ARCHAEOLOGICAL EXCAVATION REPORT

ST. MARGARET'S CHURCH, IPSWICH

IAS 7806



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SCCAS REPORT No. 2004/67

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St. Margaret's Church, Ipswich (IAS 7806) Planning Application No. I/99/0617/FP Excavation Report No. 2004/67

Summary

Ipswich, St. Margaret's Church, Ipswich (TM 1662 4486; IAS 7806; report no. 2004/67) A small area of graveyard was cleared of burials in preparation for the construction of a north porch extension. The site also had the potential to contain deposits dating from before the church's construction. St. Margaret's was built in the early 14th century as a lay church on the fringes of the Holy Trinity Priory complex (now in Christchurch Park). Although it is just outside of the town defences, the site overlooks Thingstead, now known as St. Margaret's Green. The name 'Thingstead' is of Danish origin and indicates a meeting place.

The footprint of the new building was excavated to a depth of half a metre below the nave floor, removing over a metre of overburden in places. This overburden comprised a typical cemetery soil, rich in disarticulated bone as a result of re-working over the course of centuries. Individual grave cuts were only identified within the last 500mm or so of the excavated area and a total of 13 full or partial bodies (where they had been cut by later features) removed. Around 7 further grave cuts were revealed but left in situ and will not be disturbed by any groundworks for the extension. Only two bodies can be dated with any certainty, having come from graves with nineteenth century coffin furniture still in place.

Two large pits were also revealed on the western edge of the site. These contained disarticulated bone and post-medieval pottery, likely to represent charnel deposits.

(Linzi Everett for S.C.C.A.S. and St. Margaret's Parish Council; report no. 2004/67)

1. Introduction

An application (no.I/99/0617/FP) was made to build an extension onto the north porch of St. Margaret's Church, Ipswich (Fig. 1). The church was founded and built during the fourteenth century as a replacement church for the parish when the existing Holy Trinity church was subsumed into the Priory complex which extends north of St. Margaret's into Christchurch Park (Fig. 2). The site is just outside the defences of Saxon and medieval Ipswich, however, directly to the south is St. Margaret's Green which is the site of Thingstead, a Saxon meeting place. Two evaluation trenches were opened within the proposed building footprint by SCCAS in 1999 (Finch, 1999).



Figure 1: Site location

The development area lies at TM 1662 4486, at approximately 19m OD and covers around 55 square metres. The proximity of the proposed development area to sites of known archaeological significance suggested a high potential for the presence of archaeological deposits, and this was confirmed by the evaluation.



Figure 2: Site location showing sites mentioned in the text

A Brief and Specification for the archaeological work (Appendix 1) was produced by Bob Carr of the Suffolk County Council Archaeological Service, Conservation Team. The archaeological excavation was commissioned by Nicholas Jacobs Architects for St. Margaret's Parish Council and the fieldwork was conducted during April and May 2004 by the Field Team of Suffolk County Council Archaeological Service.

2. Fieldwork Methodology

An area of approximately 55 square metres was excavated by hand to the depth of the formation level required for the extension, leaving any features below that in tact. The natural subsoil was a mid orangey brown sandy silt.

Where features were revealed, they were cleaned manually for definition and each allocated 'observed phenomena' numbers within a unique continuous numbering system under the code IAS 7806, continuing the sequence which began during the evaluation (Appendix 2). Features were then partially excavated in order to recover dating evidence as well as to observe their form and possibly determine any function. Features and excavated sections were planned on site at a scale of 1:20 (Fig. 11), with burials planned at a scale of 1:10 (Fig. 4-10). Features were also recorded photographically to form a part of the site archive. The excavation archive will be deposited in the County SMR at Shire Hall, Bury St Edmunds.

All finds were washed and marked before being quantified, identified and dated by the finds staff of the Suffolk County Council Archaeological Service (see section 4. The Finds).

3. Results

The majority of features recorded during the excavation were graves and a total of 13 in situ burials were excavated. A further 7 graves were identified but not investigated as they were located below the formation level for the new building and would therefore be preserved in situ.. Details of the excavated burials are provided below in section 4 and are summarised in tabular form in Appendix 5. Disarticulated bone, which was present throughout the excavated soils and grave fills, was collected and examined. The observations are outlined below and the catalogue of disarticulated bone is also included within Appendix 5.





Figure 3: Plan of excavated area

All excavation was carried out by hand. The topsoil comprised a very dark brown silty loam containing building debris, tile, some pottery and disarticulated bone, and was some 200mm thick. It sealed a mid orangey brown gravelly silty clay subsoil which was rich in CBM and disarticulated human bone and flecked with mortar. This was removed in individually numbered spits, each approximately 250mm thick, from which all finds were collected and numbered correspondingly. This method of removing fairly arbitrary spits was employed in order to reveal and define features cutting the homogenous subsoil at various depths.

Pits

0021 (Fig. 11) was a small, circular pit adjacent to, and at the same level as 0035. Its fill, 0022, was a mid brown sandy silt from which no finds were recovered. It may represent animal or root activity rather than anything archaeological.

0030 (Fig.11) was a large pit, irregular in plan, in the north west corner of site. It had been partially revealed during the evaluation and recorded as grave 0012. Its fill, 0031, comprised alternate layers of pale orange mixed clay and mid-pale brown clay silt from which a number of finds were recovered. This included medieval pottery sherds but also finds of 19th-20th century date. The pit also cuts graves 0092 and 0095 which are believed to be post-medieval.

0035 (Fig. 11) was a small, shallow, oval pit or tree bole, filled by 0036, a mid to dark brown silty sand, with roots and animal disturbance. It was adjacent to, and at the same level as 0021. **0070** was a very modern pit filled by ashy soil visible on sloping west side of site. It was planned but not excavated due to its obvious modern origins.

Graves

0011 (Fig. 9) was first identified, but not excavated, during the evaluation. It cuts graves 0071 and 0066 and appears to cut grave 0008, although this relationship was not entirely clear in plan during excavation, or in section. A femur and tibia recovered from this grave fill may belong to skeleton 0073 (grave 0071). A further partial femur may be from skeleton 0068 (grave 0066). The burial itself was not reached before the formation level of the building.

0024 was quite a small grave with a head stone, located towards the northern limits of the site. No body was excavated as the grave continued below the building formation level. It is assumed that the grave and headstone are associated, and therefore of post-medieval date. A coin recovered from grave fill 0025, an Edward III halfpenny, is probably residual.

0027 was located in the central southern part of the site and cut by slot 0042. It was visible cutting the subsoil but it was not excavated as it was below the formation level of the planned building. It was not possible to define the eastern end of the grave at the formation level.

0028 was located in the central southern part of the site. It was visible cutting the subsoil but it was not excavated as it was below the formation level of the planned building. It had been cut by ditch 0074 and the eastern end was not defined.

0029 was located in the central southern part of the site. It was visible cutting the subsoil but it was not excavated as it was below the formation level of the planned building. It was not possible to define the eastern end of the grave at the formation level.

0033 (Fig. 4) was a narrow cut, with sharp, vertical sides and a flat base. It contained skeleton 0090, a male of c.25-30 years of age. Its fill, 0034, was rich in disarticulated bone and seven sherds of pottery were recovered, ranging from mid-late Saxon to late medieval in date. This grave cut grave 0086 and was cut by grave 0064.

0048 (Fig. 4) was the western end of a grave in which the skull and upper torso were exposed. As the majority of the body continued beyond the eastern edge of site, it was left in situ. What had been exposed was re-buried immediately adjacent to the remainder of the body, following its recording, so as to keep the skeletal remains together and avoid unnecessary disturbance. **0050** (Fig. 6) was located immediately beneath slot 0042 and was almost certainly cut by it. It had also been cut by evaluation trench 1. It contained the skeletal remains of a child, aged c.6-8 (0052).

(Fig. 5) was located adjacent to the brick tombs in the north west corner of the site. It contained skeleton 0093, a ?middle aged female, surrounded by in situ coffin nails and coffin handles, as well as lines of staining from the coffin itself along the upper right and lower left sides of the skeleton. Amongst the coffin furniture from the grave fill were well preserved studs with remains of wood and fabric adhering to the reverse. These are typical of Victorian coffins covered in cloth or leather and finished with decorative studs.

(Fig. 7) had been cut by evaluation trench 1 and contained the upper torso and skull of skeleton 0061, an ?old female.

was partially exposed in the north east corner of the building footprint, and under slot 0042. It was not excavated as it continued below the formation level.

(Fig. 9) was cut by 0011 and cut grave 0071. Skeleton 0068 was a female c.16-17 years of age. A missing femur from this skeleton may have been redeposited in grave 0011. In situ coffin nails were recorded within the grave fill, 0067, as was an evasion token, based on a George III halfpenny, dated 1771, but this could be residual. This grave is probably the same as that numbered 0008 during the evaluation.

0071 (Fig. 9) was cut by graves 0011and 0066 and contained skeleton 0073, the skull and upper torso of a ?young female. A femur and tibia from this skeleton may have been redeposited in grave 0011. Post-medieval coffin furniture was recovered from fill 0072, as was a swivel pendant of probable early 19th century date.

(Fig. 8) was located on the E edge of evaluation trench 2. It cut grave 0079 and had itself been cut by ditch 0074. Only the lower part of the grave survived, containing the lower legs and feet of an adult male (skeleton 0078).

(Fig. 8) contained the legs and feet of a mature or old female (skeleton 0081), the upper body having been cut away by grave 0076.

(Fig. 4) was the cut of a small grave in the north eastern corner of site. It contained skeleton 0085, a child c.10 years of age, as well as disarticulated bone from 3 adults and one other child. **0086** (Fig. 4) was the cut of very small grave containing the partial remains of a childs body (0088), aged c.2-3 years. Unusually, no disarticulated bone was recovered from the grave fill. **0092** (Fig. 10) Only a part of the eastern end of this grave survived, the remainder having been cut away by pit 0030 and grave 0095. It contained the lower half of the right fibula and feet, with in situ coffin nails around the end of the grave cut. The skeletal remains were of an adult male. Disarticulated bone from pit fill 0031 could include some originally from this grave.

(Fig. 10) As with 0092, only the eastern end of this grave survived, the remainder having been cut away by pit 0030. Only the feet of a probable male survived, with roughly in situ coffin nails around the end of the grave cut. Disarticulated bone from pit fill 0031 could include some originally from this grave.

Other features

was the near complete cranial vault of an adult male exposed in the northern section of the site. It was not associated with any visible cut and is likely to be the result of a disturbed burial. **0042** was an east to west aligned slot, only visible at a depth of c.1m from the original ground surface. The purpose and age of this feature was unclear. Its western edge was not defined as it appeared to be cut by trench 1 and there was no sign of its continuation beyond the western trench edge.

 was an ephemeral cut south of slot 0042 and grave 0083. It was tentatively interpreted as a grave but the two fragments of bone recovered from the fill, 0055, were not associated. **0062** was a group of several sherds from the base and body of a large greyware jar with applied vertical strips, dating from the late 13th - early 14th century. It was recovered from layer 0063, a homogenous mid brown silty sand adjacent to the church walls and under the paved path. **0074** was an east to west aligned ditch visible cutting the subsoil between the two evaluation trenches. Its southern edge was visible in base of trench 2 where it curves slightly to the south west but the northern edge could not be defined at the same level. It cuts grave 0076 and was cut by unexcavated graves 0028, 0029 and a modern drain. It was filled by 0075, a mid brown silty clay with some mortar flecks and a single burnt flint.



Figure 4: Graves 0033, 0086, 0083 and 0048. Scale 1:20



Figure 5: Grave 0057; skeleton 0093. Scale 1:20



Figure 6: Grave 0050; skeleton 0052. Scale 1:10



Figure 7: Grave 0059; skeleton 0061. Scale 1:10



Figure 8: Graves 0076 and 0079; skeletons 0078 and 0081. Scale 1:20



Figure 9: Graves 0066, 0071 and 0011; skeletons 0068 and 0073. Scale 1:20



Figure 10: Graves 0092 and 0095; skeletons 0094 and 0097 (above) with overlay showing in situ coffin nails (below). Scale 1:20



Figure 11: Pit sections. Scale 1:40

4. St. Margaret's Church, Ipswich (IAS 7806): excavation finds

Introduction

Table 1 shows the quantities of finds collected during the excavation. A full quantification by context is included as Appendix 2. This report does not include the material collected during the evaluation (Anderson 1999), with the exception of a near complete pot found in one of the graves, the contents of which have been analysed in the plant macrofossil report (Fryer, below).

Find type	No.	Wt/g
Pottery	81	1883
CBM	202	15534
Stone*	4	60
Mortar/plaster	8	178
Glass	8	177
Clay pipe	21	83
Lava quern	2	84
Worked flint	4	73
Burnt flint	1	80
Slag	2	55
Iron*	265	6417
Copper alloy*	46	82
Lead*	4	153
Silver	2	14
Animal bone	172	2341
Shell	11	98

Table 1. Finds quantities.

* Includes bulk and small finds.

In addition, there were 31 contexts of disarticulated human bone and 13 articulated skeletons.

Pottery

Introduction

Pottery from the excavation amounted to 81 fragments weighing 1883g. Table 2 shows the quantification by fabric and period, and a full quantification by context is included in Appendix 3.

Methodology

Quantification was carried out using sherd count, weight and estimated vessel equivalent (eve). All fabric codes were assigned from the Suffolk post-Roman fabric series, which includes Norfolk, Essex, Cambridgeshire and Midlands fabrics, as well as imported wares. Imports were identified from Jennings (1981). Thetford Ware fabrics are based on Dallas (1984), and forms on Anderson (2004). Non-local ware identifications are based on McCarthy and Brooks (1988). A ×20 microscope was used for fabric identification and characterisation. Form terminology follows MPRG (1998). Recording uses a system of letters for fabric codes together with number codes for ease of sorting in database format. SCCAS pottery quantification forms were used and the results were input onto an Access 97 database. The database does not include the vessel from context 0010 of the evaluation which is discussed and illustrated below.

Pottery by period

Roman pottery

One sherd of Roman grogged greyware was an unstratified find (0001).

Middle-Late Saxon pottery

Unusually for the town, only one sherd of Ipswich Ware was recovered. The evaluation also produced a single sherd, and it seems likely that this part of Ipswich was not heavily populated in the Middle Saxon period.

Description	Fabric	Code	No.	% No.	Wt/g	% Wt	eve
Roman Grog Tempered	RBGG	1.32	1		14		
Total Roman			1	1.2	14	0.7	
Sandy Ipswich Ware	SIPS	2.32	1		48		
Thetford-type ware	THET	2.50	9		97		
Total Middle-Late Saxon			10	12.3	145	7.7	
Early medieval ware	EMW	3.10	3		17		
Early medieval ware sparse shelly	EMWSS	3.19	6		35		
Medieval coarsewares	MCW	3.20	35		1229		0.13
Medieval coarseware gritty	MCWG	3.21	1		4		
Melton Shelly Ware	MTN1	3.54	1		8		
Hedingham Fine Ware	HFW1	4.23	1		3		
Ipswich Glazed Ware	IPSG	4.31	6		139		0.18
Hollesley Glazed Ware	HOLG	4.32	2		88		
Total medieval			55	67.9	1523	80.9	0.31
Late Medieval and Transitional	LMT	5.10	2		15		
Late Essex-type Wares	LMTE	5.60	2		26		
Raeran/Aachen Stoneware	GSW3	7.13	2		21		
Total late medieval			6	7.41	62	3.29	
Iron glazed blackwares	IGBW	6.11	1		2		
Late post-medieval earthenwares	LPME	8.01	2		40		0.05
Refined white earthenwares	REFW	8.03	2		12		0.10
Refined red earthenwares	REFR	8.04	1		12		
English stoneware	ESW	8.20	3		73		
Total post-medieval and modern			9	11.1	139	7.4	0.15
Total			81		1883		0.46

Table 2. Pottery quantification by fabric.

Nine sherds of Thetford-type ware were collected, but all were body and base sherds and it is

possible that they could be fragments of a local medieval coarseware. The evaluation only produced one sherd.

Medieval wares

The majority of pottery in this assemblage was of medieval date. A few handmade and shelly wares of the 11th-13th centuries were recovered, but most coarsewares were relatively fine types of 13th/14th-century date. An almost complete medieval coarseware handled jar dating to the 12th-13th centuries (0010, Fig.12) was found at the head of skeleton 0009 during the evaluation (10 fragments weighing 588g, not included in Table 1). The jar has a pouring lip and is heavily sooted both internally and externally. Its contents were analysed for plant macrofossils (see Fryer below). A triangular-beaded jar rim of Melton Shelly Ware was found (grave fill 0058), and there were two developed bowl rims in a fine grey fabric (trench backfill 0020, grave fill 0034). Several sherds from the base and body of a large greyware jar with applied vertical strips were found (0062, 0063). Glazed wares included Ipswich and Hollesley jugs, and one small sherd of Hedingham Ware was also present.

Late medieval wares

Late medieval fabrics included both North Suffolk LMT and Essex-type redwares, but all sherds were glazed body fragments. There were also two body sherds of Raeren stoneware mugs.

Post-medieval and modern wares

A small quantity of pottery was contemporary with the excavated graves. This consisted of a fragment of an iron glazed blackware vessel, horticultural wares, a whiteware ?bowl rim, and a redware with internal white glaze and external brown glaze. Three fragments of stoneware bottles of 19th/early 20th-century date were also present.



Figure 12: Almost complete 12th-13th century coarseware jar, 0010, scale 1:2 *(illustrstion by Donna Wreathall)*

Pottery by context

Table 3 shows the distribution of pottery fabrics by feature/context, together with overall pottery spot dates.

Feature	Context	No.	Fabrics	Spot date
Grave 0024	0025	3	THET, MCW, ESW	19th/E.20th c.
Grave 0033	0034	7	EMW, MCW, HOLG, LMTE	15th-16th c.
Grave 0033/0044	0046	1	HOLG	L.13th-E.14th c.
Grave 0048	0049	2	EMWSS	11th-12th c.
Grave 0057	0058	2	SIPS, MTN1	12th-13th c.
Grave 0083	0084	5	EMWSS, MCWG, MCW	12th-13th c.
Pit 0030	0031	6	THET, IPSG, LMT, GSW3, ESW	19th/E.20th c.
Spread	0039	2	IPSG	L.13th-E.14th c.
Layer	0023	6	MCW, LMTE, GSW3, LPME, REFW, REFR	L.18th-20th c.
Layer	0038	2	EMWSS	11th-12th c.
Layer	0041	1	THET	10th-11th c.
Layer	0062, 0063	24	MCW, IPSG	L.13th-E.14th c.
Finds	0089	3	THET	10th-11th c.
Topsoil	0001	13	RBGG, EMW, MCW, IPSG, LMT, IGBW,	19th/E.20th c.
			LPME, REFW, ESW	
Trench backfill	0019	3	THET, HFW1	M.12th-M.13th c.
Trench backfill	0020	1	MCW	13th/14th c

Table 3. Pottery fabric distribution by feature.

Note that spot dates refer to pottery only; other finds are not considered.

It is clear from the very mixed nature of these groups that much of this assemblage is redeposited. The upper layers of the site (0001, 0023) contained pottery and other finds of 19th century date and were presumably reworked during grave digging and gardening during this period. This activity clearly disturbed underlying medieval deposits.

