

Archaeological Services & Consultancy Ltd

ARCHAEOLOGICAL SALVAGE RECORDING: BRIDGEWATER SCHOOL, BILLET LANE, BERKHAMSTED

on behalf of Hertfordshire County Council



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& Alex Thompson

December 2004

ASC: 636/BBS/1

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Site Data

<i>ASC site code:</i>	BBS	<i>Project no:</i>	636
<i>SMR reference / Event No:</i>	4904		
<i>County:</i>	Hertfordshire		
<i>District:</i>	Dacorum		
<i>Village/Town:</i>	Berkhamsted		
<i>Parish:</i>	St Peters		
<i>NGR:</i>	SP 98425-98995		
<i>Extent of site:</i>	555m x 210m (11.65 ha / 28.8 acres)		
<i>Present land use:</i>	School grounds		
<i>Planning proposal:</i>	New school room		
<i>Extent of development:</i>	15m x 30m		
<i>Planning application ref/date:</i>	Not known		
<i>Client:</i>	C.S.F Dept Hertfordshire County Council County Hall Hertford SG13 8DN		
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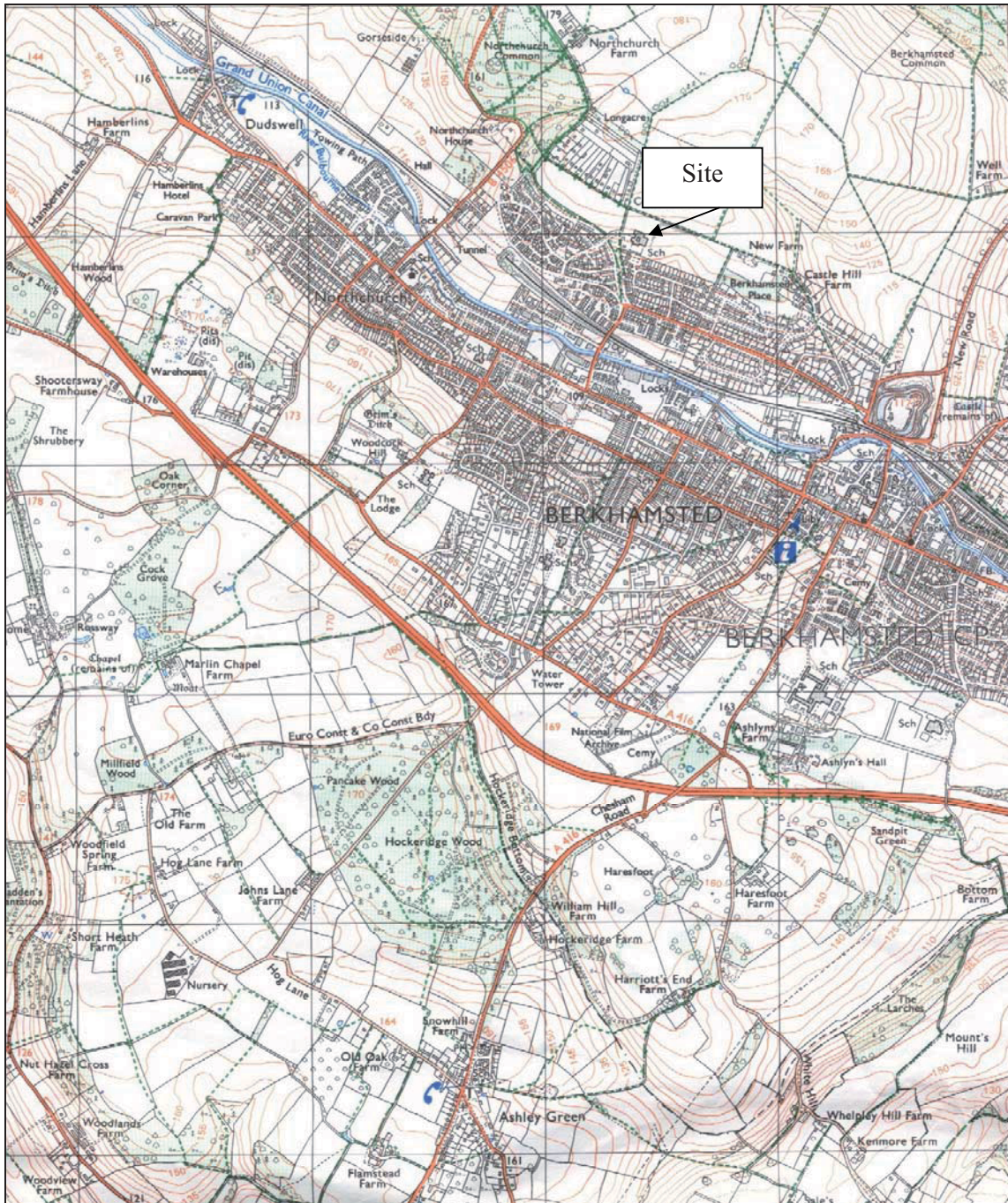


Figure 1: General location (scale 1:25,000)

Summary

In late November 2004 Alex Thompson and Jonathan Hunn undertook some remedial archaeological work at Bridgewater School on behalf of Hertfordshire County Council. This was as a result of the construction of a new classroom on the eastern side of the site. Most of the site was not recorded during the initial ground works phase but the remains of a Late Iron Age/Roman ditch was observed on the northern edge of the new building platform. This contained 1st century pottery, iron slag, a fragment of iron and a fragment of a sharpening stone. Apart from the loss of 28m of ditch it is not known what other archaeological features were destroyed during the present development.

1 Introduction

1.1 During late November 2004 *Archaeological Services and Consultancy Ltd* (ASC) carried out remedial work on a site at Bridgewater School, Billet Lane, Berkhamsted (NGR SP 98425-98995; Fig. 1). The project was commissioned by Paul Wray of the Children, Schools & Families Department (HCC), and was carried out by the authors (Jonathan Hunn and Alex Thompson) following a recommendation by Jonathan Smith of the County Archaeology Office (CAO).

1.2 *Reason for Work*

The work was required in order to record what remains survived after development had started without formal notification to the responsible authorities (CAO). An additional consideration was to provide an assessment of the archaeological potential of the site and a guide to its long term management.

1.3 *Setting*

1.3.1 The site is located on the eastern side of the school with buildings to its west and south. To the east there are the school playing fields and to the north the area is maintained as open, mown grassland; to the north west the area is semi open woodland comprising young deciduous trees. The site, including the terraced area does not exceed 30m N-S by 15m E-W. Beyond the school boundary to the north lies a large arable field. Access to the 2004 development was obtained from a narrow made-up track to the rear of main school block (Fig. 2).

1.3.2 The site lies at an elevation of just on the 165m contour, more or less where the gently sloping terrain begins to drop southwards more steeply. The land drops about 60m towards the river Bulbourne which flows towards the east, some 600m to the south. The soil is classified as belonging to the Hornbeam Association (Soil Survey 1983) formerly described as the Berkhamsted complex. The soils *'are characterised by the dominance of stony, medium to coarse-texture soils resembling those of the Batcombe series in profile morphology, but distinguished by the presence of flint and other rocks, accompanied by varying quantities of sand.....[it] is found on Pebbly Clay and Sand at elevations up to 675 ft [200m], but is most extensive below 450 ft [137m], where it is widely developed on similar, stony clay drift referred to as Plateau drift with far-travelled stones.....Elsewhere, the drift appears to include masses of undisturbed Eocene clay, so that, although the surface is pebbly, the subsoil may be*

virtually free of stones. Depending on the slope, and the relative contents of clay, pebbles and sand in the drift, the drainage of the soils ranges from free to imperfect.....At levels above 400 ft [122m] the Berkhamsted soils are chiefly developed on flattened spurs and ridge margins adjoining the main through-valleys'. In places, the distinction between it and the Batcombe series is difficult to define. 'As with the Batcombe series, the Berkhamsted complex includes limited areas of eroded and colluvial variants. In the eroded phase, occurring at the upper ends of fields and on convex slopes, the brightly coloured Bt horizon is turned up by the plough, and the surface horizon is accordingly of sandy clay loam or finer texture. The colluvial soils, located in minor dry valleys, are normally deep, pebbly loams or sandy loams, sometimes with a thin layer of gravel at the base' (Avery 1964, 68-70).

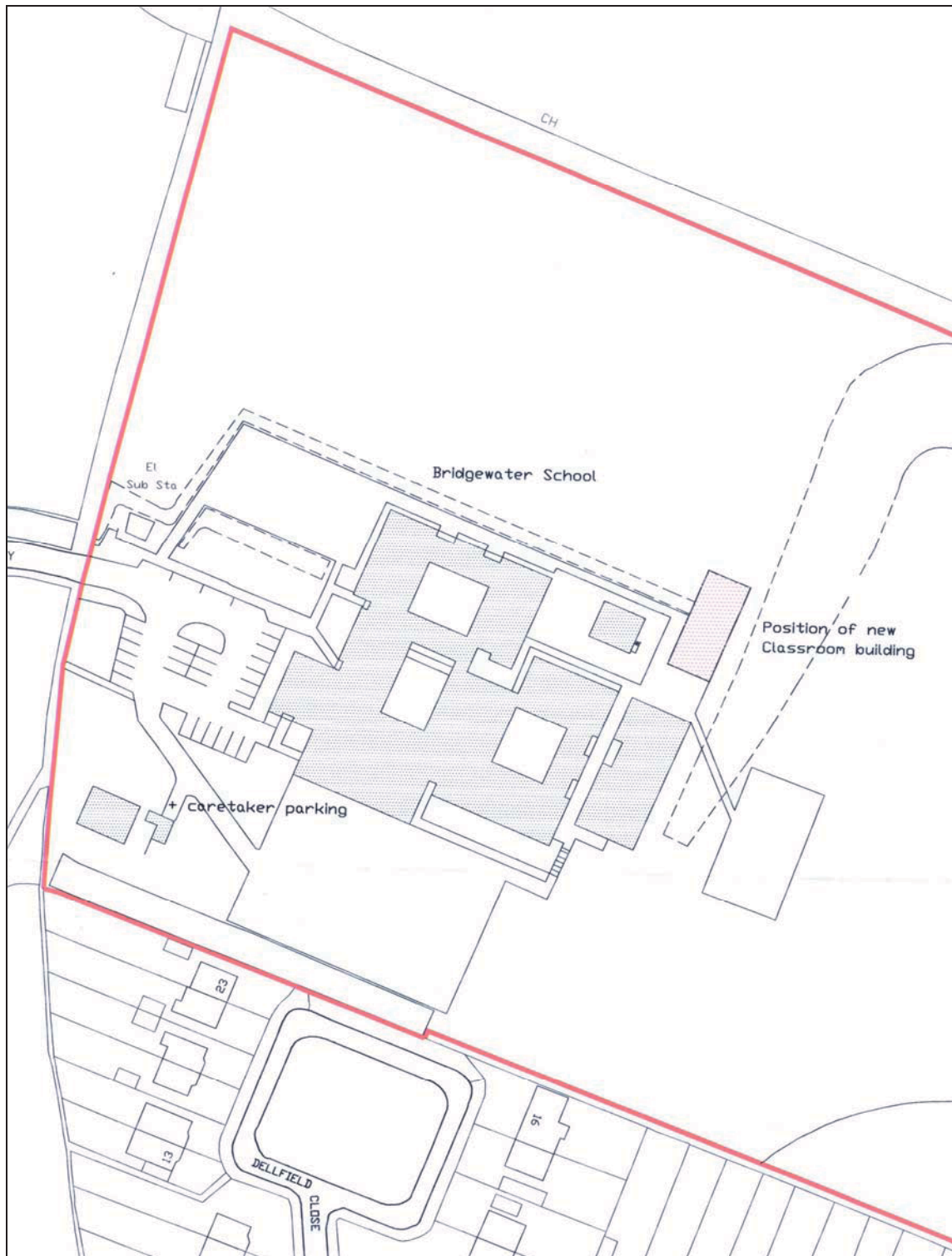


Figure 2: Site plan (scale 1:1250)

2 Aims & Methods

2.1 Aims

The aims of the remedial archaeological programme were:

- To recover as much information as possible from the area of the current development.
- To provide an overview of the current state of the site
- To make recommendations as to the potential development of the site.

