tempered type 1 fine	CCBi
M	IGN2	1150	1250	Igneous rock-tempered type 2	StR20.1 at Wolvey (Ratkai 1998)
M	MISC	1150	1500	Miscellaneous	
M	SC	1150	1250	Sandy calcareous ware	
M	PMAR	1150	1250	Sandstone and limestone-tempered ware	Potters Marsden
M	WW	1230	1500	Whitewares (various)	Chilvers Cotton A
M	WW1	1230	1500	Whiteware type 1	Chilvers Cotton A Warwick Fabric F108; WCTS WW03
M	WW2	1230	1500	Whiteware type 2	Chilvers Cotton A Warwick Fabric F118; WCTS WW01
M	WW3	1350	1500	Whiteware type 3	Chilvers Cotton A Warwick Fabric F154; WCTS WW01.7
M	WW4	1230	1500	Whiteware type 4	Chilvers Cotton Ai; WCTS WW03
PM	CIST	1575	1650	Cistercian ware	
PM	MY	1570	1725	Midlands Yellow ware	WCTS MYW
PM	CW (IP/IR)	1500	1700	Post-medieval coarseware	
PM	MPUR	1400	1720	Midlands Purple ware	WCTS MP
PM	MB	1550	1700	Midlands Blackeware	WCTS MB01
PM	STRS	1650	1750	Staffordshire-type red slipped ware	

Table 1 summary of fabric codes

	Descriptions (Mayes and Scott; Williams 1984)	Dating
A	White/cream or pink; fine inclusions giving a sandy feel	13 <sup>th</sup> -early 14th century
Ai	As above with large reddish inclusions (3mm)	
B	Coarse reddish sandy ware	13th century
Bi	As above with large reddish inclusions	
C	Pink/orange/red slightly sandy ware	14th and 15th centuries
D	Orange/brick red/dark red fabric, finely gritted; often darker surfaces (Midlands purple ware)	Late 14th and 15th century
E	Red-firing, no inclusions (Cistercian ware)	Late 14th century onwards
F	White-firing, no inclusions	Middle period of production

Table 2 The fabric codes devised for the Chilvers Coton material

## APPENDIX C: BUILDING MATERIALS REPORT

*Ian M. Betts*

### **Introduction**

The ceramic and stone building material assemblage comprised almost 80 kg of tile, brick and stone from 49 contexts. The bulk of the assemblage comprises ceramic roofing tile with smaller amounts of stone roofing and stone rubble together with a few fragments of floor tile and brick.

### **Methodology**

All the building material has been recorded using the standard recording forms used by the Museum of London. This has involved fabric analysis undertaken with a x10 binocular microscope. The information on the recording forms has been added to an Excel database.

### **Ceramic Brick and Tile Fabric Types**

A building material fabric reference collection has been established for Bermuda Park (numbered WN1 to WN7, where W = Warwickshire, and N = Nuneaton). These fabric types have been compared to pottery fabrics in the regional reference collections from Warwickshire, Coventry and Birmingham. There is only one definite match, tile fabric WH1 clearly comes from the same source as the pottery in fabric CCC (Chilvers Coton type C), indicating manufacture at the nearby tile and pottery manufacturing centre at Chilvers Coton, Nuneaton.

#### *WN1*

Form: nib/peg, ridge, brick

Colour: white, pink, cream, orange, some with grey core

Fabric: Common quartz (up to 0.8 mm) with scatter of round black and dark red iron oxide (up to 1 mm). Thin cream, red and orange clay/slit bands in certain tiles. The clay on some tiles has an almost fused appearance.

Pottery fabric: CCC (Chilvers Coton type C)

#### *WN2*

Form: nib, ridge, floor?

Colour: various shades of red and orange

Fabric: Moderate to common quartz (up to 0.8mm) with scatter of rock fragments and black and dark red iron oxide inclusions (up to 1.5 mm). Occasional silty inclusions.

#### *WN3*

Form: nib, ridge

Colour: various shades of red and orange

Fabric: Similar to WN2 but with only moderate quartz. Identified by fine moulding sand (most up to 0.2 mm).

#### *WN4*

Form: floor

Colour: orangey-red

Fabric: scatter of quartz (up to 0.5 mm) and occasional rock fragments and iron oxide (up to 0.8 mm). Similar to WN3 and less sandy versions of WN2.

*WN5*

Form type: ridge, floor, brick

Colour: white, some with grey core

Fabric: coarse sandy fabric with numerous well sorted large quartz (up to 0.8 mm) with scatter of black rock/iron oxide inclusions (up to 1 mm).

Pottery fabric: possibly SSTL, SC or CCA (see text)

*WN6*

Form: brick

Colour: various shades of red and orange

Fabric: Similar to WN4.

Possibly pottery fabric SSTL

*WN7*

Form: brick

Colour: various shades of red and orange

Fabric: Similar to WN3.

Fabric types WN3, WN4, WN6, WN7 and perhaps WN2 may come from the same production site or sites. It may prove possible to amalgamate some or all of these at a later date.

### **Ceramic form types**

*Nib/peg roofing tile*

The earliest nib/peg tiles (Fig 12.1) were used in a pitched tile hearth in Building 1 (context 1153). There is also evidence that they were also used as a roof covering on the same building. All the peg/nib tiles were almost certainly made at Chilvers Coton, Nuneaton where nib/peg tiles were found in a 14th century AD kiln dump (Mayes and Scott, 1984, 170, fig 118). The Bermuda Park tiles are in Chilvers Coton pottery fabric CCC that occurs sporadically in the late 13th century, but almost universally throughout the 14th and 15th centuries AD (Maynes and Scott, 1984, 40-41, 63-64). At 122-123 Much Park Street, Coventry the earliest nib/peg tiles are somewhat earlier, having been date to the period *circa* 1200-1250, although it is uncertain where these were made (Wright 1982, 102-103). The Bermuda Park nib/peg tiles would seem to date to the late 13th-mid 14th century.

If the tiles belong to the initial construction phase of Building 1 then it is likely that they are they are associated with occupation of the site by the Knights Templar in 1185-1308. However, if they are later replacements for an earlier stone roof (see below), they could date from when the site was under royal control until 1324, or even the subsequent occupation by the Knights Hospitallers from 1324 to 1540.

Nib/peg tiles are so-named called because both nibs and nail holes are present in the same tile. These tiles have both smoothed and sanded sides. The nib are centrally located on the top edge of the smoothed sides, whilst the nail holes are positioned each side of the nib near the tile corners. Most of these holes are square or almost square in shape. When positioned on the building the other (sanded) side would have been upper-most on the roof.

No complete tiles were recovered, but there are a number with complete breadth measurements (169-175 mm). Tile thickness varies between 11-17 mm. The nibs vary more widely in size but most are around 30-42 mm in length by 17-20 mm in breadth by 11-15 mm in height (excluding tile thickness). Most of the nail holes are around 5-8 mm square; although an oval (distorted round) nail hole (6 x 10 mm) is also present in context (1401). Nib/peg tiles with round holes were also made at Chilvers Coton (Mayes and Scott 1984, 168, fig 116). A number of tiles have areas of green and brown glaze but this seems to have been an accidental application from other glazed products, perhaps pottery or floor tile, which were being fired at the same site (Fig 12.2). The glaze is frequently on the tile edge or has run down the tile front indicating the tiles were stacked on edge during the firing process.

One tile (Context 1001) has a mark made by a finger or blunt tool set at a 90 degree to the tile edge (Fig 12.3). This may be some kind of batch mark, which are found on medieval roofing tiles elsewhere in Britain, although no other marks were observed on any of the other roofing tile examined.

#### *Nib roofing tile*

The red and orange coloured nib tiles (Fig 12.5) found on the site (fabrics WN2 and WN3) are slightly less sandy than the peg/nib tiles. There is no definite match with any of the pottery fabric samples examined, however, Stephanie Ratkai (pers comm) has noted that the redder versions of Chilvers Coton fabric C tends to be later, mainly 15th century, which suggests that Chilvers Coton may again be the production source.

Nib tiles in fabrics WH2 and WN3 probably covered the roofs of Buildings 2 and 4, where they were found associated with pottery of 1450-1550, although if they are made at Chilvers Coton, then they are unlikely to be date much beyond c. 1500. This would put the use of nib tiles in the period of the Knights Hospitallers, which occupied Bermuda Park until it was taken over by the crown in 1540 as part of the Dissolution of the Monasteries.

Although fabric WH2 and WH3 would appear to derive from the same production source certain tiles in WN2 have more frequent quartz. A more major difference is that the nib tiles in WN2 tend to be thicker, have larger nibs and have coarser moulding sand. It should be noted, however, that the sanding on certain tiles lies midway between that found on WN2 and WN3, so the fabric allocation of these tiles is less certain. In south-east England many late medieval and post-medieval roofing tiles have finer moulding sand than their medieval counterparts. If a similar change happened in the West Midlands then nib tiles in with finer moulding sand (WH3) could be slightly later than those with coarser sanding (WH2).

The nib tiles in WN2 measure 14-16 mm in thickness and have a nib size of around 33-43 mm long by 19-20 mm in breadth by 14-17 mm in height. The front of the nib is often marked by a prominent groove; the same feature is also present on the nib tiles in fabric WN3. One small area of tile from Context 2030 has part of a paw print on the smoothed side indicating they were laid out to dry during manufacture with their nib pointing upwards.

