

**The Pavement, Brewood,
Staffordshire:
Archaeological Investigations
1999-2000**

**Post-Excavation Assessment and
Research Design**

Birmingham University Field Archaeology Unit
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Summary

An archaeological excavation and watching brief in advance of, and during construction of a relief sewer on land south of The Pavement, at Brewood, Staffordshire (NGR SJ 886 085, Fig. 1) was undertaken by Birmingham University Field Archaeology Unit during September 2000 on behalf of Severn Trent Water Ltd. This report provides a post-excavation assessment of the data and a research design to see the project through to publication of the results. A previous evaluation had located the remains of a well-preserved, waterlogged timber structure of probable late Medieval date. The excavation revealed an extensive, well-preserved wooden platform associated with several substantial uprights. The remains of a second, less substantial wooden platform were recorded to the north of a cobbled surface. In addition, the watching brief revealed a number of wooden barrels set within clay-lined pits. Sherds of mid to late Medieval and early Post-medieval pottery, wooden artefacts and leather fragments were recovered from above both wooden structures and below the cobbled surface. An extensive palaeoenvironmental sampling programme was carried out. The results of the assessment indicate that industrial processes, possibly including hemp-retting and/or tanning, were being carried out on-site. Dendrochronological dates obtained from the platform and the barrels indicate felling dates in the late 12th to early 13th century. Archaeological features which were not directly cut by the pipe trench were recorded in plan and left in situ.

1.0 Introduction

An archaeological excavation and watching brief were undertaken in advance of, and during construction of a relief sewer on land south of The Pavement, at Brewood, Staffordshire (NGR SJ 886 085, Fig. 1). The excavation was undertaken by Birmingham University Field Archaeology Unit (BUFAU) between 18th September and 4th October 2000 and was commissioned by Severn Trent Water Ltd. This report, in accordance with the guidelines set out in MAP II (English Heritage 1991), provides a post-excavation assessment of the data and a research design to see the project through to publication of the results.

An evaluation of the site by BUFAU in 1999 (Taylor 2000) confirmed the presence of a well-preserved, waterlogged timber structure of probable late Medieval date. On the basis of the evaluation results, it was recommended that an excavation should take place in advance of construction of the sewer, and that a watching brief should be carried out in the immediate environs of the excavation during construction. This report combines the results from the evaluation, the excavation and the watching brief.

The specification for the excavation was prepared by Birmingham University Field Archaeology Unit (BUFAU 1999) and approved by Christopher Welch, Principal Archaeological Officer for Staffordshire County Council (S.C.C. 1999). The work was

carried out in accordance with the Institute of Field Archaeologists Standard and Guidance for Excavation and Watching Brief (Institute of Field Archaeologists, rev. 1999).

2.0 Site location

The site lies within a low-lying field containing a thick peat bed on the course of a small stream (Fig. 2), which is a tributary to the River Penk. Adjacent, and to the northwest, is a road known as 'The Pavement', and to the south is the Coven Road. The ground is marshy, and a variety of plant species grow within the field implying that there has been little recent agricultural disturbance. Most of the natural depositional processes upon the site are inter-related 'flooding events'. The level of flooding within the areas excavated illustrated that the water table was very high, partly due to the low lying ground, and partly to the proximity of the stream which flows through the centre of the field, from southwest to northeast.

3.0 Archaeological and historical background

The County Sites and Monuments Record (SMR) indicates the route of a Roman road near the site. This runs between a cropmark seen at Ackbury Heath and the Roman settlement of *Pennocrucium*, about 2km to the northeast of the site. However, the SMR suggests that the road might have run along the present Port Lane and Tinker's Lane, and highlights the fact that the excavation site lies in a more direct line between the two sites (S.C.C. 1999). The origins of Brewood lie in the Anglo-Saxon period, although the present village layout may be the result of deliberate planning soon after the Norman conquest. It is possible that the grid pattern of the road system may be based on the brook or the Roman road system nearby. The brook borders the southeastern edge of the town and from its straight line is clearly an artificial channel (Horovitz 1992, 54). It is possible, however, that the channel may have been straightened during a later period as properties expanded along the edge of The Pavement. The absence of habitation on the southeastern side of the brook is particularly noticeable (Horovitz 1992, 54).

Geotechnical works in advance of the relief sewer pipe recorded the presence of potentially significant waterlogged remains within one of the test pits. The report noted that "logs and sandstone blocks approximately 200 to 300mm thick forming a platform or raft were recorded at around a metre depth within the peaty materials." (S.C.C. 1999). A subsequent evaluation of the site in December 1999 (Taylor 2000, Fig. 2) confirmed the presence of a wooden raft located to the southwest of the stream and a few metres southwest of the gated entrance into the field. The raft was constructed of parallel timber poles, and the ends of several of the poles had been cut with either an axe or a saw. A radiocarbon date of 500 ± 50 BP (1 σ AD 1333-1445 cal.; 2 σ AD 1307 - 1483 cal. Wk - 8007) was obtained from one of the poles, and a date of 1870 ± 55 BP (1 σ AD 81 - 216 cal.; 2 σ AD 23 - 319 cal. Wk - 8008) was obtained from organic deposits believed to pre-date the structure. Several sherds of later Medieval pottery were recovered from above the structure.

4.0 Excavation objectives

The objective of the excavation was to fully examine the extent and character of the wooden structure and its associated deposits prior to its partial destruction by the proposed pipeline. Specific objectives were:

- To establish the full extent of the structure beyond the evaluation trench in order to help determine whether the structure was a linear feature, or a discrete structure such as a raft or foundation.
- To characterise the structure and gain information relating to its composition and stratigraphic association by hand-excavating a section through it. The section was to be excavated in consultation with the pipeline contractors, enabling the new pipe to be laid in the excavated trench, thus hopefully minimising damage to the structure.
- To characterise the palaeoenvironmental sequence, and in particular to develop a better understanding of prevailing environmental conditions and vegetation during the late prehistoric and Medieval periods.

5.0 Method

The main excavation trench (Area A, Fig. 3) covered an area approximately 14m by 9m. This was restricted due to the presence of mature trees to the northeast. In addition, a single narrow trench, 2.0m wide and 20m long, was excavated to the southeast of the stream (Area B, Fig. 2). This was located on the projected line of the timber structure to investigate any possible continuation on the opposite bank of the stream.

The topsoil and overlying silts were removed by machine under archaeological supervision. The upper surfaces of the wooden structure and associated stonework were then cleaned by hand and recorded. A section, 1.6m in width, was then hand-excavated across the width of the structure, to the upper surface of the natural subsoil, along the projected line of the relief sewer trench. Composite elements of the wooden structure were sample excavated, allowing for the retrieval of material for analysis, either through dendrochronological or radiocarbon techniques. Under the advice of the appropriate specialists, palaeoenvironmental samples were taken from the soil profile in the trench, from layers containing potentially datable materials.

Selected groundworks in the vicinity of the timber structure, and in areas of peaty deposits along the valley, were subject to archaeological monitoring. A full record was made of the archaeological deposits and features revealed, and of significant organic/waterlogged layers. Any artefacts were recovered and recorded, and samples for palaeoenvironmental analysis were collected where appropriate. Where deposits identified in the watching brief could reliably be correlated with those identified in Area A, the numbering sequence was continued. Otherwise, new numbers were allocated.

All recording was undertaken using *pro forma* context and feature record cards, supplemented by plans and sections at appropriate scales, and colour slide and monochrome photography. These records, together with the finds, form the project archive, which is currently stored at Birmingham University Field Archaeology Unit. It is intended that the archive will be deposited with Stoke-on-Trent Museum and Art Gallery after analysis is complete.

6.0 Results

6.1 Excavation, Area A (Figs. 3 and 4)

The natural sand and gravel (1010) was exposed within the line of the relief sewer. This was recorded at a depth of 1.15m and was overlain by black, organic silts and peats (2053, 2054, 2055). Four structures (Structures 1-4) were recorded within Area A.

All Medieval activity was clearly pre-dated by peat formation, into which structures had been cut, driven or overlain. Most of the peat appeared natural in origin, however the upper 0.3m was mixed with an occupation layer (2049) producing pottery, leather and worked wooden artefacts. This occupation layer appeared to pre-date Structure 2 and clearly pre-dated Structures 3 and 4. Stratigraphic relationships between structures were difficult to determine due partly to the similarity between deposits (largely black, amorphous, silty peat), partly to the waterlogged conditions and partly because posts had been piled through deposits, rather than set into post hole cuts. Also, in accordance with the project specification (BUFAU 1999), only a relatively narrow area was stratigraphically excavated. The rest of the area was exposed and recorded in plan and left *in situ*. The features are further described below within structure groups, which may represent phases or divisions within a single building.

Structure 1 (Fig. 3)

At the northeastern end of Area A were seven small uprights, each approximately 0.06m in diameter. The uprights formed two parallel, northeast-southwest alignments of posts, approximately 0.4m apart. The posts had been driven into the surrounding peat at intervals of 0.6m. Structure 1 appeared to be lying within a linear cut (F201) which contained a single flat, worked timber, possibly also forming part of the structure.

The poor survival of Structure 1, and the subsidence of Structure 2, made it impossible to determine a stratigraphic relationship between the two. The southernmost of the uprights from Structure 1 was evident within the eastern half of Structure 2, and it would appear that the uprights for Structure 1, driven directly into the peat, became visible due to the subsidence of Structure 2.

Structure 2 (Fig. 3, Fig. 4: Section 1, Plate 1)

Structure 2 comprised the timber platform previously identified in the evaluation. To provide a solid base for the timber platform, the peat had been dug away to the upper surface of the natural gravel. Despite this, however, it was clear that the structure had subsided considerably, making it difficult to establish reliable stratigraphic

relationships. The platform was constructed from two layers of timbers. The lower timbers (2047) were orientated northwest-southeast and spaced at 0.75m intervals. These timbers spanned a width of 6m and were placed directly over the natural gravel (1010). The upper layer of timber poles (2008) were closely packed together, at right angles to the lower timbers, and were overlying a deposit of re-worked gravel (2051).

Along the southeastern edge of the platform were a series of uprights, each approximately 0.25m in diameter. One of the uprights consisted of a large flat plank. This, however, was on the edge of the geotechnical test pit (Test Pit B - not illustrated), and may have been disturbed during geotechnical works. One substantial upright, evident in the northwestern section of the platform, was sampled for dendrochronological dating.

The structure was partially sealed by a sand and sandstone matrix (2013) which gradually became more substantial towards the lower, southeastern extent of the platform. Part of the structure was marked by a concentration of larger sandstone blocks, which overlay the wooden poles. This was sealed by layers of organic, dark brown silts (2021, 2022), approximately 0.25m. in depth.