2.2 Methods

The work was carried out in two visits to the site by the authors of the report.

- The terraced area was not observed and potential archaeology therefore lost.
- A short section of a 1st century ditch was manually cleaned and recorded by Alex Thompson and the results reviewed by Jonathan Hunn.

2.3 Standards

The work conforms to the project design, to the relevant sections of the Institute of Archaeologists' *Code of Conduct* (IFA 2000) and *Standard & Guidance Notes* (IFA 2001), to the Association of Local Government Archaeological Officers East of England Region *Standards for Field Archaeology in the East of England* (ALGAO 2003), and to the relevant sections of ASC's own *Operations Manual*.

3 Archaeological & Historical Background

3.1 Prehistoric (before 600BC)

The evidence for early pre-historic activity in the Berkhamsted area is not great. Until recently it consisted of only random finds, such as flint implements whose context and even their location is poorly understood. The picture has been considerably enhanced by the preliminary findings of sites along the route of the Berkhamsted by-pass. In particular, at Oakwood (NGR SP 974-072) there were 'a large number of dispersed features (pits, gullies, ditches)', associated finds were dated to the neolithic/Bronze Age and Iron Age (McDonald 1995, 122). At Pea Lane (NGR SP 964-083) there was structural evidence and associated pottery of the later Bronze Age/Iron Age (McDonald 1995, 121-2).

Apart from the Pea Lane site mentioned above the only evidence for late Bronze Age/Iron Age activity is derived from occasional find spots. For example, there is a late Bronze Age brooch from Berkhamsted Castle (Branigan 1977, 174-5) and an iron sword and copper alloy sheath from the cress beds at Bourne End (SMR no. 4097). There are earthwork monuments around Berkhamsted attributed to the 'prehistoric' period but their precise date has yet to be established.

3.2 Iron Age (600BC-AD43)

For the later prehistoric and Roman periods there is a considerable body of evidence suggesting that there was dispersed occupation dating from the late Iron Age and Romano-British period along the length of the upper Bulbourne valley (Morris and Wainwright 1995, 68-75). In the middle section of the Bulbourne valley the level of activity and/or settlement is equally high.

3.3 Roman (AD43-c.450)

There is evidence for dispersed occupation during this period along the length of the upper Bulbourne valley (Morris and Wainwright 1995, 68-75). Berkhamsted's principal thoroughfare follows the course of Akeman Street which was an important communication between the Roman towns of *Verulamium* (St Alban's) and *Corinium Dubunorum* (Cirencester). The closest Roman occupation site was situated 250m to the east of the site (SMR 6421) and a second site lay less than 200m to the north east near the railway line (SMR 6437). There is evidence for industrial activity in the form of shaft furnaces at Dellfield (SMR 4904), a pottery kiln in Bridgewater road (SMR 6083) and one other concentration of pottery further along the same road (SMR 6071) which may or may not be another kiln. The remaining evidence is all derived from random coin loss. For example, several Roman coins came from the castle (SMR 1336), a gold coin from Meadway (SMR 6070), one from Dellfield (SMR 6076), and one from Swingate Lane (SMR 6080).

3.4 Saxon (c.450-1066)

In the late Anglo-Saxon period Berkhamsted was held by Eadmer a thane of Earl Harold. It is probable that the settlement that we call Northchurch was, at that time, an earlier precursor of Berkhamsted (Doggett and Hunn 1985). The evidence for this comes from the fabric of St Mary's Church, otherwise known as St Mary's Berkhamsted, which has pre-Conquest stonework in its nave walls on the western and southern sides (Taylor and Taylor 1980, 462-63; Smith 1973). With the construction

of the castle in Berkhamsted some 2 kilometres to the WSW, there developed an alternative settlement focus to Northchurch

3.5 Medieval (1066-1500)

The Domesday survey of 1086 mentions that *Berchastede* was a *burhium* (borough) whose burgesses paid £4 from tolls and held half a hide of land. The number of burgesses was 52, although this has been questioned (Doggett and Hunn 1985, 22). However, if this was accurate then it would make the borough second only after Hertford with 146 burgesses but third after St Albans whose 46 burgesses paid £11.14s from tolls. The precise limits of the Domesday borough has never been satisfactorily established. For example, it is possible that the late Anglo-Saxon 'burgh' lay towards what is now called Northchurch. However, there is a mention of land called 'Oldeburgh' in the vicinity of the old Post Office on the High Street some 100 m to the west which might also indicate an earlier settlement focus. Even if this is uncertain there is no question that the post-Conquest core of medieval Berkhamsted lay along the axis of the present day High Street.

3.6 Post-Medieval (1500-1900)

The earliest representation of the town is Norden's survey of the early 17th century (PRO MR 603). This shows that settlement was located along the High Street and Castle Street. There are no buildings shown in the vicinity of Billet Lane. According to *Dury and Andrews* survey of Hertfordshire, the area is shown as being fields (1768). The area remained unbuilt until the 20th century.

3.7 Modern (1900-present)

The adjacent areas of Dellfield and Egerton Road were first developed for housing in the late 1950s to early 1960s. Work began on the site of Bridgewater School in the early 1970s.

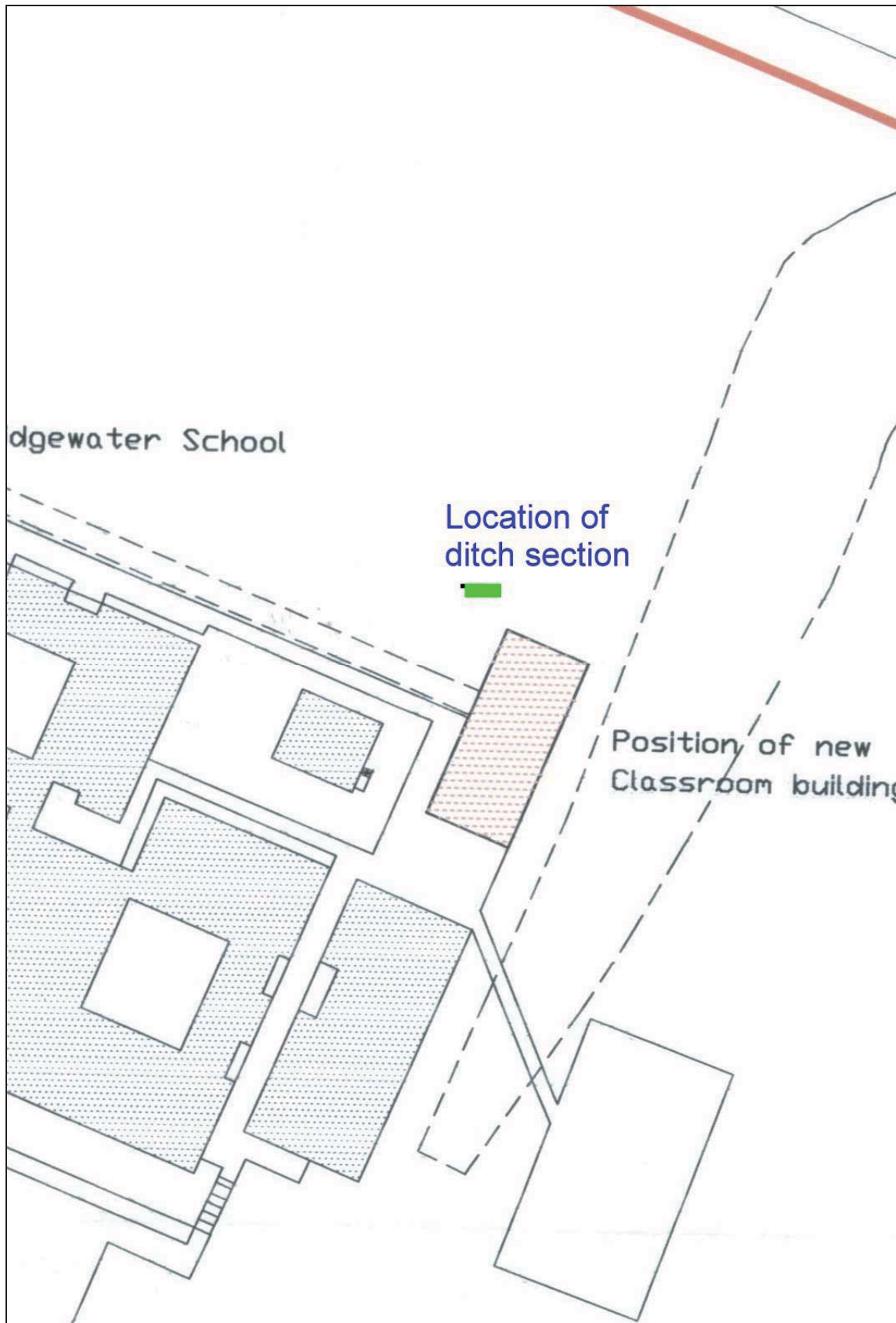


Figure. 3: Location of Roman ditch (shown in green)

4 Results

- 4.1 In the area of the new building the ground had been reduced by several metres and all signs of archaeological deposits had been eradicated. On the northern side of the site a ditch profile was observed in the slope of the terraced terrain (Fig. 3; Plate 2). A short section of ditch no more than a metre in length was cleaned and excavated (Plates 3 and 4). The ditch was 0.85m wide and 0.6m deep beneath the subsoil (Fig. 4). It was filled by a uniform dark brown, flinty clay. From this short section came 54 sherds from 8 different vessels, 2 pieces of iron slag, a fragment of a sharpening stone and a small lump of iron. The assemblage is dated to somewhere between AD 10 and AD 40 (Appendix 1).