Several graves contained only medieval and earlier pottery, but later dates were indicated by coffin fittings, metal objects or CBM. However, the late medieval date suggested for Grave 0033 is not contradicted by any other finds. Pit 0030 could also be of late medieval date if the English stoneware sherd were intrusive. Both features cut layer 0038, also suggested as late medieval, but this overlay layer 0041 which contained a fragment of clay pipe stem. If this were an early pipe, or was intrusive, then 0041 may be of late medieval or earlier date.

Building Materials

Ceramic Building Material (CBM)

Introduction

There were 202 fragments of CBM weighing 15,534g. A full quantification by context is included as Appendix 4.

Methodology

The assemblage was quantified (count and weight) by fabric and form. Fabrics were identified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and floor tiles were measured where possible, but roof tile thicknesses were only measured if another dimension was available. Forms were identified from work in Norwich (Drury 1993), based on measurements. Other form terminology follows Brunskill's glossary (1990).

The assemblage

Table 4 presents the quantification (fragment count) of CBM by fabric and form. Despite the small size of the assemblage, a wide range of fabrics is present, suggesting that a variety of sources were exploited during the construction of the church. This could be related either to several phases of building or to the use of more than one supplier during a single phase, or both. The range of inclusions suggests that most of this assemblage was probably of local or regional manufacture.

Fabric	Code	RT	RID	PAN	FB	FT	LB	MB	UN
coarse sandy, few other inclusions	cs	1					1		
medium sandy, few other inclusions	ms	34	6			5			
fine sandy, few other inclusions	fs	48		4		6	2	1	
fine sand and coarse flint	fsf	2						2	
fine sand and ferrous inclusions	fsfe	2							
fine sand and coarse red grog	fsg	30		1		13	5		1
fine sand, grog and common mica	fsgm	5				3			1
fine sand and common mica	fsm	1				1			
fine sand and voids	fsv	1							
medium sand and ferrous inclusions	msfe	1				2			
medium sand and grog	msg	3					18		
medium sand and common mica	msm	1							
white-firing medium sand and grog	wsg				1				
	Total	129	6	5	1	30	26	3	2

Table 4. Quantities of CBM by fabric and form (count).

Over half the assemblage consisted of plain roof tiles (RT). The majority were in fine sandy orange-coloured fabrics, most of which were fully oxidised and likely to be of post-medieval date. No estuarine fabrics of 13th-15th century date occurred in this group, but some of the sandy tiles may belong in this date range, particularly the few fragments with reduced cores and/or surfaces, and a single glazed fragment. Despite the post-medieval date suggested for these tiles, the common later 'msfe' fabric which appears to have been common throughout Norfolk and Suffolk in the 18th-19th centuries is barely present here and this may suggest a slightly earlier date for the tiles collected from the site. Whilst it is likely that most of this assemblage consisted of peg tile, only thirteen fragments could be positively identified as such. Of these, twelve had round holes and one had square. Most pieces probably had two holes based on the position of the holes in the fragments. No nib tiles were identified. Many fragments had traces of medium sandy ime mortar on surfaces and/or breaks and may have been used in walling.

Six fragments of ridge tile (RID) were identified, all with brown glaze. Two fragments from 0019 almost certainly came from a crested example, although the crest had been broken off. These are probably of high or late medieval date.

Fragments of pantile (PAN) were collected. These are unlikely to pre-date the 17th century, but most were well made, probably machine-manufactured, and therefore likely to be of 19th-20th century date. With the exception of a fragment from grave fill 0025, they were all from the upper layers of the site.

One flake of a possible floor brick (FB) in a white-firing fabric was recovered from pit fill 0022. It is likely to be of 18th-century or later date.

Thirty fragments of floor tile (FT) were identified, including medieval relief-decorated, late medieval Flemish types, and a post-medieval quarry tile. Most fragments were heavily worn and difficult to identify to type as the fabrics were quite variable. At least one Flemish green-glazed and one yellow-glazed with white slip were present. Only two relief tiles were unworn, and both showed a shield containing three lions *passant guardant*, one yellow-glazed (Plate 1) and one brown-glazed. This type is illustrated by Sherlock (n.d., No. 22) and is likely to be of 13th/14th century date. These finds may indicate that part of the original church floor contained relief tiles, replaced in the 14th/15th centuries by a chequerboard Flemish tile floor.

A few abraded fragments of late brick (LB) were found, all from pit fills and layers. The medium sandy grog-tempered examples may be of 'Tudor' date, but none was measurable. One fragment in a fine fabric from spread 0039 was 50mm thick, suggesting a possible 15th/16th century date. Fine fragments with rectangular frogs, one measuring 68mm thick, were found in pit fills 0022



Plate 1. Relief tile fragment (0001).

and 0031; these are unlikely to pre-date the 19th century.

Three fragments of two moulded bricks (MB) were found. One fragment (0022) was small but appeared to have a notch cut close to one edge before firing. It was in a very fine dense fabric similar to terracotta. The other two fragments (0063) belonged to a fragment of plinth or jamb with a hollow chamfer in a deep red fabric.

Two unidentified fragments had no diagnostic features (UN), but were more likely to be tile than brick.

The distribution of CBM by type of context is shown in Table 5.

Identifier	RT	RID	PAN	FB?	FT	LB	MB	UN	Total
Grave	28		1		7				36
Pit	40			1	7	22	1		71
Ditch	4								4
Slot	4								4
Layer	39	2	2		12	1	2	2	60
Spread	4	2			1	1			8
Trench	6	2	2		2				12
Finds	4				1	2			7

Table 5. CBM by context type.

The majority of CBM was collected from pits and layers, where it may have been deposited deliberately as hardcore or for stabilisation, or included accidentally during construction activity. Fragments from graves are likely to have been redeposited during backfilling, although brick and tile was used in crypt and grave monument construction so some of the material may be related to this.

Mortar

One fragment of cementitious mortar (5g) was unstratified (0001) and seven pieces of lime mortar (173g), including two fragments of plaster were recovered from post-medieval pit fill 0022. The two fine plaster fragments were long narrow pieces triangular-section pieces with red oxide 'paint' on one surface and a raised area on another, possibly indication their use at the side of a window. One fragment of coarser mortar had a flat combed surface and may have been used as render.

Stone

A small fragment (31g) of septaria was found in Trench backfill 0019. Two pieces of roofing slate (27g) were collected from pit fill 0031. These fragments were discarded following quantification.

Window glass

Three fragments of post-medieval window glass were found in layer 0063.

Structural metalwork

One fragment of window came was found in spread layer 0039 (SF 1013) and is likely to be post-medieval.

Miscellaneous

Clay pipes

Twenty-one fragments of clay pipe were collected from five layers (0001, 0023, 0039, 0041, 0063) and a grave fill (0025). The majority came from 0001, which produced nine stems and a late 17th-century bowl. All other pieces were stem fragments.

Bottle glass

Five fragments were identified as fragments of post-medieval bottles. A neck sherd from an 'onion' bottle came from layer 0023, there were two base fragments from 0022 and 0031, and two fragments were body sherds (0001, 0023).

Lava

A small fragment (1g) of lava quern was collected from pit fill 0031, and a larger piece (83g) came from grave fill 0065. These are likely to relate to medieval or earlier use of the site.

Flint (identifications by Colin Pendleton)

A large flake with edge retouch recovered from layer 0001 may be a crude scraper. Other flakes were found in pit fill 0022 and grave fill 0065. A crudely detached flake with slight edge retouch and parallel flake scars on the dorsal face was found in the fill of slot 0042. Such flakes cannot be closely dated, as although they could be late prehistoric, they could also be more recent, perhaps related to the construction or renovation of the church. One piece of burnt flint was found in ditch fill 0075.

Slag

One fragment of ?copper slag (54g) was found in trench backfill 0019, and a tiny fragment of undiagnostic ferrous slag (1g) came from layer 0023.

Small Finds

Coins, tokens and jettons

- 1. Ag. Coin. Edward III Halfpenny? 1307-1327. SF 1044 (Grave fill 0067).
- 2. Ae. Jetton. Nuremburg Rose and Orb type. 1500-1558. SF 1040 (Layer 0001).
- 3. Ae. Token. Evasion token, based on George III halfpenny. GREGORY III PON. BRITAIN RULES. 1771. SF 1009 (Grave fill 0025).

Dress accessories

Jewellery

4. Ag? Swivel pendant. Oval flat swivel (20 x 18mm) with ornate openwork frame, large S-link and short fragment of chain. May originally have been decorated with a semi-precious stone or seal. ?Early 19th c. SF 1038 (spot find).

Strap fittings

- 5. Ae. Strap mount. Double plate, four rivets, central hole, incised decoration. Length 21mm, width 10mm, thickness 3mm. Parallel Egan & Pritchard 1991 No. 1207. 15th-17th centuries. SF 1041 (Layer 0001).
- 6. Ae. Lace end. Type 2 (Margeson 1993 22). Length 11mm, 1.5mm diameter. Post-medieval. SF 1036 (Layer 0001).

Button

7. Ae. Button (or stud). Slightly convex disc with fragment of central shaft or loop attachment. 26mm diameter. Post-medieval. (Layer 0001).

Pins

Twenty-four pins were collected from eleven contexts. Six were recovered from grave fills and the rest from layers or unstratified contexts. Some of these may be dress pins rather than necessarily 'shroud' pins.

- 8. Ae. Shroud pin. Length 24mm. Post-medieval? SF 1004 (Layer 0001).
- 9. Ae. Shroud pin, bent, coiled wire head. Length 47mm. Post-medieval? SF 1034 (Layer 0001).
- 10. Ae. Shroud pin. Length 23mm. Post-medieval? SF 1035 (Layer 0001).
- 11. Ae. Shroud pin. Length 22mm. Post-medieval. SF 1037 (Layer 0001).
- 12. Ae? Shroud pin, tinned? Length 21mm. Post-medieval. (Grave 0004).
- 13. Ae. Shroud pin. Length 21mm. Post-medieval. (Grave 0005).
- 14. Ae. Shroud pin. Length 44mm. Post-medieval? SF 1001 (Trench 0020).
- 15. Ae. Shroud pin. Length 40mm. Post-medieval? SF 1057 (Trench 0020).
- 16. Ae. Shroud pin. Length 21mm. Post-medieval SF 1002 (Layer 0023).
- 17. Ae. Three shroud pins. Lengths 30mm, 24mm 22mm. Post-medieval? SF 1014 (Layer 0023).
- 18. Ae. Shroud pin. Length 33mm. Post-medieval? SF 1003 (Grave 0024).
- Ae. Four shroud pins, tinned. Lengths: 31mm, 24mm, 24mm and 11mm (broken). 16th/17th c? SF 1012 (Spread layer 0039).
- 20. Ae. Shroud pin. Length 39mm. Post-medieval. SF 1039 (Grave fill 0055).
- 21. Ae. Three shroud pins. Lengths 28mm, 24mm and 21mm. Post-medieval? (Grave fill 0058).
- 22. Ae. Shroud pin. Length 27mm. Post-medieval? SF 1131 (Layer 0063).
- 23. Ae. Shroud pin. Length 33mm. Post-medieval? SF 1130 (Layer 0063).
- 24. Ae. Shroud pin. Length 39mm. Post-medieval? SF 1068 (Finds 0089).

Equestrian objects

25. Fe. Horseshoe. One branch of a horseshoe. Web 15-30mm wide. No calkin. Two square holes visible on x-ray. Type 4 (Clark 1995). 14th/15th c. (Layer 0038).

Objects associated with literacy

26. Stone. Small slate pencil. Post-medieval. SF 1011 (Layer 0001).

Miscellaneous fittings

Coffin fittings

Handles

Twenty-seven objects were identified as coffin handles. Of these, thirteen were complete objects (handles attached to backplates), six were detached handles, and eight were backplates or fragments of backplates. It is possible that the three backplates and three handles in layers 0001 and 0039 belong together. Fragments of at least two other backplates were recovered from these contexts, and another fragment came from grave 0024. The minimum number of handles represented in the assemblage is therefore twenty-four.

It was possible to identify five different types of backplate and four different types of handle in this assemblage, although the overall style of all pieces was very similar. The main types are as follows:

Backplates:

- 1. Oval, sub-rectangular or kidney-shaped terminals, lozenge-shaped central part with sideways V-shaped (<>) perforations.
- 2. Oval terminals, rectangular-shaped central part with sideways V-shaped (<>) perforations.
- 3. Oval terminals, slightly convex sides to central part with sideways V-shaped (<>) perforations.
- 4. Trilobe terminals, concave sides to central part, no perforations.

All backplate styles had two small rivet holes in both terminals.

Handles:

- A. Rectilinear handle with swollen grip and out-curving terminals, sometimes with a central decorative 'collar' to the grip.
- B. Crescentric handle with swollen grip and outward terminals.
- C. Handle which curves to a slight central point.
- D. Oval handle with inturned terminals.

Attachment of handles was by means of a loop staple made from a strip of flat metal. In some cases it was folded back to the edge of the backplate. The depth between the plate and the base of the staple could be measured for these examples, and varied from c.15 to 17mm. It is assumed that the plates were attached by means of the small rivet holes in the terminals and possibly within the 'V' perforations, and that they were not intended to be weight-bearing.

Backplate Terminal Handle SF **Type Feature** Length Width Width Depth Height Grip Max Width length diam between attachments 70 33 1/A G.0024 c.31 1158 c.220 c.64 115 12 127 1/AG.0024 1159 c.220 70 c.31 12 127 c.64 115 c.30 G.0024 27 10 1/A 1005 >215 60 115 123 c.30 1/A G.0071 1058 c.187 55 >55 31 100 11 113 31 33 12 27 1/A L.0039 c.206 c.61 72 105 115 1160 1?/A L.0023 c.100 c.30 1067 c.203 53 >72 30 16 142 2/A L.0001 1154 126 c.40 2/A G.0057 1069 210 52 71 30 130 14 140 c.40 G.0057 214 53 30 14 2/A 1070 71 135 146 c.36 3/A G.0057 c.220 60 28 135 15 150 1133 c.60 c.36 3/A G.0057 1132 c.220 c.60 60 28 135 15 150 c.36 3/A T.0019 1155 30 >32 58 6 20 c.114 16 68 4/D L.0039 >122 24 35 35 93 8 1165 67 30 А L.0001 1153 105 12 117 c.27 А L.0039 1163 114 16 47 L.0039 1166 147 12 125 37 А В L.0039 90 8 99 30 1164 С L.0023 1156 >150 20 С L.0023 1157 >112 18 57 61 35 L.0001 1152 1 1 L.0039 1161 >175 c.58 65 28 1 L.0039 1162 >116 >36 >31 16 95 35 115 1 P.0030 1007 c.190 c.63 62 P.0030 1008 62 38 1 c.192 c.62 117

Table 6 summarises the measurements taken on each of the more complete examples.

 Table 6. Summary of coffin handle and backplate measurements.

 Note: width between handle attachments is centre to centre.

Adult coffin plates appear to vary between c.187-220mm in length. The smaller handles were presumably used for children's coffins although, as they were merely decorative, this is not necessarily the case. Only three small examples were found, measuring c.114-122+mm long.

All coffin handles and backplates were relatively simple types made in wrought iron, and with little decoration other than a central collar around the grip of the handle. Similar forms were found at Rivenhall in Essex (Rodwell 1993) where they were dated to the late 18th and early 19th centuries, and in Norwich (Margeson 1993). The assemblage from St. Martin-at-Palace, Norwich (Fryer and Beazley 2001) included several comparable backplates (cf types 5 and 9) and handles (cf types 11, 13 and 18), although none is dated.

- 27. Fe. Handle and backplate. Type 1/A. Oval terminals, one incomplete. The attachment loops are broken at the rear. Parallel Rodwell (1993, Fig 23 No. 6, dated L.18th/E.19th c.). Post-medieval. SF 1158 (Grave fill 0025).
- 28. Fe. Handle and backplate. Type 1/A. Almost identical to SF 1158 above, but both terminals complete. Postmedieval. SF 1159 (Grave fill 0025).
- 29. Fe. Handle and fragments of backplate. Type 1/A. Oval terminals, one incomplete. Wide central collar to handle grip (c.9mm wide) delineated by narrow bands on either side. Post-medieval. SF 1005 (Grave fill 0025).
- Fe. Handle and backplate. Type 1/A. Oval terminals, one lost. Central part of backplate 125mm long (total extrapolated length c.187mm). Only one 'V' perforation, but there may be rivet holes where the other should have been. Post-medieval. SF 1058 (Grave fill 0072).
- Fe. Handle and backplate. Type 1/A. Oval terminals, one incomplete. The attachment loops continue through the backplate to a depth of 15mm but are curved around and presumably did not attach the plate to the coffin. Post-medieval. SF 1160 (Spread layer 0039).
- 32. Fe. Handle and backplate. Type 1/A? Heavily corroded and concreted, mpo (wood) on rear of plate. Plate may be lozenge-shaped with missing terminals and appears to have V perforations. Handle is rectilinear, grip c.100mm long and swollen at the centre. No other measurements possible without cleaning. Post-medieval? SF 1067 (Layer 0023).
- 33. Fe. Handle and backplate. Type 2/A. ?Oval terminals, one lost, the other damaged. Rectangular central section 143mm long (total extrapolated length c.203mm). 'V' piercings (<>) appear to have rivet holes at the central ends. One staple is complete and suggests a wood depth of c.15mm, although it curves back on itself at the edge of the terminal. Post-medieval. SF 1154 (Layer 0001).
- 34. Fe. Handle and backplate. Type 2/A. Oval terminals, one damaged. Rectangular central section with slightly curving sides and concave rear. 'V' piercings (<>) appear to have rivet holes at the central ends. Staples are complete and suggest a wood depth of c.15mm, although they curve back onto the edge of the terminal. Post-medieval. SF 1069 (Grave fill 0058).
- 35. Fe. Handle and backplate. Type 2/A. Oval terminals, one damaged. Rectangular central section with slightly curving sides and concave rear. 'V' piercings (<>) appear to have rivet holes at the central ends. Rectilinear handle with central collar. Staples are near-complete and suggest a wood depth of c.17mm, although they curve back onto the edge of the terminal. Post-medieval. SF 1070 (Grave fill 0058).
- 36. Fe. Handle and backplate. Type 3/A. Kidney-shaped terminals. The drop handle is rectilinear with a central collar. Attachment is by means of a looped staple which appears to have held the whole plate to the coffin. This suggests the wood thickness was c.17mm. Post-medieval. SF 1133 (Grave fill 0058).
- 37. Fe. Handle and backplate. Type 3/A. Identical to 1133. Post-medieval. SF 1132 (Grave fill 0058).
- 38. Fe. Handle and backplate. Type 3/A. ?Oval terminals, both damaged, all terminal rivets *in situ*. Mineral-preserved wood on rear of backplate. Post-medieval. SF 1155 (Trench 0019).
- 39. Fe. Handle and backplate. Type 4/D. Trilobe terminals, circular at top and bottom and sharply pointed to centre with two small rivets in situ, one end incomplete. Central rivet. Mineral-preserved wood on rear. Staples sawn off at rear? 18th/19th c. Parallels for backplate Margeson (1993 No. 509) and Rodwell (1993, Fig 23 No. 2, dated pre 1816). SF 1165 (Spread layer 0039).
- 40. Fe. Handle. Type A. Rectilinear type. Central collar on grip. Post-medieval. SF 1153 (Layer 0001).
- 41. Fe. Handle. Type A. Rectilinear type with small central collar. Post-medieval. SF 1166 (Spread layer 0039).
- 42. Fe. Handle. Type A. Rectilinear with a central moulded collar of beading with a raised border at either side. Slightly deformed. Wide strip loops of staples still attached. 19th c? SF 1163 (Spread layer 0039).
- Fe. Handle. Type B. Crescentric, circular section. 18th/19th c. Parallel Margeson (1993 No. 520). SF 1164 (Spread layer 0039).
- 44. Fe. Handle. Type C. Curving and thickening to central point, circular section 20mm diameter at centre, c.6mm at broken ends. 150+mm long measured along the curvature. One terminal present but bent. Parallel Rodwell (1993, Fig 23 No. 9, dated L.18th c.) Post-medieval. SF 1156 (Layer 0023).
- 45. Fe. Handle. Type C. Fragment, curving and thickening to central point, circular section 18mm diameter at centre, c.6mm at broken ends. 112+mm long measured along the curvature. Parallel as 1156. Post-medieval. SF 1157 (Layer 0023).
- 46. Fe. Backplate. Type 1. Incomplete. Sub-rectangular terminal, one missing. One circular hole for handle attachment survives, 7mm diameter. Post-medieval. SF 1161 (Spread layer 0039).
- 47. Fe. Backplate. Type 1. Smaller version, although one edge may be curving rather than having sides sloping to an apex. Bent, one terminal lost. Looped staples *in situ*. Post-medieval. SF 1162 (Spread layer 0039).
- 48. Fe. Backplate. Type 1. Incomplete. Oval terminal. The centre appears to have only one 'V' piercing, no trace of the other on radiograph. Post-medieval. SF 1152 (Layer 0001).
- 49. Fe. Backplate. Type 1. Oval terminals, one incomplete. The holes for the handle are square. Post-medieval. SF 1007 (Pit fill 0031).
- 50. Fe. Backplate. Type 1. Oval terminals. The holes for the handle are square. Post-medieval. SF 1008 (Pit fill 0031).
- 51. Fe. Backplate. Fragment of handle backplate with 'V' piercing, mpo (wood) on reverse. Post-medieval. (Layer 0001).