The nib tiles in WN3 are more complete. They have a length of over 269 mm, a complete breadth of 158-171 mm and a thickness of 12-18 mm (most are 12-15 mm). The nibs measure 23-33 mm in length, 14-17 mm in breadth by 11-16 mm in height. One nib tile (Context 1329) has what appears to be a bird footprint (Fig 12.4), whilst another (Context 1029, with sanding near WN2) is a kiln 'waster' or second having been overfired and distorted during the firing process. This is of interest as some of the Chilvers Coton pottery vessels found on site

are also seconds, which suggests a deliberate import of kiln waste on to the site perhaps as hard core.

#### *Ridge tile*

Buildings covered with tiles of nib/peg and nib type would have had a line of curved ridge tiles running along the top of the roof, as would buildings with slate roofing tile. In the case of ridge tiles in fabrics WH1, WH2 and WH3, it seems reasonable to assume they are contemporary in date to the flat roof tiles in the same fabrics.

#### *Fabric WH5*

The earliest ridge tiles on the site are probably those in sandy fabric WN5 (Fig 12.6). They seem unlikely to have been used with ceramic roofing tile, as there is no nib/peg, nib or other roofing tile in the same fabric. Instead it would appear they were used to cover the crest of slate clad roofs as one fragment has mortar on the underside with a piece of grey roofing slate still attached.

The ridge tiles in fabric WH5 are generally white in colour, which is similar to certain nib/peg tiles, but they are made from slightly sandier clay. The fabric cannot be matched precisely with those used for pottery, but it does share many of the characteristics of pottery classified as 'SSTL, SL or CC'. The date of SSTL (sandstone and limestone tempered ware) is uncertain, but probably 13th century, SC (sandy calcareous ware) is dated 1150-1250, whilst CC (Chilvers Coton) has a date range of 1150-1500, although it would appear to be closest to CCA (Chilvers Coton type A) dated 1230-1350.

The ridge tiles in WN5 have a covering of green or greenish-brown glaze and are 9-16 mm in thickness (most are 11-14 mm). One fragment has small stab marks in the top surface (Fig 12.7), but this is the only sign of possible decoration. Similar glazed ridge tiles were found at 122-123 Much Park Street, Coventry (Group 1) where the earliest tiles are dated to around 1250-1350. They are described as products of the Chilvers Coton kilns (Wright 1982, 101), although it is unclear which fabric type is represented. The published descriptions suggest they are Chilvers Coton Fabric A or Ai, dated to the period 1230-1350.

One interesting feature of the Much Park Street material, which is paralleled at Bermuda Park, is that although glaze ridge tiles were present there are no flat ceramic tiles in the same fabric, which again indicates they were used in conjunction with stone roofing. It is therefore significant that slate roofing first appears at Much Park Street at the same date as the glazed ridge tiles (Period 4A), suggesting the two are connected (Wright 1982, 99 & 101).

#### *Fabric WH1*

The ridge tiles (WN1) used with the nib/peg system measure 13-15 mm in thickness and have knife trimmed edges with areas of green glaze. They would have had decoration along the top crest although this only survives on one example (Context 2030) (Fig 12.8). Unfortunately, the decorated area has been largely removed but it could have been similar to some of the decorated ridge tiles made at Chilvers Coton illustrated by Mayes and Scott (166-171, figs 114-116).

#### *Fabrics WH2 and WH3*

The ridge tiles associated with the nib system (WN2, WN3) are highly fragmented but appear to have lack both decoration and glaze (Fig 12.9). The thickness of these tiles is 18-20 mm (WN2) and 14 mm (WN3).

*Floor tile*

There are only two definite and two probable ceramic floor tiles. The former comprise a plain green glazed tile showing slight wear in fabric WN5. This measures 23 mm in thickness and is presumably contemporary with the glazed ridge tiles discussed above. The other definite floor tile has an unworn plain brown glaze which does not cover the entire top surface. This measures 22 mm in thickness and is the only tile in fabric type WN4. The two probable floor tiles are in fabric WN2 and have a plain yellowish-brown glaze. Both plain and decorated floor tiles were made at Chilvers Coton during the medieval period which is the likely source of some, or all of the Bermuda Park examples.

*Brick*

Very little brick was found on the site. Most is red and orange in colour (WN6, WN7) and dates to the mid 15th-16th century. Only one red brick is substantially intact, this has a breadth of 100 mm and a thickness of 48 mm (WN6), another brick is slightly thicker (56mm). Both were found in post-medieval contexts in Period 4. There is also an unstratified lighter coloured fragment in fabric WN1. The similarity in fabric to medieval tile from Chilvers Coton suggests that the brick may have come from a post-medieval brickworks close to the site. There were certainly clays suitable for brickmaking, as a 20th century brickworks was located at Bermuda Park.

*Kiln flooring?*

Two large cream coloured bricks were found reused in one wall (1322) of Building 4. These are in fabric WN5, although they are not necessarily from the same production site as the roof tile. These cream bricks, which measure 290 x 161-162 x 76-78 mm, are of particular interest as they are perforated by numerous tapering holes (Fig 12.10). These are round in one brick and square in shaped in the other. They were presumably used as flooring in some kiln or hearth or oven structure.

*Water pipe*

Circular water pipes (Fig 12.11) were recovered from topsoil (1001). They are in a similar fabric to roofing tiles in fabrics WH2 and WH3, and pottery belonging to the Chilvers Coton type D group, the latter dating to the period 1380–1500. An almost complete pipe was measured 75-95mm in diameter and would have had a length of just over 328mm. The pipes are socketed to allow the pipes to lock together. Water pipes, along with various varieties of field drain, are fairly common in Britain in the 18th-19th century, but are rarer before this date.

**Stone form types***Roofing tile*

The majority of stone from the site comprises fine grey laminated siltstone, identified as the Outwoods Shale, a formation of the Stockingford Shale Group of Cambrian date, probably from nearby quarries at Griff Hollows. The same stone was used for roofing at Nuneaton Priory during the late medieval period, and at Kenilworth and Sudeley castles in the 13th and 14th centuries (Cook 1981, 66).

Outwoods Shale roofing slate is generally light grey but dark red and brown patches can be present. The slates were hung using iron, or possibly wooden nails, placed through round nail

holes 7-10 mm in diameter. A number of roofing slates, which measure 7-10 mm in thickness, show cut edges (Figs 12.12 and 12.13), including one of triangular shape from a wall foundation (1131) in Period 4 (Fig 12.14). The most complete roofing slate, found associated with Building 2, measures... (*not seen – context (1160) - AOC to add size*).

The crest of the building, or buildings, with slate roofing would have been covered by curved ceramic ridge tile. This seem to have been the glazed tile in sandy fabric WH5, as a fragment of slate was found mortared to the underside of a ridge tile in this fabric (context 2065). The dating of these glazed sandy ridge tiles is still problematic (see above), but their fabric is closest to Chilvers Coton type A (CCA) dated 1230-1350.

Pottery production in Chilvers Coton type A starts earlier than the nib/peg tiles in Chilvers Coton type B (tile fabric WH1), so if the ridge tiles in fabric WH5 were indeed made at Chilvers Coton they may well predate nib/peg tile production. This would in turn imply that stone roofing was used on the site before the introduction of nib/peg tiles, which would link their use to occupation of the site by the Knights Templar. More work will be required to establish the precise chronology of stone and ceramic roofing tile use in the Nuneaton area, although at Bermuda Park the evidence suggests stone roofing with ceramic ridge tiles was used at a different date to nib/peg roofing with ceramic ridge tiles.

#### *Paving?*

There are two fragments of cut stone which may have been used as a decorative element in a stone or mixed stone and ceramic floor. The first (Context 1001) comprises a triangular shaped (123 x 73 x 25 mm) fine grained indurated (well cemented) meta-sediment known as greywacke. This is from the Lower Palaeozoic of northern England, probably from the Lake District. The non-local source suggests the stone is probably of 19th century, or later date. The second is a rectangular shaped (? x 41 x 24 mm) indurated siltstone from the Stockingford Shale Group (Fig 12.15). This stone, which was recovered from a post-medieval wall foundation (1062) with pottery of 1500-1700 date, appears to have a worn top surface.

#### *Rubble*

The majority of stone rubble from the site comprises various fine and medium grained sandstones, together with mudstones and siltstones. The mudstones, siltstones mainly derived from the Stockingford Shale Group, as do fragments of indurated sandstone from contexts (1390) and (1397).

A number of younger Carboniferous rocks are found in demolition dumps (1397) overlaying Building 1, and in a pitched tile hearth associated with Building 1 itself. These comprises mainly brown and light grey, fine and medium grained sandstones together with a solitary light grey, fine grained siltstone. One of the fine sandstones has bits of black carbon present indicating it is from the Coal Measures. The only other Carboniferous stone present was brown medium grain sandstone from a linear fill (1001) in Period 4. The latter is probably from the Etruria Formation. Of uncertain function is an unstratified pebble with the top and bottom broken off to create a rough circular counter shape. This is a quartzite, probably from the Permo-Trias drift deposits.

## **Acknowledgments**



The author would like to thank Dr Rob Ixer for his help in identifying the rock types found on the site. Geological information was also obtained from the British Geological Survey, Map 169, Coventry (solid with drift), BGS, 1994, Keyworth, Nottingham.

