

Reports from the Environmental Archaeology Unit, York 95/35, 21pp.

**Assessment of biological remains from excavations at 1-2 Tower Street
(Castle Garage), York (YAT/Yorkshire Museum sitecode 1981.3)**

by

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Summary

A small group of samples of sediment, and residues from bulk-sieving, from excavations in 1981 at 1-2 Tower Street, York, has been assessed for their content of biological remains and consequent value for archaeological interpretation.

Many of the samples proved to contain at least small numbers of well preserved plant and animal remains. There is some potential for improving some aspects of interpretation at the context and, to a limited extent, site levels, particularly in regard to the history of infilling of the putative Castle ditch.

Keywords: TOWER STREET; CASTLE GARAGE; YORK; ASSESSMENT; MEDIEVAL; POST-MEDIEVAL; CASTLE DITCH; PLANT REMAINS; PARASITIC WORMS; INSECT REMAINS

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20 September 1995

Assessment of biological remains from excavations at 1-2 Tower Street (Castle Garage), York (YAT/Yorkshire Museum sitecode 1981.3)

Introduction

Excavations at the Castle Garage site, York, were carried out in 1981 under the direction of Patrick Ottaway. Three areas were opened, exposing a variety of features of 12th to 19th century date. Samples were collected only from Trenches 1 and 3. The principal deposits considered for assessment were a sequence of ditch fills revealed in Trench 1. This ditch seemed likely to have formed part of the defences for a north bailey of York Castle. Topics for investigation through biological remains and sediments include: (a) the nature of the ditch itself, including any connections with the Rivers Ouse and Foss; (b) the nature and history of the fills of the ditch and its recuts; and (c) the usage of and ecological conditions in the surrounding area.

Material available and previous work

A total of 100 samples of various kinds was taken during excavations at this site (Table 1). The BS samples (*sensu* Dobney *et al.* 1992) had been sieved at the time of excavation and had mostly been stored as dry residues and washovers; most had been sorted in the laboratory shortly after excavation. Samples of all types had been stored in polyethylene bags and in some cases loose bagging had resulted in complete desiccation of the sample. The sediment in some of the larger GBAs appeared to have experienced little decay in store, however.

Analysis of a series of deposits from the large ditches revealed by excavation at this site were undertaken as part of a student project by Ms F. Stone (University of Bradford) in 1982 (under the supervision of HK). She examined one 1 kg subsample and one 2 kg subsample from Samples 24 (Context 1216), 94 (Context 1262), 96 (1262), 97 (1283), 98 and 99 (1284) and 100 (1297) and a single 1 kg subsample from Sample 93 (1297). All these contexts were from the primary ditch fill in Cut 1452 (Period 1.5, an organic silty clay) with the exception of samples from Context 1262 (Period 1.7, fill of gully cut 1264, through earliest ditch fills). A single subsample of Sample 100 was examined for parasite eggs in

1984, under the supervision of A. K. G. Jones. In view of the nature of Ms Stone's project and the possibility that material had degenerated in storage it was considered necessary to process new material for all contexts chosen for assessment.

Bone from these excavations has been recorded by Ms Stone, under the supervision of Dr T. O'Connor, and will be considered elsewhere.

Methods

Assessment of the surviving material was undertaken in July-September 1995. An initial inspection of all the samples available was made and a group of 14 of the unprocessed sediments samples (10 GBAs, 2 Spots, 1 Soil and 1 Column sample) selected for further analysis by means of a 1 kg 'test' subsample (Kenward *et al.* 1986), using methods outlined by Kenward *et al.* (1980). Parasite eggs and some other microfossils were reviewed for these same samples by means of a 'squash' (Dainton 1992).

Two BS residues which had been stored wet were rewashed and dried and the components of all the BS washovers and residues recorded quickly using a standard *pro forma*. It was clear that not all fractions of all the BS samples were available but all 'inclusions' recovered during sorting in 1982 were checked and recorded on a three-point scale of abundance.

Results and discussion

Preservation of biological remains varied greatly; some layers gave only the most robust material (bone, shell and charred plant remains), while certain of the cut fills, particularly the fill of the large ditch revealed in Trench 1, gave rather good preservation of the more delicate remains by anoxic waterlogging. These remains included plant macrofossils, insects (including some fly puparia, but principally beetles), other arthropods, and (rarely) parasitic worm eggs. In addition, diatoms and phytoliths (both rather more robust siliceous microfossils) were

noted from some samples. Overall, however, none of the deposits yielded substantial concentrations of well preserved remains.

