BEDFORD WESTERN BYPASS

ASSESSMENT OF POTENTIAL AND UPDATED PROJECT DESIGN

VOLUME 3

Artefact and ecofact technical appendices

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Structure of the report

The Assessment/UPD report is divided into four volumes:

1) *Introduction, summary, assessment and Updated Project Design*
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4) *Areas investigated concurrently with construction works (issued at later date to other volumes)*

***This volume** comprises sections for each artefact and ecofact data-set. Within each section the evidence is arranged by Area and usually phase if appropriate.*

Version history

Version	*Issue date*	*Reason for re-issue*
1.0	*27/06/08*	*n/a*
1.1	*19/01/09*	*Inclusion of comments from consultant*

1. POTTERY (JACKIE WELLS)

1.1 Methodology

For each context, pottery was recorded by fabric type and quantified by minimum sherd count and weight. This information was entered onto the Context Assemblage Table in the project database. Unless otherwise stated, all quantitative statements are based on sherd count. Pottery was also spotdated by individual fabric type, and the date of the latest sherd used in the provision of an overall context spotdate. The latter has been used to assist in the establishment of the provisional phasing structure.

1.2 Quantification

A total of 16,372 sherds, weighing 321kg was collected, the majority deriving from features associated with Area 5 (Table 1).

Area	Sherd No.	Weight (g)
1	480	7875
2	170	1264
3	3630	70151
5	10008	217747
6	1	14
7	59	1046
8	1697	19684
9	36	102
10	224	2354
11	67	839
Total	**16372**	**321076**

Table 1: *Quantity of pottery by area*

1.3 Range and Variety: pottery type series

Fabrics are listed below (Table 2) in chronological order, using common names and type codes in accordance with the Bedfordshire Ceramic Type Series, currently maintained by Albion Archaeology on behalf of Bedfordshire County Council.

		Area (sherd no.)									
Fabric Type	**Common name**	**1**	**2**	**3**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Late neolithic/early bronze											
Type X01	Non-specific early prehistoric	12	39								
Type X06	Grooved ware		9								
Type X07	Beaker		72				8				
Type X10	Collared Urn		43								
LBA/EIA											
Type F01C	Flint and quartz	1					6		3		
E-M Iron Age											
Type F03	Grog and sand	23		1	7		7		1		
Type F14	Fine mixed	27		22	1						
Type F15	Coarse mixed	7		1							
Type F16	Coarse shell	141		2							
Type F17	Grog	33									
Type F18	Fine sand and shell	54									
Type F19	Sand and organic	1					2		5		

		Area (sherd no.)									
Fabric Type	**Common name**	**1**	**2**	**3**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Type F22	Grog and organic	14									
Type F27	Shell and grog	38									
Type F28	Fine sand	27	1	1						41	2
Type F29	Coarse sand	2					1				
Type F30	Sand and calcareous	7									
Type F37	Calcareous mixed				2						
Late Iron Age											
Type F05	Grog and shell	5		7	254						
Type F06A	Fine grog				3					1	
Type F06B	Medium grog	5	2	11	479			1	2	17	6
Type F06C	Coarse grog			7	315		2	2	5	2	2
Type F07	Shell	12		7	227		2	2		2	
Type F08	Shell and grog	1			444						
Type F09	Sand and grog	5		7					3	7	16
Type F24	Buff shell				45						
Type F34	Sand				3		2				
Iron Age											
Type F	Non-specific Iron Age	16		1	2		3			109	1
Roman											
Type R01	Samian ware (Continental)			41	457			3			7
Type R01D	Samian ware (Romano-British)				1						
Type R02	Mica-gilded			2	32						
Type R03	Whiteware			5	71						
Type R03A	Fine whiteware (VRW)			6	60						
Type R03B	Gritty whiteware (VRW)			45	135			1		1	
Type R03C	Smooth whiteware			4	83						
Type R03D	Whiteware with fine shell			3	10						
Type R05A	Orange sandy			26	75						1
Type R05B	Fine orange sandy			214	115			2			
Type R05C	Orange micaceous			1	20						
Type R05D	White-slipped orange sandy			18	44						
Type R06A	Nene Valley greyware			2	11						
Type R06B	Coarse greyware	9		126	416		3	2		1	
Type R06C	Fine greyware	1		994	1915			17		4	
Type R06D	Micaceous greyware	1		135	499			1		3	7
Type R06E	Calcareous greyware			34	140						
Type R06F	Greyware grog and sand			2	25			1			
Type R06G	Silty greyware				14						
Type R06H	White-slipped greyware			13	45						
Type R07B	Black sandy			196	235			3		7	3
Type R07C	Black gritty			11	91						
Type R07F	Black silty			3							
Type R08	Black micaceous			1	7						
Type R09A	Pink grogged			2	2						
Type R10A	Buff gritty			1	19						
Type R10B	Fine buff gritty			8	35						
Type R10D	Buff micaceous			3	6						
Type R11	Oxford oxidised			1	28						
Type R11D	Oxford colour coat			7	31						
Type R11E	Oxford mortaria (white)			4	10						
Type R11F	Oxford mortaria (red)				2		1				
Type R12A	Nene Valley mortaria			1	18						
Type R12B	Nene Valley colour coat			26	247						
Type R13	Shell			921	3022		1	23		4	4
Type R14	Sand (red brown harsh)			5	53					2	1
Type R17	Smooth orange			16	39						
Type R18	Pink gritty			51	66						
Type R18B	Pink fine				25						
Type R19	Amphorae (source unknown)				9						

		Area (sherd no.)									
Fabric Type	**Common name**	**1**	**2**	**3**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
Type R19A	Amphorae (Dressel 20)			1	6						
Type R21	Mortaria (source unknown)				7						
Type R23	Roughcast colour coat				6						
Type R28	Gritty calcareous			585	2						
Type R29	Fine sand and calcareous				18						
Type R31	Lumpy whiteware			34	48						
Type R32A	Lead glazed ware				4						
Type R33	Mortaria (VRW)			1	22						
Type R36	Orange gritty			6	20						
Type R38	Colour coat (source unknown)			2	6						
Type R	Non-specific Roman			1	20		1				
Saxon											
Type A16	Coarse quartz	5									
Type A18	Fine quartz	1									
Type A19	Quartz and organic	2			2						
Saxo-Norman											
Type B01	St Neots-type							115			
Type B01A	St Neots-type (orange)						1	184			
Type B01C	St Neots-type (fine)							42			
Type B01D	St Neots-type (red inclusions)							28			
Type B04	St Neots-type (coarse)							10			
Type B04A	St Neots-type (hand-made)							5			
Medieval											
Type B07	Shell							530			
Type C01	Sand							145			
Type C02	Red quartz							13			
Type C03	Fine sand							26			
Type C04	Coarse sand							7			
Type C05	Sand (red margins)							15	1		
Type C09	Brill-Boarstall ware (fine)							5			
Type C10	Potterspury ware							5			
Type C53	Sand (pasty)							42			1
Type C59A	Coarse sand							42			
Type C59B	Sand							245			
Type C60	Hertfordshire-type greyware							27			
Type C61	Calcareous inclusions						1				
Type C71	Buff-grey cored						14	10			1
Type C75	Micaceous							3			
Type B	Non-specific medieval shell							3			
Type C	Non-specific medieval sand							6			1
Late medieval											
Type E01	Reduced sand							29			
Type E01D	Reduced sand (buff-red margins)							18			
Type E02	Oxidised sand							19			
Type E03	Smooth sand							13			
Post-med / modern											
Type P01	Glazed red earthenware					1	2	2			2
Type P03	Black-glazed earthenware		3					2			
Type P10	Red earthenware							1			
Type P23	Raeren stoneware							1			
Type P25	Frechen stoneware							6			
Type P33	Tin-glazed ware							1			
Type P47	Vitrified earthenware	1						1		2	
Type P48	English stoneware								1		
Type P	Non-specific post-medieval							5		5	
UNID	Unidentifiable/undatable	29			1		2	33	15	8	11

Table 2: *Pottery type series*

1.4 Provenance, Phasing and Date Range

The pottery displays a wide date range spanning the late Neolithic to the post-medieval/modern periods, the majority dating to the late Iron Age-Roman period (Table 3). Three hundred and eighty-five features (56% of contexts producing pottery) contained less than 100g, and only sixty-eight features (9%) yielded in excess of 1kg. One hundred and twenty-two features (18%) yielded only single sherds. Although the degree of fragmentation is high (average sherd weight 20g), a sizeable proportion of vessels from the Iron Age and Roman periods are represented by more than one sherd. This suggests that much of the assemblage occurs in its primary context, close to areas where the pottery was used, and is further attested by the low incidence of residual or intrusive material.

	Area										
Pottery Date	**1**	**2**	**3**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Total**
Late Neolithic/early Bronze Age	12	163				8					183
Late Bronze Age/early Iron Age	1					6		3	109		119
Early-middle Iron Age	374	1	27	10		10		6	41	2	472
Late Iron Age	28	1	39	1770		6	5	10	29	24	1911
Roman	11		3563	8224		6	53		22	23	11902
Saxon	8			2							10
Saxo-Norman						1	384				385
Medieval						15	1124	1		3	1143
Late medieval							79	1			80
Post-medieval/modern	1	4			1	2	19		7	2	35
Total *											**16240**

***Table 3:** Sherd count by date and area*

**=Excluding unidentified material.*

1.4.1 Area 1

Area 1 yielded an assemblage of 480 sherds weighing 7.8kg, the majority of early-middle Iron Age date. The earliest pottery comprises twelve undiagnostic early prehistoric sherds, representing two vessels (32g) in sand/organic and shell tempered fabric types, one bearing pinched and/or finger nail impressed decoration. All are highly abraded and occur as residual finds in domestic focus L109 (Phase 103) and activity focus L111 (Phase 104).

Approximately 86% of the Area 1 assemblage comprises handmade pottery tempered with a range of sand (types F03, F28, F29), organic (F19, F22) and calcareous inclusions (types F14, F15, F18, F27, F30 and F16), the latter predominating. Diagnostic forms are relatively scarce, although appear to suggest a predominantly middle Iron Age date. The majority of the assemblage comprises thin-walled, round-shouldered and ovoid vessels with rounded, flat, or bevelled rims, and simple flat bases. Thicker-walled sherds in shell tempered fabrics, some ranging up to 20mm, attest the presence of larger vessels, some possibly used for storage. Decoration is rare, and comprises finger impressions around vessel shoulders and rims, and four stamped or rouletted body sherds deriving from one vessel. Scoring on a number of sherds suggests they may belong to the East Midlands Scored Ware

tradition. One undiagnostic flint tempered sherd (5g) of late Bronze Age/early Iron Age date occurs as a residual find a later feature.

The majority of the early-middle Iron Age assemblage derives from storage pit clusters L121, L122 and domestic focus L109 (Phase 103), and despite its generally abraded condition, includes a number of vessels which are represented by more than one sherd. This indicates that much of the assemblage is undisturbed and occurs in its primary context.

Thirty-nine predominantly shell and/or grog tempered late Iron Age and early Roman sherds were recovered, the latter deriving exclusively from boundary ditch L112 (Phase 105). Forms are largely undiagnostic and no decorative elements occur. Eight undiagnostic sherds of sand tempered Saxon pottery, representing five vessels (68g) derived from the fills of sunken-featured building L114 (Phase 106).

Phase	L. No.	Land Use Description	Sherd No: Wgt (g)*
101	100	Field or enclosure	2:41
	102	Rectangular possible mortuary enclosure	8:48
	103	Redefinition of one of possible mortuary enclosure L102 ditches	17:274
102	105	Pit alignment	34:124
103	106	Domestic focus, part of farmstead	14:782
	107	Redefinition of enclosure L120, part of farmstead	33:371
	108	Second redefinition of enclosure L120, part of farmstead	26:363
	109	Domestic focus, part of farmstead	99:1444
	110	Possible fenced enclosure containing pits	22:155
	120	Ditched enclosure, part of farmstead	3:5
	121	Cluster of storage pits, part of farmstead	36:1013
	122	Cluster of storage pits, part of farmstead	95:2136
	124	Activity focus (pits)	46:545
104	111	Activity focus comprising partial enclosure, pits and postholes	17:273
105	112	Boundary ditch	16:102
106	114	Two isolated sunken-featured buildings	9:71
109	119	Ploughsoil	1:8
		Total*	**478:7855**

Table 4: *Area 1 pottery by phase and land use area*

1.4.2 Area 2

The Area 2 assemblage of 170 sherds, weighing 1.2kg is highly fragmentary, with an average sherd weight of 7g and much of the material deriving from the sieved residues of environmental samples.

Nine abraded grog tempered sherds (104g) with grooved and incised decoration characteristic of later Neolithic Grooved ware, derived from activity focus L201 (pit G2014, Phase 201). Early Bronze Age pottery is represented by 72 Beaker and 43 Collared Urn sherds representing a minimum of seven vessels. Beaker sherds (636g) were recovered from activity focus L201 (pit G2014), isolated pit L213 (Phase 201) and as residual finds in post-medieval activity focus L216 (Phase 204). They are predominantly sand and grog tempered and some have fingernail impressed, incised linear and lattice decoration.

The incidence of Collared Urns is restricted to activity focus L201. Pit G2015 yielded 42 shell and grog tempered sherds (95g) representing part of a collar with cord impressed decoration. A single sand tempered bevelled rim sherd (5g) with incised herringbone decoration was recovered from pit G2012.

Features within activity foci L200, L201, L214 and isolated pit L213 (Phase 201) yielded approximately 39 grog, sand and organic tempered sherds (316g) which can only be broadly classified as early prehistoric. A number have combed and fingernail impressed decoration and may derive from Beakers, although their small size and poor condition precludes positive identification.

Later pottery comprises one early-middle Iron Age sherd (1g), recovered from activity focus L211 (Phase 202) and four post-medieval glazed earthenware sherds, recovered from activity focus L216, quarry pits L217 (Phase 204) and subsoil L219 (Phase 205).

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
201	200	Activity focus comprising unenclosed pits	36:247
	201	Activity focus comprising unenclosed pits	75:353
	213	Isolated pit	50:545
	214	Activity focus comprising unenclosed pits	2:13
202	211	Isolated pit	1:1
204	216	Activity focus comprising small pits and a posthole	3:74
	217	Large quarry pits	2:23
205	219	Subsoil	1:8
		Total	**170:1264**

Table 5: *Area 2 pottery by phase and land use area*

1.4.3 Area 3

Area 3 features yielded an assemblage of 3628 sherds, weighing 70.1kg, the majority of which are datable to the Roman period.

Twenty-seven sherds (1.5kg) in predominantly mixed sand and calcareous fabric types are of early-middle Iron Age date. The majority derive from pit cluster L300 (Phase 302), in particular pit G3046, which contained eleven rim and body sherds (583g) from a large, handled vessel. The remainder of the early-middle Iron Age pottery occurs as residual finds in later features. Sherds are generally thick-walled (up to 20mm) and appear to derive from large vessels, some possibly used for storage. Decorative elements are represented by one scored body sherd.

A late Iron Age assemblage of forty abraded and largely undiagnostic grog and/or shell tempered sherds (736g) was recovered from a range of features associated with farmsteads in Phases 304 and 305.

The Roman assemblage (3558 sherds, weighing 67.7kg) comprises a comparable range of wares to those recovered from the contemporary nearby settlements at Biddenham Loop (Wells 2008, 271-272), Kempston (Dawson *et al* 2004) and Marsh Leys Farm (Albion in prep), and generally reflects the

composition of Romano-British rural areas in the Great Ouse Valley. Sherds are generally larger than pre-Roman examples, although surface abrasion is still apparent. The greatest concentration of ceramics falls within the early Roman period, although the most numerous sherds occur in fabric types which span the entire Roman period. These are predominantly reduced and oxidised sand tempered coarsewares of probable local manufacture and shelly wares, a proportion of which may derive from kilns at Harrold (Brown 1994).

Forms include lid-seated and roll rim jars and bowls, flanged, plain rim, reed rim and rectangular rim bowls, jars with triangular, reed, undercut, bead, and everted rims, carinated jars, necked jars, storage jars, ring-necked and plain necked flagons, poppy-head, folded, plain and cornice rim beakers, dog dishes, cordoned jars, reed-rim, bead, triangular rim, carinated and cordoned bowls, lids, *mortaria* (grinding vessels), and single examples of an *amphora* (imported storage vessel), miniature jar and carinated beaker, the latter a possible Terra Rubra copy. Decoration comprises rouletting, rilling, incised wavy lines, horizontal and vertical combing, burnishing, slipping and barbotine motifs. A few vessels have been modified by the addition of post-firing holes to neck, body and base sherds and two coarseware sherds have been fashioned into gaming counters (45-50mm in diameter).