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## APPENDIX D: ANIMAL BONE REPORT

*Alan Pipe*

### Introduction

This report quantifies, describes, records and interprets the assemblage of hand-collected animal bone recovered from ten contexts; (1001), (1058), (1098), (1110), (1156), (1257), (1276), (1294), (2001) and (2030). This work follows on directly from an earlier assessment report (Pipe 2005) which identified the group as of only limited potential value for post-assessment study, mainly to demonstrate major domesticated recovery in terms of species, carcass-part representation and age at death. Text given in this report, with the accompanying catalogue provides an account of each context group and an interpretation of significance for local meat diet and waste disposal subject to the constraints on the data imposed by small sample size and poor preservation.

### Methodology

Each context group was described directly onto the MoLAS Access animal bone post-assessment database, as individual bone fragments in terms of fragment count, species-identification, completeness, body side, epiphyseal fusion, butchery, sex and estimated age at death. Each context was then grouped with period, interpretation and parent context. All identifications of species and skeletal element were made using the MoLAS animal bone reference collection together with Schmid 1972. When accurate identification to species or genus level was impossible, fragments were assigned to the approximate categories 'ox-sized mammal' and 'sheep-sized mammal' as appropriate on the basis of size and wall thickness. Multiple records were made for unidentifiable fragments of 'ox-sized' and 'sheep-sized' longbone and fragmented 'ox-sized' tooth only. Estimates of age from epiphyseal fusion also followed Schmid 1972.

Table 1 provides a complete catalogue of all recorded fragments.

### *The assemblage/general*

A total of 51 fragments of animal bone were recovered by hand-collection from contexts (1001) – (2030) (Table 1). At the time of writing, contexts (1001) and (2001), together producing ten bones, are listed as unstratified, giving a smaller assemblage of 41 fragments of stratified bone. As a whole, the assemblage was in a 'poor' state of preservation often with sufficient surface damage to prevent identification of taxon, skeletal element or modification. Fragment size was generally in the 25->75mm range in terms of greatest length.

The identifiable bone assemblage included mainly ox *Bos taurus* (15 fragments) with smaller components of pig *Sus scrofa* from (1001) and (2001) (two fragments), and horse *Equus caballus* from (1001) and (1294) (three teeth). All other bones derive from 'ox-sized' and 'sheep-sized' rib and longbone fragments. There were no wild 'game' or scavenger species, fish, amphibians, birds or small mammals.

In terms of carcass-part recovery; ox (including 'ox-sized') was represented mainly by elements of the head (teeth and lower jaw), vertebrae, ribs, upper limb (humerus, femur) and lower limb (carpal, astragalus, calcaneum, tarsal), areas of moderate and good meat-bearing quality and with a bias towards areas of greatest robustness. No horncores were recovered. Pig was represented by single fragments of mandibular tooth (1001) and tibia from (2001); horse was represented only by tooth fragments from (1001) and (1294). The bones generally

derived from adults with no recovery of obviously old or of foetal or neonate animals. Single examples of juvenile ox calcaneum and infant calf carpal and tarsal bones were recovered from fill (1294) of medieval pit (1293). Evidence for butchery was confined to a single ox astragalus from fill (1276) of pit (1277) which had been chopped transversely. There was no evidence for pathological change, gnawing or burning, or of working of horn or bone. Evidence for age at death was provided by three ox epiphyses; two from fill (1294) of pit (1293) and one from unstratified contexts (2001); and obviously infant cattle carpal and tarsal from (1294). There were no mandibular tooth rows and no measurable or complete bones.

The context groups

*Unstratified (1001)*

This group produced five fragments derived from two adult, worn horse mandibular teeth, ox axis vertebra and humerus and a single adult male pig mandibular canine tooth. The horse teeth derived from the premolars or molars in the cheek tooth row, between the third premolar and the second molar inclusive.

*Cobbling (1058)*

This context produced five unidentifiable fragments of 'ox-sized' tooth.

*Fill (1098) of post-medieval ditch [1099]*

This group produced single fragments of ox left femur midshaft and thoracic vertebra.

*Fill (1110) of medieval pit [1111]*

This group produced three fragments of 'ox-sized' longbone.

*Medieval fill (1156)*

This deposit produced a single fragment of ox mandible articulation.

*Medieval cobble bedding sand (1257)*

This group produced three fragments of 'ox-sized' longbone.

*Fill (1276) of medieval pit [1277]*

This group produced a distal fragment of ox astragalus which had been chopped transversely with a cleaver or heavy-bladed knife, the only evidence of butchery from the assemblage. This very robust and solid bone forms a major component of the ankle joint; chopping through the midshaft would disarticulate the hind leg at the ankle and detach the hind foot, possibly during preparation of a leg joint.

*Fill (1294) of medieval pit [1293]*

This fill produced 22 fragments, the largest group within the assemblage. Although the majority of the group derived from 'ox-sized' longbone fragments with single examples of 'sheep-sized' rib, there were single examples of ox maxillary tooth, mandible, radius, lunate carpal, astragalus, calcaneum and central tarsal; elements of the head, lower jaw, lower fore leg, 'wrist' and ankle joints. The calcaneum and astragalus articulate together and obviously derive from the same left hind leg; the unfused proximal epiphysis of the calcaneum indicates an animal less than three years old, an animal reared for beef production rather than one slaughtered after use for a primary function such as traction or dairying. The carpal and tarsal derive from a calf in the first few months of life, probably an indication of veal consumption. Fusion of the proximal radius indicates an animal in at least the second year of life but probably not old, perhaps again a purpose-reared beef animal.

### *Unstratified (2001)*

This deposit produced single fragments of ox humerus, 'ox-sized' rib, 'sheep-sized' longbone and pig tibia. The ox humerus was fused distally indicating an age of at least two years.

### *Levelling deposit (2030) in post-medieval ditch (2031)*

This deposit produced only an ox mandibular tooth fragment and five fragments of 'ox-sized' longbone.

## **Discussion**

Preliminary impressions of the local meat diet given by the very small assemblage of stratified animal bone suggest an overall dominance of beef taken from carcass areas of good (vertebrae, rib, upper limb) and moderate (head, lower limb) meat bearing quality with an absence of elements indicative of poor quality meat or of primary carcass processing (horncore, foot, toe). With the exception of a single adult horse mandibular tooth, all other stratified bone derived from 'ox-sized' mammal; pig and 'sheep-sized' mammal derived entirely from unstratified contexts.

It should be stressed that bone preservation is poor throughout and that this will have introduced severe bias into the bone assemblage. This is shown by recovery of horse as teeth only, without any fragments of maxilla (upper jaw) or mandible (lower jaw); predominance of highly robust skeletal elements (distal humerus, carpal, tarsal, astragalus, calcaneum) of cattle; and the absence of substantially complete 'sheep-sized' or pig bones even though very fragmented examples are present. By contrast, the absence of very robust elements such as the metapodials (feet) and phalanges (toes), even though preservation conditions would favour their recovery, perhaps implies that this is a credible reflection of local carcass-part selection and disposal and a lack of in-situ primary carcass processing.

The complete lack of smaller and more fragile bones e.g. poultry, and the scarcity of 'sheep-sized' mammal and pig may reflect dietary preference, or be merely an artefact of preservation and relative robustness. The largest bone group, from fill (1294) of medieval pit (1293] seems to correspond to the overall carcass-part distribution but also clearly provides the only evidence for consumption of calf as well as young adult cattle. There is no evidence for old animals and no evidence for pathological change; therefore no reason to suggest consumption of cattle slaughtered at the end of a working life rather than of purpose-reared beef cattle.

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DATE	INTERP	PARENT	CONTEXT	TAXON	BONE	PART	SIDE	NOS.	AGE
unstratified	backfill		(1001)	horse	tooth, mandibular	most	both	2	adult
unstratified	backfill		(1001)	ox	axis	anterior		1	
unstratified	backfill		(1001)	ox	humerus	midshaft	left	1	
unstratified	backfill		(1001)	pig	tooth, mandibular	most	left	1	adult
	cobbling		(1058)	ox-sized	tooth	fragment		5	
post-medieval	ditch fill	ditch [1099]	(1098)	ox	femur	midshaft	left	1	
post-medieval		ditch [1099]	(1098)	ox	vertebra, thoracic	fragment		1	
medieval	pit fill	pit [1111]	(1110)	ox-sized	longbone	fragment		3	
medieval	fill	channel	(1156)	ox	mandible	fragment	right	1	
medieval	cobble bedding		(1257)	ox-sized	longbone	fragment		1	
medieval	pit fill	pit [1277]	(1276)	ox	astragalus	distal		1	adult
medieval	pit fill	pit [1293]	(1294)	horse	tooth, mandibular	whole	left	1	adult
medieval	pit fill	pit [1293]	(1294)	ox	astragalus	whole	left	1	
medieval	pit fill	pit [1293]	(1294)	ox	calcaneum	distal	left	1	juvenile
medieval	pit fill	pit [1293]	(1294)	ox	carpal, lunate	whole	right	1	infant
medieval	pit fill	pit [1293]	(1294)	ox	mandible	proximal	right	1	
medieval	pit fill	pit [1293]	(1294)	ox	radius	proximal	left	1	
medieval	pit fill	pit [1293]	(1294)	ox	tarsal, central	fragment	left	1	infant
medieval	pit fill	pit [1293]	(1294)	ox	tooth,maxillary	fragment	left	1	adult
medieval	pit fill	pit [1293]	(1294)	ox-sized	longbone	fragment		13	
medieval	pit fill	pit [1293]	(1294)	ox-sized	rib	fragment		1	
unstratified			(2001)	ox	humerus	distal	left	1	
unstratified			(2001)	ox-sized	rib	fragment		1	
unstratified			(2001)	pig	tibia	midshaft	left	1	
unstratified			(2001)	sheep-sized	longbone	fragment		2	
post-medieval	levelling	ditch [2031]	(2030)	ox	tooth, mandibular	fragment		1	
post-medieval	levelling	ditch [2031]	(2030)	ox-sized	longbone	fragment		5	

Table 1: Summary of Animal Bone Recovered

## APPENDIX E: SLAG REPORT

*Lynne Keys*

A medium assemblage of just over twenty kilos of iron slag and related debris were recovered during excavations; all diagnostic types were indicative of smithing. A tiny amount of flake hammerscale was found adhering to slag in two contexts (1060) and (1184), indicating these pieces had been produced during secondary smithing: hot working by a smith, using a hammer, of one or more pieces of iron to create an object or repair it.