Comments on the samples examined in the assessment are presented in Table 2, arranged in period/phase/context/sample order. Some results of analyses of the 'test' subsamples appear in Table 3 (following the same order).

'Castle Ditch' deposits (Period 1, C12th-early C13th)

The fills of the putative castle ditch which were assessed here all gave at least some 'waterlogged' plant and invertebrate remains, and in a number of cases there were assemblages of considerable size and with useful interpretative potential. This preliminary work suggests that the ditch did not hold permanent water, or if it did then it was not deep and something (severe pollution?) prevented the development of rich aquatic communities. Plants of moist nutrient-enriched soils were certainly quite common in some of the deposits and may have grown within the ditch. The aquatic invertebrates would have been able to colonise temporary water at the bottom of the ditch, perhaps even amongst standing vegetation.

There is some evidence for dumping of organic waste: hints of material resembling stable manure, and perhaps also food waste. This latter may have been in the form of faeces, but the numbers of parasitic nematodes (*Trichuris* sp. and perhaps also *Ascaris* sp.) were always small. Systematic examination and the use of larger subsamples might give clarification on these points. There was certainly large-scale dumping into the ditch at some stages, since most of the BS samples contained a wide variety of components, including pottery metalwork, glass, brick/tile, mortar/plaster, slag, charcoal, bone, leather and shellfish. The traces of possible dyeplants in Context 1265 may indicate some reworking of Anglo-Scandinavian deposits (if, as seems very likely, it can be assumed that the clubmoss, *Diphasium*, is characteristic of deposits of that period).

There is no evidence that the ditch was fed by the rivers, apart from the records of statoblasts (resting stages) of the bryozoans *Lophopus crystallinus* (Pallas) and *Cristatella mucedo* Cuvier, species not at all likely to have lived in

the ditch in static, even slightly polluted, water. The lack of plant and insect remains indicative of flowing water rather suggests that inwash from the rivers was not a regular event unless some remarkable set of circumstances prevented deposition of river silts. There were certainly no layers with a biota resembling those seen in excavations of clearly waterlain deposits close to the Foss in nearby Piccadilly (Carrott *et al.* 1991; 1992a; b), silts presumably laid down in the Kings Pool, whose creation appears to have been tied up with the construction of the Castle defences. There were traces of freshwater snails in several ditch fill contexts (and moderately large numbers in Context 1273), but they were species likely to colonise any reasonably clean body of water and not necessarily carried by flood water. The ditch may have been seasonally flooded through a rising water table or surface runoff, however.

Although there was plentiful fine sediment in the deposits, the mixture of remains recorded indicates that the 'silt' is likely to have originated locally, through inwash or dumping. In this context it is worth noting that whilst the laboratory sediment description of Sample 34 from Context 1262 suggested that it might have formed in static water, it was from the fill of a gully cut through the earliest ditch fills rather than a ditch fill *per se*.

Small numbers of fly puparia were recorded; selective identifications of these will probably complement the evidence from the beetle remains. The diatoms observed in certain deposits may have the potential to provide a clearer definition of the water regime in the ditch, and a closer examination of the phytoliths could contribute to the identification of plant materials within these fills.

It is suspected, however, that further biological investigations, although worthwhile, will only serve to clarify these points to a limited degree, unless through the serendipitous discovery of ecologically unambiguous riverine assemblages.

Other deposits

The two gully fills of Period 2 (mid C13th-early C14th) appeared (on the basis of evidence from the GBA and BS samples) to be principally dumps of heterogeneous material, probably including stable manure in the case of Context 1194. This latter deposit was exceptionally richly organic for this site. In

contrast, the 'test' subsample from Context 1221 was almost barren of plant and invertebrate remains, although it was characterised by an abundance of avian eggshell, a separate 'spot' subsample representing one patch of sediment in which eggshell was concentrated in a remarkable way (a further sample of this deposit was lithologically quite different, emphasising the heterogeneity of these fills).

