

**ARCHAEOLOGICAL WORKS:
BISHAM ABBEY
NATIONAL SPORTS CENTRE
BISHAM
BERKSHIRE**

on behalf of Sports England



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(with contributions from John Giorgi, Justin Neal, James Rackham, Jim Rylatt, Rob Scaife,
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Project ref: 1701/BSH/02

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Site Data

<i>IA project code:</i>	BSH	<i>IA project no:</i>	1701
<i>OASIS ref:</i>	138835	<i>Event/Accession no:</i>	
<i>County:</i>	Berkshire		
<i>Village/Town:</i>	Bisham		
<i>Civil Parish:</i>	Bisham		
<i>NGR (to 8 figs):</i>	SU 8475 8495		
<i>Extent of excavation and WB:</i>	c. 3.15ha		
<i>Present use:</i>	Sports facilities, accommodation, grounds		
<i>Planning proposal:</i>	Replacement accommodation, coach park, pavilion & multi use games area (MUGA) and associated services landscaping.		
<i>Local Planning Authority:</i>	Royal Borough of Windsor & Maidenhead		
<i>Planning application ref:</i>	12/02640 & 12/06640		
<i>Date of fieldwork:</i>	17/5/13 to 2/4/14		
<i>Client:</i>	Sports England c/o Collin Paddon CSP Project Management Walton on Thames Surrey		
<i>Contact name:</i>	Collin Paddon (07899-662991)		

Internal Quality Check

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CONTENTS

Summary	5
1. Introduction	5
2. Aims & Methods	8
3. Archaeological & Historical Background	9
4. Stratigraphic Report.....	14
5. Artefact Reports.....	54
6. Environmental Reports	78
7. Discussion & Conclusions.....	124
8. Acknowledgements	132
9. Archive	132
10. References	133

Appendices:

1. Context summary list.....	135
2. Drawing Register.....	141
3. List of photographs (digital and black & white).....	143
4. Finds Concordance	160
5. Pottery (Table 1).....	161
6. Coarse Building material	162
7. Matrices for Periods IV and V.....	163
8. OASIS form.....	165

Figures:

1. General location.....	4
2. Site plan.....	7
3. Heritage assets mentioned in Berkshire Historic Environment Record	13
4. Plan of coach park area.....	45
5. Plan of the archaeology of the football pitches.....	46
6. Plan of archaeology of the flood compensation area	47
7. Plan of the moat around Bisham Abbey	48
8. Section drawings.....	49
9. Plan of the the three soakaway pits on the south side of accomodation block	53
10. Illustrations of worked flint	63

Plates:

Cover: work underway on the burnt pits on the Desso football pitch in July 2013

1. Burnt pit [203] half sectioned.....	39
2. Burnt flint pit [210] newly exposed looking ENE.....	39
3. Burnt flint pits [211 & 216] looking north	39
4. Burnt flint pit [203] view north	39
5. Burnt flint pit [212] looking north.....	39
6. Burnt flint pit [219] view west	39
7. Burnt flint pit [220] looking east	40
8. Burnt flint pit [210] looking NW.....	40
9. Burnt flint pit [227] view north	40

10. Burnt flint pit [209] view south west.....	40
11. General view of flood alleviation area looking south.....	40
12. South facing section (1026) across quarry [270].....	40
13. Ditch sections (S. 1027) across ditches 261, 262, 264 & 265	41
14. Section 1021 across ditch [336]	41
15. Dog skeleton 335	41
16. Section 1046 across ditch [391] looking east	41
17. Ditch [239] view NW	41
18. Section 1052 across former sand quarry [413]	41
19. Pit [50] looking east during watching brief	42
20. Moat section looking WNW at NGR SU 84852-85019	42
21. Detail of moat fills looking WNW	42
22. Centre of moat of segment 74 at NGR SU 84921-84976.....	42
23. Chalk filled moat on E. side of SAM view south.....	42
24. West facing section of moat at NGR SU 84932-89926.....	42
25. Westernmost SE-NW section across pavilion soakaway	43
26. Silver groat of Henry VI (1422-23) 20mm diameter	43
27. 13 th /14 th century rims from upper fill of pit [50]	43
28. Anglo-Saxon pottery: from 279 (left) and 301 (right).....	43
29. Pottery from pit 259.....	43
30. Cu alloy jetton (1586-1655) 23mm diameter	43
31. Aerial photograph taken on 23 rd August 1945 (© Historic England. Lib. No. 3552)	44
32. Lidar survey of c. 2010 (© Environmental Agency https://houseprices.io/lab/lidar/map).44	44

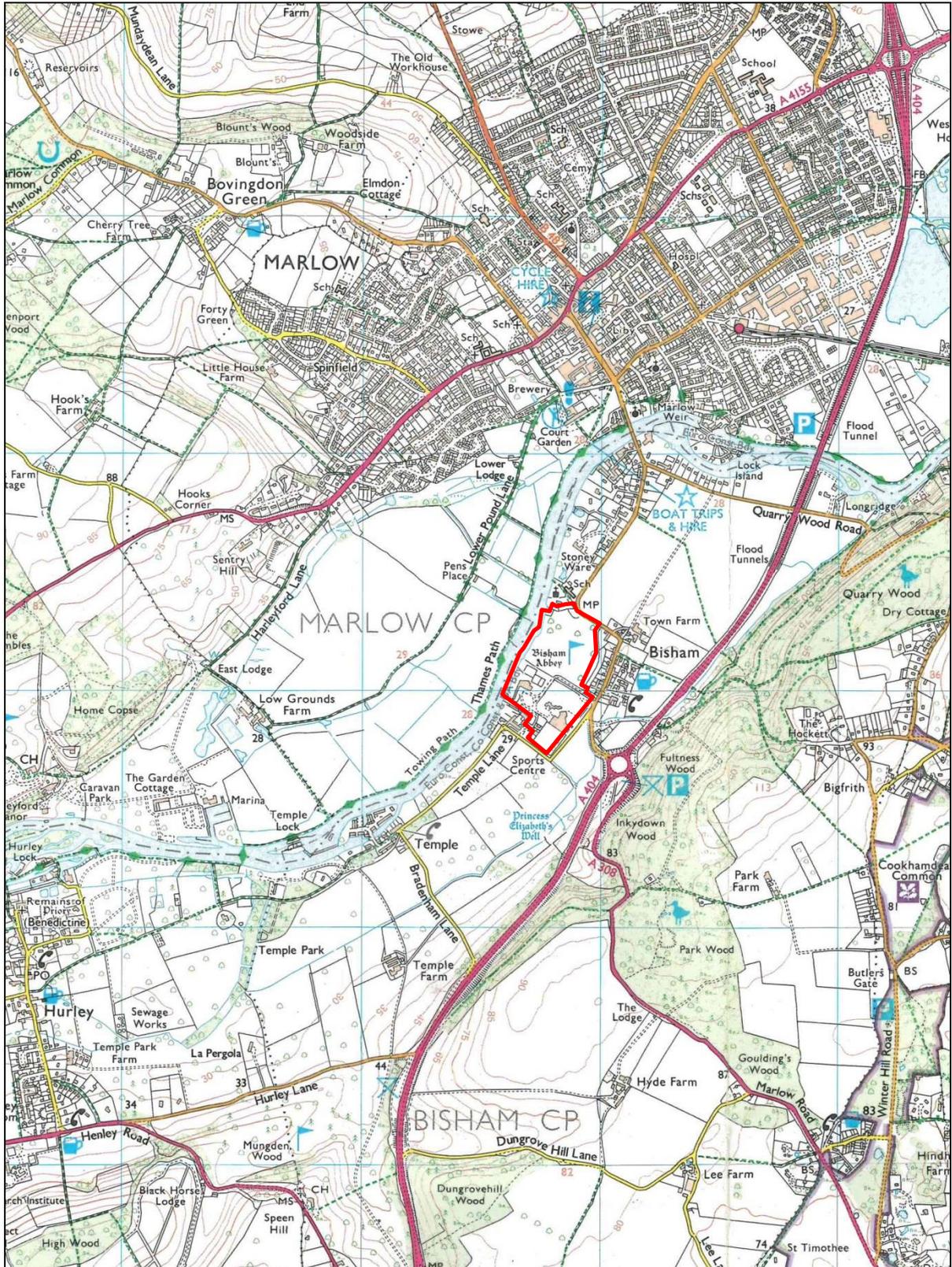


Figure 1: General location (Scale 1:25,000)

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Summary

Between the spring of 2013 and early 2014 a programme of archaeological work was undertaken at the National Sports Centre at Bisham Abbey near Marlow, Buckinghamshire. Within the Scheduled Ancient Monument area (SAM), defined by the now partly vanished medieval moat a watching brief and 'strip, map & sample excavation' were undertaken. Outside the area of the SAM, to the north, on the site of the new pavilion, three football pitches and the flood compensation area, a combined watching brief and 'strip, map & sample excavation' was also undertaken. Within the SAM medieval features were recorded associated with the monastic establishment. Outside this area late Bronze Age activity in the form of burnt flint pits together with scatters of Neolithic and Mesolithic flintwork were discovered. In the area of the flood compensation zone and middle football pitch late Roman and post-Roman remains were uncovered. This took the form of a series of enclosure ditches, a gully, a quarry and a series of pits, some of which are Anglo-Saxon re-cuts of Romano-British boundaries. In order to enhance the dating of widely dispersed features, a total of seven radio-carbon dates were obtained (two from the moat, two from the burnt pits, two from the flood alleviation excavation and one from a ditch in the centre of the desso-pitch).

1. Introduction

1.1 From April 2013 to February 2014 *Archaeological Services and Consultancy Ltd* (ASC) carried out a watching brief and 'strip map & sample excavation' at Bisham Abbey near Marlow, Buckinghamshire. The project was commissioned by Phil Jessup of *ISG plc* on behalf of Sports England, and was carried out according to a project design prepared by ASC (Hunn & Rouse 2013), and approved by *Ben Jervis* of *Berkshire Archaeology* and *Chris Welch* of *English Heritage*, archaeological advisor (AA) to the local planning authority (*Royal Borough of Windsor & Maidenhead*), The relevant planning application reference is 12/02640. Subsequent to this there was a further planning application (12/06640) concerning the construction of three large soakaways in the area of the SAM (Hunn 2014). This document is a report on the archaeological works relating to the construction of new residential and sporting facilities on the site.

1.2 *Planning Background*

This excavation was required under the terms of the *National Planning Policy Framework* (NPPF), as a condition of planning permission for the development of the site.

1.3 *The Site*

1.3.1 *Location & Description*

The site is situated in Bisham, in the administrative district of Windsor and Maidenhead, Berkshire (Fig. 1). It lies to the southwest of the village, on the east bank of the river Thames, and is centred on Ordnance Survey national grid reference SU 8475 8495 (Fig. 2).

Vehicular access to the sports centre is from Marlow Road, from which a driveway leads to the west in front of the abbey buildings, before diverting to the southeast. The site comprises the buildings and grounds of the National

Sports Centre and comprises a range of modern and medieval buildings and associated facilities. The southern half of the site has statutory protection as a *Scheduled Ancient Monument* (SAM).

1.3.2 *Geology & Topography*

The natural soils of the development area comprise the *Thames Association*, namely stoneless calcareous clayey soils over river alluvium (Soil Survey 1983, 814a). The underlying geology comprises Shepperton Gravel of the river Thames (BGS, Sheet 255). River alluvium is present in the west side of the wider complex, adjacent to the river and the soil sequence has been recorded at a number of locations on and around the site (eg. Wessex Archaeology 1989; Oxford Archaeology 2008).

1.3.3 *Proposed Development*

The development areas comprise a pre-existing accommodation block, a coach park, new changing block/pavilion, re-modelling of the car park and associated services all within the area designated as a Scheduled Ancient Monument. To the north of this area three new sports pitches will be developed on the site of existing football pitches and some flood relief measures will also be implemented adjacent to the river Thames (Fig. 2).

1.5 *Previous Archaeological Work*

A series of limited archaeological interventions (mostly watching briefs) has been undertaken on the site during the last forty years. These have been itemised in an HIA report (Fell & Hunn 2012, appendix 3).

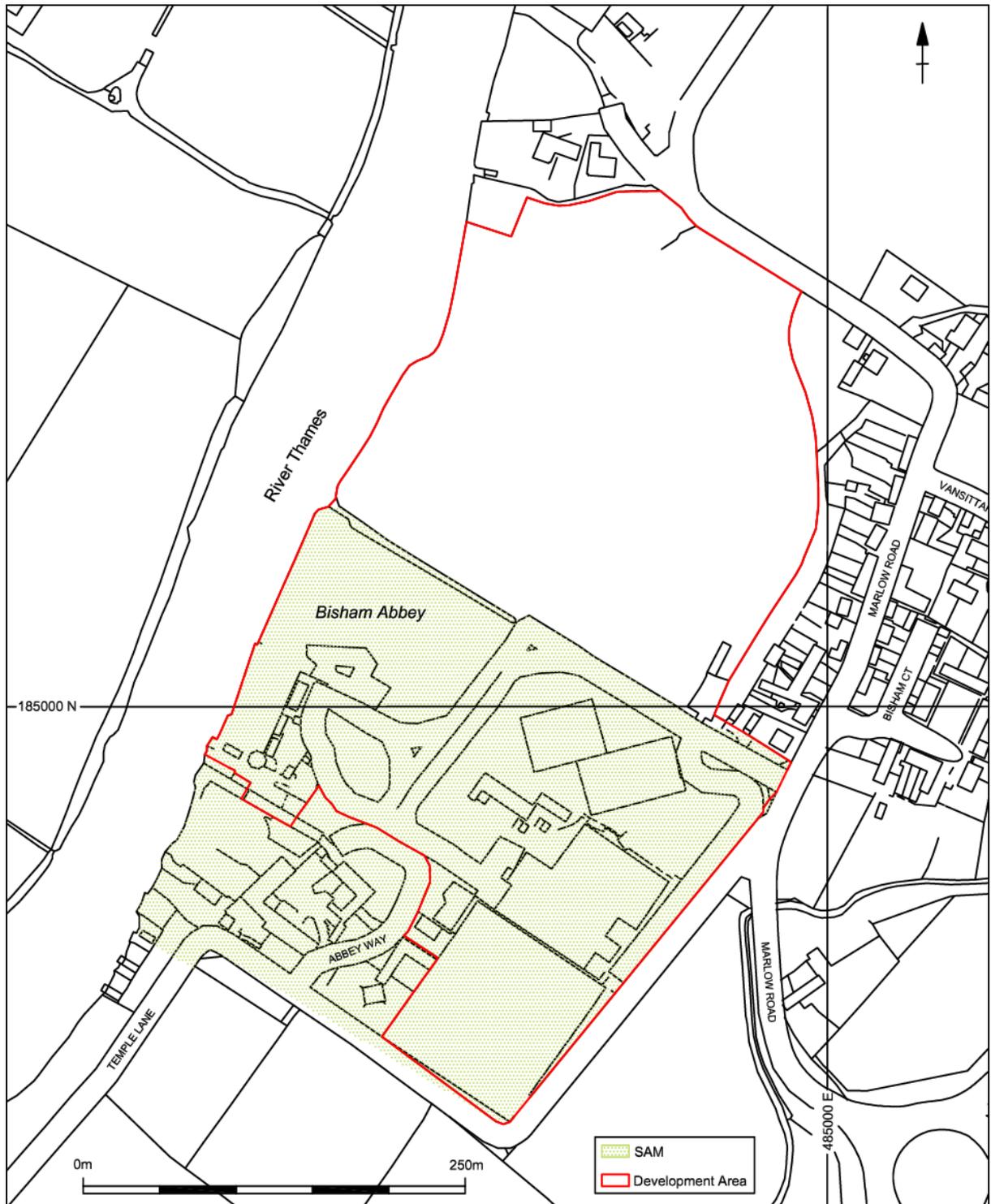


Figure 2: Site plan (Scale: as shown)

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2. Aims & Methods

2.1 Aims

As described in the project design, the aims of the excavation were:

- To determine the existence or absence of archaeological remains and should archaeological remains be present, to assess their general nature and significance.
- To determine or confirm the approximate date or date range of the remains, by means of artefactual or other evidence.
- To determine or confirm the approximate extent of the remains.
- To determine the condition and state of preservation of the remains.
- To determine the degree of complexity of the horizontal and/or vertical stratigraphy present.
- To assess the associations and implications of any remains encountered with reference to the historic landscape.
- To determine the implications of the remains with reference to economy, status, utility and social activity.
- To determine or confirm the likely range, quality and quantity of the artefactual evidence present.
- Where appropriate, to determine the potential of the site to provide palaeo-environmental, geo-archaeological and/or economic evidence.

The forms in which such evidence may be present will be determined in accordance with the guidelines set out in English Heritages' *Environmental Archaeology: A Guide to the Theory and Practice of methods, from Sampling and Recovery to Post-excavation and geoarchaeology: Using earth sciences to understand the archaeological record*.

2.2 Standards

The work will conform to the requirements of the brief, to the relevant sections of the Institute for Archaeologists' *Standard & Guidance Notes* (IFA 2008a) and *Code of Conduct* (IFA 2010), to English Heritage guidelines (EH 1991, EH 2006), and to the relevant sections of ASC's own *Operations Manual*.

2.3 Methods

The work was carried out according to the project design, which required:

The work was carried out according to the project design (Hunn & Rouse 2013), which described the methods to be used on the Scheduled Ancient Monument (SAM) and the non-designated SAM area:

2.4 Constraints

This has been described on the project design (Hunn & Rouse 2013, sections 3.3-3.4).

3. Archaeological & Historical Background

3.1 *Introduction*

The following section provides a summary of the readily available archaeological and historical background to the development site and its environs. The site lies within an area of archaeological and historical interest, and has the potential to reveal evidence of a range of periods.

The assessment site is situated in the flood plain of the river Thames. The Thames floodplain and the associated gravel terraces are areas of high archaeological potential (Booth *et al*, 2007; Lambrick & Robinson 2010) and this is reflected in the number and range of buried heritage assets recorded in the area.

A number of archaeological projects have been undertaken in the study area and these are discussed in the following paragraphs. Several areas have been subject to fieldwalking surveys, notably the *East Berkshire Archaeological Survey* (Ford 1987), which surveyed the landscape around Temple, to the southwest of the assessment site (eg HER 3008, 3089, etc.). The HER also includes a number of artefacts recorded by metal detectorists as part of the *Portable Antiquities Scheme* (eg. HER 16032-5, etc.). Several of these artefacts have been recorded only to a 1km grid square and are excluded from Figure 4. Nevertheless they contribute to general background knowledge of the assessment area and are included in Appendix 1.

3.2 *Early Prehistoric* (before AD 43)

The floodplain and gravel terraces of this area of the Thames valley were extensively exploited during the prehistoric periods and a range of sites and artefacts of these periods are known from the study area. A scatter of Mesolithic flint artefacts has been recorded at Town Farm c.850m northeast of the assessment site (HER 498) and a Bronze Age spearhead has been recorded from the river c.650m north of the assessment site at Bisham (HER 493; Ehrenberg 1977, 42).

The landscape at Temple was clearly of importance during the Bronze Age and later periods and a major multi-period site dating from the Bronze Age has recently been subject to archaeological excavation (TVAS 2011). Further prehistoric artefacts were recorded at Temple during the *East Berkshire Archaeological Survey* (HER 3044, 3087, 3089-91) and Mesolithic and Neolithic axes have also been recovered from the river in this area (HER 2933-4).

The gravel terraces of the river Thames are susceptible to the development of cropmarks, which reveal the presence of infilled ditches and other archaeological features. Three ring ditches (ploughed out Bronze Age burial mounds) have been recorded as cropmarks c.250m east of the assessment site (HER 574). Ring ditches have also been recorded on opposite bank of river Thames c.300-500m north of the assessment site (Gates 1975, map 25).

3.3 *Roman* (AD43-c.450)

During the Roman period this section of the river Thames formed the boundary between the *civitates* (tribal areas) of the *Atrebates* and the *Catuvellauni*. There is

currently no evidence for the existence of a major Roman road in the area and during this period the river Thames was probably the main route of transport and communication through the area.

Relatively little is known of the study area during this period but Roman pottery and coins have been recorded c.0.6-1km southwest of the assessment (HER 3008/9). The site at Temple developed considerably during this period (TVAS 2011) and Roman villa sites have been recorded west of the assessment site at Mill End and Yewden (Cocks 1921; Eysers 2012).

3.5 **Anglo-Saxon** (c.450-1066)

Little is known of the study area during the Saxon period but fragments of a Saxon gilt brooch and two iron spearheads have been recorded from Temple (HER 2951 and 15595).

3.6 **Medieval** (1066-1500)

This section summarises the medieval history of the assessment site. Full accounts are provided in the initial desk-based assessment (Prosser 2001) and Compton (1974).

During the medieval period the study area probably comprised open land and was part of the open field system of the parish of Bisham. Medieval pottery sherds have been recorded c.1km southwest of the assessment site at Temple (HER3251) but little is known of the early medieval development of the area.

Bisham was included in the Domesday survey (1086), where it is named as *Bistesham* (Morris 1976). The medieval village (HER 496) developed to the north of the assessment site and was probably centred on the church of All Saints c.500m north of the assessment site, which dates from the 11th century (Pevsner 2002, 88-90). Trade and commerce in the area during this period was dominated by the market town of Marlow, which developed on the north bank of the river Thames c.1.5km northeast of the assessment site (BCAS, nd).

3.7 **Post-Medieval & modern** (1500-to present)

The earliest readily available map to show the study area is Rocque's map of Berkshire, which was published in 1761 (Figure 6). The map shows the floodplain at Bisham divided into subrectangular land parcels, which are probably the result of parliamentary enclosure of the parish. The village of Bisham is shown and the principal routes, including Marlow Road and Temple Lane had been established. A tithe map was prepared in 1839 (Figure 8) which shows the area in more detail and names the individual land parcels.

Bisham War Memorial was erected at the junction of Temple Lane and Marlow Road and is shown on 20th century Ordnance Survey maps (Figures 12 and 13). The memorial is included in the national list of listed buildings (below, section 5.3.4) and is situated adjacent to the main entrance to the assessment site.

3.8 ***The Known Archaeology & History of the Assessment Site***

3.8.1 *Early Prehistoric (before 600BC)*

The only evidence for prehistoric activity comprises an assemblage of burnt flints recorded during a watching brief in 1997 (HER 15896; Wessex Arch 1997).

3.8.2 *Iron Age (600BC-AD43)*

No Iron Age sites or artefacts are currently known from the assessment site.

3.8.3 *Roman (AD43-c.450)*

The assessment site is not currently known to contain sites or artefacts of the Roman period. The river Thames flows immediately west of the assessment site and an assemblage of Roman pottery sherds has been recorded from this stretch of the river (HER 2582).

3.8.4 *Anglo-Saxon (c.450-1066)*

Saxon remains are not currently known from the assessment site.

3.8.5 *Medieval (1066-1500)*

The manor of Bisham was granted to *Henry de Ferrers* in 1066 and a Preceptory of the Knights Templar was established at *Bustlesham* (Bisham) by his son *Robert de Ferrers* c.1135-9. The temple order was suppressed in Europe in 1307 and Bisham passed to the king. The site was granted to *Hugh le Dispenser* and subsequently to *Ebulo l'Estrange* and *William Montague*, who established a priory of Augustinian canons adjoining the former Templars house in 1334. The site subsequently passed to the Neville family and an illustration of the abbey was prepared in 1463 when the funeral of earl Richard Neville was held at the abbey.

3.8.6 *Post-Medieval (1500-1900)*

The monastery was surrendered to the crown in 1536. It was briefly refounded as a Benedictine abbey in 1538 but was surrendered to the crown for a second time later in the same year.

Little is known of the arrangement of the preceptory and abbey buildings. A 16th century wall and road were observed during a watching brief (Wessex Arch 1995), but how these relate to the complex is not certain. The lawns to the south and north of the surviving medieval buildings have been subject to geophysical surveys and a geophysical anomaly to the east of the surviving buildings has been interpreted as part of the cloister (Stratascan 2001). A number of less well defined anomalies on the north side of the building may also indicate the presence of medieval buildings, or later Tudor garden features. Parchmarks in the lawn, on the site of the former tennis courts may indicate the presence of monastic buildings in this area (Compton 1974 ,65) and aerial photographs taken during the 1940s show the parchmarks of an apsidal building, which may have been part of a chapel or religious building and also a range of buildings at the site of the former tennis courts.

The site was settled on the divorced Queen Anne of Cleves, who exchanged it for a house at Westhorpe in Suffolk, belonging to Sir Philip Hoby in 1553. An account by Hoby states that the church ruins survived until the 1560s.

The earliest readily available map to show the assessment site in detail is an estate map prepared by Elias Alleyn in 1609 (Figure 5). The map post-dates the demolition of the abbey but the domestic ranges are illustrated and the area to the east is shown as an orchard. The latter is shown bounded by a watercourse, which suggests that the moat survived in the southeast part of the assessment site.

The site passed through several generations of the Hoby family who retained many of the monastic buildings and made a variety of alterations and additions to the domestic buildings. Parts of these buildings survive within the assessment site and are included in the national list of listed buildings (below, sections 5.3.1 and 5.3.2).

A number of small scale maps showing the area were prepared during the 18th century (Figures 6 and 7) and the layout of the assessment site is shown in detail in the tithe map of Bisham, which was prepared in 1839 (Figure 8). The map shows the principal buildings and indicates that the moat survived on all three sides of the estate. The entrance was via a bridge across the moat and the north to south central road, and drives serving the principal building had been established by that time. The map omits to show the dovecote but the surviving domestic buildings (The Grange, etc.) are illustrated. The northeast quadrant is shown as open land and is labelled 'Old Orchard', while the land parcel to the south is labelled 'kitchen garden'.

The kitchen garden is shown in more detail on the 1881 edition Ordnance Survey map (Figure 9) where the layout of the beds is illustrated. A group of linear structures, which were probably glasshouses, are shown at the north corner. The map also shows the dovecote, moat and the 19th century domestic buildings south of the principal house (Plates 10 and 15).

3.8.7 Modern (1900-present)

The last member of the Hoby family died in 1866 and the house was purchased by *George Vansittart*, who made a number of modest alterations during the late 19th and early 20th centuries. These are illustrated on the 1912 edition Ordnance Survey map (Figure 11) and include the addition of a boathouse and an additional bridge over the moat. The latter provided access to a footpath through the former orchard, leading to the domestic buildings. The map also shows that additional glasshouses had been constructed and a gasometer is shown in the vicinity of 'The Grange' in the south part of the assessment site. The Ordnance Survey maps were further revised in 1932 and 1960/1 (Figures 12 and 13) but show little change had taken place in the layout during the first half of the 20th century.

The estate was used as a hospital for soldiers during the First and Second World Wars, following which it was let to the *Central Council of Physical Recreation*. The estate was subsequently adopted as an establishment for sports and fitness and eventually passed into the lands of *Sports England*, who retain the site today.

The contemporary layout of the assessment site is shown in Figure 3 and described in section 3. The medieval and 19th century domestic buildings have been retained but the lawn north of the principal building was laid out as tennis courts. These were replaced c.2003 and the area returned to grass (above, section 3.2.2). The lawns to the south and east of the building have been retained but the majority of the east half of the assessment site, south of the moat was developed from the 1960s and now accommodates ranges of modern sports related buildings, tennis courts, hockey pitches

and car parks. The area north of the moat remains open ground and is laid out as sports pitches and golf courses.

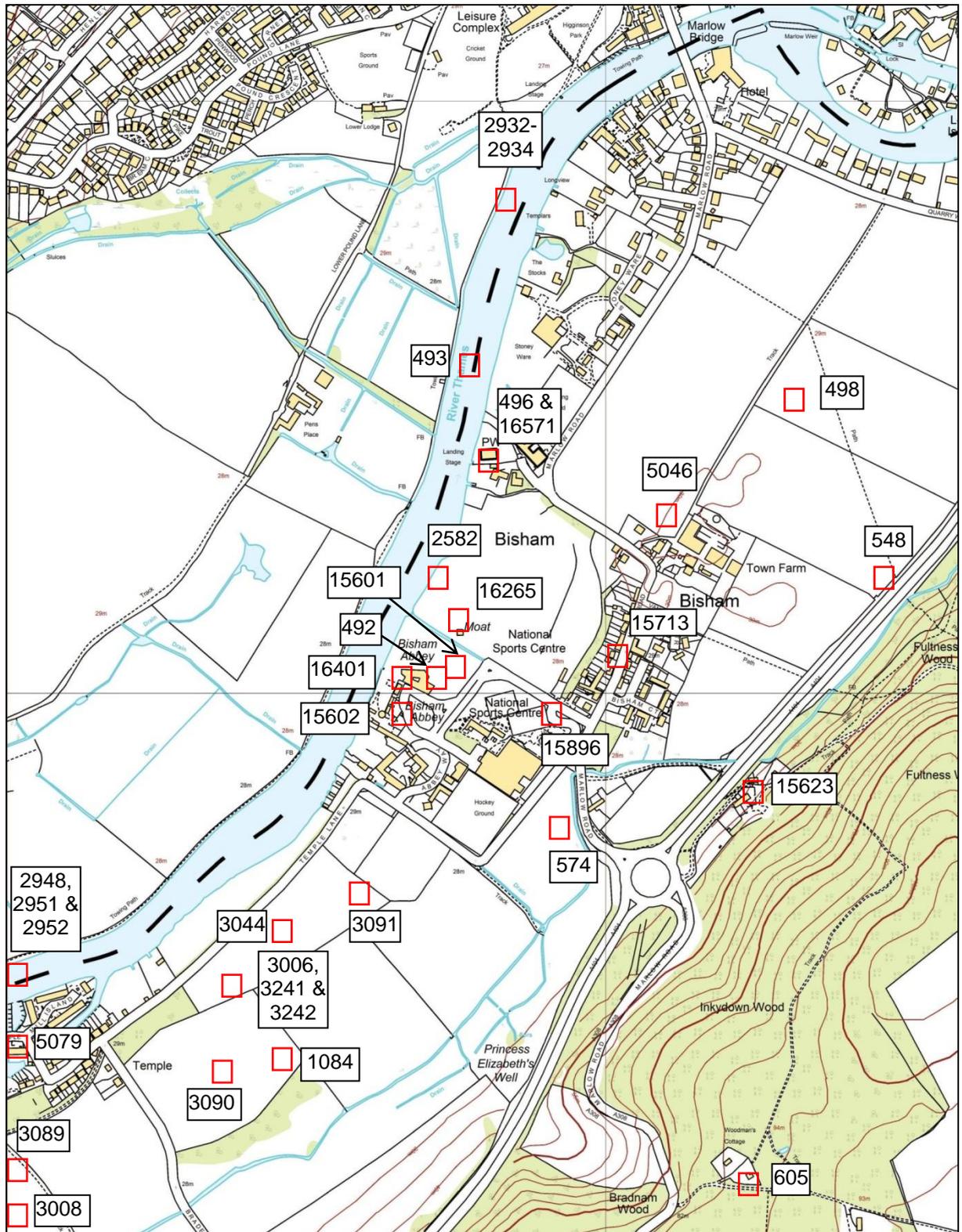


Figure 3: Heritage assets recorded in the Berkshire Historic Environment Record.
(Scale = 1 to 10,000)

4. Stratigraphic Report

4.1 *Excavated evidence*

Excavated and recorded evidence came from five distinct areas of the current phase of the development. These were as follows: i) accommodation block; ii) coach and car park area; iii) the pavilion; iv) the three sports fields (Muga, Desso and grass pitches); v) the flood compensation area.

The amount of information varied from area to area depending on the extent and depth of the development and presence of archaeological evidence and nature of the physical intervention. At least five, possibly six phases of human activity were identified from across the entire development zone. Based on our current understanding these ranged in date from the mesolithic to the post-medieval periods (Figs. 4-7).

It should be noted that the site is orientated NE-SW but the use of the bearings in this report has been kept to N-S and E-W for the sake of brevity and simplicity. That is, the River Thames is to the west with the football fields to the east; the abbey lies to the south and north is down-stream.

4.2 *Period I Mesolithic/Neolithic*

The evidence is based on flint artefacts and debitage which were identified in three areas of the development area: the pavilion, the sports field and flood compensation area. The material was collected on an ad hoc basis, that is wherever it became visible in those areas that were being disturbed. The evidence is therefore random and not systematic; the only exception to this is the area of the flood alleviation excavation at the north west corner of the application site (Fig.7).

The assemblage consisted of 341 pieces of mainly struck flint (3.38 kg), (see Rylatt section 5.1 of this report). Of this number 35 (10.2%) was derived from the upper plough-soil [201] that was exposed across the area of the MUGA and Desso pitches and a further 120 (35.1%) came from the lower plough-soil [202]. This was generally some 200mm below the surface of the existing terrain. A further 83 items (24.3%) came from Roman and post-Roman contexts. Of the 103 items ascribed to prehistoric contexts 34 (33%) came from a 'dark yellowish brown' sub-soil beneath the area of the Pavilion; 49 items (47.5%) came from 'a very dark greyish brown, sandy silt' [213] in the area of the Desso pitch and flood alleviation/compensation zone. This horizon contained mainly late prehistoric pottery, though some Roman material was also present (see Timby, this report). Of the remaining 20 pieces, 3 came from the fills of 'burnt pits', 5 came from 'tree-throw hollows' and 12 came from what may be described as the sandy-gravel sub-soil in the flood alleviation area (277 & 278), (Plate 36). The majority of the struck flint consists of 269 pieces (85.7%) of 'unmodified flakes and blades', 26 pieces of 'irregular waste' (8.3%) with the remainder (46) being of worked stone.

The composition of the worked flint assemblage comprised 7 cores of Mesolithic or early Neolithic date (9400-6000 cal BC). The largest artefact was a tranchet adze recovered from the surface of the sandy gravel sub-soil [450] which was dated to the early to late Mesolithic period (Rylatt, Fig.1; Fig. 10.9 of this report). Another re-

touched piece in the form of a 'burin' was retrieved and this was dated to the Mesolithic/early Neolithic (Rylatt, Fig. 5). Later material in the form of a chisel arrowhead (Rylatt, Fig. 13) dated to the Middle Neolithic (c. 3300-2900 cal BC) and an Oblique arrowhead of late Neolithic date type (c. 2900-2400 cal BC) were also found. Other material in the assemblage suggests that there was human activity in the area which continued from the Mesolithic into the Late Neolithic/early Bronze Age. Nevertheless, the relative scarcity of material suggests that there was unlikely to be human settlement immediately adjacent to those areas which were the focus of the current archaeological project, though it is quite possible that these may exist in the wider environs of the Bisham area (Rylatt, section 5.1). Although Rylatt suggests that several contexts (277-9, 408 & 450) could be *in situ* Mesolithic/Early Neolithic deposits this can only remain a possibility. Both (408), which was derived from a tree-throw hollow, and (450) which was a brown sandy alluvial deposit could conceivably be *in situ*. The remainder, came from the lower terrace area of the flood alleviation excavation where previous flood control measures (2006) may have caused disturbance.

4.3 *Period II Late Bronze Age*

The evidence consists of at least 9 burnt flint pits from beneath the proposed Desso pitch with a further 6 probable pits mainly concentrated in the grass pitch area to its north. Scatters of burnt flints were noted in the exposed topsoil after the removal of vegetation and, crucially, weathering. When this horizon was removed the fire pits were clearly identifiable (Plates 1-10). These ranged in size from between 1m and 1.8m wide and depths not exceeding 0.25m (as measured from the top of the sub-soil). The pits contained a layer of charcoal overlain by intensively fire-fractured flint. These features were half sectioned and bulk 30 litre samples taken. Flint tempered pottery was recovered from the ploughsoil horizon and occasionally from the burnt pits themselves. There is evidence for a possible occupation horizon with associated post-holes in the form of concentrations of flint.

The burnt pits

Although described as 'pits' these features more resembled shallow scoops which had a shared characteristic of being filled, either in part or in whole, with fire-cracked flints. There is no particular pattern to their distribution and their discovery may be due to the shallowness of the overlying soils in the area of the Desso pitch. Nine of these features were half excavated and they will be described in sequential order (their distribution is shown on Fig. 5):

[203]

(see Fig. 5; Plates 1 & 4; sample no's 10, 11 & 11a)

This had a diameter of 1.8m and depth of 0.2m and was cut into the underlying sub-soil [213]; it contained two distinct fills. The primary fill (205) consists of a thin layer (50mm) of a very dark grey silty charcoal (Mun 10 YR 3/1). Above this was a mass of fire cracked flints (204) set in a very dark greyish brown sandy silt (Mun 10 YR 3/2) some 0.15m thick. The burnt flints ranged in size between 30 and 100mm in diameter. Apart from the presence of burnt wheat grains there were no other finds recovered.

[209]

(see Fig.5 and 8.2 section 1014; Plan 1017a; Plate 10; Sample no. 24)

This had a diameter of 1.13m and depth of 0.21m and contained two fills (207-8) which appeared to seal post-hole 236. The primary fill (208) was a dark greyish brown silt 70mm thick. Above this was a deposit of fire-cracked flints (207) which were highly packed and with signs of sharp breaks. The only material from the feature came from the primary fill which contained one grain of emmer and two grains of free-threshing wheat (Giorgi, this report).

[210]

(Figs 5, 8.2 plan 1017, section 1013; Plates 2 & 8; Sample no. 20)

This had a diameter of 1.6m and a depth of 0.23m. It contained three fills (223, 226 and 231), though the lower one (231) was not separately sampled as it was seen as being the result of 'interaction' between (226) and the natural sub-soil (213). Its lower fill was a very dark grey charcoal rich deposit 120mm thick. This was overlain by an intensely burnt layer of flints (223) some 100mm thick. From (226) came mainly wheat grains but also some barley (Giorgi, this report). A C14 date was obtained from (226) which gave a date of Cal 925 BC (Beta-458764; Rackham, this report). The pit was cut by a long narrow, sharp edged feature [229] some 0.7m long x 100-200mm wide. It was filled by a brown sandy silt (Nun 10 YR 4/3). The presence of a fragment of roof tile suggests it was probably a plough furrow.

[211]

(Figs 5, 8.1 plan 1004, section 1003; Plate 3; Sample no. 12)

This approximately 1.5m wide in diameter and 0.13m deep. It contained a single fill (214) which consisted of a mass of fire-cracked flints set in a silty clay matrix. A late Neolithic/Early Bronze Age core came from the base of this deposit (see Rylatt, this report, Fig. 10, no. 5), together with 2 flint tempered sherds of pottery.

[212]

(Figs 5, 8.2 section 1012; Plate 5; Sample no. 14)

This was located a short distance to the east of pit 211 (not shown on plan). It had a maximum diameter of 1.7m and a depth of 0.17m. It contained two fills, the lowest of which (218) was a brownish-orange silty clay, flecked with charcoal some 50mm thick. Above this was the upper fill (215) which contained a mass of fire-cracked flints set in a dark grey brown silty matrix. Some grains of emmer wheat were recovered from the primary fill, though given the loose nature of the upper fill, its presence is probably intrusive.

[216]

(Figs 5, 8.1 plan 1004, section 1003 ; Plate 3; not sampled)

This was a small pit c. 0.5 x 0.9m in diameter and 0.13m deep. It contained a single fill (217) consisting of a mass of fire-cracked flint set in a greyish brown matrix of silty clay.

[219]

(Figs 5, 8.1 plan 1008, section 1005; Plate 6; Sample no. 18)

This was ovoid in plan with a width of 1.25m and a length of 1.7m and a depth of 0.16m. It contained two fills of the primary one (224) consisted of a dark grey charcoal

rich deposit some 60mm thick. This was sealed by fire-cracked flints c. 100mm thick (221). The lower fill contained two grains of wheat (Giorgi, this report).

[220]

(Figs 5, 8.1 plan 1007, section 1006; Plate 7; Sample no. 19)

This was another slightly ovoid pit being 0.96m x 1.3m and with a depth of 0.12m that cut the sub-soil (213). Its primary fill (225) comprised a 'mid dark grey-brown silty clay with charcoal flecks, which contained some cereal grain (Giorgi this report). Above this layer (222) was a mass of sub-angular fire-cracked flints in a similar matrix to the primary fill.

[227]

(Figs 5, 8.1 plan 1010, section 1009; Plate 9; Sample no. 21 and 22)

This was a broadly circular pit c. 1.65m in diameter and 0.24m deep. It contained two fills of which the lowest was (232); this was a 'light-mid brownish orange silty clay with flecks of charcoal. The upper fill (233) consisted of a dark grey/black silty clay matrix with frequent charcoal and fire-cracked flints present. Three grains of cereal were present (Giorgi, this report). And its date was exactly the same as that from pit 210 at Cal 925 BC (Beta-458765; Rackham, this report).

[228]

(Figs 5, 8.2 plan 1017b, section 1016; Sample no. 25).

This was a shallow ovoid feature 0.45m x 0.58m and 0.12m deep which cut into the sub-soil [213]. It was filled by (235) which was a dark greyish brown sandy silt (Mun. 10 YR 4/2). It contained fire-cracked flint and seven sherds of flint-tempered pottery.

[236]

(Figs 5, 8.1 plan 1017a, section 1014; Plate 10)

A small post-hole lying on the edge of pit 209. It was 0.3m in diameter and varied between 150-300mm deep. It was filled by (237) which was a very dark greyish brown sandy silt (Mun: 10 YR 3/2). There were no finds and an absence of burnt flint suggests that it either pre-dated both fills (207-8) or was contemporary with pit 209 when it was open.

[442 to 447]

(Fig. 5)

These were located within the grass football pitch and were all observed to contain fire-cracked flints in the various drainage runs below (402), as follows:

[442] a saucer shaped profile 1m wide by 0.3m deep.

[443] a spread of burnt flint 8m in diameter and lying at a depth of 0.6m.

[444] burnt flint c. 1.2m wide at a depth of 0.3m and was 0.2m thick.

[445] burnt flint 1.1m wide x 0.2m thick and exposed at a depth of 0.35m

[446] burnt flint 0.6m wide and 80mm thick and exposed at a depth of 0.3m

[447] burnt flint 1.2m wide and 0.2m thick lying at a depth of 0.3m below (202) which was a 'lower ploughsoil and cut into (213).

4.3 *Flood alleviation (compensation) excavation*

This was area of approximately 600 sq. metres (with a maximum length of 46m N-S and 20m E-W). The site lay between the sports pitches to its east and a previously reduced area its west which had formed part of a flood compensation scheme which had been created in 2006 (not recorded). The archaeology consists of pre-Roman activity in the form of pits and tree throw hollows (Period III). This was followed by a late Roman extraction pit and ditches (Periods IV), which turn was followed by a series of re-cut ditches in the post-Roman to late Anglo-Saxon periods (Period 5). The presence of building material (roof tile, brick and box-tile) suggests the proximity of a masonry building, possibly a villa or bath-house. Three phases were identified in period IV and six phases in period V. The matrices for Periods IV and V are reproduced in Appendix 7.

Period III General prehistoric period (of uncertain date)

There are eight discrete features that belong to this group of which all contained little material evidence apart from the occasional flint flake. Each is described in sequential order (see Fig. 6):

[271] This lay in the mid-western side of the site and was sub-circular in shape, approximately 0.9m in diameter and c. 0.25m wide and was filled with a dark grey brown silty sand (272).

[273] This lay close to pit 271 and was a slightly irregular oval pit being 1.6m wide x 1.8m long and 0.25m deep. It was filled with a dark greyish brown silty sand which contained no finds. It might have been a possible 'tree-throw' pit.

[349] This was a small circular pit 0.65m wide and c. 0.31m deep. It was filled by a mid-dark brown silty clay (350). It was half sectioned and the spoil sieved using a 10mm mesh. There were no finds.

[381] This was an irregular oval shaped pit 2.9m long by 1.5m wide and 0.38m deep. It contained a single fill (380) which consisted of a dark greyish brown silty sand. 250 litres of spoil was sieved through a 10mm mesh which yielded a single blade like flake attributed to the Mesolithic/early Neolithic periods.

[382] This a small pit, possibly a post-hole 0.55m x 0.4m by 0.4m deep. It was filled by (389), a dark yellowish brown silty sand (Mun 10 YR 3/4). It contained a blade like flake and a single flake (Rylatt, this report).

[383] Just to the north of pit 382 was a 'banana shaped' feature some 2.5m long x 1.2m wide and 0.45m deep. It was filled by a very dark greyish brown silty

sand (384) (Mun 10 YR 3/2). 160 litres of spoil was dry sieved through a 10mm mesh which yielded 3 flakes, probably of late Neolithic / early Bronze Age date (Rylatt, this report). It was most probably a 'tree-throw'.

- [395] This was sub-ovoid in plan being 1.5m x 0.9m and 0.2m deep. It was filled (394) by a dark greyish brown sandy clay (Mun 10 YR 3/2). 160 litres was sieved through a 10mm mesh but without an apparent finds. It may have been a 'tree-throw hollow'.
- [405] This was the remains of an irregular shaped pit 2.75m long x 1.2m wide and 0.16m deep situated on the edge of western side of the excavation, in an area that been previously truncated in 2006. It contained three fills (406-8) all of which were dry sieved through a 10mm mesh. The primary fill (406) was a reddish brown, coarse sandy layer 80mm thick which was probably the result of slumping. Above this was (407) which was a dark grey sandy silt 60mm thick. The upper, tertiary fill (408) was a mid-orange brown sandy silt some 80mm thick. From this came a flint blade (SF no. 2002) of Mesolithic/early Neolithic date.

4.4 *Period IV Late-Roman*

Phase IV.1 (Group 266) Quarry

This is represented by a linear extraction pit or quarry that was situated on the western margins of the excavation (Fig. 5). It stretches from the northern baulk to the south, a distance of 19.5m. It has been destroyed on its southern and western sides by the 2006 flood alleviation works (Fig. 6). It was 4.8m wide overall and originally 1.56m deep; it was sub-divided into three segments [270, 302 & 413]. These will be described in numerical sequence.

- [270] This was 4.8m wide x 1.56 by 0.96m deep and had been cut by ditch 274 (of phase 2, segment 269 & 274). On its western side its lower fills were cut by a possible pit [327] and on its eastern side its upper fills were cut by ditch 274 (see matrix for Period IV in Appendix 7). It contained a succession of twelve distinct fills: The lowest fills were (300 and 297), (Fig. 8.3section 1026). [300] was a mottled, light brown-orange sandy silt cut by pit (327) and (297) shared similar characteristics and was cut by ditch 274. Above (300) was a mid-grey brown sandy silt (299) and above that was (298) which was a light orange sandy silt; neither of these fills contained any finds. Above (297) was a mid-grey brown sandy silt (296). Above this were a series of dumps, all with broadly similar characteristics (294, 295, 294, 293, 292 & 291). None of these contexts contained any finds of any description. The largest of these was (293) which was some 0.4m to 0.6m thick and which sealed pit 327; it was also cut by ditch 274. The only horizon that yielded any datable material was (290). This was a dark brown sandy silt containing much charcoal. It contained two sherds of pottery (16g) and a good assemblage of animal bone (104 fragments – 3143g) of which cattle predominated (Rackham, this report). The uppermost horizon in the quarry was (268). This consisted of a dark brown-grey sandy silt which contained a rich assemblage of animal bone which is discussed in detail in section 6 (Rackham, this report). 3 sherds (104g) of pottery and 94 (3211g)

of animal bone were recovered from an area 3.5m long x 1.5m wide and a depth which was 150mm at its deepest western end to 0mm at its eastern side (its average depth is estimated at c.120mm. This would be approximately 0.42 cubic metres of soil. The material recovered from (268) was dug by hand by an experienced excavator. Nevertheless, it was decided that an adjacent portion of this horizon should be dry sieved (10mm mesh) by way of a control, so a new context number was assigned (430). From an area of approximately 2.8m long by 1.5m wide and a depth which varied between c. 150mm and 240mm (its average depth is estimated to be c. 200mm). This would be approximately 0.84 cubic metres of soil. This equated to 950 litres of soil (as measured in 10 litre buckets x 95). From this came 76 sherds (848g) of pottery of which 7 sherds (35g) were prehistoric, 61 sherds (735g) were assigned to the late Roman period and 8 (78g) to the Anglo-Saxon period. A further 270 fragments (2096g) of animal bone were recovered from this context. The assemblage was dominated by cattle although there was a significant proportion of sheep/goat bones present. Both context 268 and 430 are discussed in some detail by Rackham (this volume). A 30 litre sample was also taken (<29>) from [268] which contained wheat, barley and oats (Giorgi, this report).

- [302] This segment was situated on the northern edge of the site where it was deliberately positioned so as to avoid an adjacent dump of material (268) which lay on its eastern periphery. Its northern south-facing section shows it to be c. 3m wide, though it originally would have been 3.6m wide before it was truncated by ditch 318. It was 2.2m deep below the existing land level and contained fourteen fills as follows (Fig. 6; Plate 12):

The primary fill (303) was a re-deposited natural (yellowish brown gravelly sand). The sequence above (304 to 310) was a just a variation on a theme of sandy silts of differing hues. None of these layers contained any finds. By contrast, (311) though similar in many ways, contained 26 (1209g) fragments of animal bone of mainly cow and horse (Rackham, this report); there were a few fragments of Roman building material but no pottery. To judge from the nature of its profile it looks like deliberate backfill tipped from the eastern side. Contexts (312 to 317) were similar to the earlier fills but with more stones and mainly devoid of finds apart from the occasional fragment of animal bone. The quarry was cut by ditch 318 and then a dark yellowish grey sandy silt (324) was deposited that sealed both (302) and ditch 318 (see phase IV.2).

- [413] This represents the cleaned section at the south west edge of the excavation so that little or no artefacts were recovered. The section contains the presence of fifteen different horizons (414 to 427), (Fig. 8.3 section 1027; Plate 18). They all consist of fairly loose sandy deposits ranging from very dark greyish brown (416), dark reddish brown (418) to dark yellowish gravelly sand (423). The section was cut by ditch segment 428 which is part of ditch 274.