No slags diagnostic of smelting (manufacture of iron from ore and fuel in a smelting furnace) were present in the assemblage. Much of the slag could only be described as undiagnostic because it had been broken up during deposition, re-deposition or excavation; occasionally, however, the shape of unbroken side indicated the piece may once have formed part of a smithing hearth bottom (nine recognisable examples of these - two unstratified - were recovered). A 'smithing hearth bottom' is a plano-convex shaped slag formed as a result of high temperature reactions between the iron, iron-scale and silica from either a clay furnace lining or the silica flux used by the smith. The iron silicate material from this reaction dripped down into the hearth base forming slag which, if not cleared out, developed into a smithing hearth bottom.

The Bermuda Park assemblage is almost certainly re-deposited material – i.e. not in-situ in hearths or in an area where smithing was taking place. Before it could grow large enough to block the tuyere hole (where the air from a bellows entered the hearth) a smithing hearth bottom was usually removed and dumped in the nearest pit, ditch or unused area. The number of fragments from Bermuda Park which had been broken long ago and had worn surfaces suggests that after their removal from the hearth the treatment of the slags was such that most were damaged. With no definite indications of smithing on the site they may have been brought from a distance or, at least, from outside the immediate excavation area. All the slag was recovered from ditches (1107, 1264, and 1335), channels (1157 and 1174), revetment dumps (1329 and 1391), in postholes (1077 and 1229) and beam slot (1061) fills, or hard core in a cobbled surface (1059). The slag pieces in the beam slot may have been used to provide a firm surface for the beam but this is entirely speculative.

One could suggest the slag was brought onto the site to be used specifically as hard core or dump material. The smithing hearth bottoms and broken fragments from channel (1157), deposit (1184), are so large and heavy they would not have been carried far unless they were intended for a specific use which required heavy weights; the smithing hearth bottom in ditch (1107), fill (1106), is also large. These two deposits have been assigned to Period 3. If the smithing activity was taking place in that period somewhere near the site, it was intense and prolonged: the smithing hearth bottoms and pieces from other periods are much smaller in size.

Although hearths were found on the site there is no evidence to associate them with iron working activity. It is probable, anyway, that iron working hearths may have been raised types with the fire bed on top (the type most people see in post-medieval or modern forges) and left little evidence when they collapsed or were demolished and the material used for other purposes. The absence of quantities of hammerscale (micro-slags produced during smithing

activity), would also seem to argue for smithing having taken place somewhere outside this site.

Context	Slag Identification	weight	length	breadth	depth	comment
1001	smithing hearth bottom	296	0	0	35	incomplete
1001	smithing hearth bottom	581	110	90	40	
1001	undiagnostic	17				unstratified - discarded
1001	undiagnostic	442				
1001	undiagnostic	638				parts of smithing hearth bottoms? Three pieces
1058	iron on stone	109				
1058	stone	113				
1058	undiagnostic	239				two pieces
1058	undiagnostic	581				six pieces
1060	smithing hearth bottom	265	0	0	45	incomplete
1060	undiagnostic	85				magnetic & with flake hammerscale on surface
1060	undiagnostic	194				part of smithing hearth bottom?
1060	undiagnostic	664				abraded pieces
1076	undiagnostic	10				
1106	smithing hearth bottom	2406	255	140	80	
1184	hammerscale	0				a tiny amount of flake
1184	smithing hearth bottom	481	105	0	45	incomplete
1184	smithing hearth bottom	698	140	130	40	
1184	smithing hearth bottom	1986	180	160	55	
1184	smithing hearth bottom	3080	290	155	80	
1184	undiagnostic	131				
1184	undiagnostic	291				part of smithing hearth bottom?
1184	undiagnostic	420				part of smithing hearth bottom?
1184	undiagnostic	1160				part of smithing hearth bottom?
1184	undiagnostic	1859				part of smithing hearth bottom?
1228	undiagnostic	89				
1262	fired clay	62				
1262	undiagnostic	398				part of smithing hearth bottom?
1262	undiagnostic	474				
1329	undiagnostic	13				
1332	smithing hearth bottom	577	120	110	45	incomplete
1332	undiagnostic	136				
1332	undiagnostic	461				part of smithing hearth bottom?
1391	undiagnostic	285				part of smithing hearth bottom?
1392	charcoal	29				
1409	smithing hearth bottom	207	80	80	40	
1409	undiagnostic	116				possibly smithing: one piece with hammerscale flake on surface
1409	undiagnostic	322				part of smithing hearth bottom?
1409	undiagnostic	403				part of smithing hearth bottom?

Table 1: Summary of Slag Recovered

## APPENDIX F: REGISTERED FINDS REPORT

*Beth Richardson*

### **Introduction**

The relatively small number of items in the assemblage recovered are all of medieval and post-medieval date. Preservation is neither very good, nor so poor as to preclude identifications being proposed for the majority.

### **Medieval**

#### **Iron**

All items of this metal are heavily rusted apart from the last.

#### *Horseshoes*

<3> (1098]

Length 110mm; span 120mm; greatest width of web 26mm; wear has reduced the length marginally; Clark type 4, assigned to the late 13th to late 15th centuries. (Clarke 1995, 88-92 & 97)

<4> (1391]

One branch only: (?) three holes for nails, surviving length 100mm, greatest width of web 28mm; hint of calkin (cf. Clark 1995, 81 fig. 59); Clark type 3, assigned to the 13th and 14th centuries, with the main emphasis in the late 13th/early 14th-century period (ibid, 86-8, 92 & 96-7).

#### *Buckle*

<2> (1022]

Fragment comprising separate, outside-edge roller, length 75mm, and broken off stubs of both sides looped onto the former; X-ray plate shows white-metal coating. From a robust, rectangular frame this is almost certainly for a horse harness; assigned to the late 13th to late 14th centuries (cf. Egan 1995, 56-61 figs. 42 & 45 nos. 30-2).

### **Post Medieval**

#### **Glass**

##### *Vessel*

(1378]

Fragment of pale green pushed-in base from a bottle/phial, diameter c60mm. Probably 18th-century.

##### *Window*

(2030]

Pale green fragment with several minor bubbles; maximum survival 47x38mm; no original edges survive. Probably 18th-century.

#### **Stone**

##### *Whetstone*

(1025]



Pale grey-brown, medium sandy fabric with micaceous specks; broken off at both ends; tapering, with square section 38x36 to 31x31mm; surviving length 95mm; little obvious evidence of wear. Probably post-medieval.

**Iron**

*Bolt*

(1460]

Robust bolt with (?)rounded head: length 120mm. Probably post-medieval.

**Unknown Date**

**Iron**

*Nails*

(1001]

Length 35mm, (?)asymmetrical head.

*Unidentified*

(1290)

Curved strip with loop at one end (other end broken off); surviving length 65mm, width 10mm.

**Discussion**

These are all relatively routine finds. Within the diverse medieval and post-medieval items it is possible to see an emphasis on horse equipment in the earlier part of this timespan, with two horseshoes and the remains of an equine harness buckle (which could all be contemporary). Both of the definitive fragments of glassware appear to be routine 18th-century goods.

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Geoff Egan, September 2007.

**APPENDIX G: GEOARCHAEOLOGICAL REPORT**

**By Graham Spurr**

**Summary**

The soil micromorphology, soil chemistry and diatom analyses have refined our understanding of the sampled sediments that accumulated in Sections 3 and 9 at Bermuda Park. The natures of the depositional environments seem to have been either ponds or areas of very slow water movement. The ponds seem to have been consistently shallow and prone to drying out. Furthermore, they seem to have been subject to management practices such as recutting or clearance a number of times over their duration. They appear to have been occasionally polluted to a small degree by waste dumping often exhibiting fragments of coal, charcoal and brick as well as variations in phosphate levels indicating latrine or animal waste, but never to the extent of eutrophication or anything indicating industrial activity locally. All

the evidence points to generally shallow but clear freshwater ponds, consistently managed until they finally became redundant and in filled.

## Introduction

As part of an archaeological evaluation carried out by AOC Archaeology, a total of four monolith samples were taken from trench sections at the Bermuda Park site, Nuneaton (BDA04) which were assessed for their geoarchaeological and archaeo-environmental potential.