A pit fill (Context 3131) of Period 3 (late C14th-early C16th) appears to have had mixed origins; the seemingly 'cessy' character noted during inspection of the sediment of the GBA sample was not borne out by the examination of the 'test' subsample, which gave almost no preservation by anoxic waterlogging; equally, the 'squash' gave no evidence for the presence of parasitic worm eggs. The bulk-sieved residue was recorded as consisting mainly of tile and mortar. A further pit fill (Context 3145) also appeared to have a wide variety of materials, but with no one component predominating.

The principal feature of Period 4 (C17th-C18th) examined for assessment was a soakaway pit and an associated drain. Preservation by anoxic waterlogging in the fills of the soakaway was poor, but there were appreciable numbers of insect remains, some just identifiable and others rotted beyond reasonable identification. It appeared likely that some worthwhile information could be obtained by identifying the remains from larger subsamples. No parasitic worm eggs were recorded for this deposit; the fact that insects had survived (albeit in poor condition) suggests that absence of worm eggs was not wholly a function of poor preservation. There were small quantities of similar insect remains in the drain fill, but it is not considered that a large subsample would provide an interpretable assemblage. None of these deposits gave more than a trace of plant material other than charcoal. In sum, then, the evidence from these Period 4 features suggests that they functioned as part of a clean water drainage system, rather than for foul waste disposal.

Overall, the biota of these deposits at Tower Street appear unlikely to provide substantial information, certainly not beyond the level of context or feature interpretation. A limited study would be worthwhile if resources are available. It is conceivable that a large-scale study of the ditch fills might clarify aspects of the use and infilling of this important part of

the early medieval landscape of York, but it would be difficult to justify speculative expenditure on the scale required.

Overall priority for site

The biological remains from 1-2 Tower Street taken as a whole and on the basis of their potential for archaeological interpretation are regarded as having moderate importance at the context, feature and site levels. They cannot be considered to be of more than slight value at the local and regional levels, and are unlikely to have any national or international significance.

Problems to be addressed by further work

For the ditch fills, the objectives of further analysis would be to attempt to

- (a) define the processes leading to infilling
- (b) define the nature and sources of components of the fills
- (c) determine ecological conditions within the ditch at the various stages of infilling
- (d) clarify the extent of riverine influence within the ditches

It would also be appropriate to attempt to characterise the area drained by the soakaway in Trench 3.

Recommendations

It is recommended that, if resources are available, the problems listed above are addressed. For this, all the samples designated P1 or LP1 for any class of remains in Table 3 should be examined further (and by means of larger subsamples where indicated) for plant and invertebrate macrofossils and parasite eggs. Additional time should be allowed for selective work on fly puparia (not mentioned specifically in Table 3 because numbers were always small). These analyses should clarify the means of formation of ditch fill deposits and identify components contributing to each of the fill contexts in both pits and ditches.

Examination of phytoliths and of herbaceous detritus from certain of the ditch fills in order to establish the nature of the dumped organic

component is also desirable. Selective analyses of diatoms might be carried out in order to determine whether they indicate damp ground or open water conditions (and possibly riverine influence).

The resources required to carry out the recommended programme of further analysis are summarised in Table 4.

Retention and disposal

All of the extant material should be retained for the present.

Acknowledgements

The authors are grateful to Dr Patrick Ottaway (York Archaeological Trust) for the provision of archaeological information relating to this site and to Gill Woolrich (YAT) for assistance with sample storage and transport. The study was funded by English Heritage through York Archaeological Trust and by EH's Ancient Monuments Laboratory.

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Table 1. Numbers and types of samples from 1-2 Tower Street and their distribution through the archaeological phases. Some of the samples could not be found in store, so the numbers located are given.

Sample type	No. taken	No. located	No. located by period/phase										
			0	1.2	1.5	1.7	2.8	2.9	2.13	2.19	3.1	4.5	4.10
BS	23	11	-	-	5	-	2	1	-	1	2	-	-
GBA	29	25	-	1	9	5	1	-	1	-	3	-	5
(GBA Column samples)	5	4	-	-	3	1	-	-	-	-	-	-	-
Soil	4	4	1	-	1	-	-	1	1	-	-	-	-
Spot	39	8	-	-	1	1	2	-	2	-	2	-	-

Table 2. Samples received for assessment. Notes on raw sediment and previously processed residues. NFA: no further analysis recommended