Phase IV.2 (Group 274 'Ditch')

This was a fairly narrow boundary ditch which post-dated the quarry but followed its alignment on its eastern side. It was 21m long by 1.7m wide and 0.75m deep (Fig 6;

Plate 11). It was sub-divided into four segments [269, 318, 388 and 428] (see matrix for Period IV in Appendix 7). These will be described in sequential order:

- [269] This segment was situated in the middle of the ditch and was 1.56m wide 1.5m long by 0.78 m deep. The primary fill (289) was a light orange yellow coarse sand that contained 4 sherds (154g) of pottery and 6 (230g) fragments of animal bone. One of the sherds was dated to the Anglo Saxon period (Timby, this report). This fill may have been re-cut as its western edge looks unusually sharp. The secondary layer (288) was a mid-brown orange sandy silt which was devoid of finds. The tertiary fill (287) which was far the largest and was similar in colour to (288). It was a mid-orange brown sandy silt with one bone fragment and occasional stone present. It was devoid of any other finds.
- [318] This segment was situated on the northern edge of the excavation. It was 2m long by 1.96m wide and 0.78m deep. It contained four fills of which the primary one (320) was a 'mid grey yellow' coarse loose sandy deposit that was devoid of find. The remaining fills (321-323) were of a darker hue but broadly the same with only bone present in the tertiary fill. This consisted of 7 fragments (563g) of which 4 belonged to cattle (Rackham, this report). On its eastern side there appeared to be the remains of a de-graded bank (319). This was about 1.5m wide and 0.1m thick. Like the quarry [266] it too was overlain by a dumped horizon (324). It was also recorded as being overlain by a 'sub-soil' (213) but this is now believed it should have been assigned a different number. Context (324) contained 3 sherds (19g), one assigned to the Roman period the other undated (Timby, this report); it also contained 17 fragments (231g) consisting of cattle, sheep/goat, dog, cat and unknown/mammal, with cattle predominating.
- [388] This segment was dug to establish the relationship with the E-W ditch 263 which it pre-dates. It was a small cut no more than 0.78m square and 0.58m deep, which was not bottomed. Only one context was recorded (387) which was a mid-orange brown sandy silt. It contained no finds apart from a small fragment of Roman tile (Section 1044 - archive).
- [428] This was located at the south western side of the site in the section on the edge of the excavation facing westwards where it clearly cuts the quarry [266]. It was 1.51m wide and 0.43m deep and contained a single fill (429). This was a dark orange brown sandy silt. It was only recorded in section so no finds were recovered.

Phase IV.3 (Group 263 'Ditch')

This ditch was the largest single feature on the flood alleviation area. It was 24m long by 3.6m wide and 1.86m deep and orientated E-W (see Fig. 6). A 4m portion at its western end had been almost obliterated in the 2006 flood alleviation works. It cut all the N-S ditches and also the sub-soil horizon (213). The ditch appears to have been re-cut towards its eastern end (336 & 379) where it becomes noticeably broader (Fig. 6) and this has been assigned phase 5 (see the matrix for Period IV in Appendix 7). The segments across the phase 5 ditch 263 were as follows:

- [386] This segment was excavated to determine the relationship between the N-S ditch 274 and ditch 263 and this demonstrated that it was later. It was l-shaped being 2m N-S by 1.5m E-W m and 0.58m deep (not bottomed). A single fill was identified (385) which was a mid-grey brown sandy silt which contained only a fragment of Roman tile and 9 fragments of animal bone (261g) comprising cattle, horse and sheep/goat (Rackham, Table 5).
- [391] This was situated at the western edge of the site where it had been previously been cut by the flood alleviation scheme of 2006. Three fills were identified (390, 396 & 397) and these were only excavated as a result of the section being cut back and so the actual width of the segment was quite modest (no more than 0.2m). The primary fill consisted of a dark reddish brown sandy silt with occasional stones; it was some 0.26m thick in what looks like a 'cleaning slot'. The secondary fill was a light yellow-orange sandy silt and looks like natural slippage. The tertiary fill was the largest and most amorphous in its character. It consisted of a dark-grey brown sandy silt some almost 1 metre thick. No finds were recovered but a bulk sample was taken at a depth of c. 0.7m down. The environmental sample <32> yielded a rich assemblage of wheat and barley grain, chaff and charred hazel nut (Giorgi, this report). A radio-carbon date was obtained which gave a date range of AD 240 to AD 395 with a 98% certainty (2 sigma) (Rackham, this report). As this date was obtained from charred barley grains it is considered to be reliable. This confirmed that it was a late-Roman deposit.

Period V Post-Roman (Anglo-Saxon)

Phase V.1 (Group 261)

This consisted of a north-south ditch which runs parallel with a series of three ditches to its east [262, 264-5]. It is 10.3m long x 1.28m wide and 0.94m deep. The group is made up of three ditch segments [267, 354 & 371] which will be described in sequence (Figs 6, 8.3 section 1038; see matrix for Period V in Appendix 7):

- [267] This segment was situated on the northern edge of the site (Figs 6, 8.3 section 1036; Plate 13). It was an irregular u-shape in profile and was 1.28m wide x 1.7m long and 0.94m deep. It contained two fills of which the primary one (329) was a mid-orange grey silty gravel some 0.28m thick and which appeared to be the result of rapid slumping. As might be expected it contained no finds. The upper fill (281) was a mid-grey brown sandy silt 0.8m deep which contained no datable finds.
- [371] This was situated at the southern end of the ditch where its length was truncated by ditch 368 (Fig. 8.3 section 1038); it was 0.96m wide x 0.56m deep and contained two fills. The primary fill (370) was a mid-orange brown silty sand 0.1m deep and contained no finds. The upper secondary fill (369) was 0.46m deep and consisted of a mid-orange brown silty sand. It contained 128g of animal bone (Rackham, this report).
- [354] This segment was 1.1m long x 0.26m wide and 0.24m deep. It was filled by (355) which was a mid-grey brown sandy silt that contained no finds. It

appeared to cut a possible pit, though such was the level of bio-turbation that this was not certain. Either way, it makes little difference to the chronology of the ditch sequence.

Phase V.2 (Group 262)

This consisted of a north-south ditch which runs parallel with a series of three ditches [261, 264-5]. It is 11.4m long x 1.26m wide and 0.78m deep. The group is made up of three ditch segments [280, 356 & 368] which be described in sequence (Fig. 6):

- [280] This segment was 1.7m long x 1.26m wide and 0.78m deep and lay on the northern edge of the excavation (Fig. 8.3 section 1027). It contained two fills of which the primary fill (330) was a mid-brown orange, sandy silt and gravel that had no finds in it. The second fill (301) was a light brown-grey sandy silt some 0.66m thick. It contained one rim of Anglo-Saxon pottery (Timby, this report).
- [356] This segment was 1.1m long x 0.38m wide and 0.34m and contained a single fill (357). This consisted of a mid-grey brown sandy silt which contained a single sherd of Anglo-Saxon pottery (Timby, this report).
- [368] This segment lay at the southern end of the ditch and was 0.9m long x 1.2m wide and 0.6m deep. It contained two fills, of which the primary (rapid fill) was (367). This was a mixed brown/orange sandy silt about 0.08m deep. Above this was a 'mid (slightly) grey brown silty sand (366) that contained 1 (214g) cattle bone. No pottery was recovered.

Phase V.3 (Group 264)

This consisted of a north-south ditch which runs parallel with a series of three ditches [261-2, 265]. It is 11.8m long x 1.63m wide and 1.17m deep. The group is made up of two ditch segments [282 & 377] which be described in sequence (Figs 6, 8.3 section 1027; see matrix in Appendix 7):

- [282] This segment was located on the northern edge of the excavation and comprised at least two re-cuts [284 & 452]. The character of the fills on the primary and secondary cut suggest that the bank lay on the eastern side of the ditch. The primary cut [282] was 1.7m long x c. 1.6m wide and c. 1m deep (originally) and was truncated by the later re-cuts (see Fig. 8.3 section 1027). It contained the remains of two fills (333-4). The primary fill (334) consisted of a mid-orange brown sandy silt 0.12m thick and devoid of any artefacts. The secondary fill (333) was similar in character and was also devoid of any finds. It was re-cut by [452] and was originally c. 1.5m wide. It is 0.95m deep and contains three fills. The primary fill (332) was 0.28m thick and consisted of a 'patchy light grey orange sandy silt. The secondary fill (331) was a mixed mid-brown orange silty gravel 0.14m thick. Both the lower fills contained no finds. The tertiary fill (283) was a compact, light brown orange sandy silt containing 4 sherds (63g) of Anglo-Saxon pottery (Timby, this report) and 7 fragments (138g) of animal bone (Rackham, this report). This was cut by [284] which

was 1.32m wide and 0.74m deep and was part of ditch 263. It contained a single fill (285) which was a light grey orange sandy silt that was devoid of any finds.

- [377] This was located at the southern end of ditch 264 and was only half sectioned (see Fig. 6, 8.3 section 1038). It would have been in excess of 1.3m wide and was 1.16m deep and had one re-cut. The primary fill (376) which was a mix of light yellow, dark brown and light orangey silt 0.22m thick. The secondary fill (375) was a mid-orange brown sandy silt which had a maximum depth of 0.4m. Neither of these fills contained any finds.

Phase V.4

Ditch 264 was re-cut by [374] (Fig. 6, 8.3 section 1038). This would have been in excess of 1.2m wide and was 0.6m deep. It contained two fills of which the primary one (373) was a light brown-orange sandy silt some 0.16m thick, which was devoid of finds. Above this was (372) which was a light grey-orange sandy silt some 0.44m deep. It contained a single sherd (8g) of probable Camley Garden type ware of 13th/14th century date (Lucy Whittingham *pers. comm*).

Phase V.5 (Re-cut 263 'Ditch')

- [336] This was the single most important hand excavated segment of this ditch as the other portions were either a cleaned section [391], or limited 'relationship slots' such as [386 & 379]. Segment 336 was excavated on the eastern side of the site (3.65m wide by 1.5m long and 1.86m deep) and contained five fills (Figs 6, 8.3 section 1028). The primary fill was (337) some 0.24m thick which consisted of a loose dark brown-grey sandy silt with brown yellow lenses and many sub-angular stones. Above this was (338) which was a variable mid pink-brown sandy silt 0.35m deep. There were no finds apart from some residual prehistoric flakes. By contrast the tertiary fill (339) was larger and contained more finds. It consisted of a mid-brown-grey silty sand 3.55m wide by 0.84m deep. The fill contained 5 fragments of Roman tile and 13 sherds (100g) of which 2 were prehistoric, 5 were Roman and 6 Anglo-Saxon (Timbey, this report). There was also a good assemblage of animal bone of which there were 59 fragments. There was a variety of animal bone present of which cattle and sheep/goat predominated and it appears that sheep/goat were more significant than cattle (Rackham, this report). A 30 litre sample (<31>) was taken from this context which contain significant quantities of cereal grain (Giorgi, Table 5). Free-threshing wheat predominated followed by rye, then barley and oats (*ibid.*). An Iron object (SF. 2010) also came from this deposit. A C14 sample (Beta-.....) dated this to the late Anglo-Saxon period. Partially sealing this layer was context (340) which had a maximum thickness of 0.36m and appears to have been tipped from the banks southern side. It was a yellowish brown sandy silt which contained three fragments of animal bone but no pottery. The fifth and final fill of this ditch was (341) which had a maximum depth of 0.38m. This was a dark brown-grey sandy silt that contained 1 sherd (9g) of Anglo-Saxon pottery (Timby, Table 1). There were 7 (278g) fragments of animal bone (Rackham, Table 5).

- [379] This was situated where [263] apparently joined the north-south ditches 262, 262 & 264. This cut demonstrated that ditch [263] post-dates these ditches. It was 3.4m long by 1.02m wide and 1.16m deep and filled by (378). This consisted of a dark greyish-brown sandy silt which contained 3 sherds (34g) of pottery. These have been identified as Roman, Anglo-Saxon and Medieval (Timby, this report). It also contained 46 fragments (1489g) of animal bone (cattle, sheep/goat, pig and one fragment of human bone) with cattle predominating.

Phase V.6

- [441] This was a pit which was exposed by layer 268/430 when it was mechanically reduced by machine by a depth of 0.4m. It lay about 1m to the north of ditch 263 and was approximately 1m in diameter and 0.36m deep. It contained a single fill (440) which consisted of a light grey brown silty clay which was 'ashy' in character. It contained 1 sherd (1g) of Anglo-Saxon pottery (Timby, this report) and 6 (62g) of animal bone representing cattle, sheep/goat, pig and chicken (Rackham, this report).

Un-phased period

At least three features (all linears) were sample excavated but whose date is uncertain [260, 275 & 286] (see Fig. 6). Two of these may be late Roman but the third one could conceivably be earlier. These are described in numerical order below. In addition, there was dog burial [346].

- [260] This lies immediately to the south of the large E-W ditch 263. Its exposed length was 13.2m by 0.88m wide (though tapering towards the river to the west) and a maximum depth of 0.42m at its eastern end. Two segments were excavated [342 & 347]. The one adjacent to the eastern side was 1.5m long by 0.88m wide and 0.42m deep and contained a single fill (343). This consisted of a dark brown-grey sandy silt which contained 2 Anglo-Saxon sherds (45g). It also contained 2 fragments (4g) of animal bone. One was cattle and the second one rabbit, which may be intrusive (Rackham, this report). The second segment was [347] and lay about 9m to the west of the previous segment. It was 1.1m long by 0.44m wide 0.16m deep with a shallow v-shaped profile. It was filled by (348) which was a mid-dark brown sandy silt with small angular stones. Its contents were dry sieved through 10mm mesh. This yielded 1 (3g) piece of Anglo-Saxon pottery but nothing else.
- [275] This was situated at the southern end of the site and was one of two E-W ditches. It was 12.13 long by 2.05m wide and depth of 0.93 and its western extremity had been destroyed in 2006. Two segments were excavated [398 & 431]. The first segment was [398] (see Figs 6, 8.4 section 1051). It was 1.25m long by 2.0m wide and 0.95m deep and seems to divide as it proceeds in a westerly direction after segment 398. It appears to have cut an old land surface (412) but its south side looks as though it was partially destroyed by the 2006 flood alleviation works and modern material is represented by [413]. The segment contained four fills (404, 409-11). The primary fill (411) was a dark brown (Mun: 10 YR 3/3) gravelly, sandy silt some 0.1m deep. The secondary

fill was (410) which looks to slumping or possibly the result of a re-cut. It was a dark yellowish brown sandy silt (Mun. 10 YR 3/6) 0.1m wide and 0.45m deep. The tertiary fill was (409) which was a very dark greyish brown sandy slit (Mun. 10 YR 3/2) 0.3m thick . It contained a single sherd belonging to a Roman flanged bowl (83g) (Timby, this report) and 17 (762g) fragment of animal bone, all of which belonged to cattle (Rackham, this report). The upper fill (404) comprised a dark brown silty sand with very occasional small stone (Mun. 10 YR 3/3) 0.6m thick.

The second segment [436] was situated at the western extremity of ditch 275. It was 0.8m long by 0.95m and a depth of 0.35m. It contained a single fill (436) that consisted of a mid-orange brown sandy silt and was devoid of finds.

[286] This ditch was situated about 1m to the north of ditch 275. It was 6.65m long by 0.75m wide and 0.33m deep. Two segments were excavated across it [393 & 431]. The first segment lay towards its eastern side and was 1.1m long by 0.75m wide and 0.33m deep. It was filled by (392) which was a dark brown sandy silt (Mun 10 YR 3/3) and contained 2 Roman sherds (110g). The second segment (431) was 1.2m long by 0.8m wide and 0.22m deep and fill by (432). This consisted of a mid-orange brown sandy silt that contained 1 sherd (2g) of abraded flint tempered ware of prehistoric date.

[335] This was skeleton of a large dog that was buried in an oval pit 1.6m NE-SW by 0.9m [346] which was probably cut from much higher up. The skeleton (female) weighed 1900g and the animal was almost 1m in length (Rackham, archive catalogue) (Fig. 6; Plate 15).

Period VII Post-medieval

This was a pit that was located on the northern side of the site close to the northern baulk at NGR SU 84814-85257. It was 2.3m in diameter and 0.4m deep. It was filled by (259) which was a gritty yellowish mortary deposits containing brick, tile, occasional flint, chalk, clay, animal bone and ceramics. This was an isolated refuse dump of 19th century date (Whittingam, this report)

Scheduled Ancient Monument area

Period VI Medieval

The evidence for this phase was concentrated within the SAM area and principally, although not exclusively, within the area defined by the ancient moat. There were two discreet areas of archaeological evidence at the coach/car park and at the accommodation block.

The coach and car park

The evidence, including the undated features, consisted of a series of narrow features, most probably the lower fills of shallow enclosure ditches [114, 116, 119 & 121] and three post-holes [106, 108 & 110]. These were revealed during the 'strip, map and sample excavation' phase in May 2013 and lay on the northern side of the moated site,

beneath the coach park (Fig. 4). There was upto 0.75m of 'top-soil' over the top of the natural sub-soils [113]. The soil was a dark brown-grey from which four sherds (17g) of Medieval pottery was recovered. This also revealed fills on the inner edge of the moat [112] which will be described below under its own section. The features will be described in numerical order.

- [106] This was an isolated post-hole (c. 0.48m dia by 0.29m deep) located between the access road to its north and the tennis courts to its south. It was filled by (107) which was a mid-brown grey silty sand. It was half sectioned, but no finds were found.
- [108] A small post-hole (c. 0.3m dia by 0.14m deep) that was conjoined to a similar post-hole [110] to its north. It was filled by (109) which was a mid-brown grey sandy silt with occasional small stones. There were no finds.
- [110] This was a slightly ovoid post-hole being 0.23m wide by 0.3m long and 0.10m deep. It conjoined with [108] on its south side. Its fill (111) was exactly the same as its neighbour and also had no finds.
- [114] This was a narrow ditch or gully orientated WNW-ESE lying on the south side of the coach park area. Some 8m was exposed of which a 1.2m length was excavated (0.65 m wide by 0.24m deep). It contained a single (115) consisting of a mid-brown grey sandy silt, which was devoid of finds. This in turn was sealed by a mid-orange brown clayey silt 0.16m thick.
- [116] A short 5m length of a suspected ditch 0.88m wide and 0.32m deep and orientated NW-SE was exposed. A 1m length segment was excavated which was filled by (117) comprising a barren mid-purple brown silty clay which was overlain by (118) which is a mid-brown yellow clay. Both these fills were cut by [119].
- [119] This is a gully or trench slot lying on the northern side of the coach park on an E-W axis. A segment 1.55m long by 0.24m wide and 0.4m deep was excavated. It was filled by (120) which was a dark brown grey sandy silt that contained 2 sherds (50g) of Roman pottery. It cut [116] and therefore post-dates it.
- [121] In the extreme NE corner of the coach park a narrow ditch or gully was located. It was on the same axis as [114] and measured just over 10m by 0.5m wide and 0.2m deep. A 1m segment was excavated which was filled by (122) which was a mid-brown grey sandy silt devoid of finds.

Period VII Post-medieval

The moat

The moat at Bisham Abbey was remarkably large and had survived as a significant feature prior to 1976. It was essentially square in shape, though its northern side is longer due to the changed alignment of the river Thames (Fig.7). Its original measurements were broadly as follows: its northern WNW-ESE alignment was 360m long; its eastern ENE-WSW alignment was 300m and its southern ESE-WNW alignment was also c.290m long. Its western SSW-NNE boundary was composed of the river Thames which was c.270m in length. The moat therefore enclosed an area of approximately 9.26 ha (22.8 acres). Observations carried out in 2013 suggest that the moat was about 15m wide and 3m deep. On the side that faced the Thames, Lidar

survey undertaken by the Environment Agency suggests the presence of an artificial bank approximately 8m wide. Observations during retaining work in 1999 revealed that the ground beside the river had been artificially raised by at least 1m, with the terrain rising to the east (Hunn 1999).

Current description of moat

Measured from the edge of the Thames the water is 4.5m long to the footbridge and 11m to the end of the water inlet the moat is c. 150m long WNW-ESE to NGR SU 84752-85092. Its width is 12.5m and depth is 0.9m, with the ground higher on its northern side. There are trees and bushes concentrated on its southern side with Sycamore predominating with also Beech, Oak, Copper beech, Ash, conifers and various shrubs below, a Poplar tree, Laburnum and Prunus. On its northern side there are a variety of trees such as Sycamore, Mountain ash, Ash and Oak.

The section of the moat at Tithe Barn Cottage is at most 17m long, though only 15m if just the deepest part is measured (orientated WNW-ESE) at NGR SU 84625-84851. At this point the ditch is 9m wide with the outer bank higher than the inner side. Its depth (from lip to lip) is c. 1.3m (outer lip is estimated to be c. 1m higher. There is a hedge along the boundary with moderate landscaping with mature yew on its south side (0.5m diameter). The eastern end, ends abruptly on a wooden fence while beyond the ground has been filled in to about 1m depth.

Watching brief

During the 2013 phase of development within the scheduled ancient monument (SAM) there was one complete transect [74] and two partial cuts into the fills of the moat ditch [112], (Fig.7). These were on the north side of the coach park, one on the eastern side of the car park and an oblique cut joining the pavilion services. There were two other cuts at right angles to the ditch but these were regrettably not seen. Nevertheless, their comparatively shallow depth meant that they were of less significance than the oblique cut. There was also a large soakaway to the north of the pavilion which provided useful information. The character of the moat fills were as follows:

Coach Park

At approximately 106m from the surviving end of the existing moat a section c. 1m deep was dug 5.4m from the edge of the existing access road (i.e the one leading from entrance, off the Marlow Rd to the south east and Bisham Abbey) which overlies the back-filled moat. The fill appears to consist of demolition debris including 'hazard tape'. The sub-soil was observed at a distance of 3.6m out from the initial cut at NGR SU 84866-850101. The trench was extended and deepened in order to record the ditch section and take appropriate environmental samples. The trench was just over 4m wide at the top and c. 3m wide at its base and 3.2m deep just 1.2m south of the access road (Figs 7, 8.4 section 58; Plates 20-21). The edge of the moat on its south side is c.4.2m from the edge of the tarmac surface of the access road. The ditch was c. 2.9m below the present ground surface, but is likely to be deeper in the middle of the moat. The soil horizons in the SW-NE section were as follows: (31) topsoil; (32) re-deposited chalk; (33) dark yellow brown flinty clay containing tarmac, glass and modern security

tape; (34) black organic soil of probable old land surface; a fragment of Willow pattern porcelain sherd was noted; (35) very dark grey organic silt; (36) similar to the previous context but slightly darker; (37) a grey fine silt c. 80mm thick overlying context 38; (38) was an organic sandy silt, which at the time proved difficult to distinguish from the adjacent silt horizon into which the ditch had cut. It was originally thought to be the remains of an old palaeo-channel but in fact was clearly part of the moat on the northern side of the section. A C14 date for the lower fill [38] of the moat produced a date of Cal AD1655-95 (at 95% probability), (Beta-458763)

Car Park

In this area (NGR SU 84947-84940) ground reduction revealed a chalk spread which was most probably the top of the infilled moat (Plates 22-24). The western edge of this chalk fill was 13.3m from the wooden boundary fence beside Temple lane to the east. Some 43m to the south of the above location at NGR SU 84920-84907, the western edge was 16.6m from the edge of the wooden fence which in turn lies 1.2m from Temple lane to its east. Here the ground was reduced by about 0.5m from the surface of the existing tarmac. At NGR SU 84943-84928 the chalk fill was at least 9.5m wide. Here a service trench (0.4m wide by 0.7m deep) revealed a pink stone make-up 0.2m thick which overlay a mix of chalk and tarmac some 0.5m thick. Beyond the western edge of the chalk there was a further 5m of a dark greyish brown silty clay (Mun 10 YR 4/2) before the 'natural' brown sub-soil was reached. The author noted the presence of six service chambers of which at least four must have been built at the time of the construction of the main sports building in 2006.

The removal of several tree-stumps provided the opportunity for further observations. The first of these (4.8m by 3.2m and 1.2m deep) was located at NGR SU 84939-89926; that is some 15m east from the fence or 17.4m from the edge of the tarmac belonging to Temple lane and 30.3m south from the brick wall at the entrance to the carpark. A N-S gas pipe was noted 1.2m from the edge of the carpark on its eastern side, there was also a large water pipe 7.5m out from the carpark edge. A second, smaller stump was removed some 5m to the north of the first 'stump extraction' pit. This was c. 3.4m E-W and 2m wide and 1.3m deep. The gas pipe lay 6.9m from the fence and water pipe (200mm dia) was 12.5m from the fence to its west (Fig. 8.4 section 1059). At the above location the ground appears to have been truncated by as much as 1.2m. The section (Fig. 8.4. Section 1059) revealed the following sequence: (61) chalk fill with occasional fragments of tarmac; (62) this was a very dark brown organic horizon some 0.15m thick (Mun 10 YR 2/2) which becomes progressively thicker to the east; (63) very dark grey, sandy gravelly silt (Mun 10 YR 3/2). The top of the gravel lies at a depth of 1.3m down. In the eastern section there is the remains of an old iron fence *in situ* and an old tree stump within the edge of the moat. The 3rd pit lay 12m to the south of the above extraction pit and measured 1.5m x 2m x 1.2m deep. The 4th pit lay at 1.5m south of pit 1. It was 2.5m N-S x 1.6m x 0.9m deep.

To the south of the new pavilion an oblique cut [74] was made across the moat, near the security cabin and across the roundabout at NGR SU 84921-84976 (Fig. 7). Here the trench was 0.8m wide by 2.25m deep and the edge of the moat was delineated by the chalk back-fill which was 5.5m to the south from the southern edge of the access road. The trench was aligned NNW or 10° west off magnetic north. Water was present at a depth of 2m (and rising). At about 2m gravel is present and above that at c. 1.5m

there is a brown silty clay. The trench was filled with shingle and the gas pipe laid on it and shingle above. The top of the new pipe is 1.9m below current surface). At NGR SU 84810-85240 the following levels were noted:

1. Top of present day ground surface	29.45m AOD
2. Bottom of 'topsoil'/ top of 213	28.91m AOD
3. Sandy gravel horizon (newly reduced ground)	28.42m AOD
4. Base of moat	25.65m AOD
5. Edge of R. Thames	25.43m AOD

The moat segment [74] contained the following horizons at NGR SU 84916-84980 (Archive drawing no. 1061).

[74] Ditch segment 21.3m long x 0.8m wide and 2.25m deep aligned NW-SE. A machine-bucket cut was excavated in the centre of the moat to a depth of 3.5m to test the underlying strata. At this depth it hit heavy gravel. Water was ingressing at the bottom of the chalk. When allowances were made for the obliqueness of the trench the real width of the moat was almost exactly 15m wide. The trench cut through the subsoil (213) and the moat (Fig. 7) and topsoil on its south eastern side (75) 0.2m thick. The moat fills were sealed by tarmac and top dressing 10.4m wide x 0.15m thick (79). This rests on a spread of building rubble 0.3m thick which extends further to the northwest being in excess of 14.7m wide (76). This rests on the mid 1970's backfill (70) which consists of a dull white chalk with occasional building debris and tarmac some 1.7m thick by 20.7m wide. This rested on what was originally thought to be the primary fill (71) which was a soft, spongy, black organic layer (10 YR 2/1) between 0.4 and 0.5m thick. Two samples were taken <35> and <36>. A C14 date came out at Cal AD 1665-1780 (95% probability), (Beta – 458767). Below this was (72) comprising a grey silty alluvium c. 0.2m thick (though precise thickness uncertain) from which samples <33> and <34> were taken. The lowest deposit recorded was (73) which was a grey sandy gravel alluvium (samples <37> and <38>). A gas pipe trench (77) was visible 1m out from the northern edge of the access road; it was 0.5m wide x 0.8m deep with the gas pipe lying at a depth of 0.57m and aligned on an ESE axis (NGR SU 84907-84991). Another service trench cut the edge of the moat 1m north from the edge of the road; it was sealed beneath the rubble spread (76); it was 0.6m wide by at least 1.1m deep. At the time of recording the moat it was assumed that (71) was the primary fill. However, both (72 & 73) are also moat fills so that the final depth is assumed to be demarcated by the gravel at 3.5m down.

The pollen from the moat fills suggests that there was a comparatively low incidence of 'moats flora' and intestinal parasites which suggests that the moat had been kept clean. The surrounding vegetation was dominated by grasses with a strong representation of trees in the form of elm, oak, beech, walnut, spruce, ash, yew and lime (Scaife, this report; Plates 1-3).

New Accommodation Block

In June of 2013 the reduction of the ground was observed. The depth varies from c. 0.5m on the western side to c. 1.25m to the east beside the modern (2006) sports facility. Occasional

patches of old ploughsoil survive in the surrounding sections, otherwise there are occasional patches of sub-soil and disturbed ground. The formation level of the reduced ground (on which the piling mat sits) is 27.50m AOD. Subsequently to this, a series of pits were excavated around the individual piles. These varied between 3m x 1.7m, 2.5m x 4.2m and 1m sq. with all being c.1m deep (see archive sheets for their variability). The depth of subsoil exposed varies between 0.5m and 0.75m. The foundation pits extended along the whole axis of the building. Observations were hampered by the nature of the overlying hard core and associated dust, but there were no signs of any archaeological features being present.

Service trench

Observed a service trench on the west and northern sides of the accommodation building. It is 0.65m wide on its western side, towards the river, it was cut 0.4m into the natural sub-soil. On its northern side (along where the landscaped ground survives) it was c. 0.9m deep. The topsoil is c.0.3m thick and the trench cuts no more than 0.1m into the undisturbed sub-soil. On the southern run (dimensions as before) the ground is a combination of topsoil (0.25m thick) and a mix of redeposited dark soil and building debris; the subsoils were just visible in the lower 0.1m part of the trench. Nevertheless, prior to a final observation being made (20.6.13) the bottom of the trench had been obscured by sand so that its final character remains incomplete. However, the adjacent upcast revealed little of significance. Further to the south east a pit was observed (NGR SU 84791-84922) which was 2.3m wide by at least 1.4m deep (contexts 50-51; Plate 4). The fill (51) consisted of a dark greyish brown plastic fine clay (Mun: 10 YR 4/2) containing charcoal, burnt flint and pottery (a 30 litre bulk sample was taken <8>). Twenty sherds (0.560g) of 13th/14th pottery were recovered (Whittingham, this report). The fill contained charred plant remains of mainly free-threshing wheats with only small amounts of rye, barely and oats present (Giorgi, this report).

Percolation pits

Three percolation test-pits were excavated in the area of the Scheduled Ancient Monument in the following locations:

1.

Location: NGR SU 84926-84960

Dimensions: c. 1.9m sq x 1.45m deep

Description: Topsoil is c. 0.35m thick overlying a pink Type 2 aggregate c. 0.5m thick. Beneath this is a brown, silty subsoil with a greyish upper layer, which appears to be modern in character.

2.

Location: NGR SU 84794-84959

Dimensions: c. 2m sq. x 1.5m deep

Description: Modern rubble/disturbance 1m thick down onto the natural brown sub-soil. This was later extended to west becoming 2.5m sq and c. 3m deep. Below 2m deep becomes very gravelly with gravelly alluvium present.

3.

Location: NGR SU 84766-84933

Dimensions: 1.7m x 1m x c. 1.5m deep

Description: The brown sub-soil is situated at a depth of 0.62m.

Soakaway pits for the accommodation block

The trenches were excavated using a mechanical excavator fitted with a 2.1m wide toothless ditching bucket, operating under continuous archaeological supervision. Each trench was 8m

square and c.2m deep and detailed information regarding the trenches and their contents is provided in Appendix 1 of the evaluation report (Hunn 2014).

Trench 1

The trench was located at NGR SU 84775-84955 (centre) whose base was at 26.55m AOD. The upper part of the trench profile comprised a deposit of modern crushed building material (100). This was 0.6m deep and is interpreted as a modern make-up layer. A layer of brown silty alluvium (200) was present beneath. This is interpreted as natural stratum and was 1.2m thick. The underlying deposit comprised natural sandy gravel (102) which lay at a depth of c.2m.

Trench 2

The trench was located at NGR SU 84789-84929 (centre) whose base was 22.60m AOD. The upper profile of this trench was similar to that of Trench 1 and comprised a 0.6m thick deposit of modern crushed building material (200). A linear feature [202] was present in the east half of the trench. It was 5m long, 0.35m wide and 0.1m deep and was filled with a deposit of dark brown silty clay with flecks of charcoal (204). This is interpreted as a modern feature, perhaps an earlier building footing and is not archaeologically significant. A deposit of brown silty alluvium (201) was present beneath the modern material. This was of similar character and depth to the alluvium present in Trench 1 and is interpreted as natural stratum. The underlying natural gravel (203) was observed at a depth of 2m.

Trench 3

The centre of the trench was at NGR SU 84788-84928 at 26.6m AOD at its base. The upper part of the trench profile was similar to that observed in Trenches 1 and 2 and comprised a 0.6m thick deposit of modern building material (300). This material was disturbed by tree root action, modern service runs and a modern square pit was present at the southwest corner of the trench. The underlying material comprised brown silty alluvium (301), which was present at a depth of c.0.6m. The presence of service runs and root action prevented further observation of this alluvial deposit and the underlying natural gravel.

None of the 'trenches' (amounting to 192 sq. m) contained any archaeological features or artefacts noted.

Area outside the Scheduled Ancient Monument

Pavilion

The area was reduced to just below topsoil depth to c. 0.5m which exposed a mix of dark soil and indistinguishable sub-soils. Rubble hard-core 0.35m thick was overlain on this surface and then piled. Most, but not all were then excavated in an area 1.5m x 1m down to a depth of 0.75m; this exposed an average of 0.4m of sub-soil. No apparent features were observed.

Soakaway for the pavilion

This was situated 18m to the north of the new pavilion (to its eastern edge) and 7.2m from the existing access road between Marlow Rd and Bisham Abbey (on its southern edge) at NGR SU 84901-85020. It measured 6.3m N-S by 6.4m E-W and 1.8m deep (see Fig. 4). The soakaway was mechanically excavated during a damp November and though the various 'spits' were observed it is the SW-NE section which tells the story (Fig. 8.4 section 1062). The contexts [80-88] were as follows:

- [80] Cut of ditch
- (81) Very dark greyish brown topsoil (Mun: 10 YR 3/2) 0.3m thick
- (82) Dark greyish brown sandy, loose soil (Mun: 10 YR 4/2) 0.3m thick
- (83) Grey, red and yellow crushed brick and mortar 'trackway' 2m wide and 0.1m thick of which 6.4m was exposed before removal.
- (84) Brown sandy clay with occasional pebbles and chalk (Mun: 10 YR 4/3) 6.4m long x 3.5m wide and 0.6m thick.
- (85) Dark greyish brown sandy clay (Mun: 10 YR 4/2) 6.4m long x 1.1m+ and 0.8m+. Upper fill of [80]
- (86) Dark yellowish brown sandy silt (Mun: 10 YR 4/4) 0.8m thick containing debitage and fire cracked flints.
- (87) Dark brown fine compacted silt (Mun: 7.5 YR 3/2) 150mm to 170 thick below layer 86.
- (88) Yellowish brown silty clay (Mun: 10 YR 5/4) overlying sandy gravel c. 0.1m thick. The 'natural' gravels lie at a depth of 1.9m.

Although a pollen column sample was taken through contexts (86 & 870 this was not studied due to the absence of suitable dating material (Scaife, this report).

Muga pitch

The new pitch began to be cleared in mid-July 2013 (Fig. 5). Below the grass area a general scatter of fire fractured flint and occasional struck flint were observed, including a few small fragments of pottery. Two test pits were dug: one at NGR SU 84827-85094 was 2.1m x 3m where the natural subsoil was observed at 0.6m but on its western side at 1.2m depth. The second test pit was excavated at NGR SU 84875-85111 and measured c.2.1m sq.x 2m deep where an edge of a straight edged feature was observed. The overall depth of topsoil is about 0.5m thick but the realistic visibility is of the order of 1m due to the sandy character of the soil. A further four trial trenches were excavated to decide on the practicalities of using a bulldozer (D6). These were recorded on trench record sheets and were as follows (NB a depth of between 100 – 150mm had already been removed prior to the test trenches being dug):

Trench 1

Location: This was situated on the western edge of the Muga at NGR SU 84774-85114
Dimensions: 3.3m E-W x 2.1m x 0.5m
Description: Upper half of the soil profile is a dark brown sandy loam (Mun 10 YR 3/3). Below this the horizon merges imperceptively into a dark brown stoneless sandy silt, albeit slightly lighter. A hand dug 'sondage' showed that it was over 0.6m thick and continuing.

Trench 2

Location: NGR SU 84807-85103
Dimensions: 2.8m E-W x 2.1m x 0.65m deep
Description: The upper horizon consists of a dark brown sandy silt; beneath this a paler horizon with much chalk inclusions, tile and even coal (Mun: 10 YR 4/3). The lower 0.2m is a brown silty sand which was interpreted as 'natural'.

Trench 3

Location: This lies on the eastern side of the Muga pitch at NGR SU 84883-85069.

Dimensions: 3m N-S x 2.1m x c. 0.6m deep

Description: The upper 0.15m has already been removed and the remaining 0.4m consisted of a brown sandy loam of which the upper half is a 'plough soil' while the remaining half below is also mixed in character passing down to a stoneless dark brown c. 0.22m thick. The base of the trench is a dark yellowish brown sand (Mun: 10 YR 4/4).

Trench 4

Location: NGR SU 84849-85080

Dimensions: 3.3m N-S x 2.1m x c. 1m deep

Description: The upper 0.35m (from surface of reduced level) is a dark brown sandy loam. Beneath this is a yellowish brown sandy silt c. 0.3m thick. Below this is the natural sandy silt of which 0.2 to 0.25m was exposed. At the base of the test trench there was a possible E-W linear feature filled by a brown sandy silt fill (Mun: 10 YR 4/3). A small sondage on the west side of the trench revealed that on its north side it is relatively indistinct so that it may represent the side of an old gravel pit which was only visible at a depth of c. 1m.

[243]

A second almost square chalk spread was observed on the eastern side of the Muga pitch at NGR SU 84869-85068. It was c. 2.5m E-W by 2m N-S. It consisted of a sandy grey, chalky matrix with occasional flints, tile, oyster shell and fragment of an iron horse shoe, found at formation level (244).

[245]

On the eastern side of the Muga pitch, some 5m from its western edge at NGR SU 84879-85073 a chalk and flint feature was observed. It lay 0.1m below the surface and was 11m long by 0.15m thick. Occasional tile fragments were noted. Here the drainage run was 220mm wide and 440mm deep along the side.

[249]

This lay on the western side of the the Muga pitch and consisted of a chalk deposits 1.7m long x 0.1m thick. It lay at a depth of 0.35m and was tentatively interpreted as 'levelling'.

[250]

A sharply defined block of chalk and flint was observed on the eastern side of the Muga pitch. It was 0.46m wide and lay at a depth of 220mm below formation level. This is a possible wall footing.

[251]

This was situated 7m to the west from the present day entrance to the site at NGR SU 84804-85076 This was a chalky spread some 3.3m wide and lying at a depth of 0.35m. Possible ground levelling?

[252]

A chalk spread was observed 8m from the SE corner of the Muga pitch at NGR SU 84863-85055 it was 2m long and 0.2m thick and lay beneath 0.15m of topsoil. As its presence was observed in a service run its width or length was not determined.

[253]

An isolated chalky spread lying on the south side of the Muga at NGR SU 84826-85090. It was 3m wide and 0.15m thick and lay 100mm below formation level in the 6th drainage run

[254]

A chalky spread on the eastern side of the Muga at NGR SU 84870-85074. It was at least 3m wide and 0.2m thick and 0.15m below the formation level and exposed in a drainage/service run.

[255]

A chalky spread located on the south (middle) side of the Muga at NGR SU 84824-85078. It was between 2.3m and 3m wide and 100mm thick and situated 0.2m below the formation level in the 7th drainage run.

[unlabelled]

At NGR SU 84801-85156 there was a notable concentration of fist sized flints. This was some 8m in length and lay at a depth of 0.42m below formation level.

Desso pitch

In July 2013 the ground was initially reduced by 300mm but later to 400mm depth. Below this, scatters of fire cracked flint became visible. Much of the ground in the central area appears to sit on a natural sub-soil. However, this area is more 'earthy' in character. An area 8m x 9m was stripped down a further 0.15m and a 10m x 2.1m strip undertaken 12m to the west of this (NGR SU 07885-40217 to SU 07875-241826) in order to improve the 'visibility' of the underlying soils. The main result was the identification of a N-S ditch [239] (see below):

[238]

On the edge of the Desso pitch and extending towards the Muga pitch an area of chalk was observed [238] at NGR SU 84822-85152. It extends across an area c. 6m E-W by 3.5m N-S. later in section it showed as being 2.4m wide and c. 280mm thick with a dump like formation. The chalk was composed of fist-sized fragments and remained unexcavated. This pitch was walked (as was the Muga) in 5m transects. It would appear that there was a decline in the presence of fire-cracked flints about 25m from the eastern edge of the pitch. Whether this was because these deposits were overlain by thicker soils is hard to say.

[239]

(Figs 5, 8.3 section 1019; Plate 17)

This was located at NGR SU 84843-85184 and was revealed as a 10m long linear when the machine reduced the ground by 0.4m below the formation layer. It proved to be a u-shaped ditch aligned N-S where it cut into the natural gravels. It was masked by (240) which was a very dark grey sandy silt (Mun: 10 YR 3/1) some 3.5m wide which also was the top fill of the ditch. From this layer came the occasional flint, 3 sherds (65g) of pottery and 1 (313g) of animal bone. The ditch was 2.8m wide and 1.1m deep and contained two principal fills (241-2). The upper 0.43m was reduced by machine and the lower 0.6m (by 0.8m wide) manually excavated. The upper fill (241) was approximately 2m wide and 0.4m deep which represented the majority of the ditch fill. The fill was a dark greyish brown (Mun: 10 YR 4/3) to brown

(Mun: 10 YR 4/3) sandy silt. It contained 6 (13g) of pottery and a 20 litre sample (< 26>) was obtained. This contained mainly wheat but also an appreciable quantity of rye and oats which is indicative of a post-Roman date (Giorgi, this report). The lower half of the ditch fill was (242). This was about 0.4m thick and consisted of a dark greyish brown sandy silt (Mun: 10 YR 4/2) with gravel inclusions at its base. It contained 4 sherds (48g) of pottery but no animal bone. A 20 litre sample <27> yielded wheat, oats, barley and rye (*ibid.*). A C14 sample was obtained (Beta-.....) which dated it to the Saxo-Norman period (11th/12th century AD)

Water pipe

A large water pipe trench (c.0.6m wide and 0.8m deep) was observed lying on a NNE-SSW axis between the football pitches and the green sward to the east. The pipe was laid at a depth of 0.6m and six measurements were recorded from individual locations between NGR SU 84908-85131 and NGR SU 84931-85205. The topsoil varied between 0.24m and 0.35m thick; the sub-soil [213] varied between 0.23m and 0.25m thick. The natural gravel horizon was located between a depth of 0.57m and 0.65m. No features or artefacts were observed. Elsewhere at NGR SU 84933-85229 the gravelly sub-soil lay at a depth of 0.42m. Midway along the trench the sandy gravel is 0.7m down, though closer to 0.6m in places. At NGR SU 84941-85253 the natural gravel lies at a depth of 0.55m. Here the topsoil is 0.25m thick and subsoil 0.3m thick.

Drainage runs

The drainage runs are c.300-350mm deep and the irrigation runs c. 250mm deep (each is 220mm wide). On the north side of the Desso pitch the irrigation trench is c. 0.45m wide and 0.6m deep (E-W). On the south side of the Desso pitch (adjacent to the Muga pitch) the E-W drain is 0.5m deep and 0.22m wide.

Grass pitch

Work here was restricted to levelling and improving drainage in September of 2013 (Fig. 5). The dimensions of the drains were 140mm wide by 600mm deep (though the majority were between 500 and 550mm). The irrigation runs were 400mm deep. Nothing was observed during the creation of the secondary drainage runs as these were only 70mm wide by 250mm deep. Nevertheless, seven burnt flint features or possible features and one none flint feature were identified during the course of the drainage works [442-449] and these are described in numerical order (fewer digital images were taken due to the restricted width of the drainage runs):

[442]

Towards the north side of the pitch a shallow saucer shaped pit containing fire cracked flint was located at NGR SU 84889-85264. This was 1m wide by 0.3m high (i.e 0.3m below ground surface.)

[443]

In the northern half of the grass pitch a spread of fire cracked flint some 8m in extent and at a depth of 0.6m at NGR SU 84869-85259.

[444]

In the middle of the pitch close to [445] at NGR SU 84872-85243 an area of fire cracked flint c. 1.2m wide and 0.2m thick and lying at a depth of 0.3m (Archive images 5053-4).

[445]

A short distance to the north of [444] there was another area of fire cracked flint at NGR SU 84872-85245. It was 1.1m wide by 0.2m thick and lay at a depth of 0.35m. It had been cut by an earlier drainage run (Archive image 5059).

[446]

Strictly speaking this lies within the Desso pitch but during the ground works the division between the two pitches was often blurred. This lay at NGR SU 84864-85206 and was recorded as a possible 'burnt flint' pit. It lay at a depth of 0.3m and was 0.6m wide and 80mm thick.

[447]

An area of fire cracked flint was observed in the southern half of the grass pitch at NGR SU 84857-85233. It was 1.2m wide x 0.2m thick and was seen at a depth of 0.3m (Archive images 5069-70).

[448]

Towards the NW corner of the grass pitch at NGR SU 84853-85291 a possible fire pit was seen in a shallow drain (too shallow to obtain clear dimensions).

[449]

A possible chalk filled pit/depression was observed on the northern periphery of the grass pitch at NGR SU 84909-85269. It was c. 1m wide and 0.3m thick.

Gas pipe

The location of 350mm diameter pipe line was not known apart from where it emerged on the north side of the grounds of Bisham Abbey. Accordingly a series of test trenches were excavated in order to ascertain its location. The course of this will be described (below) for future management purposes. One of these trial trenches was located at the NW corner of the grass pitch (Fig. 5). This was situated at NGR SU 84850-85302 and was orientated ESE-WNW and was 21m long by 1.6m wide with a depth that varied between 0.8m and 1m. The topsoil was 0.5m thick and subsoil 0.3m thick. Sand and gravel was located at a depth of 0.8m. Some 6m from its eastern end a pit was located [256]. The gas main was located 16.35m to its west.

[256]

This was a bowl shaped pit located NGR SU 84859-852297. It was cut into the natural subsoil and had a diameter of 0.55m and original depth of 0.25m (but machine truncated to 0.15m deep). It was filled by (257) which was a very dark grey sandy silt (Mun: 10 YR 3/1) containing some flint debitage. A 10 litre sample (from half section) was obtained <28> which was then regrettably not processed and so remains undated.

Course of the gas pipe

At the western end of the above trench the gas pipe was located at NGR SU 84845-85007. That is, 33.2m due south from the boundary fence of the rectory besides Bisham church. The pipe line runs between the football pitches and the flood alleviation area. It is situated 7.5m to the west of the Desso pitch where it is orientated 20° north. There is an avenue of trees (mainly horse chestnuts) 6.2m to the west. For approximately 30m the ground has been reduced on its western side. The GPS reading was as follows: NGR SU 84803-85199 at the

south to NGR SU 84837-85285 (north) where it starts to curve round to the east. The width of the trench is 0.8m. It lies at an average depth of 700mm though this can vary between 660mm and 800mm.

Note on 2006 excavation

The earlier flood alleviation area was approximately triple the size of the 2013 excavation and is illustrated on Fig. 7. The spoil from this work was retained within the grounds of Bisham Abbey being placed along the northern boundary of the grounds. No record exists of this work.