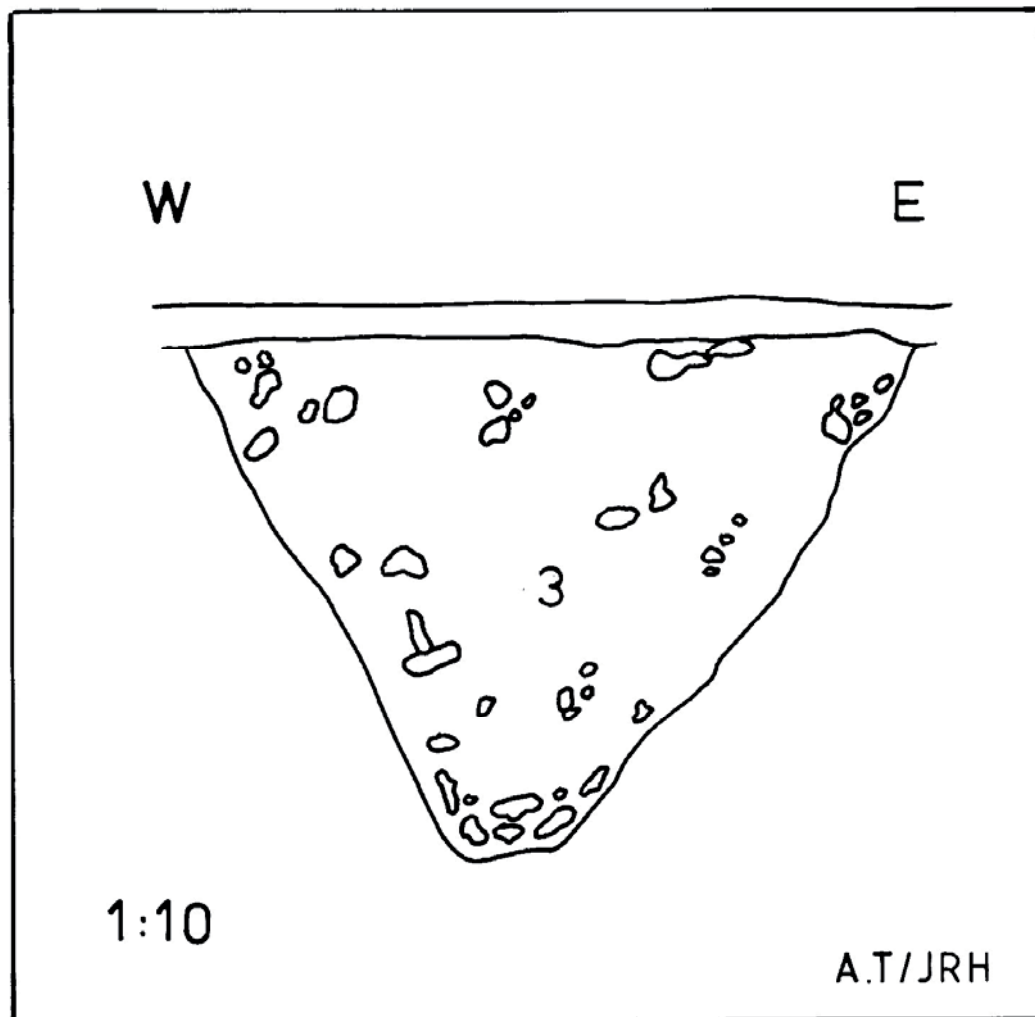


Figure: 4 Section drawing of ditch



Plate 1: New school building looking south



Plate 2: New terraced area looking north towards location of the ditch.



Plate 3: Exposed ditch section looking north



Plate 4: Detail of ditch fill (after A Tompson)



Plate 5: Remains of iron processing



Plate 6: Imported pottery from northern Gaul.



Plate 7: C1-7 rilled jar sherds



Plate 8: C1-7 rilled jar sherds



Plate 9: Pottery types 3, 5 and 6



Plate 10: Pottery types 4 and 7



Plate 11: Pottery type no. 8

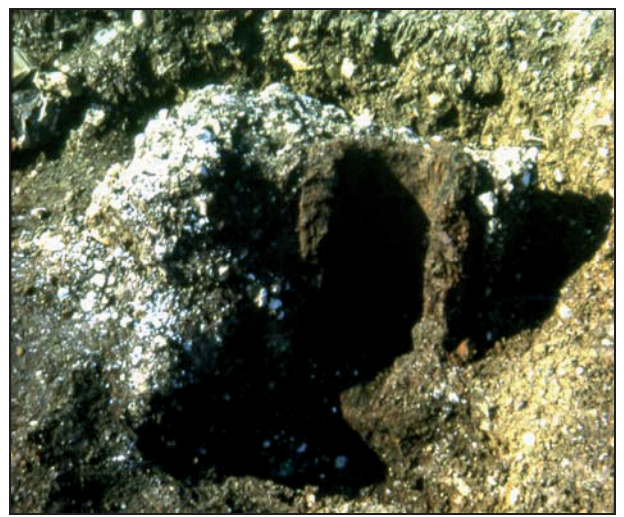


Plate 12: Furnace 1 excavated in 1972

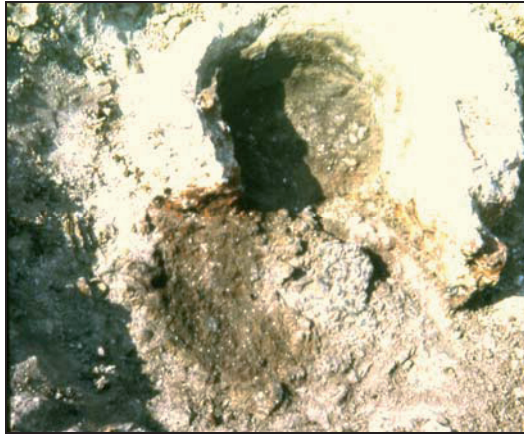


Plate 13: Furnace 2 excavated in 1972



Plate 14: Part of burial group 1 (excavated in 1972)



Plate 15: Part of burial group 2 (excavated in 1972)



Plate 16: Group 1 reconstructed



Plate 17: Group 2 reconstructed

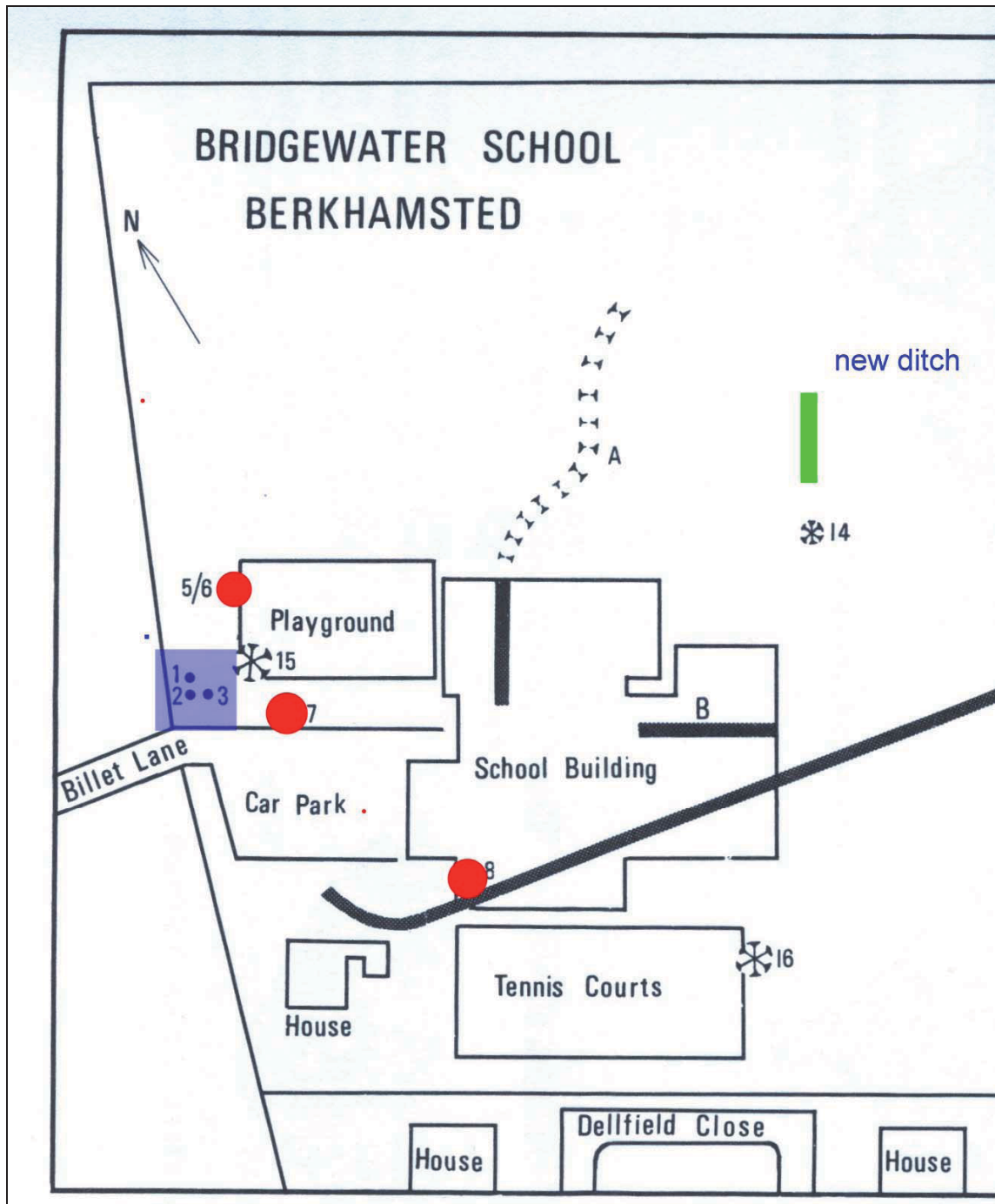


Figure. 5: Late Iron Age and Roman archaeology of Bridgewater School

5. Conclusions

- 5.1 It will never be known what archaeological information has been lost from this current development. All that is certain is that some 30m of ditch containing early 1st century occupational debris was destroyed without record. The tiny portion of the ditch that was excavated indicates the potential wealth of information that it contained. This is reflected in the quality of report on the ceramics written by Dr Thompson (Appendix 1). It has been suggested that the sherds were not a 'termination deposit' but had been included in the general fill of the ditch (*ibid.*). The precise date for the infilling of the ditch remains uncertain, but it possibly took place when the site was deliberately levelled prior to cultivation in the Roman period.
- 5.2 The site formed part of the local iron smelting industry in the 1st century, pre-dating the Roman conquest of AD 43. It is certainly of regional importance and there is a good case, as things stand at present, for arguing that the site is of national importance. The site was excavated by the local archaeological society (BDAS) in less than ideal conditions in the early 1970s with minimal resources (Appendix 2). Since then techniques have progressed and there is a greater potential to obtain more detailed information on the site and its immediate locality.
- 5.3 The area immediately to the north of the school buildings remains relatively undisturbed and has a good potential for archaeological remains to have survived *in situ* (Fig. 6). The area has the highest potential for development should the school expand in the future. It is recommended that a geophysical survey is undertaken so that an informed decision can be made on the long term management of this important site (Fig. 7).