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
0 (Natural)	0	3090	15	SOIL		natural	three samples of natural drift; NFA
1 (C12-early C13)	02	1303	92	BS	7 buckets	primary ditch fill in gully-like cut 1310 (black silt)	residue not located, but sorting record indicates it contained pottery, metalwork, glass, brick/tile, mortar/plaster, slag, wood, charcoal, nutshell, moss, bone, leather and shellfish; sorted inclusions included hazel nutshell, a freshwater snail, leather, oyster shell and a wetland moss, <i>Scorpidium scorpioides</i>
			101	GBA			(sample recovered from standing water: probably some contamination); appears to be a waterlain silty clay; NFA

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
	05	1216	24	GBA		primary ditch fills in 1452 (organic silty clay)	sample almost completely desiccated; bulk-sieved to reduce volume; residue consisted of about 4 l. of gravel and wood fragments with moderate amounts of pottery, a little bone, charcoal, brick/tile and hazel nutshell; some large fragments of leather shoe with offcuts
			25	BS	1 dust-bin		very small bag of washover: mostly wood fragments with a trace of hazel nutshell; residue mainly stone and gravel with some wood, bark and charcoal; sorting notes indicate the presence of pottery, metalwork, slag, grain, nutshell, bone, shellfish and eggshell; sorted components included moderate amounts of hazel nutshell, leather and <i>Polytrichum</i> shoots, together with a few other moss fragments and traces of charred oats and barley
			28	SPOT			a small collection of moss (<i>Polytrichum commune</i>) stems and a small pad of moss (<i>Neckera complanata</i>), together with a little fish scale and bone; NFA
			57	SPOT (wood)			wood: suitable for identification if required
		1217	36	GBA			rather heterogeneous; locally humic; subsampled for 'test'
			37	SPOT			a small collection of bone (including fish, bird and mammal), a garden snail (<i>Helix aspersa</i>), a winkle (<i>Littorina</i> sp.), hazel nutshell, a few moss (<i>Polytrichum commune</i>) stems and some ?straw; NFA

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
		1265	39	BS	7 buckets		small washover of wood, charcoal and herbaceous detritus with many seeds, especially nitrophile weeds, together with sloes, (charred) oats, hemp (<i>Cannabis sativa</i>) and a possible madder (<i>Rubia tinctorum</i>) root fragment; residue mainly stone and gravel; sorting notes indicate the presence of pottery, iron objects, a jet bead, glass, wood, charcoal, nutshell, bone, shellfish and eggshell; sorted components included traces of clubmoss (<i>Diphasium</i>) shoot fragments
			40	GBA			slightly humic clay silt; NFA
				41	BS		
		1271	44	BS	7 buckets		the small washover consisted of wood fragments and herbaceous detritus with some seeds and charcoal; the residue was mostly stone; sorting records indicate there to have been pottery, slag, lead, wood, twigs, nutshell, bone, land snails, shellfish and eggshell

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
		1273	43	BS	7 buckets		bag of moist and rotting residue; rewashed; a separate bag within the main one, which appeared to be a washover, was a BS washover from 16-22 Coppergate (1976-81.7); the residue consisted mainly of very decayed wood with moderate amounts of charcoal, gravel and stone; sorting notes (for another residue for the same sample?) indicated the presence of pottery, slag, iron nails, wood, charcoal, nutshell, bone, land and freshwater snails, shellfish and eggshell; sorted material from the residue included moderate amounts of charcoal, wood and dock (<i>Rumex</i>) fruits, perianths and flowering stalk fragments; a wide range of other remains was present, including freshwater snails (<i>Planorbis</i> sp.), <i>Helix aspersa</i> , hemp, charred oats, barley, wheat and field bean (<i>Vicia faba</i>) and several weeds of waste ground/cultivated soils, including soils with impeded drainage
		1276	66	SOIL			appeared to be rather decayed; subsampled for 'test' as an example of material suffering decay during storage
		1278	67	BS	8 buckets	primary ditch fill in 1452 (clay: perhaps slump from sides of cut)	small residue of pebbles and stone with a trace of brick/tile; sorting notes indicate that pottery, slag, nutshell, bone and shellfish were present