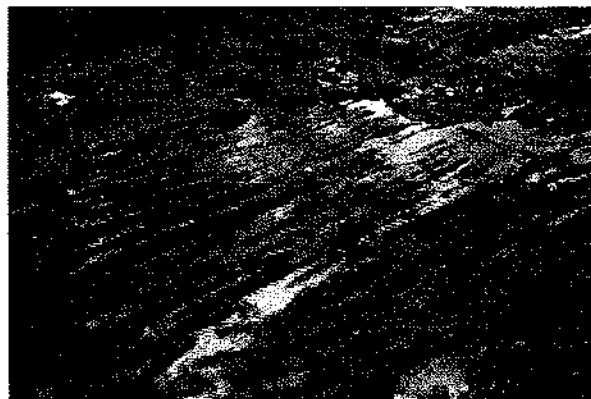


Plate 1: Structure 2

The whole structure was cambered, sloping approximately 0.28m from northwest to southeast. It is possible that Structure 2 was level when first constructed, and subsequently subsided over areas of deeper peat, particularly closer to the stream channel. The pole-ends comprising the platform had sharpened, faceted points, suggesting that the wood was chopped to size by a bladed tool, probably an axe. The timbers were in very good condition, and in particular, it was noted that the upper surface had not suffered the sort of damage that would normally be associated with the regular use of a trackway. It seems likely that the uprights and the platform are contemporary. There were no large timber uprights supporting the platform, suggesting that the uprights present to the northwest and southeast of the platform may have once supported a superstructure.

The structure overlay, or cut, deposits containing Medieval pottery of 13th - 15th-century date (2049 and 2051), and was sealed by a layer containing pottery from the late 16th century (2022).

Structure 3 (Fig. 3, Fig. 4: Section 1)

To the southwest of Structure 2 was the vestiges of a timber surface (Structure 3). This showed no trace of a foundation, resting directly over organic deposits (2049). The surface consisted of a series of closely spaced narrow poles on a northeast-southwest alignment (2017). Surviving at a slightly higher level, the preservation of the timbers was poor compared to Structure 2. Again the ends of the poles were cut, and respected the alignments of Structure 2 to the north and Structure 4 to the south. Immediately to the southeast was a large upright, placed within a stone-packed cut (2063, Fig. 3). The timber was squared, measuring 0.30m across, and was in a poor state of preservation. A small bronze buckle was recovered during the cleaning of Structure 3 (see Section 7.3 below).

Structure 4 (Fig. 3, Fig. 4: Section 1)

Structure 4 consisted of a stone surface located at the southwestern edge of the main excavation area, and overlying the peaty occupation layer (2049). The southern extent of the surface was recorded within the area of the watching brief and was not fully exposed in plan. The surface consisted of both sandstone and cobbles and was nearly 8m across. The cobbles (2024) were in a matrix of pink sand, and were edged by sandstone and tile (2018). Some of the more substantial pieces of sandstone had been dressed. Red tile was present throughout the layer, becoming more concentrated towards the southwest. At the southeastern edge of the cobbled surface were two large sandstone blocks, which may once have supported large timber uprights.

Below, and to the southwest of Structure 4 were groups of small circular stakes (2052, 3004, 3005, 3006) which had been piled through the natural peat, including the peaty occupation layer (2049), forming a series of four linear clusters running northwest southeast. Measuring approximately 0.1m in diameter and 0.6m in length the stakes were worked to a point at the base. Several stakes were also squared along the shaft. Above the southernmost group of upright stakes (3006) a series of five horizontal wooden poles (3007) were laid perpendicular to the pipe trench. At this point the overlying sandstone blocks (3027) were clearly more substantial, compressing the wooden stakes and the peat (2053).

6.2 The watching brief by Mary Duncan (Figs. 3 and 4)

A watching brief was carried out during the construction of the pipeline through two fields to the northeast of the excavation area (Fig. 2). The majority of the subsoil within this area consisted of natural clay, sand and gravel overlain by topsoil. The deposits of waterlogged silty peat appeared approximately 17m to the northeast of Area A. A watching brief was also maintained during the construction of the pipeline for a further 100m to the southwest of Area A (Fig. 2). This demonstrated the presence of intense activity between Area A and Coven Road to the south.

The Barrels (Fig. 4: Sections 2 and 3)

At a distance of approximately 16m to the southwest of Area A, four timber barrels were recorded within three negative features (F301 - barrels 3033 and 3017, F302 - barrel 3032, F300 - barrel 3031). The features were each cut to a depth of approximately 0.6m, dug through the peaty occupation layer (2049). None were inter-cutting, and the similarity of the features suggests that they were in contemporary use.

The base and sides of the features were lined with pink clay (3030, 3022 and 3023), into which the wooden barrels had been placed.

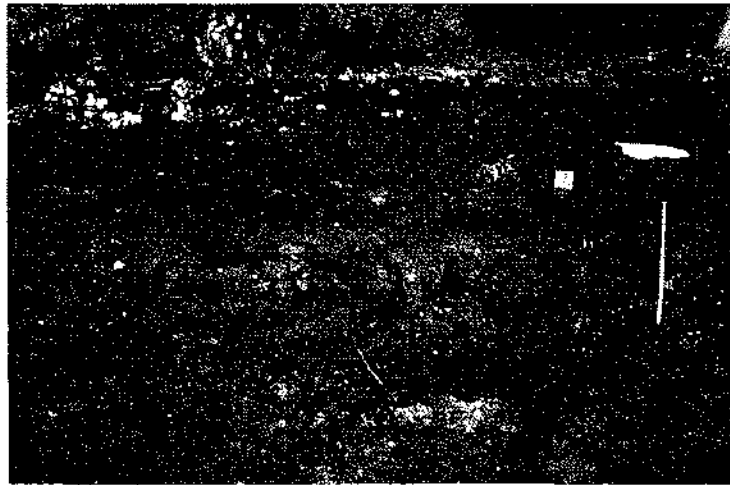


Plate 2: Three barrels visible in the southeast-facing section.

Each of the four barrels was cylindrical, with a diameter of 1.1m and a depth of 0.3m. The base of each barrel was constructed from a layer of shaped planks (a double layer in the case of barrel 3017). Curved around the outside of each base was a double layer of overlapping planks, forming the sides of each barrel. It was not apparent how these planks were bonded, and they may have been held together solely by the clay linings of the pits.

Remaining deposits within relief sewer trench profile (Fig. 4, Section 4)

The layer of peat (2053), while undulating in places, was observed along the course of the pipe trench at a consistent depth of 0.5m, ending 57m to the southwest of Area A. Just before this point, the peat was cut by a shallow feature (F307) measuring 4m in width and 0.30m in depth, which was filled by a narrow band of sand and sandstone pebbles (3035), and a layer of charcoal and coal (3034). This feature was sealed below a waterlogged silty layer (3012) which appeared to be the same as the occupation layer (2049) in Area A.

Beyond the peat lay a sandstone and cobble deposit (3040 and 3044), evident in both faces of the pipe trench for a distance of 28m, which cut or overlay the waterlogged silt (3012). The deposit, possibly a surface, consisted of cobbles (3044) and large sandstone blocks (3040), some of which were faced. A possible occupation deposit immediately above the cobbles (3047) contained waterlogged organic material, coal and charcoal.

At a distance of 94m to the southwest of Area A, close to the Coven Road, was the probable cut for a silt filled ditch (F306 - not illustrated). The ditch was aligned northwest-southeast and had two rows of wooden posts driven into the base. These posts were on the same axis as the ditch and were placed 1m apart. The ditch (F306) lay at the southern extent of the cobble and sandstone deposit (3040 and 3044), which also sealed the fill of the ditch (3048).

The sandstone and cobble deposit (3040 and 3044) was cut by two features (F304 and F305) both visible in the southeast facing section. Feature F305, located at the northeastern extent of the cobbled surface, was a deep pit measuring at least 0.7m in depth. The primary fill (3037) consisted of a mass of waterlogged organic remains. The feature to the south (F304) was square in plan and extended 0.5m into the pipe trench. In both of the exposed corners of the feature were two large square cut timbers (3049). These had been placed at the base of the cut on a north-south alignment, with a narrow plank resting horizontally across the two. It was not possible to determine the full extent of these timbers within the width of the sewer trench. A sample of the fill between the wood (3042) was taken for palaeoenvironmental analysis.

All deposits were sealed by a light orange-brown alluvial horizon (2011 - sections 2 and 3) which had been cut by a relatively modern land drain (F101, Fig. 3). This in turn was sealed by topsoil (2010) approximately 0.24m in depth.

6.3 Trial trench, Area B

A trial trench (Area B, Fig. 2), measuring 20m x 2m and orientated northeast-southwest, was excavated on the opposite bank of the stream (not illustrated). The objective of this was to investigate the possibility that the timber structure was a trackway which may have continued across the stream. No archaeological deposits were encountered and excavation of the trench was halted at a depth of 1.25m. The earliest deposit revealed was a soft layer of peat (2004) sealed by layers of alluvial silts (2003, 2002) to a combined depth of 0.4m. These in turn were sealed by an orange-brown silt, similar to the alluvial horizon (2011) in Area A, and 0.30m of topsoil.

7.0 Assessment

7.1 Stratigraphic data

Record Type		Evaluation	Excavation
Feature records		2	7
Context records		13	96
Drawings			
	A1	1	2
	A2	-	14
	A3	-	5
	A4	-	-
Photographs			
	Black and white	-	108
	Colour slides	15	95
	Colour print	-	17
Assemblage summaries		-	28
Survey record sheets		-	1
Index sheets		7	14

Table 1: Quantification of site records.

The features and deposits on the site can be dated to the mid to late Medieval period, and the early Post-medieval period. As mentioned above (section 6.1), stratigraphic relationships were difficult to determine due to waterlogging, subsidence and the fact that much of the site was only exposed and recorded in plan. However, further analysis and definition of the stratigraphic sequence in conjunction with full pottery analysis would contribute to the research aims stated in Section 4.0 above and revised in 9.0 below.

7.2 Medieval and Post-medieval pottery by Stephanie Rátkai

Results

The pottery covers the period from the 13th or 14th centuries through to the 18th century, with the greater part of the pottery belonging to the 15th - 17th centuries. The earliest (13th - 14th century) pottery consists of a small amount of iron-poor or white wares, and a greater amount of iron-rich, generally reduced, sandy ware. Sherds of this date were generally small, undiagnostic and abraded (often quite heavily). The iron-poor wares tended to be glazed and the iron-rich vessels were from cooking pots or possibly in some cases bowls.

From the later 14th century through to the 16th century fine oxidised iron-rich wares were the most frequent type, mainly jugs and bowls. There were examples of a coarser, sandier, oxidised ware and a very small number of cistercian ware sherds. Sherds of this date tended to be larger than in the preceding period and were unabraded. This is also true of the sherds of the subsequent period.

Pottery of the later 16th and 17th centuries consisted of blackware and coarseware with occasional sherds of manganese mottled ware and slipware extending the range through into the 18th century.

It was particularly noticeable that a high proportion of the sherds were heavily sooted, some after breakage and some during use or burning. This was particularly striking in the 15th - 16th-century pottery, a period when sooting on ceramic vessels is usually less in evidence in a domestic context. This would suggest that the pottery represents something other than normal domestic activity and pottery dispersal, in this case some sort of industrial process taking place on the site.

The pottery fabrics are similar to those found at Stafford Castle and Dudley Castle but also show similarities with pottery from Shropshire, further to the west.

The pottery would seem to indicate that occupation/activity began in this area in the 13th or 14th centuries. Pottery of this date was found in layer 2051 immediately below Structure 2. In layer 2013, above the wooden platform (Structure 2), were two sherds; a whiteware jug sherd (13 - 14th centuries) and a cistercian ware sherd (later 15th - 16th centuries), so the structure was in all likelihood still in operation in the early Post-medieval period at least.