Regional and continental imports each constitute less than 5% of the Area 3 assemblage. Regional imports include early Roman products of the Verulamium (St Albans) region industries and pink grogged vessels likely to derive from Caldecotte, Bucks. Later Roman regional imports include vessels from Oxfordshire and the Nene Valley. With the exception of the samian ware vessels and *amphora*, no other continental imports were noted. Samian ware includes forty-one plain and decorated sherds of probable central or south Gaulish origin. Forms are mainly dishes, cups and bowls, including form 37 bowls, a form 36 dish with trailed leaves applied to the rim and a form 45 mortarium with an upright wall. One undiagnostic body sherd had an *in situ* lead rivet/repair.

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
302	300	Cluster of storage pits, probably part of farmstead	17:955
303	301	Ditched enclosure, periphery of farmstead	2:497
	302	Activity focus, periphery of farmstead	3:76
304	303	Farmstead enclosure	77:831
	304	Farmstead enclosure	112:2034
	307	Farmstead enclosure	108:1394
	308	Farmstead enclosure	53:842
	314	Unenclosed activity focus comprising pits	50:453
	316	Cremation burial	10:256
305	305	Farmstead enclosure system boundary	124:3124
	306	Inhumation cemetery	62:1178
	309	Farmstead enclosure	886:14858
	310	Farmstead enclosure containing pottery kiln	1848:38621
	312	Farmstead enclosure	261:4859
	315	Inhumation cemetery	4:17
306	318	Ploughsoil	11:146
		Total*	**3628:70141**

Table 6: *Area 3 pottery by phase and land use area*

Significant pottery assemblages were associated with Phase 305 enclosures L309 (notably the secondary and tertiary fills of ditch G3015) and L310, which respectively yielded 14.8kg and 38.6kg. The majority of the L310 assemblage derived from the primary and secondary fills of kiln G3038 which each yielded over 16.3kg of pottery, and the tertiary fill which contained a further 2.2kg. Vessels recovered from the kiln are predominantly sand tempered coarsewares, although sherds in other fabric types also occur. In contrast with the material from other features, none exhibited evidence of use. A number of sherds in a range of fabric types are overfired and brittle, with spalled surfaces. The vessels seem to represent a dump of material used to infill the feature once the kiln had gone out of use.

Of the 69 sherds associated with northern and southern inhumation burials G3033 and G3034 (L306), only one vessel, a miniature reduced ware jar recovered from burial S3191, could be interpreted as a grave good. All others appear to have been accidentally incorporated into the infill of the features. A similar miniature jar was recovered from nearby Marsh Leys Farm (Albion in prep.), where it occurred as an accessory vessel in a cremation burial (G103, L5, Farmstead 2, Phase 3). The base and lower part of a shell tempered jar (256g) were associated with cremation burial G3045 (L306).

1.4.4 Area 5

Sixty-one percent the total pottery assemblage (by sherd count) derives from Area 5, and comprises 10,008 sherds, weighing 217.7kg. The assemblage spans the late Iron Age and Roman periods, and is comparable in fabrics and forms with the pottery recovered from Area 3. The absence of residual and intrusive material suggests the Area 5 deposits are primary in nature and largely undisturbed.

Approximately quarter of this assemblage comprises wheel-thrown and hand made grog-tempered vessels (types F06A/B/C and F05) in the 'Belgic' tradition, characteristic of Thompson's Zones 7 and 8 (Thompson 1982, 15-16). A smaller proportion of sand and shell tempered vessels also occur (types F09/F34 and F07 respectively). The shelly vessels are likely to derive from one of a number of kiln areas known in the vicinity, such as Bromham or Stagsden (Slowikowski 2000, 61-85). Sources for the grog and quartz tempered types are unknown, although are likely to be local. Late Iron Age forms include lid-seated jars and bowls, bead rim and cordoned jars, necked jars, pedestal urns, large storage vessels, a platter and a lid. Decorative elements comprise linear and random combing, burnishing, stabbing, rouletting, finger tip impressions and incised motifs. Four vessels have been modified by the addition of post-firing holes to body and base sherds.

The majority of the Roman assemblage comprises locally manufactured sand tempered wares, principally the ubiquitous reduced wares, and shelly wares. Mica-gilded wares occur in greater quantity than in Area 3. Regional imports comprise early Roman whitewares from the Verulamium region and pink grogged vessels from Buckinghamshire.

Diagnostic coarseware forms comprise a standard range of kitchen and tablewares associated with the production, consumption and storage of food. These include reed rim bowls, cordoned jars and bowls, jars with triangular, undercut and everted rims, flanged bowls, plain and triangular rim bowls, large storage jars, poppyhead beakers, narrow-necked and neckless jars, folded beakers, plain and ring-necked flagons, dog dishes, platters, lids, bead rim vessels, strainers, a carinated bowl, an unguent flask and a possible cheese press. A standard range of decorative elements, including vertical and wavy incised motifs, horizontal, vertical and random combed patterns, rilling, slipping, rouletting, overall burnishing and burnished lattice motifs occur. Modified sherds comprise a part of a greyware base reused as a possible counter, and a large shelly body sherd with a deliberately straightened edge.

Nene Valley colour coats, manufactured from the mid 2nd - late 4th century, dominate the Romano-British fineware assemblage. Vessel forms include plain rim dishes, flanged bowls, wide mouthed bowls and/or jars, folded beakers, some with rouletted, painted and barbotine decoration, and a single flagon or jug. Later Roman vessels from the Oxford industry are also well represented by a range of common forms, including *mortaria*, flanged and plain rim bowls. Imported finewares are represented by 456 plain and decorated sherds of probable central and south Gaulish samian ware (type R01). Diagnostic vessels are mainly bowls, cups and dishes, including forms 27, 33, 35, 36, 37 and a form 45 mortarium. Several sherds are stamped with makers' marks. Lead rivets/plugs and drilled repair holes are evidence of vessel curation. A single sherd of possible Romano-British samian was also identified. Fifteen *amphorae* sherds of Dressel 20 type comprise the only other imported wares.

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
501	530	Pre-settlement alluvium	8:101
502	515	Enclosure	20:154
	518	Trackway	115:2005
	525	Activity focus comprising pits, periphery of major settlement	2:67
503	501	Trackway	104:2602
	502	Domestic? enclosure west of roadway	76:1794
	504	Domestic enclosure west of roadway	140:2841
	505	Metalled roadway	257:5507
	527	Non-domestic enclosure west of roadway	27:438
	534	Domestic enclosure east of roadway	13:290
504	506	Trackway (ditches recut)	352:8926
	507	Non-domestic enclosure	266:4045
	509	Domestic enclosure west of roadway	524:11483
	510	Domestic enclosure west of roadway	3328:82170
	511	Metalled roadway	145:4360
	512	Domestic enclosure west of roadway	512:14263
	519	Domestic enclosure east of roadway	111:2390
505	508	Non-domestic enclosure	34:803
	514	Domestic enclosure west of roadway	206:4693
	517	Domestic enclosure east of roadway	195:3917
	520	Non-domestic enclosure	152:1455
	521	Domestic focus west of roadway	244:5268
	522	Domestic enclosure west of roadway	674:13481
	523	Metalled roadway	326:8332

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
	524	Domestic enclosure west of roadway	290:4843
	526	Non-domestic enclosure	51:551
	528	Domestic focus	366:4205
	535	Domestic? enclosure east of roadway	372:6640
506	516	Unenclosed domestic enclosure west of roadway	410:9529
	537	Unenclosed domestic enclosure east of roadway	200:3247
507	531	Post-settlement layer	189:5063
508	503	Possible sunken-featured building	57:695
509	533	Open fields (furrows)	30:213
510	536	Ploughsoil	61:707
		Total*	**9947:217078**

Table 7: *Area 5 pottery by phase and land use area*

Post-Roman pottery comprises two sand tempered early-middle Saxon sherds (24g), recovered from putative sunken-featured building G5047 (L503, Phase 508.

The majority of the Area 5 assemblage derives from Phases 504 and 505, which respectively yielded 59% and 25% (by weight) of the pottery. Significant among these deposits are 11.4kg recovered from domestic enclosure L509 (principally pit group G5120) and 82kg recovered from domestic enclosure L510 (principally cess pit G5038). The latter contained a deposit of 435 sherds (25.4kg) including the majority of the Area 5 samian. Within these deposits, many vessels are represented by more than one sherd and are likely to represent accumulations of domestic settlement debris.

1.4.5 Area 6

A rim sherd from a 17th-18th century glazed red earthenware bowl (14g) was recovered from the backfill of trial trench 14 (L6).

1.4.6 Area 7

Area 7 features yielded a mixed assemblage of 59 sherds weighing 1kg. The earliest pottery comprises eight decorated grog and sand tempered Beaker sherds (32g) recovered from possible ring ditch L719 (Phase 702). Small quantities of late Iron Age/early Roman coarse pottery and nine residual late Bronze Age/early Iron Age sherds derived from features assigned to Phase 704. All sherds are generally small and abraded, and no diagnostic forms occur.

The majority of the Area 7 assemblage was associated with trackway L703 (Phase 705), principally trackside ditch G7002. The latter yielded fourteen sherds (628g) from an early medieval handled vessel and a shell tempered base angle (45g) in the St Neots ware tradition (Hurst 1956; Denham 1985).

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
702	719	Possible ring ditch	8:32
703	715	Isolated pit	7:104
704	701	Boundary	3:13
	707	Colluvium	16:105
	714	Unenclosed activity comprising pits	1:2
705	703	Trackway	15:673
707	702	Trackway	6:36
	716	Tree clearance	3:81
		Total	**59:1042**

Table 8: *Area 7 pottery by phase and land use area*

1.4.7 Area 8

Area 8 features yielded an assemblage of 1668 sherds, weighing 19.5kg. The pottery ranges in date between the late Iron Age/early Roman to the post-medieval periods, with the majority being of early medieval date.
Five abraded late Iron Age grog and shell tempered sherds (32g) represent the earliest pottery recovered. Forty-nine early Roman sherds (463g) comprise reduced and oxidised sand tempered coarsewares, three abraded samian sherds, and a whiteware mortarium sherd from the Verulamium region. No other diagnostic forms occur.

The Saxo-Norman assemblage totals 386 sherds (4.3kg) and comprises shell tempered wheel-thrown vessels in the St Neots-ware tradition (fabric B01) and its variants (fabrics B01A/C/D and B04). Five hand-made sherds (type B04A) also occur. Forms include bowls with inturned and simple upright rims, and everted rim jars of varying size and diameter. Decoration comprises stabbing and applied thumbed strips, the latter possibly deriving from large storage vessels. The exterior surfaces of a number of jars are sooted, indicating their use as cooking pots.

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
801	800	Possible shrine	4:25
	801	Cultivation trenches	81:490
802	802	Field	42:219
	803	Trackway	14:254
803	804	Field	43:312
	805	Domestic enclosure	138:1321
	806	Domestic enclosure, recut of L805	102:1543
	807	Non-domestic enclosure	28:202
	808	Partial enclosure of uncertain function	83:499
804	810	Domestic enclosure containing possible post-built structures	383:5099
	811	Domestic enclosure, later activity within L810	55:565
	812	Domestic ? enclosure	51:382
	813	Non-domestic enclosure	341:3785
	814	Non-domestic enclosure containing fishpond	123:1257
	815	Open fields (furrows) to north of settlement enclosures	14:161
	819	Trackway / yard	12:140
805	829	Unenclosed activity focus	6:19
806	809	Open enclosure	24:132
	818	Open enclosure	7:24

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
	832	Unenclosed activity focus	9:43
	833	Pond and overflow channel	7:37
807	820	Pond	17:2145
808	822	Ground levelling over former pond L820	72:789
	824	Field containing possible orchard	5:35
	830.03	Tertiary pit fills	1:3
	831	Field	2:7
810	828	Drainage features	4:21
		Total*	**1668:19509**

Table 9: *Area 8 pottery by phase and land use area*

The majority of the medieval assemblage comprises shell tempered vessels of 12th-13th century date (fabric B07), likely to derive from production centres on the Beds./Bucks./Northants. borders. Vessel forms are wheel thrown bowls with upright or rounded rims, simple everted rim jars and jugs, some of the latter with thumbed decoration on applied strips. The medieval phases are also characterised by locally manufactured fine and coarse sand tempered fabric types (C01-C05, C53, C59A/B, C61, C71, and C75) and Hertfordshire-type greywares (type C60), occurring in a similar range of forms to the shell tempered vessels. Sooting marks on both shell and sand tempered sherds confirm that a proportion of these types represent kitchen wares. High medieval finewares comprise four glazed sherds of Brill-Boarstall ware (Farley 1982) and five sherds of Potterspury ware (Mynard 1970), respectively regional imports from Bucks., and Northants.

Late medieval pottery comprises 75 reduced and oxidised sand tempered sherds (1.4kg) datable to the 14th-early 16th centuries. Reduced wares are consistent with the broad south to east Midlands reduced ware tradition. Forms are bowls, jars, jugs and single examples of a cistern and a chicken feeder, the latter made from reused roof tile(?), with applied handmade additions to the upper part.

Fourteen sizeable post-medieval pottery sherds(1.4kg) were recovered from features in Phases 807 and 808. They include lead, iron and tin-glazed earthenwares and imported German stonewares. One sherd of a possible French import was also identified.

The majority of the Area 8 assemblage derived from features associated with early medieval Phase 804, principally enclosed farmstead L810 and enclosure L813, which contained 5.1kg and 3.7kg respectively. Early post-medieval pond L820 (Phase 807) yielded over 2kg of pottery.

1.4.8 Area 9

The Area 9 assemblage of thirty sherds (80g) is highly abraded, fragmentary and entirely undiagnostic. Sherds have an average weight of 3g and a proportion derive from the sieved residues of environmental samples. The majority of the assemblage is associated with features in Phase 902, (principally pits G9004) and includes three flint tempered late Bronze Age/early Iron Age sherds (10g), nine grog tempered late Iron Age sherds (24g) and fifteen shell tempered sherds (21g) of uncertain date.

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
902	901	Boundary	2:2
	902	Unenclosed activity comprising pits and postholes	19:39
	903	Cultivation trenches	6:14
	905	Unenclosed activity comprising pits	1:5
904	906	Ploughsoil	2:20
		Total*	**30:80**

Table 10: *Area 9 pottery by phase and land use area*

1.4.9 Area 10

Area 10 yielded an assemblage of 216 sherds weighing 2.3kg, the majority associated with boundary L1000 (Phase 1002). The secondary fill of the feature contained a deposit of 109 predominantly shell tempered sherds (1.4kg) representing a number of late Bronze Age/early Iron Age and early-middle Iron Age vessels. Late Iron Age pottery is represented by thirty-five abraded and largely undiagnostic grog tempered sherds (300g) recovered from bedding trenches associated with vineyard L1002 (Phase 1003). Roman pottery derives mainly from the same land use area, and comprises twenty-three sherds (116g) including sand and shell tempered coarseware sherds and one sherd from a Verluamium region whitware jar or flagon. Post-Roman pottery comprises seven sherds of 17th-18th century glazed earthenware (83g), recovered from trackways L1005 and field boundary L1009 (Phase 1005).

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)
1002	1000	Major boundary ditch	160:1904
	1003	Activity focus comprising pits and postholes	1:2
	1006	Timber façade	7:34
	1008	Water pit	1:1
1003	1002	Bedding trenches	40:309
1005	1005	Cobbled trackways	2:14
	1009	Field boundary	5:69
		Total*	**216:2333**

Table 11: *Area 10 pottery by phase and land use area*

1.4.10 Area 11

Area 11 features yielded a late Iron Age/early Roman assemblage of 53 sherds weighing 523g, the majority deriving from deposits within Phase 1103. The pottery is highly abraded and fragmentary, with an average sherd weight of 9g. Locally manufactured sand tempered Roman coarseware sherds predominate. Seven sherds of imported samian ware from one abraded vessel (3g) were also identified. Forms are rare and include a cordoned jar, and a large shell tempered storage (?) vessel.

Phase	L. No.	Land Use Area Description	Sherd No: Wgt (g)*
1102	1112	Ditched enclosure, periphery of farmstead	14:179
1103	1101	Trackway	1:4
	1107	Field	1:4
	1109	Trackway	28:304
	1116	Pit cluster	4:2
	1117	Activity focus	4:14
1104	1102	Quarrying	1:16
		Total*	**53:523**

Table 12: *Area 11 pottery by phase and land use area*

2. CERAMIC BUILDING MATERIALS (JACKIE WELLS)

2.1 Methodology

For each context, ceramic building material (comprising brick, roof tile and fired clay) was recorded by fabric type, and quantified by minimum fragment count and weight. Where possible, the brick and tile was also spotdated.