Plate 1: Burnt pit [203] half sectioned



Plate 2: Burnt flint pit [210] newly exposed looking ENE



Plate 3: Burnt flint pits [211 & 216] looking north



Plate 4: Burnt flint pit [203] view north



Plate 5: Burnt flint pit [212] looking north



Plate 6: Burnt flint pit [219] looking west



Plate 7: Burnt flint pit [220] looking east



Plate 8: Burnt flint pit [210] looking north west



Plate 9: Burnt flint pit [227] view north



Plate 10: Burnt flint pit [209] view south west



Plate 11: View south across flood alleviation excavation area



Plate 12: South facing section (1026) across quarry [270]



Plate 13: Ditch sections across [261, 262, 264 & 265] (Section 1027)



Plate 14: Section 1021 across ditch [336]



Plate 15: Dog skeleton 335



Plate 16: Ditch segment 391 of ditch [263] (Section 1046) looking east



Plate 17: Ditch [239] view NW



Plate 18: Section 1052 across former sand quarry [266] Segment 413



Plate 19: Detail of pit [50] looking east



Plate 20: Moat section at NGR SU 84852-85019 east facing



Plate 21: Detail of lower moat fills in coach park



Plate 22: Moat segment [74] at SU 84921-84976



Plate 23: Chalk filled moat on east side of SAM looking south



Plate 24: West facing section of moat at NGR SU 84939-89926



Plate 25: Westernmost SE-NW section across pavilion soakaway



Plate 26: Silver groat of Henry VI (1422-23) 20mm diameter



Plate 27: 13th / 14th century pottery from fill of pit [50]



Plate 28: Anglo-Saxon pottery from 279 (left) and 301 (right)



Plate 29: Ceramics from pit [256]



Plate 30: Cu alloy jetton (1586-1655) 23mm



Plate 31 : Aerial view taken 23rd August 1945 (© Historic England. Lib. No. 3552)

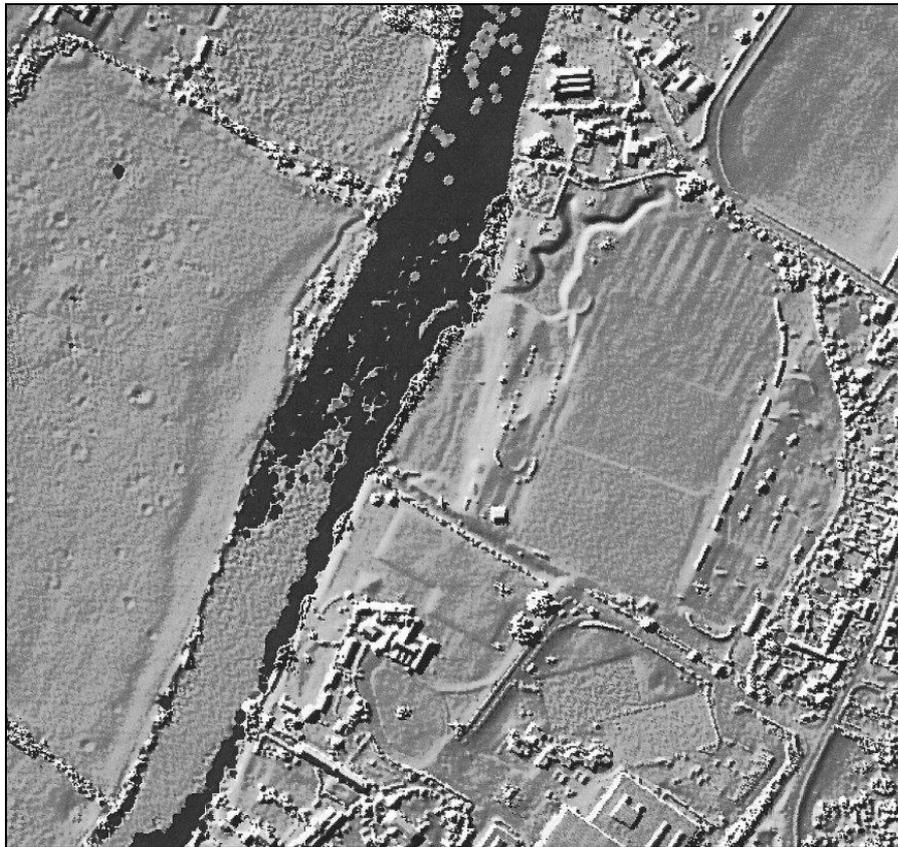


Plate 32: Lidar survey of c. 2010 © Environmental Agency
(<https://houseprices.io/lab/lidar/map>)

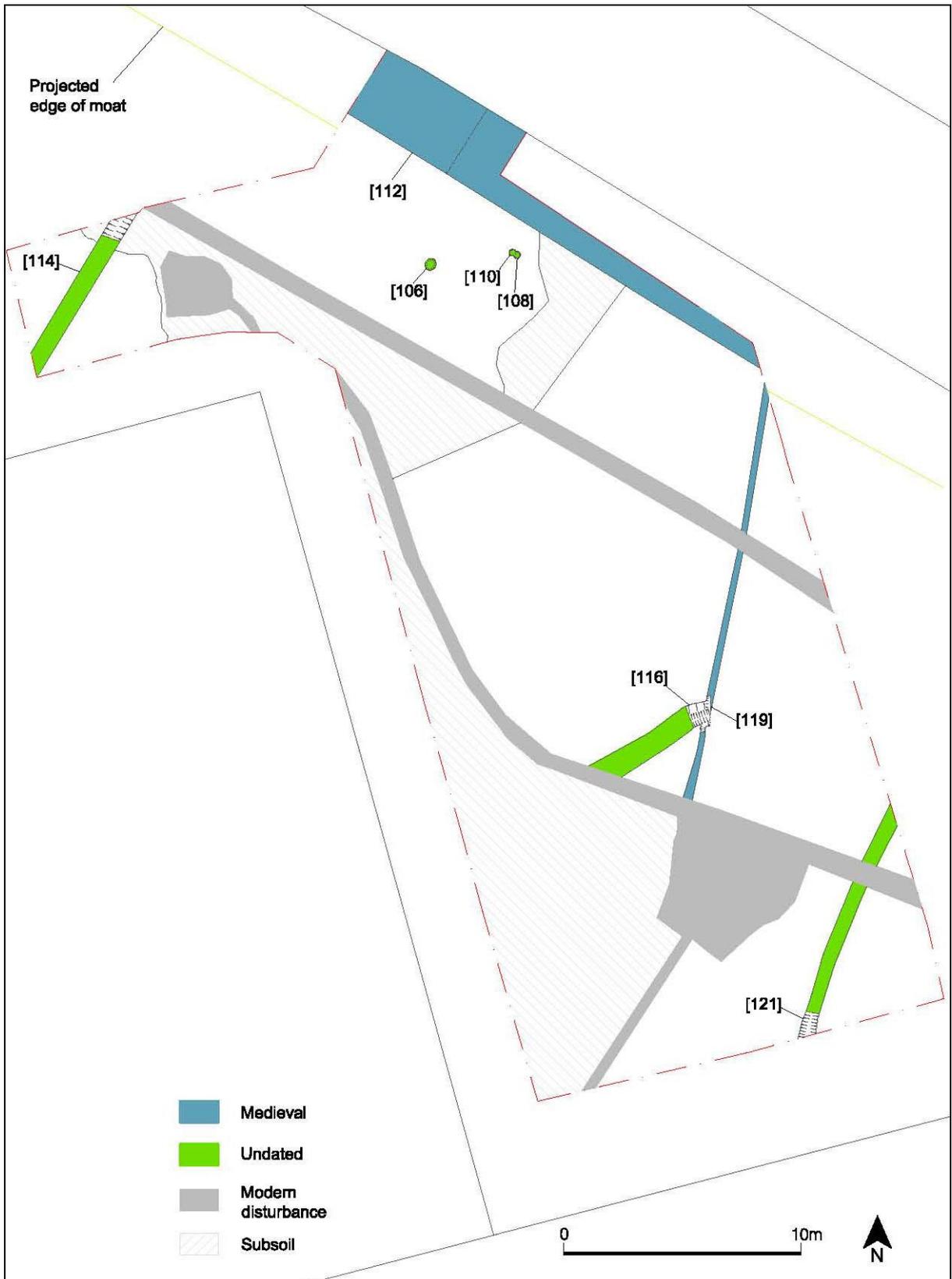


Figure 4: Plan of coach park area (scale 1:250)

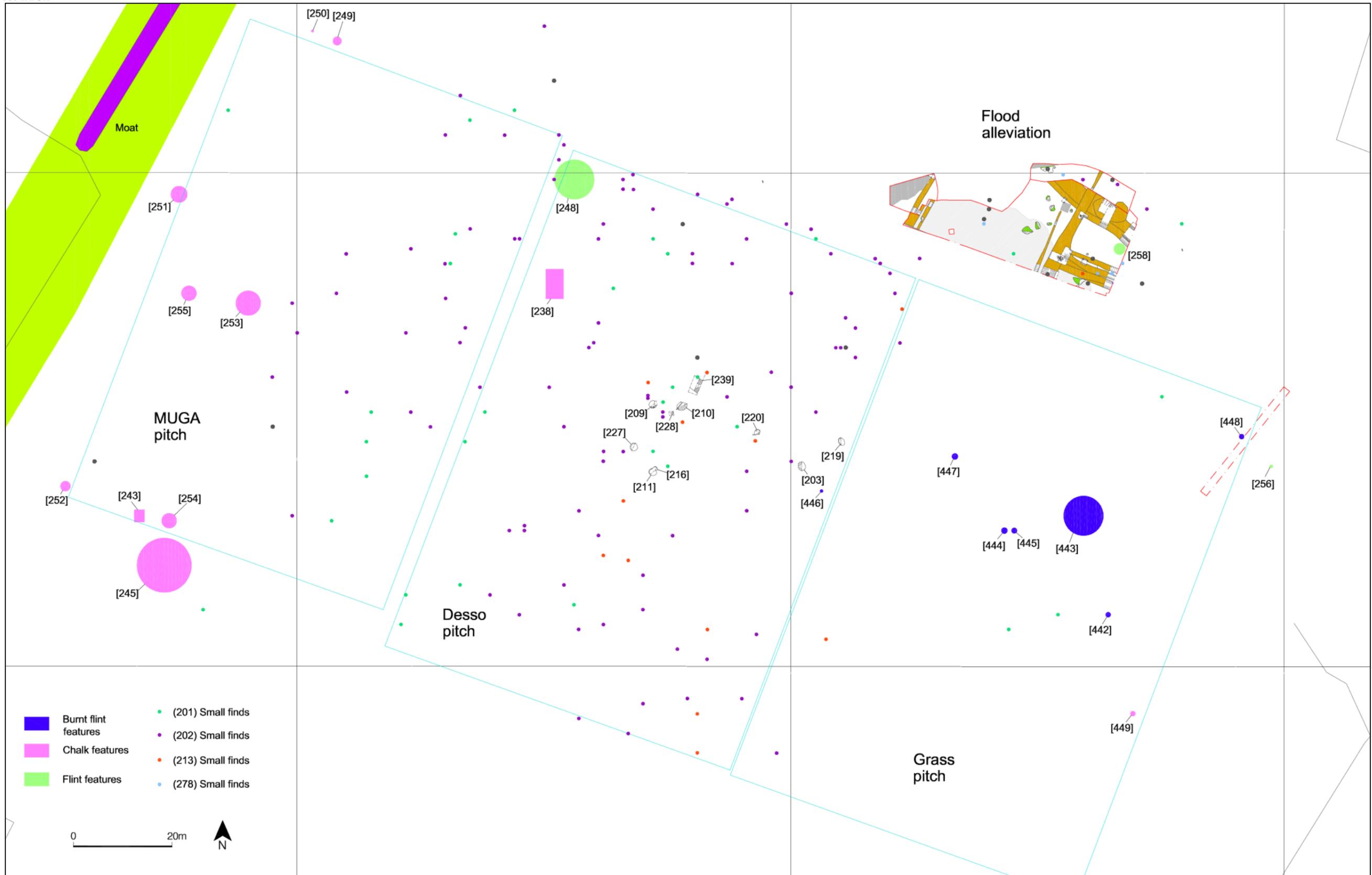


Figure 5: Plan of the archaeology of the football pitches (scale 1:750)



Figure 6: Plan of archaeology of the flood compensation area (scale 1:150)



Figure 7: Plan of the moat around Bisham Abbey (scale 1:2000)

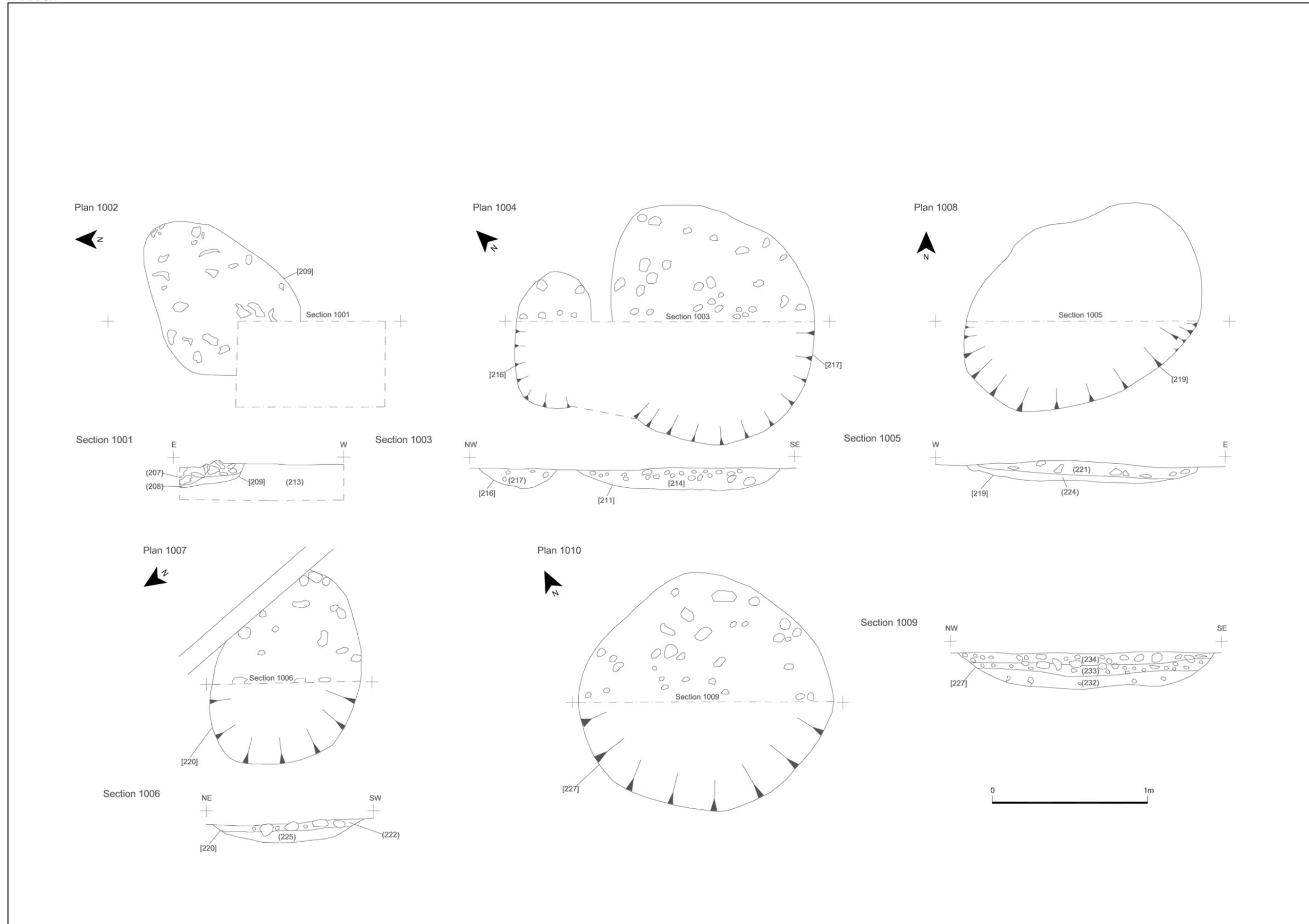


Figure 8.1: Section drawings

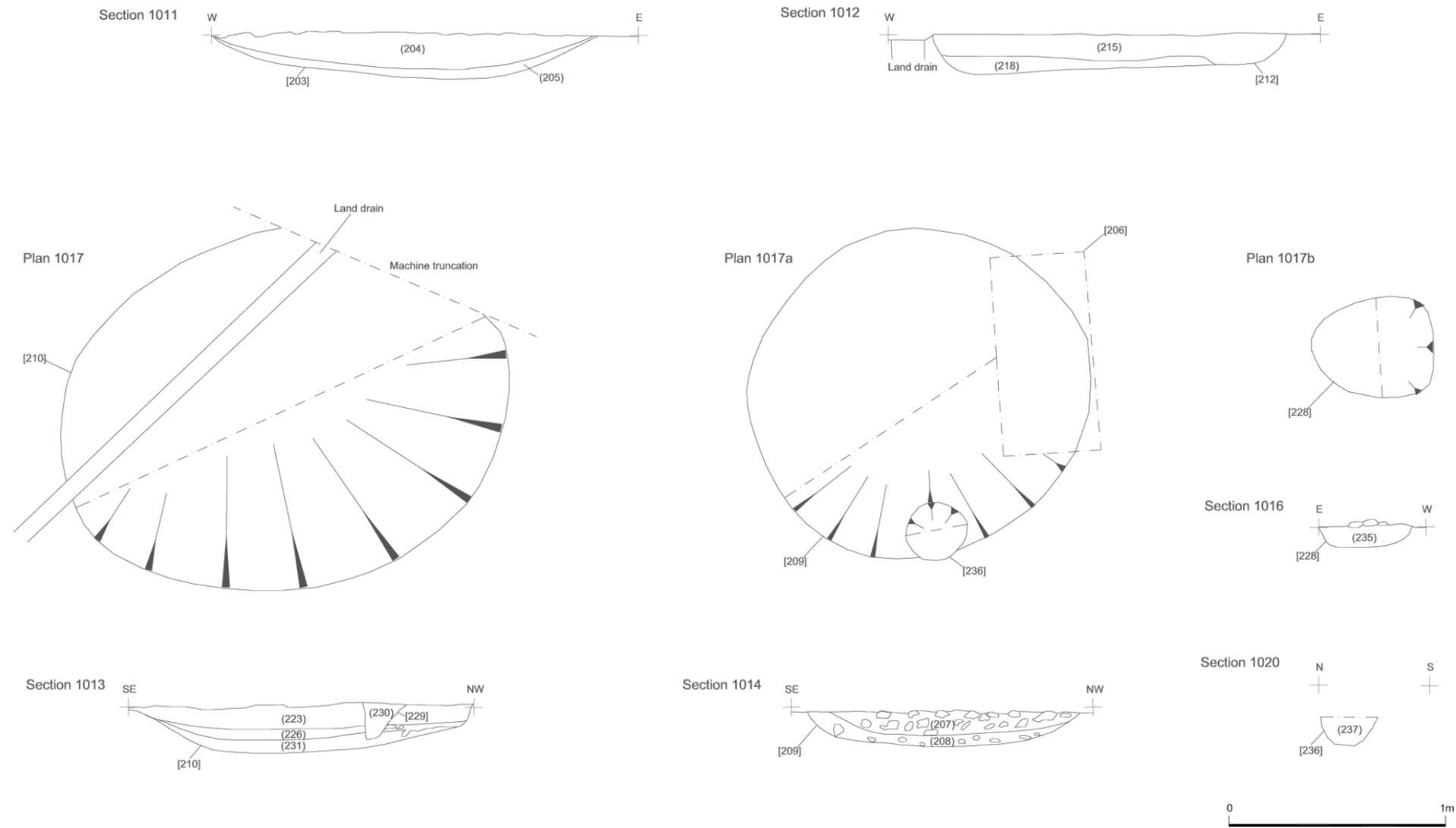


Figure 8.2: Section drawings

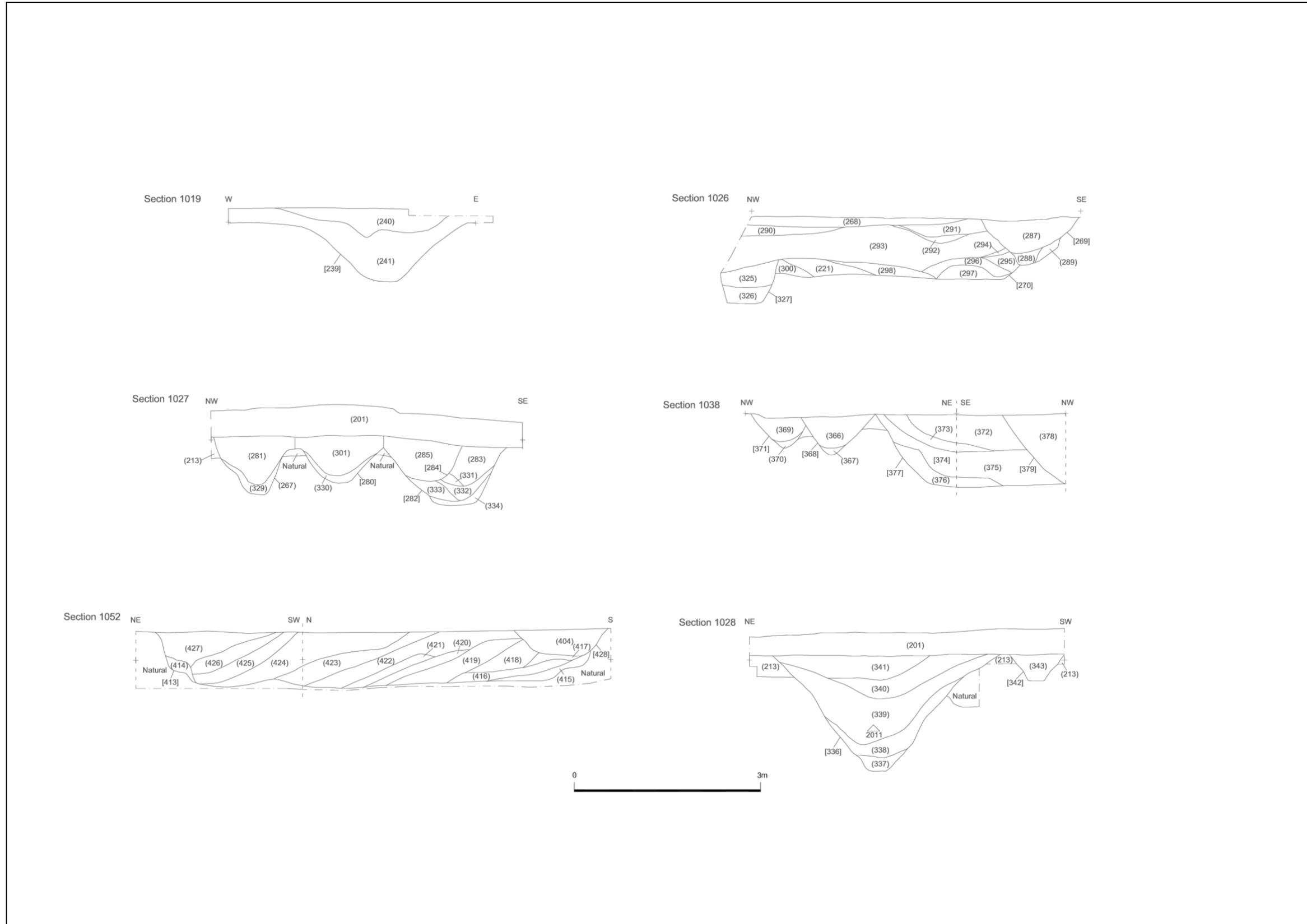


Figure 8.3: Section drawings

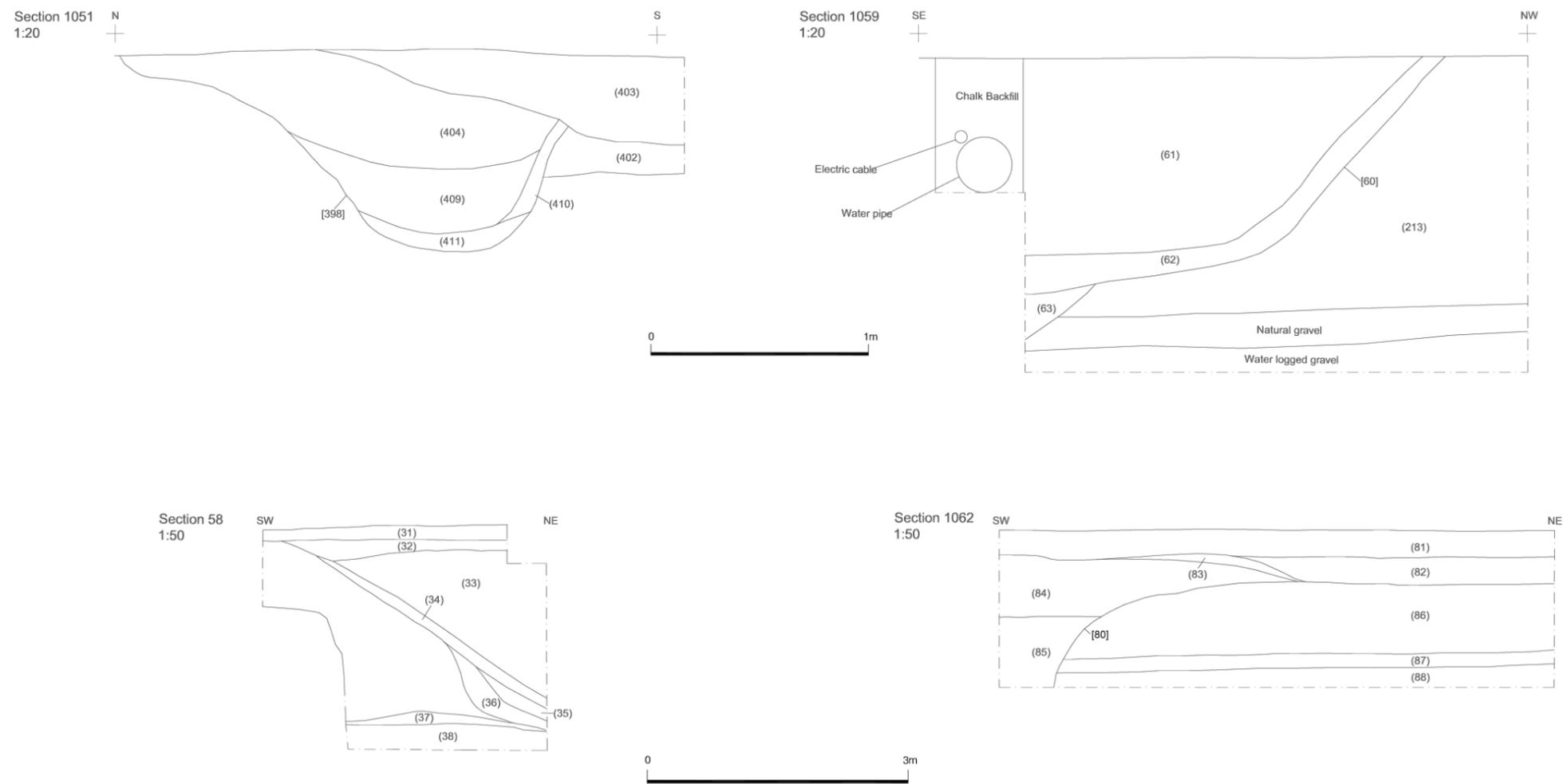


Figure 8.4: Section drawings

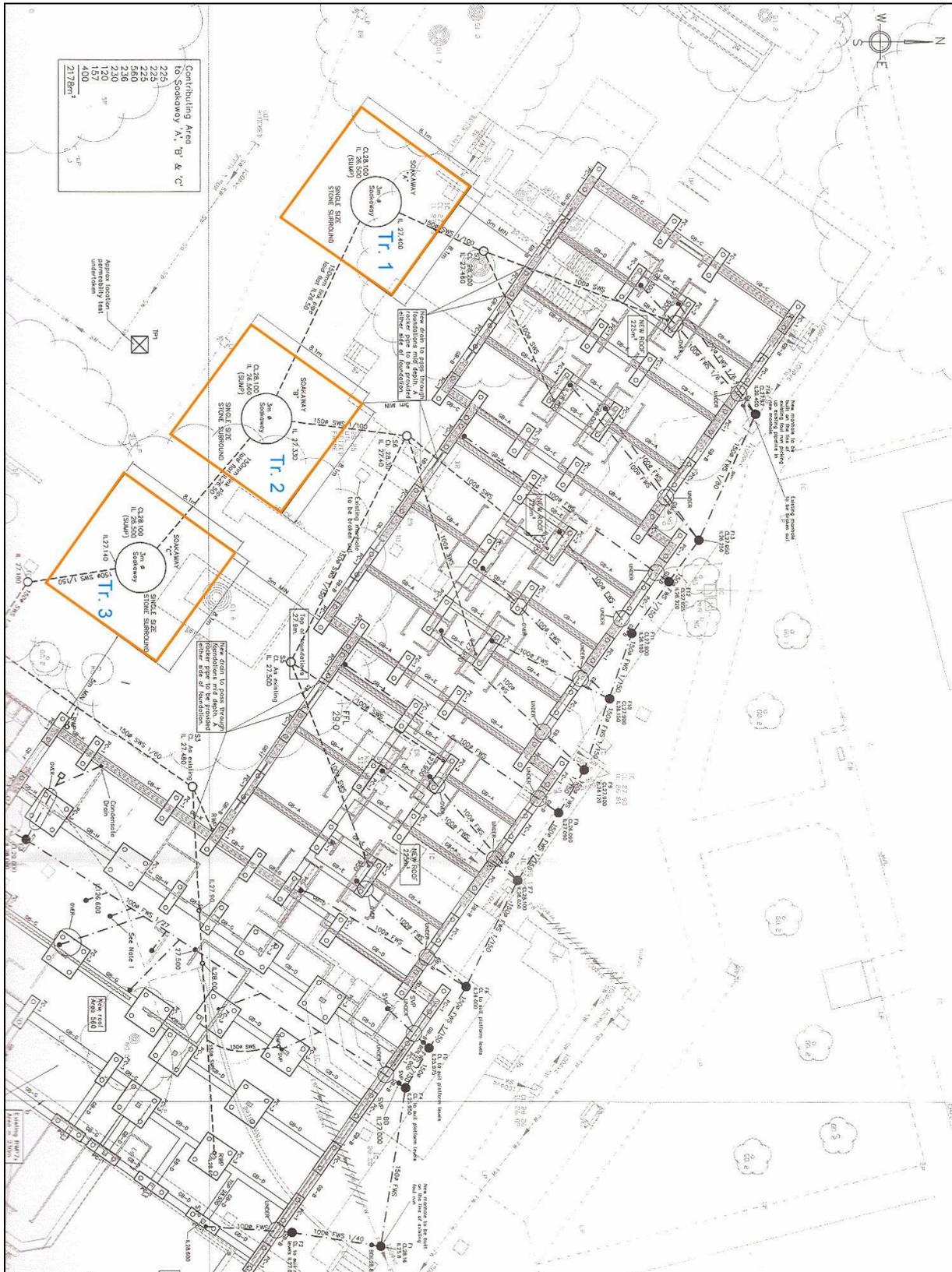


Figure 9: Plan of the three soakaways to south of accommodation block

5. Artefact Reports

5.1 The Struck Flint by Jim Rylatt

Introduction

A total of 314 pieces of struck flint, weighing 3381.7g, were recovered during a programme of archaeological fieldwork at Bisham Abbey National Sports Centre (Table 1). The fieldwork also retrieved 27 fragments of unworked burnt flint, the remnants of several heat shattered pebbles, with a total weight of 461.9g. The majority of the struck flint consists of unmodified flake debitage (269 pieces – 85.7%) and fragments of irregular waste (26 pieces – 8.3%). The assemblage is a palimpsest resulting from millennia of activity on and around the site. A significant component of the collection is the product of Mesolithic and Early Neolithic lithic industries. Two arrowheads provide diagnostic evidence of a human presence during the Middle and Late Neolithic, while recurrent morphological traits observable on at least half of the artefacts are broadly indicative of Late Neolithic and earlier Bronze Age core reduction strategies.

Methodology

All of the artefacts were physically examined and the attributes of each piece were recorded and compiled to form a digital archive. Macroscopic analysis determined position in the reduction sequence and any observable characteristics of the reduction technology, together with an assessment of the functional potential of the different elements of the assemblage. The catalogue also records the presence of patination, cortex, and whether any piece has been burnt. Metrical data was recorded for complete flakes, and each piece was weighed. Selected artefacts were examined with x6 and x20 hand-lenses to determine whether there was any evidence for localised modifications that are indicative of use.

Description of the Assemblage

Raw materials

All of the lithic tools and associated debitage were manufactured from flint. A large proportion of the assemblage consists of flint with a grey opaque matrix (194 pieces – 61.8%), much of which is mottled. Variations within some of the larger pieces demonstrate that opaque and semi-translucent flint could be derived from the same nodules.

Areas of cortical surface are preserved on 152 pieces (48.4%). This cortex is predominantly mid-brown to greyish-brown in colour, with a very thin solid matrix that has pitted and abraded surfaces, and a regular, rounded profile indicative of the pebbles and cobbles that form river terrace deposits. The characteristics of the unworked burnt flint are also typical of material from gravel beds. The site is on the floodplain of the Thames and is overlain by the Shepperton Gravel Member, which is characterised as river terrace deposits of sandy gravel (BGS 2005). It is, therefore, probable that the majority of the raw materials were obtained directly from the site or from its immediate environs. Collection of flint is likely to have been an expedient process, which focussed upon localised exposures resulting from river bank erosion, or material uncovered in tree-throw holes.

A few cortical pieces have weathered, undulating cortex between 1mm and 2mm in thickness, which is characteristic of rolled nodules and nodule fragments. This material may have formed a minor component of the Shepperton Gravel or it may have been imported onto site, possibly in the form of larger nodules obtained from Clay-with-Flints outcrops on the chalk Downs, which were used to manufacture core tools, such as the tranchet adze recovered from (450) (Holgate 2003) (Fig. 1).

The earliest elements of Bisham Abbey date to the 13th century and are largely built with chalk blocks, but the walls of the solar block and some of the walling at the western end of these medieval structures are faced with chequer-patterned diaper work consisting of alternate panels of chalk and roughly knapped flint nodules (Ditchfield and Page 1923). The flint used in these walls is predominantly mid- to dark-grey opaque and the uniformity of the nodules suggests that they were obtained from seams of flint exposed during the quarrying of the chalk blocks. These flint nodules are darker than the vast majority of the flint in the archaeological assemblage, suggesting that it is unlikely that there are any mediaeval dressing flakes in the collection.

Context	Tranchet adze	Chisel arrowhead	Oblique arrowhead	Burin	End & side scraper	End scraper	Possible scraper	Retouched piece	Possible retouched flake	Utilised blade-like flake	Core	Core rejuvenation flake	Blade/bladeler	Blade-like flake	Flake	Janus flake	Irregular waste	Unworked burnt flint	Total
86						1					1				7			25	34
201				1		1					1		1	1	26		3		35
202		1	1		1	1	1	1	1		3	5	10	86	1	1	9		120
206													3	3	41		2		1
213																			49
214											1				2				1
234															1				2
241															1				1
242															2				2
268															2				2
276												1	1	3	3				5
277												1	1		1				1
278												1	1	3	1				2
279										1		2	2	3	1				7
281															1				1
290															1				1
311															5				5
322													2				1		3
323															4				4
338													1	1	1				2
339											1	1	1	10	10				13
340													1		3		1		1
341												1			3				4
343																	2		2
372															1				1
380													1						1
384															3				3
389													1	1	1				2
392															3		1		4
401													1	7	7		5	2	15
402																	1		1
408													1		1		1		2
430													1		6		1		8
432															1				1
437															3				3
450	1														1				2
Total	1	1	1	1	1	3	1	1	1	1	7	1	19	23	22	1	26	27	341

Table 1: Composition and distribution of the struck and utilised lithic material recovered from the site.

Condition

A very high proportion of the struck flint has irregularly chipped, crushed, or abraded margins, which result from unintentional post-depositional modifications (226 pieces – 72.0%) (Table 2). This damage is often extensive and in some instances has truncated, or otherwise altered, the margin round the entire circumference of a flake. As a consequence, it is highly likely that a number of retouched or utilised pieces have been damaged to the extent that any deliberate modification can no longer be recognised and, as such, it is probable that the range and number of tools are underrepresented in the catalogue. The most extensive damage was evident in material recovered from (201) and (202), which formed the upper and lower ploughsoil across the MUGA and central football pitches, suggesting that this area was under cultivation for an extended period of time. As a result, it appears likely that there has been significant reworking of prehistoric land surfaces in much of the northern half of the development area. It is also evident that much of the undamaged material is residual, as (281), (290), (380), (389) and (401) all relate to Romano-British activity on the site (Table 2), again suggesting that prehistoric horizons have been partially or wholly truncated.

Context No.	Frequent Damage	Frequent Damage	Dating
86	Yes	Yes	Natural?
201	Yes	Yes	Modern
202	Yes	Yes	Modern
206	Yes	Yes	Modern
214	No	No	Prehistoric
241	Yes	Yes	R-B?
242	Yes	Yes	R-B?
268	Yes	Yes	R-B
277	Yes	Yes	Prehistoric
278	Yes	Yes	Natural?
281	No	No	R-B
290	No	No	R-B?
311	Yes	Yes	R-B
323	Yes	Yes	R-B
338	Yes	Yes	R-B
339	Yes	Yes	R-B
341	Yes	Yes	R-B
343	Yes	Yes	R-B
372	Yes	Yes	R-B
380	No	No	R-B
384	No	No	Prehistoric
389	No	No	R-B
392	Yes	Yes	R-B
401	No	No	R-B
408	Yes	Yes	Prehistoric
430	Yes	Yes	R-B
432	Yes	Yes	R-B
437	Yes	Yes	R-B
450	Yes	Yes	Prehistoric

Similar proportions of damaged & fresh flake margins: 213, 234, 276, 279, 322, 340, 402

Table 2: The distribution of contexts with high and low incidences of post-depositional damage to lithic artefacts.

The assemblage incorporates 45 pieces (14.3%) that have an opaque white patina covering their flake surfaces; a further 32 pieces (10.2%) have a less-developed milky discolouration on areas of their surfaces. There are 53 patinated pieces with morphological traits indicative of blade manufacture or the forms of core curation that are associated with Mesolithic and Early Neolithic lithic industries. This demonstrates a strong correlation between the presence of patination and the antiquity of an artefact. However, there are some patinated pieces, such as the five flakes from (311), which appear to be products of later Neolithic or Early Bronze Age technologies, suggesting some pieces have been modified by localised variations in the soil chemistry, which are particularly conducive to the formation of a patina.

Burnt flint

The collection contained nine pieces of worked burnt flint (from (086), (202), (343), (372), (401) and (402)), together with 27 pieces of burnt flint without any discernible evidence for working (from (086) and (401)). All of these pieces have been heated to at least 350°C, which has altered their crystalline structure, while four of the worked pieces and all of the unworked fragments have calcined surfaces indicative of temperatures approaching 500°C (Purdy and Brooks 1971; Sergant *et al.* 2006). Thermal modification has caused varying levels of disintegration, including disaggregation of margins, spalling due to differential expansion of inclusions and shattering as a result of thermal shock. Another four pieces of worked flint have less distinct characteristics that are potentially the

result of some form of thermal modification.

The heat modified flakes could potentially be the result of incidental discard while people sat around fires, or they may have been a constituent of the soils located immediately beneath later hearths. In contrast, the 25 pieces of unworked burnt flint recovered from (086) represent fragments of pebbles that were probably used to heat water and shattered due to rapid differential cooling following contact with the liquid.

Composition of the assemblage

Cores

Seven cores were collected during the fieldwork: a blade core (Fig. 2), a flake core (Fig. 3) that may have produced blades earlier in the reduction sequence and five flake cores (2.2% of the assemblage). All exhibit evidence of multiple-platform working.

The blade core, recovered from (202), has morphological traits indicative of Mesolithic industries (Fig. 2). During the final stages of reduction it was worked from two opposed platforms. At least six blades or blade-like flakes were removed from approximately half of the circumference of one flat platform before irregular terminations and the obtuse angle of the flake removal surface prevented further reduction. Subsequently, three blades or blade-like flakes were detached from an opposed platform, one of which had a hinged termination. Rather than attempt some form of rejuvenation, the core was discarded. The flake and possible blade core, from (201), is an elongated pebble fragment with scars of 19 removals from four platforms (Fig. 3). Prior to discard it was worked around c. 80% of a flat platform and there is some crushing to the opposite end, raising the possibility that it was worked on an anvil. The damaged end also preserves an earlier opposed platform that produced a series of more blade-like removals. Attributes, including evidence of platform edge trimming, suggest this piece can be broadly dated to the Mesolithic or Early Neolithic.

A flake core retrieved from (086) had been trimmed along some sections of the platform edge, while others remained unmodified. Evidence of some core curation, combined with partially patinated flake surfaces (see 'condition', above), potentially implies a Mesolithic or earlier Neolithic date for this piece, but there are no clear diagnostic traits to confirm this proposition.

Flake cores recovered from (202), (214), (Fig. 10), and (339) have all been extensively reduced, producing at least nine, fifteen and 26 flakes respectively. Their morphologies are indicative of reduction strategies concerned with the creation of broad flakes by direct hard hammer percussion and suggest they are products of Late Neolithic and Early Bronze Age lithic industries. The final flake core, also from (202), has been crudely worked and preserves scars of five very irregular removals. There are indications that the flint may have been heated in an attempt to improve its flaking properties, but this process appears to have degraded the matrix, resulting in hackly surfaces and shattered terminations. Consequently, it is unclear whether the crude nature of reduction is a product of using a flawed raw material, or signifies relatively low levels of expertise; this could signify core reduction by a child, or represent the expedient technologies practiced in the later Bronze Age (Ballin 2002).

Flake Debitage

Unmodified flakes and blades form 85.7% of the total assemblage (269 pieces).

Blade industries

The assemblage contains 74 pieces of unmodified debitage with attributes associated with Mesolithic and Early Neolithic blade industries (23.6% of the assemblage, 27.5% of the unmodified flake

debitage) (Table 3), (Figs 6-9). This material comprises one core rejuvenation flake, 19 blade and bladelets, 23 blade-like flakes and 31 flakes that have traits associated with blade manufacture. These attributes include a high incidence of platform edge trimming and abrasion, narrow platforms with small pronounced, very small pronounced, or diffuse bulbs of percussion, and scars indicating a sequence of parallel-sided removals from the same platform. There are 26 secondary blades and flakes and 48 tertiary pieces, meaning 35.1% of thedebitage from blade industries preserves some cortical surface.

Context No.	86	201	202	213	242	276	277	278	279	322	338	339	341	380	389	392	401	408	430	437	450	Total
Rejuvenation flake						1																1
Blade/bladelet		1	5	3		1	1	1	2	2		1	1					1				19
Blade-like flake		1	10	3					3		1	1		1	1		1		1			23
Flake	1	7	5	5	1	3			1		1	1				2			2	1	1	31
Total	1	9	20	11	1	5	1	1	6	2	2	3	1	1	1	2	1	1	3	1	1	74

Table 3: Distribution of unmodifieddebitage that have attributes associated with blade industries.

This element of the assemblage is dominated by broader blades. In the absence of any identifiable microliths, the prevalence of carefully produced broader blades is suggestive of an Early Mesolithic date for most, if not all, of this material. It is possible that the three bladelets, two bladelet fragments and one narrow blade-like flake are the residues of Late Mesolithic activity, but the relatively small quantity potentially indicates that they are the result of normal variation during the production of broader removals. The core rejuvenation flake from (276) is a narrow elongated blade-like flake, with a small abraded butt, which removes part of an extensively trimmed and abraded platform edge; the morphology of this piece is indicative of Mesolithic technologies (Fig. 4).

Flake industries

There are 195 flakes with traits concomitant with freehand hard hammer core reduction. This component of the collection consists of 127 complete flakes and 68 identifiable flake fragments, of which two are primary flakes and 107 are secondary flakes (55.8% have some cortical surface). Flakes are generally broad, often irregularly-shaped and dorsal scars indicate an informal approach to platform creation and the virtual absence of any basic platform edge maintenance. Some poorly controlled hammer blows were probably responsible for the 17 crushed platforms, either pulverising the impact point, or opening latent fractures in the core, while others resulted in non-marginal flaking, creating the 39 flakes with broad butts. Pronounced bulbs of percussion are a predominant feature of this flakedebitage, reiterating the dominance of hard hammer percussion (125 flakes – 74.9% of examples with surviving bulbs). A significant proportion of this material is the product of Late Neolithic and earlier Bronze Age lithic industries. However, the evidence for significant human activity during the Mesolithic implies that some of these flakes are likely to be the by-product of quartering pebbles and the primary reduction of cores as a prelude to blade production.

This material also includes two thinning flakes, which represent waste from bifacial tool manufacture; SF2079, from (202), and SF2156, from (278). There are no chronologically diagnostic traits to determine whether they are associated with Mesolithic, Neolithic or Early Bronze age activity.

Retouched and utilised pieces

There are nine pieces with recognisable secondary retouch and one utilised blade-like flake. Two pieces are potentially retouched, but post-depositional damage prevents positive identification of deliberate modification.

The largest retouched artefact is tranchet adze, SF2012, from (450), (Fig. 1). It is a bar-like form with parallel sides, 124mm long, and a lenticular cross-section, 42mm by 31mm, which has been bifacially flaked across the entirety of both surfaces. Despite slight post-depositional damage to the blade edge, there are indications of use, together with evidence of at least one resharpening event, which takes the form of a truncated tranchet flake scar on opposite face to the final tranchet flake removal (i.e. alternate faces were used each time the blade was sharpened). It has very slight wear at the tip of the butt-end, but there is more extensive crushing and abrasion to the central section of both lateral margins, which results from the adze blade rubbing against a wooden handle, or an antler sleeve, during use. Tranchet adzes are components of Early Mesolithic and Late Mesolithic toolkits. In south-east England they become more common during the later Mesolithic, but there is some contention as to whether they continue to be manufactured and used in the Early Neolithic (Butler 2005, 99; Gardiner 1990). The other retouched piece of Mesolithic to Early Neolithic date is a single-angle burin, SF2040 (201), created on a blade (Fig. 5).

A fine chisel arrowhead, SF2078, was recovered from (202), (Fig 13). It has serial bifacial retouch along two intersecting margins, while the leading edge is unmodified. This form of arrowhead is predominantly associated with Middle Neolithic activity (c. 3300 BC-2900 cal BC), although some examples may date to the Late Neolithic. The base and barb of an oblique arrowhead, SF2139, was also retrieved from (202). Invasive retouch extends along both sides of the surviving section of the secondary flake edge, the hollow base and one side of the barb; the interface between the secondary flake edge and the base is rounded rather than the abrupt, or slightly hooked, angle that was generally created. Oblique arrowheads are a Late Neolithic artefact type (c. 2900-2400 cal BC).

The collection contains four scrapers. A horseshoe scraper, SF2024, from upper ploughsoil (201), has morphological affinities with Early Neolithic forms, but a slightly later date is also possible (Fig. 11). Lower ploughsoil (202) contained an end and side scraper, SF2102, and an end scraper, SF 2013, both of which can only be broadly dated to the Neolithic or Early Bronze Age. A comparable date range applies to a second end scraper, SF2169, which was recovered from (086).

A bifacially retouched flake fragment, SF2086, from (202), was burnt after flaking, resulting in truncation along an incipient fracture. Consequently, its original form is unclear, but it may have been a preform for an arrowhead. Two artefacts potentially have small areas of surviving secondary retouch, but extensive post-depositional damage prevents definitive identification. The first is a possible end scraper, SF2017, from (201), while the second piece could be a retouched flake, SF2092 (202), which appears to have a slight polish along the ventral margin of its distal end.

Due to the frequency and extent of post-depositional damage, only one unmodified blade-like flake, from (279), preserved conspicuous traces of use-wear. This took the form of a band of diffuse polish along the ventral margin of one lateral edge. This piece has morphological attributes consistent with an Early Mesolithic date.

Discussion

The assemblage of struck flint recovered from Bisham Abbey National Sports Centre is of moderate size, given the area that was subject to archaeological investigation, although it is likely that significantly larger quantities of lithic material were not disturbed during the ground works considered in this report. The collection is a palimpsest, which provides evidence for human activity beginning in the Mesolithic and which continued into the Late Neolithic or earlier Bronze Age. The majority of the assemblage is demonstrably residual, as 26 of the 36 contexts containing worked lithic

material have been dated to the Romano-British phase of activity (Table 4). Furthermore, although (086), a possible buried land surface, and (213), an early cultivation horizon, have been broadly dated to the prehistoric period, both contain multi-period sub-assemblages of lithic material. Consequently, it would appear that only 20 pieces of struck flint were potentially recovered from primary contexts (5.9% of the collection). The homogenous character of the small quantities of struck flint recovered from (277), (278), (279), (408) and (450) potentially provide tentative indications that these are *in situ* Mesolithic or Early Neolithic horizons and deposits. Similarly, (214), (234) and (384) are arguably of Late Neolithic or Early Bronze Age date.

Identifiable Mesolithic and Early Neolithic material constitutes at least one quarter of the assemblage, comprising a tranchet axe, SF2012 (Fig. 1), a burin, SF2040 (Fig. 5), a utilised blade-like flake (Fig. 6), two cores and 74 pieces of unmodified debitage (79 pieces, 25.2% of struck flint). Mesolithic worked flint has been recovered from a number of locations in the environs of Bisham Abbey, most notably ‘a quantity of flint implements’ collected in the late 19th century from Town Field, Bisham, c. 500m to the north-east of the Desso pitch (Berks. HER No. 00498.00.00, MRW833; Historic England Monument No. 248170). This collection primarily consisted of Mesolithic and Neolithic scrapers, but a tranchet adze was also found in Town Field (Rutland and Greenaway 1970, 54; Wymer 1977, 4).

Another two tranchet adzes were recovered from the River Thames at Marlow, approximately 600-800m to the north of the football pitches (Berks. HER No. 02933.00.00, FRW7651; Wymer 1977, 22); it is unclear whether one these adzes is the ‘Mesolithic chipped flint axe head’ recorded by Peake in 1931, or whether this is a third example (Berks. HER No. 0538.00.000, FRW1417). Slightly further afield, a tranchet adze was discovered at West Street, Marlow, while three tranchet adzes and three non-tranchet Mesolithic adzes/axes were recovered from Marlow Brickyard, which are located 2.0km and 2.3km, respectively, to the north-east of Bisham Abbey (Wymer 1977, 22).

The distribution of tranchet adzes recovered from this region has a conspicuous bias toward the river margins, a pattern that is repeated further downstream between Maidenhead & Windsor (Hey and Robinson 2011, Fig 10.10). The juxtaposition between residues of Mesolithic activity and the Thames suggests that the river was the principal conduit for movement through this landscape, and by extension, the main focus for settlement and a range of other activities. Significantly lower sea levels during the Mesolithic make it likely that the site now occupied by the National Sports Centre would have been a low river terrace abutting the back swamps of a more deeply-incised river channel to the west (Robinson 2011). It would have been relatively well-drained and a suitable location for shelters, so it is conceivable that the repeated recovery of adzes from these terraces directly reflects the spatial patterning of specific tasks involving heavy-duty woodworking, such as boatbuilding and the construction of dwellings and other structures. In contrast, the absence of microliths in the assemblage could imply that hunting, and preparation for hunting, were not significant activities on this part of the river terrace. But it is also possible that various activities were highly localised, and it may be purely coincidental that the areas that were archaeologically monitored did not overlie deposits containing concentrations of microliths.

Although significant, the Mesolithic lithic assemblage is of limited size. It is possible that this is a direct correlate to relatively low-levels of human activity across the site over an extended period of time. Alternatively, it is possible that the Mesolithic land surface undulated slightly and was subsequently buried by later alluvial deposits. Lower lying areas of the

Prehistoric contexts	Number	Romano-British	Number
086	34	201	35
213	49	202	120
214	1	206	1
234	2	241	1
277	1	242	2
278	2	268	2
279	7	276	5
384	3	281	1
408	2	290	1
450	2	311	5
		322	3
		323	4
		338	2
		339	13
		340	1
		341	4
		343	2
		372	1
		380	1
		389	2
		392	4
		401	15
		402	1
		430	8
		432	1
		437	3
	103		238

Table 4: Distribution of struck lithic material in prehistoric and Romano-British contexts

earlier prehistoric land surface could still be buried below the level of any archaeological intervention, while any knolls would have been truncated by later agricultural activity, releasing their artefacts into the ploughsoil. The distribution of struck flint recovered from (201), (202) and (213) could indicate the Desso pitch and the eastern half of the MUGA pitch overlie one of these truncated hillocks.