Recommendations

The site and the artefacts and ecofacts associated with it are clearly of great importance. In the light of this, the ceramics need further, more detailed study both to illuminate the possible function of the site and also to set it in its regional context. This would involve a full fabric analysis of the Medieval and early Post-medieval pottery (i.e. pottery dating from the 13th - 16th centuries), and a full description of the vessel forms present, where this can be determined and comparison of the resulting data with pottery from sites in Staffordshire.

7.3 Other finds by Annette Hancocks

Flint

A single flint flake was recovered from layer 2050. No other dateable finds were recovered from this context and no further work is recommended on this piece.

Slag

The slag was rapidly scanned and weighed. 836g of slag were recovered from three contexts (2007, 2009 and 2014). A small quantity was recovered by metal detector. At least three possible smithing hearth bottoms were identified. These are typified by a rough convex base and smoother vitrified upper surface, which is flat or slightly hollowed as a result of the downwards air blast. No further work is recommended on this material.

Find type	Quantity or weight (g)
Medieval pottery	104
Post-medieval pottery	107
Charcoal	1
Modern buttons	4
Animal bone	893g
Ceramic tile	368
Ceramic brick	16
Slag	836g
Flint	1
Other stone	3
Lead (including 4 tokens, 2 lead weights)	10
Iron	3
Copper alloy	1
Modern vessel glass/window glass	9
Leather pieces/fragments	11

Table 2: Quantification of all finds.

Ceramic brick and tile

384 fragments of Post-medieval brick and roof tile were recovered from the site and are associated with pottery of the same date. No significant diagnostic pieces were identified. All the roof tiles appeared to be of the same type and fabric. The bricks

were made from poorly levigated clay and were of modern appearance. It is recommended that no further work be undertaken on this material.

Copper alloy

A single copper alloy item, probably a strap end, was recovered from a well-sealed context (2014), Structure 3. Pottery of 15th - 16th century date (see Section 7.2 above) was also recovered from this material, and further work is recommended on this piece (see recommendations below).

Lead

Several lead tokens and a two lead weights were recovered from the ploughsoil using a metal detector. As these finds are unstratified further detailed work is not recommended.

Iron

Two iron nails and a single iron peg were recovered. These pieces do not add intrinsically to the dating of the site and as such it is recommended that no further work be carried out.

Leather

11 fragments of worked leather were recovered from five contexts. Five pieces were recovered from context 2007. This layer primarily dated to the 16th - 17th century and contained some intrusive 19th-century pottery. The leather consisted of indeterminate off-cuts of no particular form. A further triangular-shaped piece was recovered from layer 2016. Stitching holes were recognised on two of the three sides of the fragment. From its shape the piece probably represents an apex of a shoe. No associated datable finds were recovered from this layer.

A single, rectangular-shaped off-cut was recovered from layer 2049. This deposit could be dated to the 14th - 15th century AD.

Four leather off-cuts were recovered from layer 3000. This deposit dated to the 13th - 14th century AD and the leather fragments recovered comprised a large rectangular off-cut, a semi-circular shaped off-cut with stitching holes on the curve edge and two possible apex's from the upper of a shoe.

Recommendations

It is recommended that a limited amount of further analysis be carried out on the copper alloy strap end, comprising full identification and cataloguing. No further work should be carried out on any of the other finds material.

7.4 Plant remains by Marina Ciaraldi

Introduction

The site was located on a thick peat deposit which, in some parts, reached 1.50m in depth. The unusually good preservation of the organic remains had already been highlighted by the evaluation (Taylor 2000). The sampling strategy adopted for the

excavation therefore aimed at the maximum recovery of palaeoenvironmental data and was designed and implemented by the author and James Greig. Soil samples of 20-30 litres were collected from above and below the timber structures, the stonework and the various features uncovered during the watching brief. Three samples were collected from the undisturbed peat in the eastern section of the excavation (2058 and 2060 - not illustrated). These three samples were taken to correlate with a 1.5m monolith taken for pollen analysis. Two samples were also collected from the fills of two wooden barrels (3021 and 3024) uncovered during the watching brief.

Aims

The present assessment aims to assess the preservation of plant macro remains from the samples in order to establish:

- the level of plant macro preservation.
- their potential for the reconstruction of the immediate environment.
- their potential for the reconstruction of the human activities associated with the site and the impact of such activities on the environment surrounding the site.

Methods

The soil samples were processed by the author in the Archaeobotany Laboratory of the University of Birmingham. The samples were all waterlogged. Sub-samples of 300ml were processed according to Kenward *et al.* (1980) on a 0.3 mm mesh. The fraction recovered on the mesh was examined under a low power stereomicroscope and the results of the analysis summarised in Table 3.

Results

Samples from contexts 2015 (not illustrated) and 2049 were collected from above and below the cobbled area respectively (Structure 4). They were both formed by a grey sandy silt and contained small fragments of coal and charcoal. The plant remains from these two samples are almost identical and therefore they can be considered as a single deposit.

Recommendation: It is suggested that the sample from 2049 is analysed as it was deeper and therefore there is less chance of contamination from later activity.

Three samples were collected from the eastern section of the excavation, in spits of around 30cm. Context 2060 represents the bottom part of the peat deposit, 2060 represents the top part of the peat deposit and, 2058 represents the layer of alluvium that seals the peat sequence. Context 2060 is pure peat with an increasing sandy component towards the top of the sequence. In context 2058, the sandy component is greater, constituting almost 30% of the sample.

Recommendation: Although the plant remains associated with these three samples are similar, it is suggested that they are all analysed in order to provide complementary evidence to the pollen and insect sequence.

Two samples were taken from the fills of two of the barrels (3021 and 3024). Context 3021 appeared more clayey than context 3024, and the plant remains associated with the two samples were also different. Context 3021 contained numerous seeds, including hemp seeds. This would suggest that activities involving the use of hemp (for instance hemp retting) took place in this part of the site. Context 3024 contained many bark fragments, which could also be related to industrial activities such as tanning.

Recommendation: Both these samples should be analysed as the barrel contents have high potential for providing information on the industrial activities that took place on the site.

A sample was also collected from a pink sandy level (2080 - not illustrated) above the timber structure (Structure 3), and from a similar sandy deposit (2013) visible in section above Structure 2.

Recommendation: Neither of the two samples contained significant plant remains and therefore they require no further analysis

A sample was collected from the organic layer of peat (2053) below 2049. It contained a large number of seeds and was formed by an organic matrix very different to that observed in the other samples of peat, consisting of numerous filaments similar to grass, rushes stems or leaves.

Recommendation: It is recommended that further analysis is undertaken on this sample in order to understand the reason for the different organic matrix.

The peat deposit (2054) below the main platform (Structure 2) was sampled and contained much the same type of flora observed in the other samples taken from the peat.

Recommendation: No further analysis is required on this sample.

Recommendations

As discussed in detail above, it is recommended that the seven samples highlighted in Table 3 are processed and analysed for plant macro remains. Their analysis will constitute an important source of information for the reconstruction of the environment around the site and for the human activities that took place on the site.

No.	Context	Type of context	Notes
50	2015	Soil above cobbled surface	Abundant plant macroremains including <i>Sambucus</i> , <i>Carex</i> (flat), <i>Ranunculus</i> , <i>Rubus ideaus</i> , <i>Lapsana communis</i> , <i>Carduus</i> , <i>Solanum</i> , <i>Stellaria media</i> , <i>Urtica dioica</i> . Caddis flies, charcoal and coal flakes
51	2080	Sandy layer above second platform	Only a few plant macros including <i>Carex</i> sp., <i>Urtica dioica</i> , <i>Agrostemma githago</i> (testa). Small fragments of charcoal and coal
52	2060	Bottom peat	Numerous plant macroremains including <i>Juncus</i> sp. (++) , <i>Potentilla</i> (+), <i>Carex</i> (trigonus and flat), <i>Rubus</i> sp, <i>Glyceria</i> , <i>Scirpus</i> , <i>Rumex</i> (epicarp), <i>Urtica dioica</i> , mosses. Caddis flies, a few insects
53	2060	Top peat	Numerous plant macroremains including <i>Juncus</i> sp., <i>Carex</i> (trigonus), <i>Rubus ideaus</i> , <i>Glyceria</i> , <i>Rumex</i> (epicarp), <i>Umbelliferae</i> , <i>Cirsium</i> or <i>Carduus</i> , <i>Ranunculus</i> , <i>Stellaria</i> sp.. Caddis flies, a few insects
54	2058	Alluvium	Numerous plant macros including <i>Carex</i> (trigonus), <i>Ranunculus</i> , <i>Rubus</i> , <i>Stellaria</i> , <i>Sambucus</i> , <i>Urtica dioica</i> and <i>Glyceria</i> . Some insects and small fragments of charcoal and coal
55	2049	Soil below cobbled surface	<i>Rubus ideaus</i> , <i>Chenopodium album</i> , <i>Labiatae</i> , <i>Carex</i> (trigonus and flat), <i>Stellaria</i> sp., <i>Sambucus</i> sp, <i>Lapsana communis</i> . Coal flakes
56	2013	Sand above main wooden platform	A few seeds of <i>Carex</i> (trigonus) and <i>Ranunculus</i> . Some fragments of insects and one small slag
57	2051	Gravel deposit under Structure 2	No plant macroremains or other biological remains
58	2053	Peat below cobbled surface	Unusual peaty matrix. Plant remains included <i>Juncus</i> , <i>Potentilla</i> , <i>Ranunculus</i> , <i>Carex</i> (flat), <i>Urtica dioica</i> , <i>Stellaria</i> . Some caddis flies and insects were also observed
59	2054	Early peat deposit below main platform	Seeds not very abundant and including <i>Corylus</i> , <i>Ranunculus</i> , <i>Glyceria</i> . Some charcoal fragments and insects
60	3021	Wooden barrel fill	Hempseeds (<i>Cannabis sativa</i>), <i>Rumex</i> (with epicarp), <i>Stellaria</i> , <i>Urtica dioica</i> , <i>Conium</i> .
61	3024	Wooden barrel fill	<i>Sambucus</i> , fragments of bark

Table 3: Plant remains recorded during a sample scan.

7.5 Animal bone by Emily Murray

Collection, phasing and method of analysis

A small number of animal bones were hand-collected during the course of the excavation. The bones came from contexts spot-dated to the 14th - 15th centuries (2049, 2050), late 17th - early 18th centuries (2009), 18th century (2011) and 19th

century (2007 and 2015). No faunal material was recorded during the processing of the bulk samples (M. Ciaraldi pers. comm.).

The faunal remains were recorded using a modified version of a system devised by Davis (Davis 1992, Albarella and Davis 1994) which considers a selection of anatomical elements as 'countable' while the presence of non-countable specimens are noted. The elements and species from Brewood, recorded by context, are listed in Table 4.

Discussion

The bones recovered all came from domestic species; horse, cattle, sheep/goat, dog and pig (represented by a humerus shaft). The single pig bone present showed signs of gnawing, probably by a dog. The non-countable elements included a cattle horncore. The horncore was attached to a fragment of skull and there was a chop mark located below the base of the core on the dorsal side. The greatest width at the base of the horncore was 66mm and the minimum breadth was 56mm.

The most notable aspect of the assemblage was its state of preservation. All of the bones showed signs of waterlogging and were very light in weight. A couple of fragments (from contexts 2007 and 2009) also had blackened patches which appeared as though they had been singed, while a calcined ovicaprid metapodial shaft was also noted in context 2007. 'Heavily sooted' pottery sherds were noted by Rátkai on some Post-medieval sherds, which she suggested indicated some sort of industrial activity. The possibility that tanning was being carried out at the site has been raised in the plant remains assessment (Section 7.4 above), but the animal bone assemblage is too small to provide definitive evidence for, or against, this process.