2.2 Quantification

Three hundred and twenty-seven brick and tile fragments, weighing 46.4kg, were recovered, the majority deriving from features in Area 5. Fired clay fragments weighing 17.3kg were collected, mainly associated with features in Area 5 (Table 13).

	Frag No : Wgt (g)		
Area	**Brick and tile**	**Fired clay**	**Total (g)**
1	3:306	57:1027	60:1333
2	1:101	-	1:101
3	80:21204	36:2008	116:23212
5	128:16674	249:13992	377:30666
6	5:182	-	5:182
7	3:220	2:5	5:225
8	89:7220	1:6	90:7226
9	1:43	5:22	6:65
10	13:432	-	13:432
11	4:114	4:255	8:369
Total	**327:46496**	**354:17315**	**681:63811**

Table 13: *Quantity of ceramic building material by area*

2.3 Range and variety

2.3.1 Brick and tile

Sixty-three percent of the assemblage is datable to the Roman period (206 fragments weighing 38kg). The majority of the diagnostic material comprises shell tempered flanged roof tiles (*tegulae)*, with curved roof tiles (*imbrices)*, combed flue tiles and brick fragments being less well represented. Shelly tile fabric is similar to pottery ware type R13, and at least some examples may derive from the same source. Thirty pieces of sand tempered building material also occur in Area 3 and Area 5 features only. The fragments are fairly sizeable (average weight 185g) and are generally abraded. *Tegulae* range in thickness between 14-25mm and brick fragments between 30-42mm. Several examples of both types are combed or have circular or linear finger impressed decoration. The recovery of Roman building material suggests substantial buildings were located in the vicinity of the investigations.

One hundred and twenty-one sand tempered peg tiles and brick fragments (8.4kg) dating from the late medieval period onwards comprise 37% of the identifiable assemblage. Fragments are fairly small (average fragment weight 70g) and display variable abrasion. No complete examples were recovered: the only measurements taken were the thicknesses of flat tiles, which range

between 11-20mm. Single examples of a pantile and an unglazed floor tile 40mm thick were also present.

2.3.2 Fired Clay

The majority of the fired clay assemblage comprises amorphous and abraded fragments in an oxidised sand tempered fabric, while pieces in a shell tempered fabric constitute the remainder. Several fragments have one surface, and a sizeable piece 60mm thick is perforated. Five pieces retain wattle impressions and one possible kiln bar fragment was identified. The assemblage includes portions of approximately twenty-seven handmade fired clay slabs, weighing 7.2kg. They range in thickness between 25-40mm and have finger-smoothed surfaces and edges. Twenty-two occur in an organic sandy fabric and the remainder are shell tempered. Pieces include three perforated slabs/plates and two tray-like objects with raised edges, which may derive from ovens or similar structures. With the exception of structural daub recovered from the Area 3 pottery kiln, the material represents secondary deposition of occupation material and cannot be directly associated with the use of the features from which it was collected.

2.4 Provenance

2.4.1 Area 1

Ceramic building material comprises a worn floor tile fragment of uncertain date (263g) recovered from dispersed activity area L111 (Phase 104) and two pieces of post-medieval sand tempered flat roof tile (43g) collected from the fills of quarry pit L116 (Phase 108). The majority of the fired clay assemblage was recovered from early-middle Iron Age settlement features L109, L121 and L122 (Phase 103), which yielded fifty-two fragements (877g), including portions of two shell tempered handmade slabs. Five amorphous sand tempered fragments (150g) derived from pit alignment L105 (Phase 102).

2.4.2 Area 2

The fill of quarry pits L217 (Phase 204) yielded a single piece of post-medieval flat roof tile (101g).

2.4.3 Area 3

The Area 3 brick and tile assemblage is entirely Roman in date and comprises 80 fragments, weighing 21.2kg. Shell tempered fabrics predominate, with nine sand tempered examples occurring. Forms are mainly flanged *tegulae*, with a small quantity of *imbrices* and a single brick fragment. The bulk of the material was recovered from inhumation burial S3173 (G3033) within cemetery L306, where 47 roof tile fragments had been reused as part of a grave lining.

The majority of the Area 3 fired clay derives from kiln G3038 (enclosure L310, Phase 305) and comprises thirty fragments (1.8kg) in a friable oxidised sand tempered fabric, probably representing part of the structure's clay lining.

			Frag No : Wgt (g)	
Phase	**L. No.**	**Land Use Area Description**	**Brick and tile**	**Fired clay***
303	302	Activity focus, periphery of farmstead	-	1:94*
304	304	Farmstead enclosure	1:140	-
	308	Farmstead enclosure	3:402	-
305	305	Farmstead enclosure system boundary	4:344	-
	306	Inhumation cemetery	47:16826	-
	309	Farmstead enclosure	16:2144	5:41*
	310	Farmstead enclosure containing pottery kiln	-	30:1873
	312	Farmstead enclosure	9:1348	-
		Total	**80:21204**	**36:2008**

Table 14: *Area 3 ceramic building material by phase and land use area*

* - denotes presence of slabs, plates or trays

2.4.4 Area 5

The Area 5 Roman brick and tile assemblage comprises 126 fragments, weighing 16.4kg. As in Area 3, shell tempered fabrics predominate, with twenty-one sand tempered examples occurring. Forms include *tegulae, imbrices*, flue tile and brick. Most of the material was associated with domestic enclosures L509, L510 and L512 (Phase 504), enclosure L522 and domestic focus L528 (Phase 505) and post-settlement layer L531 (Phase 507).

			Frag No : Wgt (g)	
Phase	**L. No.**	**Land Use Area Description**	**Brick and tile**	**Fired clay***
502	518	Trackway	-	4:138*
503	501	Trackway	-	3:132*
	502	Domestic? enclosure west of roadway	-	10:322*
	504	Domestic enclosure west of roadway	-	11:1605*
	505	Metalled roadway	-	15:272*
504	506	Trackway (ditches recut)	4:299	2:103*
	507	Non-domestic enclosure	-	5:123
	509	Domestic enclosure west of roadway	13:1765	2:49
	510	Domestic enclosure west of roadway	18:3146	30:3704*
	511	Metalled roadway	-	20:1486*
	512	Domestic enclosure west of roadway	35:5480	31:1296
	519	Domestic enclosure east of roadway	1:47	7:53
505	508	Non-domestic enclosure	1:159	-
	514	Domestic enclosure west of roadway	-	4:294*
	517	Domestic enclosure east of roadway	-	27:507
	520	Non-domestic enclosure	3:311	1:121
	521	Domestic focus west of roadway	8:821	4:272*
	522	Domestic enclosure west of roadway	11:1152	8:204
	523	Metalled roadway	1:30	25:728*
	528	Domestic focus	13:1495	-
506	516	Unenclosed domestic enclosure west of roadway	4:541	8:565*
	537	Unenclosed domestic enclosure east of roadway	1:19	18:672*
507	531	Post-settlement layer	11:1177	14:1346
509	533	Open fields (furrows)	1:31	-
510	536	Ploughsoil	1:10	-
		Total	**126:16483**	**249:13992**

Table 15: *Area 5 ceramic building material by phase and land use area*

* - denotes presence of slabs, plates or trays

Approximately 249 fired clay fragments, weighing 13.9kg were recovered, the majority deriving from features associated with Phase 504 domestic enclosures. All but two of the slabs/plates and tray-like objects were recovered from features within Area 5, suggesting the presence of ovens or similar structures associated with domestic activity. An incomplete kiln bar (?) was recovered from post-settlement layer L531 (Phase 507).

2.4.5 Area 6

Five pieces of late medieval/post-medieval flat roof tile (182g) were recovered from the backfill of trial trench 14 (L6).

2.4.6 Area 7

Features associated with later medieval woodland L712 (Phase 706) and post-medieval tree clearance L716 (phase 707) yielded two abraded pieces of flat roof tile and a brick fragment (total weight 220g). Two organic tempered fired clay fragments (5g) were recovered from undated activity area L717 (Phase 701).

2.4.7 Area 8

The assemblage comprises 82 sand tempered flat roof tile fragments (4.2kg), six pieces of brick (3kg) and a pantile (90g). The majority are associated with later post-medieval episodes of ground levelling L822 (Phase 808) around pond L820. A complete brick measuring L220 x W105 x D60mm was collected from culvert G8044 within modern drainage system L825 (Phase 810). Fired clay is represented by a degraded sand tempered brick or tile fragment (6g) recovered from field L823 (Phase 808).

Phase	L. No.	Land Use Area Description	Frag No: Wgt (g)
803	805	Domestic enclosure	2:108
804	814	Non-domestic enclosure containing fishpond	2:147
806	833	Pond and overflow channel	6:321
807	820	Pond	11:711
808	822	Ground levelling over former pond L820	61:2987
	824	Field containing possible orchard	1:19
	830.03	Tertiary pit fills	1:33
	831	Field	1:107
810	825	Drainage culvert	1:2760
	828	Drainage features	1:7
	834	Modern agricultural activity	1:20
		Total	**89:7220**

Table 16: *Area 8 brick and tile by phase and land use area*

2.4.8 Area 9

Romano-British boundary L901 and activity foci L902 (Phase 902) yielded five amorphous sand tempered fired clay fragments (22g). An unstratified post-medieval flat roof tile fragment (43g) derived from ploughsoil L906 (Phase 904).

2.4.9 Area 10

The Area 10 assemblage derives entirely from cobbled trackway L1005 (Phase 1005) and comprises twelve pieces (415g) of sand tempered late medieval/post-medieval flat roof tile, including a Potterspury ware fragment, deriving from kilns in Northamptonshire.

2.4.10 Area 11

Furrows L1123 (Phase 1105) yielded an abraded sand tempered brick fragment (29g) of probable late medieval/early post-medieval date. Two pieces of an organic tempered slab (239g) derived from the fills of tree-throw holes L1114 (Phase 1101) and three amorphous fired clay fragments (16g) were recovered from Romano-British activity foci L1104 and L1115 (Phase 1103).

3. NON-CERAMICS FROM EXCAVATION (HOLLY DUNCAN)

3.1 Methodology

As part of the assessment, each object was assigned a preliminary identification and functional category and was recorded by number and/or weight. This data was entered into the project database. All ironwork and selected non-ferrous objects were x-rayed by Lincolnshire County Council Heritage Service's Conservation Department. An assessment of the condition of the metalwork was carried out at the same time and required stabilisation and repackaging undertaken. Selected jet/shale items also received stabilisation treatment. Preliminary identifications were up-dated in light of the information gained from the x-rays.

3.2 Quantification

A total of 1388 items were recorded from Areas 1-3, 5, 7-11. Of these, 106 are coins and are the subject of a separate assessment (see Section 4). A small quantity of ferrous slag from Area 5 was also recorded. The distribution of the remaining 1282 artefacts by area and material is presented in Table 17.

	Area 1	Area 2	Area 3	Area 5	Area 7	Area 8	Area 9	Area 10	Area 11	Total
Material										
Amber	1									**1**
Antler		1	1	3		1				**6**
Bone				7						**7**
Copper alloy		1	16	62	2			4		**85**
Flint	114	82	3		6	3		3	1	**212**
Glass			111	11						**122**
Iron	15	6	281	445	3	15				**765**
Jet			35							**35**
Lead alloy			2	23	6	1		1		**33**
Shale			1		1					**2**
Shell			1							**1**
Stone	2		2	7		1	1			**13**
Object Total	**132**	**90**	**453**	**558**	**18**	**21**	**1**	**8**	**1**	**1282**
Slag				2386g						2386g

Table 17: *Non-ceramic artefacts (excluding coins) by area and material*

3.3 Condition

The non-ferrous metalwork across the areas generally survives in fair condition, although some structural deterioration and/or active corrosion was evident on nine copper alloy objects (including coins) and one lead alloy object, all from Area 5. Generally the ironwork assemblages from Areas 1, 2, 3, 7 and 8 survived in poor to fair condition. There is a high level of corrosion by-products on the nails recovered from inhumation burials on Area 3. Area 3 and Area 8 each had six iron objects which required consolidation. The ironwork recovered from Area 5 is generally in poor condition, the vast majority heavily encased in corrosion by-products and concretion. Thirteen objects required consolidation. Over half of the iron assemblage requiring consolidation derived from the fills of cess/rubbish pits L501 (P504), suggesting damp and possibly fluctuating water levels contributed to the poor state of survival.

The glass assemblage, limited to Area 3 and 5, survived in good condition. Localised linear structural cracking was evident on the shale armlet from Area 3, but the jet beads within the same burial survived in good condition. Worked skeletal material survived in fair to good condition but there is a surprisingly limited assemblage from Areas 1, 2 and 3. These three areas fell within the Biddenham Loop. Previous excavations on the Loop also produced very little in the way of worked skeletal material (Duncan 2008b, 280) and this may be a reflection of 'hostile' soil conditions in this area.

3.4 Discussion by Area of Provenance, Phasing and Date Range

3.4.1 Area 1

Area 1 produced an assemblage of 132 artefacts, the majority of it comprising flint debitage and tools (Table 18). The Mesolithic is represented by a flint pick, truncated blade and a possible burin. Much of the flint debitage is not closely datable and there is a mixture of blades and hard hammer-struck flakes. The former are usually dated to the Mesolithic to early Neolithic, while the latter are usually attributed to the late Neolithic to early Bronze Age. Scrapers include end, end and side, and side scrapers. These tools are not closely datable but they are the most common type of tool found on later Neolithic and early Bronze Age areas.

Period & Phase	6:P101	7:P102	8:P103	9:P104	13:P107	14:P108	15:P109	20:P1	Total
Flint Debitage									**0**
Core		2					1		**5**
Core trimming		1	1						**0**
Blade	2	2	5						**9**
Flake	7	30	24		1		4	4	**70**
Flint Tools									**0**
Awl/piercer		2	1						**3**
Burin	1								**1**
Utilised blade	1	1	1				1		**4**
Utilised flake		1	1						**2**
Knife		1							**1**
Notched flake			1				1		**2**
Retouched blade			1						**1**
Retouched flake	1	1	1	1			2		**6**
Pick		1							**1**
Scraper	1	2	5						**8**
Gun flint?							1		**1**
Other									**0**
Amber bead	1								**1**
Iron double spiked loop		1							**1**
Hearth stone			1						**1**
Saddle quern			1						**1**
Iron fragment			1					1	**2**
Iron brooch				1					**1**
Iron Nails				4		6			**10**
Cast iron plough share						1			**1**
Totals	**14**	**45**	**44**	**6**	**1**	**7**	**10**	**5**	**132**

Table 18: *Non-ceramic artefacts from Area 1 by period and phase*

A single amber bead is of probable Bronze Age date. A late Iron Age date can be assigned to the iron brooch of probable La Tene III type. The Roman period may be represented by a double spiked loop, while a date in the post-medieval period is likely for the cast iron plough share.

3.4.1.1 Phase 101 (Period 6 Late Neolithic – Early Bronze Age)

Phase 101 produced a limited quantity of worked flint and an amber bead. The majority of artefacts were associated with mortuary enclosures L101 to L103 (see Table 19).

Land Use	L101				L102	L103	L100		
Group	**G1031**	**G1032**	**G1032**	**G1033**	**G1030**	**G1028**	**G1000**	**G1001**	
Sub-group	**S1225**	**S1229**	**S1233**						**Total**
Blade	1				1				**2**
Cutting blade	1								**1**
Burin				1					**1**
Flake	2	1			1	1	1	1	**7**
Retouched flake						1			**1**
Scraper							1		**1**
Bead			1						**1**
Total	4	1	1	1	2	2	2	1	**14**

Table 19: *Distribution of non-ceramic artefacts in Period 6 land use areas*

Three assemblages from L101 derived from burials; G1031 a cow burial and G1032 two inhumation burials (S1229 and S1233). In only one instance, that of the amber bead in S1233, was the artefact directly associated with the burial, the remaining artefacts were recovered from the burial fills. The presence of blades and a burin, generally dated to the Mesolithic to early Neolithic periods, within P101 deposits suggests an element of residuality in these assemblages. Post-depositional damage on these pieces would appear to confirm this impression. The remaining flint objects were recovered from the fills of ditches, either defining the mortuary enclosures or field L100.

The flint assemblage from late Neolithic to early Bronze Age deposits is surprisingly limited, in comparison to the flint from deposits of late Bronze Age to early Iron Age and early-middle Iron Age date (see below) and to the assemblages from adjacent excavations (Bates 2008, 91). This may be due to the nature of the late Neolithic to early Bronze Age activity, most of the artefacts deriving from burial fills or mortuary enclosure ditch fills, and not domestic foci which tend to produce a greater amount and wider range of worked flint.