Figure 6: Archaeological assessment zones (red = gas pipeline; purple = destroyed; green = area of potential survival)

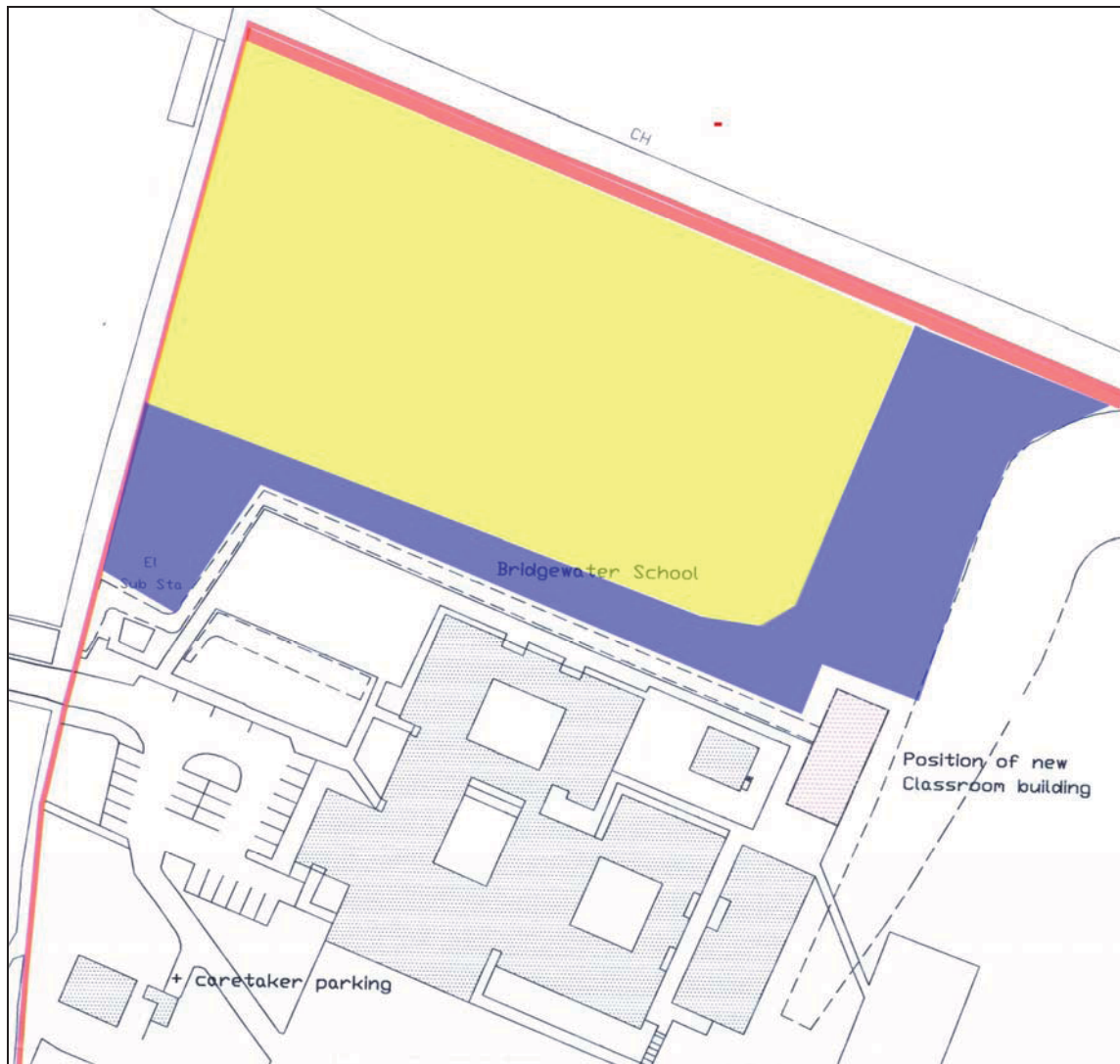


Figure 7: Potential zones for future geophysical survey (red = gas pipe line; blue = open area of grass; yellow = lightly covered in shrubs and trees)

6. Acknowledgements

The writer is grateful to Paul Wray of the CFS Dept for commissioning this report on behalf of Hertfordshire County Council, and on the advice of Jonathan Smith of the County Archaeology Office (HCC). The authors would like to thank Mike Allen (site agent) for his cooperation during their visits to the site. Thanks are due to Dr Isobel Thompson for her report on the pottery. Finally our thanks to Bob Zeepvat for editing the report.

7. Archive

7.1 The project archive will comprise:

1. Clients site plans
2. Finds
3. Original specialist reports and supporting information
4. CDROM with copies of all digital files.

7.2 The archive will be deposited with the Dacorum Heritage Museum.

8. Bibliography

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Appendix 1: Pottery Report

A small group of Late Iron Age pottery from Bridgewater School, Berkhamsted (site code BBS 04)

Isobel Thompson

This assemblage was in the fill of a ditch recorded under emergency conditions on the site of building works at Bridgewater School, Berkhamsted, in December 2004.

It consists of 54 sherds of native grog-tempered late Iron Age fabric (weighing in total just under 500g), 7 sherds of an imported Gallo-Belgic butt-beaker, and two unidentified scraps.

Imported butt-beaker

The seven sherds consist of three joining rim sherds (diameter 14cm), and four sherds of similar fabric which appear to belong to the rim, although none of them join either the rim or each other. Two of these body sherds are plain, and two have finely rouletted decoration. All the body sherds are very thin. The fabric is a fine-grained slightly sandy cream-buff ware, tending to pink on the body sherds. The rim has some larger visible inclusions, red and some black. These can be scratched with a fingernail and may be grog. All the broken edges of the sherds are old and worn.

Although the body form is unknown, the rim is that of a recognisable type, 2B2, at King Harry Lane, St Albans (Stead & Rigby 1989, 137-9, fig.56). It is distinguished by the small bead at the base of the rim on the outside, and the length of the bevel on the inside of the rim. The fabric corresponds with that of the group of butt-beakers to which this type belongs, which are imports from northern Gaul. The type is one of the more common variants in this fabric. A dozen examples of it occurred in the King Harry Lane cemetery, and it is well known in the region. Production of this type is apparently 'restricted to the late Augusto-Tiberian period, after AD 10, but before AD 40' (ibid., 138).

Grog-tempered vessels

The 54 sherds in this fabric come from 8 different vessels. The assemblage is much broken up; some of the breaks are fresh but most are old and worn, and although two vessels are represented by several sherds each, they are very incomplete. All the rest are scraps; there is only one rim.

The forms follow Thompson 1982.

1. **C7-1 rilled jar** base. Four joining sherds represent the base (diameter 124mm). There are also 24 body sherds that appear to belong to the same vessel. These include some joins and some non-joining fresh breaks; some of the joins are old and fairly worn. The jar is hand-made and probably fairly large, but not as large as a storage jar. It is made of soft grey-brown fabric with a great deal of black grog temper; patchy red-grey (mostly red) outside and red below smooth grey-brown inside surface. The sherds suggest a fairly tall jar curving towards the top, where the exterior becomes grey-brown instead of red. The inside surface has worn away completely at the base, and on the underside. The shoulder is suggested, but there is no surviving neck or rim. The form is possibly the most common

- domestic jar form in Hertfordshire from the late 1st century BC until it appears in Romanised fabrics after the conquest. The all-over rilling is also found over the same date range. The 1971-2 excavations at the site produced similar rims, but not all-over rilling (Thompson & Holland 1974-6; Thompson 1982, 273-81).
2. **C7-1 rilled jar** base, body profile up to the rilled shoulder. 12 more or less joining sherds; some old worn breaks, some fresh, much missing. The two base sherds, joining, suggest a diameter of c8 cm or slightly less. A hand-made jar, in soft coarse grey grog with some large red and black inclusions; darker surfaces, smooth dark grey inside and rough but not hard patchy dark grey-brown outside. Some roughly formed grooves on the shoulder and rustication below; the shoulder has been tooled and compacted to dark grey. Not a large jar. See no.1 above for the form; this specimen would not be out of place in a later 1st century BC context.
 3. One sherd, old and worn from the shoulder of a **B3 jar**: bulge between cordons. Grey with darker grey surfaces, especially on the inside; the outside has more wear, blurring the shaping. A standard Herts jar form, from the later 1st century BC.
 4. Three sherds, none joining, from a scrap of an everted bead rim with a cordon on the offset shoulder (**B1-1**). Two of the sherds have the rim bead, but there is not enough of it to judge the diameter. A thin vessel, possibly not very big. It may be wheel-made; the colouring suggests some firing control. Thin core with much grey and pale finely crushed grog; rim once dark grey and probably tooled, but the surfaces now both worn to red. See no.7 below, as it is possible that this rim goes with it.
 5. Probably another small thin **B1-1 jar rim**; two non-joining scraps, old and worn. Thin, grey, outside burnished smooth dark grey, inside worn to brown.
 6. A sherd from a coarse rilled jar, **C7-1**; probably hand-made, and not the same as no.2 above. Dark grey core and surfaces, much coarse brown temper visible on inside; rough rilling.
 7. Four sherds, three joining, from the curving lower body of a plain cup or bowl, a type which usually has a plain everted offset shoulder and bead rim. Grey-brown, much coarse black and buff grog, inside probably originally brown, worn to red; outside dark grey, possibly once tooled and now showing the tempering. There is too much missing to be sure is this belongs with no.4 above, but they look similar. Whatever the size, jar, cup or bowl, this form is standard in Herts from the later 1st century BC until after the conquest; the 1971 excavations had examples of all three sizes (Thompson & Holland 1974-6).
 8. Another plain curving lower body, **E3-1 cup** size, two joining sherds and a scrap that possibly belongs. Small; grey with smooth red inside and dark grey-brown outside, heavily tooled to dark grey-black on shoulder. A shallow groove, not a cordon, at the top where the body has broken away from the offset shoulder. The same comments apply as to no.7.

Unidentified scraps

A soft pale buff-pinkish piece of fired clay 35 x 35mm, hand-formed, with two broken surfaces and one curved original surface, in form like part of a storage jar rim but not in any recognisable fabric and without enough of the form to judge its true nature.

Also a curving scrap of hard white ware, only the inside of the curve being an original surface.

Conclusions

Although small and unpromising in appearance, the assemblage can be characterised and more or less dated. The vessels constitute almost the full range of standard domestic native forms in Hertfordshire during the late Iron Age, rilled and everted-rim jars and cups. Only the ubiquitous storage jar is missing (and no.1 resembles a small one). It is worth noting that without the presence of the butt-beaker sherds, and in the absence of any copies of imported forms (such as plates), the whole group could be given a date in the late 1st century BC. None of the grog-tempered vessels suggests a date of production towards the Roman conquest. The imported butt-beaker must have been made after AD 10. However, in view of the nature of the deposit (and the size of the assemblage), the import does not necessarily date the production of the native vessels.

From the worn and incomplete condition of the sherds, this is clearly not part of a 'termination deposit' as found in ditches elsewhere in Hertfordshire. Such groups consist of large quantities of rims and unworn sherds, and usually also some indication of a deposition date soon after the Roman conquest. These Bridgewater vessels are earlier, and had been treated as rubbish for unknown periods of time before being brought together as ditch fill.