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
		1280	68	BS	5 buckets	primary ditch fills in 1452 (organic silty clay)	the small washover was of wood and charcoal with weed seeds and moderate numbers of cultivated oat spikelets with grains; the record of sorting indicates the residue to have contained pottery, slag, charcoal, wood, nutshell, bone, shellfish and eggshell; sorted inclusions from the residue included traces of moss, nutshell, eggshell, sloes and wood
		1281	70	GBA		primary ditch fill in 1452 (clay: perhaps slump from sides of cut)	clay: NFA
			71	BS			residue not located but sorting record indicates it contained pottery, slag, brick/tile, mortar/plaster, nutshell, bone and shellfish
		1282	72	BS	5 buckets	primary ditch fills in 1452 (organic silty clay)	no residue located but sorting records indicate it contained pottery, slag, glass, wood, bark, twigs, nutshell, bone, land snails and shellfish; sorted inclusions included moderate amounts of wood and twig fragments with a range of other items, including charred oats and wheat, sloes, hazel nutshell, eggshell, marine shell, terrestrial and freshwater snails, and hempseed
			73	GBA			humic sandy clay silt; subsampled for 'test'
		1283	97	GBA			already examined by F. Stone; NFA
		1284	90	BS	1 dustbin		very small residue of stones with traces of wood and charcoal; sorting notes indicate it also contained pottery, nutshell, bone and shellfish (terrestrial and freshwater snails and oyster shell fragments were noted from the sorted inclusions)

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
			91	BS	7 buckets		small residue of pebbles with a little wood; eggshell, freshwater snails, oyster shell and a single 'cherry' stone were recorded as inclusions
			98	GBA			sample appeared to be bone, stone and pot ?from a subsample processed by F. Stone
		1297	93	GBA			sample drying out and very decayed; subsampled for 'test' for comparison with F. Stone's material
			100	GBA			very small sample; NFA
		parts of Contexts 1216, 1217 and 1267	83	COLUMN			NFA
		parts of Contexts 1269/1271	84	COLUMN			silty clay with ?decayed organics; some bone; subsampled for 'test'
		Parts of Contexts 1275 and 1276	86	COLUMN			stiff clay; NFA

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
	06	1270	42	BS	4 buckets	possibly a rough cobbled surface on a level platform at base of ditch	small washover located: consists mainly of wood and charcoal with some burnt bone; moderate amounts of well preserved cultivated oat (<i>Avena sativa</i>) spikelets (with grains) and traces of wheat and barley; also at least one charred straw node; residue mostly stone and cobbles with traces of wood, brick/tile, charcoal and bone; sorting notes indicate the presence also of pottery, ironwork, nutshell, shellfish and eggshell; inclusions sorted from residue included moderate amounts of oat grains (including some cultivated oats), and traces of barley and wheat; ?freshwater mussel shell fragments also present, with some marine shell
	07	1262	34	GBA		fill of gully cut 1264 through earliest ditch fills	appears to be waterlain ('cheesy' muddy silt); subsampled for 'test'
			35	SPOT ('leaves and twigs')			soft, humic sediment; subsampled for 'test'
			38	GBA			NFA
			82	COLUMN			NFA
			94	GBA			NFA
			95	GBA			NFA
			96	GBA			completely desiccated; NFA
2 (mid C13-early C14)	08	1183	19	BS	1 dustbin	fill of recut of gully 1264 (silty clay)	residue of abundant limestone and tile with a small washover of wood flakes and a little bone; sorting notes indicate the additional presence of large amounts of bone, traces of snails and shellfish and of nutshell

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
		1194	20	BS	? (form lost)		residue mainly stone with traces of wood and brick/tile; sorting record indicates the presence of pottery, slag, iron nails, amber, grain, nutshell, moss, bone and something described as 'reddish coloured dye'; the latter not observed in inclusions recovered from residue, which included moderate amounts of charcoal, leather, wood and twig fragments; there was also a little charred oats and barley and a single fragment of an (archaeologically rare) cornfield weed, <i>Caucalis platycarpus</i>
			21	GBA			very organic; subsampled for 'test'
			22	SPOT ('unknown material')			wholly organic matter; subsampled for 'test'
		1255	32	BS	7 buckets		small residue, apparently <2 mm fraction left after sorting; residue not located but sorting notes indicate the presence of pottery, slag, glass, brick/tile, mortar/plaster, wood, nutshell, bone, shellfish and eggshell; sorted inclusions from residue included traces of oats and ?wheat, of 'cherry' and apple, and a single leaf fragment of box (<i>Buxus sempervirens</i>)
		1256	31	SPOT		desiccated; a concentration of bird eggshell	
	09	1164	17	BS	1 dust-bin	ditch fill post-dating gullies of phases 7 and 8 (thick, highly organic layer)	very small residue of coal, freshwater snails, bone; sorting notes indicate the presence in the residue of wood, nutshell, bone and shellfish, together with pottery, metallic slag, and abundant brick/tile and stone