3.4.1.2 Phase 102 (Period 7 Late Bronze Age – Early Iron Age)

The continuation of flintworking throughout the Bronze Age and perhaps into the Iron Age has been the subject of discussion and study (Young and Humphrey 1999). The later Bronze Age knapping strategy might be described as *ad hoc*, when a flint implement was required a suitably-sized nodule or pebble was picked up or scavenged and once an appropriate flake achieved the core was discarded (Butler 2005 181-2). There was a general lack of skill in knapping and a more restricted range of tool types, in comparison to earlier periods. Although the flint assemblage from the fills of pit alignment L105 is

not on the whole closely datable, a proportion of the assemblage displayed a number of characteristics which may be suggestive of a late Bronze Age date – including hard hammer-struck flakes, cortex surviving on numerous pieces, hinge and overshoot terminations and reuse of both flakes that had been produced and discarded in earlier prehistory and patinated thermal flakes. Some of these characteristics are however shared by later Neolithic and early Bronze Age flints (Butler 2005, 157). Residuality was also evident within the assemblage from the pit alignment fills, as indicated by the presence of blades and a Mesolithic pick. The pick was in the lower fills of pit G1118.02 and it is possible it may have been chosen purposely for deposition. Intrusive activity is also apparent, with the recovery of a double-spiked loop from the final fills of one of the pits (G1114.03).

3.4.1.3 Phase 103 (Period 8 Early-Middle Iron Age)

Early-middle Iron Age deposits produced again mainly flint, and the assemblage overall was not dissimilar to that from preceding Period 7 deposits, including a mix of attributes associated with the Mesolithic to early Neolithic and later periods. How much of this assemblage was residual or actually represents continued flint working in the early-middle Iron Age is debateable. There is evidence of post-depositional damage on most pieces and the presence of blades, including a truncated blade, suggests that a sizeable proportion of this assemblage is residual. An unworked but heavily burnt piece of ferruginous sandstone placed towards the base of an oval pit in fenced square enclosure L110 may represent the remains of a hearthstone. The tertiary fill of single storage pit (G1021) within cluster L122 yielded remains of a micaeous sandstone saddle quern. The only ferrous item found within Period 8 deposits comprised a thin fragment of strip or sheet again found within the tertiary fill of a storage pit (G1019), this time within L121.

3.4.1.4 Phase 104 (Period 9 Late Iron Age – Early Romano-British)

Limited artefacts were recovered from deposits of late Iron Age date, and all derived from L113. A single incomplete retouched flake came from the fill of a posthole and is, by this date, considered residual. The fills of the eastern enclosure ditch (G1006) yielded four nails, while the fill of the northern enclosure ditch produced the remains of an iron brooch. Although incomplete this brooch appears to have a wide thin plate just below the head coils, which then tapers to form the bow. This may be a late La Tene type brooch, possibly a variant of the cup-shaped brooches. Mackreth argues for a date of no later than 25 BC for this brooch type (Mackreth 1989,132-33; Mackreth 1993, 84-87).

3.4.1.5 Periods 13, 15 and 20

The finds from Period 13, 15 and 20 predominantly comprise residual worked flint, with a single possible gunflint, which could date from the 18th to early 20th century, deriving from Period 15 deposits. Post-medieval quarrying activity yielded a cast plough share and a nail, while 16m to the north of the quarry pits, the fills of two postholes produced five nails.

3.4.2 Area 2

Area 2 produced an assemblage of 90 artefacts the majority of which comprised worked flint (see Table 17 and Table 20). The date range of the assemblage as a whole commences with the early Neolithic, as represented by a leaf-shaped flint arrowhead, and continues into the late Neolithic to early Bronze Age, as evidenced by a plano-convex knife and discoidal scraper. There are no finds which can be typologically dated to the Iron Age or Roman periods. The Saxon period is represented by a single white metal plated copper alloy mount with central blue glass setting, possibly dating to the late 6th to early 7th century. A single iron shoeing nail is dated to the late medieval to post-medieval periods.

Period & Phase	6:P201	8:P202	11:P203	14:P204	15:P205	20:P2	Total
Flint Debitage							
Core fragments	4				1		**5**
Flake	42	2	1		2		**47**
Chips	5						**5**
Flint Tools							**0**
Arrowhead					1		**1**
Awl/piercer	1						**1**
Axe thinning flake	1						**1**
Utilised flake	4						**4**
Knife	2					1	**3**
Denticulate	1						**1**
Retouched blade						1	**1**
Retouched flake	5				1		**6**
Scraper	6				1		**7**
Other							**0**
Antler point	1						**1**
Strap mount			1				**1**
Iron shoeing nail				1			**1**
Iron Nails				1	2		**3**
Iron fragment				2			**2**
Totals	**72**	**2**	**2**	**4**	**8**	**2**	**90**

Table 20: *Non-ceramic artefacts from Area 2 by period and phase*

3.4.2.1 Phase 201 (Period 6 Late Neolithic – Early Bronze Age)

Late Neolithic to early Bronze Age deposits produced the highest concentration of artefacts, the vast majority either flint debitage or worked flint. Eight pieces of flint, six debitage flakes and two tools, were found within the fills of three of the four pits comprising L200. All the flakes were hard hammer-struck and in five out of six cases retained small areas of cortex. Only one pit (G2009) yielded tools and these comprise a retouched flake and a boldly denticulated flake. The latter are known from Mesolithic assemblages (Butler 2005, 110), but certainly one example has been found associated with debitage more akin to late Neolithic and Bronze Age flintworking along the Baldock Bypass (Duncan forthcoming Chapter 5, Section VIII, cat OA15).

Three of the six pits forming L201 yielded 32 pieces of worked flint. The majority of this assemblage comprised debitage, 24 flakes and two chips, most hard hammer-struck and retaining areas of cortex. Tools consisted of a cutting flake and a piercer from G2012 and two end scrapers, a plano-convex knife and an invasively retouched knife from G2014. The piercer was manufactured

on a soft hammer-struck blade which suggests it may be residual and the nicked lateral edges of this piece may support this suggestion. The remaining tools exhibit traits of later Neolithic and early Bronze Age flintworking. The presence of both debitage and tools, along with a quantity of late Neolithic grooved ware pottery, burnt flint and charcoal in the fills of pit G2014 may suggest a 'structured deposit' (c.f. Thomas 1999, 62-74).

Little was found within the fills of features within L203 or L214, in each case a single flake was found in one pit within the two clusters. The single isolated pit comprising L213 however differed, producing an assemblage of 29 pieces of worked flint and a single antler tine. The antler tine has wear on the tip and a slightly bevelled point and could possibly have been used in forming retouch in flintworking. The flint assemblage comprised debitage, including core fragments, hard hammer-struck flakes and chips, in addition to a possible axe thinning flake, three utilised flakes, four retouched flakes and four scrapers. As in the case of G2014 in L201 these pit fills also yielded animal bone, a quantity of Beaker pottery and a concentration of burnt stones, suggesting a structured or special deposit.

3.4.2.2 Phase 202 (Period 8 Early-Middle Iron Age)

Evidence from early Iron Age deposits was limited to two debitage flakes from the fills of a possible quarry pit G2049 in L211. Both flakes are hard hammer-struck but with such a limited quantity of material it is not possible to say whether the flakes are residual or not.

3.4.2.3 Phase 203 (Period 11 Early – Middle Saxon)

The secondary and main fill of the sunken-featured building G2002 in L205 yielded a single residual flint flake and a white metal plated copper alloy strap or belt mount. The mount is roughly square in plan with concave sides and bevelled edges. The mount was attached by means of four copper alloy rivets, one situated in each corner. A central circular perforation originally held a blue glass setting. Tinned mounts of the similar shape were found in grave 56 dated to AD 575-625 at Dover cemetery (Evison 1987, 232 and fig. 31.8).

3.4.2.4 Phase 204 (Period 14 Post-Medieval)

The only finds from post-medieval deposits derived from quarrying activity in L217. The assemblage was small and was restricted to a single nail shank, a shoeing nail and two fragments of iron, one comprising a rectangular sectioned bar or shank and the second, remains of a perforated strap.

3.4.2.5 Phase 205 (Period 15 Modern)

Modern deposits yielded a residual assemblage of worked flint which included half of a leaf shaped arrowhead of early Neolithic date and a rather crude side scraper manufactured on a hard hammer-struck flake from topsoil and two flat headed nails from sub-soil.

3.4.3 Area 3

Area 3 produced an assemblage of 453 individual items and these are presented by period and phase in Table 21 and by material in Table 17.

Typologically datable finds include a barbed and tanged flint arrowhead of Bronze Age date, glass vessels of later 1st to later 2nd century and later 2nd to 3rd century AD, a shale armlet of 2nd to 4th century AD, two bangle bracelets of late 3rd to 4th century AD, a wire chain necklace and at least three bead necklaces dating to the 3rd and 4th centuries.

Period & Phase	10:P304	10:P305	Total
Flint tools			
Arrowhead	1		**1**
Scraper	1	1	**2**
Personal adornment			
Arm ring		1	**1**
Bead		144	**144**
Necklace component		8	**8**
Bracelet		2	**2**
Earring		1	**1**
Finger ring		1	**1**
Hobnail	1	123	**124**
Household			
Box		1	**1**
Binding	1		**1**
Flask		1	**1**
Bottle		1	**1**
Quern		1	**1**
Fasteners & Fittings			
Key	1		**1**
Lock		1	**1**
Hinge		1	**1**
Nail	10	107	**117**
Tack		22	**22**
Crafts			
Worked Antler Waste		1	**1**
Wide ranging uses			
Ring	1	1	**2**
Chain		1	**1**
Wire		3	**3**
Uncertain			
Fragment	1	12	**13**
Perforated shell		1	**1**
Whetstone?		1	**1**
Totals	17	436	**453**

Table 21: *Non-ceramic artefacts from Area 3 by period and phase*

3.4.3.1 Phase 304 (Period 10 Romano-British)

Although the assemblage from Roman period deposits is fairly sizeable, the majority of the artefacts were recovered from P305, the assemblage from P304 being fairly modest. Only one find, an incomplete and obviously residual barbed and tanged arrowhead, was found in the northern enclosure ditch (G3010) of curvilinear enclosure L303. The fills of the southern enclosure ditch (G3014) of L304, situated within L303, produced two nails and a cast copper alloy annular ring. Neither find type is closely dated nor are they suggestive of intense occupation. A cremation (G3050) within enclosure L307 yielded two flat headed nails, one from the fill of the cremation burial and the second directly associated with the urned cremation deposit. Neither nail shows any clear sign of having been exposed to heat, although this is not always clearly visible. It is possible that old timbers, with structural nails remaining in place, were used within the pyre and the nail found within the

cremation deposit was inadvertently incorporated during retrieval of the bone from the funeral pyre.

The only feature within Enclosure L308 to produce non-ceramic artefacts was the possible cess pit G3019. In addition to a residual flint scraper, six nails, a hobnail, fragmented remains of possible binding for a small box and remains of a padlock key were found within the fills of the cess pit. The key would have been used in conjunction with a barb-spring padlock, which first makes its appearance in Britain at the very end of the Iron Age and continued in use throughout the Roman period (Manning 1985, 95). Although this assemblage is quite modest it is suggestive of occupation of the enclosure.

3.4.3.2 Phase 305 (Period 10 Romano-British)

Land use areas in P305 yielded the greatest concentration of finds from Roman period deposits. The vast majority of these items were recovered from cemeteries L306 and L315, but a small assemblage was found associated with three enclosures (L309, L310 and L312) and a major boundary L305.

Boundaries and Enclosures

The fills of boundary L305 produced a copper alloy corner binding for a small box, two fragments of iron strip and a perforated oyster shell. The oyster shell has a man-made square perforation. Examples of modified oyster shells have been found on both Roman and medieval areas (e.g. Sandy, Beds., Ferrybridge, Yorkshire (Duncan 2005, 164-5) and Grove Priory, Beds. (Duncan in prep). The purpose of the perforations, which can vary in shape from circular to rectangular, is unclear. Their presence may be related to the method of opening the bivalves and the fact that other unmodified oyster shell was also recovered from the boundary fills perhaps supports this suggestion. Whatever the interpretation, the presence of oyster shell does indicate that occupants were receiving shellfish from coastal areas and indicate trading connections with costal areas.

The artefacts recovered from enclosure L309 were concentrated in the larger of the two enclosure ditches (G3015), although a single hobnail was found in the short length of ditch (G3020) which possibly formed the east boundary of the enclosure. The assemblage from G3015 was again modest, including two nails, eight hobnails and two fragmentary pieces of lead, and could have derived from occasional activity in, as opposed to occupation of, the enclosure. The presence of a sawn mid-section of an antler beam does indicate some craft activity was occurring and this, combined with the more plentiful ceramic assemblage, argues for domestic occupation of this enclosure. What is noteworthy is that this is the only worked skeletal material from the whole of Area 3. Both bone and antler were readily available and were commonly utilised in the Roman period to create hair pins, combs, knife handles and gaming counters. It is presumed that the dearth of worked skeletal material is likely the result of hostile soil conditions rather than actual absence.

In contrast to the fairly sizeable ceramic assemblage and the contextual evidence for a kiln and burial within enclosure L310, a very limited non-ceramic assemblage was recovered. This comprised a single flat headed nail

from a pit within G3030 and a robust iron strap fragment and residual flint end and side scraper from the fills of kiln G3038.

The fills of the ditches, in particular the southern ditch G3035 and its re-cut G3036, of enclosure L312 produced what might be termed the 'usual' assemblage for enclosure ditches in the Roman period on Area 3, that is nails, hobnails and fragmentary remains of iron. In addition however evidence for actual habitation is suggested by the presence of a lower stone of a bun-shaped rotary quern of Hertfordshire puddingstone and an iron lock bolt. Examples of puddingstone querns from other areas have been found in dated contexts ranging from the late Iron Age to the end of the Roman period, although most are thought to pre-date AD200 (King 1986, 71). Buckley and Major (1983, 76) argue that production may have ceased by the mid-2nd century AD. The presence of the quern within the L312 ditch fills indicates the processing of grain was being undertaken; a household-based activity during this period.

Evidence of an actual structure within enclosure L312 is suggested by the iron lock bolt for a tumbler lock (RA3106). Similar bolts have been found on other Roman areas (c.f. Crummy 1983, 124 fig 136) but are normally manufactured of copper alloy. Crummy comments that copper alloy examples were probably from small locks for boxes or cupboards, but that larger locks fitted on doors would almost certainly have been made of iron for greater strength (1983, 123). This would appear to be the case in this instance, the Area 3 bolt being twice as long as copper alloy examples. Iron lock bolts have been found in 3rd century deposits at Baldock (Manning and Scott 1986, fig. 67 no. 554) and King Harry Lane, Verulamium (Jackson 1989, fig. 23 nos 221 and 222), the latter two examples came from back-filled building cellars.

L312's eastern boundary ditch, G3037, produced two figure-of-eight links of an iron chain. Chains had a multiplicity of uses, including on shackles, as hobbles for livestock and in a domestic context as a suspension for cauldrons. The single isolated burial G3027 within enclosure L312 produced evidence for burial within a coffin in the form of ten coffin nails. Philpott notes that by the later 2nd century AD bodies were often enclosed in coffins (1991, 53). The presence of five hobnails within the grave also suggests that shoes may have accompanied the burial, a rite that seems to have been most firmly established in the countryside, as opposed to the urban context (Philpott 1991, 167). Although a few burials accompanied by hobnails are known from mid-2nd century AD, the practice of including footwear became more common in the late 2nd and 3rd centuries, but by far the majority of examples occur in the 4th century (Philpott 1991, 167). A study of the distribution of the hobnails accompanying burial G3027 may indicate whether the shoes were worn or merely placed within the coffin, which could help in refining the date of the inhumation.

There is a small assemblage of finds from the fill of pit G3028, which truncated southern enclosure ditch G3035, comprising four hobnails, two nail shanks and one cast copper alloy annular ring. This contributes little information as to the date, or the reason for abandonment, of this enclosure.

Cemeteries

Instances of from one to three burials were found within some of the Phase 305 enclosures, for example L310, L312 and L313. However, these enclosures also contained evidence for other domestic and/or craft activity. Two land use areas within P305 appear to have been utilised solely for burial, L306 and L315. Non-ceramic artefacts were found in seven of the fourteen inhumation burials within L306 and in four graves out of thirteen in L315. The burials and their associated objects are presented in Table 22.