Recommendations

It is not recommended that any further work is carried out on this small collection of animal bone, but it is suggested that a short paragraph summarising this report be included in the final publication.

Taxa	Equid	cattle			sheep/goat		dog
		2007	2009	2050	2007	2050	
context	2007	2007	2009	2050	2007	2050	2007
Teeth	-	-	-	1	1	-	-
Ulna	-	-	-	-	-	-	1
Metacarpal	-	-	1	-	-	-	-
Pelvis	-	-	-	-	1	-	-
Astragalus	-	-	-	-	-	1	-
Calcaneus	-	-	1	-	-	-	-
Metatarsal	1	1	-	-	-	-	-

Table 4: Number of 'countable' animal bone elements by context.

7.6 Pollen by James Greig

Introduction

Samples were collected for pollen analysis during the evaluation and subsequent excavation (Fig. 4: section 1). An assessment of the pollen and plant macrofossils was prepared following the evaluation (Appendix 2), and this demonstrated the high potential of the pollen for contributing towards an understanding of the Medieval and early Post-medieval landscape. A summary of the results of this assessment is included below.

Results

Pollen is very well preserved in the peat, and initial results show that an alder wood grew as the peat accumulated. The wood was cleared some time later, and increased signs of crops and weeds provide evidence of a Medieval or Post-medieval agricultural landscape around the village of Brewood. Microscopic parasite ova are also present, and provide some indication of pollution from sewage.

Recommendations

Full analysis of the pollen samples from the evaluation and the excavation should provide information about the following matters:

- About the site itself, why the peat formed, and whether the place was used for industrial activities such the retting of fibres such as hemp or flax.
- It provides a glimpse of a Medieval landscape in the surroundings of the village of Brewood, whether it was set in woodland or a more open landscape, and how this may have changed with time (if more dates are obtained).
- The pollen results can be compared with archaeological and biological data to answer further questions about the platforms and their surroundings.

7.7 Insect remains by David Smith

Introduction

The insect faunas described in this report came from a number of deposits associated with the wooden platforms (Structures 2 and 3) and barrels discovered during the subsequent watching brief. Three of the samples examined (from 2058 and 2060 - not illustrated) form a continuous sequence through the peats. One sample came from an organic-rich peat (2053) that appeared to be cut by Structure 2, and sealed by a later occupation deposit (2049). Another sample came from the layer (2015 - not illustrated) above the cobbled and stone surface (2018 and 2024, Structure 4). A sample also came from the fill (3024) of one of the barrels (3017) excavated during the watching brief.

Methods and analysis

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

- are insects remains present? If so, are the faunas of interpretative value?
- are any of the insects indicative of human settlement?
- do the insect remains provide information on the nature of the environment and land use of the area at the time of the deposits formation?
- would the insects present provide information on how these deposits formed?

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

Discussion

Samples from the peat sequence (contexts 2058 and 2060).

All three samples have produced relatively small insect faunas which, however, do have some interpretable value. The insects present indicate that pools of fresh, but slow flowing water were present, as indicated by the relatively large numbers of water beetles present.

Several plant feeding species of *Chrysomelidae* 'leaf beetles' and *Curculionidae* 'weevils' are present, which if fully identified, could be informative as to the local vegetation. A few species of beetle present also suggest grassland and pasture were present in the landscape.

There is some implication that species associated with human settlement may be present in some numbers in context 2060.

Samples from contexts 2053 and 2015.

These two samples produced small faunas that are similar to the insects seen in the samples discussed above. As suggested above, these samples have the potential to fulfil part of the research aims as they may be informative of local water conditions and vegetation cover, and they may also be able to provide an insight into the nature of the wider landscape.

Sample from the fill of one of the barrels (3024).

The fill of this barrel produced a small insect fauna that mainly consists of a range of species of beetle associated with domestic occupation and settlement. However, the species concerned are associated with a wide range of possible environments in settlements and so may not be able to suggest the specific nature of the associated activity.

Recommendations

It is recommended that the insect faunas be fully analysed. This is particularly important since there has only previously been one comparable excavation in

Staffordshire, at Stone (Moffet and Smith 1996), where insect remains have been reported on in detail.

7.8 Waterlogged wood by Rowena Gale

Introduction

The waterlogged remains of two wooden structures (2 and 3) consisted of lengths of roundwood poles laid as platforms or rafts. The poles were aligned in parallel rows with supporting poles set at right-angles. Overall, almost 100 poles were exposed, mostly relating to Structure 2. The woody structures of the poles were well preserved and firm, and many retained bark. Preliminary examination of the bark suggested that several species of wood were present, with some species probably grouped. The poles had been used whole (unsplit) and a large number displayed cut ends or worked surfaces. Wood samples including complete cross-sections were taken from those with worked areas (about 50 samples), plus a few from smaller wood fragments.

Results of wood identification

Five samples of roundwood including representatives from those grouped according to bark type (samples 3, 12, 23) were examined by assessment to ascertain their potential to produce significant data. A table listing the provenance of the wood samples is provided as Appendix 4. The results are as follows:

- Sample 3: alder (*Alnus* sp.), diameter 110mm; heartwood 90mm, about 18 growth rings; sapwood 1mm, about 2 growth rings. Very moderate growth rate.
- Sample 12: alder (*Alnus* sp.), diameter 95mm; ?heartwood 90mm, 37 growth rings; sapwood 2.5mm, 2 growth rings. Growth very slow for final 22 years of growth. Wood very pale and extremely well preserved.
- Sample 23: birch (*Betula* sp.), diameter 140mm; heartwood 120mm, about 23 growth rings; sapwood 15mm, 8 growth rings. Fairly slow growth rate, average ring width 2-3mm.
- Sample 36: alder (*Alnus* sp.), diameter 75mm; ?heartwood 70mm, 12 growth rings; sapwood 2mm, ?2 growth rings.
- Sample M: oak (*Quercus* sp.), diameter (estimate from radial measurement) 170mm; heartwood 140mm, 23 growth rings; sapwood 30mm, 5 growth rings. With a moderate growth rate and growth rings averaging 3-5 mm, the structure was not indicative of coppice growth, but rather appeared to have grown amongst fairly non-competitive vegetation.

In the absence of colour differentiation, heartwood assessment for alder and birch was based on the clearly defined soft outer sapwood and the considerably harder inner core of heartwood. For samples 12 and 36 this distinction was not clear-cut and figures given above should be considered undetermined.

As anticipated during the excavation, the wooden poles were obtained from a range of wood species. Those examined for this assessment named alder (*Alnus* sp.), birch (*Betula* sp.) and oak (*Quercus* sp.). The excellent preservation of the wood allowed the detailed study of growth patterns and the ratio of sapwood to heartwood. The wood varied in diameter from 75 – 170mm and in age from 14 – 39 years; none of the poles appeared to have originated from coppice stools.

Recommendations

The examination of selected samples from the remaining poles should produce similarly detailed information, thereby providing an unusual opportunity to study the character of the structural elements. The felling of such a large number of poles to construct these buildings must have made a considerable impact on local wood reserves. During the mid Medieval period many regional woodlands were under permanent pressure to produce wood, fuel and other products; the wood remains from Brewood therefore hold the potential to indicate the character of the local woodland, and to place it in context on a regional scale.

In order to obtain maximum data as indicated above, it is recommended that the remaining 51 samples are fully examined. The results should be collated and discussed.

7.9 Radiocarbon and dendrochronological dating by Marina Ciaraldi

Results

Two samples for radiocarbon dating were taken from the platform (Structure 2) and from the underlying peat during the evaluation in 1999. The two samples produced radiocarbon dates of 500 ± 50 BP (1σ AD 1333-1445 cal.; 2σ AD 1307 - 1483 cal. Wk – 8007) for Structure 2 and 1870 ± 55 BP (1σ AD 81 - 216 cal.; 2σ AD 23 - 319 cal. Wk - 8008) for the peat (calibrated with calib. 4.3 according to Stuiver *et al* 1998). The radiocarbon dating was carried out by the Waikato Laboratory in New Zealand. During the excavation it was possible to collect more samples for radiocarbon and dendrochronological dating. The samples were taken in order:

- to establish a more secure date for the construction of the main platform (Structure 2).
- to determine whether Structure 2 and Structure 3 were contemporary.
- to determine whether the barrels were contemporary with the main platform (Structure 2).
- to establish the beginning of the formation of the peat and any contemporary change of the pollen sequence with the main platform.

Four dendrochronological dates were obtained from the wood collected during the excavation and the watching brief. One sample came from structure 2, two from one of the barrels (3017) and the remaining sample from the feature to the southeast of the barrels (F304). See Appendix 3 for a more detailed discussion of the results. The dendrochronological dates were earlier than those provided by radiocarbon, and by the pottery assemblage.

Recommendations

The inconsistent date range produced by the two direct methods (radiocarbon and dendrochronology) and by the pottery has highlighted the need for a careful interpretation of the results. Full analysis of the pottery, the stratigraphy and the dendrochronological dating evidence may help to clarify the chronology. Also, given the large date range produced by the radiocarbon dating, and the inconsistency of the radiocarbon date with the dendrochronological dates, the validity of this type of dating evidence for such relatively late periods should be carefully examined, and advice from the Waikato radiocarbon laboratory should be sought on this matter.

On the basis of the results, it is recommended that only one sample from the pollen column, the seeds taken from the bottom, should be submitted for radiocarbon dating. This should provide an initial indication of the date for the beginning of the peat formation. If the date produced is much older than that obtained for the main site, it is recommended that a further sample of macro remains associated with an important pollen change should be submitted for radiocarbon dating, particularly if the sample was obtained from the lower part of the pollen sequence. It was not possible to obtain a dendrochronology date from Structure 3, and it is not recommended that a wood sample from this structure be submitted for radiocarbon dating considering the inconsistency of results already obtained from the other structures and features.

8.0 Storage and curation

8.1 Finds

Six boxes of finds were recovered overall, including a single dry box of iron, copper alloy and lead small finds and a large Stewart 'wet' box containing off-cuts of worked leather. No immediate long-term storage problems are envisaged, since all the finds are stable, although the waterlogged leather will require monitoring on a regular basis. The archive should be deposited with Stoke-on-Trent Museum and Art Gallery at the earliest opportunity after analysis is complete.

8.2 Samples and other organic remains

The soil samples collected during the excavation at Brewood are stored in the Environmental Processing Laboratory at the University of Birmingham. The samples are kept in sealed plastic buckets.

Waterlogged wood, leather and pollen samples are kept in a fridge at 5⁰ C. Each individual wood, leather and pollen sample has been labelled.

The animal bones collected during the excavation have been cleaned and dried and are stored in a labelled box in the Archaeozoology Laboratory of the University of Birmingham.

The plant macro remains recovered for the assessment are kept in ethanol, in individually labelled glass vials, at the Archaeobotany Laboratory of the University of Birmingham.

9.0 Updated research design

The excavation has demonstrated intense archaeological activity and exceptionally well-preserved remains surviving in a strip of land between the stream and The Pavement, extending from the northeastern field boundary as far as the Coven Road to the south. This site is particularly important as it is the only waterlogged rural site of this period in the West Midlands.