In the *Geoarchaeological Assessment Report* (Spurr 2004), the monolith samples were found to have good potential for refined understanding of the depositional environment of the sediments sampled. After the initial geoarchaeological examination of the monolith tins it was recommended that further analysis in terms of soil micromorphology, soil chemistry and diatom analysis be undertaken. The soil micromorphology and soil chemistry analyses would enable the micro-structural changes within and between the sedimentary units that are not necessarily visible in the field to be examined as well as relationships between potential agricultural and industrial processes on site. Furthermore, sedimentological variations in the deposits would interrelate with diatom analysis undertaken on the monolith samples to analyse water flow, eutrophication and nutrient content.

## Aims and objectives

The aim of this geoarchaeological examination is to follow up recommendations from a previous *Geoarchaeological Assessment* (Spurr 2004), which recommended more detailed monolith examination in terms of sediment analysis and microfossil analysis.

The objectives of this further work would be to:

To combine soil micromorphology and soil chemistry analyses to determine changes in water levels and interrelationships of organic materials and heavy metals within the different contexts and possibly identify indirect evidence for local human activity

To analyse diatom species present to help interpret the nature of the water courses for example, in terms of water depth / periodic drying out; water quality, in particular concentrations of nutrients and organic waste and effluent from both agricultural and industrial processes.

## Methodology

Sediments were recorded in the laboratory and sub-samples for soil micromorphology and diatom work were taken at selected locations within key sedimentary units.

### The sedimentary analysis (Lithostratigraphy)

Dr. Richard MacPhail of the Institute of Archaeology, UCL and J.Crowther of the University of Wales, Lampeter, carried out the soil micromorphology and soil chemistry work. The aim of the work was to investigate in detail the nature of the sediments present, water flow, anthropogenic influences and any possible industrial activity traces within the sediment.

### *Soil Chemistry Methods*

Analysis was undertaken on the fine earth fraction (i.e. <2 mm) of the samples. LOI (loss-on-ignition) was determined by ignition at 375°C for 16 hours (Ball, 1964). Phosphate-P<sub>i</sub> (inorganic phosphate) and phosphate-P<sub>o</sub> (organic phosphate) were determined using a two-stage adaptation of the procedure developed by Dick and Tabatabai (1977) in which the phosphate concentration of a sample is measured first without oxidation of organic matter (P<sub>i</sub>), using 1N HCl as the extractant; and then on the residue following alkaline oxidation with sodium hypobromite (P<sub>o</sub>), using 1N H<sub>2</sub>SO<sub>4</sub> as the extractant. These were summed to give total phosphate (phosphate-P), and the ratios phosphate-P<sub>i</sub>:P and phosphate-P<sub>o</sub>:P (expressed as percentages) were calculated. Pb, Zn and Cu were determined by atomic absorption spectrophotometry following extraction with 1N HCl.

In addition to  $\chi$  (low frequency mass-specific magnetic susceptibility), determinations were made of  $\chi_{\max}$  (maximum potential magnetic susceptibility) by subjecting a sample to optimum conditions for susceptibility enhancement in the laboratory.  $\chi_{\text{conv}}$  (fractional conversion), which is expressed as a percentage, is a measure of the extent to which the potential susceptibility has been achieved in the original sample, viz:  $(\chi / \chi_{\max}) \times 100.0$  (Tite, 1972; Scollar *et al.*, 1990). In many respects this is a better indicator of magnetic susceptibility enhancement than raw  $\chi$  data, particularly in cases where soils have widely differing  $\chi_{\max}$  values (Crowther and Barker, 1995; Crowther, 2003).  $\chi_{\text{conv}}$  values of  $\geq 5.00\%$  are often taken as being indicative of some degree of susceptibility enhancement. A Bartington MS2 meter was used for magnetic susceptibility measurements.  $\chi_{\max}$  was achieved by heating samples at 650°C in reducing, followed by oxidising conditions. The method used broadly follows that of Tite and Mullins (1971), except that household flour was mixed with the soils and lids placed on the crucibles to create the reducing environment (after Graham and Scollar, 1976; Crowther and Barker, 1995).

#### Soil Micromorphology Methods

The four 8 cm-long samples were impregnated with a clear polyester resin-acetone mixture; samples were then topped up with resin, ahead of curing and slabbing for 75x50 mm-size thin section manufacture by Spectrum Petrographics, Vancouver, Washington, USA (Goldberg and Macphail, 2006; Murphy, 1986). Thin sections were analysed using a petrological microscope under plane polarised light (PPL), crossed polarised light (XPL), oblique incident light (OIL) and using fluorescent microscopy (blue light – BL), at magnifications ranging from x1 to x200/400. Thin sections were described, ascribed soil microfabric types (MFTs) and microfacies types (MFTs) (see Tables below) and counted according to established methods (Bullock *et al.*, 1985; Courty, 2001; Courty *et al.*, 1989; Goldberg and Macphail, 2006; Macphail and Cruise, 2001; Stoops, 2003).

#### The ecological remains (Bio-stratigraphy)

Dr. Nigel Cameron, of UCL, carried out the diatom work. The aim of the work was to determine the preservation, presence, abundance and diversity of diatoms within the sequence and their potential to identify differences and trends, particularly in terms of salinity and eutrophication, within the sediment sequence.

Diatom preparation followed standard techniques: the oxidation of organic sediment, removal of carbonate and clay, concentration of diatom valves and washing with distilled water. Two coverslips, each of a different concentration of the cleaned solution, were prepared from each sample and fixed in Naphrax, a mountant of a suitable refractive index for diatom microscopy. A large area of the coverslips on each slide was scanned for diatoms, first at a

magnification of x400, followed by more detailed scanning at a magnification of x1000, both searches using phase contrast illumination.

The results of the different types of work outlined above have been drawn together in this geoarchaeological report.

#### Results of the examination

The results of the separate soil micromorphology and diatom analyses have been combined with the results of the initial monolith interpretations for the purposes of this report (tabulated below).

The sedimentary analysis (Lithostratigraphy)

*Monolith Interpretation*

G.Spurr (MoLAS)

In Area 1 two overlapping monolith tins, designated as samples <1> and <2>, were sampled from Section 3. The tins covered contexts (1002) and (1338) through to (1342) inclusive. The sampled profile covered a height range of 0.82m, from 93.68m OD to 92.86m OD.

Context	Elevation of top and base of unit	Sedimentary description
1002	93.68mOD (top of tin) to 93.62m OD	10YR 4/1 dark grey silty clay; poorly sorted, with very occasional charcoal and coal fragment; clear horizontal contact unit below.
1338	93.62m OD to 93.43m OD	10YR 5/2 greyish brown firm silty clay with frequent 10YR 6/8 brownish yellow and 10YR 8/6 yellow sand patches; poorly sorted with very occasional brick fragments throughout; graded contact unit below.
1339	93.43m OD to 93.22m OD	10YR 4/1 dark grey clay silt with fine sand element; moderately frequent fine root traces mid to upper unit and very occasional chalk flecks throughout; clear horizontal contact unit below.
1340	93.22m OD to 92.96m OD	10YR 4/1 DARK GREY CLAY SILT GRADING INTO 2.5Y LIGHT YELLOWISH BROWN FINE TO MEDIUM SAND GRADING BACK INTO 10YR 5/2 GREYISH BROWN FIRM SANDY CLAY WITH DECREASING SAND ELEMENT WITH DEPTH; POORLY SORTED WITH OCCASIONAL CHARCOAL FRAGMENTS AND IRON FLECKING THROUGHOUT; CLEAR HORIZONTAL CONTACT UNIT BELOW.
1341	92.96m OD to 92.90m OD	10YR 5/2 greyish brown firm silty clay with fine sand element and iron staining at contact; clear horizontal contact unit below.
1342	92.90m OD to 92.86m OD (base of tin)	2.5Y 6/2 light brownish grey loose clayey sand; poorly sorted with occasional iron staining and charcoal fragment.

Table 1: The sedimentary sequence sampled from section 3 (BDA 04)

In another section from Area 1, Section 9, a further two overlapping monolith tins designated as samples <3> and <4>, were taken covering contexts (1351) through to (1354) inclusive. The sampled profile covered a height range of 0.9m, from 93.6m OD to 92.7m OD.

Context	Elevation of top and base of unit	Sedimentary description
1351	93.6mOD (top of tin) to 93.5m OD	10YR 6/6 Brownish yellow clay silt; very poorly sorted with occasional brick and charcoal fragments throughout; clear sloping contact unit below.

1352	93.5m OD to 93.2m OD	10YR 5/2 greyish brown clay silt; poorly sorted with very occasional coal fragments, occasional brick and frequent charcoal fragments throughout but increasing toward base; clear horizontal contact unit below.
1353	93.2m OD to 92.83m OD	10YR 4/2 dark greyish brown clay silt; with occasional iron and charcoal fragments; clear sloping contact unit below.
1354	92.83m OD to 92.7m OD (base of tin)	5GY 6/1 greenish grey stiff oxidised mottled clay.

Table 2: The sedimentary sequence sampled from Section 9 (BDA 04)

*Soil Chemistry**(R. MacPhail & J. Crowther)*

The results of the soil chemistry work are tabulated below.