	L306							L315				Total
	S3169	S3179	S3183	S3187	S3189	S3191	S3193	S3031	S3033	S3041	S3043	
Flask					1							**1**
Bottle fragment	1											**1**
Coffin nails	28	2	1	1	18	7	3	11	11	9		**91**
Earring											1	**1**
Necklace chain									2			**2**
Necklace ring									6			**6**
Beads									144			**144**
Arm ring									1			**1**
Bracelet									2			**2**
Finger ring								1				**1**
Hobnails								70	23			**93**
Tacks	22											**22**
Total*	**51**	**2**	**1**	**1**	**19**	**7**	**3**	**82**	**189**	**9**	**1**	**365**

Table 22: *Distribution of non-ceramic artefacts in Period 10 P305 cemeteries*

*excluding unidentified fragments

Nails were the most commonly occurring item in the graves, quantities ranging between one and twenty-eight examples per grave. The presence of nails within graves is frequently the only surviving evidence for the use of a coffin. However, as nails can be inadvertently incorporated into fills of negative features, as witnessed by the frequency with which they occurred in pit and ditch fills of Area 3, a minimum number of more than three nails was set before suggesting the existence of a coffin. This suggests that a total of six inhumations were buried in coffins, three in L306 (S3169; S3189 and S3191) and three in L315 (S3031, S3033 and S3041). As discussed above Philpott believes that from the later 2nd century AD bodies were often placed in coffins (Philpott 1991, 53). Philpott argues that the presence and material of a coffin provides the most direct indicator of status in Romano-British inhumations (1991, 53).

Grave goods accompanied two of the coffined inhumation burials in L306. S3169 had a group of up to twenty-two flat headed tacks set between the skeleton's upper legs and a fragment from the base of a prismatic or cylindrical bottle, with two raised concentric circles, between the knees. The bottle sherd is of thin bubbly glass and may be an example of small, poor-quality, locally made bottles that appear to have been quite common in Roman Britain (Price 1987, 199). Whether this sherd was actually a grave good is not certain, but Philpott comments that the relatively high cost of glass may have resulted in the occasional finds of parts of vessels which were not disposed of in graves until they were broken; it is also possible that some of these vessel sherds may have had an amuletic function (Philpott 1991, 121).

The group of some twenty-two flat headed tacks could conceivably be extremely worn hobnails, but other possibilities, such as a small box or perhaps a studded belt, shouldn't be overlooked. Placing shoes either underneath the legs or in the lap isn't a common positioning, but it is not unheard of (Philpott 1991, 168). Small boxes while not common are known from burials and evidence of these are usually found in association with other grave furnishings, for example unworn ornament (Philpott 1991, 147). In the case of S3169 however no other grave goods, besides the glass vessel sherd, were found.

Burial S3189 was accompanied by a small spherical flask, 48mm high, in translucent blue-green glass with an off-centre pontil scar on its base. This was placed to the right of the skull. The glass colour and presence of the pontil scar suggest a date in the later 2nd to 3rd century AD (pers. com. H Cool). Due to its size this vessel could have held perfume, oils or perhaps cosmetics, in the manner of an unguent bottle, and may have performed part of the burial ritual. Generally the occurrence of glass vessels within inhumation burials is not common, perhaps due to its greater expense, and certainly by the 4th century is rare (Philpott 1991, 118).

The furnished graves in L315 had one thing in common; all were accompanied by items of personal adornment. After pottery vessels, personal ornaments form the second most frequently encountered class of grave furniture in Roman Britain, but they usually form only a small proportion of the total in any one cemetery (Philpott 1991, 136). Analysis of the positioning, dating and suites of grave goods indicates that there are consistent differences between the degree, nature and combination of ornament elements chosen for inclusion with a burial. None of the inhumation burials were accompanied by brooches. The 3rd century in general witnessed a decline in the use of the brooch and its absence from the burials in L315 may be a reflection of the date of the burial and an indication of changing fashions in dress.

Burial S3043 was the most modestly furnished grave in L315, containing a single earring. The position of recovery of the earring from near the skull suggests that it was worn at the point of interment. Although not a common find in graves it is clear that earrings were regularly worn in Roman Britain (Allason-Jones 1989, 1). In his study of Roman burial practices in Britain Philpott recorded twelve examples of inhumations with earrings, the burials dating from the 2nd to 4th centuries (1991, 152). The earring from burial S3043 comprises a hoop of wire with over-lapping ends. This is a long-lived form but studies have suggested that the majority of Roman examples date to the 3rd century (Allason-Jones 1989, 6). A number of the earrings included as burial goods are of precious metals and these burials frequently had an array of other objects indicative of high status (Philpott 1991, 152). There are, however, a few burials that, in common with burial S3043, had copper alloy earrings and no other furniture and it is thought that these may have been a more modest imitation of the wealthy burials found in Romanised centres (Philpott 1991, 152).

Burial S3031 in addition to being placed in a coffin, was accompanied by footwear. The position of recovery of the 70 hobnails, which were concentrated around the feet, suggests that the shoes were worn. A plain copper alloy 'trinket finger ring' with slightly swelled bezel was placed by the right shoulder of the burial. The inclusion of unworn personal ornaments within graves seems to be an overwhelmingly 4th century practice and one that is frequently associated with young females (Philpott 1991, 147). The same pattern holds true when looking at the combination of furnishings in burial S3031; of the twenty burials noted by Philpott which contained both hobnails and unworn ornament the majority were the grave of girls and young women (1991, 168).

The final furnished burial in L315, S3033, was contained within a coffin and was accompanied by a range of both worn and unworn ornament and unworn footwear. A concentration of twenty-three hobnails was situated by the right knee. A necklace of thirty-one small beads, comprising seven annular beads of green glass, eleven globular beads of blue glass, twelve square sectioned beads of blue glass and a single cylindrical jet bead with circumferential groove, was worn at the neck. A shale armlet or bracelet was worn on the left arm and, down the right hand side of the body, were the remains of at least two further necklaces, one by the right arm and the second by the upper right leg, of blue glass globular and conical beads and jet disc and cylindrical beads. Two bangle bracelets, five white metal plated copper alloy wire rings and segments of copper alloy wire chain of double figure-of-eight links, possibly a fourth necklace or a bracelet, were adjacent to the right pelvis. The date of the assemblage as a whole is indicative of a 4th century burial. This assemblage of grave goods, although not containing items of precious metal, does suggest the burial was of someone of status. It also appears to be slightly unusual in having both worn and unworn ornament in combination with unworn hobnails (Philpott 1991, 142-49; 168-73).

Purely from the evidence of the non-ceramic assemblage it could be suggested that the L306 may have been in use during the later 2nd and 3rd centuries and L315 in the late 3rd and 4th centuries.

3.4.4 Area 5

Area 5 produced an assemblage of 558 items. These are presented by period and Phase in Table 23 and by material in Table 17. Typologically datable artefacts include a saddle quern, which could date from the Neolithic to the later Iron Age and a possible Nauheim derivative brooch dating to the first half of the 1st century AD, but by far the greatest concentration of artefacts dated to the Roman period. The Roman period assemblage included artefacts dating to the second half of the 1st century AD, such as a Hod Hill openwork variant brooch, Colchester derivative brooches, and an iron intaglio finger ring. The 2nd century is represented by sherds from prismatic bottles, a round-bowled bone spoon, hair pins and a nail cleaner. Activity during the 3rd to 4th century is attested by two bracelets, one with zig-zag ornament and the second comprising a wire bracelet with twisted expanding clasp. A wider range of items, including evidence for structures, crafts and industry,

horticulture/agriculture, was recovered and these are discussed below by period, Phase and land use areas.

3.4.4.1 Phase 502 (Period 9 late Iron Age – early Romano-British)

Only one item was found within Period 9 deposits and this comprised an openwork variant of the Hod Hill brooch dating to AD 40-70, recovered from then northern ditch of trackway L518. This variant type is not common, with just a 'sprinkling' occurring in Britain and on the continent (Hattatt 1987, 79-80). This brooch would more comfortably sit within the earlier Roman period. Trackway L518 continued in use into Period 10 (as trackway L501), and it is possible that this brooch was incorporated into the fills of the re-cut track side ditches.

3.4.4.2 Phase 503 (Period 10 Romano-British)

Only seven items were found within P503, and four of these comprised single instances of nails. Two nails were found within domestic enclosure L502, one from a large pit G5008 and one from a large posthole G5039. Associated with the nail shank from G5008, however, was an iron finger ring with cornelian intaglio depicting a helmeted soldier standing, head facing to his left, his left hand holding spear, his right hand holding shield aloft. This ring is dated, on the basis of its form, to the second half of the 1st century and into the early years of the 2nd century (Henig 1978, 36). Although the metal of this ring might be 'lowly', gold rings reserved for members of the Senatorial or Equestrian orders (Henig 1978, 36), it does indicate the presence of a literate individual, perhaps given the subject matter a man with military connections.

Only two items were found within the second domestic enclosure L504; a nail was found within the fills of pit G5036 while the later alterations of building G5145 produced a vessel repair plug of lead. Although this small assemblage does not assist in the dating of the use of the enclosure, the presence of the vessel repair does suggest domestic occupation and perhaps curation of ceramic vessels.

Roadway L505 yielded few finds, a single nail shank from the north roadside ditch G5049 and ferrous slag from a re-cut of the southern roadside ditch G5180. The slag, while re-deposited, does attest to the fact that smithing was being carried out, but the exact location of this activity remains uncertain.

Period & Phase	9:P502	10:P503	10:P504	10:P505	10:P506	10:P507	11:P508	13:P509	15:510	20:P5	Total
Architectural stone					1						**1**
Clamp			3								**3**
Hinge			2	1							**3**
Lock			1								**1**
Nail		4	162	65	6	15	1	2	1	11	**267**
Staple			2	4							**6**
Tack				2		1					**3**
Box			1	1							**2**
Bottle			3								**3**
Bowl			2								**2**
Vessel			5	1			1				**7**
Vessel repair		1		1							**2**
Flesh hook			1								**1**
Awl			2	1							**3**

Period & Phase	9:P502	10:P503	10:P504	10:P505	10:P506	10:P507	11:P508	13:P509	15:510	20:P5	Total
Bar iron			1			1					**2**
Chisel			3	1							**4**
Drill			2								**2**
Needle			1	2						1	**4**
Off-cut			2	1		1					**4**
Saw			1								**1**
Waste				2		3		1			**6**
Cleaver			1								**1**
Knife			2			1					**3**
Shears			1								**1**
Steelyard weight								1			**1**
Harness				1							**1**
Snaffle			1								**1**
Hoe			1								**1**
Quern			4		1						**5**
Reaping hook			3								**3**
Bar share			1								**1**
Bracelet			1		1						**2**
Brooch	1		2	6				1			**10**
Earring				1							**1**
Finger ring		1	1								**2**
Hobnail			57	7	2					5	**71**
Pin			3	2							**5**
Strap mount			3								**3**
Mixing palette			1								**1**
Nail cleaner			1	1							**2**
Spoon			1								**1**
Toiletry implement			2	1							**3**
Phallic pendant					1						**1**
Chain			1								**1**
Collar			1			1					**2**
Ring			6								**6**
Wire										1	**1**
Uncertain/Fragments		1	56	17	8	14		2		3	**101**
Total	**1**	**7**	**344**	**118**	**20**	**37**	**2**	**7**	**1**	**21**	**558**
Slag		914g	298.4g	409.6g		764g					2386g

Table 23: *Non-ceramic artefacts from Area 5 by period and phase*

3.4.4.3 Phase 504 (Period 10 Romano-British)

Land use areas in Phase 504 produced the greatest quantity and range of finds (see Table 24). Although the quantities of artefacts from Trackway L506 are not numerous, the find of an almost complete frame saw, with a long blade with a short right-angled arm at either end, is noteworthy if not unique in Roman Britain. The heavy cast copper alloy finger ring is also of interest, as it has an asymmetrical hoop and a void near the raised bezel suggesting it was a miscast. No moulds or crucibles for copper alloy casting were found within any of the land use areas however.

Phase 504	L506	L507	L509	L510	L512	L519	Total
Clamp			1	2			**3**
Hinge				1	1		**2**
Lock				1			**1**
Loop headed spike					1		**1**
Nail	1	2	29	98	31	1	**162**
Staple				1			**1**
Box				1			**1**
Bottle			1	2	1		**4**
Bowl				1	1		**2**
Vessel			2	2			**4**

Phase 504	L506	L507	L509	L510	L512	L519	Total
Flesh hook			1				**1**
Awl				1	1		**2**
Bar iron				1			**1**
Chisel				3			**3**
Drill				2			**2**
Needle				1			**1**
Off-cut				1	1		**2**
Saw	1						**1**
Cleaver				1			**1**
Knife				2			**2**
Shears					1		**1**
Snaffle			1				**1**
Hoe				1			**1**
Quern	1		1	2			**4**
Reaping hook				1	2		**3**
Bar share				1			**1**
Bracelet					1		**1**
Brooch				2			**2**
Finger ring	1						**1**
Hobnail	1		15	5	35	1	**57**
Pin		1		1	1		**3**
Strap mount				2	1		**3**
Mixing palette					1		**1**
Nail cleaner				1			**1**
Spoon				1			**1**
Toiletry implement				2			**2**
Chain			1				**1**
Collar				1			**1**
Ring		2	1	1	2		**6**
Uncertain/Fragments	4		6	28	19		**57**
Total	**9**	**5**	**59**	**170**	**100**	**2**	**345**
Slag			48.4	250			**298.4**

Table 24: *Non-ceramic artefacts from Phase 504 by land use area*

The assemblage from the non-domestic enclosure L507 is only noteworthy for the copper alloy hair pin which due to its length and pin type (Cool's group 3A) suggests that the cesspit where it was found was in-filled in the 2nd century or later (Cool 1991, 154).

Overall the assemblage from enclosure L509, with its flesh hook, glass vessels and quern, has a purely domestic feel, in comparison to enclosures L510 and L512. The latter two enclosures while definitely possessing attributes of the household, such as glass vessels and personal items such as hair pins and toiletry implements, has a greater range of activities represented. L510 has the larger and wider ranging assemblage but this is likely to be a reflection of the intensity of investigations, L512 extending beyond the limit of excavations.

Both L510 and L512 produced slight evidence for leatherworking, with single instances of a copper alloy awl, and the working skeletal material, again single instances of antler off-cuts. Horticultural activity is suggested by the small reaping or pruning hooks, one from L510 and two from L512. L510 also yielded further evidence of horticulture/agriculture in the form of a possible hoe and a bar share from a plough. The latter, which comprises only the tip of the share, was found within the primary fill of a cess/rubbish pit G5038. Finds of complete bar shares, usually accompanied by coulters, have been found on a

number of other areas as parts of 4th century ironwork hoards or as 'special deposits' in the primary fills of enclosure ditches (Rees 1979, 57-59 and 269-86; Wessex Archaeology 2003, 24; Duncan 2008a). Manning concluded that most of the 4th century hoards were deposited for ritual reasons and coincided with a resurgence of pagan cults (1972, 248). It is possible that the placing of the broken bar share within the primary fills of cess/rubbish pit G5038 may represent a local version of this practice. Analysis of the manner of deposition of objects within enclosure L510 may reveal a clear pattern.

Woodworking is indicated by the presence of a mortise chisel and two drill bit heads. The evidence for ironworking is more tentative, with a possible smith's or mason's chisel, a punch or chisel, a piece of bar iron and a very small quantity (250g) of ferrous slag. If smithing was being carried out within L510, it is likely to have been small-scale, perhaps in the form of occasional repairs iron tools.

Although evidence for structural remains, in the form of postholes, post pads or beam sills, within enclosures L510 and L512 was sparse, the assemblage of building fasteners and fittings including nails, single and double spiked loops, hinges and from L510 a possible lock plate a and L- and T-clamps, strongly suggests buildings were present within each of these enclosures. Household furnishings and goods were generally limited to sherds of glass vessels, but this is perhaps unsurprising given their portable nature. The presence of a pewter bowl within the primary fills of cess/rubbish pit G5207 in L510 not only suggests a degree of 'disposable wealth' but might also be considered a 'special deposit'. The majority of Romano-British pewter finds come from hoards buried at the end of the 4th century (Brown 1979, 207). Three pewter vessels were found depoaread in the base of a pit cut into an enclosure ditch at Lower Cambourne, Cambs. (Wessex Archaeology 2003, 25). Although the pewter bowl from L510 cannot be considered a hoard, its placement at the base of the pit may well have greater significance than merely disposing of an unwanted article.

Items of a more personal nature, including hair pins, a bracelet, remains of two brooches and toiletry items, while limited in numbers do support the suggestion of a dwelling within L510 and 512.