- 52. Fe. Backplate. Nineteen shaped sheet fragments, some with rivets or mpo (wood). One piece may have 'V' shaped piercings. Post-medieval. (Spread layer 0039).
- 53. Fe. Backplate. Four sheet fragments, probably pieces of handle backplate, including one with 'V' piercing. Postmedieval. (Grave fill 0025).

Nails, studs and screws

One hundred and eighty objects were identified either probably or possibly as coffin nails, three as coffin screws, four as nails or studs, and 49 as studs. The studs were generally identified from their dome-shaped heads, several of which were capped with sheet copper alloy. The range of the diameters of the stud heads varied between 10mm and 14mm, with most of them being 13mm. The best preserved examples were three studs from grave fill 0057, which still had the remains of textile and wood adhering. This type of coffin adornment is typical of the Victorian period, when studs were used in abundance to attach cloth or leather to the outside of coffins. Studs could also be used to form initials and/or dates on the coffin lid, but there is no evidence for this use here.

Discussion

Table 7 shows the distribution of coffin fittings.

Context	Handle	Nail	Stud	Nail/stud	Screw
Grave	9	108	45	1	2
Pit	2	16		3	
Layer	15	46	4		1
Unstratified	1	10			

Table 7. Distribution of coffin metalwork by context type.

This shows that the majority of coffin nails and studs were recovered from graves, although most of the handles were found in layers. This may indicate that these larger pieces of metalwork were more likely to be spotted, removed and discarded when new graves were dug into older ones.

Graves 0066, 0092 and 0095 contained *in situ* nails from coffins. Handles and other fittings were *in situ* in graves 0057 and 0071. The most elaborate coffin appeared to be 0057, which had studs as well as nails and handles. The four handles were found at the head end, by both shoulders and at the side of the left knee, so two others must originally have been present. If so, these may be redeposited finds 1154 and 1155.

Other fittings

Several other fittings or fragments of sheet metal were recovered. Some of these may also be coffin fittings, but most were recovered from non-grave contexts so it is not possible to be certain of their function.

- 54. Fe. Corner bracket made from rectangular strap: long side 95mm long, 32mm wide, 4mm thick; short side 34mm long. One nail *in situ* (24mm long) close to centre of long side. X-ray shows three holes in one half of the long side, two central to the long axis (6mm diam) and a smaller one (4mm diam) slightly offset in between. Post-medieval. (Layer 0001).
- 55. Ae. Square plate with four rivet holes in the corners and raised circular opening. Dimensions 22mm x 23mm with internal diameter of 16mm. Post-medieval. SF 1010 (Layer 0038).
- 56. Fe. Ring. Square-section ring quite thick. Diameter 40mm, thickness 6mm. Post-medieval? SF 1059 (Grave fill 0072).
- 57. Fe. Sheet. Fragment, possibly part of a backplate? 37mm wide, 20+mm long, 1mm thick, bent. (Layer 0001).
- 58. Fe. Sheet. Bent fragment with attached nail/stud. Post-medieval? (Spread layer 0039).
- 59. Fe. Sheet. Fragments with attached Ae rivet. Post-medieval? (Spread layer 0039).
- 60. Fe. Sheet. Fragment with attached nail. (Finds 0089).
- 61. Fe. Strap. Fragment of binding strip, two pieces joined together (central rivet c.5mm diameter), 25mm wide, 91+mm long, 1.5mm thick. Post-medieval. (Layer 0023).
- 62. Fe. Strap? Heavily corroded lump, possibly two pieces of strap joined together. Post-medieval. (Layer 0023).

Miscellaneous tools

- 63. Fe. Knife? Flat thin sheet fragment, knife-shaped, 64+mm long, 15mm wide at maximum extent of 'blade', surfaces lost, possibly a tanged blade, but very poor. (Layer 0001).
- 64. Fe. Razor? Length 85mm, 29mm wide at maximum point, 14mm thick at maximum point. (Finds 0089).

Unidentified

- 65. Pb. Three cut sheet fragments, possibly waste from roof lead. (Layer 0001).
- 66. Fe. Slightly curving bar fragment. 125+mm long. One end has rectangular section c.20 x 10mm (but surfaces flaking), the other is trapezoid, 21 x 10-17mm. Possibly a fragment of railing? Post-medieval? (Layer 0001).
- 67. Ae. 4 fragments of pin-like object. SF 1103 (Grave fill 0058).
- 68. Fe. Object. (Finds 0089).
- 69. Fe. Sheet fragment. (Finds 0089).
- 70. Fe. Small lump possibly coffin stud. SF 1025 (Grave fill 0058).
- 71. Fe. Lump. SF 1026 (Grave fill 0058).
- 72. Fe. Sheet fragment. (Layer 0023).

Biological evidence

Human skeletal remains

Introduction

Thirty-one contexts of disarticulated bone and thirteen articulated skeletons were recorded. A catalogue is included as Appendix 5.

Method

Measurements were taken using the methods described by Brothwell (1981), together with a few from Bass (1971) and Krogman (1978). Sexing and ageing techniques follow Brothwell (1981) and the Workshop of European Anthropologists (WEA 1980), with the exception of adult tooth wear scoring which follows Bouts and Pot (1989). Stature was estimated according to the regression formulae of Trotter and Gleser (Trotter 1970). All systematically scored non-metric traits are listed in Brothwell (1981), and grades of cribra orbitalia and osteoarthritis can also be found there. Pathological conditions were identified with the aid of Ortner and Putschar (1981) and Cotta (1978).

Number of individuals

The 13 articulated skeletons represented 13 individuals. The disarticulated remains were extremely mixed and, with one exception, most of the large groups contained the remains of many individuals. The main exception was an infant from layer 0039 which was largely complete. As a rough estimate, the MNI for the disarticulated remains is 117, but comparisons of bones between contexts (particularly layers 0001, 0023, 0039 and 0063) might reduce this number. However, within the layers themselves it was clear that there were very few pairings and it is likely that most of this material was redeposited on several occasions, thus moving individual bones some distance from the remainder of the skeleton.

Condition

The majority of bone was very well preserved and in good or very good condition. Although this is unusual in the region as a whole, it is normal for an urban churchyard where continual reworking reduces the acidity of the soil. Occasionally, disarticulated bones had very eroded surfaces, perhaps indicating that they had belonged to some of the earlier inhumations in the churchyard, buried while the ground was still relatively acidic or affected by the decay of later interments.

A few of the articulated skeletons were generally in good condition but had areas which were poorly preserved. Where this had occurred, there were often traces of lime adhering to the remains of the bones, suggesting that this was a deliberate addition to the grave. Lime was used to aid decomposition and conceal odours and is generally associated with mass graves such as might be used for pauper burials or the victims of an epidemic. One individual had an unusual pattern of decay. Swirling areas were noted on the skull of young female 0068 possibly indicating the position of hair, which would have survived longer than the underlying soft tissue and thus protected some surface parts of the skull from decay.

An articulated skeleton showed signs of hacking due to truncation by a gravedigger's spade. Sk. 0073 had three hack marks at the distal end of the right humerus. Similar marks were seen on a disarticulated femur from 0089. The disarticulated but near-complete infant from layer 0039 showed signs of exposure at the proximal ends of the humeri and scapulae, suggesting the upper part of the chest and head had been removed in grave digging, and that the ends of the bones still *in situ* had been left exposed in section for some time.

Demographic analysis

Table 8 shows the age and sex determinations for the 13 articulated skeletons.

Sk. No.	Male	Female	Child
0052			c.6-8
0061		Old?	
0068		c.16-17 (?F)	
0069			c.7
0073		Young?	
0078	Adult	-	
0081		Mature/old	
0085			c.10
0088			c.2-3
0090	c.25-30		
0093		Middle-aged?	
0094	Adult	-	
0097	Mature/old (?M)		

Table 8. Age and sex of articulated skeletons.

The articulated remains represent three males, one ?male, four females, one ?female and four children. Amongst the disarticulated bones it was possible to identify a minimum of 39 children and sub-adults, 23 males or ?males, 24 females or ?females, and 31 unsexed adults. This suggests that children made up 33% of the group, which is within normal limits for a medieval and post-medieval urban cemetery. The sex ratio is close to 1:1, as would be expected.

Metrical and morphological analysis

Articulated skeletons were measured where possible and the results are included at the end of the catalogue. The lengths of disarticulated bones were recorded if complete, and these measurements are incorporated into the catalogue.

Stature could be calculated for two male and four female articulated skeletons, and the disarticulated bones of two males and six females. Table 9 presents the means and ranges of these estimates. The means for both sexes are comparable with other medieval and post-medieval groups throughout Britain.

Sex	No.	Mean	Range
Male	4	170.4cm (5' 7")	164.6 – 178.6cm (5' 5" – 5' 10")
Female	10	162.8cm (5' 4")	150.9 – 173.8cm (4' 11" – 5' 8")
	Table 0	Moong and rang	as of statura astimatas

 Table 9. Means and ranges of stature estimates.
 Image: Comparison of the status of

The cranial index could be calculated for four articulated and one disarticulated skulls and ranged from c.69.2 to 81.9. Two skulls were dolichocranial (narrow), one was mesocranial (medium), and two were brachycranial (broad). The mean, at 75.8, is just within the

dolichocranial range. It would normally be expected that medieval groups would be closer to the broad end of the range, but this may have changed in the post-medieval period. Very little data is currently available for the later period.

Dental analysis

Dentitions were only recorded in detail for the articulated remains, as those amongst the disarticulated remains were extremely fragmentary and incomplete. Five adults had complete or near-complete dentitions, and two children could also be recorded. This group is too small for any meaningful statistical analysis. Tooth charts are included in the catalogue. In summary, carious lesions, abscesses and ante-mortem tooth loss were all common in this group, as would be expected in a post-medieval urban population. Caries was largely interstitial or cervical in origin, unlike earlier and later groups in which it tends to be occlusal. Some individuals had moderate or heavy deposits of dental calculus, but little enamel hypoplasia was seen.

Congenital or developmental anomalies were noted in two jaws. Young female 0073 had an



Plate 2. Osteoarthritis of the hip (0023), showing enlargement of the acetabulum (left) and a ring of eburnation on the femur head (right).

impacted upper left canine with retention of the deciduous tooth. She also had a large Carabelli's cusp on the upper left second molar, with an additional root to support it. Male 0090 had a peglike upper left second incisor and that on the right was congenitally absent.

Several teeth of ?old female 0061 had been chipped during life and the pattern of wear suggested occupational use of her teeth.

Pathology

Introduction

There was a high proportion of pathological conditions of all kinds in this assemblage, although unfortunately most of the more interesting examples were amongst the disarticulated bone, making diagnosis difficult in some cases. It was not possible to estimate prevalence of the more common diseases.

Congenital and developmental anomalies

The first cervical vertebra of Sk. 0090 had a cleft posterior arch. This is a developmental defect, usually symptomless, similar to spina bifida occulta of the sacrum and occurs in 5% of any population (Barnes 1994, 120). A cleft arch of the first sacral segment probably occurred in Sk.

0093, although the area was damaged by post-mortem erosion.

Bipartite sesamoid bones (or possibly fractured sesamoid bones with non-union) were present bilaterally in older female 0081. The smaller sesamoid of the right foot has osteophytes around the joint margin, suggesting that there was pressure and strain on the ball of the foot, perhaps as a result of the anomaly.

Degenerative disease

Generally the most common category of pathology in any skeletal group, degenerative disease was noted in five articulated skeletons and most of the disarticulated contexts produced at least one affected bone. In the majority of cases, it consisted of lipping and/or pitting of the joint margins and edges. A few bones showed signs of eburnation, indicating that the osteoarthritis was advanced enough to have destroyed the cartilage in these areas. All forms of osteoarthritic change affected the spine, knees and hips most frequently in this group. A particularly gross osteoarthritic lesion of the hip joint, with enlargement of the acetabulum, porosity and eburnation of the joint surfaces and new bone growth over the innominate, was found in 0023 (Plate 2).

Ankylosing spondylitis was identified in three disarticulated contexts (0025, 0038, 0039), but the disease is generally rare and it is likely that all three fragments of thoracic vertebrae belonged to a single individual. The disease consists of a gradual fusion of the entire spine from the sacrum upwards, including the ribs, and eventually results in complete immobilisation. A fragment of right innominate which appeared to have a fused sacro-iliac joint in 0001 could potentially belong to the same individual, although this condition can also be caused by trauma or osteoarthritis.

Metabolic disorders

Cribra orbitalia, a lesion thought to be associated with iron deficiency anaemia, was identified in two articulated child skeletons (0069, 0085), two disarticulated juveniles (0063, 0084) and an unlabelled adult female. In most cases it was porotic, but 0063 had the more advanced cribriotic type.

The left femur of a 6-month-old baby in 0001 showed abnormal curvature and may be a pair with a similar right femur from 0025. The bowing of both bones may have been caused by rickets (vitamin D deficiency). Bowing of an adult male right femur, also in 0001, may indicate healed rickets.

Bones of an 18-month-old baby from 0039 showed gross enlargement, particularly of the femur and ulna (Plate 3), with layers of pitted new bone growth and flaring of the ends of the femur. A fragment of skull from the same context was also thickened and may belong to the same individual. The changes suggest a deficiency disease, but the fragmentary nature of the remains makes diagnosis difficult. Anaemia, scurvy and rickets are all possible, but a chronic infection might produce similar results.



Plate 3. Possible deficiency disease in a baby (0039); femur and ulna.

Stress lesions and trauma

Osteochondritis dissecans, a lesion related to stress on a joint, was noted in three individuals. It was present in the superior right zygapophyseal facet of the eleventh thoracic vertebra and the inferior left of the tenth in sub-adult female 0068. In adult male 0078 there was a lesion in the

proximal facet of the left third cuneiform (c.5 x 3mm) and five small pits in the proximal facet of the left second toe medial phalanx, which was also enlarged with osteophytes. The distal facet of the first cuneiform of 0081 was also affected.

Schmorl's Nodes were not common in this group. Male 0090 was affected to the greatest degree, with lesions occurring in the T5-L4 vertebrae, but largest in the T9-L3 bodies. Fragments of T11-12 in 0001 were also affected.

Exostoses were found in three individuals. Sk. 0078 had a long bony process on the proximal end of the right fibula, and a similar long narrow exostosis was seen on the right fibula of Sk. 0090; both indicate tearing of the attachment for the *Tibialis posterior* muscle. The sesamoid bones of the right foot of Sk. 0097 both had large exostoses on the non-articular surfaces, presumably indicating a tear in the *Flexor hallucis brevis*, the muscle which flexes the big toe.

Fractures were most common in the ribs in this group. They were found in Sk. 0090, two separate individuals in 0001 and another in 0038. Sk. 0090 also had a fracture of the right clavicle in the medial third, and possibly a similar one on the left, although both were well healed with little callus. Avulsion fractures related to twisting of the ankle and inversion of the foot were seen in 0090 (avulsion fracture of the left fifth metatarsal) and 0094 (fracture of the

posterior process of the right talus). A healed head wound was observed in disarticulated male skull 0037. The lesion was located on the left side of the frontal bone and was c.5mm diameter. It did not pierce the inner table, although it appeared to have been made by a sharp object.

A fragment of adult parietal with two straight unhealed cuts was found in layer 0001. The cuts appeared likely to have been made on wet bone and are assumed to be peri-mortem, rather than related to damage by grave digging.



Plate 4. Sawn end of amputated left tibia (0039).

An example of a lower leg amputation was unfortunately disarticulated in layer 0039. The bone consisted of a fragment of the lower two-thirds of the tibia, and had been sawn through the nutrient foramen (Plate 4). The fragment distal to this showed a gross periosteal inflammation (see below). The fact that the fragment ended up in a churchyard suggests that this surgical procedure was fatal and that the severed limb was buried with the victim.

Infections and inflammatory response

Periostitis was identified in several disarticulated bones. In 0001 there were fragments of right and left tibia, fibula and proximal left femur with gross periosteal reactive bone, presumably belonging to a single individual who had died before this new porous bone had chance to become organised into more compact bone. A metatarsal in 0019 with similar changes may belong to the same individual. A right ulna shaft fragment in 0089 also had periosteal reactive bone at the proximal end. Lesions such as these are non-specific and may be related to trauma or infection. The widespread nature of the condition seen in 0001 probably indicates an infection.



Plate 5. Infection of the rib cage (0068). Top left: anterior sternum showing sclerosis. Top right: posterior surface of 2nd and 3rd ribs. Bottom: lytic lesion posterior-inferior edge of manubrium.

rib, 44mm long, covered the whole width and comprised both lytic and sclerotic changes. These lesions suggest possible tuberculosis or a non-specific osteomyelitis – both of which are rare in these bones.

The distal half of a disarticulated sub-adult femur in 0011 had gross periosteal new bone growth on the posterior surface with enlargement of the shaft, and porosity just proximal to the epiphyseal line. This may be osteomyelitis, but no cloaca was present in the surviving fragment.

An amputated fragment of left tibia from 0039 (see above) had gross periostitis and superficial osteomyelitis suggestive of an overlying ulcerative sore in the skin overlying the shin (Plate 6). The original cause of the sore is difficult to determine, but could be associated with trauma, varicose veins or an infection.

Sub-adult female 0068 exhibited gross changes to the sternum, first to third right ribs and right clavicle (Plate. 5). There was thickening and enlargement with pitting and fibre bone on the posterior medial half of the right clavicle, c.50mm long. A circular lytic lesion was present on the posterior inferior surface of the manubrium c.15mm diameter, surrounded by pitting, and also pitting on the anterior surface in the corresponding area. Two sections of the sternal body remained unfused except in a small section of the posterior cortex, and there were lytic lesions and sclerotic new bone anteriorly on the right side (but the left side may have been lost post-mortem). Thickening and pitting was present on the first and second ribs, but the second appeared to be healed. A concave lesion on the posterior surface of the anteriot third of the third



Plate 6. Periostitis and superficial osteomyelitis of the shin (0039).