Ctxt	Description	LOI <sup>a</sup> (%)	Phosphate-P <sup>b</sup> (mg g <sup>-1</sup> )	$\chi^c$ (10 <sup>-8</sup> SI)	$\chi_{\max}$ (10 <sup>-8</sup> SI)	$\chi_{\text{conv}}$ (%)	Pb <sup>d</sup> ( $\mu\text{g g}^{-1}$ )	Zn <sup>d</sup> ( $\mu\text{g g}^{-1}$ )	Cu <sup>d</sup> ( $\mu\text{g g}^{-1}$ )
1339	Pond deposit	3.98	0.433	6.7	1270	0.528	50.4	12.6	14.7

Table 3: Soil chemistry results for Section 3

Ctxt	Description	LOI <sup>a</sup> (%)	Phosphate-P <sup>b</sup> (mg g <sup>-1</sup> )	$\chi^c$ (10 <sup>-8</sup> SI)	$\chi_{\max}$ (10 <sup>-8</sup> SI)	$\chi_{\text{conv}}$ (%)	Pb <sup>d</sup> ( $\mu\text{g g}^{-1}$ )	Zn <sup>d</sup> ( $\mu\text{g g}^{-1}$ )	Cu <sup>d</sup> ( $\mu\text{g g}^{-1}$ )
1352	Pond deposit	9.68*	1.54*	15.6	1390	1.12	56.9	41.9	19.3
1353	Pond deposit	3.37	2.11**	9.9	817	1.21	64.9	25.6	24.6
1354	Natural clay	1.25	0.526	6.1	573	1.06	3.1	13.4	65.7

Table 4: Soil chemistry results for section 9

The clay underlying the pond context (1354) is highly minerogenic (LOI, 1.25%); has quite a low phosphate-P concentration (0.526 mg g<sup>-1</sup>), most of which is present in an inorganic form (phosphate-P<sub>i</sub>:P, 74.0%); displays no evidence of magnetic susceptibility enhancement ( $\chi_{\text{conv}} < 5.00\%$ ); and contains low concentrations of heavy metals. Of the latter, Cu stands out as having a notably higher concentration (65.7  $\mu\text{g g}^{-1}$ ), but even this is low and is likely to be of natural origin.

Of three pond deposits investigated, (1352) contained quite a lot of small fragments of coal which explains its notably higher LOI (9.68%). If due allowance is made for this, then the deposits are all highly minerogenic. This suggests that little organic matter was incorporated during the sedimentation process, either as a result of rapid sedimentation and/or limited plant growth within the pond. There is a marked increase in phosphate-P from (1339) (0.433 mg g<sup>-1</sup>), through (1352) (1.54 mg g<sup>-1</sup>), to (1353) (2.11 mg g<sup>-1</sup>), which seems likely to reflect some degree of enrichment, especially in the latter context. The fact that there is a corresponding increase in the phosphate-P<sub>i</sub>:P ratio (from 44.3-89.3%), combined with the minerogenic nature of the deposits, suggests that the phosphate enrichment is largely the result of inputs of phosphate-enriched minerogenic sediments, rather than being associated with nutrient accumulation and cycling by plants growing within the pond. Although the phosphate enrichment is largely minerogenic, the inorganic phosphate may well have been derived from the mineralisation of organic phosphates (e.g. from excreta, waste dumps, etc.) within the catchment.

None of the samples show signs of magnetic susceptibility enhancement. This does not necessarily indicate, however, that the original sediments entering the pond had not been subject to heating or burning, since natural gleying processes (leading to loss of Fe) within the pond may have diluted the anthropogenic signature (Crowther, 2003). The concentrations of heavy metals in all the pond contexts are quite low, and provide no evidence of metal-working activity within the catchment of the pond.

*Soil Micromorphology*  
(R. MacPhail & J. Crowther)

The results of the soil micromorphology work are tabulated below.

Table 5: Soil micromorphology results for Section 3

Context	Depth (mOD)	Bulk sample	MFT	SMT	Voids	Clayey	Silty	Sandy
1338	93.45-93.35 m		B4	SMT 2b, 1a, 1b (3b)	10-30%	fff	fff	f
1339	93.45-93.35 m	x1339	C2	3b (3a)	as fragment		ditto	ditto
1339	93.21-93.16 m		C2	3b (3a)	20%		ffff	ff
1340	93.16-93.13 m		C1	3a, 3b	15-20%		ff	ffff
Context	Root traces	Brick/pot	Charcoal	Coal	Phytoliths	Textural Intercalations	2nd Fe	2nd Fe-P
1338	a*	a-1	a	aaa	a	aaa	aaaaa	a*
1339	ditto	ditto	ditto	ditto	ditto	ditto	ditto	
1339	a	a-3	a	aa	a	aaaa	aaaa	
1340	a*	a-2	a*	a		aa	aa	
* - very few 0-5%, f - few 5-15%, ff - frequent 15-30%, fff - common 30-50%, ffff - dominant 50-70%, fffff - very dominant >70%								
a - rare <2% (a*1%; a-1, single occurrence), aa - occasional 2-5%, aaa - many 5-10%, aaaa - abundant 10-20%, aaaaa - very abundant >20%								

Context	Thin Sections	Bulk sample	MFT	SMT	Voids	Clayey	Silty	Sandy
1352	93.20-93.16 m	x1352	B3	2a, 2b (1a, 1b)	20%	ff		fffff
1353	93.16-93.12 m		B2	1a, 1b, 2a	10%	ffff		ff
1353	92.88-92.45(30) m	x1353	B1	2a	10-20%	ff		fffff
1354	92.45(30)-92.80 m	x1354	A	1a, 1b	10-15%	ffff		ff
Context	Root traces	Brick/pot	Charcoal	Coal	Phytoliths	Textural Intercalations	2nd Fe	2nd Fe-P
1352			aa	aaaaa	a	aaaaa	aaaa	a
1353		a-2	a	a	a*	aaaa	aaa	
1353	a	a-2	aa	a*	a*	aaa	aaa	a
1354	a*	a-1				aaaaa		
* - very few 0-5%, f - few 5-15%, ff - frequent 15-30%, fff - common 30-50%, ffff - dominant 50-70%, fffff - very dominant >70%								
a - rare <2% (a*1%; a-1, single occurrence), aa - occasional 2-5%, aaa - many 5-10%, aaaa -								

abundant 10-20%, aaaaa - very abundant >20%		
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Table 6: Soil micromorphology results for section 9

*Section 3*

The junction (examined in M1) between (1340) and (1339) is composed of clean (once-dry?) fine to medium sand dumped onto a wet(?) silt loam. The clean sands may well have come from a leached soil(s) formed locally on glaciofluvial drift (see above; Avery, 1990, 235). The dump included plant fragments and a coarse (40 mm) flint flake (?). This sand seems to have briefly dried out, forming a soil porosity of channels and vughs; on re-inundation dusty clay washed into some of these voids, inferring a period of subaerial exposure.

Overlying (1339) is a silt loam-dominated deposit with included fine organic matter and phytoliths, and a scatter of coal, charcoal and examples of brick. There are also *in situ* ferruginised roots, very abundant well developed intercalations and voids infills, and much iron staining has developed. This context, which was also examined in M2 apparently records the formation of a muddy silty sand. There seems to have been inputs of both charcoal and fine coal. There are also numerous ferruginous impregnative features and possibly fragments of these. As noted above, there is no magnetic susceptibility data supporting the presence of inputs of burned or iron-working material, although gleying will have the effect of removing any signal, and weathering any iron-slag (Crowther, 2003; Macphail, 2003).

Context (1338) (M2) is composed of coarsely mixed fragments of weathered and unweathered clay (from natural substrate) and silty clay (as in M3 and M4). Many fine coal and rare charcoal are embedded in silty clay and the weathered clay material. There are also intercalations and clayey infills, and rooting traces and an example of a broad burrow; these are all strongly affected by secondary iron impregnations. Fragments of context (1339), up to 8 mm size, occur at the junction of contexts (1339-1338) in Monolith 2. These fragments have developed iron stained margins.

Thin section M2 clearly shows disturbed upper (1339) and mixed dump of unweathered and weathered clay, and the coal-rich silty clay pond fills that make up (1338). These deposits may record dumping of wet sediments from pond cleaning and/or deepening, as material from the junction between the base of the pond and the natural clay (as described in M4) seems to have been dug out. The sediments of (1338) were subsequently affected by fluctuating water tables allowing some drying out and at least one example of probable terrestrial burrowing; strong iron mottling also records these fluctuating water tables. Overall, these sediments are clearly consistent with a managed pond rather than a natural stream.

*Section 9*

Context (1354) (natural clay) is comprised of pale massive clay and an overlying mixed iron-stained clay and sandy clay. It is also characterized by very fine detrital blackened and charred organic material, and rare traces of roots. Context (1354) has a sloping and microfaulted boundary with overlying (1353). The latter is a homogeneous, finely to coarsely rooted (now mainly ferruginised) sandy clay with humic staining and many fine to coarse charcoal and probable examples of fine coal and brick. There are many weakly-formed intercalations, much iron staining and rare possible yellowish iron-phosphate (Fe-P) amorphous infills. The last is consistent with phosphate-P being strongly enriched in this layer.

Thin section sample M4 therefore seems to record a truncated and weathered junction to the natural underlying fluvio-glacial clay at the base of the pond fill, presumably resulting from of the excavation of the pond. It was noted above (M2) that assumed deepening/over-enthusiastic cleaning out of the pond led to the dumping of such pale (unweathered) and iron-stained clay (1338). Sometimes such clay deposits were dug out to form clay bunds to manage water flow at mills.

The basal pond deposits here are a homogeneous, once-rooted sandy clay mixture containing phytoliths, and fine anthropogenic inclusions such as coarse charcoal and rarely brick and coal. Phytoliths and rooting are probably associated with the likely presence of wetland plants. Sedimentation was apparently co-eval with rooting, water table fluctuations, and generally muddy conditions. Plants would have slowed the water flow. Iron staining, associated with these water table fluctuating conditions, was also accompanied by secondary amorphous probable iron-phosphate deposition. The latter is indicative of waste, including latrine waste, entering the pond. Such phosphate-P enrichment is similar to that found in phosphate-enriched layers at the Tower of London moat (Macphail and Crowther, 2004).