References

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Appendix: Fabric weights

Imported vessel	Weight (grams)	Total
Butt-beaker	50	50
Grog-tempered vessels		
1	250	
2	150	
3	20	
4	15	
5	8	
6	12	
7	22	
8	16	493
Unidentified		
Lump	26	
Scrap	3	

Appendix 2: Reproduction of 1977 excavation report

Excavation of an Iron Age Site at Dellfield, Berkhamsted

by **ALEX THOMPSON** and **ERIC HOLLAND**

Emergency excavations were carried out to investigate Iron Age finds and features made during earth levelling for the Bridgewater school, Dellfield, Berkhamsted (Fig. I). The discovery of a possible shaft furnace and Belgic potsherds (both identified by staff of Verulamium Museum) led to members of the St Albans Architectural and Archaeological Society, assisted by members of the newly formed Berkhamsted and District Archaeological Society, carrying out exploratory excavation during Christmas, 1971. The Berkhamsted Society continued the work on the site from January to June 1972.

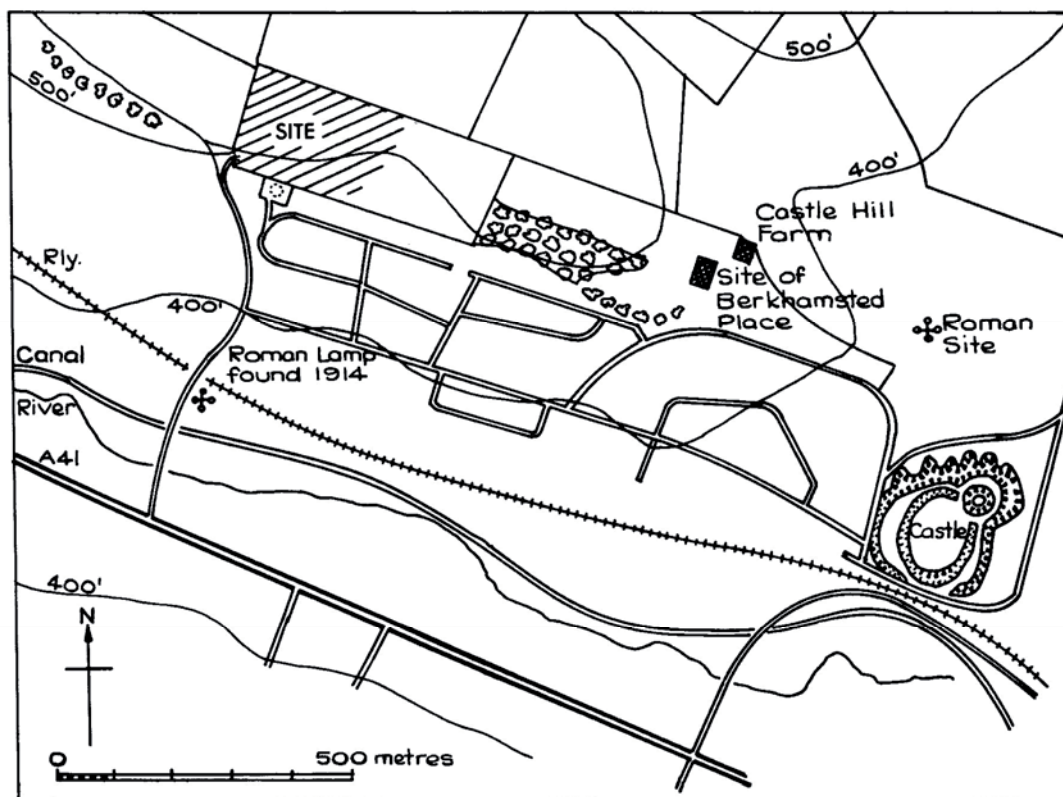


FIG. I. DELLFIELD: LOCATION MAP.

The site is on the northern slope of the Bulbourne valley overlooking Berkhamsted and on an Ordnance datum of 500 ft. Beneath the topsoil lies a layer of clay with flints overlying chalk.

The field in which the site lies has been ploughed in recent years and contains a wide scatter of thin roofing-tile fragments, but no evidence for building has been found. The oldest recorded building in the vicinity was a Tudor mansion (Berkhamsted Place), demolished in 1967.

Much of the early work was carried out at weekends and consisted mainly of tracing lengths of three ditches (Fig. II, A, B, C), and investigating any other features uncovered by workmen during the previous week. No small thanks are due to these workmen for delaying the destruction of such features until after the weekends when they could be recorded. Before excavations began much of the soil in the school area had already been removed to a depth of two feet or more. To the north and east of the school the land had been terraced several feet and pushed down the hillside to make a level platform for a playing field. It is not surprising, therefore, that no structural evidence, such as stake or postholes, was found to give an indication of the type of settlement. However, some burnt areas, possibly hearths, were noted. In one of them (Fig. II, 13) 12 grey/orange sherds, some combed, were found.

Features

The most interesting features found on the site were the remains of four shaft furnaces for the production of iron bloom (Fig. II, 5, 6, 8, and 9). From a workman's description of a feature destroyed during the making of an approach road to the site, it would seem likely that a fifth furnace (Fig. II, 7) existed.

Furnace 1 (Fig. II, 8, and Fig. IV)

This had the tallest remaining shaft which stood to a height of 60 cm. The adjacent grass level showed that this shaft had been undisturbed by recent earth removal. Its inside diameter was 28 cm. with a wall 8 cm. thick of red/brown clay. Like the other furnaces it had a floor sloping down from the rear to allow for the flow of slag when tapped. The tapping pit, 1.5 m. in length, had been infilled with large flints, and a little dark soil containing a few small pieces of slag. No tuyere was found, but this may have been in the front of the shaft which had been removed. The front of the shaft of Furnace 2 (Fig. II, 9) had also been removed, presumably in each case to allow for the extraction of the iron bloom. The shaft was supported with packed chalk. Eleven pounds of slag and several thick pieces of charcoal were found in the infill of the shaft.

Furnace 2 (Fig. II, 9)

This furnace, when found, had been shaved by an earth-moving machine and the shaft was standing to a height of only 11 cm. The walls of the shaft were better made than those of Furnace 1; being harder-fired and of an iron-brown, sandy texture. The inside diameter was 31 cm. with a wall thickness of 4 cm. The floor of the shaft had a slope of 9 cm. This shaft was also supported with packed chalk which still stood around most of the shaft. As with furnace 1, some slag remained in the shaft infill. Slag was also present in the mouth of the shaft and where it had run into the tapping pit, which had a diameter of 136 cm.

Furnaces 3 and 4 (Fig. II, 5 and 6)

These two furnaces were side by side with little more than 15 cm. between them. In neither

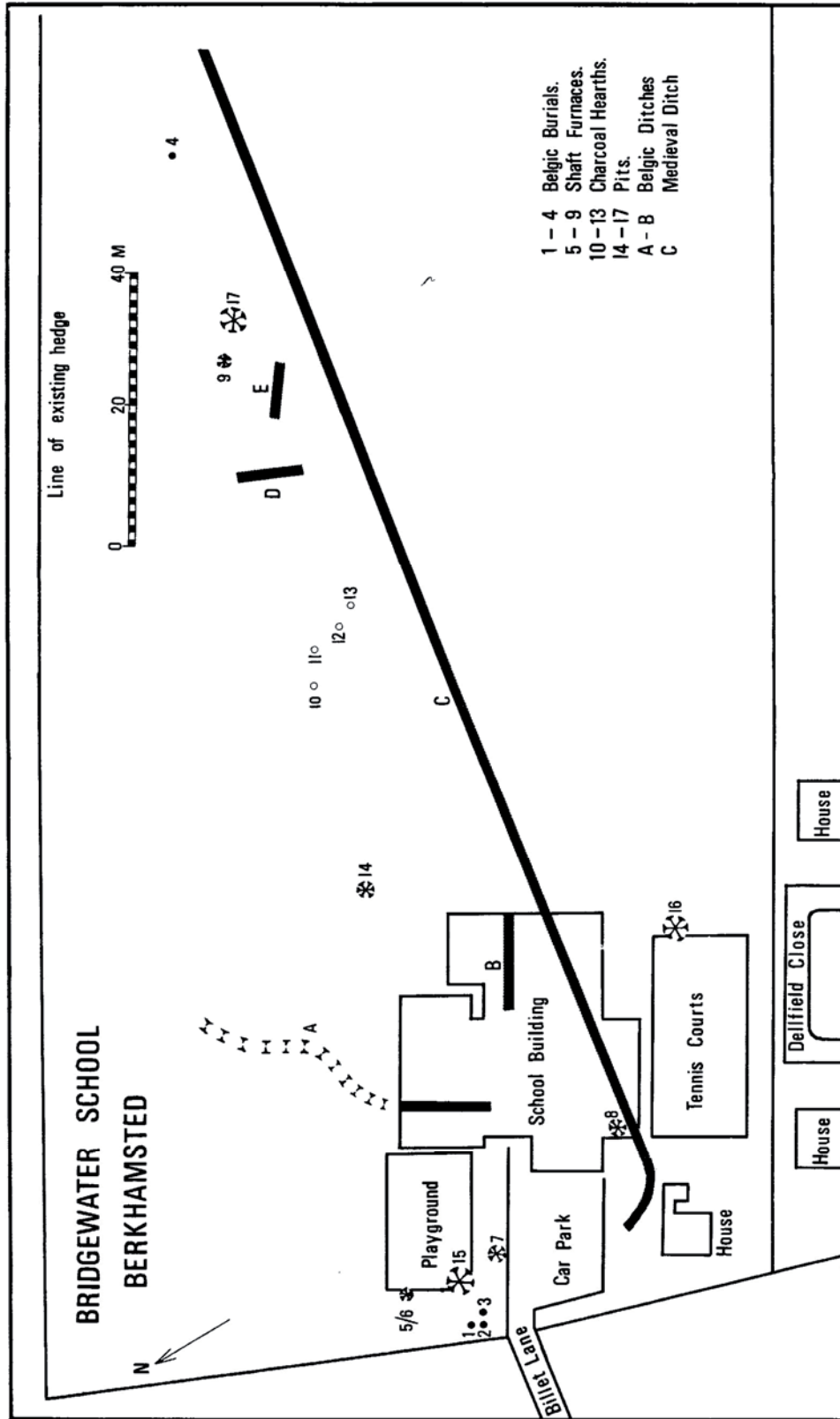


FIG. II. DELLFIELD SITE PLAN. Stippled ditches - uncovered in contractor's work and subsequently examined, Hatched ditch - excavated; ditches D & E not seen and plotted from workmen's observations.

case was there any remains of a shaft, but the blackened, sloping floors remained, together with fire-reddened clay and evidence of chalk packing. Some pieces of slag were present in the surrounding soil.

All four furnaces faced approximately west, the direction of the prevailing winds, but as draught in this type of furnace is bellows-induced significance in the orientation, if any, must have some other explanation. The only undisturbed shaft, that of Furnace 1 (Fig. II, 8, and Fig. IV), had its top level with that of the surrounding soil. None of the furnaces showed evidence of long use; the shaft remains showed no signs of patching, and fired clay, slag, and charcoal deposits were light. It is possible, however, that the shafts were completely rebuilt after the removal of the bloom. Mr H. Cleere identified these furnaces as his type B.1.i (Cleere, 1972) and dated them to the late first century or second century A.D. However, he thought it reasonable to assume that this type of furnace would have been introduced into Britain soon after the Roman invasion. In view of the Belgic sherds (Fig. VII, No. 79), found in the tapping pit of furnaces 2 and 3/4 (Fig. II, 9, and 5/6) a first-century date would seem more likely. Although the burial urns and iron brooch have been given a possible pre-Roman dating, connection between them and the furnaces was not proved and it seems likely that the furnaces were in use in the first century A.D., and possibly early in the Roman period.