The nature of the features and structures identified, the character of the artefacts and organic remains recovered, and the location of the site adjacent to the stream are all indicative of an industrial function. The stream, which would have provided the constant flow of fresh water needed by many industrial processes, appears to be an artificially straightened channel which is respected by the adjacent structures. The lack of wear on the upper surface of the wooden poles forming Structure 2, and the fact that there is no continuation on the opposite side of the stream confirms that the structure is not a trackway, as originally postulated. The most likely interpretation is that the wooden structures provided a raft foundation for overlying sandstone blocks, on which industrial processes, almost certainly associated with the barrels to the southwest, if contemporary, took place. It is a possibility that the platforms once supported a superstructure, and the area may have been the location for a variety of small, self contained working areas, possibly the backplots of properties fronting onto The Pavement.

The high proportion of sooting on the pottery, both prior to and after breakage, also suggests industrial use rather than domestic occupation. Initial assessment of the seeds contained within the fills of the barrels raises a number of interesting possibilities. Hemp seeds, identified from the fill of one of the barrels (3021), may represent the by-product of hemp retting for the manufacture of rope (Sassen *et al* 1995). Hemp is also associated with early paper manufacture, although it is unlikely that paper manufacture would have been carried out prior to the late Medieval period, and even then only on a limited basis (Coleman 1958). Bark fragments recovered from the fill of another barrel (3024) may suggest tanning, as could the leather off-cuts recovered during the excavation. Large pits normally associated with tanning and retting were not encountered, and there was no specific animal bone evidence for tanning, but this may simply be due to the restricted area examined.

All the structures and features identified during the excavation and watching brief were either cutting or overlying a silty layer (2049/3012) containing pottery dating to the 14th - 15th centuries, apart from the shallow pit near the southward limit of the peat (F307), which was sealed by the silty layer, and therefore represents the earliest activity on the site. The pottery recovered from the site ranged in date from the 13th - 14th centuries through to the 18th century. However, the greater part of the pottery assemblage dates from the 15th through to the 17th centuries, and may indicate an intensification of activity during this period. Use of the site in the Post-medieval

period is also attested by the large quantity of ceramic brick and tile recovered from the site.

The dendrochronological spot-dating gives a relatively narrow felling-range for the barrels and platform timbers from the late 12th to early 13th centuries. This suggests a period of use in the mid 13th century, some 200 years earlier than the pottery found in layers which are stratigraphically earlier than these features. It is well attested that barrels were often constructed from re-used wood and can therefore be problematic for dating purposes (Tyers, Appendix 3). The fact that the barrels and the platform are both made from wood felled at a similar date, and so much earlier than the pottery, raises questions which will need to be resolved during full post-excavation analysis. The dendrochronological dating has also raised the possibility that the barrels were constructed from a non-local wood source, which poses questions about the interpretation of the site in relation to Medieval trade in Brewood, as well as the nature of the industrial processes being carried out at the site.

This site offers an outstanding opportunity to study an exceptionally well-preserved Medieval rural industrial site, with associated high-quality palaeoenvironmental remains. Preservation of remains of this quality is relatively rare on sites in Britain, and particularly rare in Staffordshire. Full palaeoenvironmental analysis will therefore provide a major component of the final report, providing detailed information relating not only to the character of the immediate site and the individual structural elements, but also to the wider environment in the Medieval period.

Specific research aims are:

- To place the site within its overall geographical, archaeological, historical and economic context
- To establish an absolute chronology of the site through dendrochronological dating, assisted by full analysis of the artefactual assemblages
- To utilise the artefactual and palaeoenvironmental evidence to identify the industrial activities associated with the site and to understand the effect of such activities on the local environment
- To contribute to the understanding of industry in Medieval Staffordshire, with particular reference to other sites of similar date recently investigated within the county
- To utilise the palaeoenvironmental data to reconstruct the environment in the immediate vicinity of the site in the Medieval period
- To contribute to regional palaeoenvironmental studies by placing the site in a wider environmental context, considering issues such as woodland management in the Medieval period and early Post-medieval periods, and the development of the landscape around Brewood over time
- To enhance the importance of the archaeological and palaeoenvironmental remains by library research into surviving Medieval records, particularly those relating to trade and industry in Brewood in the Medieval and early Post-medieval periods

10.0 Publication synopsis

It is intended that the final report will be offered for publication to the Transactions of South Staffordshire Archaeological and Historical Society.

The Excavation of Waterlogged Medieval Remains at Brewwood, Staffordshire

Edited by Lucie Dingwall

with contributions by Marina Ciaraldi, Richard Cuttler, Rowena Gale, James Greig, Emily Murray, Stephanie Rátkai, David Smith and Ian Tyers

Text

Summary (250 words)

Acknowledgements (250 words)

Introduction - the site and its landscape setting, background to the excavation (1000 words)

Aims and Methodology (500 words)

The Results – an illustrated account outlining main features and site characteristics (3000 words)

Specialist reports: Medieval and Post-medieval pottery by Stephanie Rátkai (2000 words)

Plant remains from the barrels by Marina Ciaraldi (3000 words)

Pollen analysis and waterlogged plant remains by James Greig (3000 words)

Insect remains by David Smith (3000 words)

Waterlogged wood by Rowena Gale (3000 words)

Dendrochronology by Ian Tyers (1000 words)

Animal bone (summary paragraph) by Emily Murray (200 words)

Discussion and conclusions (6,000 words).

References

Total 26,200 words

Figures (by Nigel Dodds)

1 Location plan

2 Plan of Area A

3 Plans of individual structures from the excavation

4 Sections from the excavation and watching brief

5 Pottery (10-15 drawings)

Plates

1 Overall view of Area A

2 - 5 Detail of Structures 1 - 4

6 - 7 The barrels

It is also intended to offer more specialised versions of the report to the following journals: Medieval Archaeology, Journal of the Association of Environmental Archaeology, Vegetation History and Archaeology.

11.0 Acknowledgements

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12.0 References

Albarella, U. and Davis, S. 1994 *The Saxon and Medieval Animal Bones Excavated from 1985-1989 from West Cotton, Northamptonshire*, London, AML Report 17/94.

BUFAU 1999 *Specification for an archaeological excavation at Brewood, Staffordshire*.

Coleman, D. C. 1958 *The British Paper Industry*. Oxford, Clarendon Press.

Davis, S. 1992 *A rapid method for recording information about mammal bones from archaeological sites*. London, AML Report 19/92.

Dyer, C. 1989 *Standard of living in the later Middle Ages*. Cambridge University Press, Cambridge.

Horovitz, D 1992 *Brewood*. David Horovitz in association with The Self Publishing Association Ltd.

Kenward H. K., Hall A.R., and Jones A.K.G. 1980 'A Tested Set of Techniques for the Extraction of Plant and Animal Macrofossils from Waterlogged Archaeological Deposits.' *Scientific Archaeology*, 22. 3-15.

Kenward H. K., Engleman C., Robertson A. and Large F. 1985 'Rapid Scanning of Urban Archaeological Deposits for Insect Remains.' *Circaea*, 3. 163-72.

Moffett, L.C. and Smith, D. N. 1997 'Insects and Plants from a Late Medieval Tenement in Stone, Staffordshire.' *Circaea*, 12 (2). 157-175.

Sassen, M. M. A., Oostendorp, C.E.C.M., Boon, J.J., Vanderheijden, E., Stassen, P. and Dencamp, H. J. M. O. 1995 'Rope from the ruten cog, a 13th-century seagoing vessel found in the Netherlands.' *Journal of Archaeological Science* 22 (4). 551-559.

S.C.C. 1999 *Brief with specification for an archaeological excavation at land south of the pavement, Brewood, Staffordshire*. Staffordshire County Council, unpublished.

Stace, C. 1991 *New Flora of the British Isles*. Cambridge, Cambridge University Press.

Stuiver, M., Reimer, P.J., Bard, E., Beck, J.W., Burr, G.S., Hughen, K.A., Kromer, B., McCormac, F.G., v. d. Plicht, J., and Spurk, M., 1998 INTCAL 98 *Radiocarbon age calibration 24,000 - 0 cal BP*. *Radiocarbon* 40:1041-1083.

Taylor, J. 2000 *An archaeological evaluation of land south of The Pavement, Brewood, Staffordshire*. Birmingham University Field Archaeology Unit, Report No. 647.

Appendix 1

Spot dating by Stephanie Rátkai

<u>Context</u>	<u>Date</u>
2007	19th century (<i>Pottery is mainly 16th - 17th century in date with some residual Medieval material. Odd sherds from the 18th and 19th centuries are almost certainly intrusive.</i>)
2009	late 17th - early 18th century
2010	17th - early 18th century (<i>Topsoil</i>)
2011	later 18th century
2013	late 15th - 16th century
2014	late 15th - 16th century
2015	19th century (<i>Similar to 2007 in that the pottery is mainly 16th -17th century and odd sherds from the 18th and 19th centuries are probably intrusive.</i>)
2018	15th - 16th century
2022	(later 16th) 17th century
2024	18th century
2025	13th - 14th century
2026	13th - 14th century
2049	14th (15th) century
2050	14th - 15th century
2051	13th - 14th century
3000	13th - 14th century
3001	18th century
3008	13th - 14th century
3009	18th century
3013	13th (14th) century

Appendix 2

Interim report on pollen and plant macrofossils from the evaluation by James Greig

Summary

A peat bed at Brewood containing good pollen and seeds shows potential for understanding the Medieval/Post-medieval landscape.

The site

The test pits dug for the archaeological evaluation revealed a peat bed in the damp meadow beside a stream, with wooden structures that appeared to date from the 15th and 16th century according to the pottery (Taylor 2000).

The stratigraphy was as follows, with depths given from the present ground surface:

0-57 cm topsoil with roots

57-59 sand (?disturbance)

59-70 sandy organic material

70-145 cm peat, with occasional pebbles, no apparent stratigraphy

145 cm sand and gravel, sharp transition

Samples

The sample depths given refer to the 100 cm boxed section (Taylor 2000, Fig. 3). 45 cm should be added to these depths for the depth below the ground surface. A 100 cm monolith section was collected at the point where the peat was deepest, with boxed samples for pollen analysis together with 3 bulk samples for general biological analysis at 25-50 cm, 50-75 cm and 75-100 cm. Another six bulk samples were collected by Marina Ciaraldi, of wood from the structure and the associated sediments.

Laboratory work

Plant macrofossils (sample 75-100 cm, base of section)

A subsample of 100 ml was measured out. It was broken down in water, and the lighter, organic, fraction washed over to separate it from the inorganic material, and caught in a 600 µm sieve. The washover was sorted in water under a x10 stereo microscope and the plant remains identified and checked with the writer's own reference collections. The results are listed in taxonomic order (Kent 1992) in Table 1.