Higher up in the Section 9 sequence (M3), (1353) is composed of coarse fragments of natural clay and disturbed clay from the base of a possible fill, with many intercalations and iron staining. These probably represent dumps of clay dug from base of the fill (1354). These lumps of clay became mixed with lower pond fills under muddy conditions, presumably because of recutting/cleaning-out of the pond fill, or even collapse of pond side deposits had accumulated from pond cleaning episodes.

Overlying (1352) is a weakly humic silty clay containing very abundant fine to coarse coal, with charcoal and charred fine organic matter; phytoliths continue to be present. The abundant textural pedofeatures, some associated with weakly formed laminae, formed through muddy sedimentation. There is also iron staining and organic matter mineralization and further examples of rare amorphous possible Fe-P impregnations that are consistent with phosphate-P enrichment. Clearly, this very coal-rich weakly humic silty clay is associated with the disposal/accidental spillage of coal dust etc., into this muddy fill. Although the amount of coal present strongly inflates the measured LOI (see above), minor amounts of organic matter seemed to have begun to accumulate in these sediments. Again, the deposits were affected by fluctuating water tables (iron mottling) and associated gravity water flow that also led to structural collapse.

## Conclusions

The fills seem to record the construction of a pond, by excavation down through possible sands into unweathered clay of fluvio-glacial origin. The latter was presumably a totally suitable medium for holding and retaining a body of water associated with the mill. The fragmented clay at the base of the dug pond became weathered as pond sediments, which included the presumed overlying sands of the fluvio-glacial deposits, began to accumulate. Clearly, throughout the history of the pond, water depth and water flow was compromised by generally muddy sedimentation (indicative of generally very slow water flow) and the growth of wetland(?) plants. Local occupation and disposal/spillage of fuel (mainly coal with some charcoal) could also be linked to drainage into the pond of occupation waste, including human waste, which enriched two of the pond contexts in phosphate. Despite this amount of coal and charcoal waste present, the lack of any magnetic susceptibility enhancement and heavy metal concentrations (as for example found at the Tower of London moat), or micro-



inclusions indicative of high temperature burning, etc., suggest a lack of local industrial activity, however.

The sediments clearly record weakly humic infilling of the pond by fine silt, clay and sand, and the apparent necessity for cleaning and re-digging of the pond in order to maintain the required depth of water and necessary flow. Some dumped pond material included fragments of possible wetland plant material, whereas the top of (1340) seems to have involved the dumping of (local?) leached sandy soil that included a possible flint artifact. In addition to water fluctuations associated with the use of the mill, the pond must have undergone several instances of being drained in order to carry out maintenance such as cleaning and re-digging. General fluctuations produced a variety of textural pedofeatures, iron mottling features and organic matter replacement, whereas possibly longer episodes led to the drying out of the sediments and instances of burrowing by soil meso-fauna.

The ecological remains (Bio-stratigraphy)

*Diatom work*  
(Nigel G. Cameron)

The results of the diatom work are tabulated below.

<i>Diatom Sample</i>	<i>Context</i>	<i>Diatoms</i>	<i>Diatom numbers</i>	<i>Quality of preservation</i>	<i>Diversity</i>	<i>Assemblage type</i>	<i>Potential for % count</i>
D1	1339	present	low	poor	low-moderate	aerophile non-plankton	low
D2	1340	present	moderate	moderate-poor	moderate	non-plankton epiphyte	some
D3	1341	present	low	moderate-poor	moderate-low	non-plankton epiphyte	low
D4	1342	present	very low	poor	very low	aerophile non-plankton	none
D5	1338	present	very low	very poor	low	aerophile non-plankton (cf. epiphyte)	none
D6	1339 upper	present	moderate	poor-moderate	moderate	aerophile benthic non-plankton	some

Table 7: Diatom results for section 3

<i>Diatom Sample</i>	<i>Context</i>	<i>Diatoms</i>	<i>Diatom numbers</i>	<i>Quality of preservation</i>	<i>Diversity</i>	<i>Assemblage type</i>	<i>Potential for % count</i>
D7	1351	present	very low	poor	low	aerophile epiphyte	none
D8	1352 upper	present	very low	poor-moderate	very low	aerophile epiphyte	none
D9	1352 lower	present	very low	poor	very low	aerophile	none
D10	1353 upper	present	low	very poor	low-moderate	aerophile non-plankton	low
D11	1353 lower	present	low	poor	low-moderate	aerophile non-plankton	low
D12	1354	absent	-	-	-	-	none

Table 8: Diatom results for section 9

Diatoms are present in eleven of the twelve samples assessed. Diatoms are absent from the bottom sample (D12) from (1354). However, the number of diatoms in the other samples is generally low and the quality of preservation is poor. Species diversity is also relatively low. There is therefore little or no potential for percentage diatom counting in nine of the eleven diatomaceous samples. Exceptionally, in diatom samples D2 (1340) and D6 (1339 upper) there are moderately high numbers of diatoms, the quality of preservation of some diatom valves is better and species diversity is moderately high. Only in these two diatom samples is there any potential for percentage diatom counting, but it is doubtful if any additional information could be gained than that discussed here.

Given the ubiquity of diatoms in natural water bodies, the poor preservation, absence or low numbers of their remains from water-lain sediments can be attributed to taphonomic processes. In particular this is often the result of silica dissolution caused by factors such as high sediment alkalinity, very high acidity, the under-saturation of sediment pore water with dissolved silica, cycles of prolonged drying and rehydration, or exposure of sediment to the air (e.g. Flower 1993; Ryves *et al.* 2001).

The diatom assemblages from all the monolith samples are composed entirely of non-planktonic diatoms. These diatoms grow attached to submerged surfaces such as aquatic macrophytes and stones (epiphytic and epilithic) or in some cases within the submerged mud surface (epipellic). The presence of non-planktonic diatoms only, without diatom plankton, indicates that the water depth was shallow. In addition there are a number of other non-planktonic diatoms present that are tolerant of desiccation. These aerophilous species are present in habitats that are subject to drying out for prolonged periods. They may originate from within the water body, for example on the bank or bottom if the pond or stream dried out. Alternatively they may have been introduced with dumped or eroded material (see introduction) including soil. Aerophilous diatoms were found in all the samples and in most there were also chrysophyte stomatocysts (the resting stages of another group of siliceous algae) that are indicative of periodic drying out. Many large, robust (heavily silicified) *Pinnularia* sp. were not identifiable to specific level but are types that are very likely to be aerophilous. Others such as *Pinnularia borealis*, *P. brebissonii*, *P. microstauron* and *P. subcapitata* are common aerophilous benthic diatoms. Fragments of the cosmopolitan aerophile *Hantzschia amphioxys* were very common and other aerophilic diatoms included *Diadesmis perpusila*, *Navicula mutica*, *Nitzschia recta* and *Nitzschia terrestris*.

With the exception of *Anomoeoneis sphaerophora* in D11 (1353 lower) benthic diatoms are less abundant than epiphytes or epilithic diatoms. The epiphyte *Cocconeis placentula* (and varieties of the species) is particularly common in samples D2 (1340) and D3 (1341). Epiphytes such as *Epithemia* sp., *Gomphonema acuminatum*, *Gomphonema olivaceum*, *Rhoicosphaenia curvata* and *Synedra ulna* are most common in D2 (1340). This observation along with the relatively low numbers of benthic diatoms suggests that the macrophyte growth was dense during some periods and the growth of benthic diatoms was restricted either through shading or lack of available surface for colonisation.

Unfortunately there is no clear indication from the diatoms about the rate of current flow that might differentiate a pond from a stream. There are however no rheophilous diatoms present that are associated with flowing water and the indication here is of a pond or slow flowing water. Similarly there is no strong diatom evidence for nutrient enrichment. The diatoms present are found in circumneutral water with only moderately high nutrient levels. Therefore despite the archaeological evidence for industrial activity and dumping of material in the water there appears to have been no organic enrichment resulting in eutrophication. The debris dumped in the water and surrounding industry (mill) has not produced notably poor water quality that would have resulted in the presence of a distinct diatom flora.

## Conclusions

Diatoms are present in eleven of the twelve samples assessed.

The diatom assemblages contain a high proportion of aerophilous diatoms that originate from drying out of the sediment, through bank or soil erosion or possibly with debris introduced into the water body.

The absence of diatom plankton and abundance of epiphytic and epilithic diatoms reflects the shallow depth of the water. Epipellic diatoms are less common suggesting that the mud surface was restricted by shading from macrophytes or the available area for colonisation.

It is not clear whether the water body is a pond or a stream. However, there are no rheophilous diatoms present that would indicate flowing water therefore current flow seems to have been slow.

Nutrient levels were only moderately high and there is no indication of eutrophication through organic pollution.

Realisation of the research objectives

Outlined in the following is the extent to which soil micromorphology, soil chemistry and diatom analysis have addressed the research objectives:

*Objective: To combine soil micromorphology and soil chemistry analyses to determine changes in water levels and interrelationships of organic materials and heavy metals within the different contexts and possibly identify indirect evidence for local human activity*

The soil micromorphology and soil chemistry analyses provided detail of the micro-structural changes within the deposits highlighting periods of exposure, dumping, water fluctuation and management of the section deposits. No heavy metals were detected to indicate industrial activity.