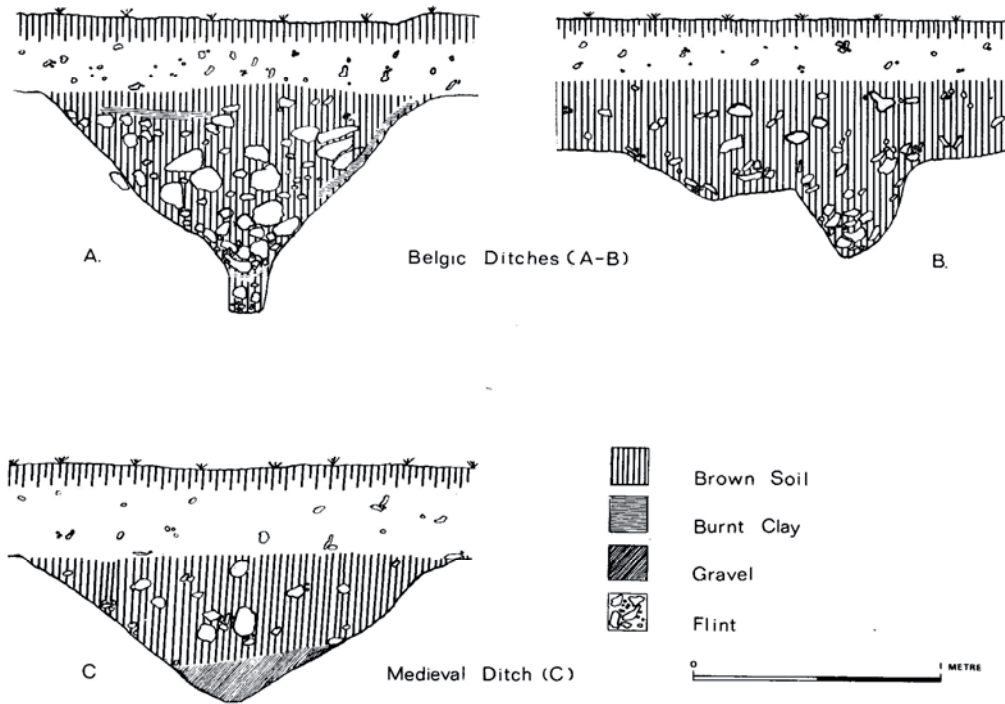


FIG. III. DELLFIELD: DITCH SECTIONS.

EXCAVATION OF AN IRON AGE SITE

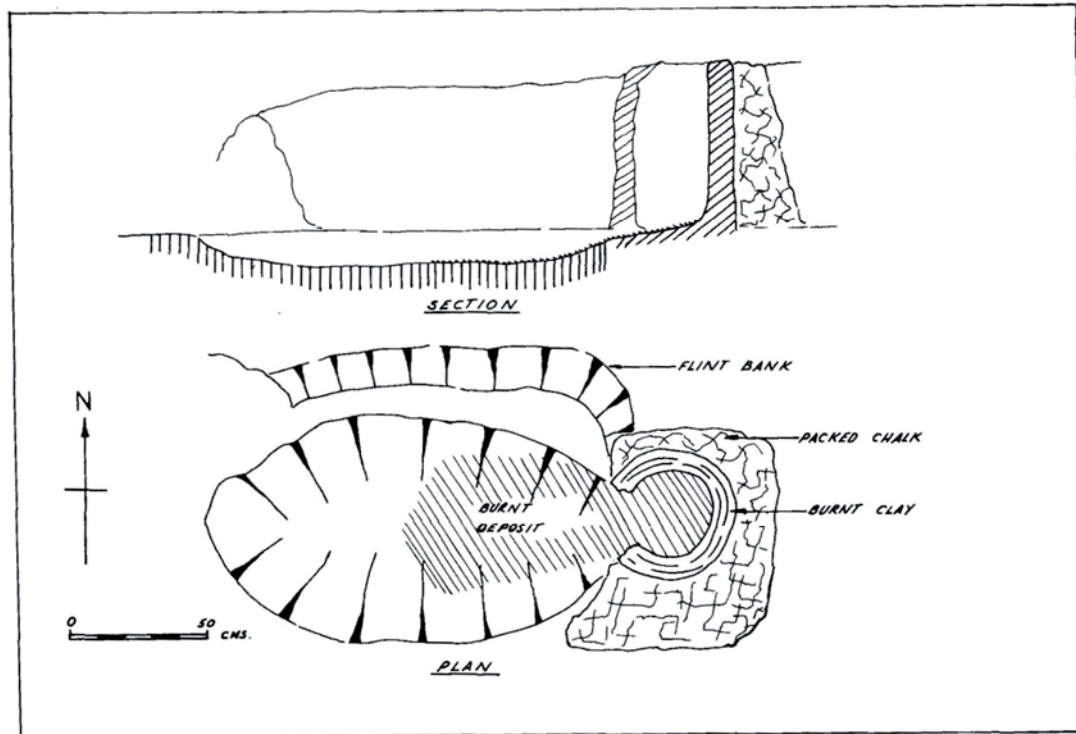


FIG. IV. DELLFIELD: FURNACE 1.

Iron analysis

Analysis carried out on a sample of the tapslag from furnace 2 (Fig. II, 9) was as follows:

	<i>per cent</i>		<i>per cent</i>
Carbon	0.04	Phosphorus	0.23
Silicon	10.02	Sulphur	0.024
Manganese	0.52	Iron	53.8

These results are quoted as metals (silicon, manganese, and iron) as they are not considered to be in the oxide state. The remainder of the 100 per cent is mainly calcium oxide, with small amounts of aluminium and magnesium oxides.

A copy of this analysis was sent to Dr R. F. Tylecote. His opinion was that the ore was of a moderately phosphatic type common in the U.K. Its silicon/iron ratio is typical of EIA-Roman rather than medieval slag. Dr Tylecote thought the manganese the most important element and typical of the Wealden ores. He also thought that the most likely form of ore used was that of iron modules or concretions, and that this might have come from the Reading Beds at Berkhamsted. We were of the opinion that the ore was most likely obtained locally rather than from away, so small nodules present on certain parts of the site were also sent for analysis.

Analysis of possible ore

Silicon 22.9 per cent Iron 22.06 per cent Manganese 0.37 per cent

Dr Tylecote was of the opinion that the iron/silicon ratio of the nodules showed that they could not have produced the slag analysed.

Mr Clecre thought that the ore would have been obtained locally because normally iron was smelted in the immediate vicinity of the ore.

Burials

Four cremation burials were found; three close and to the west of the school, and the fourth approximately 150 cm. to the east.

Burial group I (Fig. VII, Nos. 57-60)

This group consisted of four pots with small, beaded rims; that on the pedestal urn barely existing. The largest pot in the group acted as a cinerary urn. Also included in the pit with this burial were an iron disc and a small, triangular-shaped whetstone (Fig. VIII, 1 and 2).

Burial group II (Fig. VII, Nos. 61-4)

This group, which was 1.25 m. from group I, also consisted of four pots, but with more pronounced rims. The largest pot served as a cinerary urn and contained, as well as bone, an iron brooch and a fragment of bronze which might once have been a brooch, but possibly had been distorted by heat (Fig. VIII, 3 and 4).

Burial group III (Fig. VII, No. 65)

This group was a little to the east of the first two groups and was discovered when dug into by an earth-moving machine. Some bone remained with the sherds to show that this was another burial. Sherds were rescued from a spoil heap where they had been dumped, and partial reconstruction was possible with one pot. The remains of two other pots showed that this group had consisted of at least three pots.

Burial IV (Fig. VII, No. 66)

This burial was discovered by members following a grader. It was close to the surface and had been crushed by the tracks of the machine. A few pieces of a small, thin pot were present together with some fragments of bone which were partially enclosed by part of an iron band. Unfortunately no time was available for proper excavation and this band disintegrated when lifted. It has been suggested that this might be an infant burial with the bone contained within a wooden bucket.

A year before work was started on the school site a trench was dug just inside the hedgerow to the west of the school for a natural-gas pipeline. As the Berkhamsted Society was not then in existence, no watch was kept during the digging of the trench for this pipeline, and so it is not known whether any other burial groups or features were destroyed during the operation. No excavations by the Society was carried out close to this pipeline.

Ditches

Three lengths of ditches were excavated. One of these (Fig. II,A, and Fig.III,A) ran SW.-NE. Another short length (Fig. II,B, and Fig.III,B) ran roughly E.-W. It is possible that these two lengths were once part of the same ditch, but impossible to prove because they had been

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separated by earth removal. The remaining length of ditch (Fig. II,C and Fig. III,C) which was much longer, ran E.-W. To the east, parts of this ditch remained only as a dark line a few centimetres thick. This ditch contained no Belgic material, but a few pieces of medieval pottery were found in it, suggesting possible former occupation nearby. The two lengths of Belgic ditch contained many sherds, some bone, and two pieces of rotary quern made from Hertfordshire conglomerate.

Also shown on the plan of the site (Fig. II, D and E) are two short lengths of ditch, reported by workmen, but not seen by the excavators.

Pits

Four pits were found, but only one (Fig. II, 14) contained anything – a few Belgic potsherds. One of the pits (Fig. II, 15) was destroyed before excavation could be carried out.

Small finds

Small finds, apart from pottery, were very few. No coins were found and only four pieces of metal, all from burials.

Bronze (Fig. VIII, 4)

1. A misshapen piece, possibly once a brooch. From burial group II.

Iron (Fig. VIII, 3)

2. An iron brooch with a four-coil spring, internal chord and a solid catchplate. Dr Ian Stead thought this brooch was not earlier than 50 B.C. and could well run into the first century A.D., resembling a type found throughout that century. Mr M. R. Hull thought that this type of iron brooch (Hull 9786) properly belongs to native sites, chiefly in southern England. They were in the main, pre-conquest, but they have recently been found at Dragonby and similar sites where they may have lasted for quite a while after the conquest.
3. An iron disc (Fig. VIII, 1) with an approximate diameter of 8 cm. Use not determined. Found in pit with burial group I.
4. Part of an iron band (not illustrated) with four thicker strengthening bars. Possibly the upper supporting band of a wooden bucket. From burial IV.

Stone (Fig. VIII, 2)

5. A small, triangular-shaped whetstone of liver-coloured sandstone, probably from the Triassic (Bunter) to the west and north. Transport to the Chilterns was by ice and/or glacial outwash. Pebbles such as this are fairly abundant locally. From burial group I.
6. Two pieces from rotary querns made from Hertfordshire conglomerate; from ditch B.