Two fragments of skull from layer 0039 showed signs of possible tertiary syphilis (Plate 7). It is

not clear whether the two pieces were from a single individual, although the thickness and colouring of the bone would not rule this out. The fragment of frontal bone was male, the parietal was unsexed. The lesion in the frontal bone consisted of a circular hole with new bone growth at the edges; it perforated the brow ridge just to the right of the nose and entered the frontal sinus. A large, compact mass of bone (Plate 7) was present on the inner table of the frontal bone to the left of the midline, but the cause of this is uncertain. The fragment of parietal had several stellate scars associated with healing of cranial syphilitic lesions.



Plate 7. Possible syphilis of the cranial vault (0039), partly healed on parietal (left) but with lytic lesion in glabella (right).

Neoplasms

Very small osteomata were present on the frontal bone of male 0090. It is likely that these would have developed into larger growths had he lived longer, but at the time of his death they were very shallow raised areas of dense new bone 6-9mm in diameter. Small warty growths like these are commonly found on the cranial vault and are benign.

Miscellaneous lesions

Slight hyperostosis frontalis interna was present on the inner table of the frontal bone of older female 0061. This lesion is associated with menopausal changes in women.

A fragment of skull which appeared to show Paget's Disease was identified in 0001. This disease of unknown aetiology affects older individuals, more usually male than female. The skull fragment was thickened and the spaces within the trabecular bone were lost, but a more certain diagnosis would require a radiograph.

A deep volar phalangeal groove was seen in the left proximal fourth finger phalanx of older female 0081. This type of lesion is found in leprosy and is a result of the claw-like contraction of the fingers. In this case, however, leprosy is an unlikely diagnosis and the groove may have been formed by a flexion contracture of the proximal interphalangeal joint, as seen in Dupuytren's contracture.

Pitting of the parietals, possibly a result of porotic hyperostosis in childhood or an inflammation of the scalp was seen in older female 0061 and young male 0090.

Summary and discussion

The remains of as many as 130 individuals were identified amongst the articulated and disarticulated human bone assemblage. The condition of the bone, together with the high prevalence of dental disease and associated coffin furniture indicates a post-medieval date for

most of these remains.

Age and sex distribution was within the expected patterns, including individuals of both sexes in roughly equal proportions, ranging in age from perinatal through to elderly adults. In terms of stature and physical appearance, the group was within normal limits for the period.

The bones were well preserved but it is unfortunate that so many good examples of pathological conditions were disarticulated. Diseases present in this group included the usual range of degenerative changes; several fractures of the chest area and head wounds which may indicate direct violence; minor injuries and stress fractures of the legs, ankles and feet; inflammatory changes which may be related to trauma; and infections associated with the close contact of urban life such as syphilis. The most unusual find was evidence for surgery in the form of an amputated limb, performed due to a chronic ulcerative infection and probably resulting in the death of the patient.

Animal bone

Introduction

A total of 2341g, consisting of 172 pieces, of faunal remains were analysed. All finds are from post-medieval contexts, but it is probable that the bone retrieved is from pre-church land use. The assemblage produced the butchered remains of sheep, cattle, pig and goose; in addition, a single rat bone was recovered.

Methodology

All of the bone was examined primarily to determine range of species and elements present and the amount of material that could produce measurable, ageable bone. Bones were also studied to determine if bone, horn or antler working was present in the assemblage. A note was made of butchering and any indications of skinning, hornworking and other modifications. When possible a record was made of ages and any other relevant information, such as pathologies. Counts and weights were noted for each context. No measurements were taken with this assemblage due to the lack of much suitable material and the small size of the assemblage. All information was recorded on the faunal remains recording sheets and input into an Excel database for analysis. The analysis was carried out following a modified version of guidelines by English Heritage (Davis 1992). A catalogue of all of the bone context by context is included in Appendix 5.

Results and conclusions

The assemblage had been heavily butchered and fragmented, allowing just 33.5% of the remains to be positively identified to species. The remainder of the assemblage was simply recorded as 'mammal' and comprised of butchered fragments of medium to large mammals. Apart from the fragmentation, the assemblage was generally in good condition. Canid gnawing was noted on bone from layer 0038, which may indicate that some bone waste had been left uncovered and open to scavenger activity.

The majority of the identifiable bone in this assemblage belongs to the main three domestic food species, sheep, cattle and pig; most of these remains were butchered to some degree. The most common species identified was sheep, which produced almost twice the quantity of cattle or pig. Small quantities of goose were recorded in layer 0001, trench 0020 and grave fill 0049, all belonging to adult geese; butchering of the geese was noted, particularly in 0049 which produced a heavily cut distal goose radius. A single juvenile rat femur was found in 0049, but could be intrusive as these animals will burrow deep into the ground.

The sheep recovered include adult and juvenile remains. The elements of sheep found include metapodials, horn, humeri, femurs and pelvis, most of which had been chopped and cut; so it appears that both primary and secondary butchering and food waste is present. The sheep horncore from pit fill 0036 is interesting as it shows a depression at the rear of the horn that may be re-absorption of the horn to recover calcium. This re-absorption has been previously noted in

sheep on a poor diet or in sheep that have been over-milked or over-bred (Albarella 1995) and may suggest that sheep at this site had not been looked after well. The sheep horncore had also been chopped, possibly to remove the horn for working.

Both primary and secondary butchering/food elements of cattle were recovered. As with the sheep, both adult and juvenile bones are present. The remains included a horn from layer 0001 which had been chopped, possibly for working. This context also produced butchered cattle remains including 4cm of the proximal end of a metatarsal. This metatarsal appears to have been sawn and the bone also shows some cut marks. This piece of bone is a much darker brown than the rest of the bone in this context, it also has suffered more wear than the other bone, which would suggest it is residual or re-deposited. It is possible that this piece of cattle bone, or the remainder of the metatarsal, had been intended for working.

Adult and juvenile pig bones were found, all of which had been butchered. Layer 0001 produced a sawn pig humerus that also bore several cuts. This humerus appears distorted and swollen, suggesting an infection in the bone, despite this, the butchering would suggest that the pig was eaten.

Overall conclusions

It would appear that this assemblage is derived from the primary and secondary waste of the main domestic food species. The presence of both adults and juveniles of all of these animals would suggest that they could have been bred on or close to the site and processing was carried out nearby.

The removal of horns of both sheep and cattle could suggest that hornworking was carried out on site, although not on any large scale. Working could be further suggested with the sawn cattle humerus.

Shell

Ten oyster shells and one fragment of mussel were recovered from nine contexts, including pit fills, grave fills and unstratified layers. These fragments probably relate to pre-church use and are largely redeposited in later features.

Plant macrofossils

by Val Fryer

Introduction

During the 1999 evaluation, a complete pottery vessel was recovered from the fill of a medieval grave (Fig 4). The entire contents of this pot were sampled for the assessment of the plant macrofossil assemblage.

Methods

The sample was processed by manual water flotation/washover, collecting the flot in a 500 micron mesh sieve. The dried flot was scanned under a binocular microscope at magnifications up to x16, and the plant macrofossils and other remains noted are listed below on Table 10. All plant remains were charred. The non-floating residue was collected in a 1mm mesh sieve and sorted when dry. Artefacts/ecofacts were not present.

Results of assessment

The assemblage was largely composed of charcoal, some fragments of which were quite large and appeared to have very clean, sharp and unabraded surfaces. Charcoal identification was not undertaken at this stage. Other plant remains were rare, but single examples of an indeterminate culm node, basal rachis node and tuber fragment were recovered along with a barley (*Hordeum* sp.) rachis node. Two possible grain fragments were also noted but they were too poorly

preserved for positive identification. Small pieces of black porous 'cokey' material were possibly residues of the combustion of organic remains at very high temperatures. The only other material noted was two small fragments of a vitreous bubble or globule.

Sample No.	0010
Plant macrofossils	
Hordeum sp. (rachis node)	Х
Cereal indet. (grains frags.)	х
(basal rachis node)	Х
Charcoal <2mm	XX
Charcoal >2mm	XX
Indet. culm node	Х
Indet.seeds	х
Indet.tuber frag.	х
Other material	
Black porous 'cokey' material	х
Vitreous material	Х
Sample volume (litres)	4
Volume of flot (litres)	0.1
% flot sorted	100%

Table 10. Charred plant macrofossils and other remains Key: x = 1 - 10 specimens; xx = 10 = 100 specimens

Conclusions and recommendations for further work

The assemblage would appear to be primarily composed of fuel residue in the form of charcoal or charred wood. The chaff/straw elements and tuber fragment may be derived from dried material used as kindling. However, the significance of such material within a medieval grave is not apparent at the time of writing. As so few macrofossils were recovered from this assemblage, no further work is recommended.

Discussion of the finds evidence

The earliest finds from the site consist of a few worked flints of prehistoric date and a sherd of Roman pottery. Sherds of Saxon pottery were also infrequent. None of these indicate intensive land use before the medieval period.

The small quantity of early and high medieval pottery from the site may indicate that there was some domestic activity on the site prior to the construction of the church in c.1300, perhaps related to the Priory of the Holy Trinity. Other finds which may relate to medieval site use include animal bone, slag and lava quern. Some of the medieval wares may post-date the construction of the church, however. Their presence, like that of the later wares and bottle glass, may simply be a result of proximity to urban settlement and casual deposition of rubbish.

Building materials from the site suggest the use of ceramic roof and floor tiles from the medieval period onwards. There is evidence for at least two phases of tiled floors within the church. Potentially the fragments of roof tile represent an earlier phase of roofing prior to the Victorian renovations, although much of the roof appears to have been leaded even before this (Knott 2005). Roof tile may have been used in some of the less visible areas of roofing, but some of it had clearly been reused as hardcore in walling. A few small fragments of post-medieval window came and glass may relate to the renovations, but they are not closely datable.

With the exception of a few items – such as coins and dress accessories – which probably reached the churchyard through casual loss, the metalwork assemblage consists largely of items related to funerary activity. Simple coffin fittings of a type also found in both Norfolk and Essex were recovered, and indicate that some of the excavated graves belonged to the 18th/19th centuries.

The limited evidence from the skeletal remains themselves indicates that the burials represent a 'normal' population which included individuals of all ages and both sexes. The high proportion of bony pathology present in this group is typical of an urban medieval and later population, in which the diseases of old age, accidental and deliberate injuries, and chronic infections were relatively common in comparison with earlier groups.

5. Discussion

Evidence for activity on the site predating the medieval church was scant, comprising a few prehistoric flints, a single Roman pottery sherd and a low density of Saxon pottery. Whilst the lack of Saxon material could be explained by the fact that the excavation only went to the depth of the formation level for the new extension, it is more likely to suggest that this part of the town, outside the defences, was not well populated before the medieval period. Although the excavation area was small and did not extend to the depth of the naturally occurring subsoil, in a graveyard where the soil has been extensively re-worked over hundreds of years, one might expect any early evidence present to be well distributed through the soil.

The burials and disarticulated bone removed during the excavation makes up a relatively small assemblage and represents only a small proportion of the number of burials present within the churchyard. As such, the evidence provided by the skeletal remains is quite limited. However, what was seen can be said to be representative of an urban medieval and later population in terms of pathology.

The presence of an almost complete pot (0010) is unusual in a medieval graveyard and the presence of pits, particularly pit 0031, and linear features (0074 and 0042) was unexpected.

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SUFFOLK COUNTY COUNCIL ARCHAEOLOGICAL SERVICE - CONSERVATION TEAM

Brief and Specification for an Archaeological Excavation

ST MARGARET'S CHURCH, IPSWICH

1. Background

- 1.1 Consent has been granted for development (I/99/0617/FP). The development consists of alterations and extension to the north aisle to form kitchen and WC accommodation.
- 1.2 The development area has been evaluated (Suffolk County Council Archaeological Service, Report No 99/8), the report adequately describes the archaeology of the site.
- 1.3 In order to comply with the planning condition the prospective developer has requested a brief and specification for the archaeological recording of archaeological deposits which will be affected by development.
- 1.4 There is a presumption that all archaeological work specified for the whole area will be undertaken by the same body, whether the fieldwork takes place in phases or not. There is similarly a presumption that further analysis and post excavation to final report stage will be carried through by the excavating body. Any variation from this principle would require a justification which would show benefit to the archaeological process.
- 1.5 All arrangements for field excavation of the site, the timing of the work, and access to the site, are to be negotiated with the commissioning body.

2. Brief for Archaeological Project

- 2.1 In the area defined on Figure 1, archaeological excavation, as specified in Section 3, is to be carried out prior to development. The intention is to excavate all areas affected by the extension, the new pathway and retaining wall beyond the extension.
- 2.2 The excavation objective will be to provide a record of all archaeological deposits which will be damaged or removed by development, including services and landscaping.
- 2.3 A record is to be made of the Medieval wall and fabric of the present north aisle which will be obscured and affected by the new works.
- 2.4 Monitoring of ground-works by the main contractor is to be undertaken, special attention is to be paid to drain trenches and foul sewers. The presence and location of disturbed burials are to be recorded, and efforts made to make minor realignments to avoid excessive disturbance, but in this instance full archaeological excavation will not be required
- 2.4 The academic objective will centre upon the high potential for this site to produce evidence for Medieval and Post Medieval population via the skeletal remains. There is also potential for evidence of pre-church land use and settlement.
- 2.5 This project will be carried through in a manner broadly consistent with the
'Management of Archaeological Projects' English Heritage 1991 (MAP). Excavation is to be followed by the preparation of a full archive, and an assessment of potential for analysis. Analysis and final report preparation will follow assessment and will be the subject of a further brief and updated project design.

- 2.6 The submission of a Project Design based upon this brief and the accompanying outline specification of minimum requirements, is an essential requirement. The Project Design will be used to establish whether the requirements of the planning condition will be adequately met. Selection of an archaeological contractor should not take place until the Project Design has been approved.
- 2.7 The developer or his archaeologist will give the Conservation Team of the Suffolk County Archaeological Service (Suffolk County Council, Shire Hall, Bury St Edmunds IP33 2AR. Telephone/Fax: 01284 352443) five working days notice of the commencement of ground works on the site, in order that the work of the archaeological contractor may be monitored. The method and form of development will also be monitored to ensure that it conforms to previously agreed locations and techniques upon which this brief is based.

3. Specification for the Archaeological Excavation

The excavation methodology is to be agreed in detail before the project commences, certain minimum criteria will be required:

- 3.1 Human burials are to be excavated in their entirety, for example: if the lower limbs intrude into the excavation area the excavation must be extended to include the entire interment. However, where possible interments should be left entire and undisturbed, for example: beneath paved pathways outside the building and below the formation layer of the new building floor.
- 3.2 Fully excavate all features which are, or could be interpreted as, structural. Post-holes, and pits which may be interpreted as post-holes, must be examined in section and then fully excavated. Fabricated surfaces within the excavation area(e.g. yards & floors) must be fully exposed and cleaned. Any variation from this process can only be made by agreement with a member of the Conservation Team of the County Archaeological Service, and must be confirmed in writing.
- 3.3 All other features must be sufficiently examined to establish, where possible, their date and function. For guidance:
 - a) A minimum of 50% of the fills of the general features is be excavated.
 - b) Between 10% and 20% of the fills of substantial linear features (ditches etc) are to be excavated, the samples must be representative of the available length of the feature and must take into account any variations in the shape or fill of the feature and any concentrations of artefacts. Any variations from this practice are to be agreed [if necessary on site] with the Conservation Team.

Any variation from this process can only be made by agreement with a member of the Conservation Team of the County Archaeological Service, and must be confirmed in writing.

- 3.4 Collect and prepare environmental samples (by sieving or flotation as appropriate). A general policy on environmental remains, including sampling strategy and processing, is to be agreed with the Regional Environmentalist before the commencement of site work, and should be contained in the Project Design.
- 3.5 A finds recovery policy is to be agreed before the project commences. It should be addressed by the Project Design. Use of a metal detector will form an essential part of finds recovery. Sieving of occupation levels and building fills will be expected.
- 3.6 All finds will be collected and processed. No discard policy will be considered until the whole body of finds has been evaluated.
- 3.7 All ceramic, bone and stone artefacts to be cleaned and processed concurrently with the excavation to allow immediate evaluation and input in decision making.
- 3.8 Metal artefacts must be stored and managed on site in accordance with *UK Institute of Conservators Guidelines* and evaluated for significant dating and cultural implications before despatch to a conservation laboratory within 4 weeks of excavation.
- 3.9 Human remains are to be treated at all stages with care and respect, and are to be dealt with in accordance with the law. They must be recorded *in situ* and subsequently lifted, packed and marked to standards compatible with those described in IFA Technical Paper 13 "Excavation and post-excavation treatment of Cremated and Inhumed Human Remains", McKinley & Roberts. Proposals for the final disposition of remains following study and analysis will be required in the Project Design.
- 3.10 Plans of the archaeological features on the site should normally be drawn at 1:20 or 1:50, depending on the complexity of the data to be recorded. Sections should be drawn at 1:10 or 1:20 again depending on the complexity to be recorded. Any variations from this must be agreed with the Conservation Team.
- 3.11 A photographic record of the work is to be made, consisting of both monochrome photographs and colour transparencies.
- 3.12 Excavation record keeping is to be consistent with Suffolk County Council Sites and Monuments Record requirements and compatible with its archive. Methods must be agreed with the SCC Conservation Team.

4. **Fabric Recording**

- 4.1 Make a photographic record of the elevation of the north aisle wall to be obscured.
- 4.2 Provide basic structural analysis of the wall using sketch elevations [no measured survey necessary].
- 4.3 Record any disturbance to Medieval fabric caused by the keying in of new work
- 4.4 During construction or excavation make a record of exposed areas of the Medieval foundations of walls and buttresses to determine construction methods and to identify building phases.

5. Archive Requirements

- 5.1 Within four weeks of the end of field-work a timetable for post-excavation work must be produced. Following this a written statement of progress on post -excavation work whether archive, assessment, analysis or final report writing will be required at three monthly intervals.
- 5.2 An archive of all records and finds is to be prepared consistent with the principle of 'Management of Archaeological Projects', English Heritage 1991 (MAP), particularly Appendix 3. However, the detail of the archive is to be fuller than that implied in MAP Appendix 3.2.1. The archive is to be sufficiently detailed to allow comprehension and further interpretation of the site should the project not proceed to detailed analysis and final report preparation. It must be adequate to perform the function of a final archive for lodgement in the County SMR or museum.
- 5.3 A clear statement of the form, intended content, and standards of the archive is to be submitted for approval as an essential requirement of the Project Design (see 2.5).
- 5.4 The site archive quoted at MAP2 Appendix 3, must satisfy the standard set by the "Guideline for the preparation of site archives and assessments of all finds other than fired clay vessels" of the Roman Finds Group and the Finds Research Group AD700-1700 (1993).
- 5.5 Pottery should be recorded and archived to a standard comparable with 5.3 above, i.e. *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, Prehistoric Ceramics Research Group Occ Paper 1 (1991, rev 1997), the *Guidelines for the archiving of Roman Pottery*, Study Group Roman Pottery (ed M G Darling 1994) and the *Guidelines of the Medieval Pottery Group* (in draft).
- 5.6 All coins must be identified and listed as a minimum archive requirement.
- 5.7 The data recording methods and conventions used must be consistent with, and approved by, the County Sites and Monuments Record. All record drawings of excavated evidence are to be presented in drawn up form, with overall site plans. All records must be on an archivally stable and suitable base.
- 5.8 A complete copy of the site record archive must be deposited with the County Sites and Monuments Record within 12 months of the completion of fieldwork. It will then become publicly accessible.
- 5.9 Finds must be appropriately conserved and stored [in accordance with UK Institute Conservators Guidelines].
- 5.10 Every effort must be made to get the agreement of the landowner/developer to the deposition of the finds with the County SMR or a museum in Suffolk which satisfies Museum and Galleries Commission requirements, as an indissoluble part of the full site archive. If this is not achievable for all or parts of the finds archive then provision must be made for additional recording (e.g. photography, illustration, analysis) as appropriate. If the County SMR is the repository for finds there will be a charge made for storage, and it is presumed that this will also be true for storage of the archive in a museum.
- 5.11 Where positive conclusions are drawn from a project, a summary report in the established

format, suitable for inclusion in the annual 'Archaeology in Suffolk' section of the Proceedings of the Suffolk Institute for Archaeology journal, must be prepared and included in the project report, or submitted to the Conservation Team by the end of the calendar year in which the evaluation work takes place, whichever is the sooner.