*Objective: To analyse diatom species present to help interpret the nature of the water courses for example, in terms of water depth / periodic drying out; water quality, in particular*

*concentrations of nutrients and organic waste and effluent from both agricultural and industrial processes.*

The diatom analysis was able to determine the freshwater nature of a pond (or at least a very slow water flow) environment and periods of drying out and exposure. No signs of eutrophication were discerned indicating intensive industrial processes.

## Discussion

*The drawing together and discussion of the separate analyses follows the division into Sections 3 and 9 as in the original monolith assessment.*

### Section 3

The sediments sampled in section 3 (contexts 1342 to 1338 inclusive) were described in the initial monolith assessment as, on the whole, reflecting dumping in a watery environment whether that be a pond or a stream. All sediments were found to be poorly sorted, often mixed with charcoal and coal and iron-rich sands. Context (1339) differed from the rest however through the presence of fine root traces suggesting that it was once a possible land surface.

The soil micromorphology and chemistry analysis refined this assessment in a number of areas. Fundamentally, none of the sediments examined indicated anything but a pond environment that had certainly suffered periods of drying out and probably management or maintenance including drainage. Initially, for example, a period of subaerial exposure was found to have occurred between (1340) and (1339) when a fine to medium sand containing plant fragments was dumped over (1340). Furthermore, the upper part of (1339) was found to have been disturbed with a mixing of natural clay and the fill of (1338) indicating anthropogenic activity thought to be cleaning and or deepening of the pond. The soil chemistry analysis however found neither indication of industrial activity through magnetic susceptibility indicators nor presence of heavy metals to indicate, for example, evidence of metal-working locally. Interestingly, although (1339) was thought to be a possible land surface in the original monolith assessment, the *in situ* ferruginous roots within it (confirmed in the soil micromorphological analysis) probably stemmed from the context overlying it (1338) which exhibited not only signs of a fluctuating water table but also terrestrial burrowing activity indicating this context to have been dry and exposed for a longer period.

Although the diatom analysis of Section 3 encountered poor preservation on the whole, the overall picture is one of shallow water conditions persisting throughout the period of sediment accumulation through the presence of, exclusively, non-planktonic diatoms. Furthermore, the lack of rheophilous diatoms (associated with flowing water conditions) again strongly indicates the presence of a pond rather than a stream. Interestingly, the environmental picture is further enhanced by the low numbers of benthic diatoms in parts suggesting dense macrophyte (water plant) growth on the surface of the pond presumably through the summer months.

### Section 9

The initial monolith assessment for Section 9 reflected again, for the most part, dumping within a watery environment. Contexts (1351) through to (1354) are essentially silts with a clay element typical of an alluvial deposit but each context is highly mixed with debris such as brick fragments, charcoal or coal. The underlying deposit however, (1354), seems to be natural, possibly reflecting the local boulder clay as its source. Its greenish grey colour reflects a waterlogged environment, which has suffered fluctuations in the level of the water table causing it to partly oxidise.

Again, the soil micromorphology and chemistry analysis refined this assessment. The overall assessment is the section represents sediments accumulated in a pond that has been managed. For example (1353) was found to contain coarse fragments of (confirmed) natural clay (1354) indicating cleaning out or recutting episodes. Iron staining, as in section 3, was ever present throughout indicating water table fluctuation. The sediments were also found to be 'muddy' indicative of slow water movement. The soil chemistry analysis found phosphate enriched

minerogenic sediments particularly in (1353) and (1352) - notably thought not to be associated with plants within the pond but stemming from outside sources such as waste dumps including possible latrine/animal waste. The presence of coal dust in the laminae of muds seen in the micromorphology analysis of (1352) indicate disposal of coal dust locally although no confirmed evidence of industrial activity (heavy metals for example) were encountered.

The diatom evidence was limited by poor preservation but the assemblage types were consistently dominated by aerophilous species indicating a habitat prone to drying out, much like those in section 3. Furthermore there seems no evidence for significant organic enrichment resulting in eutrophication and poor water quality, which, although not ruling out occasional spillage into the pond, does go against the idea of intense industrial activity occurring locally.

Both sections tend to indicate the depositional environment to have been shallow, freshwater ponds prone to drying out either naturally or through drainage for maintenance. The management of the ponds seem to have involved clearance or recutting to some degree in both. With the exception of slightly increasing phosphate levels particularly in Section 9 (possibly to some degree derived from animal or human waste) sediments from both ponds seem to have been subject to some pollution through refuse disposal although not enough to indicate industrial activity in the vicinity.

## Conclusion

The soil micromorphology, soil chemistry and diatom analyses have refined the understanding of the sampled sediments that accumulated in Sections 3 and 9 at Bermuda Park. The soil micromorphology and soil chemistry analyses enabled the micro-structural changes within and between the sedimentary units that are not necessarily visible in the field to be examined as well as relationships between potential agricultural and industrial processes on site. Furthermore, sedimentological variations in the deposits interrelated with diatom analysis undertaken on the monolith samples to analyse water flow, eutrophication and nutrient content.

The original question as to the nature of the depositional environment (pond or stream) seems to have been answered with the idea of ponds or very slow water movement environments predominating. The ponds seem to have been consistently shallow and prone to drying out. Furthermore, they seem to have been subject to management practices such as recutting or clearance a number of times over their duration probably with deliberate drainage occurring. They seem to have been occasionally polluted to a small degree by waste dumping often exhibiting fragments of coal, charcoal and brick as well as variations in phosphate levels indicating latrine or animal waste, but never to the extent of eutrophication or anything indicating industrial activity locally. All the evidence points to generally shallow but clear freshwater ponds, consistently managed until they finally became abandoned and in filled.

The geoarchaeological examination of the pond sediments at the Bermuda Park site, Nuneaton site has provided an informative and corroborative addition to the archaeological record of the area.

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## APPENDIX H: OasIS FORM

**OASIS ID: aocarcha1-39512****Project details**

Project name	Bermuda Park
Short description of the project	An archaeological excavation was undertaken by AOC Archaeology Group between August and November. The land is known from documentary sources to have been within the demesnes of the monastic military order of the Knights Templar between 1185 and 1308 and subsequently the Knights Hospitallers of St. John of Jerusalem, until the dissolution of monasteries by King Henry VIII in c.1540. The western half of the site was subject to extensive modern industrial activity; the eastern half was less disturbed and had been the subject of several previous archaeological investigations over the last 40 years. The earliest evidence of activity on the site was in the form of large stone packed postholes and the ephemeral remains of masonry walls, probably representing the original Templars' 12th century manor. In a later medieval phase a building with stone foundation replaced this structure, and further structures associated with cobbled yards and a trackway were recorded to the east. Large amounts of 13th-14th century medieval pottery, probably from the nearby Nuneaton kilns, were found associated with these remains. A series of stream channels were managed in the medieval period and in the southern part of the site a pond was formed. Timber stakes and a substantial dump of stone formed what may have been a bridge abutment part of a mill, a further stone feature to the south may have been a related collapsed pier base.
Project dates	Start: 01-09-2004 End: 30-11-2004
Previous/future work	Yes / No
Any associated project reference codes	BDA04 - Sitecode
Type of project	Recording project
Current Land use	Vacant Land 3 - Despoiled land (contaminated derelict and brownfield sites)
Monument type	RESIDENTIAL BUILDING Medieval
Monument type	DITCH Medieval
Monument type	DITCH Post Medieval
Significant Finds	POTTERY Medieval

Significant Finds	POTTERY Post Medieval
Significant Finds	CERAMIC BUILDING MATERIAL Medieval
Investigation type	'Full excavation'
Prompt	Direction from Local Planning Authority - PPG16

### Project location

Country	England
Site location	WARWICKSHIRE NUNEATON AND BEDWORTH NUNEATON BERMUDA PARK, NUNEATON, WARWICKSHIRE
Postcode	CV11 4XX
Study area	10.00 Hectares
Site coordinates	SP 3520 8980 52.5045935448 -1.481355496650 52 30 16 N 001 28 52 W Point
Height OD	Min: 93.82m Max: 95.23m

### Project creators

Name of Organisation	AOC Archaeology
Project brief originator	Local Authority Archaeologist and/or Planning Authority/advisory body
Project design originator	AOC Archaeology
Project director/manager	Ron Humphrey
Project supervisor	Angus Stephenson
Type of sponsor/funding body	Developer

Name of sponsor/funding body George Wimpey Midland Ltd

### Project archives

Physical Archive recipient	Warwickshire Museum
Physical Contents	'Animal Bones', 'Ceramics', 'Metal'
Digital Archive recipient	Warwickshire Museum
Digital Media available	'Images raster / digital photography'
Paper Archive recipient	Warwickshire Museum
Paper Media available	'Context sheet', 'Microfilm', 'Photograph', 'Plan', 'Report', 'Section', 'Unpublished Text'

### Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	BERMUDA PARK, NUNEATON, WARWICKSHIRE - ARCHIVE REPORT
Author(s)/Editor(s)	'Eddisford, D.'
Date	2008
Issuer or publisher	AOC Archaeology Group
Place of issue or publication	AOC Archaeology Group
Description	A4 bound report with illustrations

Entered by	Daniel Eddisford (dan.eddisford@aocarchaeology.co.uk)
Entered on	19 March 2008