Although both enclosures L510 and L512 produced a sizeable quantity of artefacts, the majority of these comprise tools and fastenings and fittings which cannot be closely dated. The glass ware assemblage from both enclosures is predominantly of translucent blue-green glass. This is the most common colour used to produce glass vessels in the 1st to 3rd centuries, but it also occurs quite frequently in the 4th century (Price and Cottam 1998, 15). Certainly two of the vessels from L510, and one rim sherd from L512, belong to a common class of household containers, the cylindrical and prismatic bottle. As a group these containers were in use from the later 1st throughout the 2nd century and in some cases may have continued in use into the early 3rd century (Cool and Price 1995, 184-5). Only one of the L510 vessels could be allocated to a specific form of container, and this was the rectangular bottle, which was in use in the second and third quarters of the 2nd century (Price and

Cottam 1998, 201). Also from L510 is a rim sherd from a jar, thought to date to the 2nd to 3rd centuries. The only vessel glass dating to the 4th century, a single sherd of yellowish-green glass, was found within the tertiary fills of pits G5124 in L510. Some support for a date in the 2nd to perhaps the 3rd century for the main period of occupation of L510 can be found in the recovery of a hair pin of mainly 2nd century date, a nail cleaner of 2nd to 3rd century and a Cochleria type bone spoon of 1st to 2nd century date. The bone hair pin from L512, with its knob head and slightly swelled shank belongs to Greep's type B1, thought to date to between AD150/200 to 400 (Greep 1998, 269). The wire bracelet with twisted expanding joint, found in the tertiary fill of pit G5131, is of a type which generally is found in contexts of the late 3rd to 4th centuries; the type was however in use earlier, an example known from the mid-2nd to a 3rd century deposits (Cool 1993, 91).

The extremes of the possible date range for L510 are represented by the remains of two brooches of 1st century date, and the possible 4th century date for the deposition of the bar share and pewter bowl. A one piece brooch was found in the same deposit as the 2nd to 3rd century nail cleaner and is therefore residual. The Colchester BB derivative brooch, dating to the second half of the 1st century, was found in the sole fills of drainage gully G5159 which, although having a sizeable quantity of late Iron Age to early Roman pottery, also contained fabric types of 2nd century date and again is likely to be residual. The brooches may have originated from earlier activity in P503, L504.

Although the overwhelming majority of Roman pewter has been found in late Roman contexts of between AD 250-410, these dates reflect the date of deposition and in many cases could have included items several decades old (Beagrie 1989, 175). Having said that, there does seem to have been a floruit of the pewter industry in the late 3rd and 4th centuries and, although there is some evidence for pewter vessels dating to before *c*. 250, they remain quite rare (Beagrie 1989, 175-6). This suggests that the deposition of the pewter bowl in the primary fills of cess/rubbish pit G5207 in L510 is unlikely to have occurred much before the mid-3rd century. This suggests that G5207 may well belong to a later phase of activity, P505 or P506.

The limited assemblage from L519, a nail and a hobnail, offers little in the way of dating evidence, nor does the assemblage confirm or refute the suggested domestic nature of this Land Use group.

3.4.4.4 Phase 505 (Period 10 Romano-British)

Land use areas in P505 yielded moderate assemblages of artefacts, the largest of these deriving from roadway L523 and enclosure L522; a fairly substantial percentage of this material however comprise nails (see Table 25). In comparison to Phase 504, craft activity is poorly represented in most of the enclosures.

	Road	Enclosures						Domestic foci			
Phase 505	**L523**	**L508**	**L520**	**L522**	**L524**	**L526**	**L535**	**L517**	**L528**	**L521**	**Total**
Hinge									1		**1**
Tack					1		1				**2**

	Road	Enclosures						Domestic foci			
Phase 505	**L523**	**L508**	**L520**	**L522**	**L524**	**L526**	**L535**	**L517**	**L528**	**L521**	**Total**
Nail	18		6	15	5	1		7	12	1	**65**
Staple				2	1				1		**4**
Box				1							**1**
Vessel									1		**1**
Vessel repair					1						**1**
Awl				1							**1**
Chisel				1							**1**
Needle	1			1							**2**
Off-cut					1						**1**
Waste				2							**2**
Harness		1									**1**
Brooch	2		1	1					2		**6**
Earring								1			**1**
Hobnail	3			2					2		**7**
Pin				2							**2**
Nail cleaner	1										**1**
Toiletry implement									1		**1**
Uncertain/Fragments	7			5	1	1	1			2	**17**
Total	**32**	**1**	**7**	**33**	**10**	**2**	**2**	**8**	**20**	**3**	**118**
Slag					85		101				**186g**

***Table 25**: Non-ceramic artefacts from Phase 505 by land use area*

All the objects from roadway L523 were found in the actual road surface and not from the roadside ditch fills. A single nail was found in the make up layers for the road, providing no assistance in determining the date for the construction of the road. The majority of artefacts from the road surface comprised nails, fragmentary remains and a small group of hobnails, none of which are closely dated. Three items however are more closely dated. The brooch was of one piece construction with a flat sectioned bow with sharp turn to coil, dating to the mid-late 1st century. The same deposits also produced a nail cleaner of Crummy type 1A dating to the mid-late 1st century into the 2nd century. The most interesting find is that of a baling or couching needle, with flattened bi-lobate perforated head and perforated shank. This is closely paralleled by an example from Castleford, dated to 1st century (Cool 1998, 92 and fig. 34 no. 429). Cool has commented that the 1st-century military associations of examples with perforated lobes is noticeable (1998, 92). This small group of artefacts with dates centred on the mid-late 1st century AD may either suggest the roadway was in use at this time or that these artefacts were originally associated with the preceding roadway L511 in P504.

Six of the seven enclosures assigned to P505 yielded artefacts. Only one of these enclosures, L522, could be clearly defined as domestic, based upon the presence of structures, and perhaps unsurprisingly this enclosure produced the largest quantity and range of finds. However, over half of the assemblage comprises fasteners and fittings, including nails, a spiked loop and a small timber dog (see Table 25) and the majority of these items came from the fill of pits G5132. Household furnishing is limited to an angle binding from a small box, again recovered from G5132. Small scale craft activity is suggested by the presence of a chisel or punch, a leatherworking awl and a copper alloy needle. Personal items were present but also in limited numbers. The brooch survived only as a small portion of the lower bow and start of the footplate and therefore cannot offer assistance in dating. Both hairpins are made of bone, the

more complete example equates with Greep's type A, in use from the 1st into the 3rd centuries (Greep 1998, 268-9).

The nature of enclosure L524, whether domestic or non-domestic, is ambiguous. Although this produced an assemblage of ten items the range of artefacts was limited, the majority consisting of nails. Two items might suggest domestic activity, a 'paper clip' rivet for repairing vessels and an off-cut of a large horn core, but this evidence is too limited to draw a firm conclusion.

The remaining enclosures yielded very few finds, nails or tacks generally featuring in limited quantities and this may support there non-domestic attribution. The fill of L520's southwest enclosure ditch G5021 produced less than half of a Colchester derivative brooch, dating to between AD43-65, which given its battered condition is considered residual. Northern boundary ditch G5010 of L508 yielded a harness strap slider. Although tempting to see some cavalry connection these items were also used on civilian harness.

Despite L517 being a major focus of activity, including evidence for a structure, associated yard and a well, the non-ceramic evidence was both limited in quantity and range. Of the eight items recovered, seven were nails; their distribution was restricted to the fill of well G5044 and pit G5172. A single earring of Allason-Jones type 9, dating to the 1st to 2nd centuries, was found on the yard surface associated with building G5058.

The assemblage from domestic foci L528 restricted to two features, the fills of water pit G5106 and the fills of pits G5108. G5106 yielded nine nails, one of Manning's type 2 with triangular head (1985, 135), a pinned hinge, possibly from shutters or a cupboard, two hobnails and a body sherd of blue-green glass. The fills of the two pits forming G5108, in addition to three nails and a double-spiked loop, contained remains of two 1st century brooches and a toilet spoon. It is possible that the nails and associated hinge originated from building G5107. The presence of a glass vessel and toilet spoon does support the domestic function assigned to this Land Use group, but the residual nature of the two brooch fragments suggests that there may have been earlier activity in the vicinity. The full range of activities carried out in L528 must remain uncertain as it continued beyond the limits of excavation. Little insight into the nature of activity in L521, to the northeast of L528, is gained from the meagre assemblage of a triangular headed nail and two iron fragments found within the silting of disused trackway ditch G5138.

3.4.4.5 Phase 506 (Period 10 Romano-British)

The limited artefacts assemblage from P506 (see Table 26) is more a reflection of the preservation *in situ* strategy than a true representation of activity levels within these domestic foci.

Despite the clear structural evidence for building G5052 no artefacts were found directly associated with this structure. The adjacent possible structure G5051, abutting G5052 on the northwest side, produced a single nail shank and a fragment of iron strap. Structure G5053, abutting structure G5052 on the

southwest side, produced fragmentary remains of iron sheet. Neither assemblage has any potential to assist in determining the nature of these buildings. The superstructure of oven/hearth G5134 may be represented by a portion of a rectangular limestone block placed upon a silty clay construction layer, 0.15m thick. A burnt clay lining was found over the stonework. A single hobnail and fragmentary remains of copper alloy sheet were found within the disuse fills of the oven/hearth.

	L516	L537	Total
Stonework	1		**1**
Nails	1	5	**6**
Quern	1		**1**
Bracelet	1		**1**
Hobnails	1	1	**2**
Pendant		1	**1**
Fragments	8		**8**
Total	**13**	**7**	**20**

Table 26: *Non-ceramic artefacts from Phase 506 by land use area*

The only other feature within L516 to produce artefacts were the fills of inter-cutting cess pits G5135. The secondary fills of one of the pits contained a small fragment of lead sheet and a fragment of a bracelet of light bangle form, with hook and eye closure and zig-zag and ring dot ornament. The light bangle form was the dominant bracelet type of the 4th century, but it is thought that zig-zag ornament may have been developed in the 3rd century (Cool 1993, 89). Remains of a rotary quern of lava were found within the tertiary fills of the same pit. The trade in lava querns from the continent commenced soon after the initial conquest of southern Britain but is thought to have declined by the 3rd century (Buckley and Major 1998, 243). This, combined with the bracelet of later 3rd to 4th century date from the secondary fills, indicates that the quern was residual.

The assemblage from L537 in the main comprises nails, two from the make-up layer of an isolated gravel and pebble surface G5087 and three nail shanks from the fills of hearth G5164. One hobnail was found in the fill of a posthole within G5050. A copper alloy phallic pendant was found within the collapse/demolition spread of a possible wall G5093. Phallic pendants in a variety of materials are relatively common Roman finds. These served as personal protection and good luck charms, but also could have been intended to confer virility or potency (Greep 1994, 84; Crummy 1983, 139). They are frequently found on military areas (Green 1978, 34-5), but that does not preclude their use in civilian life. Such pendants could have been worn by individuals or formed decorative elements of horse harness (Johns 1996, 108).

3.4.4.6 Phase 507 (Period 10 Romano-British)

The layer which formed over the Roman period settlement contained 37 items and 764g of ferrous smithing slag. The majority of the finds comprised either fragmentary remains of objects, most of lead, or nails. A tang, possibly from a knife, an iron cylindrical collar, a piece of bar iron and an off-cut of antler crown with saw marks were also identified. None of these are closely dated and all are represented within the various phases of Roman activity. Only one

object appears unique to the collection and this appears to be a cast zoomorphic pendant.

3.4.4.7 Phase 508 (Period 11 early – middle Saxon)

The Saxon period assemblage is meagre being confined to a single flat headed nail from the fill of G5047, a pit or possible sunken-featured building. G5204, the robbing of the Roman period stone-lined well, produced a fragment of translucent blue green glass from a thick-walled cylindrical necked vessel. This is likely to have derived from a cylindrical or prismatic bottle in use from the later 1st throughout the 2nd century and possibly into the early 3rd century (Cool and Price 1995, 184-5).

3.4.4.8 Phase 509 (Period 13 Medieval)

A small assemblage of artefacts was recovered from the fills of plough furrows. As no medieval settlement activity was revealed and the fills of Saxon period features yielded only residual Roman artefacts, it is probable that the P509 assemblage originated from Roman period activity. In addition to two nails and three fragmentary remains of lead objects, a 1st century AD hinged brooch fragment of Hod Hill or related variety and a lead steelyard weight were identified. The truncated spherical weight had a rectangular depression at its apex where the suspension hook or ring had been removed. At 571g this could equate with a 20 *unciæ* or 1 ¾ *libra* (Zupko 1977, 7).

3.4.4.9 Phase 510 (Period 15 Modern)

Deposits relating to modern activity produced a single nail, its flat rectangular head formed by flaring sides, a type found in medieval and later periods.

3.4.4.10 Unphased (Period 20)

Unphased deposits yielded nails, fragmentary remains of iron sheet, a piece of copper alloy wire, five hobnails and a cast copper alloy needle. The needle has a groove above and below the rectangular eye and equates with a Crummy type 3 needle in use during the Roman period (1983, 67).

3.4.5 Area 7

Area 7 produced a limited assemblage of eighteen artefacts. These are presented in Table 27 by Period and Phase and by material in Table 17. The Neolithic to the early Bronze Age period is represented by four scrapers, at least one may belong to the earlier Neolithic. The only other typologically datable artefacts belong to the post-medieval period and include a lead pistol ball and two shoe buckles.

Period & Phase	6:P702	10:P704	13:P706	14:P707	20:P7	Total
Flint						
Core		1				**1**
Retouched flake					1	**1**
Scraper	3	1				**4**
Other						
Pistol ball					1	**1**
Buckle					2	**2**
Fishing weight					1	**1**
Nail		1		1	1	**3**
Fragment		1	3			**4**

Uncertain				1		**1**
Total	**3**	**4**	**3**	**2**	**6**	**18**

***Table 27**: Non-ceramic artefacts from Area 7 by period and phase*

3.4.5.1 Phase 702 (Period 6 Late Neolithic – Early Bronze Age)

The secondary fill of ditch G7036 yielded two scrapers, an end scraper and an end and side scraper. These were both manufactured on fairly thin flakes which could suggest a late Neolithic to early Bronze Age date (Butler 2005, 166-7). The same fill produced eight sherds (32g) of Beaker pottery. The overlying stone surface G7009 yielded a disc scraper which could date to either the early or late Neolithic.

3.4.5.2 Phase 704 (Period 10 Romano-British)

The assemblage from Roman period deposits is meagre. A single flat headed nail was found in the fill of boundary ditch G7000 in L701, while two pieces of worked flint, a core and a disc scraper, the latter of possibly early Neolithic date, were residual within colluvial layer G7018 (L707). Although copper alloy staining was visible on the wrist and neck area of isolated inhumation burial G7031 in L718, the only surviving find was a short length (4mm) of 1mm diameter pin, possibly from a brooch. This was found in an environmental sample taken from the chest area of the burial.

3.4.5.3 Phase 706 (Period 13 Medieval)

The non-ceramic assemblage from later medieval deposits comprised three small fragments of lead sheet, all found within trackway L709 deposits.

3.4.5.4 Phase 707 (Period 14 Post-Medieval)

Trackway L702 was the only post-medieval deposit to produce finds, comprising a flat headed nail and what has been tentatively identified as unworked shale. Both these items were found within the fills of a sub-ovoid feature interpreted as tree bowls aligned on the trackway.

3.4.5.5 Unphased (Period 20)

A small assemblage of post-medieval artefacts, comprising a lead pistol ball, two shoe buckles and a lead fishing weight, all from the same context, indicate possible domestic post-medieval activity in the vicinity of Area 7.

3.4.6 Area 8

Area 8 produced a limited assemblage of twenty-one artefacts. These are presented by Period and Phase in Table 28 and by material in Table 17. Typologically datable artefacts include a crude side scraper which may be of late Bronze Age date. The remaining datable artefacts centre on the medieval period and include a T-shaped bolt from a barrel padlock, in use throughout the medieval and into the post-medieval periods, a barrel padlock key, use spanning the 11th to 14th century, and a horseshoe dating to mid-13th to 15th century.

Period & Phase	10:P801	12:P802	12:P803	13:P804	13:P806	14:P808	15:P810	Total
Flint								
Flake		1						**1**

Scraper	1							**1**
Knife				1				**1**
Other								
Staple						2		**2**
Hasp				1				**1**
Padlock			1					**1**
Key							1	**1**
Nails			1		1	3		**5**
Mason's wedge			1					**1**
Off-cut			1					**1**
Waste			1					**1**
Horseshoe				2		1		**3**
Quern					1			**1**
Fragment						1		**1**
Total	**1**	**1**	**5**	**4**	**2**	**7**	**1**	**21**

Table 28: *Non-ceramic artefacts from Area 8 by period and phase*

3.4.6.1 Phase 801 (Period 10 Romano-British)

The crude flint scraper from the fills of the L-shaped ditch forming a possible Roman period shrine or mortuary structure G8013 (P801) is thought to be of late Bronze Age date and is therefore residual. No other artefacts where found in Roman period deposits.