6. **Report Requirements**

- 6.1 A report on the fieldwork and archive must be provided consistent with the principle of MAP, particularly Appendix 4. The report must be integrated with the archive.
- 6.2 The objective account of the archaeological evidence must be clearly distinguished from its archaeological interpretation.
- 6.3 An important element of the report will be a description of the methodology.
- 6.4 The report will give an opinion as to the potential and necessity for further analysis of the excavation data beyond the archive stage, and the suggested requirement for publication. Further analysis will not be embarked upon until the primary fieldwork results are assessed and the need for further work is established. Analysis and publication can be neither developed in detail or costed in detail until this brief and specification is satisfied.

Specification by: R Carr

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Tel: 01284 352441

Date: 25 November 2000

Reference: /StMargarets10

This brief and specification remains valid for 12 months from the above date. If work is not carried out in full within that time this document will lapse; the authority should be notified and a revised brief and specification may be issued.

If the work defined by this brief forms a part of a programme of archaeological work required by a Planning Condition, the results must be considered by the Conservation Team of the Archaeological Service of Suffolk County Council, who have the responsibility for advising the appropriate Planning Authority.

Appendix II: Context list

_	OPNO	CONTEXT	IDENTIFIER	DESCRIPTION	CUTS	OVER	CUTBY	UNDER	FINDS	PERIOD
	0001	0001	Layer	V. dark brown silty loam topsoil containing building debris, tile, some pottery and disarticulated bone, recorded in both trenches 1 & 2, 20cm deep.		0002 0004			у	modern
	0002	0002	Layer	Spread of mixed orange-brown silty clay containing tile/ pot/ disaticulated bone over NW half of Trench 1.		0018	0004	0001	у	
	0003	0003	Layer	Layer of orange-brown silty clay over SE half of Trench 1- possibly equal to 0002- cut by grave cut 0004.			0008	0001	у	
	0004	0004	Grave (cut and fill)	Grave cut filled with mid brown clayish silty loam, pot, tile and disarticulated bone and some ?in-situ coffin fittings.	0002 0017			0001	у	
	0005	0005	Grave	Grave containing articulated skeleton- only half visible-upper body half under section edge.				0003	n	
	0006	0006	Grave	Grave containing skull (excavated) and articulated body (un-exc.).				0003	n	
	0007	0004	Skeleton	Skeleton (un-exc.) in cut 0004 below grave fill and disarticulated bone.				0004	n	
	8000	0008	Grave	Grave containing skeleton 0008. Cuts 0003 on its SE side but appears to be cut by grave 0011.	0003		0011		n	
	0009	0009	Grave	Grave containing articulated skeleton and pot 0010, cutting natural clay 0017.	0017			0003	у	
	0010	0009	Complete pot	Complete pot found at the head of skeleton 0009.						
	0011	0011	Grave	Grave which appears to cut grave 0008, although their relationship was not entirely clear whilst excavating or in section.	0008 0017			0001	n	
	0012	0012	Grave	V. gravely mid brown-orange sandy clay grave fill under the topsoil across the NWestern-most 30cm in T2. Contains building debris and disart. bone.	0013 0014			0001	у	
	0013	0013	Layer	Mid brown-orange silty clay loam with mortar flecks and building debris.		0014	0012	0001	у	
	0014	0014	Layer	Mid brown silty clay loam visible across Trench 2 with few brick/tile fragments, cut by grave 0012.			0012	0013	у	
	0015	0015	Layer	Mid brown silty clay loam containing large mortar lumps and building debris, cut by grave 0012.			0012	0014	у	
	0016	0016	Layer	Mid orange-brown silty clay loam layer containing building debris and disarticulated bone, the fill of a ditch feature running E-W across Trench 2.			0012	0015	у	
	0017	0017	Layer	Natural orange clay and sand subsoil recorded in trenches 1 &2.			04 06 08 09 011	0003	n	
	0018	0018	Stone-topped	Stone/concrete-topped tomb at NW end of Trench 1, 40cm below turf height. tomb				0002	n	

0019	0019	Trench	Backfill of Trench 1					
0020	0020	Trench	Backfill of Trench 2					
0021	0021	Pit cut	Small probable pit					
0022	0021	Pit fill	Fill of pit 0021					у
0023	0023	Layer	Mid orangey brown gravelly silty clay. Rich in artefacts - CBM, disarticulated human bone, flecked with mortar. Probably same evaluation layers 0002/0003/?0013/14. Essentially cleaning layer.				0007	у
0024	0024	Grave cut	Small grave? With small head stone (beside large one) 40 x 9cm piece of stone approx 50cr down in east end, not sure if placed or thrown. Small headstone sat on a 'packing stone' which had been attached to the large one.	n		0035 0036?		
0025	0024	Grave fill	Fill from grave 0024					
0026	NOT USED							
0027	NOT USED							
0028	NOT USED							
0029	NOT USED							
0030	0030	Pit cut	Large pit, irregular in plan, in NW corner of site. Called grave 0012 in evaluation.	0092 0095				
0031	0030	Pit fill	Filled by alternate layers of pale orange mixed clay & mid-pale brown clay silt.					у
0032	NOT USED							
0033	0033	Grave cut	Rather narrow grave. Cut running E-W					
0034	0033	Grave fill	Fill of grave cut 0033. Light brown silty, clay sand, with nodules of chalk. Tree root present.	0047	0045 0047			
0035	0035	Pit cut	Oval small pit. Possible tree bole?					
0036 0037	0035 0037	Pit fill Human skull	Mid to dark brown silty sand, with plenty of roots and animal disturbance Loose human skull. Levelled & position planned but later found to be fragment only					у

OPNO CONTEXT IDENTIFIER DESCRIPTION

_	OPNO	CONTEXT	IDENTIFIER	DESCRIPTION	CUTS	OVER	CUTBY	UNDER	FINDS	PERIOD
	0038	0038	Layer	Mid brown sandy silt layer. Mixed, redeposited material; rich in disarticulated bone & building material. Occasional sherds of med pottery. Essentially cleaning layer. Arbituary.			0024 0033 003	0023 0	у	
	0039	0039	Spread layer	Mid brown silty stony sand	0024 0039					
	0040	0040	Layer	Mid brown silty sand mixed with chalky clay visible as distinct layer or feature in edge of site section						
	0041	0041	Layer	Soil beneath 0038. Not layer as such. Approx 25cm (arbitrary) brown silty sand full of tile, animal & human bone and patches of mortary soil. Mixed, redeposited - like 0023 & 0038. Essentially, cleaning layer. Few cuts visible.	Nat			0038		
	0042	0042	Slot?	Slot running E-W, U modern runs towards [0033] and might be same thing. Unclear what happens to it. Only visible about 1m down.						
	0043	0042	Slot fill?	Fill of slot 0042						
	0044	0044	Grave cut	Possible grave cut. Realtionship with [0048] unclear.						
	0045	0044	Grave fill	Mid grey brown silty sand				0034		
	0046	0034/45	Finds	Mixed finds from fills (0034) and (0045)						
	0047	0047	Layer	Layer immediately to N. of and cut by Slot [0033]. Loose grey brown silty sand.				0034		
	0048	0048	Grave cut	Possible grave cut. Relationship with [0044] unclear						
	0049	0048	Grave fill	Fill of possible grave. Mid grey brown silty sand.						
	0050	0050	Grave cut	Just below slot 0042 and almost certainly cut by it. Sides of grave not perfectly clean.			0042	0042		
	0051	0050	Grave fill	Fill of grave 0050						
	0052	0050	Skeleton	Childs body laid on back, arms by side. Almost certainly cut by 0042 as left side of body missing. Head & shoulders also missing probably cut away by evaluation trench. Some toes disturbed by digger (TF)						
	0053	0053	Layer			0056				
	0054	0054	Grave cut	Possible grave cut						
	0055	0054	Grave fill	Fill of possible grave 0054						

OPNO CONTEXT IDENTIFIER DESCRIPTION

CUTS OVER CUTBY UNDER FINDS PERIOD

0056	0056	Layer			0053
0057	0057	Grave cut	Grave next to big tombs in NW corner of site identified by line of nails		
0058	0057	Grave fill	Fill is a mid to dark brown silty/clayey/loamy sand. Bag of bones, put in with Fill No are bones which have nothing to do with Skeleton in situ.	3	
0059	0059	Grave cut	Skeleton cut by evaluation trench		
0060	0059	Grave fill	Mid brown silty clay sand.		
0061	0059	Skeleton	Upper half of skeleton in grave 0059		
0062	0063	Finds	Concentrated group of pot sherds.		
0063	0063	Layer	Mid brown silty sand layer between church and drain (under path) Rich in finds (incl. 0062) & charcoal flecks. Homogenous - may be the result of trampling prior to laying of path.		
0064	0064	Grave cut	Grave in NE corner of site		
0065	0065	Grave fill	Mid orangey brown silty sand.	0033	
0066	0066	Grave cut	Squarish grave cut. Cut by 0011	0011	
0067	0066	Grave fill	Mid brown sandy clay. Fairly compacted.		
0068	0066	Skeleton	Skull shows old & new breaks. 'Striations' visible on outer surface of skull. Right hand side cut away. Same as 0008 in evaluation. Signs of Ae staining on R clavicle, sternum & vertebrae but no associated object surviving		
0069	0086?	Skull	Disturbed skull possibly related to skeleton 0088		
0070	0070	Pit cut & fill	Very modern pit filled by ashy soil. Visible on sloping side of site. Pretty irrevelant but put on plan.		
0071	0071	Grave cut	Grave is cut by [0011] from elbow down. No lower body there. E-W grave.		
0072	0071	Grave fill	Mid brown silty clay sand. Full of tree roots. Fairly compacted.		
0073	0071	Skeleton	Skeletons back bone is more of stain than bone bottom half of body has gone, possible taker away with 0011.	1	

OPNO	CONTEXT	IDENTIFIER	DESCRIPTION	CUTS	OVER	CUTBY	UNDER	FINDS	PERIOD
0074	0074	Ditch cut	Ditch/slot running W-E. Visible from rectangular drain to evaluation trench 0020. Recorded in trench section (evaluation report) though not recognised as ditch at that stage. Not noticed further east of site. Cuts grave [0076] Relationship with grave [0079] not known.	1					
0075	0074	Ditch fill	Mid brown silty clay, some mortar flecks.	0076					
0076	0076	Grave cut	Grave on edge of evaluation trench 2 cut away (probably by trench) from knees up. E-W grave. Cuts grave 0079, skeleton 0078 lies almost touching legs off 0081 skeleton (at cutting point)	0079 J	0074				
0077	0076	Grave fill	Fill of grave 0076						
0078	0076	Skeleton	Only lower legs remaining. Bones quite large and in good condition. Lying on back, legs slightly apart.						
0079	0079	Grave cut	Legs & feet remaining in grave, top part cut away by grave 0076. E-W.						
0080	0079	Grave fill	Fill of grave 0079						
0081	0079	Skeleton	Only legs & feet, lies on back with legs slightly apart, medium size.						
0082	0076/79	Mixed finds	Finds from both 0080 and and 0077 (grave fills)						
0083	0083	Grave cut	Cut of small grave in NE corner of site.						
0084	0083	Grave fill	Fill of 0083 Mid orangey brown silty sand.						
0085	0083	Skeleton	Missing hands, lower legs and feet. No it isn't!						
0086	0086	Grave cut	Cut of very small grave						
0087	0086	Grave fill	Fill of 0086. Mid grey/brown silty sand.						
0088	0086	Skeleton	Few bones remain.						
0089	0089	Finds	Finds from cleaning layer above & possibly comprising grave 0011, 0071 & 0066. Could come from any of these fills or from mixed layer immediately above (0038)						
0090	0033	Skeleton	Only missing left arm.						
0091	0048	Skeleton	Only the head and shoulders excavated, rest continues beyond edge of site. Skull etc. reburied at E end of adjacent grave [0083]						
0092	0092	Grave cut	E end (45cm) only of grave			0030			

OPNO	CONTEXT	IDENTIFIER	DESCRIPTION	CUTS	OVER	CUTBY UNDER FINDS	PERIOD
0093	0057	Skeleton					
0094	0092	Skeleton					
0095	0095	Grave cut	Square E-end of grave; all but c. 200mm cut away by pit 0030.	0092		0030	
0096	0095	Grave fill	Mid brown clay sand, occasional flint pebbles. Coffin nails present around feet.				
0097	0095	Skeleton	Only the feet survive.				
0098	0093/96	Finds	Finds from either 0096 or 0093 or both, recovered before relationship established.				
0099	0092	Grave fill	Mid grey/brown loam with pockets of orange clay.				
0100	0033	Finds	Articulated human bone, from a child (tibia, fibula) Bones found near head of skeleton 0090. See plan.				

Appendix III: pottery by feature and context

Ctxt	Fabric	Fab No	Туре	Form	Rim	Base	No.	Wt/g	Rim Diam	Rim %	Decoration	Glaze ext/	int	Ab.	Soot Also in	Notes	Spotdate	Type date
featu	ure 000	1																
0001	Layer RBGG	1.32	U				1	14						+				RB
	EMW	3.10	U				1	5								slightly gritty, oxid		11th-12th c.
	MCW	3.20	U				3	10								1 v. micaceous		L.12th-14th c.
	MCW	3.20	В			F?	1	8							+	occ shell		L.12th-14th c.
	IPSG	4.31	RH	JG	UPP	Ľ	1	60	80	18		LG				strap handle. May be non-local, fine orange with grey core		L.13th-E.14th c.
	IPSG	4.31	Н				1	41						+		wide strap, mortar all over		L.13th-E.14th c.
	LMT	5.10	D				1	14			COHL	DB		+				15th-L.16th c.
	IGBW	6.11	D				1	2				DB	DB					16th-18th c.
	LPME	8.01	R	BL?	FTE	V	1	15	170	5								18th-20th c.
	REFW	8.03	D				1	7				С	С					L.18th-20th c.
	ESW	8.20	D	BT			1	59				DB				blacking bottle or similar		17th-19th c.
featu	ure 001	9																
0015	THET	2.50	U				2	19						+		1 thick		10th-11th c.
	HFW1	4.23	D				1	3			SG	G		+				M.12th-M.13th c.
featu	J re 002	0																
0020	MCW	3.20	R	BL	SQB	D	1	32	260	8							13/14th c	L.12th-14th c.
featu	u re 002	3																
0023	Layer MCW	3.20	U				1	20						+	+	micaceous		L.12th-14th c.
	LMTE	5.60	D				1	21				С	С					15th-16th c.
	GSW3	7.13	D				1	19				С	С					L.14th-E.16th c.

Ctxt	Fabric	Fab No	Туре	Form	Rim Base	No.	Wt/g	Rim Diam	Rim %Decorati	ion Glaze ext/i	nt	Ab. Soot Also in	Notes	Spotdate	Type date
	LPME	8.01	U			1	25								18th-20th c.
	REFW	8.03	R	BL?	FTEV	1	5	140	10						L.18th-20th c.
	REFR	8.04	D			1	12			DB	W				L.18th-20th c.
featu 0025	ure 002 Grave f	24 Fill													
	THET	2.50	В		S	1	12								10th-11th c.
	MCW	3.20	U			1	1						burnt?		L.12th-14th c.
	ESW	8.20	D	BT		1	10			В	С				17th-19th c.
featu 0031	ure 003 Pit fill	0													
	THET	2.50	U			2	20						1 burnt? 1 deformed		10th-11th c.
	IPSG	4.31	В			1	8		tb						L.13th-E.14th c.
	LMT	5.10	D			1	1				G				15th-L.16th c.
	GSW3	7.13	D			1	2			С	С				L.14th-E.16th c.
	ESW	8.20	D			1	4			В	С				17th-19th c.
featu 0034	ure 003 Grave f	i3 fill													
	EMW	3.10	U			2	12								11th-12th c.
	MCW	3.20	U			2	4						flake		L.12th-14th c.
	MCW	3.20	R	BL?	COLL?	1	10	250	5					13/14th c	L.12th-14th c.
	HOLG	4.32	DH	JG		1	71			G		0046?	strap		L.13th-E.14th c.
	LMTE	5.60	D			1	5				С				15th-16th c.
feat	Iro 003	1/15													
0046	Finds	4/40 1 22	Р			1	17			0		00242			1 12th E 14th a
	HULG	4.52	U			1	17			G		0034?			∟. i 3ui-E. 14ui C.

Ctxt	Fabric	Fab No	Туре	Form	Rim	Base	No.	Wt/g	Rim Diam	Rim %Decoration	Glaze ext/int	Ab. S	oot	Also in	Notes	Spotdate	Type date
featur 0038	re 0038 Layer EMWS S	3 3.19	U				2	16									11th-12th c.
featur 0039	e 003 Spread IPSG	8 9 I layer 4.31	D				2	18		SLW?	G				speckled glaze		L.13th-E.14th c
featu 0041	u re 004 Layer THET	2.50	U				1	4				+			or poss MCW		10th-11th c.
featu 0049	u re 004 Grave f EMWS S	8 fill 3.19	U				2	3					+				11th-12th c.
featu 0058	Ire 005 Grave f SIPS	57 fill 2.32	U				1	48				+					650-850
	MTN1	3.54	R	JR	TRBD)	1	8				+	+				12th-13th c.
featur 0062	re 006 Finds MCW	3 3.20	BUD	JR		S	18	954		ATSV			+	0063?	large jar		L.12th-14th c.
0063	Layer MCW	3.20	BU	JR		S	5	158					+	0062?			L.12th-14th c.
	IPSG	4.31	U				1	12		SG int							L.13th-E.14th c
feat u 0084	u re 008 Grave f	3 Fill															
	EMWS S	3.19	D				1	11		STAB					stabbed with bird bone? oxid		11th-12th c.
	EMWS S	3.19	U				1	5					+				11th-12th c.
	MCW	3.20	В			S	1	24					+				L.12th-14th c.
	MCW	3.20	U				1	8							slight shoulder, oxid ext/int		L.12th-14th c.
	MCWG	3.21	в			S?	1	4									L.11th-13th c?

Ctxt	Fabric	Fab No	Type Form	Rim	Base	No.	Wt/g	Rim Diam	Rim %Decoration	Glaze ext/int	Ab. Soot	Also in	Notes	Spotdate	Type date
featur 0089	e 0089 Finds THET) 2.50	U			3	42						= 2 vess, may be MCW?		10th-11th c.