Sample	Quantity	English name
<i>Chenopodium cf. album</i> L.	2	fat hen
<i>Montia fontana</i> ssp <i>minor</i> Hayw.	1	blinks
<i>Lychnis flos-cuculi</i> L.	3	ragged robin
<i>Rumex</i> sp. (including <i>R. sanguineus</i>)	10	dock
<i>Viola</i> sp.	3	violet, pansy
<i>Potentilla erecta</i> (L.) Räusch	18	tormentil
<i>Prunus/Crataegus</i> sp. thorns-	1	hawthorn
<i>Hydrocotyle vulgaris</i> L.	6	marsh pennywort
<i>Galium</i> sp.	1	bedstraw
<i>Carduus</i> sp.	3	thistle
<i>Cirsium</i> sp.	10	thistle
<i>Juncus</i> sp.	3	rush
<i>Isolepis setacea</i> R. Br.	3	bristle club-rush
<i>Carex</i> subg. <i>Vignea</i>	12	sedges
<i>Carex</i> subg. <i>Carex</i>	11	sedge
<i>Glyceria</i> sp.	1	flote-grass
Poaceae nfi	1	grasses

other remains:

<i>Sphagnum</i> leaves	+
charcoal fragments	++
brick	+
Coleoptera remains	+
Trichoptera	+

Table 1: Plant list from 100 ml material, names and order according to Stace (1991).

Pollen analysis (samples 0, 30, 50, 60, 70, 90 and 100 cm)

Pollen samples were processed using the standard method; about 1 cm³ subsamples were dispersed in dilute NaOH and filtered through a 70µm mesh to remove coarser material, which was then scanned under a stereo microscope. The finer organic part of the sample was concentrated by swirl separation on a shallow dish. Fine material was removed by filtration on a 10µm mesh. The material was acetolysed to remove cellulose, stained with safranin and mounted on microscope slides in glycerol jelly.

Counting was done with a Leitz Dialux microscope. Identification was using the writer's pollen reference collection, seen with a Leitz Lablux microscope. Standard reference works were used, notably Fægri and Iversen (1989) and Andrew (1984).

The pollen counts have been calculated into percentages and drawn in a pollen diagram with the TILIA programme (Grimm 1990) which is given in Fig. 1. The

nomenclature and order of the taxa follow Bennett (1994) and Kent (1992) respectively.

Results

Plant remains, both pollen and seeds, are very well preserved in this peat. Other potentially useful remains such as beetles are also present.

The outline results so far obtained show that the peaty deposit started growing probably under an alder carr shown by large amounts of *Alnus* (alder) and quite large amounts of *Quercus* (oak). There were also sedges (Cyperaceae pollen, *Carex* seeds) and various other wetland plants that would be expected in and around a mire. It is not yet clear why peat started forming at this particular point, and whether it was the result of human action changing the drainage regime, such as damming the brook.

The surrounding dry land seems to have been partly wooded, as there is a significant amount of *Tilia* (lime) in the lower part of the pollen diagram. The records of crops, weeds and grassland and some charcoal among and macrofossils of land plants indicates a low level of human activity on the nearby dry land.

At 60 cm there is a change, with a sharp reduction in *Alnus* (alder) and other trees, showing that the alder carr was cleared. At the same time there is a sharp peak in Cyperaceae (sedges) perhaps as the sedge understory responded to the increased light. Signs of crops, weeds and grassland, and therefore of farming, increase, with more Cerealia (cereal) pollen, together with the cornfield weed *Centaurea cyamus* (cornflower) and a range of other weeds which probably represent arable land. However, the total evidence of farming is rather slight compared with results from some other sites (see below). This change could represent an assart, or increased local activity.

The signs of woodland at this site may be evidence that this area, or at least the immediate surroundings of the site, were generally rather well wooded at the time in question. Corresponding evidence for woodland can be seen in local place names connected with woods such as Oakley and Bishop's Wood, as well as the place name of Brewood itself. There are also woodlands in the area which might be relicts of earlier, more extensive woodland.

Correlation with other sites

Work on pond and moat deposits at another site, Lawn Farm near Stoke on Trent (Greig 1998), provided a picture rather similar to that obtained from Brewood, with signs of local alder carr and rather slight indications of farming and occupation. However, other parts of the Medieval landscape show much stronger indications of such activities. Pollen results from Lammascote Road, Stafford provide a radiocarbon-dated Medieval sequence which can be compared with the results from Brewood (Greig 1999). There is generally much less tree pollen at Lammascote Road in the Medieval period than at Lawn Farm and Brewood, but here again the local alder wood

was the last to be cleared, although long before that at Brewood. A much larger range of crops is represented at Lammascote Road, and this landscape shows far more signs of occupation than Brewood, as one would expect from its proximity to Stafford town.

A pollen diagram from Cookley Worcestershire (Greig, In prep.), which covers the Medieval period in unusual detail, also seems to show extensive occupation of the landscape, with records of the many crops that were grown on the adjoining dry land such as rye and other cereals, hemp, beans and flax, together with occasional records of walnut. However, evidence of dense occupation of the Stour valley is not known.

The density of occupation and amount of surviving woodland during the Medieval period may well have varied considerably from place to place, as shown by an historical study of woodlands in Warwickshire (Wager 1998). Doubtless there is a similar story to be unravelled from the records of Staffordshire.

The importance of a site such as Brewood is the information which it can provide about that particular area at a particular time period, which appears to go from the 15th - 16th century. Such data can then be compared to that obtained from other pollen sites, and with other types of evidence, to build up a picture of the development of the whole landscape.

Research design

1. Macrofossil samples

It would be worth assessing more macrofossil samples to see if any can provide more evidence of human activities at or around the site, both from the platform and therefore associated with archaeology (such as layer 1007) and from the upper part of the pollen succession. It would probably be worth looking at the beetle remains already recovered to find the potential for useful studies.

2. Pollen

It would be worth doing pollen analysis of intermediate levels either to provide a pollen diagram with a 10 cm resolution (4 more samples), or 5 cm (14 more samples), to provide more detail on the changes indicated.

3. Dating and chronology

This is obviously crucial to the value of the results; the date of clearance of the alder wood needs to be established, as well as the date of the top of the peat, if possible.

Acknowledgements

The support of English Heritage for this work is gratefully acknowledged

References

- Andrew, R. 1984 *A practical pollen guide to the British flora*. Quaternary Research Association, Technical Guide 1, Cambridge.
- Bennett, K. D. 1994 Annotated catalogue of pollen and pteridophyte spore types of the British Isles. unpublished report.
- Fægri, K. and Iversen, J. 1989 *Textbook of pollen analysis* (4th edn.), by Fægri, K., Kaland, P. E. and Krzywinski, K., Wiley, Chichester.
- Greig, J. 1998 Report on pollen from Lawn Farm (LAF97), Staffordshire. *unpublished report*.
- Greig, J. 1999 Report on pollen in a 1.7 m profile from Stafford, Lammascote Road. *unpublished report*.
- Greig, J. In prep. Report on pollen from Cookley, Worcestershire.
- Grimm, E. C. 1990 TILIA and TILIAGRAPH. PC spreadsheet and graphics software for pollen data. INQUA working group on data-handling methods, Newsletter 4: 5-7.
- Kent, D. H. 1992 *List of vascular plants of the British Isles*. Botanical Society of the British Isles, London.
- Taylor, J. 2000 An archaeological evaluation of land south of The Pavement, Brewwood, Staffordshire. BUFAU Report 647.
- Wager, S. 1998 Woods, wolds and groves: the woodland of Medieval Warwickshire. BAR British Series 269, Oxford.

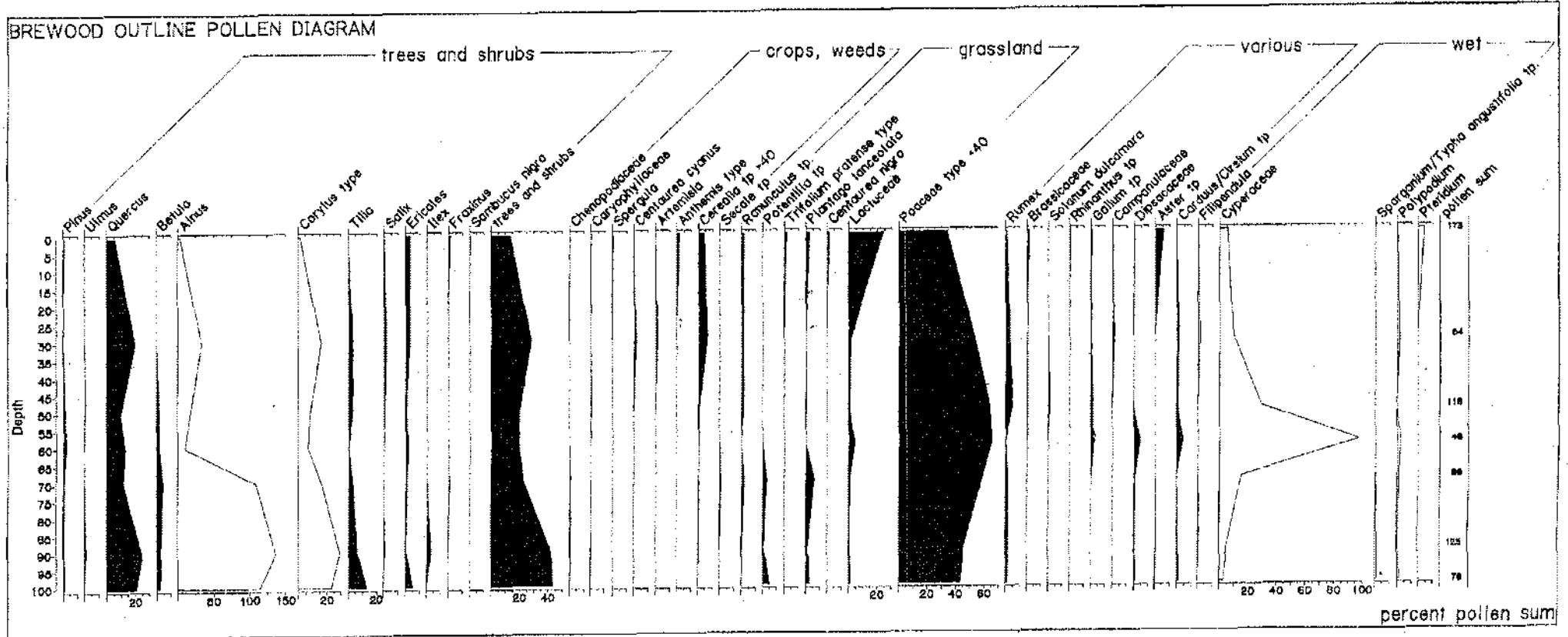


Fig. 1

Appendix 3

Dendrochronological spot-dates of samples by Ian Tyers

A total of seven samples were submitted for spot-dating. Summary notes on the origin of the samples were supplied with the samples. Three samples come from a timber platform (Structure 2), one sample is from a possible drain (F304), two from a barrel (3017), and the final sample is an upright post (F306). All the submitted samples were oak, another 49 timbers from the site were identified as alder (46), birch (1), and willow/poplar (2) by Rowena Gale (pers comm. 2000).

Two oak samples from the submitted group were unsuitable for measurement (both 101 and M had too short a sequence for reliable analysis). Standard dendrochronological methods (see e.g. English Heritage 1998) were applied to the remaining five samples. Four samples cross-matched with externally dated site masters or regional chronologies. A summary of the results is provided below. It is important to appreciate that although the dendrochronological dates will not change in the future, the interpretations of the results are of necessity interim and liable to change, particularly as aspects of re-use and repair are revealed by post-excavation analyses. The other measured sample was not found to cross-match reference chronologies and is undated by the analysis reported here.