The absence of microliths prevents refined dating of this element of the assemblage, but the morphology of the blades and associated flake debitage suggests most, if not all, of this material is a product of Early Mesolithic industries (c.9400-6000 cal BC). There are six narrow bladelets or blade-like pieces, which are potentially later Mesolithic in character, but none of this material provides definitive evidence for a Late Mesolithic presence. Similarly, none of the lithic material can be confidently attributed to the Early Neolithic. It is, therefore, conceivable that human activity was sporadic and transient throughout this extended period, possibly equating to nothing more than fleeting visits associated with foraging, or the pursuit of game.

The chisel and oblique arrowheads are the most chronologically diagnostic elements of the entire assemblage and provide evidence of a human presence in the Middle and Late Neolithic. However, as they are projectile points, it is feasible that their presence is merely a material trace of two hunting parties passing over the site during a period of up to nine centuries. Even so, there was an increase in the frequency and level of activity at some point during later Neolithic or Early Bronze Age, as a substantial proportion of the 195 hard hammer flakes produced by unsystematic core reduction were probably created during this period, as were the four multiple-platform flake cores. Additionally, although none of the scrapers are closely datable, some are likely to be of a comparable date.

The quantity of Late Neolithic to Early Bronze Age lithic material is not large, which suggests that there are no settlement foci immediately adjacent to the areas investigated by this programme of fieldwork. Conversely, there appears to be too much struck flint to merely constitute a background scatter representing the incidental discard of artefacts by generations of people moving across the site from one locale to another. It is, therefore, possible that there are settlements or other hubs of sustained activity within the wider environs of the National Sports Centre.

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Fig 1. Blade like-flake

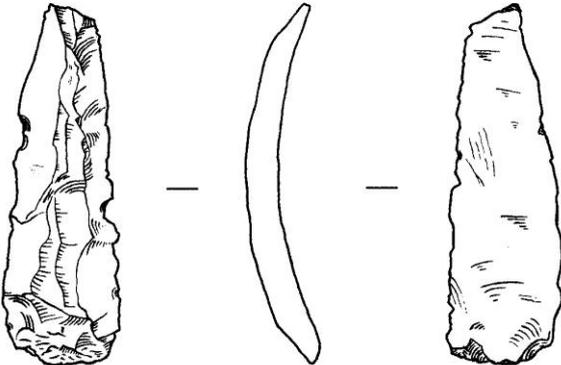
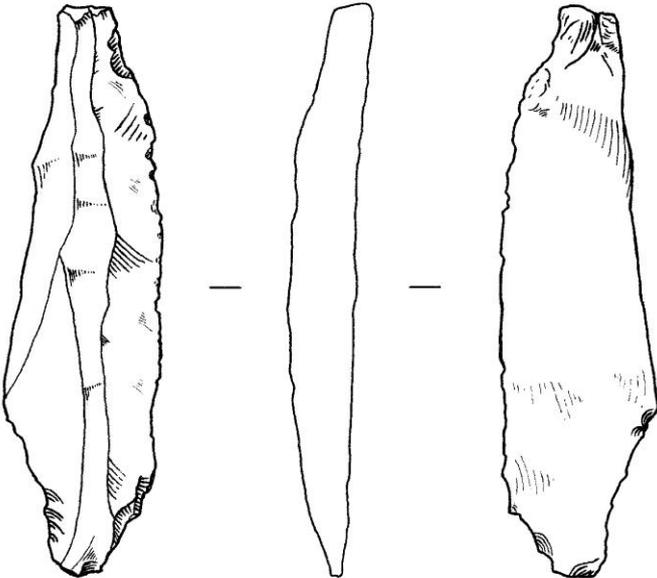


Fig 2. Utilised blade-like flake



0 5 cm

Figure 10: Flint illustrations no's 1-2

Fig 3. Blade

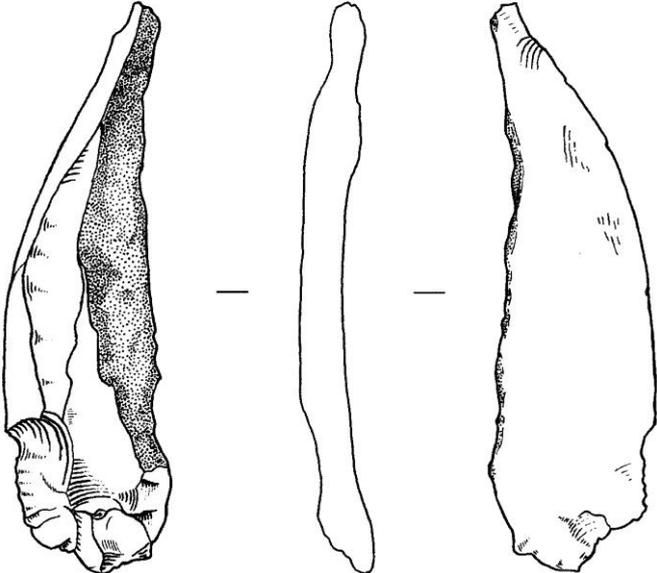
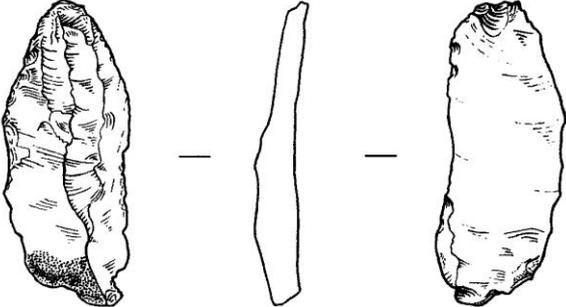


Fig 4. Blade



0 5 cm

Figure 10: Flint illustrations no's 3-4

Fig 5. Blade core

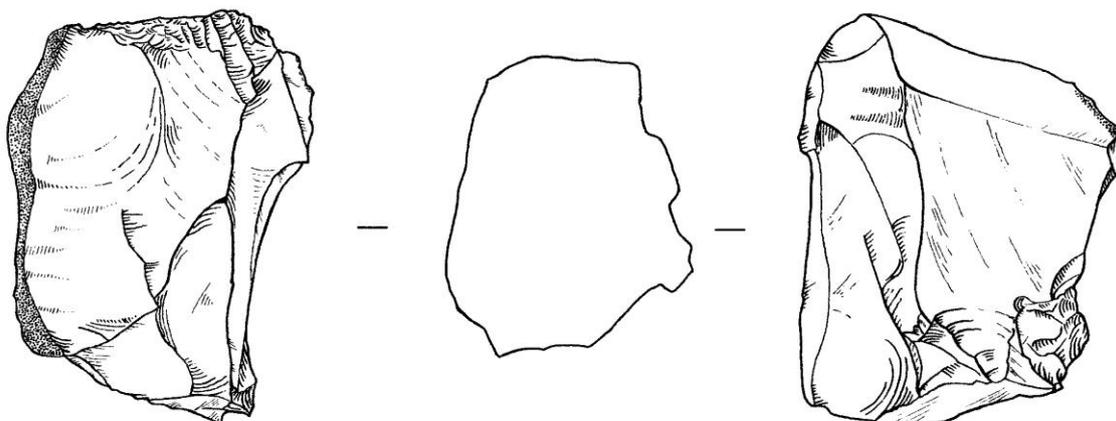


Fig 6. Blade & flake core

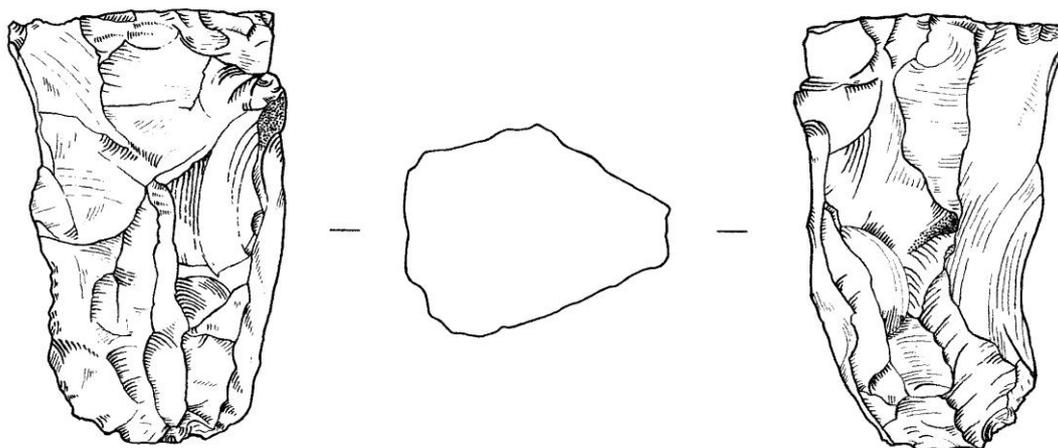


Figure 10: Flint illustrations no's 5-6

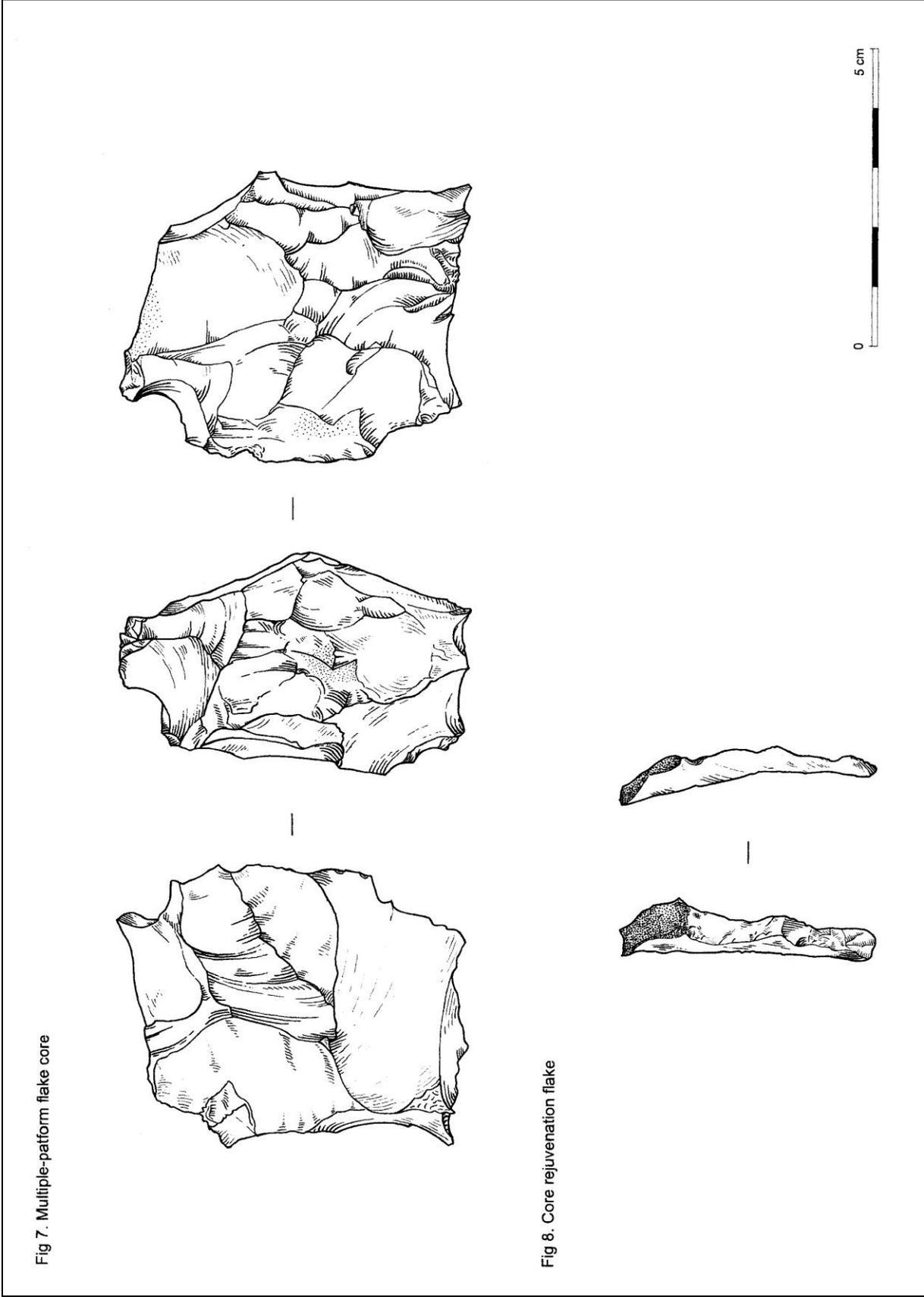


Fig 7. Multiple-platform flake core

Fig 8. Core rejuvenation flake

Figure 10: Flint illustrations no's 7-8

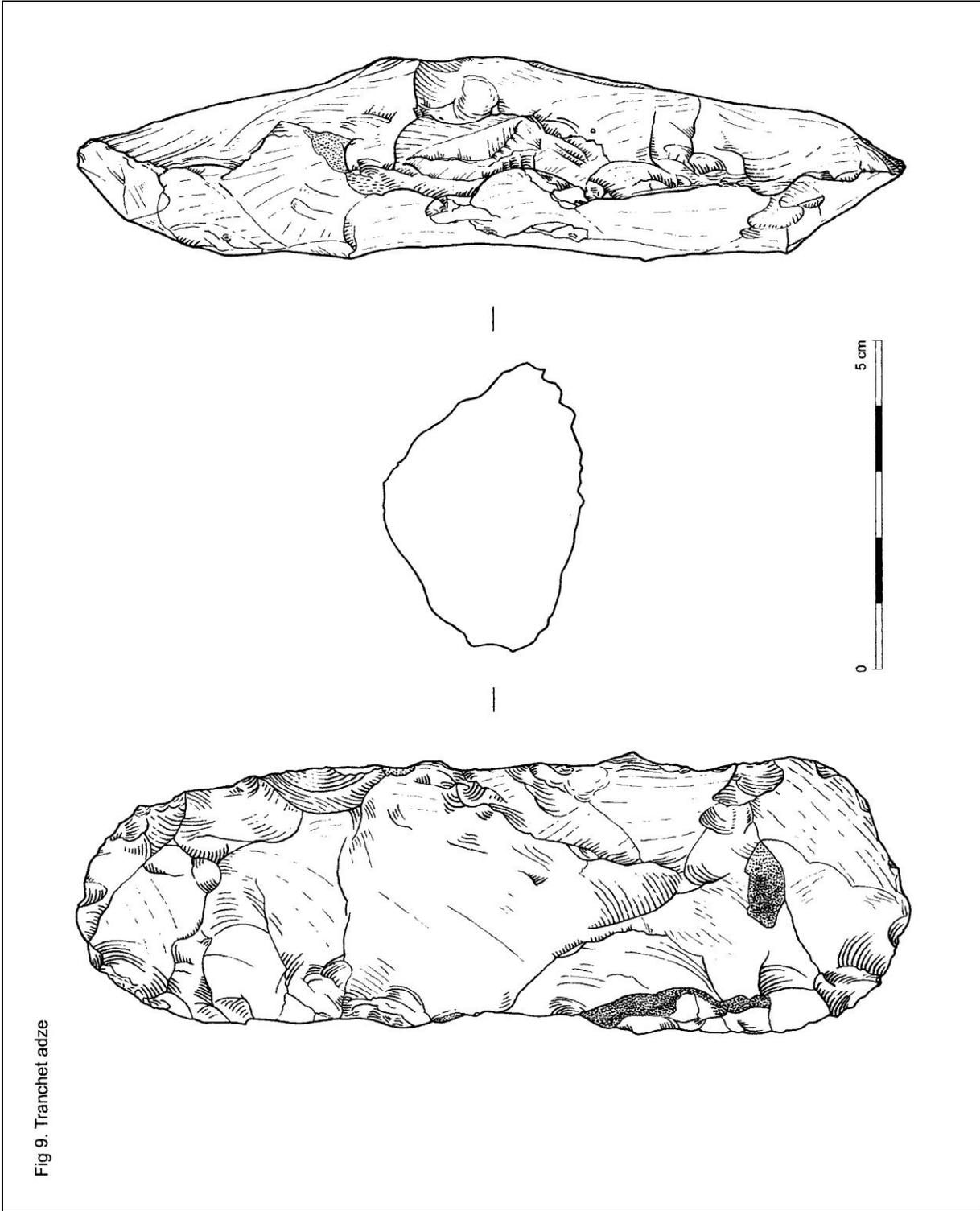


Fig 9. Tranchet adze

Figure 10: Flint illustrations no. 9

Fig 10. Burin

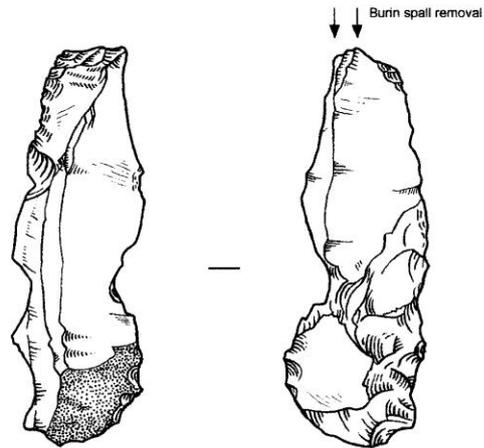


Fig 11. Chisel Arrowhead

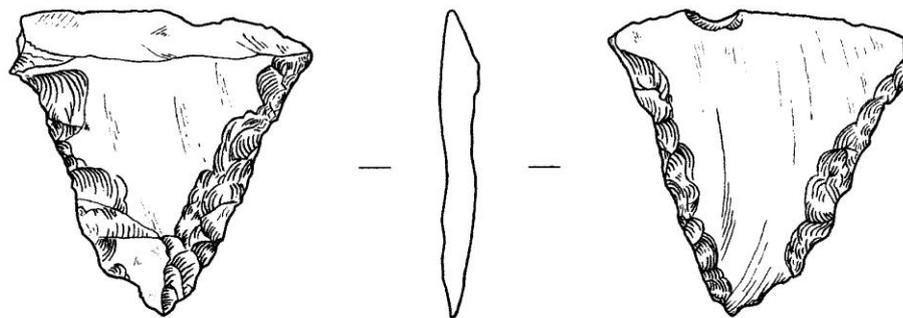


Fig 12. Oblique arrowhead

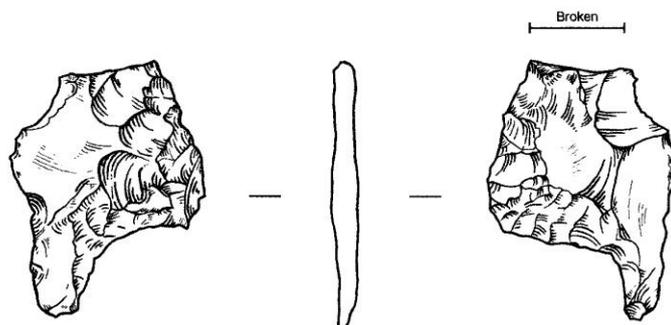


Figure 10: Flint illustrations no's 11-12

Fig 13. End Scraper

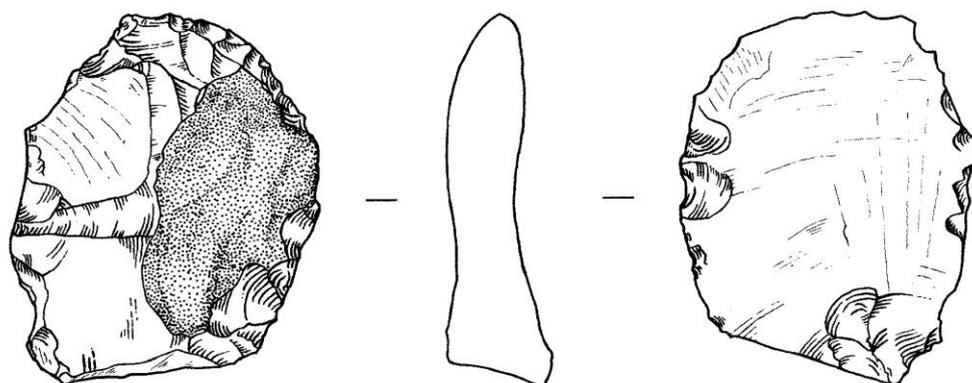


Fig 14. End Scraper

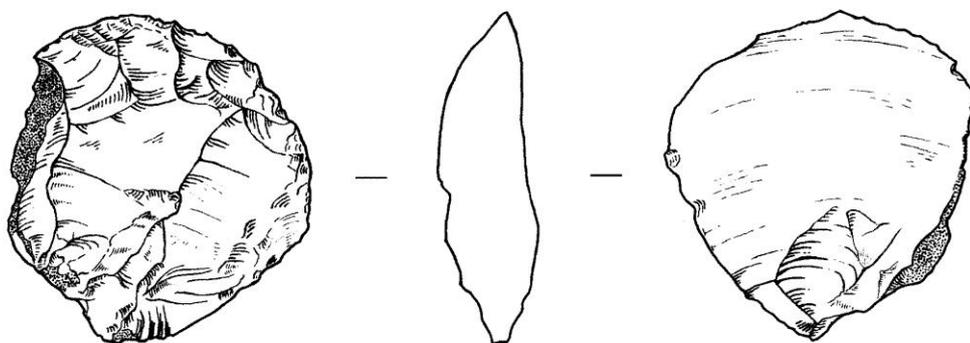


Figure 10: Flint illustrations no's 13-14

5.2 The Pottery by Jane Timby

1 Introduction and methodology

- 1.1 The archaeological work resulted in the recovery of some 420 sherds of pottery weighing *c* 4.16 kg. The assemblage includes material of later Prehistoric, Roman, Saxon, medieval and post-medieval date.
- 1.2 The assemblage was sorted into fabrics based on the colour, texture and nature of the inclusions present in the clay. The prehistoric material was classified following the recommended nomenclature in PCRG (1997) where the letters denote the main inclusions present, for example, FL = flint. Known named, or traded, Roman wares are coded using the National Roman fabric reference system (Tomber and Dore 1998) (codes in brackets). Other wares were coded more generically according to firing colour and main fabric or surface characteristics.
- 1.3 The sorted assemblage was quantified by sherd count and weight for each recorded context. Freshly broken sherds were counted as single pieces. Rims were additionally coded to general form and measured to establish diameter and percentage of rim present (estimated vessel equivalent (EVE)) (cf. Orton *et al.* 1993). A summary of the sherds by period for each context can be found summarised in Table 1 along with a provisional date for that context.
- 1.4 In general terms the assemblage was in poor condition with well-fragmented sherds and very few diagnostic featured pieces. The overall average sherd weight was just 9.9 g. Many pieces showed edge abrasion although surface finishes were preserved in most cases.
- 1.5 Pottery was recovered from 37 contexts; a total 24 cut features, with the quantities ranging from single sherds up to a maximum of 194 sherds from the lower plough soil (202). Around 59% of the assemblage by count came from the plough soil levels (cxts 201-203). A further 19.5% came from quarry [270] leaving only 21.5% to be distributed across the other contexts.
- 1.1 In the following report the general composition of the assemblage is described by chronological period followed by an overall assessment of the potential of the material.

2 Prehistoric

- 2.1 Some 114 sherds, 27.1% of the assemblage appears to date to the later prehistoric period. The group was overwhelming dominated by bodysherds from handmade vessels with a calcined flint temper. There was some variation in terms of the size and frequency of flint present ranging from quite coarse (fabric FL1), to finer (FL2), finer and more compact (FL3) and sparse (FL4).

- 2.2 There are no decorated or featured pieces and the vessel walls overall are generally quite thin (i.e. not urn material). The flint-tempered tradition is a long one in this area extending from the earlier prehistoric period through to the Iron Age. It is likely that a considerable proportion of the material here is likely to be of later Bronze Age/early Iron Age date but without any diagnostic examples or significant associated groups of material it is difficult to be precise.

3 Roman

- 3.1 Roman pottery accounts for approximately 43% of the recovered assemblage. Again the quantity of diagnostic material is limited but what there is suggests that the emphasis is very much towards the later Roman period. A significant proportion of the wares are bodysherds in grey or black sandy ware. A very similar fabric features in both the Roman and medieval period and in some cases the discrimination of smaller sherds is uncertain.
- 3.2 Continental imported wares are limited to two sherds of Central Gaulish samian (LEZ SA); one sherd from a burnt dish Dragendorff form 31; the other from a decorated bowl Drag. 37. Both vessels are of 2nd-century manufacture but appear to be residual in Saxon contexts.
- 3.3 Regional imports are limited to three sherds of Lower Nene Valley colour-coated ware (LNV CC); three sherds of Oxfordshire white ware mortaria (OXF WH); four sherds of Oxfordshire colour-coated ware (OXF RS), one sherd of Tilford ware (OVY WH) and a significant quantity of grey sandy ware and including BB1 copies most of which are likely to be Alice Holt reduced ware (ALH RE).
- 3.4 Overall there were very few vessels present. Most of the rims are quite small and largely from jar forms with everted, rolled or flaring rims. The proportion of bowls and dishes is quite high, a feature typical of later Roman assemblages. The common bowl form is a flanged-rim, conical type exclusively in grey or black sandy ware probably largely from the Alice Holt industry. The Oxfordshire wares include a flanged bowl Young 1977, type C51. All these types date to the later 3rd or 4th centuries. Also quite prominent are plain-walled dishes typical of the later 2nd to 4th centuries with one example in LNV CC; the other in reduced sandy wares. Minor forms include two mortaria; one from Oxfordshire (ibid. type M22) dating to the 3rd-4th century and one probably a New Forest vessel and a single possible lid.

4 Saxon

- 4.1 Some 39 sherds are present dating to the Saxon period. There is a diverse range of fabrics present including organic-tempered (SXOR); sandy with sparse organic (SXSAOR); sandy (SXSA/ SXQTZ); mixed grits with organic with sand and limestone (SXORSACA) and limestone and flint (SACAFL).
- 4.2 The organic-tempered ware dominates the group and includes at least three handmade jars rims. Some sherds show a burnished finish but there are no decorated vessels. At least two sherds are sooted from use.

- 4.3 The organic-tempered tradition lasts quite a long time from the later 5th century through to the later 8th/9th centuries. Most of the fabrics present here could be considered typical of the early Saxon period.

5 Medieval

- 5.1 A further 37 sherds have been designated as of medieval date. The grey sandy ware, probably from the Surrey-Hampshire industry and the coarser black early Surrey wares are very difficult to discriminate from Roman and Iron Age sherds in such small groups.
- 5.2 The sherds are all from plain jars/ cooking pits and there are at least three thumb-tipped rims present.

[NB the medieval assemblage from pit 50 and post-medieval assemblage from pit 258 is reported in section 5.3 below]

6 Post-medieval

- 6.1 A total 26 sherds of later medieval or post-medieval date are present all of which came from the upper and lower plough soil (201/202).
- 6.2 The group includes glazed earthenware (PMGRE); German stoneware (PMGST); salt glazed wares (PMSALT); English stoneware (PMEST) and Surrey-Hampshire Border ware (PMSHBW).

7 Distribution

- 7.1 As noted above the distribution of material is very uneven with 59% of the sherds coming from the upper three levels. As might be expected of a multi-period site there also appears to be quite a high level of residuality.
- 7.2 There are just four features where flint-tempered prehistoric sherds are present without later material: pit 209 (upper); posthole 228; ditch 436 and one unassigned context (278). With the exception of posthole 228 which yielded seven sherds, these are all single bodysherds and thus cannot be taken as a reliable indication of date.
- 7.3 At least six features and one layer produced Roman sherds with in some cases residual later prehistoric pieces. These include ditches 119, 239, 393 and 398; quarry 302; layer (213) and unassigned context (434). Quarry 270 although mainly of Roman date has some Saxon material which may be material from upper levels (?)
- 7.4 Features with early Saxon pottery include pits 211 and 331; ditches 282, 269, 283, 336, 342 and 352; gully 347 and quarry 270. A single Saxon sherd also came from unassigned context (279).
- 7.5 Five features appear to have a *tpq* in the medieval period: pits 50 and 244, ditches 239 and 379 and ditch recut 374. In addition it is the latest material in layer (113).

8 Summary and potential

- 8.1 The work at Bisham produced a moderately small assemblage of pottery which seems to indicate activity in the area from later prehistoric times onwards. The pottery distribution is fairly uneven with significant parts of the assemblages coming from a just a few features. This combined with the limited amount of diagnostic material and the longevity of some of the pottery traditions has made dating difficult in some cases.
- 8.2 Previous work in the Bisham area (Manor House, Temple Lane) similarly identified multi-period activity dating to the earlier prehistoric, middle-late Iron Age periods, early Roman late Roman and Saxon periods (Timby 2011). The composition of the previous assemblage overlaps with, but also differs in nature to the present one with a much more extensive range of fabrics, especially in the prehistoric period. This could also suggest we are looking at a slightly earlier phase of use at the site at Bisham Abbey in the later Bronze Age/early Iron Age rather than the mid-late Iron Age. There is also little evidence of an early Roman presence at the Abbey site with most of the Roman pottery intimating a later Roman phase of activity although there are a small number of possibly early-mid Roman sherds present. Unlike Temple Lane there is also some medieval activity. Both sites show a limited Saxon presence but the material was all residual at Temple Lane.
- 8.3 The nature and size of the assemblage would not justify a lengthy report and very few sherds are large or significant enough to warrant illustration. In fact just two Saxon jar sherds would qualify. The absence of any large associated groups of material and limited featured sherds considerably limits the precision of the dating at present and is prohibitive to any detailed discussion.

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5.3 Medieval Pottery by Lucy Whittingham

Introduction

A total of include 20 sherds from 5 early medieval vessels (0.560 kg) and 9 post-medieval sherds from 8 vessels (0.456 kg).

Methodology

The pottery has been quantified using sherd count and estimated number of vessels (ENV). Fabric type, vessel form and various attributes, such as decoration and glaze are also noted. A spot date has been calculated on the fabrics present in each context and applied to the stratigraphic phasing to corroborate the chronological sequence. The pottery records will be stored with the site archive under the site code 1591/BHS.

Period	Fabric	Sherd No	ENV	Wt (g)
Early medieval	Camley Gardens type coarseware	18	18	542
	Shell-tempered	1	1	18
Post-medieval	PMR	1	1	128
	TPW2	3	3	244
	PEAR	2	1	18
	REFW	2	2	36
	MOCHA	1	1	12
	Total			1,016

Table 1 Summary of all pottery fabrics as number of sherds, ENV and weight by period

Early medieval assemblage

A small early medieval assemblage of 20 sherds in a coarse quartz tempered fabric are most likely to be the products of the kilns at Camley Gardens, Maidenhead (Pike 1965). All of the vessels are cooking pots/jars represented by bases and everted rims. These sherds are all from the same context (051) and are probably 13th/14th century in date. In the same context and contemporary is one shell tempered coarseware fragment from a jar.

Post-medieval assemblage

A late 18th to early 20th -century pottery assemblage is represented by 9 sherds collected from context (259) of which the earliest wares represented are a Pearlware teabowl painted in earth coloured enamel decoration dating from 1790-1830 and a Mocha decorated jug (1790-1895). Later wares include Transfer-printed ware (TPW2) dishes and serving dishes decorated in willow pattern (1807-1900) and plain white refined whiteware (REFW 1800-1900) cup and jug. One coarse red earthenware jar with iron rich fabric is contemporary with the later 18th to early 19th century Pearlware

Significance and potential

The pottery assemblage from this site is significant for dating of the stratigraphic features and the medieval assemblage is well stratified in a medieval pit. The post-medieval material has been collected from a dump and is therefore of less significance to the history of this site.

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5.4 Coarse building material by Jonathan Hunn

Roman building material

This small assemblage was derived principally from the flood alleviation scheme (FAS) area and consisted of 65 separate items, amounting to 8.687 kg. Of these, 11 items were identified as 'brick' (22.2% by weight); 65 pieces comprised roofing tile (both tegula and imbrex (67.6%) and 12 pieces were too small to enable a classification to be made (7.2%). Most of these items were to be found throughout most periods with the possible exception of the very earliest phases. A single portion of a combed box-tile, some 150mm wide and 15mm thick came from the upper fill of quarry [413] (Plate....). This would originally have been used to channel the hot air from the heating system (hypocaust) up the walls of a reception room or bath-house. The tiles varied between 13mm and 28mm thick, with the majority being of a well fired, smooth reddish brown fabric. One of these contained the impression of an animal, possibly a cat (Plate....). The brick fragments were mainly a well fired reddish brown fabric, but were too small to ascertain their dimensions other than their thickness which varied between 34 and 40mm.

The source of the building material could be local but the proximity of the river Thames could easily have facilitated transport from much further afield. The amount of material, although limited does suggest the proximity of a mortared structure of some kind, perhaps a villa. This might have lain immediately adjacent to the river, though more probably it lay further to the north, perhaps in the vicinity of Bisham church.

Medieval building material

These few pieces were retrieved from the area of the football pitches. Three of these were found in the plough soil horizons (201-2), one from a plough furrow (230) and one from the upper fill of a Romano-British ditch. Of those found in the plough-soil (Plates.... To) all were fragments of glazed floor tiles. One of these looks like a late 14th century Penn tile (Plate...). Only one was of sufficient size to enable its full dimensions to be estimated. This came from the Muga pitch, just north of the moat at NGR SU 84856-85199 from the lower plough-soil. It was 104mm sq. by 21mm thick and decorated with a green and yellow glaze (Plate...). All these finds are almost certainly derived from the abbey itself and their presence is not unexpected.

The two fragments of roof tile were 10 and 12mm respectively, one of which had a nail hole (from the upper fill of a RB ditch in the 2nd football pitch (240). See Fig... The second piece was composed of a sandy pinkish brown fabric and was found in a plough furrow [229] that had cut an earlier burnt flint pit deposit [210]. In both cases the tiles were likely to have been brought onto the field during some episode of manuring.

5.4 Coins & tokens recovered from the football pitches (Jonathan Hunn)

No.	Type	Metal	Monarch	Width	Date	Context	Obj. no.
1	jetton	cu alloy	n/a	23mm	1586-1655	202	2005
2	token	cu alloy	n/a	25mm	Post-med	202	2159
3	half 'peny'	cu alloy	George III	18mm	1795	201	2160
4	groat	silver	Henry VI	20mm	1422-23	202	2161
5	half penny	cu alloy	Victoria	25mm	1865	202	2162
6	half penny	cu alloy	George II	28mm	1737	202	2163

All these coins & tokens were recovered from the preparation surfaces of the football pitches by eye with none recovered by metal detector (all were individually logged by GPS). With the exception of the silver groat (4d) all these items were of relatively low value, being the kind of thing that might be lost by a labourer, possibly during ploughing. No Roman coins were recovered from either the football pitches or the flood alleviation area.

5.5 Stone material from flood alleviation site

Type	number	weight	dimensions	context
Niedermendig lava	1	272g	70 x 40 mm	u/s
Niedermendig lava	3	89g	-	202
Niedermendig lava	1	114g	90 x 45 mm	241
Niedermendig lava	1	75g	c. 80 x 35mm	283
Niedermendig lava	8	194g	Too fragmentary	339
	14	0.744		

The only type of imported stone found on the site came from the Mayen district of western Germany, known as Niedermendig lava (basalt). The pieces were too fragmentary and small to enable anything more than presence being recorded. Their abraded nature suggests that they were most probably re-deposited away from their original place of deposition. This material was used in the production of mill stones for grinding corn and was used throughout the Romano-British period (1st to 4th centuries AD).

6 Environmental Reports

Environmental Archaeology report by James Rackham, John Giorgi and Rob Scaife

Introduction

An archaeological programme involving a watching brief and ‘strip, map and sample excavation’ was conducted by Archaeological Services and Consultancy (ASAC) on behalf of Sports England as mitigation of a development of the National Sports Facility at Bisham Abbey, a Scheduled Ancient Monument near Marlow, Buckinghamshire. In the course of these archaeological investigations a series of soil samples were collected for a range of archaeological study (Table 1), and specifically the recovery of biological evidence for potential information on the diet, agricultural economy and human activities at the site, and the nature of the local environment over time. Subsequently a number of these were discarded or not processed. In addition a small collection of animal bone was recovered during the hand excavation. Organic material from five of the samples was dated by radiocarbon analysis. The sample flots and animal bone were submitted to the Environmental Archaeology Consultancy (EAC) for assessment and subsequent analysis.

Table 1. All samples taken from Bisham Abbey.

Sample no.	Context no.	Feature	Vol. L.	Weight Kg	Sample type	Date
1	35	Moat fill, upper	*	47g	Pollen	Post-med
2	36	Moat fill, upper middle	*	55g	Pollen	Post-med
3	37	Moat fill, middle	-	70g	Pollen	Post-med
4	38	Moat fill, lower	*	65g	Pollen	Post-med
5	36	Moat fill, upper middle	-	50g	C14	Post-med
6	38	Moat fill, lower	12	18	Bulk	Post-med
7	38	Moat fill, lower	-	0.5	C14	180 +/- 30 BP (Beta 458763)
8	51	Fill latrine 50	30	33	Bulk	medieval
9	205	Lower fill 203	-	0.1	C14	Prehistoric
10	204	Top fill 203	10	-	discarded	prehistoric
11	205	Lower fill pit 203	27		Bulk	LBA?
11a	205	Lower fill pit 203	0.225	0.34	Sub-sample	LBA?
12	214	Sole fill Pit 211	30	33.5	Bulk	LBA? – Burnt mound (BM)
13	215	Upper fill Pit 212	10	-	discarded	prehistoric
14	218	Lower fill Pit 212	20	19.4	Bulk	LBA? - BM
15	222	Upper fill Pit 220	7.5	-	bulk	LBA?
16	223	Upper fill Pit 210	10	-	discarded	prehistoric
17	221	Upper fill Pit 219	34	-	Bulk	LBA?
18	224	Lower fill Pit 219	20	22.4	Bulk	LBA? – BM?
19	225	Lower fill Pit 220	15	-	bulk	LBA?
20	226	Middle fill Pit 210	30	38.2	Bulk	Cal BC 1010 to 890 (Cal BP 2960 to 2840) and Cal BC 875 to 845 (Cal BP 2825 to 2795) (Beta 458764) – BM
21	234	Upper fill Pit 227	0.6	1.19	grab	prehistoric
22	233	Middle fill Pit 227	30	35.5	Bulk	Cal BC 1010 to 890 (Cal BP 2960 to 2840) and Cal BC 875 to 845 (Cal BP 2825 to 2795) (Beta 458765) - BM
23	207	Upper fill Pit 209	20	-	discarded	prehistoric
24	208	Lower fill Pit 209	20	20	Bulk	LBA? - BM
25	235	Sole fill p'hole 228	10	11.6	Bulk	LBA?
26	241	Middle fill Ditch 239	20	25.2	Bulk	Late Saxon
27	242	Lower fill Ditch 239	20	25.8	Bulk	Cal AD 1028-1184 (Beta-464971)

28	257	Fill of Pit 256	10	-	discarded	prehistoric
29	268	upper fill quarry pit 270	30	29.9	Bulk	Romano-British
Sample no.	Context no.	Feature	Vol. L.	Weight Kg	Sample type	Date
30	324	Backfill quarry 302	30	30	Bulk	Romano-British
31	339	2 nd silting Ditch 336	30	26.8	Bulk	Cal AD 943-1024 and Cal AD 897-925 (Beta-464970)
32	390	Upper fill of ditch [391]	30	24.7	Bulk	Cal AD 240 to 395 (Cal BP 1710 to 1555) (Beta 458766)
33	72	Moat fill, middle	10	8.5	Bulk	Post-medieval
34	72	Moat fill, middle	-	50g	Pollen	Post-medieval
35	71	Moat fill, upper	10	9.1	Bulk	140 +/- 30 BP (Beta 458767)
36	71	Moat fill, upper	-	50g	Pollen	Post-medieval
37	73	Moat fill, lower	10	11.1	Bulk	Post-medieval
38	73	Moat fill, lower	-	50g	Pollen	Post-medieval
40	87	Palaeosol?	-	24g	Pollen	Prehistoric?
41	86	Palaeosol/sub-soil?	-	25g	Pollen	Prehistoric?
42	86	Palaeosol/sub-soil?	-	22g	Pollen	Prehistoric?
43	86	Palaeosol/sub-soil?	-	28g	Pollen	Prehistoric?
44	86	Palaeosol/sub-soil?	-	27g	Pollen	Prehistoric?
45	86	Palaeosol/sub-soil?	-	29g	Pollen	Prehistoric?
46	86	Palaeosol/sub-soil?	-	47g	Pollen	Prehistoric?
47	86	Palaeosol/sub-soil?	-	46g	Pollen	Prehistoric?
48	86	Palaeosol/sub-soil?	-	45g	Pollen	Prehistoric?

* - samples studied for pollen

All but four of the bulk samples were processed by ASAC using their processing procedures, and a record of the finds are noted in Table 2. Four bulk samples (11,15,17,19) were processed by the EAC using the following methods.

Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet sieve of 1mm mesh for the residue. Both residues and flots were dried and the residues subsequently re-floated to ensure the efficient recovery of charred material. The samples with preserved organic material were processed by 'wash-over' onto a 0.25mm mesh for the separation of 'waterlogged' plant remains, and the organic fraction was kept wet. The volume of the dry and wet flots was measured and the volume and weight of the residues recorded. This differs from the samples that ASAC processed which were subjected to only one flotation although the <4mm residues from these samples were subsequently refloated a second time at the EAC.

The residues were sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through the residue in order to recover magnetised material such as hammer scale and prill. The flot was studied using x30 magnifications and the presence of environmental finds (i.e. snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The flot was then bagged and along with the finds from the sorted residue, constitute the material archive of the samples. The individual components of the samples were then preliminarily identified and the results are summarised below in Tables 2 and 3.

In addition to the bulk samples, five samples or sub-samples were processed specifically for the recovery of material suitable for radiocarbon dating. One from a 'burnt mound' pit, a

second from a prehistoric pit, one from a presumed Romano-British ditch, one from an organic fill of the moat and the last from a feature initially interpreted as a palaeochannel beneath and cut by the moat.

Table 2. Bisham Abbey AMS C14 dates

BETA	SUBMITTER NO	(MATERIAL): PRETREATMENT	d13C	CONVENTIONAL AGE	2 SIGMA CALIBRATION	D14C
458767	1591BSH/35/071	Walnut shell: acid/alkali/acid	-25.9	140 +/- 30 BP	Cal AD 1665 to 1780 (Cal BP 285 to 170) and Cal AD 1795 to 1895 (Cal BP 155 to 55) and Cal AD 1905 to Post 1950 (Cal BP 45 to Post 0)	-17.3 +/- 3.7 o/oo
458766	1591BSH/32/290	Charred barley grains: acid/alkali/acid	-23.8	1720 +/- 30 BP	Cal AD 240 to 395 (Cal BP 1710 to 1555)	-192.7 +/- 3.0 o/oo
458765	1591BSH/22/233	Charred roundwood: acid/alkali/acid	-27.5	2790 +/- 30 BP	Cal BC 1010 to 890 (Cal BP 2960 to 2840) and Cal BC 875 to 845 (Cal BP 2825 to 2795)	-293.4 +/- 2.6 o/oo
458764	1591BSH/20/226	Charred roundwood: acid/alkali/acid	-25	2790 +/- 30 BP	Cal BC 1010 to 890 (Cal BP 2960 to 2840) and Cal BC 875 to 845 (Cal BP 2825 to 2795) Cal AD 1655 to 1695 (Cal BP 295 to 255) and Cal AD 1725 to 1815 (Cal BP 225 to 135) and Cal AD 1835 to 1840 (Cal BP 115 to 110) and Cal AD 1855 to 1865 (Cal BP 95 to 85)	-293.4 +/- 2.6 o/oo
458763	1591BSH/7/38	Hazel nutshell: acid/alkali/acid	-24.2	180 +/- 30 BP	and Cal AD 1920 to Post 1950 (Cal BP 30 to Post 0)	-22.2 +/- 3.7 o/oo
464970	1591/BSH/31/339	Charred wheat grain: acid/alkali/acid	-22.2	1060 +/- 30 BP	Cal AD 943-1024 (Cal BP 1007-926) and Cal AD 897-925 (Cal BP 1053-1025)	-123.62 +/- 3.27 o/oo
464971	1591/BSH/27/242	Charred rye grain: acid/alkali/acid	-23.0	920 +/- 30 BP	Cal AD 1028-1184 (Cal BP 922-766)	-108.21 +/- 3.33 o/oo

This latter sample was too deep to allow access so the sample was collected from the machine bucket ensuring as far as possible that it represented an uncontaminated sample of the basal organic fills of the presumed palaeochannel. Charred rye and charred free-threshing wheat grain were selected from the samples from ditches 239 and 336 for dating. These ditches were provisionally dated to the Romano-British period but the samples contained cereal assemblages more consistent with Saxon and medieval deposits so a decision was made to radiocarbon date the two deposits.

Radiocarbon results

The samples were submitted to Beta Analytic Inc for dating (Table 2) and the calibration details are attached (Appendix 1). The results from the hazelnut shell fragments from the putative prehistoric palaeochannel (context 38) beneath the moat are very similar to those from the walnut shell from the organic fill (context 71) of the moat and this deposit originally interpreted as a palaeochannel is clearly an earlier fill of the moat. The moat which lacked any excavated dateable finds was originally interpreted on site as medieval in date but these two radiocarbon results indicate that the organic fills of the moat are post-medieval, suggesting either an original post-medieval date for the moat or an episode of cleaning or recutting of an earlier moat in the post-medieval period. This dating is supported by a small sherd of white glazed ceramic and splinters of clear glass in context 71.

The charred barley grains from the upper fill of ditch 391 indicate a late Romano-British date for the fills of this feature.

The charred cereals from ditches 239 and 336, both provisionally dated to the Romano-British period both produced late Saxon radiocarbon dates confirming the date based upon the cereal assemblage.

Two samples were selected from the group of prehistoric pits in the 'football pitches' area. A sample of charred roundwood from the middle fill of pit 210 and a piece of large charred roundwood from the middle fill of pit 227 some nine metres to the SW, a deposit filled with burnt flint and interpreted as a 'burnt mound'. Both samples produced the same result, a late Bronze Age date, suggesting that this group of prehistoric pits and the associated 'burnt mound' deposits may represent a fairly short period of activity in the early 1st millennium BC.

On the basis of these results the fills of the moat (including the deposits previously suggested as a palaeochannel) have been assigned to the post-medieval period and the group of pits in the centre of the football pitches area to the late Bronze Age, although the burnt flint filled pits and spreads, 442-447, to the east were not sampled and have not been radiocarbon dated.

Bulk sample results

The samples fall into four groups, the post-medieval moat fills, the late Saxon ditches, the Romano-British pits and quarry pits and the prehistoric (late Bronze Age) pits and burnt flint spreads, with a fifth group represented by a single sample from a feature interpreted as a possible medieval latrine pit.

The post-medieval moat fills were all waterlogged producing well preserved organic remains but very few finds - a tiny sherd of white glazed ceramic, glass chips, a little fuel ash slag and possibly re-deposited flint debris (Table 3). No charcoal or charred plant remains were

observed in the flots, but small fish bones and aquatic snails (see Table 4), and a few of the waterlogged plant remains (Table 6) reflect the aquatic origin of the deposits.

Table 3. BSH1591: Archaeological finds from the processed samples, arranged in assigned period order.

Sample No:	Context No:	Cut No:	Feature	Vol. I. (L)	Mag+ve (g)	4mm residue	2mm residue	1mm residue	Pottery	Bone	Flint	CBM#	Slag	Fe	Comments
									No:/g	No:/g	No:/g	No:/g	No:/g	No:(g)	
Postmedieval															
6	38		moat	12	4*	1568	599	855	-	-	44/8	-	-	-	
7	38		moat	-											C14 sample
35	71		moat	10	3*	910	45	46	-	+	-	+	-	-	Glass-0.5g; white glaze pot chip; nutshell frags + (C14); a little fuel ash slag
33	72	-	moat	10	2*	697	64	49	-	-	-	-	-	3/4	modern plastic?; glass frags.
37	73		moat	10	3	9522	1336	1310	-	+	4/5	-	-	-	?poss contamination; flint-waste
Medieval															
8	51		latrine	30	22*	2708	322	451	10/21	24/21	17/1	-/4	1/4	1/3	Glassy slag; glassx1; flint debitage+microliths?
Late Saxon															
26	241	239	ditch	20	5*	1654	324	993	6/12	7/5.5	1/1	2/45	-	-	occasional fire cracked flint/charcoal
27	242	239	ditch	20	2*	5710	594	567	3/7	6/2	3/72	+	-	-	A little fire cracked flint
31	339	336	ditch	30	8	2842	284	1514	4/10	45/59	12/0.75	+	-	-	Flint-natural?; little firecracked flint
Romano-British															
29	268	270	quarry	30	52*	4099	437	1522	2/5	8/27	-	-	-	-	Occ fire-cracked flint
32	390	391	ditch	30	55*	4567	390	139	2/18	50/191	2/1	+	-	4/6	?Fe hobnails x4g
30	324	318	ditch	30	10*	2945	606	206	2/2	6/13	16/1	-	-	-	Flint-natural? Occ fire-cracked flint
Prehistoric pits															
11	205	203	layer	27	<1	-	-	-	-	-	-	-	-	-	2 flakes hammerscale
11a	205			0.41											26g fire cracked flint
12	214	211	pit	30	3*	16007	319	195	2/4	-	-	-	-	-	Abundant fire cracked flint
14	218	212	pit	20	2*	7062	193	115	-	-	-	-	-	-	Abundant fire cracked flint
15	222	220	pit	7.5	<1	-	-	-	1/2	-	2/0.5	-	-	-	Flint-debitage/natural?; burnt flint
17	221	219	pit	34	-	-	-	-	2/1	-	35/8	-	-	-	Flint-2 flakes, microliths?, debitage; 7 flakes hammerscale; very abundant burnt flint
18	224	219	pit	20	2*	4420	269	119	-	-	-	-	-	-	Abundant fire cracked flint
19	225	220	pit	15	<1	-	-	-	1/2	+	7/3	-	-	-	Flint-debitage? 3 flakes hammerscale; burnt flint
20	226	210	pit	30	14*	6593	506	526	1/4	-	-	-	-	-	Abundant fire cracked flint
21	234	227	pit	10	-	-	-	-	-	-	-	-	-	-	grab sample retained; burnt flint
22	233	227	pit	30	22*	13853	490	-	-	-	-	-	-	-	Abundant fire cracked flint
24	208	209	pit	20	4*	2367	244	270	-	-	-	-	-	-	Abundant fire cracked flint
25	235	228	p'hole	10	2*	522	66	89	3/3	-	-	+	-	-	occasional fire cracked flint; occ CBM/fired earth

• - magnetic fraction not seen or checked for hammerscale; # CBM or fired earth; + present in quantities too small to weigh;

Table 4. Environmental finds from the samples, arranged in period order.