3.4.6.2 Phases 802- 803 (Period 12 Saxo-Norman)

The sole find from the earlier Saxo-Norman field system L802, a debitage flake, came from tree root disturbance and is considered residual (P802). The assemblage from P803, representing later Saxo-Norman activity, is fairly meagre. A single nail shank and an antler off-cut were found within the fills of ditches G8091 and G8094, thought to represent a second stage of construction of farmstead L805. The re-cutting of the enclosure ditch surrounding farmstead L806, yielded 15g of lead run-off, perhaps representing recycling of caulking, guttering or roofing material. The fills of boundary ditch L808, 70m north of the farmstead produced a T-shaped padlock bolt for a barrel padlock and a mason's wedge. These two items suggest further settlement activity in the vicinity. None of this assemblage is closely dated, the barrel padlock being of a type that was in use throughout the medieval and into the post-medieval periods.

3.4.6.3 Phase 804 (Period 13 Medieval)

Despite the abundance of contextual evidence for settlement activity during the early medieval period, the non-ceramic assemblage was very modest and located away from actual dwelling evidence. A single horseshoe fragment and a residual flint knife were found in the tertiary fills of the eastern enclosure ditch G8022, defining L814. The only other finds derived from trackway L819; a figure-of-eight hasp from the cobbled surface and remains of a horseshoe from the wheel ruts. Again, none of this assemblage is closely dated, the horseshoes surviving only as fragmentary remains.

The later medieval period P806 is also poorly represented amongst the non-ceramic assemblage, finds restricted to remains of a lava quern or millstone and a single nail from the fills of enclosure ditches defining L818.

3.4.6.4 Phase 808 (Period 14 Post-Medieval)

The non-ceramic assemblage from late post-medieval deposits P808 was again surprisingly limited. A residual horseshoe, dating to between the mid-13th to 15th centuries, was found within the ground levelling layers G8023, which served to infill earlier ponds in L822. The northern field enclosure ditch G8007 in L824 produced two U-shaped staples, while tree-planting holes G8123 in L831 yielded three nails.

3.4.6.5 Phase 810 (Period 15 Modern)

Modern ploughsoil layer G8089 in P810 yielded a single find of an iron padlock key, which although incomplete would appear to fall within Goodall's type 5 group, in use from the 11th to the 14th centuries (1980, 143). Although residual its presence does serve to confirm the contextual evidence for medieval buildings in earlier phases of activity.

Generally the deposits dating from the Saxo-Norman to the late medieval periods produced few non-ceramic finds and the majority of these were found away from occupation foci. Although there are hints of structures, in the finds of a padlock component, a key, a hasp and staples, this evidence was dispersed and limited in quantity. This is perhaps unsurprising for the Saxo-Norman and earlier medieval periods when less ironwork was used in buildings but the meagreness of the later medieval and post-medieval assemblages, when ironwork was more readily affordable, is unexpected. The absence of agricultural tools may reflect careful curation, but the general scarcity of domestic and personal items suggests that the inhabitants of these farmsteads may have had limited financial resources.

3.4.7 Area 9

The non-ceramic assemblage from Area 9 was limited to a single possible secondary whetstone. This was found within the fills of a drainage gully G9014, thought to be associated with agricultural activity during the Roman period (P902, L903). The stone appears to be a waterworn pebble of micaeous sandstone which due to its honing properties may have been utilised on an '*ad hoc*' basis. As such, it cannot be closely dated.

3.4.8 Area 10

Area 10 produced an assemblage of eight objects. These are presented by Period and Phase in Table 29 and by material in Table 17. Typologically datable finds include two end scrapers, one of which has a suggested date of late Neolithic, and a small invasively retouched knife thought to date to the later Neolithic to early Bronze Age. The late medieval period is represented by a cast dagger chape of the 15th to 16th centuries while a pistol ball of the 17th century or later, two cast rumbler or crotal bells and a small cast open bell, probably for harness, represent the post-medieval period.

Period & Phase	10:P1003	14:P1005	15:P1006	Total
Flint scraper	2			**2**
Flint knife			1	**1**
Bell		1		**1**
Rumbler bell		2		**2**

Pistol ball		1		**1**
Chape		1		**1**
Total	**2**	**5**	**1**	**8**

Table 29: *Non-ceramic artefacts from Area 10 by period and phase*

The only finds from Roman period deposits were two residual flint end scrapers found within the fills of bedding trenches for the vineyard L1002. The late medieval and post-medieval artefacts all derived from trackway L1005, P1005 indicating the route of this trackway was in use from at least the 16th century and continued in use in the 17th century at least. The late Neolithic invasively retouched knife derived from modern ploughsoil.

3.4.9 Area 11

A large flint flake with nicked edges and post-depositional damage was found within the fills of eight inter-cutting late Roman period quarry pits in L1102, P1104. The nicked edges suggest this flake may have been utilised as a cutting implement. Although not closely dated, the flake is residual within these Roman period fills.

3.5 Summary by Chronological Period

A summary of the presence of datable artefacts by chronological period and area is presented in Table 30.

Area	**1**	**2**	**3**	**5**	**7**	**8**	**9**	**10**	**11**
Period									
Palaeolithic									
Mesolithic/early Neolithic	√ 2 (R)	√ 1 (R)							
Late Neolithic/early Bronze Age	√ 2	√ 3			√ 1			√ 1 (R)	
Late Bronze Age/early Iron Age	√? 2								
Early-middle Iron Age	√ 1								
Late Iron Age	√ 1								
Roman			√ 3	√ 3	√ 1				
Saxon		√ 1							
Saxo-Norman						√ 1			
Medieval						√ 1			
Post-medieval	√ 1	√ 1			√ 1			√ 1	

Table 30: *Datable Non-ceramic artefacts by chronological period and area*

Key: FW = fieldwalking; Ex = excavation; (R) = residual; 1 = present in small quantities; 2 = moderate assemblage (over 10 and up to 50); 3 = large assemblage (50 or more)

4. COINS (PETER GUEST)

4.1 Quantification and date range

One-hundred-and-six coins were recovered from Areas 3, 5 and 7. The coins include a copper-alloy unit struck during the later Iron Age, 103 coins from the Roman period, a medieval silver penny and a single (possibly) modern coin. Most of the coins are in a good / very good condition and only 25 require some cleaning to facilitate full identification. The tables below provide summary descriptions.

The Roman coins include some issues struck during the first and second centuries, although most are dated to the later third and fourth centuries (with significant proportions from the periods 260-90 and 330-378). Three third century *denarii* are the only silver coins from the Roman assemblage. A significant proportion of the excavated coins were recovered from stratified deposits and several contexts produced more than one coin. The analysis of these assemblages will be important for the chronological discussion of the excavated archaeological remains.

4.2 Coin Catalogue

4.2.1 Area 3

RA no.	Context	Land Use	Phase	Denomination	Ruler/type	Date
3001	3475	309	305	AE3	uncertain	late 3rd/4th c.
3002	3475	309	305	AE3	uncertain	late 3rd/4th c.
3003	3475	309	305	AE3	uncertain	late 3rd/4th c.
3005	3166	309	305	AE3	House of Valentinian - Securitas	364-78
3006	3166	308	304	AE3	House of Valentinian - Securitas	364-78
3009	3247	309	305	radiate	Victorinus	268-70
3010	3247	309	305	denarius	Gordian III	238-44
3011	3462	309	305	AE1	Diva faustina I	141-80
3012	3166	309	305	radiate?	uncertain	270-90
3013	3166	309	305	barb. radiate?	uncertain	260-90
3015	3469	309	305	AE3	House of Valentinian - Securitas	364-78
3016	3469	304	304	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
3017	3166	309	305	AE3/4	House of Theodosius - Salus	388-402
3018	3247	309	305	denarius	Septimius Severus	193-211
3019	3489	309	305	AE1/2	Commodus	180-92
3384	3475	309	305	AE2/3	uncertain	late 3rd/4th c.

Table 31: *Coins from Area 3*

4.2.2 Area 5

RA no.	Context	Land Use	Phase	Denomination	Ruler/type	Date
5000	5526	506	504	AE3	Constans	330-7
5002	5002	532	509	penny	long cross	1279-1489
5006	5741	531	507	AE4	House of Thedosius – Victoria	388-402
5010	5741	531	507	AE4	House of Thedosius – Victoria	388-402
5012	5743	533	509	AE2	Uncertain	1st-2nd c
5013	5741	531	507	radiate	Tetricus II	273-4
5014	5514	518	502	CuA unit	late iron age	late 1st C BC/ early 1st c AD
5017	5660	522	505	AE3	House of Valentinian – Securitas	364-78
5018	5660	522	505	AE3	Urbs Roma	330-40
5019	5670	522	505	AE3	House of Constantine - Gloria Exercitus (2 stds)	330-7
5020	5670	522	505	AE3	House of Constantine	324-30
5021	5660	522	505	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
5022	5660	522	505	AE3	Urbs Roma?	330-40
5025	5458	522	505	AE1	Uncertain	1st-2nd c
5026	5469	510	504	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
5028	6193	510	504	AE3	Constantinopolis	330-40
5029	5743	533	509	AE 3/4 copy	as Constantinopolis	330-48
5030	5670	522	505	AE3 copy	as Constantinopolis	330-48
5032	5670	522	505	AE3	House of Constantine - Gloria Exercitus (2 stds)	330-37
5034	5742	533	509	AE3	Urbs Roma	330-40
5035	5469	510	504	radiate	Gallienus	260-8
5037	5741	531	507	AE3	House of Valentinian – Gloria	364-78
5038	5741	531	507	AE3 copy	Fel Temp Reparatio (falling horseman)	350-60
5039	5741	531	507	barb. radiate	Uncertain	270-90
5043	5741	531	507	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
5045	5741	531	507	AE3	House of Valentinian – Gloria	364-78
5048	5741	531	507	AE3 copy	as H of C - Gloria Exercitus (1 std)	335-48
5049	5741	531	507	AE4 copy	as Urbs Roma	330-48
5050	5633	510	504	barb. radiate	Uncertain	270-90
5051	5786	510	504	radiate	Claudius II	268-70
5053	5469	510	504	radiate	Tetricus I	270-4
5054	5469	510	504	AE3 copy	as Fel Temp Reparatio (falling horseman)	350-60
5055	5632	533	509	AE3 copy	as Constantinopolis	330-48
5056	6193	510	504	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
5057	6193	510	504	AE3	House of Valentinian - Securitas	364-78
5058	5660	522	505	AE3	House of Constantine - 2 Victories	347-8
5059	5660	522	505	radiate	uncertain	260-90
5060	5743	533	509	AE3	House of Valentinian - Securitas	364-78
5061	5743	533	509	radiate	Postumus	260-8
5062	5743	533	509	radiate	Gallienus?	260-8
5063	5743	533	509	radiate	uncertain	260-90
5064	5743	533	509	radiate	Claudius II?	268-70
5067	5660	522	505	AE2	Hadrian - Cos III	117-38
5069	5741	531	507	AE3	Constantinopolis	330-40
5070	5741	531	507	AE4 minim	uncertain	late 3rd/4th c
5071	5741	531	507	AE4	uncertain	late 3rd/4th c
5072	5741	531	507	AE3	House of Valentinian - Securitas	364-78

5074	5741	531	507	AE3 copy	as Fel Temp reparatio (falling horseman)	350-60
5075	5741	531	507	AE3 copy	as HoC - Gloria Exercitus (2 stds)	330-48
5085	5002	532	509	AE1	uncertain	1st-2nd c
5087	5660	522	505	AE3	House of Constantine - Virtus Auggnn?	pre-324?
5088	5660	522	505	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
5089	5660	522	505	AE3	Urbs Roma	330-40
5090	5660	522	505	AE3	Constantinopolis	330-40
5092	5046	517	505	AE3	uncertain	late 3rd/4th c
5096	5201	523	505	barb. radiate	uncertain	270-90
5097	5224	521	505	AE3	uncertain	4th c
5105	5285	509	504	radiate	Tetricus I	270-4
5107	5287	524	505	AE3	House of Thedosius - Victoria	388-402
5121	5390	520	505	barb. radiate	uncertain	270-90
5141	5557	523	505	AE3	House of Constantine - 2 Victories	347-8
5142	5557	523	505	AE3	Fel Temp Reparatio (phoenix)	348-50
5143	5557	523	505	AE3/4	House of Theodosius - Salus	388-402
5144	5557	523	505	barb. radiate	uncertain	270-90
5148	5823	522	505	AE2	Sabina	117-38
5161	5559	523	505	radiate	Gallienus	260-68
5174	5560	523	505	AE3	uncertain	late 3rd/4th c
5175	5560	523	505	radiate	uncertain	260-90
5217	5927	512	504	radiate	Gallienus?	260-8
5218	5927	512	504	radiate	Tetricus I	270-4
5219	5927	512	504	radiate	Claudius II	268-70
5220	5927	512	504	barb. radiate	uncertain	270-90
5221	5927	512	504	barb. radiate	uncertain	270-90
5230	6263	512	504	radiate	Tetricus I	270-4
5261	6262	512	504	radiate	Victorinus	268-70
5275	6258	512	504	denarius	Julia Mamaea	222-35
5318	6629	516	506	AE3	Fel Temp Reparatio (falling horseman)	350-54
5329	6379	503	508	AE3	House of Constantine - Gloria Exercitus (1 std)	335-40
5331	6379	503	508	barb. radiate	as Divo Claudio	270-90
5334	6477	511	504	radiate	Beata Tranquillitas	318-24
5335	6379	503	508	radiate	Tetricus II	273-4
5357	5526	506	504	radiate	uncertain	260-90
5359	6657	517	505	As	Claudius - Minerva type	43-64
5361	6466	516	506	AE1	uncertain	1st-2nd c
5397	5102	531	507	AE3	uncertain	4th c
5403	5526	506	504	radiate	uncertain	230-68
5423	5741	531	507	AE3	uncertain	late 3rd/4th c

Table 32: *Coins from Area 5*

4.2.3 Area 7

RA no.	Context	Land Use	Phase	Denomination	Ruler/type	Date
7000	7004	709	706	barb. radiate	uncertain	260-90
7001	7004	709	706	AE4	uncertain	late 3rd/4th c.
7010	7136	7	7	penny	uncertain	modern

Table 33: *Coins from Area 7*

5. NON-CERAMICS FROM FIELD ARTEFACT COLLECTION (HOLLY DUNCAN)

5.1 Methodology

Each worked flint object was assigned a preliminary identification and, where possible, a date. This data was entered into a networked Access database which was then used to plot the results of the survey.

5.2 Quantification and Date Range

An assemblage of 287 worked flints was identified; secondary depositional damage was evident on most of the recovered flint, thought to be the result of modern cultivation.

Debitage, including cores and core fragments, core trimming flakes, tested pieces, blades and flakes, comprises 72.47% of the assemblage (Table 34). Primary, secondary and tertiary flakes were present. Amongst the blade assemblage just over 81% were incomplete, compared to only 18% of the flake assemblage. Only a small number of soft hammer-stuck flakes were present, the majority of the flake assemblage being hard hammer-struck. Five of the flakes were struck from re-used patinated flint. Blades and soft hammer-struck flakes can be dated to the Mesolithic to early Neolithic period. The larger assemblage of hard hammer-struck pieces is less easy to generalise. While the majority probably belong to late Neolithic to early Bronze Age, when the use of the hard hammer was the norm, hard hammer-struck flakes can also result from removal of the cortex from the nodule, the initial step in the knapping process in the Mesolithic and early Neolithic periods. For the purposes of plotting the dated assemblage, blade cores, blades and soft-hammer struck flakes were assigned to the Mesolithic to early Neolithic and flake core fragments, and hard hammer-struck flakes were assigned to the late Neolithic to early Bronze Age.

A range of tools were identified (see Table 34). Some of these modified pieces are more chronologically diagnostic than others. Mesolithic period activity is suggested by the tranchet adze. The earlier Neolithic is represented by two leaf shaped arrowheads, a notched soft hammer-struck flake, a piercer with short point and a fabricator. The retouched blades may belong to either the Mesolithic or early Neolithic. Part of a polished/ground axe was identified; this type of axe first makes an appearance in the earlier Neolithic period but continues throughout the Neolithic. Three fragments of oblique arrowhead, a fragment from a possible tranchet arrowhead and two combination tools date to the late Neolithic. A single thumbnail scraper probably dates to the Bronze Age.

The remaining modified pieces are not closely datable and could belong to the early to late Neolithic or early Bronze Age. Scrapers are almost always the most common type of tool found on later Neolithic and early Bronze Age areas, so a proportion of the twenty-two examples identified are likely to date to this period.