Appendix IV: CBM catalogue

contex	tfabric	form	no	wt/g	length	width	height p	beg	mortar abr	comn	nents	date	spot date	context type	•	
0001	fs	RT	1	35	-			CS			reduced co	orse, hard	d	Med?	19th/20th c.	Laver
	fs	RT	2	91								,		PMed	19th/20th c.	Laver
	fs	PAN	1	150										PMed	19th/20th c.	Laver
	fs	FT	1	51							worn			LMed?	19th/20th c.	Laver
	fs	FT	1	216		22		ms	on base		worn, GG	on sides,	Flemish?	LMed?	19th/20th c.	Layer
	fsf	RT	2	120			1 x R			+	,	,		PMed	19th/20th c.	Layer
	fsq	RT	8	569			1 x	2 m	s					PMed	19th/20th c.	Laver
	fsqm	RT	2	96				1 m	s	+				PMed	19th/20th c.	Laver
	fsam	RT	1	28							rubbed edd	ae to forn	n a curve. reduced	core LMed?	19th/20th c.	Laver
	ms	FT	1	167		16					relief tile. s	hield sho	wing 3 lions passa	ant. YG.		- 5 -
											as Sherloc	k No.22	3 • • • • • •	Med	19th/20th c.	Layer
	ms	FT	1	86		16					relief tile e	dge frag,	shield as above, E	G Med	19th/20th c.	Layer
	ms	FT	1	53							v. worn, G tile	G side, re	educed centre, pro	b relief Med	19th/20th c	laver
	msg	LB	1	5						++				PMed	19th/20th c.	Layer
0019	fsg	RT	2	20										PMed	PMed	Trench
	fsgm	RT	2	24						+				PMed	PMed	Trench
	ms	RID	2	170							BG, prob c	rested		Med	PMed	Trench
	msg	RT	1	25				ms			reduced su	urfaces		LMed?	PMed	Trench
0020	fs	PAN	2	307										PMed	PMed	Trench
	fs	FT	1	274 9	97 95	5 14		ms	all over		Relief tile,	v. worn		Med	PMed	Trench
	fsm	FT	1	20							chamfered	edge, G	G on base	LMed	PMed	Trench
	msm	RT	1	54			1 x R							PMed	PMed	Trench
0022	fs	RT	1	18							BG			Med	18th/19th c?	Pit fill
	fs	MB?	1	84							v. dense, r	otched o	on one edge	PMed	18th/19th c?	Pit fill
	fs	LB	2	75							1 with recta	angular fr	rog	19th c+	18th/19th c?	Pit fill
	fs	FT	1	76		22					?Relief, bu	rnt edge,	, v. worn	Med?	18th/19th c?	Pit fill
	fs	RT	9	371			1 x R	1 m	S					PMed	18th/19th c?	Pit fill
	fs	FT	1	204		22		ms			Flemish, w	orn, GG	on base	LMed	18th/19th c?	Pit fill
	ms	RT	3	89										PMed	18th/19th c?	Pit fill
	msg	LB	17	763				OCC	fs/ms	+				PMed	18th/19th c?	Pit fill
	wsg	FB?	1	57							flake			PMed	18th/19th c?	Pit fill
0023	fs	PAN	1	292				ms	on break					PMed	18th/19th c?	Layer
	fs	RT	5	93										PMed	18th/19th c?	Layer
	fsg	FT	2	101		19+	F			+	worn			LMed?	18th/19th c?	Layer
	fsg	RT	2	169			1 x R							PMed	18th/19th c?	Layer
	ms	RT	1	156				ms			burnt/overf	fired, redu	uced surface	LMed?	18th/19th c?	Layer
	ms	RT	5	461			1 x S	ms	on some					PMed	18th/19th c?	Layer
	ms	FT?	1	29							reduced ce	entre		Med?	18th/19th c?	Layer
	ms	RID?	1	47							BG, reduce	ed, overfi	red	Med?	18th/19th c?	Layer
0025	fsg	PAN	1	91										PMed	L.18th/E.19th	Grave fill
	ms	RT	2	87				1 m	s					PMed	L.18th/E.19th	Grave fill
0031	CS	LB	1	26							overfired			PMed	19th c.	Pit fill
	fs	FT	1	265		30					Flemish, G	iG		LMed	19th c.	Pit fill
	fs	RT	8	429			2 x R							PMed	19th c.	Pit fill

conte	xt fabric	; form	no	wt/g	length width	height	peg	mortar	abr	comments	date	spot date	context type
	fsfe	RT	2	54	-	-					PMed	19th c.	Pit fill
	fsg	RT	4	40							PMed	19th c.	Pit fill
	fsg	FT	1	47						v. worn	LMed?	19th c.	Pit fill
	fsg	LB	1	600		68				rectangular frog	19th c+	19th c.	Pit fill
	fsg	LB	1	155					+	straw impression in base	LMed?	19th c.	Pit fill
	fsg	FT	1	21					+	worn	LMed?	19th c.	Pit fill
	ms		6	386		05	1 x R	1 ms		relief DC reduced core	PMed	19th C.	Pit fill
	ms		1	28		25				relier, BG, reduced core	Ivied	19th C.	PITIII
0034	fs	RT	5	439			1 x R	some ms			PMed	15th/16th c?	Grave fill
	tsg	RI	2	113						- U	PMed	15th/16th c?	Grave fill
	tsg		6	459			4 D			all V. worn, prob Flemish	Livied ?	15th/16th C?	Grave fill
	ms	RI 	8	201			TXR	ms		reduced surfaces	ivied?	15th/16th C?	Grave fill
0046	ms	RT	3	27							PMed	PMed?	Finds
0036	fs	RT	2	191			1 x R				PMed	PMed	Pit fill
	fsg	RT	3	182							PMed	PMed	Pit fill
	ms	RT	1	165				ms			PMed	PMed	Pit fill
	mste		1	187		26				worn, quarry tile?	PMed?	PMed	Pit fill
	msie	RI 	1	63							Pivied	Pivied	PITIII
0038	fs	RT	1	119		0					PMed	15th/16th c?	Layer
	tsg		1	100		8				v. worn	LMed?	15th/16th C?	Layer
	rsgm		1	249		22				v. worn	LIMEd ?	15th/16th C?	Layer
	me	חוס	2	207						PC	Mod	15th/16th c2	Layer
	msfe	FT	1	223		21				v coarse ferrous frags worn	I Med?	15th/16th c?	Layer
	mod	п	י ר	262		21		ma			DMod	15th/16th o2	Layer
	msy		2	303				1115			Fined		
0039	CS		1	91		20				Flomich WOVC	Pivied	L.18th/E.19th	Spread layer
	fog		1 2	202		20	1 v			Fiemisn WSTG	DMod	L. 10(1)/E. 19(1)	Spread layer
	fea		2 1	853		50	1 X	me			PMed	L. 1011/E. 1911	Spread laver
	ms	RID	2	29		50		1115		BG	Med	L 18th/E 19th	Spread layer
	ms	RT	1	40						reduced core	Med?	L.18th/E.19th	Spread laver
0041	fsam	LIN	1	16						flake	Lin	PMed	l aver
0041	fsam	FT	1	155	112	15				relief v worn reduced core	Med	PMed	Laver
	ms	RT	2	354		10					PMed	PMed	Laver
0043	fs	RT	2	79						1 reduced surfaces	PMed	PMed	Slot fill?
0040	fsa	RT	2	70							PMed	PMed	Slot fill?
0049	fea	PT	-	50				1 me			PMed	I Med+	Grave fill
0043	form			50				1 1113		raduand core	MadQ	Mada	
0051	isgin		1	0						reduced core	Med?		Grave III
0054	fsg	RI	1	17							PMed	PMed	Grave cut
0055	fs	RT	1	121				ms			PMed	PMed	Grave fill
0063	fs	RT	3	262						1 reduced	PMed	19th c.	Layer
	fsf	MB	2	1338	95+	93+				hollow chamfer, plinth?	PMed	19th c.	Layer
	fsg	UN	1	5						flake	Un	19th c.	Layer
0065	fs	RT	3	73							PMed	PMed	Grave fill
	fsm	RT	1	36						v. abraded, poss an estuarine fabric?	Med??	PMed	Grave fill
0075	fs	RT	4	164				2 ms			PMed	PMed	Ditch fill

contex	xt fabri	c form	no	wt/g le	ngthwidth height peg	mortar	abr	comments	date	spot date	context type
0084	fsv	RT	1	15				reduced surfaces	LMed?	Med?	Grave fill
0089	fsg	FT	1	105	10-14	ms		v. worn, reduced core	Med?	PMed	Finds
0098	fs	RT	1	5					PMed	PMed	Finds
	fsg	LB	2	8					PMed	PMed	Finds

Catalogue

Notes

Methods of age and sex determination are generalised to give an idea of the bones used. Sexing based on the pelvis used more traits than entries might suggest. "DF" stands for discriminant function, a statistical method of determining sex, where +2.0 is very male, -2.0 very female (WEA, 1980).

Teeth are recorded in the form illustrated below.

Maxilla	R.	8	7	6	5	4	3	2	1		1	2	3	4	5	Х	7	U	L.
Mandible		0	7	6	5	4	-	_	-		/	/	3	4	5	6	7	С	
		A		С															
0.1																			
Code	Meaning																		
1 2 3 etc.	Tooth pro	Tooth present in jaw.																	
Х	Tooth los	Tooth lost ante-mortem.																	
/	Tooth los	Tooth lost post-mortem.																	
U, u	Tooth un	eru	oted	1.															
O, o	Tooth in	pro	ces	s o	f er	up	ting	g.											
C	Tooth co	nge	nita	ılly	ab	ser	nt.	-											
	Jaw miss	ing																	
А	Abscess	pres	ent	: (a	bov	/e/l	bel	ow	too	oth	nui	mb	er).						
С	Caries pr	Caries present (above/below tooth number).																	

Lower case letters a-e and u/o are used for deciduous teeth. Attrition patterns are coded according to the scores suggested by Bouts and Pot (1989, modified version of Brothwell's original tooth wear chart).

A few abbreviations have been used in the catalogue for commonly occurring pathological conditions and anatomical regions. These are as follows:

OA	osteoarthritis		MT	metatarsal
OP	osteophytosis,	osteophytes	MC	metacarpal
С	cervical)	L.	left
Т	thoracic) vertebrae	R.	right
L	lumbar)		-

Any other abbreviations should be self-explanatory, since they are simply shortened forms of bone names or anatomical areas (prox = proximal, etc.).

Tables of measurements for the skull and major long bones are included after the catalogue of disarticulated remains. Tables of non-metric trait scores are also provided.

Articulated s Sk. 0052 Description: Condition: Determination of Notes: Extra bone:	skeletons Child, c.6-8. Gage:	Dist and Goo Lon Cut 1 fra	Pistal R humerus, lower R arm and hand, frags of R ribs, sacrum, R innominate, R leg nd foot, distal L femur, lower L leg and foot. Good. ong bone lengths (RaL1=128, UlL1=142, FeL1=c.253, TiL1=201, FiL1=187). Cut by grave 0011 and evaluation trench. frag adult fibula.														
Sk. 0061 Description: Condition: Determination of Determination of Stature: Cranial index: Teeth:	Female, old? age: sex:	 Skull, C1-7, T1-8, ribs, sternum, clavicles, scapulae, R arm, L prox humerus. Good, but fragmentary in parts. Medial clavicle fused, tooth wear heavy, some degeneration. Cranial DF -1.3; long bones gracile. 164.9cm (5' 5") from radius 71.6 (dolichocranial) 															
		v	v	v	A	A	2	2	1	1 1	2	A	A	A	v	v	v
	-	<u>X</u> 8	<u>X</u> 7	<u>X</u> 6	<u> </u>	4 4	3	$\frac{2}{2}$	/ 1	1	2	3	4 4	<u>X</u> 5	<u> </u>	<u>X</u> 7	<u>X</u> 8
		° C	Á	A	5	·	5	2	C A	C A	2	5	I	5	A	Ċ	C C
Tooth wear:		- 1	- 7	- 7	6 5	7 4+	5+ 4+	5+ 5+	- 5+	5+ 5+	5+ 5+	6- 4+	6 4+	-	- 7	- 3+	-
Dental patholog	<i>y</i> :	Cari indi	ies is cate c	largel	y cerv tiona	vical in l use.	n orig Mode	gin. To erate o	eeth c	hippe us.	d in v	ivo ar	nd wea	ar pat	terns 1	nay	1
Pathology:				1							_						
Degenerative disease: OA III head 1st L rib, OA II head 1st R rib and facets of 11 vert. OP bot heads poss cyst in L OA II C3-4 hodies. C6 inf body OA III C5-6 R zy								oth hu zvg (Imeru P T3	s -5							
Miscellaneous:		Slig	ht hy	perost	osis f	rontal	is inte	erna.	Pitting	g rear	of pa	rietals	nn 05 8.	-0 K	Lyg. C	1 15	-5.
<i>Notes:</i> Cut by evaluation trench.																	
Sk 0068	?Female c 1	6_17	Vea	rc													
Description:	Temale, c. I	Sku	ll, Cl	-T11 v	verts,	ribs, s	scapu	lae, c	lavicl	es, pro	ox R l	humer	us, L	arm a	nd so	me ha	ind
		bon	es, L	innom	inate,	, L leg	, and	foot,	R foo	t.							
Condition: Determination of	age.	Upp Epir	er ha	lf goo al fusi	d, low	compl	gs and lete t	l feet wo th	ird m	ut son olars	ne erc only i	osion. Dartial	lv eru	pted	basi-c	occipi	tal
2 000 111111111011 05		not	fully	fused.		• omp	, .			oraro	only r			p,	cusi c	, eeipi	
Determination of	sex:	Crai	nial D	F - 0.9	9, pel·	vic Dl	F0.3	8, long	g bon	es gra	cile.						
Cranial index:		80.0) (brad	chycra	nial)		.11										
Teeth:						С							С				
	-	0	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
		U	7	6	5 C	4	3	2	1	1	2	3	4	5 C	6 C	7	8
Tooth wear:		1	1	2	2-	2-	2-	2	2	2+	2-	2-	2	2	2 2	1	1
		-	2	2	2-	2+	2+	2	2+	2+	2-	2+	2+	2+	2+	1	1
Dental patholog	<i>y:</i>	Cari	les int	erstiti	al. Sli	ight ca	alculu	ıs. Hy	popla	isia at	age c	2-3y	rs.				
Infection:		Pitti	ing an	d slig	ht thio	ckenir	ng ant	erior	L inn	omina	ate are	ound l	ower	part o	of scia	tic no	tch.
		Infe	ction	of the	chest	t area:			• , ,•		1 (*1	1				1. 1.1	10
		-	thick R cla	ening	and e	nnarg	ement ng:	t with	pittir	ng anc	1 fibre	bone	on po	osterio	or mee	lial ha	alf
		-	circu	lar lyt	ic les	ion po	ost inf	fsurfa	ace m	anubr	ium c	.15mr	n diar	neter,	surro	unde	l by
		_	pittin	ig, als al bod	o pitti	ing on	ant s	urfac	e in c	orresp	ondii ent at	ng are	a; rior ¹	vtic 14	sions	and	
		-	scler	otic ne	ıy, ∠ s ew bo	ne an	t R si	de (bi	it L si	ide ma	ay be	lost p	-m);	y lie it	,510115	anu	
		- thickening and pitting 1st and 2nd ribs, 2nd seems healed?															
		-	widtl	ave le h, lytic	sion c c and	on pos sclero	tic ch	of ar ange	n sect s;	lion of	1 310 1	10, 44	mm l	ong, (overs	wno	le

Trauma:	- possibly TB or a non-specific osteomyelitis – both rare in these bones. Osteochondritic lesions in T11 superior R zygapophyseal facet and inf L T10 zyg											
Notes:	Cu alloy staining on manubrium, T1-2 bodies and medial end R clavicle. Unusual swirling erosion pattern on skull, possibly due to the presence of hair? Fragment of											
Extra bone:	Frag L frontal of ?adult, small lower incisor of child? Adult upper L 2nd incisor.											
Sk. 0069 Child, c.7 Description: Condition:	years. Cranial vault and face only. Good but fragmented.											
Determination of age:	Tooth eruption.											
Teeth:	- U 6 e / / / U U / / U / 6 U -											
Pathology: Cribra orbitalia:	Possible L orbit, but frag.											
Sk. 0073 Female, yo Description: Condition: Determination of age: Determination of sex: Stature:	Sung? Skull, C1-2, sternum, clavicles, scapulae, humeri. Fair, skull mostly intact but very deformed and some parts badly decayed, L arm and shoulder poor. Lime deposit on underside of skull and around C verts. Tooth wear medium, no degeneration? Cranial DF –0.9, long bones medium, fairly gracile.											
Cranial index: Teeth:	c.69.2 (dolichocranial)											
Teem.	C C C C C C											
	<u>- 7 6 5 - 3 2 1 1 2 c 4 5 6 7 -</u>											
	- 7 - X 4 3 2 1 1 2 3 4 X X 7 C?											
Tooth wear	-2 - 2 + 2 - 3 - 3 - 4 + 4 - 6 - 3 + 3 - 3 - 2											
	- 2+ 3 3+ 3 3+ 3+ 3 3+ 3+ 2+ -											
Dental pathology:	Caries interstitial. L M2 has a large Carabelli's cusp and extra root. M3s probably all congenitally absent? Impacted upper L canine. Diastema between upper R incisors. Three hack marks at distal end R humerus presumably related to truncation of											
Notes:												
	skeleton and not peri-mortem injury. The grave was cut by grave 0011 at this point,											
Extra bone:	and R leg in 0011 may belong. Adult MT, juv MC.											
Sk. 0078 Male, adul	t.											
Description:	Lower legs and feet.											
Condition: Determination of age:	Very good. Eninhyses fused											
Determination of sex:	Large, robust bones.											
Stature:	168.5cm (5' 6") from fibula											
Pathology: Trauma:Osteochondritic lesion L 3rd cuneiform prox end (c.5 x 3mm), nothing in navicular facet. Five small pits in prox facet L 2nd toe distal phal, enlarged with OP. Prox R fibula has exostosis at prox end facet, may be due to continual strain rather than a single injury												
Notes:	Cut by evaluation trench.											
Sk 0081 Female M	[ature/Old											
Description:	L hand, legs and feet.											
Condition:	Good.											
Determination of age:	Some degeneration.											
Determination of sex:	Gracile.											
Sature: Pathology:	139.2011 (S-S-) 110111 11001a											
Congenital:	Bilateral bipartite sesamoid bones (or possibly both fractured?).											

Degenerative disease:

Trauma: Miscellaneous:

Notes:

OA II both patellae and distal R femur with OP. Slight pitting lateral R tibia prox condyle. One sesamoid bone on the R has large OPs and pitting.
Small osteochondritic lesion distal facet 1st cuneiform for MT1, 2mm diam.
Deep volar phalangeal groove in L prox 4th finger phal, may indicate contracture of the finger? No evidence for RA or leprosy. Possibly Dupuytren's Contracture. Underlies/cut by 0078.