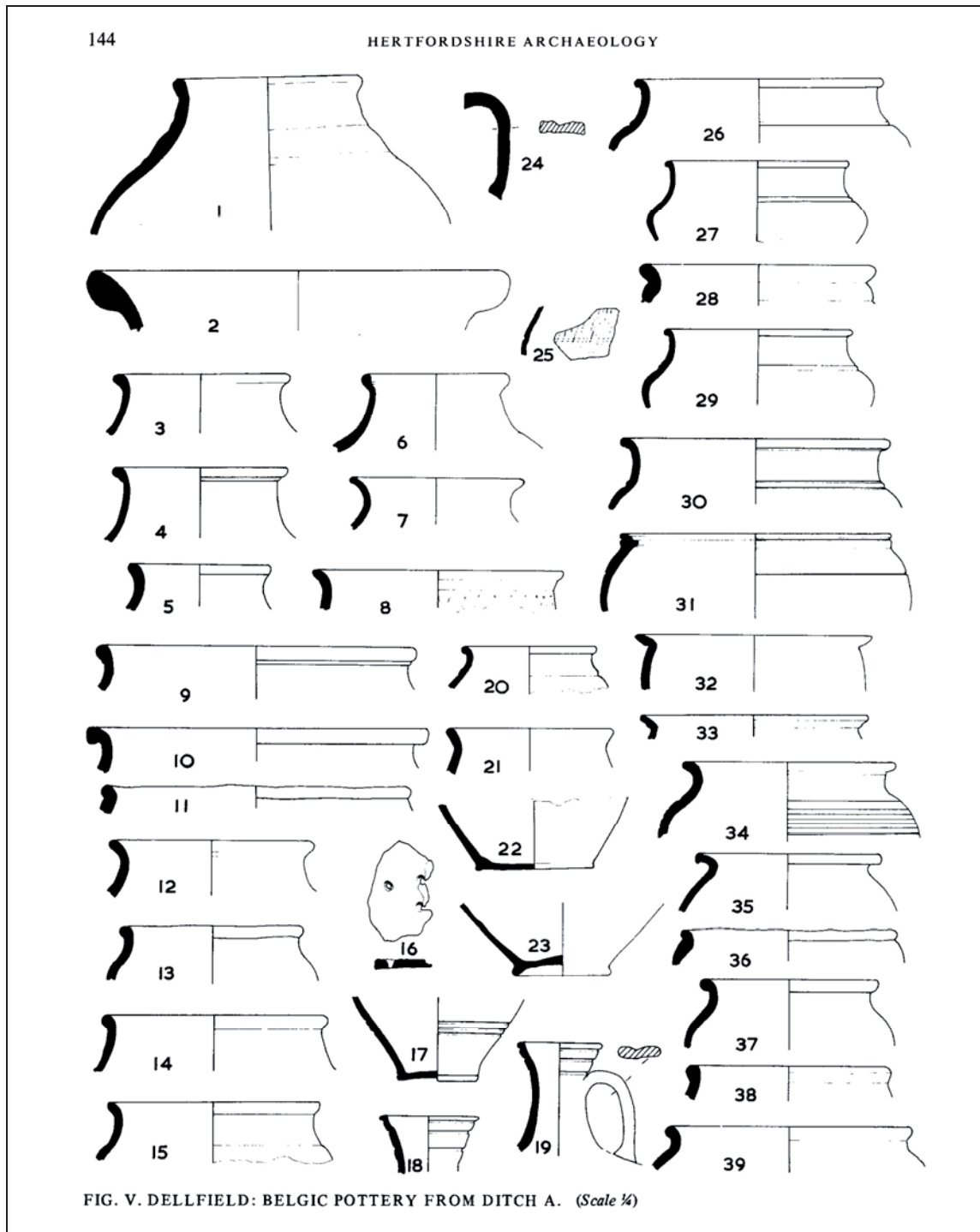
Pottery

Most of the Belgic pottery came from ditches A and B, but some sherds were also found in the tapping pits of furnaces 2 and 3.

Burial groups I, II, and III were examined by Miss Valerie Rigby who thought them to be earlier than any found at the King Harry Lane excavations, and that the cremations could belong to the second half of the first century B.C.

Belgic pottery found in ditch A (Fig. V)
(Nos. 1-17, 20-3, and 25-39 are jars.)

1. Soft, coarse, buff fabric with grey surface. Ceramic tempered.
2. Coarse, grey fabric with pink/red surfaces. Made from unsieved clay.
3. Light grey fabric with dark grey surface. Ceramic tempered.
4. Grey fabric. Ceramic tempered.
5. Yellow/brown fabric. Ceramic tempered.



EXCAVATION OF AN IRON AGE SITE

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| <ul style="list-style-type: none"> 6. Grey fabric with brown surface. Ceramic tempered. 7. Black fabric with hard, coarse finish. 8. Grey/brown, coarse fabric. Chevron pattern beneath rim. 9. Coarse, grey fabric with smooth pink finish. 10. Coarse, reddish/brown fabric. Ceramic tempered. 11. Brown fabric with soapy black finish. 12. Grey/buff fabric with grey, slightly soapy finish. Ceramic tempered. 13. Grey/buff fabric with soapy black finish. 14. Grey/buff fabric with gritty finish. Ceramic tempered. 15. Light grey fabric with dark ceramic temper. 16. Buff/red fabric with soapy red interior and brown exterior surfaces. Pierced holes, Ceramic tempered. 17. Grey, coarse fabric with soapy finish. Three parallel grooves. 18. Flagon in buff fabric with slightly sandy surface. Three-ringed neck. 19. Ring-necked flagon with handle, in hard, yellow/pink fabric. Fine sand temper. 20. Brown/grey fabric with soapy red and grey surfaces. 21. Brown fabric. Ceramic tempered. 22. Light buff fabric with darker buff surfaces. Ceramic tempered. 23. Grey fabric with slightly soapy finish. 24. Handle of flagon in coarse, buff fabric. Ceramic tempered. 25. Fine, cream/cuff fabric with slightly gritted finish. | <ul style="list-style-type: none"> 26. Coarse, grey fabric with pink surface. Made from unsieved clay. 27. Buff/red fabric with brown, soapy finish. Pierced holes, ceramic tempered. 28. Black fabric with brown finish. Ceramic tempered. 29. Light brown fabric with dark ceramic temper. 30. Orange/brown fabric with dark brown soapy finish. Ceramic tempered. 31. Grey fabric with gritty, buff surface. 32. Dark grey fabric with brown finish. Ceramic tempered. 33. Light grey fabric with burnished, brown finish. Ceramic tempered. 34. Brown fabric with dark grey, soapy finish. Ceramic tempered. 35. Hard-fired, grey fabric with gritty finish. 36. Light brown fabric with darker soapy finish. Ceramic tempered. 37. Black fabric with soapy brown finish. 38. Black fabric with dark brown finish. Ceramic tempered. 39. Dark grey fabric with orange/brown, gritty finish. Ceramic tempered. <p><i>Belgic pottery found in ditch B (Fig. VI)</i>
(Nos. 40-42, 44-7, 50-4, 56 are jars.)</p> <ul style="list-style-type: none"> 40. Buff fabric with reddish internal and grey external surfaces. Soapy finish. Ceramic tempered. 41. Grey fabric with gritty, pink finish. 42. Buff fabric with slightly gritty, pink finish. |
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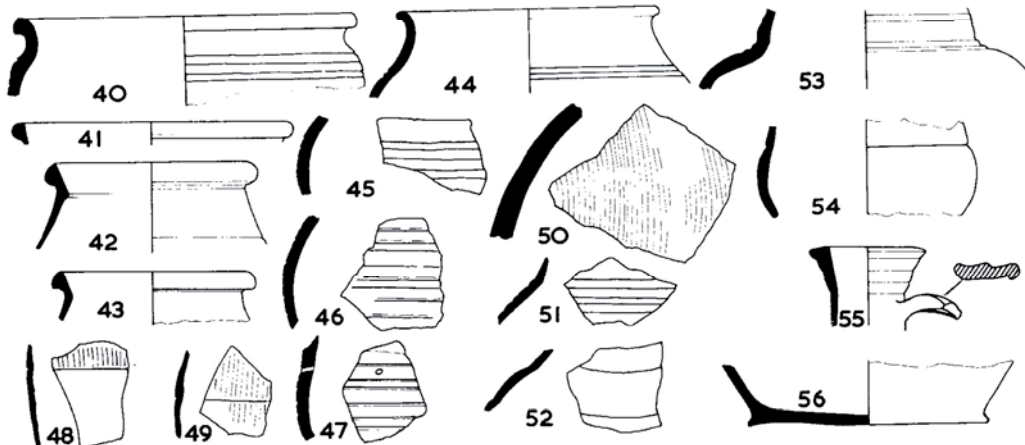
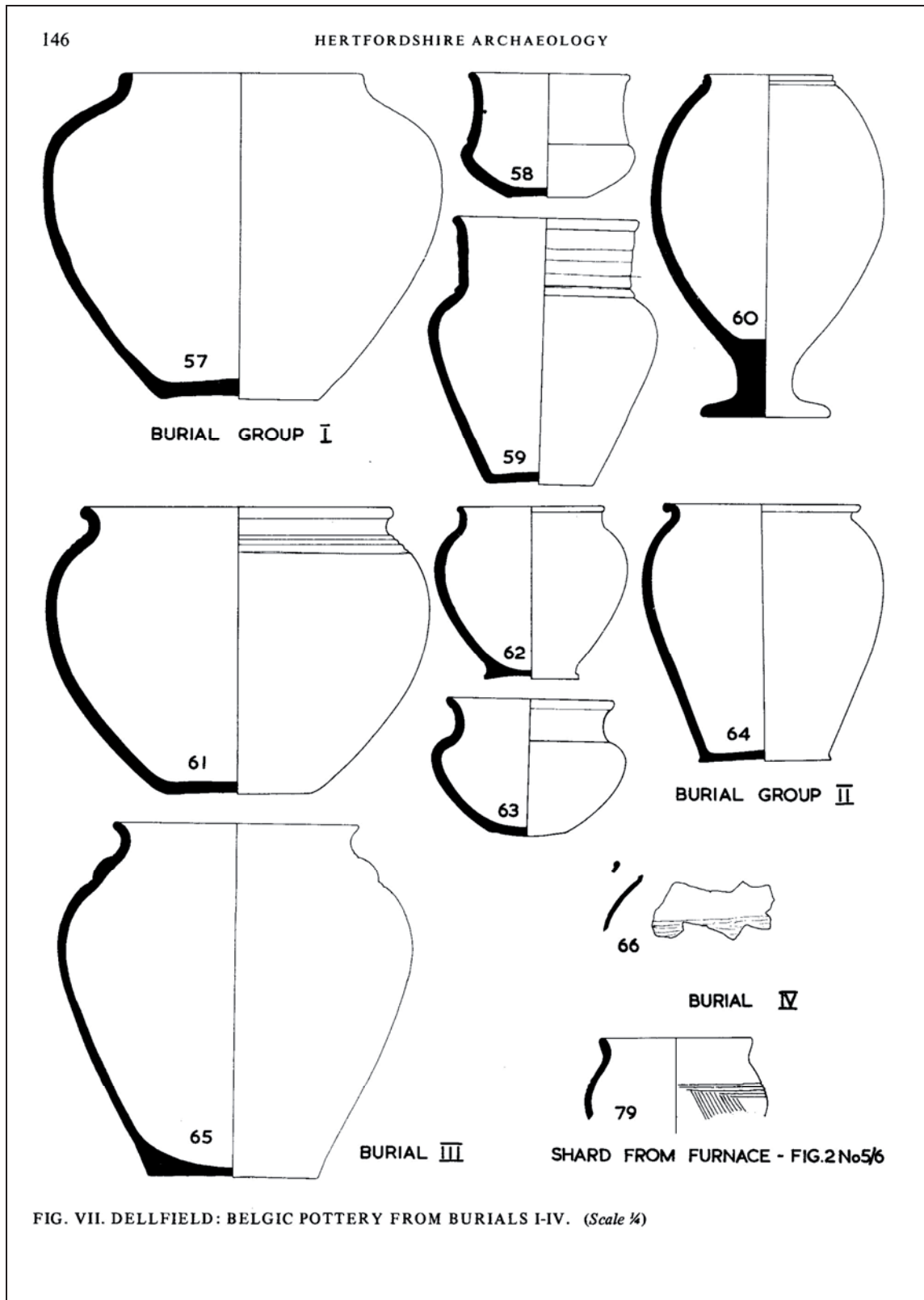