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
		1185	18	SOIL	8 buckets	ditch fill post-dating gullies of phases 7 and 8 (sandy lens)	sandy sediment; sorting notes indicate the residue contained much pottery, together with some iron objects, glass, a coin, a jet bead, slag, charcoal, some charred grains, much bone, fish scale and eggshell
	13	1138	14	SOIL		not specified in narrative	small sample of desiccated pale orange-brown silty sand; NFA
		1221	26	SPOT		gully fill in 1222	a concentration of bird eggshell with traces of charcoal and fish vertebrae in a clay silt matrix; completely desiccated
			27	GBA			sample rich in eggshell; subsampled for 'test'
			29	SPOT			brown, moist, more or less crumbly silt with stones to 35 mm and small patches of grey-brown and yellow-grey clay; black smears (?manganese rather than carbon); NFA
	19	1145	16	BS	5 buckets	layer over sand path 1146 and drain 1149 and in the middle of the ditch in phase 17 and 18 (clay loam)	tiny washover of charcoal to 20 mm; and a residue of stone and gravel with traces of brick/tile and ?some slag; sorting notes indicate the presence of charcoal, bone, eggshell, shellfish, pottery and metalwork
	3 (late C14-early C16)	01	3109	51	SPOT ('burnt wood')		fill of pit 3110
3123			6	GBA		fill of pit 3114	labelling ambiguous; NFA
3124			7	GBA			grey-brown silt; NFA
3131			9	GBA			?'cessy'; subsampled for 'test'; the residue from an earlier 1 kg subsample consisted of sand and gravel with moderate amounts of brick/tile

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
			10	BS	6 buckets		residue comprised abundant tile and mortar with a trace of coal; sorting notes indicate the presence of wood, bark, twig fragments, grain, bone, shellfish, eggshell, together with pottery and metalwork
		3145	13	BS	13 buckets	fill of pit 3129	a large residue of stone with traces of coal, brick/tile, cinder and bone; washover mostly charcoal to 15 mm; sorting notes indicate the presence of traces of wood, charcoal, bone, shellfish, worked bone (including a comb fragment), pottery, metalwork and slag; sorted inclusions from the residue included traces of oats, barley and wheat, and of hazel nutshell
	22	1082	12	BS	?no record of sieving	fill of pit or other cut; probably C15th	the residue from a 1 kg subsample processed to check preservation was all that could be located; it consisted of sand with a little gravel and a single mammal bone fragment; NFA
4 (C17-C18)	05	3028	49	SPOT ('wood')		fourth spit of dark loam; pot is C18th	wood probably identifiable
	10	3009	1	GBA		fill of soakaway pit 3014	dense, humic; subsampled for 'test'
		3010	2	GBA			dark and 'earthy'; subsampled for 'test'
		3011	3	GBA			unlikely to have organic preservation (?backfill); NFA; the residue from an earlier 1 kg subsample consisted of mortar with some brick/tile and a trace of charcoal
		3012	4	GBA			NFA

Period (and date)	Phase	Context	Sample	Sample type	BS size	Context type and excavator's comments	Assessment notes and action
		3019	5	GBA		fill of drain 3017 leading to soakaway pit 3014	sandy, ?humic, clay; subsampled for 'test'

Table 3. Results of analyses of 'test' subsamples for selected GBAs. Flots of normal size unless noted. Key: CN - context number; Per - period; Ph - phase; SN - sample number. In Priority column: Pn - priority; +3 - process larger subsample (in this case 3 kg); S - sorting time; R - recording time; LPn -priority for larger subsample (if different); LR - time for recording recommended larger subsample. In Microfossils column, ptlths = phytoliths. Times are only for specified tasks, and do not include allowances for ancillary activities, data analysis and reporting.