Three types of dating result are usually obtained by dendrochronological analysis. Firstly, where a sample is complete to bark-edge a precise year of felling is obtained directly from the date of the last ring on the sample. Secondly, where a sample has some sapwood, but is not complete to the bark-edge a felling date range is obtained by applying the maximum and minimum numbers of rings of sapwood normally seen in oaks for the relevant areas, to the relevant samples. The range 10 – 46 has been used in this report for local material. Finally, where no sapwood survives a terminus post quem (tpq) date is obtained by adding the minimum number of sapwood rings likely to have been lost to the date of the latest surviving ring. This type of date is very much less useful than the other two types since a very great number of rings could have been lost either through ancient carpentry practise, or poor site preservation, and thus the felling date of such material may be considerably later than the tree-ring date.

A summary of the findings is presented in Table 1, and Figure 1.

Sample	Description	Type	Rings	Sap wood	Growth Rate (mm/year)	Sequence date	Interpreted felling date
E	Structure 2	Oak	103	?H/S	0.67	AD1117-1219	AD1229-65?
M	Structure 2	Oak	c. 28	-	-	Not measured	-
26	Structure 2	Oak	46	-	1.46	undated	-
100	Flat board from F304	Oak	63	-	2.84	AD1150-1212	after AD1222
101	Upright/?barrel - F306	Oak	c. 31	-	-	Not measured	-
103	Barrel 3017	Oak	148	-	1.20	AD1028-1175	after AD1185
104	Barrel 3017	Oak	168	-	1.55	AD1015-1182	after AD1192

KEY: ?H/S heartwood/sapwood boundary possibly present

Table 1: Sample details

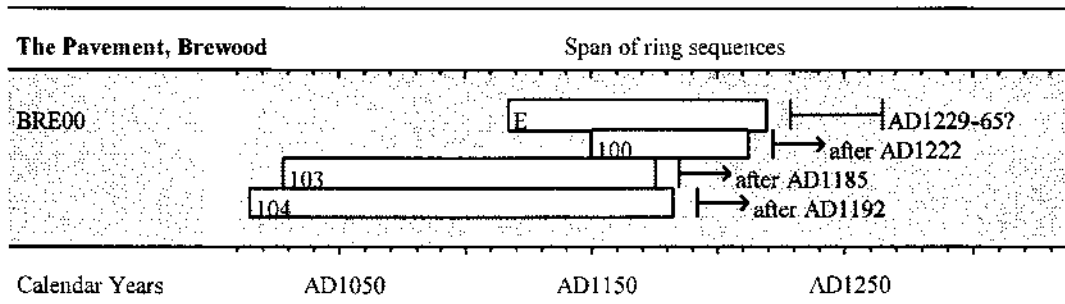


Figure 1: Bar diagram showing the relative and absolute positions of the four dated samples. White bars represent heartwood, the *tpq* dates calculated for each timber using appropriate sapwood estimates is also shown.

The dated samples come from the main platform (sample E), from a possible drain (sample 100) and from a barrel (samples 103 and 104). These four samples appear to form two distinctive tree-ring groupings (E and 100 form a pair, whilst 103 and 104 form another pair). Mutually exclusive pairing is unusual in rural tree-ring analyses and may indicate a variety of local or perhaps non-local sources were used for the timbers (particularly with respect to the barrels). Precisely what this observation means for the site interpretation is currently unclear. The latest tree-rings present on the site are those in sample E which ends with a possible heartwood/sapwood boundary at AD1219. In the absence of sapwood on any dated sample it is not possible to identify any minor differences in chronological date between the various structures. The fairly narrow spread of end-dates between AD1175 and AD1219 suggests much of the timberwork present is, if not exactly contemporary, at least the result of a relatively short period of occupation in the mid 13th century.

Acknowledgements

My thanks to Marina Ciaraldi for supplying information about the samples, and Rowena Gale for supplying both the samples themselves and the wood identification details for the non-oak timbers.

References

English Heritage, 1998 *Guidelines on producing and interpreting dendrochronological dates*, London.

Appendix 4

List of wood identification samples

Sample No.	Structure/ Feature/Context	Notes
1	Structure 2	Large log in section, oblique. RB
2, 3, 4, 5	Structure 2	South side of platform. Group of samples close to section. laid not perfectly horizontal, SB, WW
7	Structure 2	South side of the platform Thick log
7.5	Structure 2	South side of the platform thin log
8	Structure 2	South side of the platform SB, WW thin log
9	Structure 2	South side of the platform SB, WW. Goes under platform
9.5	Structure 2	South side of the platform 2 smaller wood
10, 10.5, 11, 12	Structure 2	Samples 10-12 are a group of similar logs with SB, WW and similar thickness, preservation and colour. They are almost as long as the entire platform
13, 13.5, 14, 14.5, 15, 15.5, 16	Structure 2	Samples 13-16 are a group of very similar logs with same thickness, preservation and colour. Sample 13 is thin end of the log.
17	Structure 2	North side of platform, RB, WW
17.5	Structure 2	North side of platform, RB, WW
18	Structure 2	North side of platform, only 1m of the log emerges, RB, WW
19	Structure 2	North side of platform, long log L=1.70m, RB, WW sinks in the middle of platform. Thicker end sampled
19.5	Structure 2	North side of platform, long log L=2m, RB, goes underneath slab. thinner end sampled
20	Structure 2	North side of platform, short log L=30cm. goes underneath sandstone slabs
21	Structure 2	North side of platform, short log L=30cm. prob. RB, WW
22	Structure 2	North side of platform, short log L=25cm, RB, WW, damaged and broken log
23	Structure 2	
24	Structure 2	North side of platform, RB, WW, L=2.50. Goes underneath large sandstone in the middle of the platform
25	Structure 2	
26	Structure 2	
27	Structure 2	South side of platform. L=2.5m (but not completely visible, probably longer, RB
27.5	Structure 2	
28	Structure 2	South side of platform. L=3.5-4m, SB, WW
29	Structure 2	South side of platform. Log not straight, L=3.5m, WW, bark not visible
30	Structure 2	South side of platform. Short log around 50cm. RB, WW
31	Structure 2	South side of platform. WW, bark not visible
32	Structure 2	South side of platform. RB, WW not visible, log seems to go underneath the cobbled area
33	Structure 2	South side of platform. RB, WW not visible, log seems to go underneath the cobbled area . It could be same log as 13-14
34	Structure 2	South side of platform. RB, WW not visible, log goes underneath sandstone
36	Structure 2	
37	Structure 2	South side of platform. Long log not sampled by MC
38	Structure 2	
39	Structure 2	South side of platform. Log partly inside the section. Straight end. Could be the same log as that sampled in 1999 (BRS99)
40	Structure 2	South side of platform. SB, WW not visible, probably broken

Sample No.	Structure/ Feature/Context	Notes
41	Structure 2	Longitudinal log. not sampled by MC
42	Structure 2	North side of platform, SB, straight end although probably because damaged. Prob. 42=25 with 42 thinner end. Log damaged in the middle. L=3.50
45	Structure 2	Various small twigs collected from the top of the platform, in the central area
D	Structure 2	Upright
E	Structure 2	Upright
M	Structure 2	Upright
100	F304/3049	Flat board, from top of drain
101	F306/3048	Upright
102	F304/3049	Flat board from side of drain
103	F302/3017	Barrel
104	F302/3017	Barrel, round sided bottom
105	3004	Upright squared and pointed
106	3004	Upright