FIG. VI. DELLFIELD: BELGIC POTTERY FROM DITCH B. (Scale 1/4)



EXCAVATION OF AN IRON AGE SITE

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| <p>43. Butt beaker in hard, fine, white fabric with slightly gritty, pink surface.</p> <p>44. Fine, light grey fabric with light brown finish. Ceramic tempered.</p> <p>45. Dark brown fabric with soapy grey/brown finish. Ceramic tempered.</p> <p>46. Dark grey fabric with soapy buff finish. Reeded.</p> <p>47. Coarse, black fabric with soapy buff finish. Reeded, with pierced hole. Ceramic tempered.</p> <p>48. Butt beaker in hard, fine, white fabric (same as 43).</p> <p>49. Butt beaker in hard, fine, white fabric (same as 43).</p> <p>50. Thick, coarse, grey fabric with combed, pinkish exterior.</p> <p>51. Blue/grey fabric. Ceramic tempered.</p> <p>52. Fine, grey/buff fabric with slightly soapy finish. Ceramic tempered.</p> <p>53. Grey/brown fabric with soapy finish. Ceramic tempered.</p> <p>54. Grey/brown fabric. Ceramic tempered.</p> <p>55. Ring-necked flagon in hard, pink/brown fabric with buff, sandy surface.</p> <p>56. Light grey, coarse fabric. Ceramic tempered.</p> | <p><i>Burial group I</i> (Fig. VII)</p> <p>57. Large jar in light brown fabric.</p> <p>58. Beaker in light brown fabric.</p> <p>59. Jar in light brown fabric.</p> <p>60. Pedestal urn in light brown fabric.</p> <p><i>Burial group II</i> (Fig. VII)</p> <p>61. Large jar in light brown fabric.</p> <p>62. Jar in light brown fabric.</p> <p>63. Beaker in light brown fabric.</p> <p>64. Jar in light brown fabric.</p> <p><i>Burial group III</i> (Fig. VII)</p> <p>65. Cordoned jar in brown fabric with red/brown finish. Ceramic tempered.</p> <p><i>Burial IV</i> (Fig. VII)</p> <p>66. Small jar in light brown fabric with orange/pink finish. Ceramic tempered.</p> <p><i>Medieval pottery found in ditch C</i> (Fig. IX)</p> <p>67. Bowl in coarse, yellow/orange fabric with sandy finish. Ceramic tempered.</p> |
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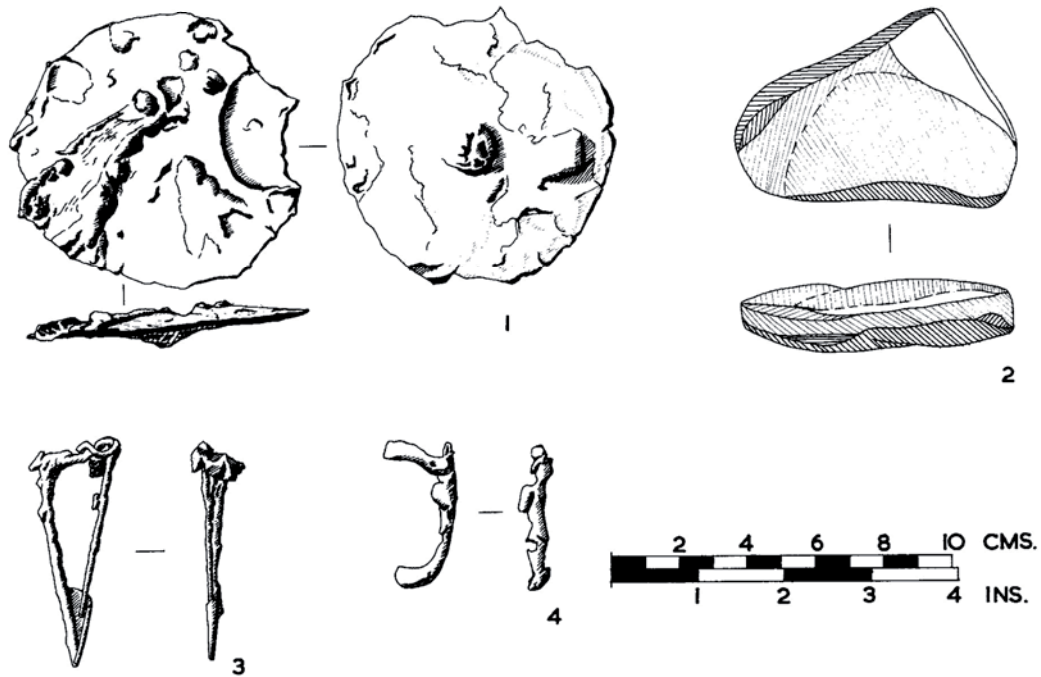


FIG. VIII. DELLFIELD: OBJECTS FROM BURIAL GROUPS I AND II.

68. Bowl in fine, hard, grey fabric with gritty finish.
 69. Jar in hard, buff fabric with gritty, grey surface.
 70. Jar in hard, light brown fabric. Sand tempered.
 71. Jar in hard, buff fabric with sandy grey surface.
 72. Handle in buff, sandy fabric with gritty, grey surface. Slashed surface.
 73. Small jar handle in hard, pink fabric with gritty finish. Slashed surface.
 74. Base in hard, pink fabric with buff, sandy finish.
75. Jar in coarse, sandy yellow/grey fabric with red finish.
 76. Jar in hard, coarse, grey/brown fabric. Ceramic tempered.
 77. Jar in hard, buff fabric (same as 71).
 78. Jar in grey fabric with red/buff surface.
- Pottery found in furnace 3*
 79. Jar in black fabric. Ceramic tempered.

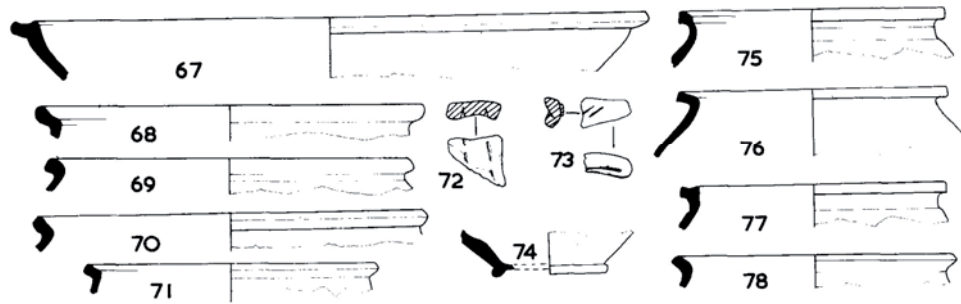


FIG. IX. DELLFIELD: MEDIEVAL POTTERY FROM DITCH C. (Scale $\frac{1}{2}$)

Acknowledgements

The Society is grateful to David S. Neal for teaching pottery drawing and giving advice on the preparation of this report. Our thanks are also due to Dr R. F. Tylecote for his comments on the iron slag and ore analyses and to Mr J. A. Rae for carrying out these analyses. We also thank Mr H. Cleere for information and identification of the furnaces, and Mr C. F. Tebbutt for information on the Romano-British bloomery at Pippingford, Sussex (Tebbutt & Cleere, 1973). We are grateful to Dr I. Stead and Mr M. R. Hull for examining the iron brooch, and to Miss Valerie Rigby for her comments on the burial group pottery; to Mr Montagu-Puckle for examining the rest of the pottery finds; and to Mr Ellis for his report on the whetstone. Feature drawings and site plan were prepared by Alex Thompson. Michael and Doreen Canter prepared the final pottery drawings from preliminary work by Hilary Bushell, Gladys Wyatt, and Messrs Bushel, Lanham, Miles, and Wyatt. Michael Canter drew the small finds.

Last, but not least, the Society's thanks are due to Donald Lockhart Ltd, the site foreman and workmen and Hertfordshire County Council, without whose helpful co-operation none of this report would have been possible.

All material from the site is deposited at Verulamium Museum, St Albans, with the exception of burial groups I and II which are displayed in the Bridgewater School.

BIBLIOGRAPHY

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 Tebbutt, C. F. and Cleere H., 1973. 'A Romano-British Bloomery at Pippingford, Hartfield', *Sussex Archaeol. Coll.*, CXI.

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Appendix 2: SMR Summary Sheet

HERTS

Site name and address: Bridgewater School, Billet Lane		
County: Hertfordshire		District: Dacorum
Village/Town:		Parish:
Planning application reference: not known		
Client name, address, & tel. no: C.S.F Dept Hertfordshire County Council County Hall Hertford SG13 8DN		
Nature of application: new classroom		
Present land use: school grounds		
Size of application area: 30m x 15m		Size of area investigated: 0.8m x 1m
NGR (to 8 figures): SP 98425-98995		Site code: BBS04
Site director/Organization: Jonathan R Hunn/ ASC Ltd		
Type of work: Rescue/remedial archaeology		
Date of work:	Start: November 30 th	Finish: December 1 st 2004
Curating museum: Dacorum Heritage Trust		
Related SMR nos: 4904		Periods represented: LPRIA/RB
Relevant previous summaries/reports Holland E & Thompson A 1977 Herts Archaeology vol IV, , 137-148		
<p>Summary of fieldwork results:</p> <p><i>In late November 2004 Alex Thompson and Jonathan Hunn undertook some remedial archaeological work at Bridgewater School on behalf of Hertfordshire County Council. This was as a result of the construction of a new classroom on the eastern side of the site. Most of the site was not recorded during the initial ground works phase but the remains of a Late Iron Age/Roman ditch was observed on the northern edge of the new building platform. This contained 1st century pottery, iron slag, a fragment of iron and a fragment of a sharpening stone. Apart from the loss of 30m of ditch it is not known what other archaeological features were destroyed during the present development.</i></p>		
Author: J.R. Hunn		Date: 22/12/04