Per	Ph	CN	SN	Matrix and biota	Priorities and times		
					Plants	Micro-fossils	Insects, etc.
1	05	1217	36	Of the moderately large residue, about 60% was organic material including very decayed wood, a little charcoal (to 20 mm) and herbaceous detritus. The remainder was sand and gravel, with a trace of mammal bone to 35 mm. Identifiable plant remains included arable and waste ground weeds, some wetland taxa and a trace of hazel nutshell. The flot gave a fairly small group of beetles and bugs, with just enough aquatics to suggest deposition in water. Terrestrial insects were mostly decomposers, with hints of stable manure-like material. Some terrestrial outdoor forms, circumjacent or from further afield? Larger subsample would allow identification of dumped material and its source. The 'squash' yielded traces of <i>Trichuris</i> , together with some phytoliths and diatoms.	P2 R1	P1 R2 + ptlths	P2 R1.5 LP1 +3-4 LR4
		1276	66	The small residue was mostly sand and gravel with a trace of wood to 20 mm; <i>Atriplex</i> seeds were abundant in the flot, along with moderate numbers of <i>Chenopodium</i> Sect. <i>Pseudoblitum</i> and some other weeds. Small numbers of insect remains in the flot, some aquatics and a few terrestrial decomposers. Perhaps dumped organic matter or background fauna; a few outdoor forms. Larger subsample unlikely to be much more informative.	P2-3 R1	P0 R0	P3 R0.5
		1282	73	The smallish residue was mainly sand and gravel with about 20% organic material, including wood to 20 mm; the flot included moderate numbers of <i>Ranunculus sceleratus</i> achenes and some other taxa (of little interpretative significance). Very few invertebrate remains in the flot; enough aquatics to suggest deposition in water, rest probably background fauna. Larger subsample unlikely to give much more information.	P2-3 R1	P0 R0	P3 R0.5

Per	Ph	CN	SN	Matrix and biota	Priorities and times		
					Plants	Micro-fossils	Insects, etc.
		1297 ditch fill	93	The residue was about 20% organic matter, mainly fine plant detritus and including moderate numbers of seeds of <i>Ranunculus sceleratus</i> , <i>Urtica dioica</i> and <i>Conium maculatum</i> with a few other weeds (these were also prominent in the flot); traces of flax capsule fragments and traces of charcoal; the remainder of the residue sand and gravel. Very few invertebrates; a few aquatic, terrestrial and waterside beetles. Some critical identifications. Hint of input from one of the rivers from <i>Lophopus crystallinus</i> ; in view of this, process more.	P2-3 R1	P0 R0	P2 R1.0 LP1 +4-5 LR4
		parts of Con- texts 1269/ 1271 ditch fill	84	The small residue was mainly sand and gravel with traces of mammal bone to 30 mm and charcoal to 15; the flot contained abundant <i>Ranunculus sceleratus</i> achenes, moderate numbers of <i>Urtica dioica</i> and a few other weeds. Flot as Sample 93, but <i>Cristatella mucedo</i> as well as <i>L. cristallinus</i> , strengthening suspicion of limited riverine input. A trace of <i>Trichuris</i> and a few diatoms recorded from the 'squash'.	P2-3 R1	P1 R2	P2 R0.5 LP1 +4-5 LR2.0
07		1262 ditch fill	34	The very small residue consisted mainly of small clasts of ?recrystallised calcite, together with moderate numbers of a variety of weed seeds. A linseed (<i>Linum usitatissimum</i>) was observed, together with leaves of <i>Sphagnum</i> ; the latter were also present in the flot, along with small (<1 mm) fragments of wheat/rye bran. This seems likely to contain some food waste, perhaps in faeces. Few insects in the flot, probably including some aquatic and wet-ground fauna. Terrestrial forms perhaps from gully edge or background fauna (including inwash or windblow, perhaps). No point in further work on invertebrates unless to catalogue; larger subsample unlikely to be helpful. There were traces of <i>Trichuris</i> and some diatoms in the 'squash'.	P1 R1.5	P1 R2	P3 R0.5