Legend: SB = Smooth bark; RB = Rough bark; WW = worked wood

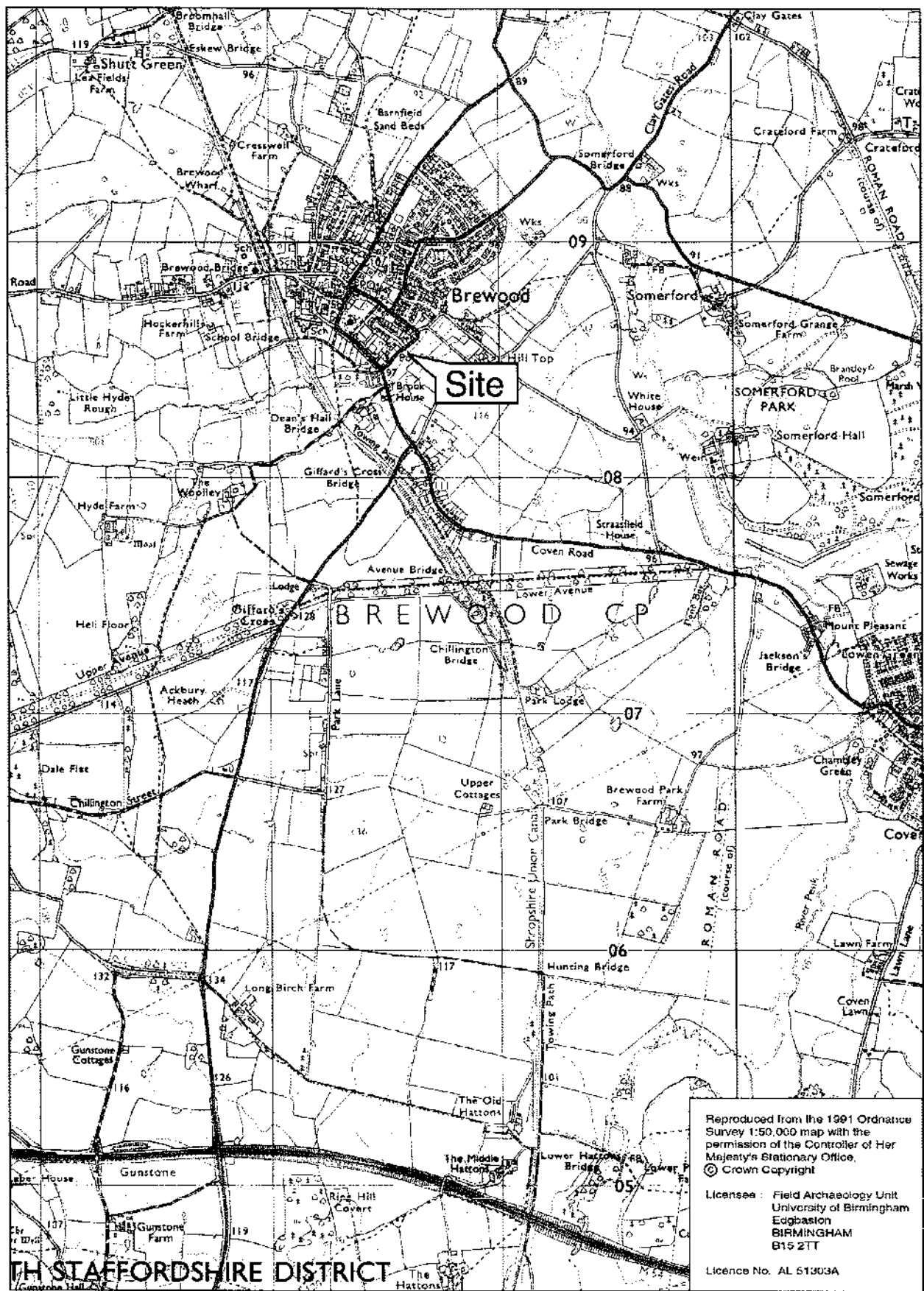


Fig.1

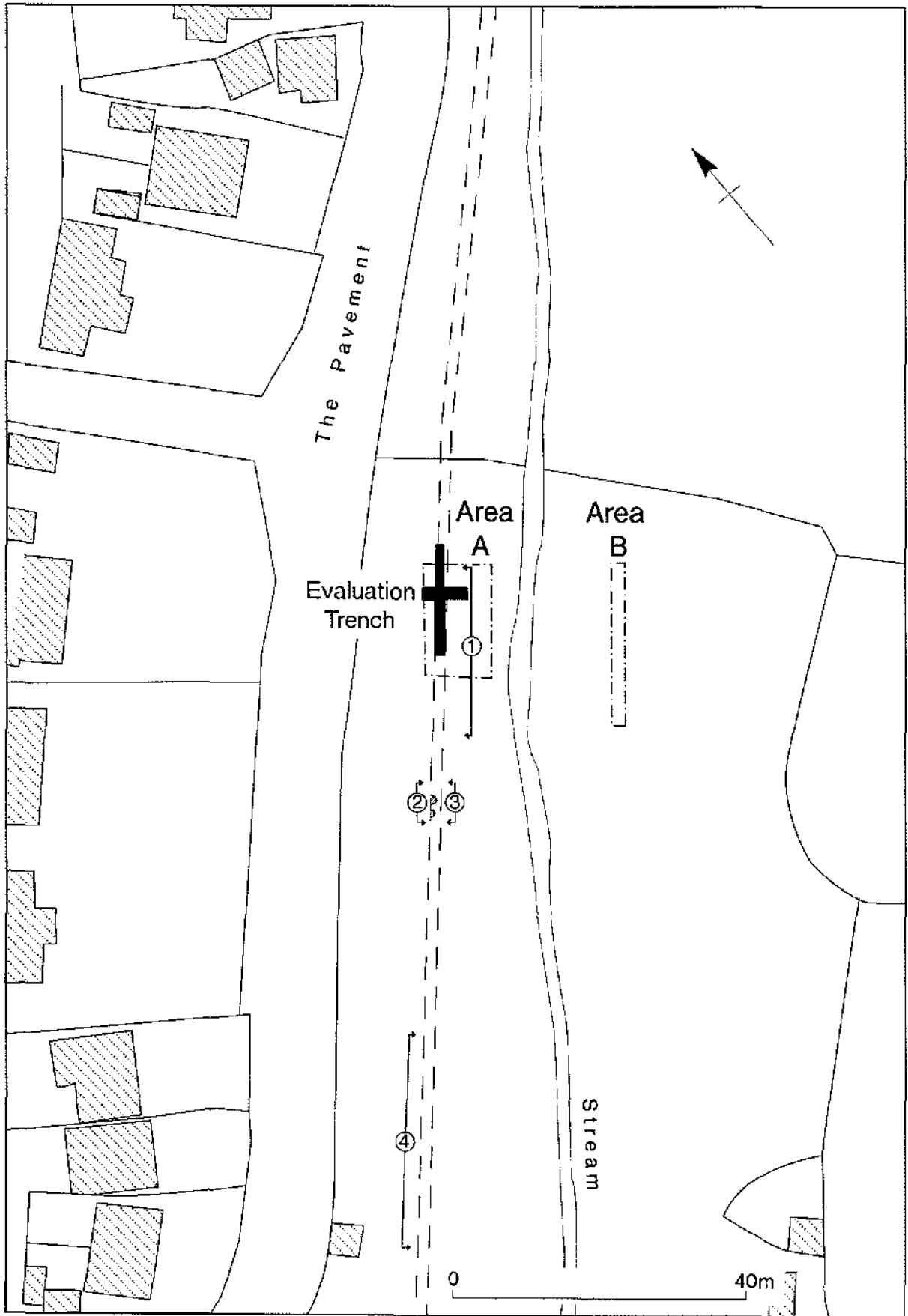


Fig.2

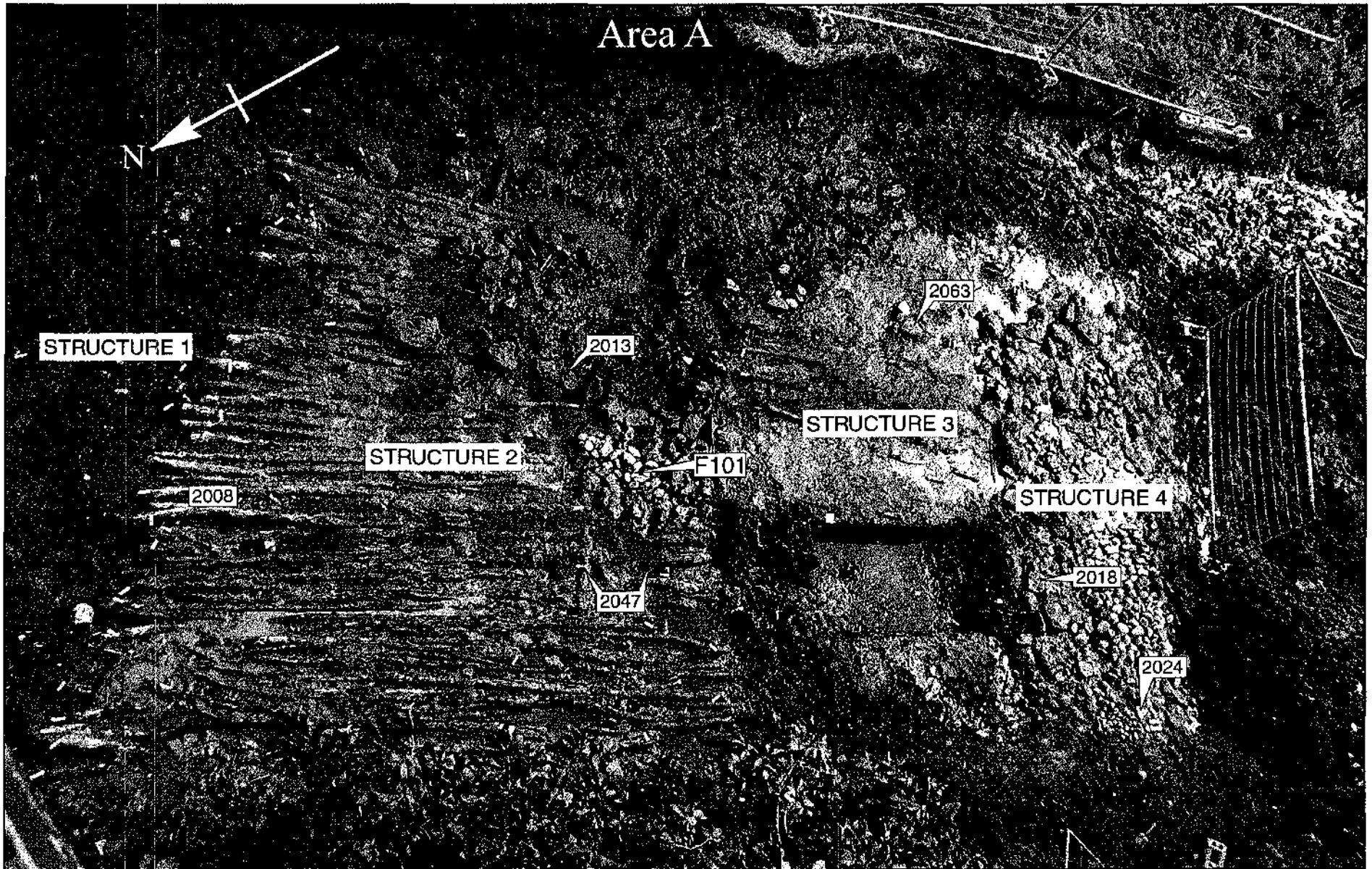


Fig.3

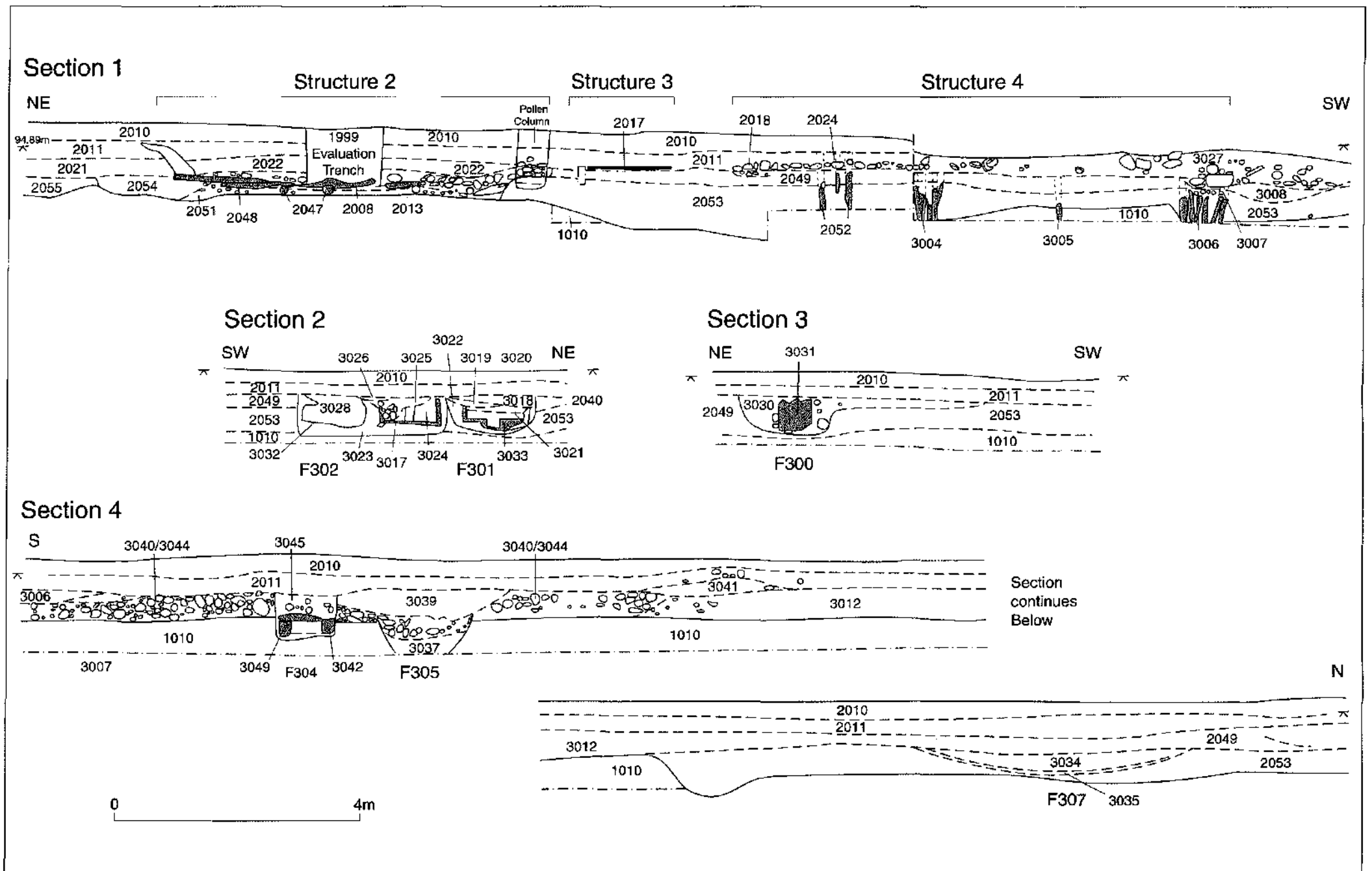


Fig.4