Sample No:	Context No:	Volume (L)	Weight (kg)	Flot Vol ml	Charcoal #/*	Charred Grain *	Charred Chaff *	Charred Seeds *	waterlogged Seeds *	Bone Wt g.	Comments
Post-medieval moat fills											
6	38	12	18	42					3		Waterlogged sample – see Table 6
7	38	nd	0.5	20	-/2				2		Waterlogged sample – see Table 6
35	71	10	9.1	255					3	+	Cyprinid, fish scales, frog/toad; snails – <i>Bithynia tentaculata</i> , <i>Valvata piscinalis</i> - waterlogged sample – see Table 6
33	72	10	8.5	200					3		<i>Planorbis planorbis</i> x2, <i>B. tentaculata</i> x2, <i>Viviparus fasciatus</i> x1 ; see Table 6
37	73	10	11.1	7					2	+	Small fish – waterlogged sample – see Table 6
Medieval											
8	51	30	33	250	5/5	4	1	2		24	Sheep/goat, field vole, wood mouse, Turdidae, frog/toad, eel, cyprinid, large fish – see Table 5
Late Saxon											
26	241	20	25.2	40	3/5	5	1	3		6	Sheep/goat, field vole – see Table 5
27	242	20	25.8	35	3/5	4		2		6	Indet bone, rodent, small fish; <i>Vallonia</i> sp. x1 – see Table 5
31	339	30	26.8	36	3/5	2		2		45	Horse, cattle, pig, mole, house mouse, field vole, frog/toad, newt, eel, cyprinid – see Table 5
Romano-British											
29	268	30	29.9	2000	5/5	2		2		8	Cattle, sheep size indet, rodent; <i>B. tentaculata</i> – see Table 5
32	390	30	24.7	800	5/5	4	2	4		50	Charred Hazelnut; Cattle, sheep/goat, dog, rabbit, house mouse, frog/toad, small fish; see Table 5
30	324	30	30	500	5/5	2	1	2		6	Charred Hazelnut; field vole, frog/toad – see Table 5
Prehistoric pits											
11	205	nd	nd	125	5/5	1	1	1			Virtually all charcoal; charred grain frags (2) & traces of chaff (<i>Triticum dicoccum</i> glume base (1), <i>T. spelta</i> glume base (1)); charred bud fragment; occ uncharred seeds (Lamiaceae); occ moss & root fragments; snails- <i>Anisus leucostoma</i> , <i>Vallonia</i> sp. – see Table 5
12	214	30	33.5	2	1/3						
14	218	20	19.4	20	4/5	1					See Table 5
15	222	10	nd	60	5/5						Virtually all charcoal (>nos id'ble fragments also >6.7mm); occ roots; NO CPR
17	221	40	nd	42	4/5	1					Mainly charcoal (good nos id'ble fragments); rare indet charred grain fragments (2); occ uncharred seeds (<i>Sambucus</i>); occ insects (pupae), roots & worm capsules – see Table 5
18	224	20	22.4	8	3/5	1					<i>Trichia hispida</i> x1 – see Table 5
19	225	20	nd	30	4/5	1		1		+	Mainly charcoal (good nos id'ble fragments); occ. indet.charred grains (3), <i>Bromus</i> ; occ uncharred seeds (<i>Silene</i> , <i>Atriplex</i>); occ moss & root fragments; field vole – see Table 5
20	226	30	38.2	1100	5/5	2					Free threshing wheat, barley; see Table 5
21	234	10	nd	5							
22	233	30	35.5	185	5/5	1					See Table 5
24	208	20	20	172	5/5	1					See Table 5
25	235	10	11.6	9	2/4	1		1			<i>Vallonia excentrica</i> x1 – see Table 5

#/* frequency of charcoal recovered from flots >2mm and <2mm; *frequency 1=1-10; 2=11-50; 3=51-150; 4=151-250; 5=>250; + represents present but too small to weigh;

The sample from context 72 produced fragments of modern plastic suggesting some contamination. The plant remains are dealt with in detail below.

Just one medieval deposit was sampled, the fill of pit 50, a possible latrine pit. This contained a range of rubbish including pottery and animal bone with a little slag, brick/tile and an iron object. A few flints include possible debitage and microliths which are likely to be re-deposited. The deposit was rich in charred cereal remains (see below) and with sheep/goat, eel, cyprinid (carp family) and a largish fish dentary bone included food waste (Table 4). A carpometacarpus of a thrush (Turdidae), possibly a fieldfare or mistle thrush, could be either food debris or a natural death.

Samples from two ditches, 239 and 336 have produced radiocarbon results on charred cereal grains that date the fills to the late Saxon period and indicate the probability that a third sample, <26>, from the middle fill of 239 is probably also of late Saxon date. Although these features were initially dated to the Romano-British period on the basis of ceramics the radiocarbon results are consistent with the provisional dates suggested by the charred cereal assemblages. The lower and middle fills of ditch 239 both produced a cereal assemblage more reminiscent of a Saxon or medieval site than Roman (see below – Table 5), with free-threshing wheat, rye and oats present and no spelt wheat. Since rye comprises 30 and 27% of the identified cereal grain in the lower and middle fills of ditch 239 this is consistent with the late Saxon date. The secondary silting of ditch 336 includes two rye grains in a group of fourteen identified cereals also consistent with the radiocarbon results. These deposits produced pottery, flint and animal bone and ceramic building material (CBM) in context 241. They also produced abundant charred cereal grain, hazel nutshell in ditch 239, horse, cattle, sheep/goat, pig and small fish including eel and cyprinid, all of which were probably food debris. Additionally field vole, frog/toad and newt reflect small wild vertebrates, and the find of house mouse in ditch 336 might suggest a building or house nearby.

Three samples were taken from Romano-British ditch 391 and quarry pits 270 and 302. The deposits from quarry pits 270 and 302 produced emmer and spelt wheat (or undifferentiated emmer/spelt – glume wheat), and the former has a radiocarbon date on barley grain indicating a late Roman date (Table 2). The absence of glume wheat from the ditch samples supports the suggested later date of these deposits, but confident dating would require radiocarbon dating of grain from the two features even though Roman ceramics, which could be residual, have been recovered in the deposits. These deposits produced pottery and animal bone, and iron hob-nails in 390. A little firecracked flint in two of the samples suggests perhaps debris from the earlier burnt mounds on the site (see below). The material from the quarry pits includes abundant charcoal and charred cereal grain, with hazelnut, cattle, sheep/goat and occasional small fish suggesting food debris, while house mouse, field vole and frog/toad represent the commensal and wild fauna. A dog innominate bone in context 390 perhaps suggests a disturbed burial, while the rabbit tooth almost certainly indicates an intrusive animal. A shell of the aquatic gastropod *Bithynia tentaculata* in quarry pit fill 268 perhaps suggests that the pit was waterfilled at some point in its history.

The remaining samples were taken from the group of pits in the centre of the football pitches area. Many of them contained abundant firecracked flint (Table 3) which has been interpreted as ‘burnt mound’ deposits. The two pits with radiocarbon dates from their fills suggest that this group of pits probably dates to the late Bronze Age (Table 2). The samples produced a few sherds of pottery (Table 3) and a little probable flint debitage with possible microliths in

pit 219. The pottery in conjunction with a little flint waste and a small number of charred cereal grains in nine of the fourteen samples suggests some small input of occupation debris, although burnt mound sites often lack any such material.

The Plant remains (*John Giorgi*)

Methods

The plant remains were identified using a binocular microscope (with a magnification of up to x40) together with modern and charred botanical reference material and reference manuals (Cappers *et al* 2006; Jacomet 2006). Twenty one of the samples contained identifiable plant remains with no identifiable material in pit fills [214] (sample <12>) and [222] (sample <15>); 16 samples produced charred plant material and five contained 'waterlogged' plant remains. The charred remains were extracted and counted with the exception of very fragmented cereal grain (smaller than 2mm), indeterminate items and charcoal. The 'waterlogged' plant remains were recorded without extraction unless not readily identifiable and estimates of the abundance of the 'waterlogged' remains made on the basis of the following rating system: + =1-10; ++ = 11-50; +++ = 51-150; ++++ = 151-250; +++++ = >250 items.

Results

Charred plant remains from the samples are shown by period in Table 5 and the 'waterlogged' plant remains in Table 6. Taxonomic order for the wild plants following Stace (2005), also used for habitat and ecological data together with Ellenberg (1988), Hanf (1983) and Wilson *et al* (2003). The plant remains are discussed by period.

Prehistoric Period

Pit fills [221], [226], [225], [205], [208], [218], [224], [233]; *Post-hole fill* [235] (9 samples) (Bronze Age Phase 2) (Table 5)

These samples were largely collected from burnt flint pits and have been assigned to the Late Bronze Age. Charcoal was the dominant feature of all the plant assemblages from the eight pit fills and one post-hole fill, with an exceptionally large amount (>1000ml) in pit fill [226] and large quantities (>100ml) in pit fills [233], [208] and [205].

The samples contained only small amounts of other charred plant remains with no significant differences between individual assemblages, all of which had an item density of less than one per litre of processed soil. These remains consisted largely of small numbers of charred cereal grains, most of which could not be identified further. The identifiable grains were virtually entirely of wheat (*Triticum*), with evidence for hulled wheat including possibly emmer (*Triticum cf dicoccum*) in pit fills [208] and [218], two glume bases in pit fill [205] confirming the presence of this cereal and the hulled wheat, spelt (*Triticum spelta*). Free-threshing wheat grains (*Triticum aestivum/turgidum*) were identified in pit fill [208] while pit fills [226] and [235] also contained evidence or tentative evidence for the presence of this cereal. The only other cereal represented in these samples was barley (*Hordeum*), two grains of which were found in pit fill [226]. Other charred plant remains in these samples was limited to two large wild grass seeds, including *Bromus* (brome), in separate fills and probably cereal weeds, plus a charred bud fragment in pit fill [205].

The cereal grains may have been accidentally burnt while being dried before storage or milling or during cooking of whole grains, while the traces of chaff (from the de-husking of hulled wheats) and large weed seeds represent debris from the final stages of crop-cleaning,

these assemblages indicative of low-level domestic activities possibly taking place close-by, with the remains incidentally incorporated into the pits. The wheat and barley grains in these samples may have been used for making bread, porridge or gruel or may have been added to stews including pottage (Wilson 1991, 189) and soups; barley was also used for brewing beer (Renfrew 1985, 15-16). Hulled wheat (both emmer and spelt) along with barley, are the most common finds in Bronze Age deposits in southern England while free-threshing wheat is less common although more frequent in Neolithic contexts (Greig 1991, 300, 302). A degree of caution, however, needs to be exercised with respect to the presence of free-threshing wheat grains in prehistoric contexts, recent research involving the radiocarbon dating of such grains in prehistoric and Roman contexts, often showing many to be intrusive and of post-Roman date (Carruthers *et al.*, 2015).

Romano-British Period

There were six samples initially assigned to this period, two from pit fills associated with a sand quarry and a ditch fill, and three from later enclosure ditches, although these latter, as discussed above have been dated to the Late Saxon period (see below). One of the quarry pit fills produced a rich charred plant assemblage (Table 2). Charred barley grain from quarry pit 270 has been dated to the 3rd-4th century AD (Table 2).

All three samples from the sand quarry and ditch fill 390 produced very large flots (500ml to c 2000ml) consisting mainly of fragmented charcoal with abundant large fragments (>4mm) and round wood including *Quercus* (oak). The richest botanical assemblage (c 500 items and a density of 16.6 per litre of processed soil) was from the lower quarry pit fill [290], cereal grains accounting for half of the quantified remains, wild plant/weed seeds making up 48%, and hulled wheat chaff fragments the other 2%. More modest sized charred plant assemblages were recovered from the upper fill [268] and backfill [324] samples with low item densities (1.8 and 2.1 per litre of soil), the remains in both consisting mainly of cereal grains and smaller amounts of wild plant/weed seeds.

The cereals represented in all three samples, however, were broadly similar, six-row hulled barley being the dominant grain in all three assemblages followed by hulled wheats including evidence (grain and chaff) for both emmer and spelt; there were also traces of free-threshing wheat grain in the lower fill [290] sample. A few oat (*Avena*) grains were also present in the lower and upper fill samples although it was not possible to establish if these were from cultivated and/or wild oats.

This range of cereals is typical for the Romano-British period with hulled wheat and hulled barley usually being the main grains together with occasional finds of free-threshing wheat (Greig 1991, 309); spelt is usually the main hulled wheat but there was insufficient data in this instance to establish whether this or emmer or indeed either, was the dominant hulled wheat cereal on the site. The few oat grains in the samples may be simply weeds.

During the Roman period cereals may have been used for bread, porridge or added to stews or soups (Renfrew 1985a, 22). Spelt and bread wheat both contain the necessary proteins for leavened bread unlike emmer which, however, is better for porridge and making cakes (Cool 2006, 70). Barley, the best represented cereal in the three samples, is also a poor bread making grain but makes good griddle cakes (*ibid.*, 71); it has also been used along with wheat in brewing although none of the grains had sprouted to suggest such a use in this instance. Barley

was also used as animal fodder. Other possible food residues in these samples were represented by a few charred hazelnut shell fragments in two samples and a beech fruit in one.

Table 5. Charred plant remains

	period	LBA	LBA	LBA	PREH	PREH	PREH	PREH	PREH	PREH	RB	RB	RB	LSax	LSax	LSax	MED
	feature	PIT	PIT	PIT	PIT	PIT	PIT	PHOLE	PIT	PIT	DITCH	QPIT	QPIT	DITCH	DITCH	DITCH	?LATRINE
	cut number	210	210	227	220	203	209	228	212	219	391	270	302	239	239	336	50
	type	MFILL	UFILL	MFILL	LFILL	LFILL	LFILL	FILL	LFILL	LFILL	LFILL	UFILL	BFILL	LFILL	MFILL	SILTING	UFILL
	context number	226	221	233	225	205	208	235	218	224	390	268	324	242	241	339	51
	sample number	20	17	22	19	11	24	25	14	18	32	29	30	27	26	31	8
	vol sample (l)	30	40	30	20	27	20	10	20	20	30	30	30	20	20	30	30
	vol flot (ml)	c. 1100	42	185	30	125	172	9	20	8	c. 800	c. 2000	500	35	40	36	250
Cereal grains																	
<i>Triticum dicoccum</i> Schubl.	emmer wheat											2					
<i>T. cf. dicoccum</i>	?emmer wheat						1		1		1	1					
<i>T. spelta</i> L.	spelt wheat												1				
<i>T. dicoccum/spelta</i> type	emmer/spelt wheat								1		5						
<i>T. cf. dicoccum/spelta</i> type	?emmer/spelt wheat										9						
<i>T. aestivum/turgidum</i> type	free-threshing wheat	1					1				1			24	51	2	6
<i>T. cf. aestivum/turgidum</i> type	?free-threshing wheat	3					1	1			2			12	40	5	16
<i>Triticum</i> sp(p).	wheat	2						1			20	5	3	14	17	1	4
cf. <i>Triticum</i> sp(p).	?wheat	3								2	11	4	2	16	35	1	23
<i>Triticum/Secale cereale</i> L.	wheat/rye													6	16		2
<i>Secale cereale</i> L.	rye													14	11		1
cf. <i>S. cereale</i>	?rye													27	58	2	1
<i>Hordeum vulgare</i> L.	barley, hulled twisted										15	13	5	1	2		
<i>H. vulgare</i> L.	barley, hulled straight										7	2	2	1		1	1
<i>H. vulgare</i> L.	barley, hulled										35	10	7	6	9		
<i>H. vulgare</i> L.	barley, indet	2									12	1	2	2	3		1
cf. <i>H. vulgare</i>	?barley										7					1	
<i>Avena</i> sp(p).	oat										3	3		1	5	1	2
cf. <i>Avena</i> sp(p).	?oat													10	9	1	6
Cerealia	indet. cereal	5	2	3	3	2	2	4	1		118	9	15	140	184	35	113
Cerealia	indet cereal fragments <2mm										+++		++	++	++++	++	+++
Cereal chaff																	
<i>Triticum dicoccum</i> Schubl.	emmer wheat glume base						1				1						
<i>T. spelta</i> L.	spelt wheat glume base						1				1		1				
<i>Triticum</i> spp.	hulled wheat glume base										6						
<i>Triticum</i> spp.	hulled wheat spikelet base										3						
<i>T. aestivum</i> type	hexaploid wheat rachis																1
<i>Triticum</i> sp.	wheat rachis														1		
<i>Secale cereale</i> L.	rye rachis														1		1
<i>Hordeum</i> sp.	barley rachis																1

	context number	226	221	233	225	205	208	235	218	224	290	268	324	242	241	339	51
	sample number	20	17	22	19	11	24	25	14	18	32	29	30	27	26	31	8
Other plant/weed seeds																	
<i>Urtica</i> sp.	nettle										1						
<i>Fagus sylvatica</i> L.	beech										1						
<i>Corylus avellana</i> L.	hazel nut shell fragments										2		1		1		2
<i>Chenopodium</i> sp.	orache/goosefoots etc										14						1
<i>Stellaria media</i> (L.) Vill.	common chickweed										30		1				
<i>Agrostemma githago</i> L.	corncockle													15	17	1	
<i>Polygonum aviculare</i> L.	knotgrass										3		1				1
<i>Fallopia convulvulus</i> (L.) A Love	black bindweed													2			1
<i>Rumex</i> sp(p).	dock										7		1		3		2
<i>Vicia sativa</i> L.	common vetch													2			
cf. <i>V. sativa</i>	?common vetch													3			
<i>Vicia/Lathyrus</i> spp.	vetch/tare/vetchling (>2mm)													7	14	2	5
<i>Vicia/Lathyrus/Pisum</i> sp(p).	vetch/tare/vetchling/pea (>2mm)														1	1	2
<i>Vicia/Lathyrus</i> spp.	vetch/tare/vetchling (<2mm)														3		13
<i>Vicia/Lathyrus/Pisum</i> spp.	vetch/tare/vetchling/pea (<2mm)										3					2	4
<i>Medicago/Trifolium</i> sp(p).	medicks/clovers										55	4	4				1
Fabaceae indet	large fragments (>2mm)																2
Fabaceae indet	small rounded legumes (<2mm)										2	4	1			1	
<i>Bupleurum rotundifolium</i> L.	thorow-wax													1			
<i>Prunella vulgaris</i> L.	self-heal										2						
<i>Plantago lanceolata</i> L.	ribwort plantain										11		1				
<i>Euphrasia/Odontites</i> spp.	eyebrights/bartsias										3						
<i>Rhinanthus minor</i> L.	yellow rattle										3						
<i>Sherardia arvensis</i> L.	field madder														3		
<i>Galium aparine</i> L.	cleavers										4	1			2		
cf. <i>G. aparine</i>	cleavers															1	
<i>Centaurea</i> sp.	knapweed										2						
<i>Anthemis cotula</i> L.	stinking chamomile										13						3
<i>Eleocharis palustris/iuniglumis</i>	spike-rush																1
<i>Carex</i> sp.	sedge										2	2					
<i>Festuca/Lolium</i> spp.	fescue/rye-grass										6		2				
<i>Bromus</i> sp(p).	brome				1						2			6	9		1
cf. <i>Bromus</i> sp(p).	?brome										1			1	5	1	2
Poaceae/Cerealia indet.	large grass seeds/cereal grains							1			9				2		
Poaceae indet.	grasses (small seeds)										31	3	2		2		
Poaceae indet.	grass/cereal node/internode										1		1				
indeterminate	thin stems (ribbed, round)										33						
indeterminate	bud fragment					1											

	context number	226	221	233	225	205	208	235	218	224	290	268	324	242	241	339	51
	sample number	20	17	22	19	11	24	25	14	18	32	29	30	27	26	31	8
indeterminate	wood charcoal	+++++	+++++	+++++	+++++	+++++	+++++	++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++	+++++
indeterminate		+									++	+	+		+	+	+
	TOTAL	16	2	3	4	5	5	7	3	2	498	64	53	311	504	59	220
	item density (per litre of processed soil)	0.5	0.05	0.2	0.1	0.2	0.3	0.7	0.2	0.1	16.6	2.1	1.8	15.6	25.2	2	7.3

Item frequency: + =1-10; ++ = 11-50; +++ = 51-150; ++++=151-250; +++++ = 250+items

The other plant remains in these samples, largely from the lower quarry fill, consisted mainly of wild plant/weed seeds, which are probably largely from arable weeds, incidentally imported with the cereal grains, and which may provide information on aspects of crop husbandry. Of the few weed seeds that could be reduced to species, several, including *Agrostemma githago* (corn cockle) and *Plantago lanceolata* (ribwort plantain), suggest the use of sandy loam soils while *Anthemis cotula* may point to the cultivation of heavier clay soils along with *Galium aparine* (cleavers). This corresponds fairly well to the current soils around Bisham which consist largely of freely draining slightly acid but base rich loamy highly fertile soils with some clayey soils to the east, over mainly superficial deposits of sands and gravels and chalk bedrock. The presence of *Stellaria media* (common chickweed) and *Galium aparine* may suggest the spring and autumn sowing of cereals as is practiced today in the area. The cereals in the samples may have been sown in either period, spelt and free-threshing wheat being frost hardy although emmer less so, while barley can produce a good crop when sown in spring having a short growing season. There is tentative evidence for the harvesting of cereals by cutting fairly low on the straw with the presence of free standing fairly low-growing weeds in the samples including *Anthemis cotula* and *Stellaria media*, although Roman agronomists describe a range of harvesting methods which may have been used in Britain including cutting the straw at different heights and uprooting (Spurr 1986, 67-8).

There was a relatively large number of small leguminous weed seeds including *Medicago/Trifolium* (medick/clover/trefoil) in all three samples (c. 25% of all weed seeds in the lower quarry pit fill) which may indicate decreased soil fertility of the arable fields from over-cropping during the Roman period, these nitrogen-fixing plants thriving in such soils. The remains of some of these legumes could, however, also be associated with the collection of hay from meadows/grasslands possibly closer to the river, with a number of characteristic grassland plants found in the lower quarry pit fill including *Prunella vulgaris* (self-heal), *Plantago lanceolata*, *Rhinanthus minor* (yellow rattle), *Carex* (sedges) and fairly large numbers of small (Poaceae) grass seeds; some of the thin ribbed and rounded stems could also possibly belong to wild grasses.

The composition of the three charred plant assemblages appears to provide an indication of the activities that generated the remains. The two smaller assemblages from the upper quarry pit fill [268] and back fill [324] consisted largely of cereal grain, with few weed seeds and only a trace of chaff in the backfill, which suggests that these remains largely derive from fully cleaned grain which could have been accidentally burnt during drying before storage or milling or as a result of accidents during cooking. The large amount of grain (50% of the quantified remains) in the richer assemblage from the lower quarry pit fill [290] may have also been burnt during similar activities with little chaff (2% of the material) to suggest large scale de-husking of hulled wheat. The other 48% of quantified remains in this sample, however, consisted of material from potentially several sources; waste from the final stages of crop-cleaning - the small weed seeds, for example *Chenopodium* (goosefoots etc), *Stellaria media*, *Rumex* (docks), *Anthemis cotula*, through separation from the grain by sieving, and the larger weed seeds such as *Agrostemma githago*, *Galium aparine*, *Bromus* (bromes) of a similar size to grains, by hand-sorting from almost fully processed cereals. There are also the potential residues of burnt hay (represented by a range of grassland plants) and traces of other food debris in the form of hazel nutshell and beech fruits. The main component of all three flots, however, was charcoal, spent fuel from various activities including possibly cooking.

Late Saxon period

Enclosure Ditch [239] lower fill [242] (sample <27>), middle fill [241] (sample <26>), Ditch [336] silting [339] (sample <31>)(Table 1)

Three samples from the fills of two enclosure ditches provisionally dated to the Romano-British period have now been dated by radiocarbon analysis to the Late Saxon period. These produced charred plant remains, with very rich assemblages in the two fills [241], [242] of Ditch [239] and a smaller assemblage in the fill [339] of Ditch [336]. Most of the charred plant remains in all three samples consisted of cereal grains with much smaller numbers of largely wild plant/weed seeds.

The cereal grains were well-preserved in the two samples from Ditch [239] but poorly preserved in Ditch [336]. The range and representation of the cereals in the three samples was very similar; thus, free-threshing wheat was the main grain followed by rye (*Secale cereale*) with much smaller numbers of six-row hulled barley and oat grains. Chaff fragments were limited to a single wheat and rye rachis fragment in the middle fill of Ditch [239]. This pattern is notably different from the cereals identified in the quarry pit fills where barley was the dominant grain and where hulled wheat (spelt and emmer) was the main wheat cereal, with the enclosure ditch fill samples containing no evidence for hulled wheat, either grains or chaff. The four cereals in the enclosure ditch fills, free-threshing wheat, rye, hulled barley and oats, are typically of the post-Roman period (Greig 1991, 315).

The other difference in the charred plant remains from the Romano-British samples were the remains of cultivated pulses represented by a small number of seeds of common vetch (*Vicia sativa* ssp *sativa*) in the lower ditch fill [242] and possibly the larger legumes possibly *Vicia/Pisum* (bean/pea) fragments (>2mm) in all three samples. Common vetch was commonly grown as a fodder crop during the medieval period (Greig 1991, 323) but has not been found in deposits earlier than the Saxon period (Carruthers 2007, 39). A single hazel nut shell fragment may represent burnt debris from the collection and consumption of wild nuts.

There were only small numbers of wild plant/weed seeds in the three samples although the range of identifiable remains included a good number of *Agrostemma githago* plus *Galium aparine* seeds in the two ditches, both of which were recorded in the quarry pit fills and may also point to the cultivation of sandy loams and possibly clay soils. Species not found in the earlier quarry pits included a few seeds of *Bupleurum rotundifolium* (thorow-wax) and *Sherardia arvensis* (field madder) which may indicate the use of calcareous loams for growing crops and occasional records for *Fallopia convolvulus* (black bindweed) which is mainly found on well drained soils on sands or limestones. *Bupleurum rotundifolium* and *Galium aparine* are usually indicative of winter sown crops while *Fallopia convolvulus* is a weed particularly of spring sown cereals. Of the two main cereals in these samples, free-threshing wheat is usually found in rich soils, and rye on sandy soils, both mainly being autumn sown.

The bulk of the charred plant remains in these samples were from the two fills of Ditch [239] with over 300 items in both and densities of 15.6 and 25.2 per litre of processed soil. The composition of all three samples from both ditches, however, was broadly similar, cereal grain dominating each assemblage (88% of the quantified material in the two fill samples of Ditch [239] and 85% in the fill of Ditch [336]). In each instance free-threshing wheat and rye were the main cereals together with smaller amounts of hulled barley and oats. There was virtually no chaff (except for two rachis fragments in ditch fill [241]) and few small weed seeds, most

of the crop-processing debris consisting of large weed seeds including *Agrostemma githago*, *Galium aparine* and *Bromus*, common in grain stores and requiring hand-sorting. This suggests that most of this assemblage represents virtually cleaned grain ready for use, which may have been accidentally burnt in a similar way to that described above, during drying before storage or milling, during cooking or possibly while in storage.

Medieval Phase

Only one sample was taken from a medieval deposit; the fill of a possible latrine which produced charred plant remains.

Possible Latrine Pit [50] fill [51] (sample <8>)(Table 5)

This deposit was dated on the basis of 13th-14th century pottery in the pit, with the sample producing a fairly large flot (250ml) consisting mainly of fragmented charcoal but also a sizeable charred plant assemblage (several hundred items and a density of 7.3 per litre of processed soil). The bulk of the charred plant remains consisted of cereal grain, poorly preserved and fragmentary, which accounted for 80% of the quantified remains with traces of cereal chaff (1%), while wild plant/weed seeds made up the other 19%.

The cereal assemblage was made up of mainly free-threshing wheat grains with only very small numbers of rye, hulled barley and oats; one wheat rachis fragment confirmed the presence of hexaploid bread wheat (*Triticum aestivum*) while there were also single rye and barley rachis fragments. Free-threshing wheat, hulled barley, rye and oats are the four main cereals found in medieval southern England (Greig 1991, 321; Moffett, 2006, 45).

Wheat was the most valued cereal in the medieval period, bread wheat being the preferred bread making grain (Moffet 2006, 49) although wheat flour was also used for pies and pastries. All the cereals in the samples, however, either separately (except for oats) or in mixes, may have been used for making bread (Campbell *et al* 1993, 25). Rye was probably mainly used for peasant bread (Hammond 1995, 2) while the cereals may have also been used for biscuits and cakes or added to pottage (Campbell *et al* 1993, 25). Barley and oats were also used for animal feed and for brewing (as was occasionally wheat) although there were no sprouted grains in the assemblages to suggest such a use at the site. A few hazel nut shell fragments were again recovered which may be evidence for the gathering and consumption of these nuts. There were a number of large *Vicia/Pisum* fragments which could be the remains of cultivated pulses (beans, peas, vetches) although the smaller leguminous seeds in this sample may be an indication of poor soil fertility of the arable fields from over-cropping.

There was only a small quantity and range of other wild plant/weed seeds in this sample, few of which could be identified to species; the presence of *Anthemis cotula*, however, previously recorded in the Romano-British quarry pit backfill, may suggest the use of calcareous or heavier soils around Bisham, probably associated with the cultivation of free-threshing wheat including bread wheat (the main cereal in the sample) which grows best in heavy and rich soils (Moffett 2006, 48). Traces of *Polygonum aviculare* and *Fallopia convolvulus* may also point to the use of sandy soils for cultivation while *Eleocharis palustris/uniglumis* (spike rush) may suggest the use of damper soils.

The bulk of the charred plant remains in this sample consist of cereal grains, accidentally burnt during the final stages of crop-cleaning and food preparation and indicative of domestic activities, with crop-processing by-products limited to a few weed seeds, both small and large

(eg *Bromus*) which would have been removed during the latter stages of cleaning with the traces of chaff persistent contaminants from earlier stages of processing. The charcoal, which formed a major component of the flot, may represent spent fuel, possibly from cooking activities.

Post-medieval period moat fills

Radiocarbon dating of hazelnut shell (context 38) and a walnut shell (context 71) from the deposits interpreted as a palaeochannel and the overlying moat fills, respectively, have both produced post-medieval dates (Table 2) and indicate that the deposits originally interpreted as a palaeochannel beneath the moat must represent a slightly earlier fill of the moat. Both dates are very close and indicate that these fills are post-medieval rather than medieval as originally assumed.

Two sections of the moat were sampled, a sequence at NGR SU 84852-85019 comprising 35 (lower penultimate fill of moat), 36 (lower organic peaty silt fill of moat), 37 (upper pale grey silt fill of 'palaeochannel') and 38 (grey sandy silt secondary fill of 'palaeochannel'); and a sequence at NGR SU 84916-84980 comprising 71 (soft spongy organic fill of moat), 72 (very dark grey silty clay), 73 (dark grey gravels – upper fill of 'palaeochannel'). On the basis of the radiocarbon date the 'palaeochannel' deposits would appear to reflect earlier fills of the moat. This error almost certainly arose because the sections were machine dug and access to the sections (the machine dug trench was 3.5m deep) could not be gained safely so recording had to be undertaken of the uncleaned section by looking into the trench. Five samples from these deposits were processed and studied from contexts 38, 71, 72 and 73 (Table 6), and all contained waterlogged plant remains.

Lower moat fills [38] (samples <6>, <7>), [73] (sample <37>)

Sample <6> from the grey sandy silt lower moat fill [38] produced most of the identifiable plant remains from these lower fills, the other two samples only containing a small range of identifiable material.

Wetland plants represented in the lower fill [38] (sample <6>) included aquatic/semi-aquatic species, *Potamogeton* (pondweeds), *Alisma* (water plantain), *Ranunculus Batrachium* (crowfoots), suggesting a muddy substrata with moving water, while *Lycopus europaeus* (gypsy-wort), and *Carex* (sedges) point to wet conditions in the immediate vicinity of the moat. Evidence for an aquatic environment in the other two samples was limited to *Potamogeton* in fill [73] and a small number of ostracods in the sample <7>.

All three samples from these lower moat fills contained evidence for a woodland/hedgerow/scrub habitat, with a relatively good number of fruits of *Crateagus monogyna* (hawthorn) in both samples from [38] while all three contained *Rubus fruticosus* (blackberry) and *Sambucus nigra* (elder) seeds. *Prunus* stones including *Prunus domestica* (plum/bullace) were also recorded in sample <7>. All these wild plants are potential sources of food. Two large *Juglans regia* (walnut) shell fragments were also identified in sample <6>; this non-native tree was introduced in the Roman period and may have been planted on the 'estate'. Large amounts of fragmented variable sized wood (including round wood and bark) were also present in all three lower moat fills while there was a little charcoal in sample <7>. Occasional thorns in the two fills may be from hawthorn or brambles.

Other plant remains identified in samples <6> and <37> included *Urtica dioica* (common nettle) and *Solanum nigrum* (black nightshade), both of which are found in nitrogen rich soils which could be indicative of human/animal activity or refuse tips close-by. Traces of *Ranunculus* (buttercups), *Carduus/Cirsium* (thistles) and Poaceae (wild grasses) in samples <6> and <7> may point to areas of disturbed ground/grassland. Other vegetative material in sample <7> included leaf, stem, bud and moss fragments.

Table 6. Waterlogged plant remains from the moat

	Period	Post-med	Post-med	Post-med	Post-med	Post-med
	deposit	Moat	Moat	Moat	moat	moat
	fill	lower	lower	lower	middle	upper
	context number	38	38	73	72	71
	sample number	7	6	37	33	35
	vol sample (l)	0.5	12	10	10	10
	vol flot (ml)	20	42	7	c 200	255
LATIN_NAME	ENGLISH					
Waterlogged plant remains						
<i>Taxus baccata</i> L.	yew					+
<i>Ranunculus acris/repens/bulbosus</i>	buttercups		+		+	+
<i>R. subgen. Batrachium</i> (DC) A Gray	crowfoots		+		+	+
<i>Cannabis sativa</i> L.	hemp					+
<i>Urtica dioica</i> L.	common nettle		++	+	+	+
<i>Juglans regia</i> L.	walnut shell fragments		+			+
<i>Fagus sylvatica</i> L.	beech fruits				+	
<i>Alnus glutinosa</i> (L.) Gaertn.	alder seeds				+	+
<i>Corylus avellana</i> L.	hazel nut shell fragments				+	
Caryophyllaceae indet.				+		
<i>Polygonum aviculare</i> L.	knotgrass					+
<i>Rumex</i> spp.	dock			+	+	+
<i>Rubus</i> sect <i>Glandulosus</i>	blackberry		+	+	++	++
<i>Rubus</i> sect <i>Glandulosus/idaeus</i>	blackberry/raspberry				+	+
<i>Rubus</i> spp.	brambles etc fragments			+		+
<i>Prunus domestica</i> L.	wild plum/bullace fruit stones	+				
<i>Prunus</i> spp	shell fragments	+				
<i>Crateagus monogyna</i> Jacq.	haws	++	+++		++	++
<i>Solanum nigrum</i> L.	black nightshade		+			
<i>Prunella vulgaris</i> L.	self-heal					+
<i>Lycopus europaeus</i> L.	gypsywort		+			
<i>Sambucus nigra</i> L.	elder		+	+	++	++
<i>Carduus/Cirsium</i> spp.	thistles		+		+	
<i>Alisma</i> spp.	water-plantain		++			
<i>Potamogeton</i> spp.	pondweed		+	+	+	+
<i>Carex</i> spp.	sedge		++		++	++
<i>Carex</i> spp.	sedge uticles		+			
Cypercaeeae indet	sedges etc.		+			+
Poaceae indet.	grasses (large seeds)	+				
Poaceae indet.	grasses (small seeds)	++				
indeterminate	stone/shell fragments	+			+	
indeterminate	leaf abscission pads				+	++
indeterminate	leaf fragments	++			++	
indeterminate	bud fragments	+	++	++	+++	++++
indeterminate	stem fragments	+++				
indeterminate	thorn fragments		+	+	+	++
indeterminate	wood (inc bark & roundwood)	+++++	+++++	++++	+++++	+++++
indeterminate	items	+	+	+	+	
Bryophyta indet.	moss	++			+++++	++
charcoal		++				

item frequency: + = 1-10 items; ++ = 11-50 items; +++ = 51- 250 items; ++++ = >250 items
Quarry Pit [270] lower fill [290] (sample <32>), upper fill [268] (sample <29>), backfill [324] (sample <30>) (Table 1)

Middle fill of moat [72] (sample <33> Table 6)

This sample produced a fairly large flot (c 200ml) of mainly fragmented wood (including a large amount of small round wood) and evidence for a wide range of plants indicative of a similar range of habitats to those represented in the deposits above and below; indicators of a wetland/aquatic environment as shown by the presence of *Potamogeton*, *Ranunculus Batrachium* and *Carex*, together with ostracods, and possibly disturbed ground/grassy habitats as shown by the presence of *Urtica dioica*, *Ranunculus*, *Rumex* (dock) and *Carduus/Cirsium*.

There is a better representation of woodland, hedgerow and scrub species in this fill, as compared to the moat deposits above (see below), perhaps suggesting the presence of denser woodland during the accumulation of this deposit or closer proximity to woodland. There was evidence (fruits, seeds, nut shell) for a canopy of larger trees, *Fagus sylvatica* (beech) and *Alnus glutinosa* (alder), the latter found in damp woods and by lakes and rivers, and an understorey of smaller trees or shrubs including *Corylus avellana* (hazel), *Crateagus monogyna* (hawthorn), and *Sambucus* (elder) and *Rubus Glandulosus* (blackberry). All these plants, with the exception of alder, produce potential sources of wild food while beech was used extensively in the past as fuel and the nuts eaten by cattle (Mabey 1997, 79-81).

Upper Moat fill [71] (sample <35>) (Table 6)

This sample produced a fairly rich 'waterlogged' plant assemblage consisting largely of fragmented wood and with evidence for a range of plants not dissimilar to those recorded in the sediments below and indicative of a similar environment. Thus, there was again a good representation of woodland, hedgerow and scrub species, with the first evidence for *Taxus baccata* (yew) and the recurrence of *Juglans regia* (walnut), *Alnus glutinosa* (alder) and smaller trees or shrubs including *Crateagus monogyna* (hawthorn), *Rubus Glandulosus* (blackberry), *Rubus Glandulosus/idaeus* (blackberry/ raspberry) and *Sambucus* (elder), all of which, except yew and alder, produce edible fruits and nuts.

A similar range of wetland including aquatic species (*Potamogeton*, *Ranunculus Batrachium*, *Carex*), plus ostracods and fish bone indicates that the moat still contained water up to this level. A few plants, *Urtica dioica*, *Polygonum aviculare*, found in nitrogen rich soils may be indicative of human/animal activity or refuse disposal close-by, while *Prunella vulgaris* (self-heal) and *Ranunculus* may be evidence for grassy areas. An interesting find was a seed of *Cannabis sativa* (hemp); this plant was introduced in the Roman period and was grown for the use of the fibres for canvas, cloth and rope while oil from the seeds was used for cooking and lighting and the seeds as animal feed (Greig 1988, 122); it is also found today as a common casual on tips (Stace 2005).

Pollen Analysis (R. Scaife)

Initially four pollen samples (<1> to <4>) were taken from the organic sediment sequence in one of the moat sections, and two further samples from the second trench through the moat (samples <34> and <36>). A further series of samples (<40> to <48>) were taken through an alluvial and palaeosol sequence overlying the silty gravels (Fig. 1).

A pollen assessment has been carried out on four sediment samples from one of the moat sections. The principal aim of the study was to establish if sub-fossil pollen and spores are

preserved and if so, to provide preliminary information on the local vegetation and environment. This proved to be the case and interesting information on the local vegetation, including introduced trees has been obtained. Further study was not considered warranted and the lack of material suitable for radiocarbon dating rendered the sequence from the section illustrated in Fig. 1 unsuitable for study, although the pollen might itself have provided some guide to the age of the deposits.

Palynological techniques

Standard pollen extraction techniques were used on sub-samples of 2ml. volume (Moore and Webb 1978; Moore *et al.* 1992). A sum of 200 grains of dry land taxa plus extant marginal and aquatic taxa, fern spores and miscellaneous palynomorphs were identified and counted for this preliminary study. Pollen count data obtained are given in *table 1* below. Chemical preparation procedures were carried out in the Palaeoecology Laboratory of the School of Geography, University of Southampton and identification and counting was carried out using an Olympus biological microscope fitted with Leitz optics. An extensive pollen reference collection was available.



Fig. 1. Detail of pollen sampling column in sub-soils 86-87

The pollen data

Four samples of the moat sediments were examined of which three contained sub-fossil pollen and spores. The sample of middle fill (37) was barren. Pollen count data from samples of upper, upper middle and lower fills of the moat are given in Table 7 below. Pollen was well preserved with moderately diverse assemblages in spite of the assessment counts of 200 grains per sample.

The vegetation and environment

There have been relatively few pollen studies of moat fills and the data here indicate their value in delimiting the local vegetation and environment. However, the pollen influx of moats often has a complex taphonomy. Factors such a cut and fill may have taken place and the possibility that pollen may have been derived from secondary sources such as dumped domestic waste must be taken into account. Possible pollen sources may include:

- that coming from vegetation growing immediately on and adjacent to the sample location. i.e. aquatic macrophytes and fringing wetland plants.
- Pollen from farther sources. These tend to be wind pollinate varieties, especially trees and shrubs. The pollen derives from different parts of the site (near local) and from greater distances (regional and long distance).
- Pollen from taxa planted within the grounds of the site.
- Pollen from secondary sources such as domestic waste including human and animal ordure. This frequently results in high values of cereal pollen and the presence of intestinal parasites.

The moat vegetation: Surprisingly, there is little representation of the moats flora. Only small numbers of sedges (Cyperaceae) and occasional reed mace and/or bur reed (*Typha angustifolia* type), purple loosestrife (*Lythrum salicaria*) and possibly hemlock water dropwort (*Oenanthe* type) are present. It is possible that the moat was kept clean, a fact also possibly verified by the absence of intestinal parasites and quantities of cereal and associated pollen from dumped domestic waste.

The surrounding vegetation: Although herbs, dominated by grasses (Poaceae), are important there is also a very strong representation of trees and shrubs. In the latter, of particular note are elm (*Ulmus*), walnut (*Juglans*), and spruce (*Picea*). Also present are oak (*Quercus*), beech (*Fagus*), ash (*Fraxinus*) and yew (*Taxus*).

Of these trees, walnut and spruce are introduced and may have been planted locally as part of ornamental gardens. The former, walnut (*Juglans regia*), was a Roman introduction to Europe as a whole and once established there are pollen records from this period onwards. Exact locations for its growth are rare but have been highlighted in London at Spitalfields medieval Hospital (Scaife report to MOLA) and here, numbers similarly suggest such local planting and the presence of walnut shell in the deposits confirms this. It is, however present in many Roman and post-Roman contexts but only with sporadic occurrences (Scaife 2004). Spruce (*Picea*) is similarly not a native tree in this interglacial and increasing numbers of pollen records from the historical period, especially in London (Scaife 2004) suggest that it was planted in parks and gardens. High values of elm pollen here are enigmatic. Whilst they clearly show important local growth, it is not clear whether this was part of a local planted estate or from hedgerow elms. Recent studies of Thorhill Moat (Scaife 2013) have similarly shown its local importance. Of the remaining tree pollen recorded, beech (*Fagus*) and ash (*Fraxinus*) are poorly represented in pollen spectra (Andersen 1970, 1973) and it is certain that these were similarly constituents of the near site woodland growth, possibly planted, the latter perhaps supported by the beech fruits in the sediments (Table 6). Oak (*Quercus*) and hazel (*Corylus avellana* type) may represent more regional woodland growth although hazel

nutshell in the moat sediments would again imply some local growth. Birch (*Betula*) and pine (*Pinus*), are substantial pollen producers, are wind pollinated and are not regarded as having been of local significance at this time. Dogwood (*Cornus*) is important in one sample and was locally very important, possibly as scrub or in hedgerows along with a number of other shrub taxa noted.

Table 7. Pollen count data for the post-medieval moat fills

Context	Upper fill (35) <1>	Upper middle fill (36) <2>	Lower fill (38) <4>
Trees & Shrubs			
<i>Betula</i>	1	1	
<i>Pinus</i>	2		4
<i>Picea</i>			2
<i>cf. Taxus</i>		1	
<i>Ulmus</i>	45	63	34
<i>Quercus</i>	12	12	24
<i>Fagus</i>	6	7	8
<i>Juglans</i>	1	9	10
<i>Ilex aquifolium</i>			1
<i>Fraxinus</i>	1	3	10
<i>Corylus avellana</i> type	1	1	4
<i>cf. Rubus</i>	1	1	1
<i>Prunus/Malus</i> type			1
<i>Cornus</i>	33		5
<i>Hedera helix</i>			1
Herbs			
Poaceae	63	64	67
Cereal type	5	5	2
<i>Ranunculus</i> type		1	1
<i>Sinapis</i> type	1		1
Rosaceae undiff.	3	4	
<i>Filipendula</i>	1		
Apiaceae	1		
<i>Euphorbia</i>	1		
<i>Rumex</i>	1	7	
Scrophulariaceae	3	1	3
<i>Rhinanthus</i> type	1		
<i>Veronica</i> type		10	12
<i>Pedicularis</i>	1		
<i>Rhinanthus</i> type			
<i>Plantago media/major</i>			1
<i>Plantago lanceolata</i>	3	1	5
Lactucoideae		2	
Marsh			
Cyperaceae	1	1	
<i>Oenanthe</i> type	2		
<i>Lythrum salicaria</i>	1		
<i>Typha angustifolia</i> type		1	
Unidentified/degraded	3	1	3
Unidentified/exotic			
Ferns			
<i>Equisetum</i>		1	
<i>Pteridium aquilinum</i>	3	9	5

The herb flora: Herbs are important and as noted are dominated by grasses (Poaceae). Whilst a proportion of this pollen probably comes from on-site or very local sources, it is probable

that this also shows the local importance of grassland, presumably pasture. Other herbs recorded such as ribwort plantain (*Plantago lanceolata*), attest to this. There are only small numbers of cereal pollen present. This is unusual for moat sediment which often contains substantial numbers of secondary pollen derived from domestic waste, especially ordure. The cereal pollen here may come directly from arable activity and/or crop processing.

Animal Bone (*James Rackham*)

A total of 694 bones weighing nearly 21 kilogrammes were collected during excavation and identified and recorded following the procedures of the EAC (see Appendix 2). Most of this material was collected by hand during the excavation process but context 430 a sub-division of context 268, an upper fill of quarry 270, was sieved on site (a total of 950 litres) so recovery from this deposit will have been more efficient. The fact that the average fragment weight for the whole assemblage is just over 30 grammes might suggest that hand recovery was not efficient, supported to a degree by the frequency of small bones from the soil samples, some 193 fragments the heaviest of which weighed just 21 grammes and the total weight of which was 318 grammes, an average weight of 1.6 grammes, although only 9% of these fragments were identifiable. Furthermore the bones from the hand sieved context 430 produced an average weight for 255 fragments of 8 grammes, while the 87 bones from context 68 of which it was a sub-division had an average weight of 37 grammes. This may have had a serious impact on the relative proportions of the main species with sheep, and perhaps to a lesser extent pig, probably being under-represented in the hand picked contexts (eg ratio of cattle+cattle size to sheep/goat+sheep size for the unsieved hand picked contexts was 281 to 65, while that for the sieved context 430 was 149 to 79 – over twice the proportion of sheep/goat+sheep size fragments relative to cattle+cattle size). These differences could in part be temporal but it would be naïve, given the difference between contexts 268 and 430 (ostensibly the same deposit), not to assume a significant bias against the smaller species in the hand collected assemblages.

There is a further problem with the samples. Radiocarbon dating has indicated that the fills of two ditches are late Saxon in date, ditches 239 and 336, although originally phased on the basis of pottery and tiles to the Romano-British period. Ditch 336, one of the ditches with probable later material is the only context from the site with a greater number of sheep/goat+sheep sized than cattle+cattle size fragments, and the upper fill of quarry 270 the sieved portion of which (context 430) has a relatively high sheep/goat+sheep size proportion could also be a post-Roman deposit, although as discussed above this higher sheep/goat count may be due to better recovery.

These problems have a significant impact on the interpretive potential of this collection and it would be inappropriate to take its analysis beyond what it can sustain.

The assemblage is summarised in Tables 8 and 9 by fragment numbers and weight, with material presented by period based upon ceramics, stratigraphy and radiocarbon dates, with the unsieved sample from context 268 and the sieved sample from context 430 (a sub-division of 268) presented individually.

The very small assemblages from features dated to the prehistoric and medieval periods (Table 8) are not deserving of any comment. Of the remaining groups those contexts assigned to the Romano-British period comprise a small collection of 148 bone fragments, those from the late Saxon features 173 fragments, and those from the upper fills of late Roman quarry

270 – 87 fragments in 268 and 255 fragments in the sieved material from 430. A complete skeleton of a large dog was recovered from the top fill of Romano-British ditch 379, and assuming this was buried the implication is that the burial pit was dug from much higher, and the skeleton may well be post-Roman in date although recorded below in Tables 8 and 9 under ‘RB?’.