Sk. 0085 Description: Condition:	Child, c.10 y	ears Nea Ver	r-con y goc	nplete od.	skele	eton.												
Determination of <i>Teeth</i> :	age:	Lon	g bor	ne len	gths (c.10),	teeth	ı (c.9-	10).									
	-	U U	U U	6	e e	d d	c c	2	1	1	2	2	c c	/ d	e e	6	U U	U U
Pathology: Cribra orbitalia Extra bone:	.:	Poro 1 fra	otic b ag juv	ooth si v C2.	des.		-			1 -					-	-		-
Sk. 0088	Child, c.2-3	years.																
Description:		L scapula and clavicle, L ribs, 1 R rib, R lower arm and hand, some T and L vertebrae, pelvis, prox halves femora.																
<i>Condition: Determination of</i>	age:	Fair Esti	mateo	d long	, bone	e leng	ths.											
<i>Extra bone:</i> L ulna of child c.6yrs (UlL1=c.135).																		
Sk. 0090 Description: Condition: Determination of Determination of Stature:	Male, c.25-3	0 yea Fair Very Mec Cran 169.	ars. ly co y goo lial c nial I .7cm	mplet od, exc laviclo DF +0 (5' 7'	e but cept R e part .7, pe ') fror	lackin R ribs ly fus lvic E n ferr	ng the (fair) ed, to DF +1 nur+ti	e L arr ooth w .8, boi bia	n and ear sl nes la	l han light- arge a	id and -mod and r	d th lera	e L fe te. ist.	oot.				
Teeth:		81.9	(Dia	cnyci	annar)					1.								
	-	C C	7 7	6 6	5 5	4 4	$\frac{3}{3}$	<u>C</u> /	1 /	1	2	2 2	3	4 4	5 5	6 X	7 7	$\frac{C}{C}$
Tooth wear:		-	3	4	3-	3-	3	-	4	4	3	3	3-	2+	3	4	C 3	-
Dental patholog	y:	- L up Cari	oper 2	4 2nd in terstit	3- cisor ial	is peg	3 g-like	- and F	- t is co	2+ onge	nitall	ly a	3 bsent	2+ with	3- no sp	- bace f	or it.	-
Pathology: Caries interstitial. Pathology: C1 arch incomplete. Trauma: SN T5-L4, especially T9-L3 (large). Long exostosis prox R fibula at 43mm from prox end on interosseous line, 15mm long, 3mm wide. Another smaller central to posterior R tibial condylar facets, c.3mm high. Fractures L 11th-12th ribs, well healed. Fracture R clavicle at about a third in from the medial end, well healed. Possible same on L clavicle, but less clear.									mm									
Neoplasms: Miscellaneous Extra bone:	Fomalo mid	Avuision fracture of L M15 tuberosity with partial union. Very slight osteomata on centre and L of frontal, 6-9mm diameter but very shallow. Pitting on both parietals and occipital. R calcaneus. Infant L pubis. Juv rib frag and finger phal.																

SK. 0075	i cinale, indule agea:
Description:	Near-complete skeleton.
Condition:	Fair-good, skull deformed.
Determination of	of age: Tooth wear slight, some degeneration.
Determination of	of sex: Cranial DF –1.6, pelvic DF –1.9, long bones gracile.
Stature:	163.9cm $(5' 4\frac{1}{2}'')$ from femur+tibia
Teeth:	

			С		С												
	-	-	6	5	4	3	-	-	-	-	-	-	5	-	-	-	
	-	-	-	-	4	3	2	1	1	2	/	4	5	-	-	-	
												С					
Tooth wear:	-	-	2	2	3	3+	-	-	-	-	-	-	2	-	-	-	
	-	-	-	-	2+	3	2+	2+	2+	2+	-	2+	3+	-	-	-	
Dental pathology: Caries occlusal in M2, interstitial elsewhere. Medium-heavy calculus.																	
Pathology:												-					
Congenital: S1 arch possibly not closed.																	
Degenerative disease: Very slight OP T8, L1. OP L patella and both distal femoral condyles ant.																	
<i>Extra bone:</i> Larger R MC2-3 with L hand, presumably from adjacent burial? Extra lower i								er inci	sor.								

Sk. 0094 Male, adult.	
Description:	Feet and lower half R fibula only.
Condition:	Good, but distal ends of toe phals poor, eroded, some lime deposits.
Determination of age:	Epiphyses fused.
Determination of sex:	Large bones.
Pathology:	
Degenerative disease:	Slight OP of some tarsal joints.
Trauma:	Fracture at posterior process of R talus, partially healed but very clear line on facet.
Notes:	Some bones in pit fill 0031 may belong.

Sk. 0097 ?Male, matur	re/old.
Description:	Feet only.
Condition:	Good.
Determination of age:	Some degeneration.
Determination of sex:	Large bones.
Pathology:	
Degenerative disease:	OP MTP1 joints both sides.
Trauma:	R sesamoids have small OPs at facets and large exostoses on non joint surfaces, suggests torn muscle?
Notes:	Some bones in pit fill 0031 may belong.

Disarticulated bone

Context	Age	Sex	MNI	Bones present
0001 bag 1	Infant	-	1	Parietal bone fragment
	Foetus?	-	1	L. tibia (TiL1=c.55)
	6m	-	1	L. femur (FeL1=108), abnormal curvature, poss rickets, more in
				0025?
	c.7-9	-	1	L. tibia.
	c.9-11	-	1	R. femur prox $\frac{3}{4}$.
	Child	-		Rib frag.
	Adult	Male?	2	Occipital fragment, R medial clavicle (OA medial end), large L
				ulna, frags L innominate and L ilium, R tibia shaft and fragment
				of fibula with gross periosteal new bone growth.
	Adult	Female		Small MC3.
	Adult	?	4	Fragments of skull of at least 4 individuals, two R scapulae with
				OP glenoid, ribs of 3 individuals (one fractured), distal ulna, 3
				finger phals, S1, frags R. tibia, 2 unident frags.
0001 bag 2	Child	-		2 frags skull, C2-3?, 2 ribs, R femur shaft.
	Infant	-		1 rib.
	c.4-5	-	1	Distal half R radius.
	c.6-8	-	1	R humerus prox 2/3
	Old?	Male	1	R innominate: SIJ probably fused, OP acetabulum, pitted ishial
				tuberosity.
	Adult	Male?		R? MC frag.
	Adult	Female?	1	R. mandible fragment (/ /), distal half R humerus, finger
				phal.
	Adult	?	1	Occipital frag, 2 ribs, distal third L ulna, distal frag radius
				(deformed joint with OP), prox half R femur (OP linea aspera), L
				vert with OP, ilium frag, long bone shaft frags.

Context	Age	Sex	MNI	Bones present
0001 bag 3	c.4-6	-		R. humerus shaft frag.
	c.10-12	-		R. humerus shaft frag.
	Child	-		MC3.
	Sub-ad	-	1	L talus frag.
	Adult	Male?		Dist half R humerus, prox L femur shaft (periosteal fibre bone as tibia in hag 12) R MT5
	Adult	Female		L humerus (HuL1=c.305mm; stature 160.5cm), surfaces eroded.
	Adult	?		6 frags cranial vault of 2-3 individuals small frag mandible with
				one tooth lost A-M. 6 frags rib. R femur distal half (central ?stress
00011 4	C1.11			lesion in dist facet for patella).
0001 bag 4	Child	-		3 finger phals, ischium.
	c.11-12	-		L temur prox $\frac{3}{4}$ (FeL1=c.290)
00011 5	Adult	?		Frags Illum
0001 bag 5	Child?	-		Skull frag.
	Sub-ad?	-		Humerus shaft Irag.
	Adult	Male		40mm).
	Adult	Female?	1	Occipital fragment (large inion), distal R humerus and small frag
	Adult	2		Parietal frag (nitted surface 2 straight unhealed cuts nroh neri-
	7 Iduit	·		mortem) 2 frags temporal R scapula shaft frags 2 clavicles (2
				ind) 7 adult rib frags mandible () 2 adult
				ilia MC1 MC2 MC4 MT1 MT2 MT5 MT frags and 3 toe
				nhals
0001 bag 6	Child	-		Medial L clavicle T vertebra rib frag MT
ooor bug o	Adult	2		L mandible frag (/ 8) premolar 2 C2s 2 frags C verts 2 frags L
	1 Iduit			verts (1 with ehurnation on inf zvg facet) distal frag humerus 3
				MC 5 finger phals 5 rib frags 1 MT misc unident
	Old	?		L nubis
0001 hag 7	Child	-		Frontal and parietal frags C/upper T vert arches rib frag L
0001 0 u g /	ennu			ischium & ilium
	c 2	_	1	R mandible frag (U e $/$)
	Adult	Male?	1	Prox R ulna R femur shaft (bowed poss healed rickets)
	Adult	Male	-	L tibia pair with hag 1 gross periostitis Also unident frag with
	1 Iddit	maie		neriostitis enlarged noss fibula
	Adult	Female		L femur shaft
	Adult	?		4 frags parietal (2-3 inds) L mandible (- 7.8 periodontal disease
	110010	•		caries of M3 with complete loss of crown). 2 T1s, 3 frags scapula.
				medial L clavicle 13 rib frags (some OA/OP 1 fractured) distal
				frags 2 L humeri MC L ilium L vert arch and L 5? with large OP
				on L side MT frag ?fibula shaft frag
0001 hag 8	Sub-ad	Male?	1	Unfused distal frag tibia
0001 0 u g 0	Adult	Male	1	Mandible fragment $(X / / /)$
	Adult	?		Parietal frag 3 ribs 3 ilium frags prox R femur R MT2
0001 hag 9	Old?	Male	1	R innominate (new hone growth OP acetabulum) large R
ooor oug y	014.	maie	-	humerus distal end poss deformed but lost
	Adult	Female?	2	Femur shaft distal half R tibia distal frags 2 L humeri small L
			-	vertebra (voung).
	Adult	?		Ten cranial vault frags (nine poss Pagetic thick diploe lost)
	110010	•		frags rib, scapula, prox 2/3 R radius of mature/old adult.
0001 bag 10	Child	_		2 skull frags, 2 iuvenile fibulae, R calcaneum.
	Infant	-		Rib.
	Old	Male	1	L mandible $(//345XX)$
	Young	Male	1	L mandible $(1/5 67)$
	Adult	Male?		L radius shaft, large femur shaft frag.
	Old?	Female	1	R mandible $(-//X)$
	Adult	Female?	-	L. ilium, small L femur (poss sub-adult).
	Adult	?		7 skull frags. C2 with OA (eb) at odontoid neg and inf L zvg scap
		-		acromion, 2 medial R clavicles, frag sternum 4 ribs L ilium prox
				and dist frags R humerus (voung). 2 L & 1 R ulnae (3 ind). 2 MC
				2 finger phals, distal frag L femur, frags L & R tibiae 4 frags
				fib/ulna shaft L & R calcaneums (2 ind) tarsal navicular R MT1

Context	Age	Sex	MNI	Bones present
				MT3, MT4 (2-3 ind), T11-12 (osteoporotic, large OPs, SN), misc
"0707"	Adult	9		small long bone frags.
0/0/	Adult	!		frag large lateral R clavicle, premolar, 2-3 individuals.
Unlabelled	Child	-		Rib frag.
	Adult	Male	1	Dist half R femur (OP distal facets), R calc, R MT1, L MT4-5.
	Adult	Female	1	Complete frontal, porotic cribra orbitalia. L tibia (TiL1=347),
	A .114	9		pitted medial surface.
0011	Adult	/ Eamolo?	1	4 skull frags, L scapula frag, 2 fibs, upper L vert arch, frag filum, Digt $\frac{3}{2}$ R famur, prov $\frac{3}{2}$ R tibia, gracila but long. Dogs = sk 0073
0011	Sub-ad	-	1	Dist half R femur adult sized Unfused eninbysis gross periosteal
	Suo uu		1	new bone growth at posterior surface, enlargement of shaft,
				pitting just ant/prox to epiphysis jt, poss osteomyelitis but no
				cloaca. Poss = sk 0068.
0019	Child	-		Rib.
	Sub-ad	- Eamala9	1	R MC2.
	Adult Adult	remate?	1	R prox und and 2 frags shall? Parietal frag. I temporal innominate frags finger phal MT with
	Adult	1		thick fibre bone
0020	Adult	?		R tibia frags, L vert body, frag pubic ramus.
0023	<6m	-	1	A few cranial frags, R. ilium, L. humerus (HuL1=71), both
				femurs, L. tibia (TiL1=c.71).
	c.18m?	-	1	Skull fragments, maxilla (U u o u U) and unerupted
	c 2_3	_	1	permanent lower incloor. Skull frage R humerus ribs I scapula I clavicle 3 verts
	c.2-3	-	1	Skull frags R scapula frag humerus radius ulna tibia MT
	0.0 0.			Skull may not belong.
	c.6-8		2	Frag femur shaft, 2 L? tibia shaft frags.
	Sub-ad?	-	1	Pair humeri, L clavicle, distal frag femur.
	Adult	Female	1	Pair femora (R FeL1=392; FeHd=42; stature 150.9cm).
	Old	Male?	1	R femur prox ³ / ₄ and frag ilium, gross OA hip with enlargement,
	Adult	2	11	Frags of at least 5 skulls (one metonic) 8+ mandibles (3 F 2 M 3
	riduit	·		?) and loose teeth, 4 R & 7 L humeri (no obvious pairs -3 M , 3
				F), 2 R & 4 L ulnae, frags ulna and radius shaft, R MC1-4, 3 L
				MC3, L MC5, MC2/3?, 9 finger phals, 3 R clavicles (2 M, 1 F),
				medial L clavicle, 3 R & 1 L scapulae, 37 rib frags, 3 frags
				sternum, 3 C, 9 I and 8 L verts (4 L verts with large OP, 2 inds), 6 L & 1 R innom frags (mostly male?) $2 + sacra 2 R & 2 L$
				femurs and various shaft frags (as many as 12 inds?) 2 R & 1 L
				patellae, 3 R & 3 L tibiae and frags of 3+ others, 5 fibulae (poss 1
				pair), pair calcs and frag of another, 2 R & 1 L tali, cuboid,
				navicular, 19 MTs, 3 toes
0025	6m	-		R femur (FeL1=c.110; pair with 0001 bag 1?), slightly bowed. L
	034			llium may also belong. Drox ¹ / ₄ I femur I ilium
	c.10	-		Prox $\frac{1}{2}$ R humerus
	Child	-		Radius shaft, ?R tibia, rib, 2 MTs.
	Adult	Male	1	R femur (small exostosis dist medial), dist ³ / ₄ L femur, patella, R
				& L innominates, shaft frag ulna. R femur head frag (FeHd=49)
	> 20	F 1.	1	with OP may belong.
	>30	Female	1	(Hul 1=313 HuHd=38: epicondular process) pair radii (R
				RaL1=227); L clavicle fused medially. 2 ribs.
	Adult	?	2	Sacrum with fused L5, L3-5 with sacralised L5, frags of 2 other
				sacra, piece of innominate, T verts in poor condition with fused
				rib and bodies (ankylosing spondylitis), 2 L clavicles, 2 scap
				rrags, 6 ribs, 8 trags skull, 2 trags temur shaft, pair fibulae, L
0031	Infant	_	1	Femur shaft poor
5051	Child	-	2	Frags of 2 skulls, 2 ribs.
	Adult	Male	1	R femur (FeL1=432, FeHd=47), R tibia (TiL1=347, Diam 38 x

Context	Age	Sex	MNI	Bones present
				24; stature 164.6cm), pair ulnae (L UlL1=250), distal R radius, R
				MC5, scaphoid, 4 finger phals, tarsal navicular. Possibly part of
	4 1 1.	261		sk. 0097 or 0094?
	Adult	Male	1	L femur prox frag, frag of shaft.
	Adult	Female?	1	Distal nali L radius.
	Adult	2		shaft frags innominate
0034	Child	-	4	11 frags skull (2 skulls), 1 C and 1 T verts, R clavicle, frags rib, L
				ilium, 3 L tibiae of similar size (c.6-7), 1 fibula, 2 femur shafts,
				smaller tibia and fibula (c.2-3?), 4 MTs, calcaneus.
	Sub-ad	-		Distal ulna frag, just fusing. Fibula frag, unfused.
	Adult	Male?	1	Prox R humerus, distal L humerus, R innominate (OP at SIJ), L
				femur shaft and dist frag.
	Adult	Female	2	R humerus (HuL1=326, HuHd=40; stature 167.5cm), R
	A 1 1/	0		innominate, L tibia ($11L1=387$; stature 173.8 cm).
	Adult	1		4 frags skull, 10 frags rib, 2 1 verts, 5 frags scapula, small frag
				nhale 3 L & 1 R distal frage adult tibiae 2 prov L & 1 R tibiae
				and frags 8 fibula frags R talus 2 tarsals 10 MTs
0037	Adult	Male	1	Near-complete cranial vault (L=191 B=146 H ² =139 cranial
0007	1 100110		-	index 76.4), surface eroded, healed wound in L frontal, lesion
				c.5mm diam, does not pierce inner table.
0038	c.5	-		7 skull frags, R mandible (/ e d / / / /).
	c.6-8	-		2 humerus frags.
	Adult	?	3	6 frags skull, L mandibular ramus and central frag, lower incisor,
				2 T and 3 L verts (all with OP, 1 T with OA of rib facet, poss
				same as 0025 AS), 5 rib frags (1 fractured?), R scapula, prox L
				numerus (HuHd=42), K & L dist numeri, 2 radius shafts, 2 ulna
				shafts, 5 linger phals, Irags K linum, sacrum, ischium, pair and 1 L
				MTs
0039	<6m	_	1	Frags skull, scapulae, ribs, verts, all long bones of small infant.
				RaL1=53, UlL1=62, FeL1=78, TiL1=69. Skull may not belong.
	12m	-	1	R tibia (TiL1=c.95).
	c.18m	-	1	R ulna (enlarged, pitted), femur shaft (gross enlargement ?distal
				end, pitted). ?Same individual: frags of skull (1 thickened,
	A 1 1/	9		anaemia?), 2 T verts, 2 ribs, R tibia shaft.
	Adult	?		Frags of at least 8 skulls (2 M, 2 F, 4 ?; 1 occip with pitting; 1
				to sinus with new hone at adapts, and separate large area of new
				hone endocran parietal frag with stellate lesions and int nitting
				poss syphilis). 2 adult molars (1 carious). 7 rib frags. 3 T vert
				frags and 2 fused T verts with rib (AS as 0025 and 0038?), R
				scapula, 2 R prox ulna & 4 shaft frags, 2 pros R radius, 2 MC, 1
				finger phal, frags 4 R & 3 L innoms (mostly ischia; 1 frag R ilium
				has large exostosis on posterior surface but borken there), prox
				frag fibula (slight periosteal pitting), L tibia (amputation, gross
				ulcerative periositits/osteitis medial, sawn at prox end through
				nutrient foramen), frags patella, talus, navicular, 2 MTs, 1 toe
	>30	Male?	4	plial. R clavicle 3 prox R humerus and 1 shaft L ulna frags sacrum
	> 50	whate:	-	(OP S1) I, femur (coxa vara) frags 2 prox R femur shafts and
				large femoral head (FeHd=50), distal frag R tibia & ?R fibula
				(periostitis interosseous line of both), fibula shaft (periosteal new
				bone).
	Adult	Female?	2	L clavicle, 2 distal R humerus, R ilium, frags sacrum (open arch
				S3-5), distal frag L tibia, midshaft L tibia (periosteal new bone,
	<u> </u>			graining, enlargement).
0040	Child	- F. 1		L parietal frag.
	Adult	remale		K numerus distal (or sub-ad). T vert L secret als and \$4.5, finger that 2 frage fibulas
0041	Child	<i>!</i>	2	4 frags of 2 skulls 4 ribs 1 yert small humarus frag sub adult
0071	Ciniu	-	4	τ mass of 2 skuns, τ mos, 1 vort, sman numbers may sub-adult