Per	Ph	CN	SN	Matrix and biota	Priorities and times		
					Plants	Micro-fossils	Insects, etc.
			35	The residue was small and consisted of about 80% organic material, including twig fragments to 30 mm and one large lump (to 50 mm) of fen peat. The identifiable plant remains included moderate numbers of <i>Ranunculus sceleratus</i> , <i>Conium maculatum</i> and <i>Sambucus nigra</i> , with several other probable weed taxa and some bud-scales of willow (<i>Salix</i>). Numerous insects remaining in residue. Flot with a modest-sized group of beetles and bugs and abundant other remains, mostly fly immatures. Numerous aquatics and a few terrestrial forms (as Sample 34). Larger subsample would give interpretatively useful assemblage. 'Squash' contained some very badly preserved ? <i>Trichuris</i> eggs and a few diatoms.	P1-2 R1	P1 R2	P1 R2 LP1 LR6
2	08	1194 gully fill	21	<p>The moderately large residue consisted of about 60% organic matter, including twig fragments to 20 mm, some very degraded wood, and charcoal to 10 mm. There was some herbaceous detritus and a moderately large assemblage of weeds of waste places and cultivated soils, together with some indicators of wetland and <i>Sphagnum</i> leaves.</p> <p>The flot contained a modest number of insect remains. The beetles ranged from superbly to rather poorly preserved. There were some aquatics but the fauna was mainly terrestrial decomposers. Parts of a flea and ?honeybee. Overall, fauna appears to a mix of insects dumped with organic waste or redeposited soil, and background fauna, perhaps of circumjacent origin. A larger subsample might clarify matters.</p> <p>There were many diatoms, some fungal spores and phytoliths and traces of ?<i>Ascaris</i> in the 'squash'.</p>	P2 R1	P1 R2 +ptlths +diatoms	P2 R3.0 LP1 +3-4 LR8

Per	Ph	CN	SN	Matrix and biota	Priorities and times		
					Plants	Micro-fossils	Insects, etc.
			22	Residue about 70% by volume organic matter, including wood fragments (to 35 mm) and herbaceous detritus. A little charcoal to 10 mm. The rest sand and gravel with some bone (including fish) to 150 mm. Identifiable plant remains mainly weeds of waste places and arable fields; some possible uncharred cereal chaff/straw fragments. There were moderate numbers of insect remains in the flot; decomposers (with hints of house fauna and foul matter) and outdoor taxa which may have been from nearby vegetation. However, subjectively, whole fauna is suggestive of stable manure. Larger subsample and plant evidence would allow proper characterisation. Many phytoliths and diatoms and some fungal spores in 'squash', with traces of ? <i>Trichuris</i> and ? <i>Ascaris</i> .	P2 R1	P1 R2 +ptlths +diatoms	P1 R1.5 +3 R4
	13	1221 gully fill	27	The washover consisted of charcoal to 15 mm; the residue was of sand with some brick/tile to 15 mm, fish bone and fish scale with moderate amounts of eggshell. No invertebrate remains were observed.	P3 R0.5	P0 R0	P0 R0
3	01	3131 pit fill	9	The washover consisted mainly of charcoal to 2 mm with a little plant detritus including <i>Juncus bufonius</i> seeds, a trace of decayed insect cuticle and a (?land) snail; the residue was of sand and gravel including some mortar and brick/tile to 15 mm, pottery, coal and an Fe object. There were abundant phytoliths and many fungal spores in the squash.	P3 R0.5	P0 R0 + ptlths	P0 R0
4	10	3009 soak-away fill	1	The small residue was of sand with a little mortar and brick/tile to 15 mm. The tiny flot was mostly very decayed insect cuticle, some identifiable, with some well-rotted earthworm egg capsules. Possibly some differential preservation. and a mixed assemblage of unusual type. Not recordable quantitatively but it would be worthwhile processing more to characterise the fauna and to try to determine the nature of the drained area	P0 R0	P0 R0	P3 R1.0 LP1 +5.0 LR6

Per	Ph	CN	SN	Matrix and biota	Priorities and times		
					Plants	Micro-fossils	Insects, etc.
		3010 soak-away fill	2	A rather small residue, mainly brick/tile to 30 mm with some sand and a trace of mortar to 10 mm. Almost barren of plant detritus, even in flot. Latter essentially as that from Sample 1 and same arguments apply. Some ?phytoliths present in the 'squash'.	P0 R0	P0 R0	P3 R1.0 LP1 +5.0 LR6
		3019 drain fill	5	The moderately large residue was of sand and gravel (including brick/tile to 25 mm and mortar to 20 mm) with a little charcoal to 5 mm. The washover contained coal and cinder fragments to 2 mm, and a few well-decayed insect remains. A larger subsample would be unlikely to provide clarification of interpretation.	P0 R0	P0 R0	P3 R1.0