Table 8. Identified animal bone fragments numbers (268 and 430 are two parts of the same upper fill of quarry 270)

species	prehist	RB	RB?	268	430	LSax	med
Human?						1?	
Horse		7	1	1	2	12	
Cattle	8	43	3	36	18	48	2
Cattle size	9	59	2	34	131	37	
Sheep/goat		7	2		32	14	1
Sheep					1	1	
Sheep size		10		6	46	24	
Pig		5		6	2	17	1
Dog		5	1*		5	2	
Cat		3				2	
Roe deer					1		
Red deer		2		2			
Rabbit		2		1	4	1	
Unidentified mammal		2	1		11	8	
Chicken		2				1	
Duck						1	
Goose					1		
Unidentified bird						2	
Frog/toad					1	1	
Small animal		1		1			
Unidentified fish						1	
Total	17	148	8 (1*)	87	255	173	4
Average fragment weight	44.8	45.25		37	8.1	33.5	49.5

* a complete dog skeleton

Table 9. Weight in grammes of identified bone in same grouping as Table 8.

species	prehist	RB	RB?	268	430	LSax	med
Human?						1	
Horse		981	46	212	74	1484	
Cattle	613	4447	191	2591	1023	3603	180
Cattle size	149	459	9	109	486	299	
Sheep/goat		88	13		232	84	2
Sheep					15	13	
Sheep size		18		16	69.5	59	
Pig		139		145	73	222	16
Dog		32	1900*		36	4	
Cat		9				14	
Roe deer					48		
Red deer		485		141			
Rabbit		3		2	5.5	1	
Small animal		0.5		0.5			
Unidentified		3.5	2		16	7.5	
Chicken		32				1	
Duck						0.5	
Goose					3		
Unidentified bird						1	
Frog/toad					0.5	0.2	
Unidentified fish						0.5	
Total	762	6697	261 (1900*)	3216.5	2081.5	5794.7	198

* complete dog skeleton

Romano-British assemblage

The Romano-British assemblage is dominated by cattle and cattle sized bone fragments, but when different methods are used to estimate the proportion of cattle bones in the sample they vary widely – 29% by fragment number, 66% by weight, and 59% on the basis of the frequency of zones present.

If we also consider the possible impact of poorer recovery of the smaller bones then the relative fragment percentages and those for the zones must significantly over-represent cattle, but the weight of cleaned cattle bones exceeds those of sheep and also pig to such an extent that the proportion of species by weight is much less likely to move as far with better recovery of the smaller identifiable sheep and pig bones, and may even be offset to a degree by additional identifiable smaller bones of cattle. Bone weight best represents relative meat contribution to the daily diet, rather than frequency of animals or bones, so perhaps the total bone weight of each species is the least biased of the figures we have available. Preservation of all the bones is fairly good so although there may be some differential erosion of the bones of different species or those of animals slaughtered at different ages this is not likely to have been of major significance in terms of their total weight. We can perhaps then fairly safely assume that beef was the most important meat, with mutton/lamb and pork of much less importance.

The 79 identified cattle bones have a fragmentation index of 2.3 (total no zones/total no identified fragments). There are no appendicular cattle bone indicative of an immature animal, but a number of vertebrae indicate sub-adult or younger adult animals. The dental data suggests adult and aged adult cattle were slaughtered, while the remainder of the bone fragments from the post-cranial skeleton show the adult condition (see Appendix 2). Two of the bones show evidence of butchery in the form of knife cuts or chop marks, and six have tooth or gnawing marks indicative of canid scavenging. Two bones have evidence of pathology, two lumbar vertebrae with pitting in the central epiphyses.

The small group of five pig bones from the Romano-British contexts has a fragmentation index of 2.4, just one post-cranial bone classifiable as immature, while the one mandible derives from an immature animal.. Just one of the pig bones shows evidence of a knife cut and none show signs of scavenging.

The small group of seven sheep/goat bones has a fragmentation index of 2.1. There are no postcranial bones indicative of juvenile or immature sheep, but one of three mandibles still has a well worn deciduous premolar 4, suggesting a sub-adult animal. Two vertebrae have been chopped down the side, and no bones carry evidence for dog gnawing.

The assemblage of seven horse fragments has a fragmentation index of 2.1. All exhibit an adult stage of development except one thoracic vertebra whose anterior and posterior epiphyses are unfused and suggest a sub-adult or young adult age. None of the bones carry evidence for butchery and none show evidence for dog scavenging.

Bones and antler of red deer were recovered from two fills of quarry 270, the bones from the lower fill 290 comprise the right scapula and radius and ulna, while those from the upper fill, 268, are dealt with below. The latter include a metacarpus and all three could perhaps derive from the same limb.

The remaining species from the Romano-British deposits include two rabbit bones, presumably intrusive, two chicken bones, and fragments of cat and dog.

Collectively this whole assemblage indicates debris from butchery and cooking, indicating occupation and settlement on the site, and might imply little secondary processing (ie jointing, boiling bones from gruel or soups, etc) although the relatively unfragmented condition of the assemblage may have been biased by recovery methods.

Upper fills of Quarry 270 – contexts 268 and 430

The upper fills of quarry pit 270 are dealt with separately because part of the assemblage was collected by hand and the remainder after dry sieving on site using a 10mm mesh. The hand collected material is recorded as context 268 while the sieved assemblage derives from a subdivision of this, context 430. This context is described as a ‘dump’ and contains quantities of Roman tile and pottery. It was sieved as control on the other samples of bone, pottery and tile and because it was a relatively rich deposit. Whether these deposits are Romano-British or later is problematic, but it has been suggested below that the red deer metacarpus fragment in 268 could possibly derive from the same limb as the scapula and radius and ulna in context 290 below in the quarry pit, and even if the material was dumped in the post-Roman period it could all derive from Roman deposits.

To reiterate the discussion above two things stand out between these two assemblages. Context 268 produced no identified sheep/goat bones and just six fragments of sheep sized bone among a sample of 87 bones weighing over 3 kilogrammes, while the sieved material from context 430 produced 33 bones of sheep/goat and 46 fragments of sheep sized animal from a sample of 255 bones weighing over a kilogramme less; and the average fragment weight in 268 was 37 grammes and that in 430 8.1 grammes. Unless there were significant differences within this deposit, these variations seem likely to reflect recovery bias. If this is true and this deposit is Romano-British in origin and a reasonable representation of the late Roman period, whether re-deposited or not, then it is clear that sheep must have been much more important than the Romano-British assemblage discussed above suggests. In the sieved assemblage identified cattle bones comprise 34% of the major domestic dietary species (cattle, sheep and pig), but sheep/goat represent 62% compared to less than 15% in the Romano-British sample (see Table 8). Pig appear under-represented in the sieved sample – just under 4% as against 13% in the RB assemblage in Table 8. When considered by weight in the RB assemblage sheep/goat comprise less than 2% (of the cattle+sheep/goat+pig bones) but in the sieved material over 18%, an even greater proportional change than the fragments. It may be that these samples are just too small to be representative, or it could be that context 430 represents a temporally different assemblage, but as a sieved sample this represents the most reliable collection from the site.

The cattle bones in context 268 have a fragmentation index of 1.6 (61% of identified cattle bones carried zones) and those in the sieved assemblage from 430 1.2 (33% of the cattle bones carried zones), this reduction in fragmentation index and the number of bones carrying zones reflecting the smaller identifiable bones recovered during the sieving.. Like the RB assemblage there are very few bones from younger cattle. A single metacarpus fragment is the only post-cranial evidence for immature animals, while a small scapula fragment is described as juvenile, with a few vertebra fragments from sub-adult or young adults. One maxilla fragment indicates a calf with no permanent dentition erupted. Two cattle bones show

evidence for butchery, while four carry canid gnawing marks. A healed fracture on a cattle sized rib is the only pathological feature recognised.

430 is the only context with any significant number of sheep/goat bone fragments. This assemblage of 33 bones has a fragmentation index of 0.93 (with 39% of the fragments carrying one or more zones), significantly lower than that for cattle in the same context. This suggests that the sheep/goat bones are generally more fragmented, and this and the fact that many of these pieces are loose teeth and mandibular fragments would help to account for their absence from the hand collected assemblages. None of the few post-cranial bone fragments (nine) indicates juvenile or immature animals, although immature and sub-adult animals are indicated by the dental data (see Appendix 2). A sheep skull fragment was chopped down the centre of the cranium, presumably to remove the brain, and a metatarsus shows evidence for canid gnawing.

The eight pig bones have a fragmentation index of 1.5. One metacarpus indicates an immature animal and two mandible fragments indicate immature animals, and one is male. Two bones show evidence for dog gnawing.

Three horse bones were recovered and included a nearly complete scapula, a complete first phalanx and a canine tooth.

Three bones of deer are present, a red deer antler tine and metacarpus fragment, the latter possibly from the same limb as the two red deer bones from context 290 lower in the quarry fill, and an unworked shed pricket antler of roe deer.

The remaining bones include dog, a goose scapula and five rabbit bones, including a skull, these latter five almost certainly intrusive in the deposit. The five dog bones are all likely to derive from the same juvenile individual and suggest a disturbed burial.

Once again this assemblage appears to reflect food waste, with the sieved assemblage indicating that although cattle are the most important meat source, sheep or goat were also a significant contributor. The samples are too small to warrant any discussion on the slaughter and husbandry of the animals. The associated finds would suggest a Romano-British date for the assemblage and there is nothing in the assemblage to contradict this.

Late Saxon ditch fills

A small assemblage of 173 bones was recovered from deposits assigned to the Late Saxon period. Cattle bones dominate (48%) in the small group of identified bones, with sheep/goat (15%), pig (17%) and horse (12%) being the bulk of the remaining 52%. Additionally bones of dog, cat, rabbit, chicken, duck, frog/toad and fish are present. The rabbit is almost certainly intrusive.

The fifteen cattle bones have a fragmentation index of 2.2. In contrast to the previous groups discussed three of the post-cranial elements indicate the presence of immature animals, while maxillary and mandibular dental information indicate adult and aged adult animals. Four of these bones show evidence of chopping, and four have been gnawed.

The fifteen sheep/goat bones have a fragmentation index of 0.66, the greatest level of fragmentation recorded on the site. Two post-cranial bones suggest sub-adult and adult

animals and two mandibular teeth indicate a young adult and adult animal. None of the bones carried butchery evidence, but three had been gnawed.

The seventeen pig bones have a fragmentation index of 1.06. Two of the post-cranial bones derives from an immature animal, while a skull and a mandible show a dental development consistent with immature animals. Four of the bones have been gnawed but none show signs of butchery. Two lower canine fragments both indicate male animals and one a female.

The remaining bones comprise twelve horse bones - one an immature femur, two dog bones, two cat bones, a chicken tibiotarsus, a duck scapula and a rabbit tibia. A single unidentified fish bone was the only evidence for fish in the hand collected sample. A single bone fragment has been tentatively assigned to human on the basis of texture and general shape rather than specific identification.

The only appreciable differences between this assemblage and the Romano-British samples and that from contexts 268 and 430 discussed above is a greater relative proportion of immature cattle, a higher proportion of pigs and the presence of a duck bone and fish bone. The sheep/goat bones are mainly post-cranial, while those in context 430 are dominated by loose teeth and mandible fragments.

A small assemblage of animal bones was recovered from the samples. These were not catalogued and with only eighteen identifiable fragments of domestic animals from all the samples make little contribution to the study. However eel, cyprinid and other small fish which were identified from the Late Saxon ditch samples are typical of the period.

Overall Discussion (*J.Giorgi, J.Rackham and R.Scaife*)

The radiocarbon dating of items from seven of the samples and the charred plant analyses have revised the dating for parts of the site. Two samples from the prehistoric pits in the centre of the football fields indicate that some, possibly all, of the activity in this area is late Bronze Age. A sample of barley grain from the lower fill of the quarry pit 270 indicates a late Roman date for this feature and the two dates for nutshell from the moat and deposits previously thought to be a palaeochannel underlying the moat are so close (Table 2) that the deposits originally assigned to a palaeochannel must be earlier moat sediments. Both these latter dates indicate a post-medieval age for the organic fills of the moat. Finally the radiocarbon dates on charred cereals from ditches 239 and 336, previously identified as Roman on the basis of pottery and tile in the fills, have revised this to the Late Saxon period.

There are minor differences in the animal bone assemblages between the Roman and Late Saxon periods. Cattle are more dominant in the Roman period, although collection efficiency may have mis-represented the relative importance of the major domestic species. Pig is more abundant in the Late Saxon period, and fish first appear in the samples from this period. The assemblages are too small to consider differences in slaughter pattern.

The charred plant remains in general consisted largely of cereal grains, and being present in every phase of the site, together with a small amount of chaff, provided an opportunity to examine crop husbandry over time. The Late Bronze Age pit fills contained only small cereal assemblages, virtually all of wheat including evidence for hulled wheat, both emmer and spelt, and free-threshing wheat, plus a few barley grains. A similar range of cereals but represented by larger amounts of grains, were found in the Romano-British quarry fills, six-row hulled barley being the main cereal followed by hulled wheat (including again both emmer and spelt)

and traces of free-threshing wheat. The few oat grains in these samples are probably weeds. Rich grain assemblages from the Late Saxon fills of ditches 239 and 336, showed significant differences from the quarry pit fills, and consisted mainly of free-threshing wheat followed by rye and much smaller amounts of six-row hulled barley and oats and significantly no evidence for hulled wheat. This range of cereals is typical for the Saxon and medieval periods and indicates the Roman finds are residual in these deposits. The 13-14th century possible latrine, produced the same range of cereals as the Late Saxon enclosure ditch fills, mainly free-threshing wheat with occasional remains of rye, hulled barley and oats.

There were virtually no arable weed seeds in the prehistoric samples although identifiable weed seeds in the Romano-British and medieval samples, albeit limited, show a fairly consistent pattern, suggesting the cultivation of sandy loams, calcareous loams and possibly clays. Small leguminous weed seeds in the Romano-British quarry pits and the medieval latrine may be evidence of poor soil fertility from over-cropping. There was tentative evidence for both spring and autumn sowing of crops. Grassland plants in a Romano-British quarry pit fill sample may be the residues of hay collected from grasslands/meadows possibly closer to the river.

Virtually all the charred plant assemblages are indicative of domestic activities associated with the final stages of crop-cleaning and food preparation, consisting of mainly cleaned grain with only traces of chaff and small amounts of weed seeds (both large and small) which would have been removed by sieving and hand-sorting. The Romano-British quarry pit fill [290], however, was slightly different in containing a greater proportion of wild plant/weed seeds including possibly the burnt residues of hay.

There were only limited amounts of 'waterlogged' plant remains in the samples from the post-medieval moat fills, which produced mainly large amounts of wood. The identifiable remains, however, do show a fairly consistent pattern in respect of the character of the local environment over time; thus, there was an aquatic element (including *Potamogeton* and *Ranunculus Batrachium*) throughout the sequence alongside tree/hedgerow/scrub indicators (*Crateagus monogyna*, *Sambucus*, *Rubus*), with a possibly increase in tree cover in the later alluvial and moat deposits. Plants of disturbed nitrogen rich soils, such as *Urtica dioica*, may indicate human/animal activity or refuse tips.

There have been few studies of pollen from moats and this study adds to the available corpus of data providing information on the local environment including exotic introductions/planting. The samples studied derived from the moat and date to the post-medieval period. Although the pollen indicates herbs are important there are unusually high tree pollen numbers for this period. The trees and shrubs include background oak and hazel but there are high values of elm and importantly, walnut and occasional spruce. These are clearly exotic introductions and perhaps suggest planted 'gardens' at the site. Ash, beech, lime and holly were also present, some or all of which could be locally planted.

A dominance of grass pollen along with the herb taxa suggests a local grassland/pasture environment. Occasional cereal pollen attests to their use. The pollen may, however, come from secondary sources. The flora of the moat is unclear but absence of aquatic macrophytes in any numbers and absence of pollen from domestic waste indicates (largely cereals) that the moat was kept clean or may have been a landscape feature rather than around a domestic site.

Conclusions

The late Bronze Age phase is clearly characterised by the burnt mound activity on the site but the occasional pottery sherd, flint waste and charred cereal evidence perhaps suggests some domestic activity. The presence of occasional charred cereal grain in all but one of the sampled pits perhaps indicating some low level occupation on or adjacent to the burnt mound activities, perhaps short term 'camping' at the site when the site is in use generating the burnt mound debris. The charred cereals are consistent with a deposit of this date with emmer, spelt, free threshing wheat and barley present.

Just three samples are dated to the Romano-British episode of ditches, pits and quarry pits, the latter of late Roman date, which are characterised by a relative abundance of pottery, animal bone and charred cereals, with occasional small finds, hazelnut fragments, house mouse and large magnetic fractions (Table 3) suggestive of hearth debris. The bulk of the hand collected animal bone sample was recovered from deposits assigned to this phase. It is clear that there is a significant Romano-British occupation episode, and with the bulk of the debris suggesting domestic occupation rubbish and the presence of house mice it is probable that there were buildings on the site somewhere. Cattle dominate the faunal assemblage, although sheep/goat were probably much more important than the recovered hand collected sample suggests, since the sieved upper fill of quarry pit 270 produced a much higher proportion of sheep than the hand collected samples, sheep being more abundant than cattle. Pig bones were a little less frequent than sheep. Immature and adult horses were used but there is no evidence for the horses being butchered, and their relatively unfragmented condition would support this. Bones perhaps from one forelimb of a red deer indicate hunting, while fragments of antler of both red and roe deer may have been collected for bone working. Chicken and probable domestic goose bones were recovered, but no bird eggshell was noted in the samples. The cereals utilised included emmer, spelt, free-threshing wheat, barley and oats, all cereals characteristic of the period. Charred beechnut and hazelnut fragments suggest other gathered food sources.

Three samples were taken from Late Saxon ditch fills. These deposits were rich in pottery, animal bone and charred cereal remains, although the pottery is residual. Bones of eel, cyprinid (carp family) and other small fish occur. These assemblages are indicative of domestic rubbish and their concentrations, along with the presence of house mouse, would suggest domestic occupation nearby. The charred cereals indicate free-threshing wheat to be dominant with rye important, and barley and oats. Common vetch is present and could have been grown as a green manure or fodder crop, although this practice is not thought to have developed until the early 13th century (Campbell 1988). The assemblage of hand collected animal bone from these two ditches is dominated by cattle, with similar numbers of sheep/goat and pig bones, and includes bones of horse and occasional bones of dog, cat, chicken and duck, the latter probably a domestic or mallard.

One sample was collected from a possible medieval latrine pit. The hand collected bone sample from this context was very small with just cattle, sheep/goat and pig present. The soil sample also produced eel, cyprinid, a larger fish, and a thrush bone all of which are likely to have been food items. The charred plant assemblage is rich in charred cereal grain with a very similar composition to ditch samples discussed above, although rye, barley and oats were represented by traces rather than significant numbers of grain. Once again this appears to be a domestic rubbish assemblage and would imply, particularly if it is a latrine pit, and adjacent building.

The remaining samples derive from the post-medieval moat fills. There was no animal bone excavated from these deposits and the samples are singularly devoid of cultural material or rubbish, and generally lack the cereal pollen and parasite ova that turn up in moats receiving debris and faecal material (through garderobes) from adjacent buildings. A little charcoal was present in one of the samples but this need not have been domestic in origin. All the deposits were waterlogged and included a small aquatic snail assemblage, fish bones and seeds of aquatic plants supporting a conclusion that the deposits formed while the moat held open water. An abundance of small roundwood, bark, leaf and bud fragments suggests that the moat was overhung by trees, while fruits of yew, walnut, beech, alder and hazel all suggest trees nearby, some like the alder probably overhanging. Other trees and shrubs such as hawthorn, elder and *Prunus domestica* may also have been close. The pollen evidence adds pine, spruce, oak, elm, ash, birch and dogwood to this list. The radiocarbon dates indicate a post-medieval age, postdating 1650 AD (Table 2), a period during which major landscape gardens were being designed and produced. Some early garden designs included the construction of moats as landscape features (ie Lyveden New Build), rather than enclosing a house or manor, and it is possible that the pollen and fruits of a whole range of trees and shrubs (Tables 6 and 7) might reflect contemporary planting, certainly any of these tree species could have been planted but spruce, walnut, *Prunus*, elm and perhaps pine are quite likely to have been planted in a large landscaped garden and park. The Victorian OS map (1875-76) shows the moat overhung with trees, and this may have been the case for many years before, and Historic England record a moated house (incorporating the preceptory) being built in the 16th century, with alterations in the 17th century and restoration in the 19th so the post-medieval date for the moat fills would be consistent with either a new moat or re-excavation of an earlier moat in any new landscape design.

There is some minor evidence for iron smithing on the site, but disconcertingly this occurs as a few flakes of hammerscale in the late Bronze Age features, rather than the later deposits. We can assume that in these contexts the hammerscale is intrusive, having moved down through the soil as a result of natural soil processes, but it does suggest some smithing activity on the site, in the area of the football pitches, to the north of the moated site.

Acknowledgements

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April 2017

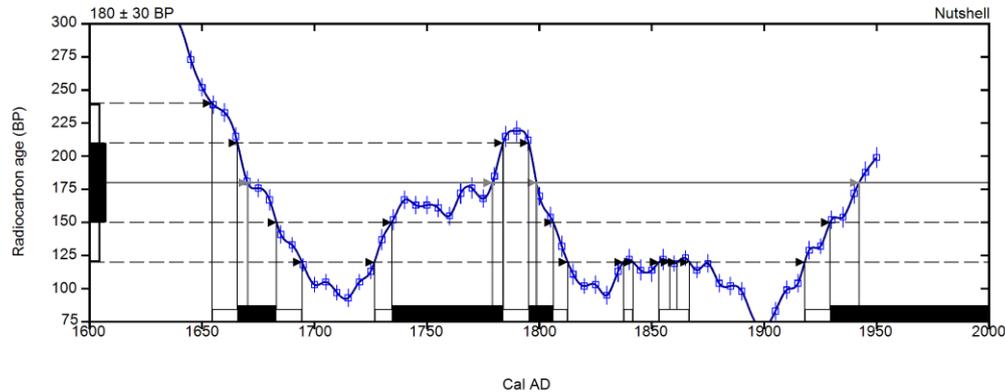
The Environmental Archaeology Consultancy

Appendix 1 – Radiocarbon Calibration Curves

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -24.2 o/oo : lab. mult = 1)

Laboratory number	Beta-458763 : 1591BSH/7/38
Conventional radiocarbon age	180 ± 30 BP
Calibrated Result (95% Probability)	Cal AD 1655 to 1695 (Cal BP 295 to 255) Cal AD 1725 to 1815 (Cal BP 225 to 135) Cal AD 1835 to 1840 (Cal BP 115 to 110) Cal AD 1855 to 1865 (Cal BP 95 to 85) Cal AD 1920 to Post 1950 (Cal BP 30 to Post 0)
Intercept of radiocarbon age with calibration curve	Cal AD 1670 (Cal BP 280) Cal AD 1780 (Cal BP 170) Cal AD 1800 (Cal BP 150) Cal AD 1940 (Cal BP 10) Post AD 1950 (Post BP 0)
Calibrated Result (68% Probability)	Cal AD 1665 to 1685 (Cal BP 285 to 265) Cal AD 1735 to 1785 (Cal BP 215 to 165) Cal AD 1795 to 1805 (Cal BP 155 to 145) Cal AD 1930 to Post 1950 (Cal BP 20 to Post 0)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

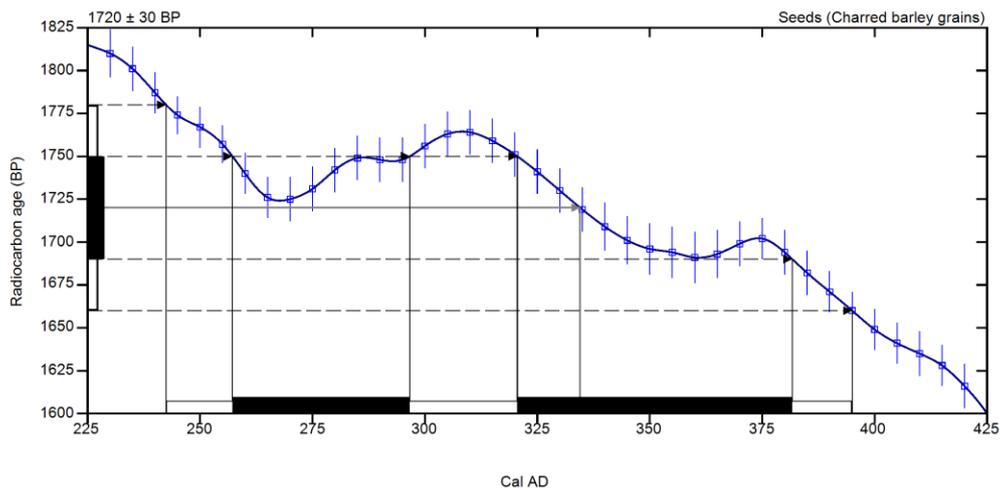
Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

CALIBRATION OF RADIOCARBON AGE TO CALENDAR YEARS

(Variables: C13/C12 = -23.8 o/oo : lab. mult = 1)

Laboratory number	Beta-458766 : 1591BSH/32/290
Conventional radiocarbon age	1720 ± 30 BP
Calibrated Result (95% Probability)	Cal AD 240 to 395 (Cal BP 1710 to 1555)
Intercept of radiocarbon age with calibration curve	Cal AD 335 (Cal BP 1615)
Calibrated Result (68% Probability)	Cal AD 255 to 295 (Cal BP 1695 to 1655) Cal AD 320 to 380 (Cal BP 1630 to 1570)



Database used
INTCAL13

References

Mathematics used for calibration scenario

A Simplified Approach to Calibrating C14 Dates, Talma, A. S., Vogel, J. C., 1993, Radiocarbon 35(2):317-322

References to INTCAL13 database

Reimer PJ et al. IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP. Radiocarbon 55(4):1869–1887., 2013.

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BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: $\delta^{13}\text{C} = -22.2$ o/oo)

Laboratory number **Beta-464970**

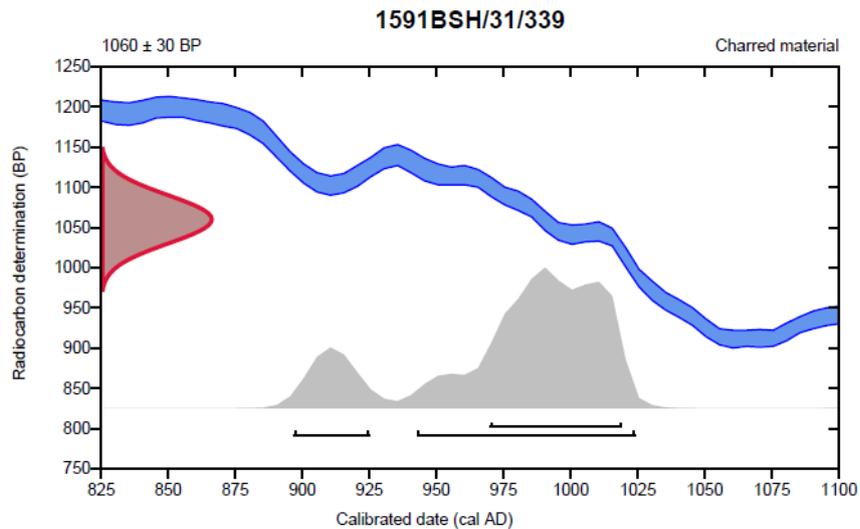
Conventional radiocarbon age **1060 \pm 30 BP**

95.4% probability

(81%)	943 - 1024 cal AD	(1007 - 926 cal BP)
(14.4%)	897 - 925 cal AD	(1053 - 1025 cal BP)

68.2% probability

(68.2%)	970 - 1019 cal AD	(980 - 931 cal BP)
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Database used
INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. *Radiocarbon*, 51(1), 337-360.

References to Database INTCAL13

Reimer, et al., 2013, *Radiocarbon*55(4).

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BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: $\delta^{13}\text{C} = -23.0$ o/oo)

Laboratory number **Beta-464971**

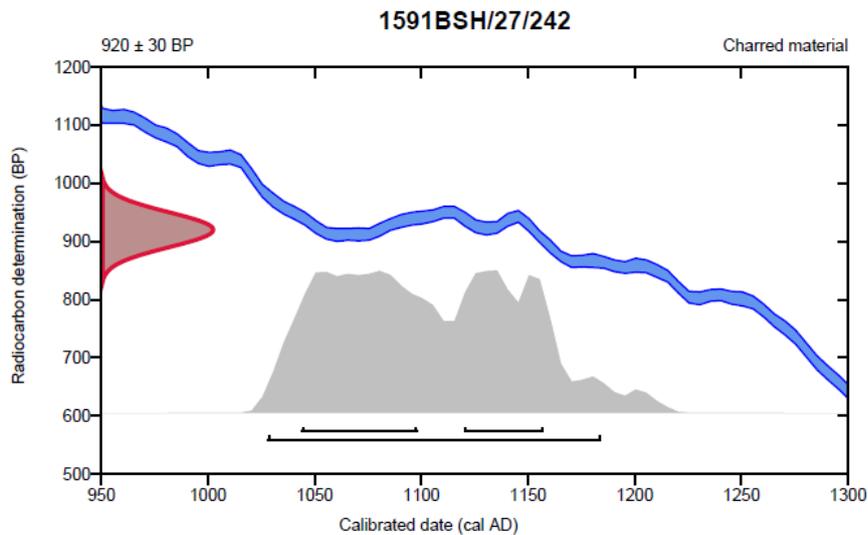
Conventional radiocarbon age **920 ± 30 BP**

95.4% probability

(95.4%) 1028 - 1184 cal AD (922 - 766 cal BP)

68.2% probability

(41.9%) 1044 - 1098 cal AD (906 - 852 cal BP)
(26.3%) 1120 - 1157 cal AD (830 - 793 cal BP)



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. *Radiocarbon*, 51(1), 337-360.

References to Database INTCAL13

Reimer, et al., 2013, *Radiocarbon*55(4).

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Appendix 2 Animal Bone catalogue

THE ENVIRONMENTAL ARCHAEOLOGY CONSULTANCY

Key to codes used in the cataloguing of animal bones and marine shells

SPECIES:

SPECIES CODE			SPECIES CODE	
MAN	human		DOVE	Dove species
EQU	Horse		FER	Feral dove
EQSZ	Horse size		PART	Partridge
BOS	Cattle		SWAN?	Swan?
BOSL	Cattle-large		WOOD	Woodcock
CSZ	cattle size		CURL	Curlew
SUS	Pig		WADE	wader
OVCA	sheep or goat		CROK	Crow or rook
OVI	Sheep		CORV	Crow or rook
CRA	Goat		JACK	Jackdaw
SSZ	sheep size		OWL	Owl indet.
FEL	Cat		BUZZ	Buzzard
CAN	Dog		GULL	Gull sp.
AUR	Aurochs			
AUR?	Aurochs?		TURD	Turdidae
CER	red deer		BIRD	Identifiable but not id'd
DAM	Fallow deer		PASS	Passerine
CLS	roe deer		LBIRD	Large bird
LEP	Hare		UNIB	Bird indet
ORC	Rabbit			
LAG	Lagomorph		FROG	Frog
CARN	Carnivore		FRTO	Frog or toad
FOX	Fox			
POLE	Polecat/ferret			
WEA	weasel		GAD	Gadid, cod family
BADG	Badger		LING	Ling
SEAL	seal		HADD	Haddock
SQU?	Squirrel?		RAY	ray
BEAV	Beaver		FISH	Fish
ROD	Rodent		UNIF	Fish indet
RAT	Rat			
AGR	Field vole		OYS	oyster
ARV	Water vole		COK	Cockle
MUS	House mouse		MUSS	Common Mussel
SORA	Common shrew		WHELK	Common whelk
MOLE	Mole		HEL	Helix aspersa
SMA	Small mammal		HELIX	Helix sp.
UNI	Unknown		HELN	Helix nemoralis
			SNAIL	snail
CHIK	Chicken			
CHKZ	Chicken size		FOSS	Fossil bone
GOOS	Goose, dom			
GOOS?	Goose, dom.?			
GSSZ	Goose size			
GSSP	Goose species			
GOSZ	Goose, poss. Wild			
DUCK	Duck, domestic sp.			
DUCK?	Duck?			
DKSP	Duck species			
DSP	Duck species indet			
MALL	Duck, dom.			
TURK	Turkey			

BONE ELEMENT:

BONE CODE		BONE CODE	
SKEL	skeleton	SCP	scapula
SKL	skull	HUM	humerus
ANT	antler	RAD	radius
ANT?	antler?	ULN	ulna
ATT	antler tine	RUL	radius and ulna
HC	horn core	C/T	carpus/tarsus
TEMP	temporal	C23	carpus 2+3
FRNT	frontal	CAR	carpus
PET	petrous	CPA	accessory carpal
PAR	parietal	CPI	intermediate carpal
OCIP	occipital	CPR	radial carpal
ZYG	zygomatic	CPU	ulnal carpal
NAS	nasal	MTC	metacarpus
PMX	premaxilla	MC1-5	metacarpus 1-5
MAN	mandible	MTP	metapodial
MNT	mandibular tooth	MPL	lateral metapodial
DLI	deciduous lower incisor	INN	innominate
DLPM1-4	deciduous lower premolar 1-4	ILM	ilium
LI	lower incisor (and 1-3)	PUB	pubis
LC	lower canine	ISH	ischium
LPM1-LPM4	lower premolar 1-4	FEM	femur
LM1-LM3	lower molar 1 - molar 3	PAT	patella
MAX	maxilla	TIB	tibia
DUI	deciduous upper incisor	FIB	fibula
UI	upper incisor (1-3)	LML	lateral malleolus
UC	upper canine	AST	astragalus
DUPM	deciduous upper premolar	CAL	calcaneum
DUPM1-4	deciduous upper premolar 1-4	CQ	centroquartal
UPM1-UPM4	upper premolar 1-4	TAR3	tarsus 3
UM1-UM3	upper molar 1 - molar 3	T4	tarsus 4
MXT	maxillary tooth	TAR	tarsus
TTH	indeterminate tooth	MTT	metatarsus
INC	incisor	MT1-5	metatarsus 1-5
HYD	hyoid	MTL	lateral metatarsus
ATL	atlas	SES	sesamoid
AXI	axis	PH1	1st phalanx
CEV	cervical vertebra (and 3-7)	PH2	2nd phalanx
TRV	thoracic vertebra (and 1-13)	PH3	3rd phalanx
LMV	lumbar vertebra	PHL	lateral phalanx
SAC	sacrum	LBF	long bone
CDV	caudal vertebra	UNI	unidentified
VER	vertebra		
STN	sternum	CLV	clavicle
CC	costal cartilage	COR	coracoid
RIB1	first rib (2 etc)	CMP	carpo-metacarpus
RIB	rib	CMC	carpo-metacarpus
		WPH1-3	wing phalanges 1-3
URO	urostyle	WPH	wing phalanx
		LSA	lumbosacrale
DENT	dentary		
CLEI	cleithrum		
RAY	fin ray		
SHELL	shell		
UV	upper valve		
VAL	valve		

NUMBER: number of fragments in the entry

SIDE: W - whole L - left side R - right side F - fragment

FUSION: records the fused/unfused condition of the epiphyses
P - proximal; D - distal; E - acetabulum; N - unfused; F - fused; C - cranial; A - posterior

ZONES: records the part of the bone present.
The key to each zone on each bone is on page 4

BUTCHERY: records whether a bone has been chopped (CH), cut (KN), worked (W), burnt (C)

GNAWING: records if a bone has been gnawed by dogs (DG), cats (FEL) or rodents (RG)

TOOTH WEAR - Codes are those used in Grant, A. 1982 The use of tooth wear as a guide to the age of domestic animals, in B.Wilson, C.Grigson and S.Payne (eds) *Ageing and sexing animal bones from Archaeological sites*, 91-108.

Teeth are labelled as follows in the tooth wear column:

Deciduous	Permanent
f ldpm2/dupm2	F lpm2/upm2
g ldpm3/dupm3	G lpm3/upm4
h ldpm4/dupm4	H lpm4/upm4
	I lm1/um1
	J lm2/um2
	K lm3/um3

MEASUREMENTS :Any measurements are those listed in A.Von den Driesch (1976) *A Guide to the Measurement of Animal Bones from Archaeological Sites*, Peabody Museum Bulletin 1, Peabody Museum, Harvard, USA

Some measurements have been taken on juveniles. Measurements marked L1 are the greatest length of long bones lacking one unfused epiphysis – the measurement being taken from the epiphyseal junction. Measurements marked L2 are the greatest length of the long bones between epiphyseal junctions when both epiphyses are unfused.

PATHOLOGICAL: A 'P' indicates that the bone fragment carries a pathology

COMMENTS: This may include a short description of the fragments, any pathologies, butchery or gnawing evidence

PRESERVATION: records the condition of the bone in the following manner

- 1- enamel only surviving
- 2- bone very severely pitted and thinned, tending to break up; teeth with surface erosion and loss of cementum and dentine
- 3- surface pitting and erosion of bone, some loss of cementum and dentine on teeth
- 4- surface of bone intact, loss of organic component, material chalky, calcined or burnt
- 5- bone in good condition, probably with some organic component

ZONES - codes used to define the zones on each bone

SKULL	1. paraoccipital process	METACARPUS	1. medial facet of proximal articulation, MC3	
	2. occipal condyle		2. lateral facet of proximal articulation, MC4	
	3. intercornual protuberance		3. medial distal condyle, MC3	
	4. external acoustic meatus		4. lateral distal condyle, MC4	
	5. frontal sinus		5. anterior distal groove and foramen	
	6. ectorbitale		6. medial or lateral distal condyle	
	7. entorbitale			
	8. temporal articular facet		FIRST PHALANX	1. proximal epiphysis
	9. facial tuber			2. distal articular facet
	0. infraorbital foramen			
MANDIBLE	1. Symphyseal surface	INNOMINATE	1. tuber coxae	
	2. diastema		2. tuber sacrale + scar	
	3. lateral diastemal foramen		3. body of illium with dorso-medial foramen	
	4. coronoid process		4. iliopubic eminence	
	5. condylar process		5. acetabular fossa	
	6. angle		6. symphyseal branch of pubis	
	7. anterior dorsal ascending ramus posterior M3		7. body of ischium	
	8. mandibular foramen		8. ischial tuberosity	
VERTEBRA	1. spine	FEMUR	1. head	
	2. anterior central epiphysis		2. trochanter major	
	3. posterior central epiphysis		3. trochanter minor	
	4. centrum		4. supracondyloid fossa	
	5. neural arch		5. distal medial condyle	
SCAPULA	1. supraglenoid tubercle	TIBIA	6. lateral distal condyle	
	2. glenoid cavity		7. distal trochlea	
	3. origin of the distal spine		8. trochanter tertius	
	4. tuber of spine		1. proximal medial condyle	
	5. posterior of neck with foramen		2. proximal lateral condyle	
	6. cranial angle of blade		3. intercondylar eminence	
	7. caudal angle of blade		4. proximal posterior nutrient foramen	
HUMERUS	1. head	CALCANEUM	5. medial malleolus	
	2. greater tubercle		6. lateral aspect of distal articulation	
	3. lesser tubercle		7. distal pre-epiphyseal portion of the diaphysis	
	4. intertuberal groove		1. calcaneal tuber	
	5. deltoid tuberosity		2. sustentaculum tali	
	6. dorsal angle of olecranon fossa		3. processus anterior	
	7. capitulum		METATARSUS	1. medial facet of proximal articulation, MT3.
8. trochlea	2. lateral facet of proximal articulation, MT4			
9. coronoid fossa	3. medial distal condyle, MT3			
RADIUS	0. teres tubercle	METATARSUS	4. lateral distal condyle, MT4	
	1. medial half of proximal epiphysis		5. anterior distal groove and foramen	
	2. lateral half of proximal epiphysis		6. medial or lateral distal condyle	
	3. posterior proximal ulna scar and foramen			
	4. medial half of distal epiphysis			
	5. lateral half of distal epiphysis			
ULNA	6. distal shaft immediately above distal epiphysis	ULNA		
	1. olecranon tuberosity			
	2. trochlear notch- semilunaris			
	3. lateral coronoid process			
	4. distal epiphysis			

7 Discussion & Conclusions

7.1 Introduction

Upto 2013, comparatively little was known about the archaeology of the Sport England's Bisham Abbey site, other than what was known about the physical remains of the surviving buildings within the moated site. There was also a comparative dearth of any understanding of the setting of the building within its landscape. The grounds of Bisham Abbey and its associated sports pitches lie within an area of approximately 15.5 ha (38.3 acres) adjacent to the largest and arguably, most important river system in England, the river Thames. This has always been a magnetic for human activity since the ice retreated to the far north. Nevertheless, this particular part of the Thames littoral was not really understood in terms of past human impact. The work described within this report does not claim to have created a coherent historical and archaeological narrative, but rather perhaps, to have taken the first steps in its creation. The evidence is, by the very nature of development orientated excavation, piecemeal, both in terms of spatial and temporal frameworks. It is a first step towards an understanding of the landscape as a whole, rather than simply a focus on a particular site or sites.

7.2 Prehistoric period (early)

Until the 1st millennium BC the material evidence, such as it is, points to the Bisham landscape being what may be broadly described as a 'hunting zone', one in which human activity was essentially episodic and rarely, if ever, of any kind of permanence. To what extent 'ownership' ever existed is debateable. Rather that it would have been an 'open zone' beside the river attracting game and perhaps as serving as a supply for materials and 'wild foods' which could be exploited by mobile hunter-gatherer groups, comprising extended family units. The collection of lithic evidence during this project, though dictated by the programme of pitch construction, was broadly consistent and more or less complete in terms of its coverage, though the depths did vary from pitch to pitch. In particular, the grass pitch received less attention due to the more restricted nature of the ground works. What also varied, though perhaps of less significance, in terms of spatial patterning, were the GPS readings which were only accurate to within 3m and recorded over a period between July 16th and October 2nd, 2013. Nevertheless, in terms of the landscape scale and speed and flexibility of the 'watching brief' the results were not considered to be sufficiently compromised as to invalidate the data.

The lithic evidence amounted to 341 pieces of struck flint, of which the great majority were residual and less than 6% (at best) were from potentially undisturbed deposits (Fig. 5). The earliest evidence comes from the early Mesolithic period where the presence of a tranchet axe (Fig. 10.9), along with similar discoveries from the Thames littoral, suggest a focus of wood working, either for boat building or dwellings (Rylatt, this report). It is too early to be certain whether the comparative dearth of Mesolithic evidence is a true reflection of absence, or that there was only a partial exposure of former prehistoric land levels (due to the effects of an undulating terrain) which has thereby created this apparent effect. The character of the flint blades and flake debitage are indicative of early Mesolithic activity (c. 9400-6000 cal BC) which suggests very short and infrequent activity on the site (Rylatt, this report). This pattern seems to continue into the middle and late Neolithic as suggested by the presence of chisel and oblique arrowheads (Rylatt, this report). This is also replicated in the late Neolithic

and early Bronze Age which, though not large, is indicative of the proximity of potential contemporary settlement (Rylatt, this report).

7.3 *Prehistoric period (later)*

In the later prehistoric period (from the early 1st millennium BC to the early 1st millennium AD) there is more evidence to support the notion of an ‘open landscape’ along the Thames periphery at Bisham. It is not certain when this landscape first became cleared of trees, but if the flint blades recovered from the various tree-throw pits were associated with such activity then a later Neolithic/early Bronze Age date would seem the most probable. However, without appropriate pollen evidence to support such an interpretation, this assertion must be treated with caution.

The 2013 season of archaeological work at Bisham revealed the presence of at least ten, if not sixteen, pits containing fire-cracked flint. These ranged from the smallest (0.6m diameter) to the largest (8m in diameter). Their average dimensions of the excavated pits would be of the order of c. 1.63m x c. 0.18m deep. The depth was measured from the formation level which was after the removal of c. 0.4m of topsoil. This would imply an original depth of 0.6m. How much the contents of the pits were reduced by the plough in antiquity is not certain. To judge from the amount of scattered fire cracked flint lying around, this could be higher than that recorded, but certainly not enough to warrant the term ‘mound’. However, it all depends on exactly how the pits were used. There was no evidence that the pits were ever lined with clay to hold water. There is also no clear evidence that the carbonised layer was derived from material that was burnt *in situ* (to judge from lack of burning from the sides of those pits which were half excavated). Nevertheless, the base of the pits tended to be filled by a carbonised layer, often at least 50mm thick. The burnt flint seems to have been heated to temperatures between 350°C – 500°C (Rylatt, this report), so this required some effort to reach those levels of heat.

If these pits were the result of being used to generate steam in the use of communal ‘sweat-lodges’, as is argued elsewhere (Richmond *et al* 2006; Topping 2011) then it is conceivable that the two post-holes that were located, may have been several of many, and could have been combined with others to support some sort of leather clad structure. However, this possibility could not be established due to the framework of the current project (watching brief). Such evidence may survive, as will that relating to the pits themselves, which will in some cases survive in a half-sectioned state and others that will remain out of contact with the service and drainage runs. Nevertheless, it would seem that these ‘burnt pits’ may only be the truncated remains of more extensive features (possibly mounds). These may have become progressively denuded by post-Roman agricultural activity, perhaps by the action of the plough and deliberate stone clearance

The only previous reference to burnt flints on the site came from a *Wessex Archaeology* watching brief of 1997 (HER ERM 464) where a small collection was found in trench 12, which lay to the north of the boundary of the Scheduled Ancient Monument and not far from the present day pavilion. This suggests that these features might extend over an area of approximately 250m (N-S) by 80m (E-W). Those recorded in 2013 lay in a band c. 90m x 40m and most probably extended to the north.

Due to the paucity of datable artefacts from within the pits two radio-carbon dates were obtained from pit [210] and pit [227] which were c. 15m apart. In both cases the date was virtually identical, being accorded an intercept date of Cal BC 925 (Cal BP 2875), though given the margin of error they could be upto 40 years apart (Rackham *pers. comm*). It is possible, therefore, that this late Bronze Age activity may have been of relatively short duration.

Table 1.Dimensions of late Bronze Age ‘fire-pits’ at Bisham Abbey

No.	Context	Dia. (mm)	width (mm)	Data type
1	203	1800	200	Exc.
2	209	1130	210	Exc.
3	210	1600	230	Exc.
4	211	1500	130	Exc.
5	212	1700	170	Exc.
6	216	900	130	Exc.
7	219	1700	160	Exc.
8	220	960	130	Exc.
9	227	1650	240	Exc.
10	228	580	120	Exc.
total	-	13520	1720	-
average	-	1352	172	-
11	442	1000	300	WB
12	443	8000		WB
13	444	1200	200	WB
14	445	1100	200	WB
15	446	600	80	WB
16	447	1200	200	WB
total	218	13100	980	WB
average		2183.3	196	

Overall average = 1.63m x 0.18m

Although the recovery of this information relating to the ‘burnt pits’ was less than ideal, they do afford an interesting comparison to other sites in the Thames valley catchment area. The closest parallel, and more thoroughly excavated came from a site at Little Marlow which lay 3.5 km NE from Bisham (Richmond et al 2006). Here there were three areas of burnt mounds situated along the side of a stream. These mounds measured 15 x 8m, 13 x 10m and 16 x 19m and between 200-400mm thick. Associated with these features were narrow shaped ‘troughs’ and cluster of eight post-holes situated on the north side of a stream. One of the mounds was dated to the early Bronze Age while a second one was dated to the middle/late Bronze Age (*ibid.*). What was particularly significant was the presence of a peat deposit, whose upper levels spanned the Bronze Age. This yielded important environmental data which showed that there was a decline in lime woodland in the middle/late Bronze Age and that there were substantial areas of open agricultural land. Due to the low lying nature of this site and the character of some of the rectangular troughs and lack of animal and domestic remains, it was argued that these features were used in bathing activities (*ibid.*). By

contrast, the single burnt mound site on the Reading Business Park covered an area of 85 x 25m by 200mm thick not far from the Foudry brook (Brossler *et al* 2004, 39). It lay adjacent to a 8.5m diameter round house and had no evidence of any ‘trough-like’ features. It contained a good quantity of late Bronze Age flint tempered pottery and was associated with sheep bones and loom weights. There was also evidence of a field system that spanned the middle to late Bronze Age. It was suggested that the burnt mound was a product of multiple processes over an extended period of time (Brossler *et al* 2004, 129).

There is a growing body of evidence to suggest that wherever there were bodies of water, particularly on the gravel terraces of the Thames valley, these were favoured locations of Bronze Age activity (Morigi *et al* 2011). This also applies to the water courses of the Chilterns and elsewhere throughout the British Isles (Richmond 2006, 94-98). Recent work on pipelines in North and South Wales point to the frequency of such sites (Kenney 2013; Rackham forthcoming). In SW Wales, the pipeline between Milford Haven and Aberdulais yielded evidence of 45 burnt mounds spanning a period of 1500 years (Rackham, forthcoming). Their frequency was such that their numbers are in the tens of thousands but that all will exhibit a variety of different characteristics, depending on their locality and availability of appropriate resources (*ibid.*). The evidence suggests that they occur wherever there was a need to use heated water, whether for human purposes or for textile processing (wool) or in some rarer cases, food processing.

7.4 *Romano-British period*

The evidence for this period is late and is only indicative of the proximity of contemporary habitation rather than the evidence for the actual buildings themselves. The precise location of dwellings remains unclear, though it has to be close since the presence of butchered animal bones and crop processing would seem to imply this (Rackham and Giorgi, this report). The site lies approximately 50m to the east of the Thames and it is possible such buildings may have been located on the river’s edge. If this were the case then the un-recorded flood alleviation works of 2006 may have destroyed some of the evidence. However, the higher ground to the east of the site may have been preferred in order to avoid potential flooding. No building debris was noted during the watching brief but given the relative shallowness of the landscaping on the grass football pitch, such structures may have remained undetected during the present development of the site. Only an appropriate geo-physical survey would be able to establish this one way or another.

The excavated remains consisted of a small portion of a rectilinear field system set at a right angle to the flow of the Thames. There were two ditches of which only the larger E-W one [263] could be described as ‘significant’. The smaller one [274] would have required the addition of a hedge in order to make it stock proof. Two ditch phases were identified [274 & 263], the last of these could have been associated with ditches 275 & 286, located approximately 25m to the south but no physical relationship was ever established (Fig. 6). The sequence begins in the late Roman period and continues into the Anglo-Saxon period. This will be discussed below in section 7.5.

The earliest evidence for late Romano-British activity was a sand/gravel extraction pit [266] located on the western side of the site (Fig. 6). Most of its fills were devoid of

any dating but those contexts that sealed it (290 & 324), which are both contemporary, if not the same horizon, contained late Roman pottery and with a predominance of cattle bone (see Appendix 7 for matrix). Sealing this was a layer of domestic refuse (268) and sub-division of this context (430). The character and implications of this dump have been discussed by Rackham (this report). This suggested that the most important meat source was cattle but that sheep/goat were also a significant contributor to the late Roman diet. Both ditches 274 & 263 (IV.2 and IV.3) cut the fills of this quarry.