Context	Age	Sex	MNI	Bones present
	Adult	Male	1	I mandible frag (XX?)
	Adult	Female	1	Mandible frag $(////345 X/-)$ crowding abcess at M2) distal
	1 Idult	i ciliulo	1	3 /L radius and ulna frag. L tibia midshaft.
	Young	Female	1	L humerus prox (HuHd=40).
	Adult	?		Skull frag, 3 ribs, upper L vert with SN, L scapula frags, L radius
				(RaL1=228), dist condyle frag femur, R patella with gross
				eburnation and pitting, MT shaft.
0043	<2	-	1	2 frags skull.
	5-6	-	1	L humerus distal ³ / ₄ .
	Adult	Female	1	R femur shaft.
	Adult	?		4 rib frags, 3 vert frags, ischium, MC1, ?fibula shaft.
0046	Child	-		Parietal frag, 15 ribs, 5 T verts (2 ind), 3 MTs.
	c.3	-	1	L humerus (HuL1=132), L radius & ulna (RaL1=c.95).
	c.6	-	l	R & L humerus
	>6	-	1	Prox R ulna, larger child.
0047	Adult	/ 	I	2 mags tibla, 2 noulae, L talus, mag calcaneus, toe phai.
0047	Adult	Male?		L scapula frag.
	Adult	2		R nontai nag. R avis frag. distal I. femur.
0049	Child	-	1	2 rih frags R scap frag, vert body MT frag, phal
0049	Adult	Female?	1	Dist L humerus R MC4 L hamate R tibia shaft frags
	Adult	?	1	Zygomatic process. T vert arch. 8 frags rib.
0051	Child	_		7 rib frags. 1 L vert body. S5. capitate. R publs. $MT = sk 0052?$
	Adult	?		L scapula frag, MC frag.
0054	Child	-		Small rib frag.
	Adult	Female?		R prox hallucial phal.
0055	Infant	-		Rib frag.
	Adult	?		Rib frag, finger phal, ?L mandible frag with large abscess.
0058	Old	Female	1	L clavicle shaft, L humerus shaft, 5 frags R ribs, R ilium frag.
	Adult	Male	1	R humerus (HuL1=351, HuHd=47, stature 178.6cm), bowed
				distal half to lateral.
0.0.42	Adult	?	-	Toe phal.
0063	Child	-	2	Frags 1-2 juvenile skulls, 1 frag L orbit with cribriotic cribra, L
	A 1 1/	1.1	1	temur, radius shaft, temur shaft (poss pig/sheep?), 1 rib, L M11.
	Adult	Male	1 1	Frags adult skull, mandible (8 / 6 5 4 / / / / 3 4 5 6 / /).
	Adult	remaie	1	neal-complete skull, mastolus large, but smooth gladena and
	$M\Delta +$	Female		R pubis & ischium OP acetabulum
	Adult	Female	1	Lulna L scanula and lateral clavicle
	Adult	?	7	Frags of 2 skulls 12 ribs C2 MT1 4 R & 4 L femurs (poss 1
	1 100010	•	,	pair) and shaft frags. 4 L & 1 R tibiae (2 sub-ad/F, 2 M?), 2 L ilia
				(F), frags 4 L humeri, 2 heads prob male, shaft frags, 2 R radius, 6
				shaft frags fib/ulna.
	Adult	?	1	Distal R fem, prox pair tibiae, poor condition.
0065	Child	-		Frags skull, L ischium & ilium frag.
	Adult	Male	1	L ischium, R tibia prox half, L calcaneus, 2 cuneiforms, frags 3
				MTs, 1 toe phal.
	Adult	Female	1	Parietal, occipital & L temporal. R scapula frags, S1-2, L femur
	<u></u>	2		(FeHd=41).
	Old	?		L mandible frag (/ $6 / /$, abscess of M2).
	Adult	?		Frags skull, L mandibular ramus, 3 rib frags, 1 1 vert, 3 finger
				phais, K WC3, Houla shall frag, long bone frags.
0075	Child			Rih frag
0075	Adult	- 2		L vert arch frag iliac crest prov R radius with gross $\Omega \Delta$ III prov
	ruult	-		R MT2
0077	Child	-		Sacrum frag.
,	Old	Female		2 frags skull, 1 rib, T vert arch, R clavicle (verv gracile). L femur
				head, L ilium frag (OA II acetabulum), hamate. = sk 0081?
0082	Child	-		Frontal frag.

Context	Age Adult	Sex ?	MNI	Bones present 4 frags adult skull (occipital, parietals), 5 rib frags, L vert with OA zyg (eburnation, OP), R ulna shaft, dist humerus frag, MC shaft, R ischium (OP acetabulum) = sk 00812
0084	c.4-6	-	1	Frags skull (cribra R orbit), 2 rib frags, scapula, 2 epiphyses, frag
	A .J 14	Mala9		C2, sternal body, R femur, R tibia prox (some poss = 0085).
	Adult	Male?	1	Dist shall frag temur.
	Adult	Female	Ι	Prox ³ / ₄ L humerus (HuHd=39), dist frag R humerus, 3 finger phals, 1 MC, L innominate, L femur prox (FeHd=41), sacrum, L patella with OP lateral edge.
	Adult	?		Small frag mandible, premolar, 6 ribs, 5 L verts (2 inds, 1 with
				large OP), R clavicle medial, ischium (OP acetabulum), frags iliac
				crest, toe phal.
0087	Infant	-		2 small frags skull. 4 ribs, 2 finger phals.
0089	c.10	-	1	R mandible (e O O // //), R ilium, L pubis, humerus shaft
				frag, 3 MTs.
	Sub-ad	-		L femur shaft.
	Adult	Male		Femur shaft, post-mortem spade marks at distal end, but possible
				cut at prox poss peri-mortem? Thick fibre bone growth over most of shaft.
	Adult	?		2 skull frags, 1 rib, frags sacrum, R humerus prox shaft, R ulna shaft (periosteal fibre bone at prox end).
0098	Child	-		Unident frags.
	Adult	Male?		R radius shaft frag.
	Adult	?		Skull frag (temporal) poss animal, and unident.
0100	c.7	-	1	R tibia and fibula (lengths c.180).

Cranial measurements

		Sk.	0061	0068	0073	0090
Cranium						
Max Length	L		190	170	c.185	188
Max Breadth	В		136	136	c.128	154
Max Height	Η'		138	125	133	135
Basi-nasal Length	LB		105	96		99
Basi-alveolar Length	GL					88
Upper facial Height	G'H					71
Bimaxillary Breadth	GB					95
Bizygomatic Breadth	J					131
Nasal Height	NH'					50
Nasal Breadth	NB					21
Simotic Chord	SC					
Bi-dacryonic Chord	DC					
Orbital Breadth	O'1				38	38
Orbital Height	O2				36	35
Palatal Length	G'1					40
Palatal Breadth	G2					38
Min Frontal Breadth	В'		94	94	99	95
Biasterionic Breadth	BiastB		110	113	111	112
Foramen Magnum Length	FL		34	37	35	39
Foramen Magnum Breadth	FB		30	33	32	34
Frontal Arc	S1					
Parietal Arc	S2					
Occipital Arc	S3					
Frontal Chord	S'1		111			120
Parietal Chord	S'2					113
Occipital Chord	S'3					93
Trans-Biporial Arc	B'Q					
Mastoid Process Height	MPH		23	29	27	35
Cranial Index	100(B/L)		71.6	80.0	c.69.2	81.9
Height/Length Index	100(H'/L)		72.6	73.5	c.71.9	71.8
Height/Breadth Index	100(H'/B)		101.5	91.9	c.103.9	87.7
Upper Facial Index	100(G'H/J)					54.2
Orbital Index	100(O2/O'1)				94.7	92.1
Palatal Index	100(G2/G'1)					95.0
Foramen Magnum Index	100(FB/FL)		88.2	89.2	91.4	87.2
Gnathic Index	100(LB/GL)					112.5

Post-cranial measurements

		Sk.	0061	0068	0073	0078	0081	0090	0093
Femur									
Maximum length	FeL1	R						454	443
Maximum length	Telli	I		119				452	113
Olding a locate	E.I.2	L D		440				455	445
Oblique length	FeL2	K						453	442
		L						453	443
Head diameter	FeHead	R						49	40
		L		42				47	40
Bicondylar breadth	FeE1	R					75	84	70
		L					74	84	70
Min subtrochanteric A-P diameter	FeD1	R						28	23
		L		24				29	23
Max subtrochanteric M-L diameter	FeD2	R						36	29
	1002	I		28				32	31
Minimum shaft diamator (A D)	E ₂ D2	D		20			25	20	20
Willingtham Shart Graniteter (A-1)	rebs	I		26			23	21	20
				20			24	20	20
Maximum shaft diameter (M-L)	FeD4	K					23	30	27
		L		23			26	30	26
Meric Index 100(FeD1/FeD2)		R						77.8	79.3
		L		85.7				90.6	74.2
Robusticity Index 100((FeD3+FeD4)/FeD2))	R						13.2	12.4
		L						13.5	11.7
Tibia									
Maximum Length	TiL1	R				357	350	364	353
		I				507	200	366	354
Ricondular Breadth	TiE1	D				80	67	80	554
Bicondynai Bicaddii	TILI	T				00	69	00	
	T'D 1					26	08	01	20
A-P diameter at nutrient foramen	TIDI	K		20		36	31	38	28
		L		30		36	30	36	27
M-L diameter at nutrient foramen	TiD2	R				28	20	29	20
		L		19		26	20	28	20
Cnemic Index 100(TiD2/TiD1)		R				77.8	64.5	76.3	71.4
		L		63.3		72.2	66.7	77.8	74.1
Fibula									
Maximum Length	FiL1	R				361		359	
e		L					340		
Humerus									
Maximum Length	Ц лІ 1	D	310					222	325
Maximum Lengu	IIUL I	I I	510	204				552	223
II 1 1	TT TT 1	L D	42	294	40			47	324
Head diameter	HuHead	K	43	40	42			4/	•
		L	42	40					39
Epicondylar Breadth	HuE1	R	61					67	
		L							
Radius									
Maximum Length	RaL1	R	232					247	203
C		L		225					
[]]na									
Maximum Length	UIL1	R	255					266	
Muximum Dengui	UILI	I	200					200	217
Calaanaus		L							21/
Manimum Langth	Cal 1	р				70		00	70
Maximum Length	Call	ĸ				/8		80	12
~		L				/5		80	13
Clavicle									
Maximum Length	CIL1	R	136					135	
		L	141					143	
Sacrum									
Maximum Length								114	105
Maximum Breadth								119	113
S1 Width								62	41
Breadth/Length Index								104 4	107.6
S1 Width/Max Breadth Index								57 1	26.2
								52.1	50.5
Statura			164.0	164.9		169 5	150.2	160 7	162.0
Stature			164.9	104.8		108.5	139.2	109./	103.9

Cranial non-metric traits

	Sk.	0061	0068	0073	0090	0093
Highest nuchal line	R	0	0	0	0	-
-	L	0	0	0	0	-
Ossicle at lambda/Inca		0	0	0	0	0
Lambdoid wormian bones	R	+	0	0	+	-
	L	0	0	0	+	-
Parietal foramen	R	+	+	0	0	+
	L	+	+	0	0	-
Bregmatic bone		0	0	0	0	0
Metopism		0	0	0	0	0
Coronal wormian bones	R	0	0	0	0	-
	L	+	-	0	0	-
Epipteric bone	R	0	0	0	0	-
1 1	L	-	-	-	0	+
Fronto-temporal articulation	R	0	0	0	0	-
	L	-	-	-	0	_
Parietal notch bone	R	0	0	0	0	_
	L	+	0	0	0	-
Asterionic ossicle	R	0	ů 0	Ő	Ő	-
	L	0	Ő	Ő	Ő	_
Auditory torus	R	0	0	0	0	_
ruationy torus	L	0	0	0	0	_
Huschke's foramen	R	0	0	+	0	_
Husenke's forumen	I	0	0	-	0	
Post condular canal	D	0 +	0	-	0 +	-
i ost-condylar canar	К Т	, -	0	, +	0	-
Double condular facet	L D	0	0	0	0	-
Double condylar facet	К Т	0	0	0	0	-
Precondular tuberale	D	0	0	0	0	-
riecolidylai tubercie	К Т	0	0	0	0	-
Double hymogloggal acrol	L D	0	0	0	0	-
Double hypoglossal callal	К Т	0	0	0	0	-
Foremen evals in complete	L D	0	0	0	0	-
Foramen ovale incomplete	К Т	0	0	0	0	-
Entre relations former	L D	-	0	-	0	-
Extra palatine loramen	K	+	+	-	0	-
D-1-time to me	L	0	-	-	+	-
Palatine torus	K	0	0	-	0	-
N.C. 11. (L	0	0	-	0	-
Maxillary torus	K	-	0	-	0	-
	L	-	0	-	0	-
Zygoma-facial foramen	K	1	0	0	2	-
	L	0	1	0	2	1
Supra-orbital foramen complete	K	+	0	0	0	+
	L	+	0	0	0	+
Extra infra-orbital foramen	R	-	-	-	0	-
~	L	-	-	-	0	-
Sagittal wormian	_	0	0	0	0	0
Squame parietal ossicle	R	-	0	0	0	-
	L	-	0	0	0	-
Multiple mental foramen	R	0	0	0	0	-
	L	0	0	0	0	-
Mandibular torus	R	0	0	0	0	-
	L	0	0	0	0	-

Post-cranial non-metric traits

	Sk.	0061	0068	0073	0078	0081	0090	0093	0094	0097
Atlas bridge lateral	R	0	0	0	-	-	0	-	-	-
	L	0	0	-	-	-	0	-	-	-
Atlas bridge posterior	R	0	0	0	-	-	0	-	-	-
	L	+	0	-	-	-	0	-	-	-
Atlas double facet	R	+	+	0	-	-	0	-	-	-
	L	+	+	-	-	-	0	-	-	-
Suprascapular foramen	R	0	0	0	-	-	0	-	-	-
	L	0	0	-	-	-	-	-	-	-
Detached acromion epiphysis	R	0	-	0	-	-	0	-	-	-
	L	0	-	-	-	-	-	-	-	-
Sterno-manubrial fusion	R	0	0	-	-	-	0	0	-	-
	L	0	0	-	-	-	0	0	-	-
Septal aperture of humerus	R	+	-	-	-	-	0	0	-	-
	L	-	0	-	-	-	-	0	-	-
Epicondylar process of humerus	R	0	-	-	-	-	0	0	-	-
1 7 1	L	-	0	-	-	-	-	0	-	-
Sacralisation of L5	R	-	-	-	-	-	0	0	-	-
	L	-	-	-	-	-	0	0	-	-
Four sacral segments		-	-	-	-	-	0	0	-	-
Six sacral segments		-	-	-	-	-	0	0	-	-
Acetabular crease	R	-	-	-	-	-	+	0	-	-
	L	-	0	-	-	-	+	0	-	-
Allen's fossa of femur	R	-	-	-	-	-	0	-	-	-
	L	-	+	-	-	-	0	0	-	-
Poirier's facet of femur	R	-	-	-	-	-	0	-	-	-
	L	-	+	-	-	-	0	0	-	-
Plaque formation of femur	R	-	-	-	-	-	0	-	-	-
I	L	-	0	-	-	-	0	0	-	-
Third femoral trochanter	R	-	-	-	-	-	0	-	-	-
	L	-	+	-	-	-	0	0	-	-
Vastus notch of patella	R	-	-	-	-	0	-	-	-	-
1	L	-	-	-	-	0	+	0	-	-
Calcaneus double facet	R	-	_	_	0	+	0	+	+	+
	L	-	0	-	+	+	0	+	+	+
Cuboid-navicular articulation	R	-	-	_	0	0	Ō	+	0	0
	L	-	_	_	0	Õ	Õ	+	Õ	+
	-				, v	v	v		v	

Appendix VI: Animal bone catalogue

Context	No.	Wt/g	Date	Species	Sp. No.	Butchering	Comments
0001	47	761	U/S	cattle	5	butchered	tibia, humerus, horn, + worked?
				sheep	7	butchered	metapodial frags, femur, phalange
				pig	4	butchered	radius with cuts, jaw frags, adult
				goose	1	cut	carpometacarpus
				mammal	30	butchered	
0019	16	73	PMed	cattle	2		teeth
				mammal	14		
0020	2	13	PMed	goose	1		tarsometatarsus
				mammal	1		
0023	25	444	PMed	cattle	1	chopped	radius
			PMed	sheep	7	cut/chopped	metapodials, humerus, tibia, inc juvs
			PMed	pig	3	chopped	juv tibia,radius
			PMed	mammal	14	butchered	skull, vertebrae and shaft frags
0025	3	17	PMed	mammal	3	butchered	
0031	1	2	PMed	mammal	1		
0034	5	54	PMed	cattle	1		proximal phalange
				mammal	4	chopped	
0036	3	24	PMed	sheep	3	chopped	sheep horncore, pathology
0038	22	292	PMed	cattle	2	chopped	humerus,tibia
				sheep	2	cut/chopped	chopped humerus, pelvis with cuts
				pig	2	chopped	radius x 2
				mammal	16	butchered	includes canid gnawing
0039	4	92	PMed	cattle	2	chopped	metatarsal
				pig	1	cut	juvenile calcaeneus
				mammal	1		
0041	6	39	PMed	sheep	3	cut/chopped	juv metatarsal, adult radius, vert
				mammal	3	butchered	
0049	2	1	PMed	goose	1	cut/chopped	distal radius, heavily cut
				rat	1		juvenile rat femur
0055	2	35	PMed	mammal	2	chopped	
0063	30	467	PMed	cattle	2	chopped	juv. Humerus, adult radius
				sheep	3	cut/chopped	cut metapodials, chopped femur
				pig	2	chopped	humerus and tibia shafts
				mammal	23	butchered	
0065	2	23	PMed	cattle	1		tooth
				sheep	1		radius shaft
0082	2	4	PMed	sheep	1		molar, adult
				mammal	1		fragment



Plate 8: North door



Figure 13: North door illustration

OPNO	CONTEXT	IDENTIFIER	DESCRIPTION
0101	0101	Doorway	Doorway, N.aisle, worn fine grained limestone, rendered (Victorian?). 2- centred arch, hood mould with label-stops, W. female head, E. very degraded, but almost certainly similar to W. 14thC
0102	0102	Wall fabric	N.aisle wall fabric, seen entire length from ground to string-course below windows. Recorded E. & W. of 0101. Randomly laid unknapped flint cobbles with occasional re-used limestone masonry & rooftile to the w. Repointed with cream/buff lime mortar + ash 14thC
0103	0103	Wall fabric	N.aisle wall fabric, adjacent to buttresses, similar seen further to east. Closely packed knapped dark grey/black flint, mainly angular frags (up to 8cm) with galetting. A hint of coursing, but not good
0104	0104	Wall fabric	N.aisle wall fabric, above 0101 arch. Randomly laid rounded flint cobbles (up to 10cm). No galetting. Set in light cream to buff lime mortar. Similar seen adjacent to other N.aisle windows.
0105	0105	Wall fabric	N.aisle wall fabric, immediately above string-course above doorway, irregular patch, unknapped rounded closely spaced flint pebbles, up to 10cm, long axis vertical, hint of coursing, set in buff coloured sandy lime mortar
0106	0106	Wall fabric	N.aisle wall fabric, immediately above 0105 to top of wall, randomly lain unknapped rounded closely spaced flint pebbles, up to 10cm, long axis horizontal, set in brown lime mortar