The largest ditch was [263] (Fig. 6; Plate. 16). This was 2.2m wide x 1.3m deep (so allowing for plough and later machine truncation would have been c. 3m wide and 1.8m deep). This was clearly more than a simple field boundary. Whether it was territorial or defining an enclosure around a domestic dwelling is not possible to say. A C14 sample from the lower part of its fill (390) revealed an intercept date of Cal AD 335 (Beta-.....). By contrast, the eastern end of this ditch alignment was different in character and date. Its tertiary fill contained Anglo-Saxon pottery which a C14 sample confirmed as being late (10th/11th century). It would seem therefore, that ditch 263 was re-cut upto and perhaps respecting ditch 262 (V.2). Ditch 263 was first constructed in the late Romano-British period and its eastern end was re-cut in the post-Roman period. The date of its final re-cut is not certain but its tertiary fill (339) could in fact represent the primary fill of Anglo-Saxon ditch (though not interpreted as such, at the time of excavation) that re-cut the former RB ditch (see matrix in Appendix 7)

The material culture, in contrast to the environmental data, can only be described as poor. No Romano-British coins were recovered from the Flood alleviation site, nor indeed were any recovered from the football pitches, despite the fact that some six coins or coin-like objects were recovered during field walking. A metal detector was used on the Muga site but with mixed results. This also applies to dress accessories (brooches, finger rings and pins etc) and other metal objects. The ceramics for this period are both small in number and limited in quality, with few high status wares being present. The coarse building material (bricks and tiles of various types) were also restricted in terms of their number and size. Their presence is no more than might be expected from a site within the general proximity of a Roman masonry building. Of more interest, is the character of the late Roman domestic waste, both in terms of the animals bones and the crops that were being processed in the vicinity. There were seventeen different species (excluding the sole human bone) recovered from the site of which cattle predominated (Rackham, Table 8). The charred plant remains comprised some 18 different cereal remains, six cereal chaff and 38 other plant/weed seeds. These were dominated by barley, followed by emmer and spelt wheat and to a much lesser degree, oats (Giorgi, Table 5).

Beyond the immediate vicinity of Bisham there is, as yet, a comparative dearth of known Romano-British settlement in the area. Most of this evidence has been derived piecemeal and is not the result of systematic study (see section 3.3 of this report). One thing is certain, is that the economic and social dynamics of the area were greatly influenced, if not determined by the presence of a major fluvial artery such as the Thames which reached deep into the interior of central England to the west and to London to the east and beyond that, to the open sea and to Europe.

7.5 *Post-Roman (Anglo-Saxon) period*

The ceramic evidence, although modest, appears to span a period from the later 5th century to the later 8th/9th centuries and is dominated by organic-tempered wares (Timby, this report). There were 39 sherds (less than 400g) came from the flood alleviation area and football pitches. 9 of these came from the 'lower plough-soil' [202] from within the area of the Desso pitch, the remainder from excavated contexts.

It would seem that the evidence suggests a good degree of continuity between the late Roman and Anglo-Saxon ditches on the flood alleviation site. How long they survived into the medieval period is difficult to determine (see below). There was a single sherd (8g) from the upper fill (372) of a re-cut of ditch 264 (phase V.4) which was tentatively dated to the medieval period. As this was later cut by ditch 263 (phase IV.6) this would push much of the linear features into the post-Roman period. Nevertheless, there are good grounds for believing that the landscape remained subdivided well into the 1st millennium AD.

7.6 *Medieval period*

The earliest evidence is from the fill of ditch 239 which was dated to the 11th/12th century (Beta-....). The composition of the environmental sample suggests the proximity of some contemporary dwelling, somewhere in the centre of the Desso pitch. Further to the south within the Scheduled Ancient Monument only a relatively small proportion of the site was effected by the current 2013 development. The area of the coach park revealed only narrow linear features and the occasional post-hole which may be the result of horticultural activities in the medieval period. The paucity of datable artefacts (many of which may only have survived in topsoil) suggests that this area was not close to human habitation. The only feature of note came from the south side of the accommodation block, where a pit (possibly a latrine) yielded 13th/14th century pottery and associated environmental data. This consisted of mainly cereal grain of mainly free-threshing wheat and the occasional rye, barley and oat grains; there were also cultivated pulses present which together with the cereal are indicative of food preparation. The proximity of a medieval kitchen or barn is therefore to be expected. This is most likely to lie to the south west of the 'latrine' pit as there was little structural or artefactual evidence from the footprint of the new accommodation block.

As part of the background research into the Bisham Abbey site several off-site sources of information were consulted. Two sources are particularly worthy of mention: aerial photographic data (held by Historic England at Swindon) and Lidar survey data (held by the Environment Agency). In both cases the information is believed to relate to relict features of the medieval period. In 1945 four RAF sorties between May 10th and September 23rd 1945 revealed probable parch marks of a rectangular building running parallel with the moat and lying c. 25m to the NE from what is today the Warwick Room of Bisham Abbey (Plate 31). This structure looks to be in excess of 40m long and approximately 6-8m wide. There is a suggestion that it was linked to the former abbey by a similar sort of structure. If this were correct then it would seem to have formed the cloister of the former Austin priory. This accords with what has been previously described, and that they could still be observed in periods of dry weather until the grass tennis courts were superseded by hard courts (Compton 1973, 65-66).

The second form of information was derived by a Lidar survey of c.2010 (Plate 32). This shows the entire area of the Bisham sports centre prior to the development of 2013. Of particular relevance to this report was the survival of ridge & furrow (i.e. the vestiges of medieval ploughing regimes) on the northern end of the Bisham holding. Traces of these features can also be observed surviving in the SE corner of the nine-hole golf course to the north of the Scheduled Ancient Monument (i.e. the former moat). The ridges run on NNE-SSW axis. Those on the western side are about 80m long but probably continued northwards towards a possible 'headland', beside the Marlow Rd, possibly a further 15m (95m in all). Those on the eastern half, appear to be longer, being in excess of 100m. There are nine 'ridges' in a width of c.110m which would make 12.2m from apex to apex (of the ridge). The furrows appear to be slightly narrower so that each 'ridge' was probably about 7m wide (c.23ft) and each furrow about 5m (16.4ft) wide. These figures would broadly accord with current ridge & furrow classification (Upex 1204, 62, Fig. 3).

The ridge & furrow at Bisham was more extensive than shown on the Lidar survey as by then the two most southerly football pitches had been graded flat. In the early years of the Sports Centre's existence these pitches were notorious for having an undulating surface, particularly in the days when used as a hockey pitch (Peter Land *pers. comm.*). Aerial photographs taken in August and September 1945 confirm the presence of ridge and furrow' and which also appears to show, albeit faintly, in the area of the 'old orchard' within the moated site (SAM). That is, where the coach park and tennis court and main buildings are located. The area shown on the Lidar survey appears to show that five the most westerly ridges stop on a WNW-ESE alignment. Coincidentally or not, this would be the location, more or less, of the projected course of the late Anglo-Saxon boundary ditch [263]. However, it is difficult to distinguish any form of 'headland' at that point and also the ridges appear to continue SSW thereafter, albeit in a less pronounced form.

7.7 *Post-medieval to the modern period*

The moat

The 2013 development works afforded an opportunity to observe and, where possible, to obtain appropriate environmental samples from the back-filled moat. In its Scheduled Monument description it was suggested that it was of post-Dissolution date (Nat. Mon no. 19021). However, there was a possibility that it could have been constructed in the medieval period. There were no surviving internal banks to observe, only the moat sections in three potential locations on the north and east sides (coach park, car park and service trenches to the pavilion) (Fig. 7). The samples from the lower fills of the moat indicate a post mid 17th century date (Rackham, this report), one in which there was a proximity of a woodland/hedgerow/scrub habitat. The dates were obtained from the shells of walnut and hazel, which in some ways would accord with the evidence of the 'old orchard' from the Tithe map of 1839 (Scaife, Table 7 section 6, in this report). This only tells us the approximate date of when the moat was last scoured (cleaned out). We know that it was in existence by the early 17th century since there is a map of 1609 which depicts it (BRO D/EX 1228/1). Interestingly, it shows that it contained water on its south and eastern sides. This would accord with the entry in the *Victoria County History* for Berkshire, which says that Bisham Abbey

stands on 'low ground by the river, which feeds the surrounding moat' (Ditchfield & Page 1923, 139-152). The evidence suggests, though does not prove, that the moat is most likely to be of Tudor date, as suggested in the original scheduling. If so then it would be more likely to have been constructed in the 2nd half of the 16th century when Sir Philip Hoby was granted the site in 1553 (*ibid.*). It is known that Queen Elizabeth I and James I were entertained at Bisham and that the latter was a frequent visitor (*ibid.*). Such an earthwork, particularly if it contained water, would have been a fitting setting for the display of wealth and status of the host before their respective sovereigns.

While the above scenario is plausible the evidence does not solve the question as to whether there was a moat in the medieval period. Certainly, the current known size of the enclosed area (in excess of 9 ha) would be out of keeping with other known medieval moated sites (Aberg 1978; Coveney 2014). However, the presence of a ditch cut in the pavilion soakaway some 4 to 5m to the north of the lip of the 'Tudor' moat, could be the back-filled remains of an earlier moat. Whether this interpretation is correct only future work will reveal.

The moat is shown on Ordnance Survey maps throughout the 19th and early 20th century (OS 25" scale, Sh. no. XXIX.5: 1880, 1912 and 1932). It is shown on aerial photographs between 1945 and 1969 (Historic England, formerly NMR, Lib no's: 3566 & 11465). After the war, Bisham Abbey was let to the *Central Council of Physical Recreation* by Phyllis Mary Vanistart-Neale as a memorial to her two nephews who had been killed in World War II (Compton, 1973, 98). Bisham was the first national recreation centre in the country and later it was purchased, with state aid, in c.1965 (*ibid.*). Some ten years later during the construction of the new bypass around Bisham (A404) an opportunity was taken to in-fill the moat along a third of its SW side, all its SE side and two thirds of its north eastern side (c. 600m) and flattening the internal bank (Peter Land *pers. comm*). This increased the internal area by c. 1.2 ha (c. 3 acres). Coincidentally or not, the area within the Bisham Abbey moated site was scheduled in 1977 (SAM: 19021).

The land outside the SAM area

In the early 17th century the land to the north of the moated site was referred to as 'The warren' (BRO D/EX 1228/1). This is probably, though not certainly, a reference to an existing or former rabbit warren, presumably adjacent to the Thames and away from land that continued to be directly ploughed. It was still called this on the Tithe map of 1839, though by the time of Ordnance Survey 6th scale map of 1881 the present day area of the Sports Centre holding is shown as being parkland Berkshire County Series XXIV). To what extent this 'parkland' was ever formally landscaped is not clear. There are indications that the terrain, including the area of ridge & furrow, remained in an undulating and unmodified state. A dump of 19th century household waste in pit 256 was considerably wider (c. 2m in diameter) than appears on the context form. Much of this was machined away during the initial ground reduction of the site and only a representative sample of the ceramics retained (Whittingham, this report; Plate 29). This would be a typical type of waste disposal in an era before domestic rubbish was collected by the local council. The most significant land modifications have occurred in the last twenty five years as the Sports Centre has sought to expand and improve its facilities.

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The project was managed for *ASC Ltd* and subsequently *Icknield Archaeology Ltd* by Jonathan R Hunn. The report was prepared by Jonathan Hunn and edited by David Fell.

9 Archive

9.1 The project archive will comprise:

1. Brief
2. Project Design
3. Initial Report
4. Clients site plans
5. Site records
6. Finds records
7. Finds
8. Sample records
9. Site record drawings
10. List of photographs
11. B/W prints & negatives
12. Original specialist reports and supporting information
13. CDROM with copies of all digital files.

9.2 The archive will be deposited with *Windsor & Royal Borough Museum* (The Guildhall, Windsor)

10 References

Standards & Specifications

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IFA (various dates) Institute for Archaeologists' *Standard & Guidance* documents (*Desk-Based Assessments 2011, Watching Briefs 2008, Evaluations 2009, Excavations 2008, Investigation and Recording of Standing Buildings 2008, Finds 2008*).

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Appendix 1: Context Summary List

Context	Type	Description	Date	Length	Width	Depth
1-30			Previously assigned numbers (not used)			
031	layer	Topsoil	Coach Park @ NGR SU 84852-85019	modern	-	0.4m
032	layer	chalk	Top fill of moat in coach park	Modern	-	0.35m
033	fill	Re-dep clay	Fill in moat	Modern	-	2.75m
034	layer	Organic dep	Pre-infill old land horizon in moat	Post-medieval	-	0.2m
035	fill	v. dark grey horizon	Lower penultimate fill of moat	Post-med	-	0.20m
036	fill	Lower organic fill	Peaty silt in moat @ NGR SU 84852-85019	Post-med	-	0.25m
037	Fill	Pale grey silt	Formerly thought of as Holocene deposit	Post-med	-	0.15m
038	fill	Grey, sandy silt	Secondary fill of paleo-channel?	Post-med	-	unknown
039	layer	Re-deposited material	Foundation of modern road	modern	-	0.4m
040	layer	tarmac	Modern layer of access road	modern	-	50mm
41-49			Reserved numbers (unused)			
050	feature	pit	Possible latrine pit @ SU 84791-84922	medieval	-	c. 2.3m
051	fill	Upper fill of 50	Sticky, dark greyish brown deposit	medieval	-	c. 2.3m
52-59			unassigned			
60	Cut	moat	Cut of moat on east side @ SU 84939-89926	Post-medieval	4.8m	2.4m+
61	Fill	Moat	Chalk fill	modern	4.8m	1.8m
62	Fill	layer	Old land surface	Post-medieval	-	c. 0.15m
63	fill	moat	Sandy gravelly silt in [60]	Post-med	-	0.22m +
64-69			Reserved numbers (unused)	-		
70	fill	Chalk deposit	Fill of moat	modern	-	c. 2m
71	fill	Peat/organic	Soft, spongy, organic layer obtained from machine scoop from moat @ SU 84916-84980	Post-medieval	-	c. 2m
72	Layer	V. dark grey silty clay	Lower fill of moat @ SU 84916-84980	post-med	-	c. 2m
73	layer	Loose, dark grey gravels	Lower fill of moat @ SU 84916-84980	Post-med	-	c. 2m
74	cut	moat	Cut of moat on north side @ SU 84921-84976	Post-med	0.8m	15m
75	Layer	topsoil	Sealing moat	modern	-	0.2m
76	Layer	deposit	Building rubble	modern	-	1.1m +
77	Cut	gas	Service trench for gas	modern	-	0.55m
78	cut	water	Service trench	modern	-	0.6m
79	layer	road	Tarmac surface	modern	-	10.4m
80	Cut	Ditch	Machine cut @ SU 84896-85019	medieval	6m+	1.1m+
81	layer	topsoil	Machine cut as above	modern	c. 6m+ sq.	< 0.0m to 0.3m
82	layer	Dark greyish brown soil	A 'lower plough-soil'	Post-medieval	c. 6m+ sq.	< 0.3m to 0.6m
83	layer	Grey, red & yellow & crushed brick	Residual old trackway to the abbey	Post-medieval	6.4m+	2m
84	layer	Brown sandy clay	Up caste from the existing moat?	Medieval?	6.4m+	c. 3.5m
85	fill	Dark greyish brown clay	Upper fill of [80]	medieval	6.4m+	1.1m
86	layer	Dark yellowish brown silt	Natural sub-soil or possible old land surface	Paleo-soil?	6.4m+	5.75m
87	layer	Dark brown compact silt	Possible old land surface immediately above natural silty gravels	Paleo-soil	6.4m+	5.75m
88	layer	Yellowish brown silt	Pre-Holocene deposit	geology	6.4m+	6.4m+

89-99			Unused context numbers				
100	layer	Dark grey brown	Topsoil number for Coach park site	modern	-	-	c. 0.24
101	layer	Mid orange brown clay	Sub-soil beneath [100]	Post-Holocene	-	-	0.16m
102	horizon	Mid brown orange clay	'natural' ground, partially revealed across Coach park site	geology	-	-	0.1m+
103	fill	Chalk and sandy silt	Made ground along side of access road to Bisham Abbey	modern	Along area of coach-p	1.3m	0.45m
104	fill	Mid brown orange	Made ground along side of access road to Bisham Abbey beneath [103]	modern	Along area of coach-p	2m	0.65m
105	fill	Dark brown clay	Made ground along side of access road to Bisham Abbey beneath [104]	Post-medieval	Along area of coach-p	c. 3m	c. 0.8m
106	cut	Post-hole	-	undated	-	0.46m	0.29m
107	fill	Mid brown sandy silt	In post hole [106]	undated	0.52m	0.46m	0.29m
108	cut	Post-hole	Next to [110]	undated	0.33m	0.27m	0.14m
109	fill	Mid brown sandy silt	Fill of post hole [108]	undated	0.33m	0.27m	0.14m
110	cut	Post-hole	Post hole joined with [108]	undated	0.3m	0.23m	0.10m
111	fill	Mid brown sandy silt	Fill of post hole [110]	undated	0.3m	0.23m	0.10m
112	cut	linear	Filled by [105]. Moat cut	medieval	-	-	1.2m
113	layer	Dark brown grey silt	Covers area of coach park. Possible buried soil	Post-med ?	all	all	0.5m
114	cut	ditch	In new coach park area	uncertain	1.2m	0.65m	0.24m
115	fill	Mid brown grey sandy silt	Sealed by [101]	undated	1.2m	0.65m	0.24m
116	cut	Ditch ?	Linear feature of uncertain origin	uncertain	1m	0.88m	0.32m
117	fill	Mid purple brown silt	Fill of [116]	uncertain	1m	0.88m	0.32m
118	fill	Mid brown yellow clay	Secondary fill above [117]	undated	1m	0.74m	0.1m
119	cut	ditch	Cuts [118]	medieval	1.53m	0.24m	0.40m
120	fill	Dark brown silt	Fill of [119]	medieval	1.53m	0.24m	0.40m
121	cut	ditch	Similar to [119] but no finds	Medieval	1m	0.5m	0.2m
122	fill	Mid brown grey silt	Fill of ditch [121]	Medieval	1m	0.5m	0.2m
123-200			Unused numbers				
201	layer	v. dark grey sandy loam	Upper plough soil across MUGA & central football pitch	Modern	all	all	c. 0.2m
202	layer	Similar to 201	Lower plough soil across MUGA & central football pitch	Modern / Post-med	all	all	Below 0.2m
203	cut	pit	Circular pit beneath formation level @ c. 0.5m depth @ SU 84859-85202	prehistoric	-	1.8m dia	0.2m
204	fill	Burnt flints set in a sandy brown matrix	Top fill of [203]	prehistoric	-	1.8m half section	0.15m
205	fill	Charcoal rich deposit	Lower fill in [203]	prehistoric	-	1.8m half section	0.05m
206	Box-cut	See 2009	@ SU 84847-85170	Exc.TP	0.92m	0.5m	0.2m
207	fill	Dark brown silt & burnt flint	Upper fill of [209]	prehistoric	-	1.13m	0.14m
208	fill	Flint & charcoal	Lower fill of [209]	prehistoric	-	1.11m	0.07m
209	cut	pit	Sub-rectangular feature @ SU 84847-85173	prehistoric	-	1.13m half sect	0.21m
210	cut	pit	Sub-circular pit @ SU 84848-85202	prehistoric	-	1.6m dia	0.23m
211	cut	pit	Circular pit @ SU84860-85172	prehistoric	-	1.4m dia	0.14m
212	cut	pit	Circular pit @ SU 84867-85168	prehistoric	-	1.6m dia	0.17m
213	layer	very dark greyish brown	Very early 'lower plough-soil' below [202]	prehistoric	Across site	Across site	Not estab.

214	fill	greyish brown sandy clay & burnt flint	Sole fill of pit 211	prehistoric	-	1.32m	0.13m
215	Fill	Burnt flint & charcoal	Upper fill of pit [212]	prehistoric	-	1.6m dia half sect	0.12m
216	cut	pit	Small oval pit @ SU 84860-85172	prehistoric	-	0.5m	0.13m
217	fill	Burnt flint in sandy silt	Fill of pit [216]	prehistoric	0.9m	0.5m	0.13m
218	fill	greyish brown sandy clay & charcoal	Lower fill of pit [212]	prehistoric	-	1.15m	0.05m
219	cut	pit	Shallow oval pit @ SU 84854-85210	prehistoric	1.7m	1.25m	0.16m
220	cut	pit	Shallow oval pit @ SU 84852-85193	prehistoric	1.3m	0.96m	0.12m
221	fill	mid brown silt with burnt flint	Upper fill of pit [219]	prehistoric	-	1.4m	0.1m
222	fill	Dark greyish brown & burnt flint	Upper fill of pit [220]	prehistoric	-	0.96m	0.05m
223	fill	Very dark grey silt with burnt flint	Upper fill of pit [210]	prehistoric	-	1.6m	0.1m
224	fill	Dark brownish grey silt & burnt flint	Lower fill in pit [219]	prehistoric	-	1.3m	0.06m
225	fill	Dark brownish grey silt & burnt flint	Lower fill of pit [220]	prehistoric	-	0.78m	0.07m
226	fill	Very dark grey	middle fill of pit [210]	prehistoric	-	1.1m	0.08m
227	cut	pit	Circular burnt pit @ SU 84855-85168	prehistoric	-	1.6m	0.24m
228	cut	Post-hole	Shallow ovoid pit @ SU 84850-85176	prehistoric	0.58m	0.45m	0.12m
229	cut	Furrow ?	Cuts pit [210]	Med/Pm ?	0.70m	0.2m	0.15m
230	fill	Brown sandy silt	Fill of [229]	Med/Pm ?	0.70m	0.2m	0.15m
231	fill	Dark greyish brown silt	Lower fill of pit [210]	prehistoric	-	1.4m	0.12m
232	fill	Mid brownish orange silt	Lower fill of pit [227]	prehistoric	-	1.4m	0.10m
233	fill	Dark grey/black	Middle fill of pit [227]	prehistoric	-	1.4m	0.0.8m
234	fill	greyish brown with burnt flint	Upper fill of pit [227]	prehistoric	-	1.65m	0.06m
235	fill	Dark greyish brown silt	Fill of post-hole [228]	prehistoric	0.58m	0.45m	0.12m
236	cut	Post-hole	Circular ph @ SU 84847-85271	prehistoric	-	0.3m	c.0.3m
237	fill	v. dark greyish brown silt	Fill of post hole [236]	prehistoric ?	-	-	-
238	feature	Chalk dump	Rectangular spread of chalk @ SU 84822-85152	Med/pm?	c. 6m	c.3.5m	-
239	cut	ditch	Rounded v- shaped ditch @ SU 84843-85148	Saxo-Norman	2m+	2.8m	1.1m
240	fill	v. dark grey silt	Upper fill of ditch [239]	Saxo-Norman	10m+	c.3m	c.2m
241	fill	Dark greyish brown silt	Middle fill of ditch [239]	Saxo-Norman	2m+	2m	0.4m
242	fill	Dark greyish brown silt	Lower fill of ditch [239]	Saxo-Norman	2m+	1.1m	0.4m
243	cut	Top fill of pit?	Rectangular chalk filled pit @ SU 84869-85068	Med?	2.5m	2m	-
244	fill	Sandy grey & chalk	Possible square latrine pit @ SU 84869-85608	Med?	2.5m	2m	-
245	cut	Foundation?	Possible floor make-up @ SU 84879-85073	Med?	11m	-	0.15m
246	fill	Chalky spread	Fill of [245]	Med?	11m	-	0.15m
247	fill	Chalky matrix	Part of [238]	Med?	-	2.4m	0.28m
248	feature	Structure?	Flinty feature @ SU 84801-85156	Med?	-	8m	0.1m

249	deposit	Chalk spread	Possible levelling @ SU 84773-85108	Med/pm	-	1.7m	0.1m
250	Wall	Flint & chalk	Possible wall footing @ SU 84771-85103	Med/pm	-	0.46m	-
251	deposit	Chalky spread	Possible ground levelling @ SU 84804-85076	Post-med	-	3.3m	0.35m
252	deposit	Chalky spread	Possible ground levelling @ SU 84863-85053	Post-med	-	2m	0.2m
253	layer	Chalk with tile & flint	Observed @ SU 84826-85090	Post-med	-	3m	0.15m
254	Layer	Chalky spread	Possible levelling @ SU 84870-85074	Post-med	-	3m+	0.2m
255	layer	Chalk and occ flint spread	Possible levelling @ SU 8482485078	Post-med	-	3m-	0.1m
256	cut	pit	Bowl shaped pit @ SU 84859-85297	prehistoric	-	0.55m dia	0.2m
257	fill	v. dark grey silt	Fill of [256]	prehistoric	-	0.55m	0.2m
258	cut	pit	@ SU 84814-85257	19thC	-	2.3m	0.4m
259	fill	Misc debris in yellow mortar	Fill of pit [258]	19th C	-	2.3m	0.4m
260	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	13.26m	0.88m	0.42m
261	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	10.3m	1.28	0.94m
262	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	10.7m	1.26m	0.78m
263	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	23.74m	3.65m	1.86m
264	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	11.11m	1.63m	1.17m
265	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	11.23m	1.28m	0.74m
266	cut	Ditch (group)	Flood alleviation excavation	Late LATE RB	19.5m	4.31m	1.56m
267	cut	Ditch	Flood alleviation excavation	Late LATE RB	1.1m	1.28	0.94m
268	fill	Dark brown grey silt	upper fill of quarry [270]	Late LATE RB	-	3.62m	0.16m
269	cut	ditch	Ditch cutting quarry [270]	Late LATE RB	-	1.56m	0.78m
270	cut	quarry	At north eastern end of site	LATE RB	-	4.8m	0.9m+
271	cut	pit	No context sheet (only register)				
272	fill	pit	No context sheet (only register)				
273	cut	pit	Shallow oval pit or possible tree-throw	undated	1.8m	1.6m	0.25m
274	cut	Ditch (group)	NE-SW ditch along edge of quarry [266]	Late Late RB	20.97m		
275	cut	Ditch (group)	NW-SE ditch	Late LATE RB	12.13m	2.05m	0.93m
276	fill	ditch	General fill of ditch group [275]	Late LATE RB	-	-	-
277	Layer	Sandy soil	Lower terrace soil	Holocene	-	-	-
278	Layer	Sandy gravelly silt	Sub-soil	Natural	-	-	-
279	layer		General cleaning layer	natural	-	-	-
280	cut	ditch	NNE-SSW ditch	LATE RB	11.4m+	1.26m	0.78m
281	fill	Mid grey brown	Secondary & main fill of ditch [267]	LATE RB	1.6m	1.6m	0.96m
282	cut	ditch	NNE-SSW ditch truncated by [284]	LATE RB	11.8m+	1.6m+	0.96m
283	fill	Light brown-orange silt	Primary fill of ditch [282]	LATE RB	1.5m	0.9m	0.64m
284	cut	ditch	Re-cut of ditch [282]	LATE RB	11.8m+	1.32m	0.74m
285	fill	Light grey-orange silt	Sole fill of ditch [284]	LATE RB	1.5m	1.32	0.74
286	cut	Ditch (group)	NW-SE orientation	LATE RB	6.65	0.75m	0.33m
287	fill	Mid orange brown silt	Third fill of ditch [269]	LATE RB	1.5m	1.56m	0.6m
288	fill	Mid orange brown silt	Second fill of ditch [269]	LATE RB	1.5m	0.46m	0.29m
289	fill	Light orange yellow silt	Primary fill of ditch [269]	LATE RB	1.5m	0.37m	0.12m
290	fill	Dark brown sandy silt	Upper fill of quarry [270]	LATE RB?	1.5m	1.63m	0.17m

291	fill	Light brown & yellow silt	An upper fill of quarry [270]	LATE RB?	1.5m	1.4m	0.3m
292	fill	Light orange brown silt	Below [291]	LATE RB?	1.5m	1.22m	0.13m
293	fill	Mid brown orange silt	Middle fill of quarry [270]. Below fills [290 & 292] cut by [269]	LATE RB	1.5m	3.58m	0.74m
294	fill	Light orange brown silt	Small slumping below [293]	LATE RB	1.5m	0.47m	0.1m
295	fill	Light brown orange silt	Fill in quarry below [294]	LATE RB	1.5m	0.63	0.33m
296	fill	Mid grey brown silt	Secondary fill/dump in quarry [270]	LATE RB	1.5m	1.44m	0.26m
297	fill	Light brown orange silt	One of several primary fills in quarry [270]	LATE RB	1.5m	1.2m	0.23m
298	fill	Light orange yellow silt	tertiary tip in quarry [270]	LATE RB	1.5m	1.87	0.19m
299	fill	Mid brown grey sandy silt	Secondary tip in quarry [270]	LATE RB	1.5m	1.52m	0.29m
300	fill	Light brown & orange silt	Primary fill in quarry [270]	LATE RB	1.5m	0.64	0.2m max.
301	fill	Light greyish brown silt	Primary fill of ditch [283]	LATE RB	1.5m	1.26	0.66m
302	cut	quarry	Quarry cut by ditch [318]	LATE RB	1.8m	2.40m	1.55m
303	fill	Light yellowish brown silt	Primary slumping into quarry [302]	LATE RB	1.8m	1.75m	0.26
304	fill	Brown silt	Secondary silting in quarry [302]	LATE RB	1.8	0.72m	0.26m
305	fill	Dark ylw brown	Secondary silting in [302]	LATE RB	1.2m	0.64m	0.08m
306	fill	Dk grey-brown	In quarry [302]	LATE RB	1.8m	1.23m	0.16m
307	fill	Yellow brown	Secondary silting in quarry [302]	LATE RB	1.3m	0.8m	0.14
308	fill	Yellow brown	Primary silt in quarry [302]	LATE RB	1.3m	0.84m	0.24m
309	fill	Drk grey brown	Secondary silting in quarry [302]	LATE RB	1.3m	0.87m	0.18m
310	fill	Yellow brown	Primary silting in quarry [302]	LATE RB	1.3m	0.92m	0.22m
311	fill	Yellow brown	Possible deliberate back-fill in [302]	LATE RB	2m	1.88m	0.60m
312	fill	Pink-brown	Secondary silting in quarry [302]	LATE RB	1.2m	0.66m	0.22m
313	fill	Grey-brown	Primary slumping in quarry [302]	LATE RB	1.2m	0.86m	0.14m
314	fill	Yellow brown	Slumping? In quarry[302]	LATE RB	2m	2.85m	0.3m
315	fill	Yellow brown	Secondary silting in quarry [302]	LATE RB	1.5m	0.94m	0.22m
316	fill	Grey brown	Stony fill in quarry [302]	LATE RB	1.5m	1.13m	0.29m
317	Fill	Yellow brown	Re-deposited natural 1 [302]	LATE RB	1.6m	1.13m	0.18m
318	cut	ditch	Cuts quarry [302]	LATE RB	2m	1.96m	0.78m
319	layer	Bank?	Upcaste from [318] ?	LATE RB	-	1.42	0.12
320	fill	Greyish brown	Primary fill of ditch [318]	LATE RB	2m	0.54m	0.13m
321	fill	Drk yell. brown	Secondary fill of ditch [318]	LATE RB	2m	0.79m	0.08m
322	fill	Orange brown	Secondary silting [318]	LATE RB	2m	0.9m	0.22
323	fill	Orange brown	Secondary silting [318]	LATE RB	2m	1.96m	0.44m
324	fill	Drk yell. grey	Backfill of quarry [302]	LATE RB	2m	4.2m	0.3m
325	fill	Grey brown	Secondary fill of pit [327]	LATE RB	-	0.9m	0.45m
326	fill	Mid brown .yell	Primary fill of pit [327]	LATE RB	-	0.78m	0.32m
327	cut	Quarry?	Cuts quarry [270]	LATE RB	-	0.9m	0.71m
328	fill	Ditch fill	On west side of ditch [282]	LATE RB	-	-	-
329	fill	Silty gravel	Primary fill of ditch [267]	LATE RB	-	0.94m	0.28m
330	Fill	Silty gravel	Primary fill of ditch [280]	LATE RB	-	1.06m	0.14m
331	fill	Silty stones	Fourth fill of ditch [282]	LATE RB	-	0.34m	0.16m
332	fill	Sandy silt	Third fill of ditch [282]	LATE RB	-	0.96m	0.28m
333	fill	Sandy stones	Second fill of ditch [282]	LATE RB	-	0.82m	0.26m
334	fill	Silty sand	Primary fill of ditch [282]	LATE RB	-	0.98m	0.12m
335	burial	skeleton	Dog burial in top fill [379]	LATE RB	0.85m	0.75m	-
336	cut	ditch	Oriented NNE-SSW	LATE RB	1.5m	3.65m	1.86m
337	fill	Silty sand	Primary slumping in ditch [336]	LATE RB	1.5m	0.83m	0.24m
338	fill	Sandy silt	Lower fills of ditch [336]	LATE RB	1.5m	2.22m	0.35m
339	fill	Sandy silt	Tertiary silting in ditch [336]	Late Anglo Saxon	1.5m	3.85m	0.84m
340	fill	Sandy silt	Possible remains of bank in [336]	LATE RB	1.5m	2.57m	0.36m
341	fill	Sandy silt	Third fill in ditch [336]	LATE RB	1.5m	2.5m	0.38m
342	cut	ditch	Part of [260]	LATE RB	1.5m	0.88m	0.42m
343	fill	Sandy silt	Secondary silting of ditch [342]	LATE RB	1.5m	0.88m	0.42m
344	cut	-	Previous test pit by contractors	LATE RB	-	-	-
345	fill	Sandy silt	Fill of dog burial [346]	LATE RB	1.36	0.9m	-
346	cut	burial	For dog burial for [379]	LATE RB	1.36m	0.9m	-

347	cut	gully	Gully/ditch, same as [342]	LATE RB	-	0.44m	0.16m
348	fill	Sandy clay	Fill of [347]	LATE RB	-	0.44m	0.16m
349	cut	pit	Small pit	LATE RB	-	0.65m	0.31m
350	fill	Silty clay	In [349]	LATE RB	-	0.65m	0.31m
351	fill	Silty sand	Fill of shallow pit [273]	LATE RB	1.6m	1.8m	0.25m
352	cut	Pit?	Shallow pit	LATE RB	1.08m	0.64m	0.14m
353	fill	Sandy silt	Fill of pit [352]	LATE RB	1.08m	0.64m	0.14m
354	cut	ditch	Enclosure ditch, part of [261]	LATE RB	1.1m	0.26m	0.24m
355	fill	ditch	Secondary silting of [354]	LATE RB	1.1m	0.26m	0.24m
356	cut	ditch	Part of [262]	LATE RB	1.1m	0.38m	0.34m
357	fill	ditch	Secondary silting of ditch [352]	LATE RB	1.1m	0.38m	0.34m
358	cut	Post-hole	Cuts natural	LATE RB	-	0.32m	0.56m
359	fill	Post-hole	Fill of [358]	LATE RB	-	0.32m	0.56m
360	cut	Post-hole	Filled by [361]	LATE RB	-	0.32m	0.53m
361	fill	Post-hole	Fill of [361]	LATE RB	-	0.32m	0.53m
362	cut	Post-hole	Filled by [363]	LATE RB	-	0.44m	0.43m
363	fill	Post-hole	Fill of [362]	LATE RB	-	0.44m	0.43m
364	fill	Post-hole	Fill of [365]	LATE RB	1m	0.75m	0.23m
365	cut	Post-hole	Filled by [364]	LATE RB	1m	0.75m	0.23m
366	Fill	Silty sand	Upper fill of ditch [368]	LATE RB	-	1.18m	0.56m
367	Fill	Silty sand	Primary fill of ditch [368]	LATE RB	-	0.4m	0.12m
368	Cut	ditch	Part of [262]	LATE RB	-	1.2m	-
369	fill	fill	Upper fill of ditch [371]	LATE RB	-	0.88m	0.46m
370	fill	ditch	Primary of ditch [371]	LATE RB	-	0.48m	0.1m
371	cut	ditch	Part of [261]	LATE RB	-	0.96m	0.56m
372	fill	Ditch	Fill of re-cut [374]	LATE RB	-	0.8m	0.44m
373	fill	ditch	First of re-cut [374]	LATE RB	-	1.16m	0.16m
374	cut	ditch	Same as [284]	LATE RB	-	1.16m	0.6m
375	fill	ditch	Fill of ditch [377]	LATE RB	-	1.3m	0.4m
376	fill	ditch	Primary fill of [377]	LATE RB	-	1.02m	0.22m
377	cut	ditch	Same as [282]	LATE RB	-	1.3m	1.16m
378	fill	ditch	Fill of ditch [379]	LATE RB	1.7m	1.02m	0.6m
379	cut	ditch	Part of [263]	LATE RB	-	1.02m	1.16m
380	fill	Silty sand	Fill of pit [381]	LATE RB	2.9m	1.5m	0.38
381	cut	pit	Maybe a tree-throw	LATE RB	2.9m	1.5m	0.38
382	cut	Post-hole	Filled by [389]	LATE RB	0.4m	0.55m	0.4m
383	cut	Tree-throw	Banana-shaped filled by [384]	prehistoric	2.5m	1.2m	0.45m
384	fill	Silty sand	Fill of tree-throw [383]	undated	2.5m	1.2m	0.45m
385	fill	Sandy silt	Upper fill of ditch [386]	LATE RB	-	1.02m	0.58m
386	cut	ditch	Part of [263]	LATE RB	-	1.02m	0.58m
387	fill	Sandy silt	Fill of [388]	LATE RB	-	0.78m	0.56m
388	cut	ditch	Part of [274]	LATE RB	-	0.78m	0.58m
389	fill	Silty sand	Fill of post-hole [382]	LATE RB	0.4m	0.55m	0.4m
390	fill	Sandy silt	Upper fill of ditch [391]	LATE RB	-	2.16m	0.98m
391	cut	ditch	Part of [263]	Cal AD 335	-	2.16m	1.32m
392	fill	Silty sand	Fill of ditch [393]	LATE RB	1m	0.75m	0.33m
393	cut	ditch	Filled by [392]	LATE RB	1m	0.75m	0.33m
394	fill	Sandy clay	Fill of cut [394]	LATE RB	1.5m	0.9m	0.2m
395	cut	Tree throw	Possible pit	LATE RB	1.5m	0.9m	0.2m
396	fill	Silty sand	2 nd fill of ditch [391]	LATE RB	-	0.62	0.06m
397	fill	Sandy silt	Primary fill of [391]	LATE RB	-	0.58m	0.26m
398	cut	ditch	E-W ditch	LATE RB	-	2m	0.95m
399			unassigned				
400	cut	Test pit	North end of site	LATE RB	1m	1m	0.42m
401	layer	Brown grey sandy silt	In test pit (same as 202)	LATE RB	1m	1m	0.15m
402	layer	Orangey brown	Same as [213]	LATE RB	1m	1m	0.25m
403	fill	Dark brown	Re-deposited soil?	LATE RB	-	1.2m	0.4m
404	fill	Silty sand	Fill of [398]	LATE RB	1m	2m	0.6m
405	cut	Pit?	Probable tree-throw	prehistoric	1.2m	2.75	0.16m
406	fill	Red brown	Primary slumping in [405]	LATE RB	1.2m	1.65m	0.08m
407	fill	Brown grey	Tree-throw fill	prehistoric	0.5m	1.1m	0.06m
408	fill	Sandy silt	Secondary silting in tree-throw	prehistoric	0.9m	1.22m	0.08m
409	fill	Silty sand	Fill of ditch [398]	prehistoric	1m	1.15m	0.3m
410	fill	Yell. brown	Slumping in [398]	LATE RB	-	0.1m	0.45m
411	fill	Gravelly silt	Primary fill of ditch [398]	LATE RB	1m	0.8m	0.1m
412	layer	Silty sand	Old soil ?	prehistoric	-	0.5m	0.15m
413	cut	quarry	In machined section	LATE RB	-	7.08m	0.91m
414	fill	Coarse sand	Primary fill of quarry [413]	LATE RB	-	0.49m	0.2m
415	fill	Coarse sand	Primary slumping	LATE RB	-	1.66m	0.16m

416	fill	Sandy silt	Secondary quarry fill in [413]	LATE RB	-	2m	0.15m
417	fill	Coarse sand	Primary silting quarry [413]	LATE RB	-	0.94m	0.16m
418	fill	Sandy silt	Quarry fill in [413]	LATE RB	-	1.2m	0.42m
419	Fill	Coarse sand	Re-deposited natural in [413]	LATE RB	-	2.18m	0.34m
420	fill	Sandy silt	Quarry fill [413]	LATE RB	-	1.7m	0.14m
421	fill	Coarse sand	Quarry fill [413]	LATE RB	-	1.47m	0.14m
422	fill	Sandy silt	Quarry fill [413]	LATE RB	-	3.52m	0.38m
423	fill	Coarse sand	Quarry fill [413]	LATE RB	-	2.19m	0.33m
424	fill	Sandy silt	Quarry fill [413]	LATE RB	-	3.37m	0.59m
425	fill	Coarse sand	In quarry [413]	LATE RB	-	1.73m	0.26m
426	fill	Coarse sand	In quarry [413]	LATE RB	-	1.5m	0.27m
427	fill	Sandy silt	In quarry [413]	LATE RB	-	1.85m	0.46m
428	cut	ditch	Part of [274]	LATE RB	-	1.51m	0.43m
429	fill	Sandy silt	Secondary silting in [428]	LATE RB	-	1.51m	0.43m
430	fill	Sandy silt	Sub-div of [268] 950 litres sieved	LATE RB	2.8m	1.5m	-
431	cut	ditch	Part of [286]	LATE RB	0.95m	0.6m	0.22m
432	fill	Sandy silt	Secondary fill of [431]	LATE RB	0.95m	0.6m	0.22m
433			Not assigned	-	-	-	-
434	fill	Quarry fill	In quarry [413]	LATE RB	-	-	-
435	fill	Ditch fill	Upper fill of ditch [262]	LATE RB	-	-	-
436	cut	ditch	Orientated NW-SE	LATE RB	0.95m	0.8m	0.35m
437	fill	Sandy silt	Secondary fill of [436]	LATE RB	0.95m	0.8m	0.35m
438	'cut'	-	late RB	undated	0.8m	1.05m	0.44m
439	fill	Mixed grey brown sandy silt	Late RB	LATE RB?	0.8m	1.05m	0.44m
440	fill	Silty clay	Fill of pit [441]	LATE RB	-	1.06m	0.34m
441	cut	pit	Cut into quarry [270]	LATE RB?	1.06m	0.96m	0.36m
442	cut	pit	Burnt flint @ SU 84889-85264	prehistoric	-	1m	0.3m
443	deposit	spread	Burnt flint @ SU 84869-85259	prehistoric	-	8m	-
444	cut	pit	Burnt flint @ SU 84872-85243	prehistoric	-	1.2m	0.2m
445	cut	pit	Burnt flint @ SU 84872-85245	prehistoric	-	1.1m	0.2m
446	'cut'	Pit?	Burnt flint @ SU 84864-85206	prehistoric	-	0.6m	0.08m
447	deposit	spread	Burnt flint @ SU 84857-85233	prehistoric	-	1.2m	0.2m
448	Cut?	Pit?	Burnt flint @ SU 84853-85291	prehistoric	-	-	-
449	Cut?	Pit?	Chalk filled pit @ SU 84909-85269	prehistoric	-	1m	0.3m
450	layer	Loose sand	Interface between natural sand and gravels	Holocene?	-	-	0.1m
451	layer	Mun: 10YR 3/2	Fluvial deposit over [450]	Holocene?	-	-	0.14m
452	cut	Ditch segment	3 rd re-cut of 264. Section 1027	Post-Roman	-	-	-

Appendix 2: Drawing Register

Site Name/Code: 1591/1701 Bisham Abbey					Page No.1	
Drawing No	Sheet No	Section / Plan	Scale	Details	Drawn by	Date
1001	1	S	1:20	Pit 209	MM	29.7.13
1002	1	P	1:20	Pit 209	MM	29.7.13
1003	1	S	1:20	Pits 211 & 216	CSM	31.7.13
1004	1	P	1:20	Pits 211 & 216	CSM	31.7.13
1005	1	S	1:20	Pit 219	MM	1.8.13
1006	2	S	1:20	Pit 220	CS	1.8.13
1007	2	P	1:20	Pit 220	CS	1.8.13
1008	1	P	1:20	Pit 219	MM	1.8.13
1009	2	S	1:20	Pit 227	CS	2.8.13
1010	2	P	1:20	Pit 227	CS	2.8.13
1011	3	S	1:10	Pit 203	JRH	2.8.13
1012	3	S	1:10	Pit 212	JRH	2.8.13
1013	3	S	1:10	Pit 210	JRH	5.8.13
1014	2	S	1:20	Pit 209	MM	29.7.13
1015	2	P	1:20	pit	MM	29.7.13

1016	3	S	1:10	PH 228	JRH	7.8.13
1017	3b	P	1:20	Central area of Desso pitch	JRH	6.8.13
1018	5	P	1:20	Central area of Desso pitch	JRH	6.8.13
1019	3	S	1:20	Ditch 239	JRH	7.8.13
1020	3	S	1:10	Ph 236	JRH	7.8.13
1021	4	P	1:50	Upper flood comp. area 00/99	JRH	2.9.13
1022	5	P	1:50	Upper flood comp. area 00/00	JRH	9.9.13
1023	6	P	1:50	Upper flood comp. area 00/98	JRH	10.9.13
1024	7	P	1:50	Upper flood comp. area 00/96	JRH	10.9.13
1025	9	S	1:20	Quarry & ditch 302 & 318	RSB	9.9.13
1026	8	S	1:10	S(W) facing of ditch 269 & quarry 270	ZC	16.9.13
1027	8	S	1:20	S(W) facing of ditch 269 & quarry 270	ZC	16.9.13
1028	9	S	1:20	N-S section across 263	RB	18.9.13
1029	8	P	1:10	Dog skeleton 335	ZC	18.9.13
1030	9	S	1:10	Gully 347	CS	20.9.13
1031	9	S	1:10	Pit 349	CS	20.9.13
1032	9	S	1:10	Pit/ph	273	23.9.13
1033	9	S	1:20	Ditches 334/6 & 352	RSB	23.9.13
1034	9	S	1:20	Poss p/h 358	RSB	23.9.13
1035	9	S	1:20	Poss p/h 360	RSB	23.9.13
1036	9	S	1:20	Poss p/h 362	RSB	23.9.13
1037	8	S	1:10	P/h 365	CS	23.9.13
1038	10	S	1:20	S facing of ditches 371, 368, 374 & 377	ZC	24.9.13
1039	10	S	1:20	(N) W facing of ditches 374, 377 & 379	ZC	24.9.13
1040	10	S	1:20	N (E) facing dog burial & ditch 379	ZC	24.9.13
1041	8	S	1:10	395	CS	26.9.13
1042	8	S	1:10	381	CS	26.9.13
1043	10	S	1:20	383 tree-throw	CS	26.9.13
1044	10	S	1:20	SW & E facing sec of ditches 386 & 388	ZC	26.9.13
1045	8	S	1:20	p/h	CS	27.9.13
1046	10	S	1:20	NW facing section of ditch 391	ZC	27.9.13
1047	10	S	1:10	Ditch 393	CS	27.9.13
1048	8	S	1:20	Prob rooting [405] with SF	RSB	1.10.13
1049	11	9	1:50	Area plan of 99/00	JRH	1.10.13
1050	12	9	1:50	Area plan of 99/96	JRH	2.10.13
1051	10	S	1:10	Ditch cut 398	CS	2.10.13
1052	13	S	1:20	Quarry seg 413 & ditch 428	RSB	2.10.13
1053	13	S	1:20	Ditch 431	RSB	3.10.13
1054	13	S	1:20	Ditch 436	RSB	3.10.13
1055	13	S	1:20	SW facing small pit 441	ZC	4.10.13
1056	14	P	1:50	00/00 after ground reduction	JRH	4.10.13
1057	15	P	1:50	01/99 enclosure ditches	JRH	7.10.13
1058	16	S	1:20	Section across moat opp pavilion	JRH	10.10.13
1059	16	S	1:20	Section across moat opp pavilion	JRH	10.10.13
1060	17	S	1:20	Rep. section of 213/451	RB	23.10.13
1061	17	S	1:50	Section through moat 74 (seg)	RSB	30.10.13
1062	17	S	1:20	Section through ditch & sub-soil	JRH	11.11.13

Appendix 3: List of Photographs

SITE NAME: Bisham Abbey			SITE NO/CODE:1591/BSH
Shot	B&W	Digital	Subject
1		2698	General view of test pit (percolation test) view SE 24/4/13
2		2699	General view of test pit (percolation test) view east
3		2700	Location of TP2 view NW
4		2701	View NE of old accommodation block.
5		2702	TP2 under water
6		2703	Flooded area view ESE
7		2704	Ditto
8		2705	Ditto
9		2706	Location of TP2 after pumping view NW
10		2707	Detail of TP2
11		2708	Work underway in aftermath
12		2709	View of wall to south to abbey buildings
13		2710	Detail of tree against abbey wall
14		2986	Erection of temporary hoarding looking NNW 17/5/13
15		2987	Erection of temporary hoarding looking NE
16		2988	Foundation pits for the above (incomplete)
17		2989	Foundation pits (complete)
18		2990	Post alignment view SW
19		2991	Detail of ditto
20		2992	General view of compound looking SE
21		2993	Detail of post-pit for compound perimeter hoarding
22		2994	Location of water valve
23		2995	Hatch location of water valve
24		2996	Location of old water valve south of accommodation block
25		2997	Detail of ditto
26		2998	2 nd valve south of accommodation block
27		2999	Detail of above
28		3000	Location of test pit in new coach park
29		3001	Edge of infilled moat in section by car park
30		3002	Location of test pit in new coach park
31		3003	Detail of ditto
32	yes	3004	Section of infilled moat looking ESE
33		3005	View south along trench edge of old moat
34		3006	Detail of soil horizons south of moat edge
35		3007	View north of ground by access road and entrance to new coach park
36		0170	View west of moat fill 21/5/13
37		0171	Machine clearance of coach park area looking SE
38		0172	View north of northern area of coach park and access road
39	yes	0173	South side of coach park showing ground reduction
40		0174	Detail of soil horizon
41		0175	Post hole [106]
42		0176	General location of post-hole [106]
43	yes	0177	Post-hole 108 & 110
44	yes	0178	Post-hole 106 view NE

45	Yes	0179	[108 & [110] fully excavated
46	yes	0180	Ditch 114 SW
47	yes	0181	Ditch 114 NE
48	yes	0182	South edge of coach park area
49		0183	View SE of linears [121]
50	yes	0184	Ditch cut ? [116] view east
51	Yes	0185	S.10 ditch 119 view south
52	yes	0186	S.11 Ditch 116
53		0187	Ground reduction on E.side of coach park
54	yes	0188	S.13 ditch 121 north
55	yes	0189	S.14 ditch 121 south
56	yes	0190	Ground reduction view east
57		0191	Ground reduction in area of the coach park
58		0192	Ditto
59		0193	Post-holes for compound fence
60		0194	Ditto
61		0195	Ditto
62		0196	Ditto
63		0197	Ditto
64		0198	Ditto
65		0199	Ditto
66		0200	Turf stripping of temporary access and rumble strip to construction site
67		3128	View north along entrance to new accommodation block. 31/5/13
68		3129	Detail of temporary aces to accommodation block
69		3130	State of demolition of old accommodation block
70		3131	General reduction of east side of coach park looking north
71		3132	South east corner of new coach park
72		3133	General view of SE corner of new coach park
73		3134	View south across tennis courts to demolished accommodation block
74		3135	Looking SE across coach park towards tennis courts
75		3136	Ground reduction of east side of coach park
76		3137	View of eastern section of ground reduction of coach park
77	yes	3138	Detail of character of soils in area of new coach park
78		3139	Exposed sub-soil on eastern side of new coach park
79		3140	State of demolition of old accommodation block looking SSE
80		3141	Water spray/dust suppressor in action
81		3142	Ground clearance of south side of accommodation area
82		3143	Temporary access track to new accommodation block view north
83		3144	Office compound of ISG at Bisham
84		3204	Partially exposed southern edge of moat in coach park view SE 5/6/13
85		3205	Work continuing on coach park area
86		3206	General view of demolition site from the north

87		3207	General view of Bisham Abbey
88		3208	Ground reduction of coach park area view NW
89		3209	Ground reduction of coach park area view WNW
90		3210	Test pit by accommodation block
91		3211	Demolition site view north
92		3212	Demolition site view east
93		3213	Coach park area – pipes being underpinned
94		3214	Percolation test pit on eastern side of coach park looking west.
95		3215	Ditto, detail from the west
96		3216	Ditto, detail from the east
97		3217	Fill of moat, in situ 'safety bunting'
98		3218	Coach park area view south
88		3219	Demolition site view south
100		3220	Demolition site view east
101	yes	3221	South edge of moat on east side of coach park
102		3222	Detail of ditto
103		3226	Site of old pavilion looking east 7/6/13
104		3227	West side of entrance to coach park showing part of moat fill
105		3228	Test pit in coach park area
106	yes	3229	WNW-ESE section of moat fill beneath modern access road
107		3230	Detail of ditto
108		3231	Exposed section of moat fill looking WNW
109		3232	Detail of ditto
110		3233	Demolition site looking east
111	yes	3234	Cleaned up moat section looking WNW
112		3235	Lower fills of moat looking WNW
113		3236	Detail of ditto
114		3237	Lower fills of moat showing state of water ingress
115		3238	Ditto (further back)
116		3239	Ditto
117		3240	Oblique view of lower fills of the moat
118		3241	Lower fills of moat with survey staff in place
119		3242	General view of working area around moat view north
120		3243	Machining underway of east facing section
121		3244	Character of natural deposits beneath moat fills
122		3245	Recording of moat section
123		3246	Oblique view of ditto
124		3247	Detail of moat section
125		3248	ditto
126		3249	Detail of dust suppressor. 11/6/13
127		3250	Pipe line trench in coach park area
128		3251	General view of the above, work underway
129		3252	Pipe work in coach park area
130		3253	General view of coach park looking north
131		3254	Cable trench adjacent towards Pavilion area
132		3255	Pavilion area towards former Lodge and present entrance
133		3256	Entrance to Bisham Abbey showing Old Lodge
134		3257	As above

135		3258	Demolition site with water spray in action, view west
136		3259	As above, view NW
137		3260	Exposed service trench on E side of footprint of new accommodation block
138		3261	Plan of proposed service trench cutting the moat
139		3262	View WNW along surviving section of moat
140		3263	View ESE along former section of moat
141		3267	E side of reduced area of accommodation block. 19/6/13
142		3268	State of ground reduced area of accommodation block
143		3269	Same as above looking west
144		3270	Detail of section by old Sports Hall looking east
145		3271	Same as above looking south
146		3272	Same as above looking east
147		3273	General view of site looking west
148		3274	General view of proposed site of MUGA view north
149		3275	Coach park area view SE
150		3276	Site of new accommodation block
151		3277	State or reduced ground being infilled
152		3278	Course of diverted water trench around accommodation block view east
153		3279	As above, view west
154		3320	As above, view south
155		3321	Detail of subsoils in trench section
156		3322	General view east along course of diverted pipe line
157		3323	General view east along north side of diverted water pipe.
158		3324	As above
159		3325	General view of site preparation of accommodation block
160		3326	East end diverted pipe line looking east 20/6/13
161		3327	South side of diverted pipe line looking east
162		3328	Detail of above
163		3329	Character of soils at SW corner of diverted pipe line
164		3330	General view of accommodation site looking west
165		3331	Machining of diverted trench
166		3332	As above
167	yes	3334	Oblique view of section through pit/ditch [50] looking east
168		3335	Detail of pit [50] looking east
169		3336	As above looking SW
170		3342	Work underway in Pavilion area view east 26/6/13
171		3343	View north along cable trenches in Pavilion area
172		3344	Detail of make up of ground along cable trench in Pavilion area
173		3345	Piling underway
174		3346	Ditto
175		3347	General view north across accommodation building site
176		3348	View across the Thames from Bisham Abbey
177		3349	Western end of moat looking south
178		3350	Bisham Abbey looking south
179		3351	Location of percolation pit by car park looking WNW

180		3352	Detail of above
181		3353	Percolation test pit north of accommodation block
182		3354	Reinforced piling rods awaiting insertion
183		3355	Percolation test pit by accommodation block
184		3356	As above view west
185		3357	As above, view north
186		3358	Partial ground reduction in Pavilion area looking north
187		3359	Area of proposed flood alleviation scheme
188		3360	View east across area of proposed MUGA
189		3361	Ground reduction for piling mat in area of pavilion view west
190		3362	As above, view south
191		3363	Drainage plan in area of new accommodation block
192		0228	View SE along drainage trench run to inspection chamber (28.6.13)
193		0229	Excavating piling cap trench (PCT) near tennis courts looking ENE
194		0230	Detail of PCT
195		0231	Ditto
196		0232	Working shot of excavating PCT
197		0233	Ditto
198		0234	Piles prior to removal of concrete top
199		3402	General view of accommodation block looking east (1.7.13)
200		3043	Detail of pile caps trenches view ESE
201		3404	Detail of PCT section view NE
202		3405	Ditto
203		3406	Excavation of drainage junction looking east
204		3407	Pavilion area and section trench looking north
205		3408	Detail of PCT during excavation
206		3409	General view of accommodation block site from west
207		3421	General view of accommodation block view east (3.7.13)
208		3422	View of east end of accom. Block view south
209		3423	Excavation of PCt at ditto
210		3424	Piling at east end of accommodation block view south
211		3425	View west across west end of accommodation block
212		3426	Machining in operation and loading spoil from TCP's
213		3427	Western middle rows of TCP's view east
214		3428	Cleaning of concrete caps
215		3429	Installation of base for drainage junction, view south
216		3430	Ditto, machine in action adjacent to tennis courts
217		3431	Detail of freshly dug TCP view north
218		3478	General view of southern row of west end of accommodation block (5.7.13)
219		3479	Detail of ditto
220		3480	Middle row of TCPs
221		3481	Northern row of west end of accommodation piles
222		3482	General view of site looking west
223		3483	2 nd base for drainage junction showing natural gravel in section

224		3484	General view of pavilion looking south
225		3485	South facing elevation of Bisham Abbey
226		3486	Bisham Abbey in relation to current construction site
227		3487	Brick built chimney at west end of Bisham Abbey
228		3488	Western courtyard of Bisham abbey
229		3489	View of existing hockey pitch and sports hall beyond, looking north
230		3490	Access road to Sports Hall on east side of site looking south
231		3491	Entrances to grange Cottage & Tithe Barn Cottage at Bisham, view north
232		3492	Boundary beside Tithe Barn Cottage by Temple Lane
233		3493	Nature of ground on north side of accommodation block view north
234		3494	General view of accommodation block looking east
235		3526	Oblique view SE of building operations near accom. Block. 9.7.13
236		3527	Detail of ground on north side of accom. Block
237		3528	Row of PCT's on east side of site
238		3529	Ditto
239		3530	PCT's looking north on east side
240		3531	Detail of ditto view north
241		3532	General view of accomm. Block from west
242		3533	Percolation test pit at NGR SU 84766-84933
243		3534	Manual cleaning of PCT on east side of site
244		3535	General view of accom. Building under construction view NE
245		3536	View of Portacabin offices looking SSW.
246		3541	Double pair of piles mid east side, view north (11.7.13)
247		3542	Pair of piles ditto, view south
248		3543	Double pair of piles ditto, view west
249		3544	Work underway removing concrete from piles, view east
250		3545	Pile trenches view east
251		3546	General view of piling trenches at east end looking south
252		3547	General view of site looking west
253		3548	Double pair of piles in trenches being excavated looking north
254		3549	View of drainage inspection junction on north side of site, view north
255		3550	Circular flower bed on north side of Bish Abbey
256		3551	Location of severely landscaped moat in grounds of the Tithe Barn, view SW
257		3552	Ditto, view from the west
258		3553	View along moat at Tithe Barn Cottage looking west
259		3556	General view of moat at Tithe Barn Cottage looking SW
260		3557	South side of moat at Tithe barn Cottage looking south
261		3558	Tithe Barn Cottage looking NE (Tithe Barn in foreground)
262		3559	Piling trench on eastern edge of accommodation block view SW

263		3560	State of piles and foundation trenches on Pavilion site view north
264		3561	Detail of ditto
265		3562	Piling trenches on mid east side of accommodation block
266		3596	Turf removal on MUGA 1 area view west (16.7.13)
267		3597	Turf removal on MUGA 2 view north to Bisham church
268		3598	Turf removal on MUGA 1 looking west to golf club house
269		3602	View north across eastern end of accommodation block (17.7.13)
270		3603	General view west across western end of accommodation block.
271		3604	Piling pit/trenches on north side of eastern end of accom. Block view west
272		3605	Detail of ditto
273		3606	Piling trenches on north side of east end of accom. Block view east
274		3607	Detail of ditto
275		3608	MUGA 1 after turf removal view west
276		3609	Machining underway on MUGA 1 looking east
277		3610	Turf removal with Bisham church in background
278		3614	General view across MUGA 1 looking west (18.7.13)
279		3615	Machining of test pit 1 at NGR SU 84827-85094
280		3616	Character of made up ground above the natural silts
281		3617	Overall view of test pit 1 looking north
282		3618	Second test pit at NGR SU 84875-85111
283		3619	General view of soil stripping showing drainage runs (c. 6m apart)
284		3620	General view north with Muga in foreground (22.7.13)
285		3621	Gen. View west across Muga pitch
286		3622	Gen view east across Desso pitch
287		3623	Oblique view of works (note toothed bucket)
288		3624	State of foundations at west end of accommodation block view north (23.7.13)
289		3625	Foundations at east end of accom block view north
290		3626	Oblique view north across accommodation block
291		3627	Ground reduction looking west across Muga pitch
292		3628	Under drainage across Desso pitch view south
293		3629	Depth of soil reduction at Se corner of Desso pitch
294		3630	Concentrations of burnt flint @ SU 84847-85172 view NW
295		3631	Machining on Desso pitch view NNE
296		3632	Machining on Desso pitch view SSW
297		3633	Test pit 1 in Muga view north (24.7.13)
298		3634	Detail of test pit 1 view north
299		3635	Test pit 2 in Muga view north
300		3636	Detail of test pit 2 view north
301		3637	Location of test pit 3 view south
302		3638	Detail of test pit 3 view east
303		3639	General view of test pit 4 view SW
304		3640	Test pit 4 view west

305		3641	Soil horizons in test pit 1 view north
306		3642	Soil horizons in test pit 2 view north
307		3643	Working shot view east
308		3644	Soil horizons in test pit 3 view east
309		3645	Soil horizons in test pit 4 view west
310		3646	View from pest pit 4
311		3647	Edge of feature in test pit 4 view west
312		3648	Under drainage pattern looking west
313		3649	Ground reduction of the Muga pitch, view east (26.7.13)
314		3650	Ground reduction of the Desso pitch, view NNE
315	yes	3651	First identification of burnt flint pit 203
316	yes	3652	Detail of top fill of 203 (exposed by 360 exc.)
317		3653	Pit 203, working view north (29.7.13)
318		3654	Pit 203 partially excavated view north
319	Yes	3655	Pit 209 with box segment removed looking north
320		3656	Pit 203 fully half sectioned
321		3657	Pit 203 detail of section
322		3658	Recording underway on site, view south
323		3659	Detail of box section across part of 209
324		3660	General view of site looking north
325		3661	Ground reduction in middle of Desso, view east
326		3662	Burnt flint pit 210 newly exposed, view ENE
327		3663	General view of Desso pitch ENE (30.7.13)
328		3664	Fire cracked pit 210 view east (pre-exc.)
329		3665	Location of pits 211 & 212 on reduced ground
330	Yes	3666	Pit 211 (pre-exc) looking north (31.7.13)
331	yes	3668	Pit 212 (pre-exc.) looking north
332		3669	Ditto
333		3670	Work underway on burnt flint pits (Geri & Carina) view SE
334	Yes	3671	Pit 211 under excavation
335	Yes	3672	Pit 212 under excavation
336		3673	Pit 211 re-cleaned after rain
337		3674	Detail of burnt flint in pit 211
338		3675	Work underway on pits 211 and 212
339		3676	General view of site looking north (blurred)
340	Yes	3677	Pits 211 and 216 half sectioned view north
341		3678	Ditto
342		3679	Pit 203 after further clean, view north
343	Yes	3680	Pit 212 view north
344	Yes	3681	Ditto
345		3682	Burnt flint pit [219] newly exposed
346		3683	Work underway on the Desso pitch (1.8.13)
347	Yes	3684	Burnt flint pit 220 at formation level
348		3685	Ditto
349	Yes	3686	Burnt flint pit 219 half sectioned view west
350	Yes	3687	Burnt flint pit 220 half sectioned view east
351		3688	Ditto
352		3689	Plough furrow across BF pit 210 view NE
353		3690	Work underway on BF pits 220 & 227
354	Yes	3691	Burnt flint pit 227 unexc. View east

355		3692	Ditto
356		3693	Area of BF pit 210 looking NW
357	Yes	3695	Burnt flint pit 210 half sectioned view SE (2.8.13)
358		3696	Ditto
359		3697	Detail of section across 210
360		3698	CS working on pit 227
361		3699	Flint tempered pottery in situ in 228
362	Yes	3700	Burnt pit 227 view north
363		3701	Ditto
364	Yes	3702	Feature 228 (ph?) view north
365		3703	Detail of the above
367	Yes	3704	Burnt flint pit 209 – half sectioned view SW
368		3705	CS at work
369		3706	Ph 228 half sectioned.
370		3707	Ph 236
371		3708	General view of Desso pitch and excavation areas
372		3719	Chalk feature 238 on edge of Desso/Muga pitches view south (5.8.13)
373		3720	Detail of the above
374		3721	Area of RB ditch in Desso pitch view north
375		3722	Detail of above
376		3723	Irrigation pipe trench exc on east side of site
377		3724	Ditto view north
378		3725	Detail of irrigation trench view south
379		3726	Ditto view north
380		3727	Detail of soil section
381		3728	Ground reduction across N-s ditch on Desso pitch view north
382		3729	Ground re-profiling document (6.8.13)
383		3730	Plan of above
384		3731	Section
385	Yes	3732	Section across ditch 239 view north
386		3733	Ditto, detail
387		3734	General setting of ditch 239 view NW
388		3735	Ditch 239 in sunlight.
389		3736	Irrigation trench operation view south (7.8.13)
390		3737	Area of chalk feature 238 after reduction looking north
397		3744	View west along irrigation trench (9.8.13)
398		3745	Detail of machinery
399		3746	Chalk feature beside by golf club house view west
400		3747	Detail of ditto
401		3748	General view of Flood compensation area looking north
402		3749	Ditto south
403		3750	Ditto north
404		3751	Ground reduction to west of FC area, view north
405		3752	Previous FC area in sinuous trenches
406		3753	General view across FCA and Desso beyond looking SE
407		3754	Old FCA looking south
408		3755	General view across FCA and Desso beyond looking SE

409		3756	Irrigation pipework on E side of Desso @ SU 84908-85131
410		3757	Irrigation runs view WNW
411		3758	view of soil section @ SU 84913-85150
412		3759	Soil horizons @ SU 84923-85182
413		3760	Soil profile in irrigation pit @ SU 84924-85191
414		3761	Soil profile in irrigation pit @ SU 84931-85205
415		3762	Chalk filled feature @ SU 84869-85068 [243]
416		3763	Detail of
417		3768	Irrigation trench on E side of Desso (12.8.13)
418		3769	Detail of
419		3770	Sub-soil @ SU 84933-85229
420		3771	General view of Desso
421		3772	Sub-soil @ SU 84941-85253
422		3777	Work on Desso view north (13.8.13)
423		3778	Work on drainage runs
424		3779	Depth of drain age runs (0.25m scale)
425		3780	Width of ditto
426		3781	State of Muga pitch
427		3782	Gen. view of Desso view north
428		3783	Accommodation block view east (14.8.13)
429		3784	Loading soil from Muga
430		3785	CS metal detecting on Muga area
431		3788	Levelling work on Muga (15.8.13)
432		3789	Irrigation run on Desso pitch
433		3821	Sand spreading on Desso (19.8.13)
434		3822	General view across Desso towards Muga pitch
435		3823	Spoil heap view north
436		3824	Drainage machine in operation
437		3825	Detail of drainage run in Desso
438		3826	Location of drainage run
439		3827	Detail of ditto
440		3828	Chalk spread 245 @ SU 84879-85073
441		3829	Detail of
442		3830	Chalk & flint deposit 238 @ SU 84821-85149
443		3831	Detail of
444		3832	View of main development site from spoil heap
445		3833	State of Muga from west
446		3834	Flint horizon [248] in drainage run @ SU 84801-85156
447		3835	Grass snake (dead)
448		3836	Brick building debris on S side of Muga by entrance
449		3837	Detail of
450		3838	Infilling drainage run view east
451		3839	Drainage run near golf clubhouse view east
452		3840	Detail of chalk spread [249] @ SU 84773-85108
453		3841	Chalk & flint footing [250] @ SU 84771-85103
454		3844	2 nd chalk spread [251] @ SU 84804-85076
455		3845	Oblique view
456		3846	Chalk spread [252] @ SU 84863-85055
457		3847	N. side of Muga E-W irrigation run (20.8.13)
458		3848	Character of sub-soil at east end

459		3849	Ditto at W. end
460		3853	Chalk spread [253] @ SU 84826-85090 oblique view west
461		3854	[253] detail view north
462		3855	Chalk spread [254] @ SU 84870-85074
463		3856	Detail of
464		3857	Chalk spread [255] @ SU 84824-85078
465		3858	Detail of
466		3861	Irrigation valve pit @ SU 84821-85235 (21.8.13)
467		3863	Detail of soil horizon @ SU 84821-85235
468		3864	Stoning up of Muga
469		3865	Trial trench looking for gas main looking east
470		3866	Soil horizons in trial trench @ SU 84850-85296
471		3867	Paul and Poles by gas pipe line
472		3868	Pit [258] @ SU 84858-85296
473		3869	Overall view of gas pipeline looking west
474		3870	JRH in TT view west
475	Yes	3871	Pit [256] half sectioned looking north
476		3872	Trial trenching for gas pipe route (22.8.13)
477		3873	Located
478		3874	Ditto view south
479		3878	Route of gas pipe (marked in yellow) view north
480		3879	Ditto view south
481		3880	Depth of gas pipe
482		3905	View NE across Desso (29.8.13)
483		3906	Muga being 'stoned up'
484		3907	Commencement of FCA (flood compensation area) soil stripping view north
485		3908	Topsoil removed from FCA
486	Yes	3909	Victorian dump @ NGR SU 84814-85267 (258) view south
487		3910	Detail of
488		3911	Ditto
489		3912	Half section through
491		3914	Material from dump
492		3915	Machining underway looking north
493		3916	Machined area on west side of site
494		3917	Machining view north
495		3918	Detail of upper RB deposits looking north
496	Yes	3919	View west across FCA site (30.8.13)
497		3920	Detail of
498		3921	1 st area clearance of FCA
499	Yes	3922	View south across site
500		3923	Detail of ditch section [391]
501		3929	The site looking ESE (2.9.13)
502		3930	The site looking NW
503		3931	Desso pitch SE
504		3932	Machining underway on N. side of FCA (3.9.13)
505		3933	Secondary expansion phase
506		3934	General view of site location looking south
507		3935	Expansion of FCA site south

506		3936	Ditto east
509		3937	West edge of FCA showing lower ground
510		3938	State of site looking west (5.9.13)
511		3939	Ditto
512		3940	ditto
513		3941	Working shot looking east
514		3942	Ditto west
515		3943	General oblique view of site looking south west
516		3944	View S of service trench on E side of SAM (6.9.13)
517		3945	Detail of ditto (oblique)
518		3946	Detail of section
519		3947	Top fills of moat on east side of SAM area
520		3948	Ditto view south
521		3949	State of ground in car park area view west
522		3950	Chalk filled moat at N. end of eastern side of SAM view north
523		3951	Work underway in quarry section in FCA
524		3965	View north along service trench on east side of SAM (9.9.13)
525		3966	Ditto
526		3967	Detail of ground make-up on E side of SAM
527		3968	North end of service trench
528		3969	Ditto
529		3970	Detail of ditto
530		3971	State of FCA looking north
531		3972	Work underway on FCA
532		3973	General view of FCA view north
533		3974	Chalk filled moat on east side of SAM
534		3975	Service trench view west in car park area
535		3976	View south of service trench crossing upper fill of moat on east side
536		3977	Ditto at NGR SU 84934-84928
537		3978	Car park area with raised service intersections view south
538		3979	Ditto view west
539	Yes	0266	South facing section (1026) across quarry [270] (11.9.13)
540		0267	Ditto oblique view
541	Yes	0268	S facing section (1022) across quarry [270]
542		0269	Ditto
543		0270	Ditto
544		5002	Working shot looking west
545		5003	Ralph Brown recording section 1022 view NNW
546		5004	Ditto view ENE
547		5005	Zoe Clarke recording quarry [27]
548		0271	S. 1027 ditch [267] south facing (16.9.13)
549	Yes	0272	S. 1027 ditch [280] south facing
550	Yes	0273	S. 1027 ditch [282 & 284]
551		0274	Ditto
552		0275	S. 1027 ditch sections
553		5006	Chalk filled moat on E side of Sam view south
554		5007	Working view of ditch sections S. 1027
555		5008	Working view east

556		5009	Service trench near car park entrance view NW (17.9.13)
557		5010	Route of shallow electric cable across moat.
558		5011	Ditto view south
559		5012	Grubbing out of old tree stumps in car park area view north
560		5013	ditto view east
561		5014	Ditto view north
562		5015	E-W moat section 1059
563		5016	Section across moat view south
564		5017	West facing section in tree stump removal pit
565		5018	Ditto view east
566		5019	Section across moat view south
567		5020	Area of recorded level on back filled moat [60]
568		5021	Detail of ground make-up
569		5022	2 nd tree stump pit @ NGR SU 84939-89931 view S
570		5023	Ditto oblique view ENE
571		5024	3 ^d tree stump pit @ NGR SU 84939-89914
572		5025	4 th tree stump pit @ NGR SU 84939-89929
573		5026	View south across Desso to Muga pitch (18.9.13)
574		5027	View SE across part of Desso pitch
575		5028	View west towards FCA site.
576		5029	Cleaned up section 1059 across E side of moat
577		5030	Ditto
578		5031	Detail of section South
579		5032	Detail of section SE
580		5033	Ralph Brown working on ditch section 1021
581		5034	Zoe Clarke on middle ditch section view north
582		5035	View south of carpark re-modelling (19.9.13)
583		5036	Work underway on FCA site view south
584		5037	Ditto view NE
585		5038	Ditto
586		5039	Section 1021 across ditch [336 = 270]
587		5042	Ditto with vertical scale
588		5043	Oblique view of
589		5044	Dog skeleton [335]
590		5045	Ditto
591		5049	Ditto
592		5050	Ditto
593		5051	Drainage run across Grass pitch
594		5052	Fe object 2010 from (339) (20.9.13)
595		5053	Burnt flint pit [443]
596		5054	Ditto
597		5055	Work on FCA site view SW
598		5056	Ditto view SE
599		5057	Ditto view ESE
600		5058	Chris Swain working
601		5059	Burnt flint pit [445]
602		5060	State of west side of site
603		5061	Ditto
604		5062	Gully/palisade [347] view east
605		5064	Working view east

606		5065	Working view north
607		5066	Pit [273] view north (23.9.13)
608		5067	Working view south
609		5068	Drainage run in Grass pitch view west
610		5069	Burnt flint pit [447]
611		5070	Detail
612		5071	Post-holes ? S.1034
613		5072	Detail
614		5073	Post-hole S. 1035
615		5074	Post-hole S. 1036
616		5075	Pit [365]view north
617		5076	General view
618		5077	ZC dry sieving on site (24.9.13)
619	Yes	5079	S. 1038 showing N-S ditches 371 (267), 368 (280) and 377 (282)
620		5080	General view of site looking south
621		5081	RB hoeing site
622		5082	Ditto
623		5083	S. 1039
624		5084	Detail of surface of sub-soil
625		5085	S. 1023 pit [395] (25.9.13)
626		5086	s. 1040 ditch [379]
627		5087	General view of site under excavation view NNW
628		5088	Ditto view north
629		5090	S.1042 east facing section across pit 381
630		5091	Southern end of site after cleaning view north
631		5093	Section 1043 tree throw [383] view south
632		5094	CS working on adjacent feature [382] to 383
633		5096	Working view SE
634		5097	Working view SE working view SE with sieving in foreground
635		5098	Test pit into sub-soil
636		5100	State of new construction in SAM area (27.9.13)
637		5101	View north across Muga to Desso
638	Yes	5102	S.1044 across ditches 386 & 388
639	Yes	5103	S. 1045 across feature 382 view east
640		5104	S. 1047 across ditch 393 view NW
641	Yes	5105	S. 1046 across ditch 391 view east
642		5106	Looking SW across grass pitches and FCA in background (30.9.13)
643		5107	View south across Desso with Muga in background
644		5108	Work at southern end of FCA view south
645		5109	Chalk filled feature [449]
646		5111	Ditto
647	Yes	5112	Test pit view west showing character of sub-soil 213
648	Yes	5113	S. 1048 on west edge of FCA (lower ground) (1.10.13)
649		5114	Work on west side of site looking south
650		5115	View east across new extension to site
651	Yes	5116	S. 1051 across ditch 398 view east
652		5117	Ditto
653	Yes	5118	S. 1052 view E of former sand quarry 413 (2.10.13)

654	Yes	5119	Ditch 398 view east
655		5120	General view of southern extension
657		5121	S. 1051 ditch 398 view east
658		5122	General view of FCA looking NNE
659		5123	General view south of FCA (3.10.13)
660		5124	Ditto
662		5125	Ditto view SE
663		5126	Ditto view SW
664		5127	State of grass pitch
665		5128	General view south of FCA (from loading bucket)
666		5129	General view SW
667		5130	General view SE
668	Yes	5131	S. 1053 ditch/gully 431
669		5132	West side after secondary ground reduction
670	Yes	5133	Animal bones in 290 view east
671		5135	Ditto
672		5136	Ditto view west
673	Yes	5137	S. 1054 across ditch 436 & 438
674	Yes	5138	S. 1055 across pit 441 view north
675		5139	General view of west side of site view south (7.10.13)
676		5140	Southern end of site
677		5141	View south across N-S ditches during ground reduction phase of FCA (15.10.13)
678		5142	Detail of ditto view south
679		5143	Ditto view west
680		5144	Ditto view north
681		5145	General view of grass pitch view south to abbey
682		5146	Ditto view SW with FCA site in background
683	Yes	5168	View north across the setting of the Mesolithic find spot (22.10.13)
684	Yes	5169	Adze in situ (vertical)
685		5170	Ditto
686		5171	Ditto
687	yes	5172	Oblique view of 'adze' with overlying soil horizons
688		5173	Detail of lower portion of overlying deposits (v.sandy)
689		5174	Adze in situ with 0.25m scale
690		5175	Ditto with compass showing orientation ditto
691		5177	Ditto
692		5178	Adze freshly washed with scale
693		5179	Ditto
694		5180	Location of adze after removal from position
695		5181	Adze with 10cm scale – oblique
696		5182	Adze with 10cm scale - side
697		5183	Adze with 10cm scale
698		5184	Adze with 10cm scaleobverse
699		5188	Adze with 10cm scale - verso
700		5191	General view north across exposed sandy gravel horizon (23.10.13)
701		5192	Sieving in vicinity of adze find spot
702		5193	Detail of sieving
703		5195	Oblique view north

704		5196	Ditto west
705		5197	Location of service trench across moat view SSE
706		5198	West facing section oblique view SE
707		5199	Working shot looking north
708		5200	Ditto
709		5201	Close up of Desso machine
710		5202	Detail of soil horizons that sealed the 'adze'
711		5203	Closer view of ditto
712		5205	View of site NNW after excavation of gravel horizon
713		5206	Final ground reduction of northern end of Flood compensation area (FCA) (24.10.13)
714		5207	View NE across Grass pitch
715		5208	Location of cut across the moat [74]
716		5209	Work underway on service trench across moat
717		5210	Service trench looking northwards
718		5211	Ditto
719		5212	Detail of west facing section
720		5213	Pipe laying in service trench view NNW
721		5214	Pipe in situ (note off- centre)
722		5215	Location of gas pipe on north side of access road
723		5216	Detail of gas pipe
724		5217	View across service trench across moat [74] (25.10.13)
725		5218	View SW across Desso pitch with machines at work
726		5219	Machine at work in service trench across moat
727		5220	View of machine cut in centre of moat with staff as scale view NNW
728		5221	Detail of ditto – 3.5m depth
729		5222	Ditto – clearer view
730		5223	JH's work station beside the moat section
731		5224	Exposure of gas pipe in section view NNW
732		5225	Section view SE
733		5226	Section view NNW
734		5227	General view of service trench looking SSE
735		5229	View north across Dess & Grass pitch with fencing blown down (28.10.13)
736		5230	View SW across FCA – note flooding
737		5233	NNW end of service trench trench across moat. West facing section
738		5234	Ditto view SSE
739		5235	Detail of, view east
740		5236	Detail of, view south
741		5237	Service chamber foundation at NNW end, view NNW
742		5239	Detail of composition of gravelly alluvium after rain (note rounded chalk fragments)
743		5260	Location of service trench to pavilion (11.11.13)
744		5261	East facing section showing chalk fill of moat in service trench
745		5263	View south of service trench and gas main
746		5264	View east across location of 6m square soakaway
747		5265	View east with crushed tile & mortar spread (83) below topsoil
748		5266	View east across furthest extent of (83)

749		5267	Ditto
750		5268	Excavation of soakaway underway, view east
751		5270	View north of initial machine cut (dusk)
752	yes	5271	Eastern most SE-NW section across soakaway (12.11.13) view NW
753		5273	Ditto
754		5275	Detail of ditto (SE end)
755		5276	Detail of ditto (middle section)
756		5277	Detail of ditto (NW end)
757		5278	Detail of subsoils (86-87) in middle section
758		5279	Oblique view of same section
759		5281	Detail of the soil sampling column in subsoils (86-87)
760		5282	Ditto in sunlight
761		5283	Machine Exc. At work with Manny driving, view N.
762		5285	Ground being reduced in soakaway with pavilion beyond
763		5286	SE end of western most section (uncleaned)
764		5287	NW end of ditto (note rising subsoil 87)
765		5288	Final landscaped area of FCA with Desso beyond
766		0414	Soakaway near Coach Park looking west
767		0415	Soakaway near Coach Park looking east
768		0416	Section of Coach Park Soakaway looking south
769		0417	Section of Coach Park Soakaway looking south
770		0419	Coach Park soakaway looking northeast
771		0421	Coach Park soakaway looking northeast
772		0422	Coach Park soakaway looking north
773		0423	Coach Park soakaway looking northeast
774		0425	Section of Coach Park Soakaway looking west
775		0432	Section of Coach Park Soakaway looking west
776		0433	Coach Park soakaway looking southwest
777		0434	Coach Park soakaway looking northwest
778		0439	Coach Park soakaway looking northwest
779		0441	Coach Park soakaway looking southeast
780		0442	Section of Coach Park Soakaway looking east
781		0469	Flooded moat looking northwest
782		0470	Sondage in Trench 20 looking west
783		0471	Sondage in Trench 20 looking northwest
784		0472	Sondage in Trench 20 looking north
785		0473	Sondage in Trench 20 looking northwest
786		0474	Sondage in Trench 20 looking west
787		0475	Trench 20 looking southeast
788		0476	Possible Gully in Trench 20 looking west
789		0477	Trench 20 looking south
790		0479	Trench 20 looking south
791		0480	Trench 20 looking northeast
792		0481	Trench 20 looking southwest
793		0482	Trench 20 looking southeast

Appendix 4: Finds Concordance

Finds highlighted in bold have individual location coordinates for CAD spatial plotting.

Context No:	Cut No:	Grid Square	Feature Type	Pottery		Bone		Flint		CBM		Stone		B.Flint		Other	Comments
				No:	(g)	No:	(g)	No:	(g)	No:	(g)	No:	(g)	No:	(g)		
86			subsoil					3 + 6 (SF)	117					24	447		plotted material
113	-		layer	4	16					1	40						
120	119		ditch	2	49					1	7						
201			topsoil	13	127			2	140	2	226					clay pipe 2g	plotted material
201			topsoil	12	179			36 (SF's)								clay pipe 13g, coin x1 (SF)	plotted material
202	-		lower ploughsoil	209	1542			136 (SF's)		2	361	3	89			glass x3 13g, clay pipe x2 16g,slag 14g, Pb 141g, (4x coin (SF))+Cu obj (SF)	plotted material
206	-		layer	2	8												
207	209		?pit	1	2												
213			layer	5	26			16 (SF's)									plotted material
213	-		layer	2	12			1	31								
213	-	00/960	layer	2	16			1	2								
213	-	00/97	layer					4	24								
213	-	00/975	layer	5	43												
213	-	00/98	layer					1	2								
213	-	01/990	layer	1	7			7	25								
213	-	01/985	layer					2	18								
213	-	005/97	layer	4	64			7	56								
213	-	005/975	layer	4	51			11	118								
213	-	005/98	layer	4	24			3	16								
214	211		pit					1	95								
230	229		furrow							1	57						
234	227		flint pit					2	26								
235	228		p/hole	4	59												
240	239		ditch	3	62	1	312			3	287						
241	239		ditch									1	114				
242				1	41												plotted material
244				1	10												plotted material
259	258		pit	9	444												
268	270		pit	3	90	94	3211	1	10	7	631					clay pipe 2g	
276	275		pit					5	8								
277			lower terrace soil					1 (SF)									plotted material
278				1	11			2(SF)									plotted material
279	-		general cleaning layer	1	24			3 +4(SF)	24								plotted material
281	267		ditch			22	942	1	2	1	9						
283	282		ditch	4	63	7	138					1	75				
287	269		ditch			14	343										
289	269		ditch	5	158	19	235			5	528						sieved from (268)
290	270		pit			104	3143										
291	270		pit							1	471						
294	270		pit			4	16			2	33						
301	280		ditch	1	16												
311	302		quarry			26	1209	6	110	11	1595						
314	302		quarry			2	49										
316	302		quarry			1	150										
322	318		ditch					5	4								
323	318		ditch			14	565	4	172								
324	318		ditch	1	18	19	223			3	341						
328	282		ditch					1(SF)									plotted material
335	346					136	1485										dog skeleton
338	336		ditch					2	7								
339	336		ditch	9	89	102	2333	13	310	5	286	7	194	1	45	daub 19g, Fe x1 (SF)	plotted material
340	336		ditch			3	16	1	7								
341	336		ditch	1	9	6	282	4	25								
343	342		ditch	2	45	2	5	2	4								
348	347		gully	1	3												
353	352		?deposit			2	16										
357	356		ditch	1	45	4	64										
366	368		ditch			1	203										
369	371		ditch			3	2			1	128						
372	374		ditch	1	7	16	481	1	3								
375	377		ditch			6	391			1	17						
378	379		ditch	3	34	50	1489			3	138						
380	381		treethrow					1	1								
384	383		treethrow					4	9								
385	386		ditch			10	259			7	659						
387	388		ditch							1	84						
389	382		p/hole					3	10								
392	393		ditch	2	35			4	29								
408	405		treethrow					1	2			2	7				same as (286)
409	398		ditch	2	81	19	707			1	178						
430	270		pit	76	848	270	2096	12	25	21	977						sieved from (268)
432	431		ditch	1	2			1	8								
434	413		quarry	3	38	1	49			3	579						
435	262		ditch			4	526			1	461						1x brooch pin (SF)
437	436		ditch	1	18			3	64								plotted material
440	441		pit	1	6	10	81										
450								2(SF)									plotted /Adze
u/s										1	570						
Total				408	4421	972	21001	116	1504	85	8663	12	472	27	499		

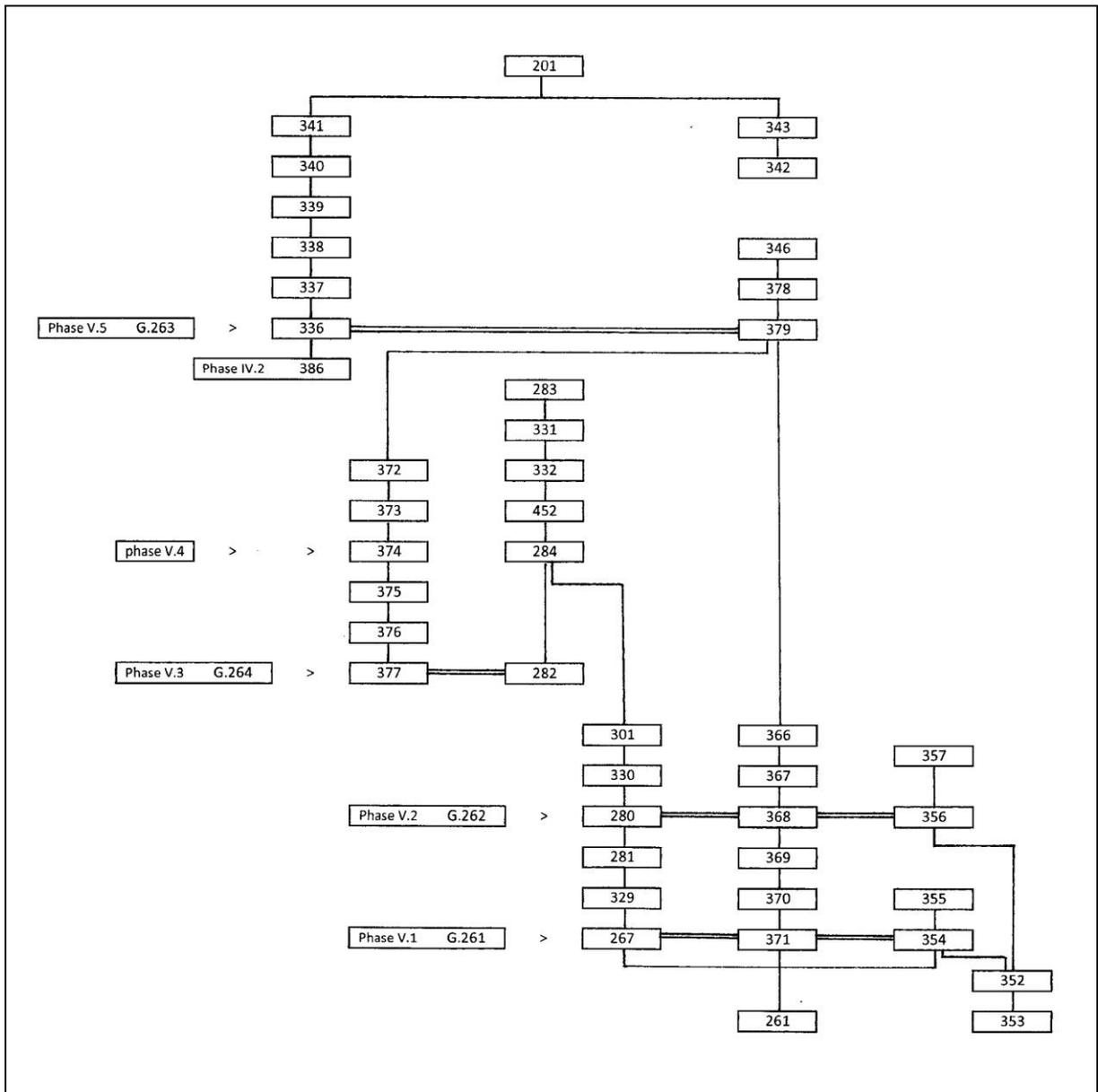
Appendix 5: Pottery Table 1 (Jane Timby)

Context	Type	Lpreh	Roman	Saxon	Med	Pmed	No date	Total No	Total Wt	Date
51	pit 50	2	0	0	3	0	4	9	20	Lpreh/Med
113	layer	0	0	0	4	0	0	4	17	Med
120	ditch 119	0	2	0	0	0	0	2	50	Roman
201	topsoil	5	9	0	0	11	0	25	305	Lpreh/Ro/Pmed
202	subsoil	55	75	8	26	15	15	194	1610.5	Lpreh-Pmed
206	box cut	1	0	1	0	0	0	2	9	Lpreh-Sx
207	pit 209 (upper)	1	0	0	0	0	0	1	2	Lpreh
213	layer	24	4	0	0	0	0	28	253	Lpreh/Ro
214	pit 211	1	0	1	0	0	0	2	3	Lpreh/Sx
226	pit 210	0	0	0	0	0	1	1	4	no date
235	phole 228	7	0	0	0	0	0	7	62	Lpreh
240	ditch 239	0	2	0	1	0	0	3	65	Ro/Med
241	ditch 239	2	3	0	0	0	1	6	13	Lpreh/Ro
242	ditch 239	3	1	0	0	0	0	4	48	Lpreh/Ro
244	pit	0	0	0	1	0	0	1	10	Med
268	quarry 270	0	5	0	0	0	0	5	94	late Roman
278	sub-soil	1	0	0	0	0	0	1	12	Lpreh
279	cleaning horizon	0	0	1	0	0	0	1	25	Sax
283	ditch 282	0	0	4	0	0	0	4	63	Sax
289	ditch 269	0	4	1	0	0	0	5	154	Ro/Sax
290	quarry 270	0	2	0	0	0	0	2	16	Roman
301	ditch 283	0	0	1	0	0	0	1	17	Sax
324	quarry 302	0	1	0	0	0	2	3	19	late Roman
339	ditch 336	2	5	6	0	0	0	13	100.25	Sax
341	ditch 336	0	0	1	0	0	0	1	9	Sax
343	ditch 342	0	0	2	0	0	0	2	45	Sax
348	gully 347	0	0	1	0	0	0	1	3	Sax
357	ditch 352	0	0	1	0	0	0	1	47	Sax
372	ditch recut 374	0	0	0	1	0	0	1	8	Med
378	ditch 379	0	1	1	1	0	0	3	34	Med
392	ditch 393	0	2	0	0	0	0	2	36	later Roman
409	ditch 398	0	2	0	0	0	0	2	83	late Roman
430	quarry 268/270	7	60	8	0	0	0	75	842	Sax
432	ditch 431 [286]	1	0	0	0	0	0	1	2	Lpreh
434	not assigned	0	3	0	0	0	0	3	39	Roman
437	ditch 436	1	0	0	0	0	0	1	18	Lpreh
440	pit 441	0	0	1	0	0	0	1	6	Sax
us	us	1	0	1	0	0	0	2	15	Lpreh/Sax
TOTAL		114	181	39	37	26	23	420	4158.75	

Appendix 6: Coarse Building Material (Jonathan Hunn)

Catalogue of CBM from Flood alleviation site

context	Obj. no	type	number	weight	co-ordinants	diamensions	Description	total
434	n/a	box-tile	1	0.464	n/a	150mm wide x 15mm	combed box tile	0.464
unstratified	n/a	brick	1	0.222	n/a	70 x 64 x 34mm	brick	
201	n/a	brick	1	0.122	SU 84840-85161	70 x 42 x 40mm	grey core with straw impressions	
268	n/a	brick	1	0.232	n/a	34mm thick	reddish brown	
289	n/a	brick	3	0.345	n/a	37mm thick	brick	
311	n/a	brick	1	0.52	n/a	27mm thick	oxidised brick	
385	n/a	brick	2	0.146	n/a	30mm	brick	
430	n/a	brick	1	0.132	n/a	40mm thick	brick	
			10	1.719				1.719
281	n/a	frag	1	0.009	n/a	n/a	chip	
339	n/a	frag	1	0.019	n/a	n/a	hard buff cbm	
369	n/a	frag	1	0.128	n/a	35mm	brick	
375	n/a	frag	1	0.017	n/a	14mm thick	tile	
378	n/a	frag	1	0.138	n/a	16mm thick	tile	
387	n/a	frag	1	0.084	n/a	15mm	imbrex	
409	n/a	frag	1	0.182	n/a	21mm thick	imbrex	
113	n/a	frag.	1	0.04	n/a	16mm thick	abraded pale orange brown	
120	n/a	fragment	1	0.007	n/a	less than 23mm	n/a	
51	8	fragments	3	0.004	n/a	less than 14 x 7mm	n/a	
			12	0.628				0.628
unstratified	n/a	tile	1	0.128	n/a	63 x 36mm	tegula	
unstratified	n/a	tile	1	0.574	n/a	130 x 140 x 21mm	tegula	
240	n/a	tile	1	0.057	n/a	n/a	tegula	
240	n/a	tile	1	0.215	n/a	n/a	vitrified brick	
241	26	tile	2	0.045	n/a	24mm thick	tegula	
268	n/a	tile	6	0.3	n/a	betwn 14 & 16mm thick	tegula	
268	n/a	tile	1	0.104	n/a	21mm thick	tegula	
289	n/a	tile	2	0.176	n/a	23mm thick	tegula	
291	n/a	tile	1	0.472	n/a	28mm thick	tegula	
294	n/a	tile	3	0.033	n/a	19mm thick	tegula	
311	n/a	tile	10	1.08	n/a	20mm thick	tegula	
324	n/a	tile	3	0.34	n/a	24mm thick	thick lipped tegula	
339	n/a	tile	5	0.392	n/a	17mm thick	tegula	
385	n/a	tile	4	0.432	n/a	15mm	tegula	
385	n/a	tile	1	0.084	n/a	13mm	imbrex	
430	n/a	tile	20	0.865	n/a	15mm thick	tegula	
434	n/a	tile	1	0.028	n/a	n/a	tegula	
434	n/a	tile	1	0.09	n/a	17mm thick	imbrex	
435	n/a	tile	1	0.461	n/a	15mm thick	imbrex	
			65	5.876				5.876
Totals								8.687



Matrix for Period V (late Anglo Saxon)

Appendix 8: OASIS Form

PROJECT DETAILS			
Project Name:	Bisham National Sports Centre	OASIS reference:	13885
Short Description:	A series of archaeological works was undertaken on the site of the new accommodation block, car and coach park, pavilion, three sports pitches (muga, desso & grass) and flood alleviation scheme. Medieval and post-medieval features were found within the SAM; on the football pitches Neolithic and Bronze Age artefacts and 'burnt pits' ditches and one extraction pit and a Saxo-Norman field boundary. On the flood alleviation area there were some 'tree-throw' hollows and a series of late Roman and Anglo Saxon ditches.		
Project Type:	Watching brief and 'strip, map & record' excavation		
Previous work: (eg. SMR refs)	BA HER 492	Site status: (eg. none, SAM, listed)	SAM 1007934 (south) and none (north).
Current land use:	Sports Centre	Future work: (yes/no/unknown)	Not known
Monument type:	Medieval & Post-medieval	Monument period:	Late Bronze Age, Roman, Saxon, Medieval & post-Med.
Significant finds: (artefact type & period)	Early Mesolithic tranchet axe		
PROJECT LOCATION			
County:	Berkshire	OS reference: (8 figs min)	SU 8475-8495
Site address: (+ postcode if known)	Bisham Abbey National Sports Centre, Bisham village, Marlow Rd, Bisham, Marlow SL7 1RR		
Study area: (sq. m. / ha)	3.15 ha	Height OD: (metres)	28m
PROJECT CREATORS			
Organisation:	Icknield Archaeology Ltd		
Project brief originator:	Ben Jervis (Berks Arch)	Project design originator:	Hunne & Rouse 2013
Project Manager:	Dr. J.R.Hunn	Director/Supervisor:	Jonathan Hunn
Sponsor / funding body:	ISG Plc and Sports England		
PROJECT DATE			
Start date:	17/5/13	End date:	2/4/14
PROJECT ARCHIVES			
	Location (Accession no.)	Content (eg. pottery, animal bone, files/sheets)	
Physical:		12 files, 17 plans and 45 sections, B/W films, 4.5 kg pot, 20.4 kg bone, 206 lithics, small finds, cbm & residues	
Paper:		310 site records and 82 WB sheets	
Digital:		793 digital images and survey data	
BIBLIOGRAPHY (Journal/monograph, published or forthcoming, or unpublished client report)			
Title:	Archaeological Works: Bisham Abbey national Sports Centre		
Serial title & volume:	Icknield Archaeology Ltd Report ref. 1701/ BSH/02		
Author(s):	Jonathan R Hunn BA PhD FSA MCIfA		
Page nos	165	Date:	25/5/17