Type	Quantity
Debitage	
Blade core	12
Flake core/fragment	17
Core trimming flake	2
Tested piece	2
Blade	16
Flake	152
Chip	7
Tools	
Adze	1
Axe	1
Rough out fragment	2
Arrowhead	6
Scraper	22
Piercer	6
Knife	3
Fabricator	2
Combination tool	2
Notched flake	13
Retouched blade	1
Retouched flake	16
Cutting flake	3
Ripple flaked fragment	1
Total	**287**

Table 34: *Flint assemblage from field artefact collection*

5.3 Distribution

Earlier non-intrusive investigations within the area of Biddenham Loop identified a series of flint artefact concentrations (FAC) (BCAS1991; Boismier 2003). The current episode of field artefact collection coincides with two of these concentrations, FAC 9 and FAC 11 and is adjacent to a further three (Figure 1). Flint types diagnostic of date, combined with statistical studies of artefact densities and artefact diversity, enabled some of the flint concentrations to be dated and the nature of activity suggested (Boismier 2003). Of the three activity types identified by Boismier, two were present in the area under consideration (see Table 35).

FAC no.	SP/SR	LPR/MO	Date
7	√		Undated
9		√	Undated
10		√	Mesolithic/Neolithic
11	√		Neolithic
38	√		Undated

Table 35: *FAC dates and activity types in the field artefact collection area*

Short permanent and/or seasonal residential locations (SP/SR) are defined as exhibiting low numbers of several artefact types and variable densities. They are thought to reflect general purpose domestic and maintenance activities at locations that were probably either occupied seasonally or for short periods of time throughout the year. Long permanent residential and/or multiple occupation locations (LPR/MO) exhibited high numbers of several artefact types and high densities. These are locations that were probably either permanent occupations for long periods of time or multiple reoccupations over longer periods.

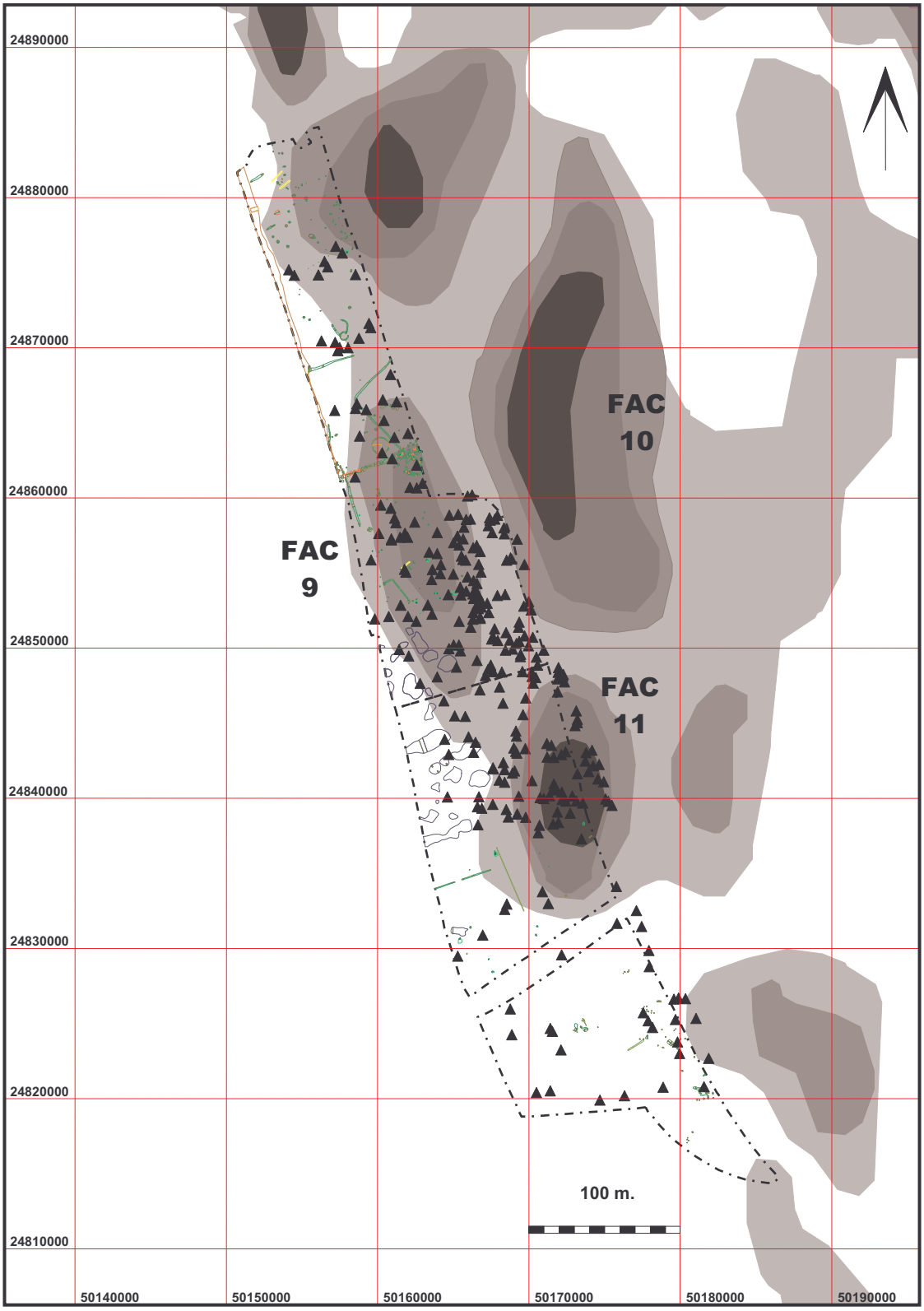

Figure 1: *All flint recovered from field artefact collection over Areas 1 and 2 with evaluation flint concentrations as underlay*

To a degree these defined flint concentrations were mirrored by the results from the more recent field artefact collection episode. Flint quantities were focussed in the areas of FAC9 and FAC11, with quantities declining in the

northern area of Area 1 and the southern area of Area 2 which were situated at the very edge of short permanent/seasonal flint concentrations. The plot of flint tools best reflects this pattern (Figure 1).

Quantities of datable debitage and all tool types from FAC 9 and FAC 11 are presented in Table 36. FAC9 has been characterised as a long permanent residential and/or multiple occupation location and this is confirmed by the density of flints and range of tool types collected from the most recent field artefact collection. The datable assemblage is fairly evenly split and this could suggest that FAC 9, like the neighbouring FAC 10, had multi-period occupancy. FAC 11 has a slightly lower density of flint and a range of tool types, usually single examples, although the quantity of scrapers and retouched flakes is somewhat at odds with the definition of short permanent and/or seasonal residential locations.

Flint type	FAC 9	FAC 11
Debitage		
Blade Cores	7	3
Flake Cores	1	5
Blades	8	5
Flakes (soft hammer)	1	1
Flakes (hard hammer)	17	4
Sub-total debitage	34	18
Tools		
Adze	1	
Axe	1	
Arrowhead	1	1
Combination tool		1
Piercer	4	1
Scraper	4	6
Knife		1
Retouched blade	1	
Retouched flake	6	6
Notched flake	6	1
Cutting flake		1
Sub-total tools	24	18

Table 36: *Datable debitage and all flint tools from FAC 9 and FAC 11*

6. HUMAN BONE (NATASHA POWERS)

6.1 Methodology

The inhumations and burnt bone were examined according to standard MoLAS assessment procedures (Powers *unpublished*), with results recorded into Excel spreadsheets.

Human remains were recorded from five of the ten areas: Areas 1, 3, 5, 7 and 8. The material available for assessment consisted of inhumed remains, burnt bone from probable cremation burials, samples of inhumed bone recovered by wet sieving and contexts containing burnt remains which were determined to be animal in origin or single fragments of human bone (burnt and un-burnt). The majority of the inhumation burials came from Area 3, a Romano-British cemetery associated with a farmstead.

The inhumed bone was scanned to provide basic quantification data. The percentage of a complete individual present was estimated to the nearest 5% (based on the proportions of skull 20%, torso 40%, legs 20%, and arms 20%). It was assumed that no skeleton was entirely complete and thus the maximum score was 95%. Preservation was estimated on a three point scale: 1= good, 2= moderate 3= poor. A summary catalogue was complied indicating the body areas present. Where appropriate, age and sex of individuals was estimated using numerical codes (Table 37). Sub-adult age was based in the eruption of the permanent molars, when the dentition was absent individuals were recorded as 'subadult' (unless they were obviously neonatal based on size and morphology). No attempt was made to age adult individuals although some comments were noted. Sex estimation was made using a visual assessment of the characteristics of the pelvis and cranium (Buikstra and Ubelaker 1994).

Age code	**0**	Neonate/foetus
	1	1 month to 6 years (to M1 erupted)
	2	7-12 years (to M2 erupted)
	3	13-16 years (to M3 erupting)
	7	Adult (fusion complete, M3 erupted)
	8	Subadult (age unknown)
Sex code	**1**	Male
	2	? Male
	3	Intermediate
	4	? Female
	5	Female
	9	Undetermined
	0	Sub-adult

Table 37: *Age and sex codes used for human bone*

Gross pathological changes were noted and specific conditions identified by a numerical code. An estimate of minimum number of individuals (MNI) within each context was made, together with comments on the presence of animal bone or artefacts.

All samples of burnt bone had been fully sorted prior to observation. The total weight of the samples was measured in grams; any unsorted residue was also

weighed. The approximate percentage of fragments identifiable to body area was estimated as a proportion of the sorted sample. The degree of fragmentation was established from the size of the largest fragment to the nearest millimetre and by visually estimating average (mean) fragment size to the nearest 5 mm.

The colour of the burnt bone was described with an approximate percentage for each colour present. The potential of the remains to enable estimation of age and/or sex was noted together with any gross pathological changes, intrusive animal bone or artefact remains. An estimated minimum number of individuals present were established for each sample from the presence of repeated skeletal elements.

The bone recovered from samples by wet sieving was recorded using the same methods as the burnt bone but omitting the information on fragmentation and colour.

Inhumation results have been tabulated in the relevant area results sections. Burnt bone data can be found at the end of the results section (Table 47). Assessment data should be considered a preliminary indicator of the potential of the assemblage and, as such, all results are subject to alteration following analysis.

6.2 Results

6.2.1 Area 1

6.2.1.1 Inhumations

Seven inhumations were recovered from Area 1. Six of these dated to P101, Period 6 (Late Neolithic-early Bronze Age) and one to P102, Period 7 (late Bronze age- early Iron Age). Those burials from P101 consisted of four crouched inhumations (and an animal burial) found at the base of a segmented enclosure ditch (L101) and a further rectangular enclosure attached to this contained two inhumations along the north side (L102). The inhumations appeared relatively tightly clustered, though [1168] lay slightly apart to the east of the main grouping.

Within L101, three of the four burials were poorly preserved, compromising the pathological data which could be obtained, as fine surface changes will have been removed. Skeleton SK1158 was moderately well preserved. All were 75% complete or more, probably a reflection of their location; containment within a ditch affording some protection. L102 contained poorly preserved individuals, both of whom were less than 50% complete.

Skeletons SK1100, 1113 and 1115 (L101) were those of adult males. Burial SK1113 of a very young adult: although dental eruption was complete, epiphyseal fusion was still underway in a number of locations indicating this probable male was in his late teens when he died. The fourth burial was that of an adolescent who had died between the age of 13 and 16 years. The remains

from L102 were also adult individuals, a young probable male SK1155 and an adult with intermediate sexual morphology SK1168.

The skeletons of the adults from L101 all had indications of both degenerative joint disease in the spine and dental pathology, those from L102 only had dental disease.

Schmorl's nodes (the result of herniation of the intervertebral discs) were present in all adults from L101, with osteophyte formation noted in the vertebrae of SK1115. This adult male also had secondary joint changes in the left elbow resulting from a traumatic injury. Subluxation or partial dislocation of the joint may have been the result of a well healed intra-articular fracture: radiography will be required for accurate diagnosis. Dislocation of the elbow is commonly the result of a fall on an outstretched arm and is common in both adults and children (McRae 1999: 294). Wedging of the twelfth thoracic vertebrae indicated a possible compression fracture and the bodies of two mid thoracic vertebrae were fused, most likely a consequence of joint disease.

Burial SK1115 also had heavy dental wear, perhaps indicating advanced age. Caries and antemortem tooth loss were also noted. Skeleton SK1100 had deposits of calculus (mineralised plaque) on the teeth whilst SK1113 had linear hypoplastic enamel defects. Adolescent SK2528 had a crowded anterior dentition in the mandible.

The two individuals from L102 had dental caries, with calculus deposits noted in SK1155.

The poorly preserved remains of an adult leg and foot from fill (1153) P102; Period 7 was recovered from a non-funerary feature (L105). Given the number of burials in the vicinity, it is likely that this isolated bone was the result of redeposition from a nearby grave although all the burials excavated from Period 6 were found to have both legs remaining.

A summary of results for Period 6 can be seen in Table 38 and Period 7 in Table 39.

Land use area	Skeleton	Condition	% complete	Skull	Dentition	Torso	Pelvis	Legs	Feet	Arms	Hands	Age	Sex	Pathology comments	Joint disease		Trauma		Misc		Dental	
101	1100	2	90	1	1	1	1	2	2	2	2	7	1	SN	1	0	0	0	0	0	1	3
101	1113	3	90	1	1	1	1	2	2	2	2	7	1	SN - deep central cavitations	1	0	0	0	0	0	1	4
101	1115	3	75	1	1	1	1	2	2	2	2	7	1	SN, OP, poss. Compression # T12. Fusion 2x T vert (joint disease?) dislocation/fracture dislocation L elbow with secondary OA	1	311	1	423, 425	0	0	1	1, 2
102	1155	3	40	1	1	1	1	2	0	2	2	7	2	None	0	0	0	0	0	0	1	1, 3
102	1168	3	45	1	1	1	1	2	0	2	0	7	3	None	0	0	0	0	0	0	1	1
101	2528	3	80	1	1	1	1	2	0	2	2	3	0	anterior dental crowding, mandible	0	0	0	0	1	1055	0	0

Table 38: *Phase 101 (Period 6) human skeletons from Area 1*

Land use area	Context	Condition	% complete	Skull	Dentition	Torso	Pelvis	Legs	Feet	Arms	Hands	Age	Sex	Pathology comments	MNI
105	1153	3	10	0	0	0	0	1	1	0	0	7	9	none	1

Table 39: *Phase 102 (Period 7) human remains from non-funerary features from Area 1*

6.2.1.2 Burnt bone

Five contexts (six samples) of burnt bone from Period 8 were examined. Spits (1185)-(1191) were the fills of a single grave [1191] being the primary fill). A total of 1212g of burnt bone were recovered from this feature, the greatest quantities in (1185) and (1187). Although the degree of burning was uniformly high (1186) contained fragments of bone with unburnt trabeculae and (1187) large pieces of readily identifiable bone. Overall more than 50% of the bone fragments were identifiable to body area and the largest fragment size was 133mm.

The remains were those of an adult, possibly a male. At this stage it appears that a single individual was present.

6.2.1.3 Wet sieved bone

Two deposits (1169) and (1983) that were dated to Period 6 also produced human bone from ecofactual samples. Deposit (1169) was the fill of a grave containing inhumation SK1168 and contained a single fragment of unburnt bone. Deposit (1983) was the fill of the grave containing skeleton SK2528. Burnt fragments of cortical bone were present in addition to hand elements from the adolescent burial (Table 40).

Context	Sample	Total weight (g)	Approx % Identifiable fragments	Age?	Sex?	Finds	Comments
1169	1041	0.4	0%	N	N	None	not burnt, single fragment probable human bone
1983	1107	7.2	60%	Subadult	n/a	None	unburnt subadult hand elements and burnt fragments of cortical and trabecular bone

Table 40: *Phase 101 (Period 6) wet sieved bone from Area 1*

6.2.2 Area 3

6.2.2.1 Inhumations

Several enclosures in Area 3 contained burials dating to Period 10. Burial SK3102 had been decapitated, the head placed between the feet. The inhumations were arranged in two separate enclosures but have been treated as a single group for the purposes of assessment.

Thirty-two inhumation burials were excavated from Area 3: 31 from P305 and one from P304. All contained the remains of a single individual.

Completeness varied significantly but 84% (27/32) of the assemblage were 50% complete or more (Figure 2). All remains were fragmentary and the cortex of most elements was eroded with indications of root impressions present on the surface: 91% of the burials scored as a '3' (Figure 3). In some

cases the surface erosion extended to the dentition, most notably adolescent SK3360. A small fragment of iron was seen adhering to a rib of adult female SK3183 and red staining noted on the posterior ilium of male SK3136 and the tooth roots of female SK3345. The latter suggests this had occurred some time after burial as the tooth roots would otherwise have been protected from surface contaminants.

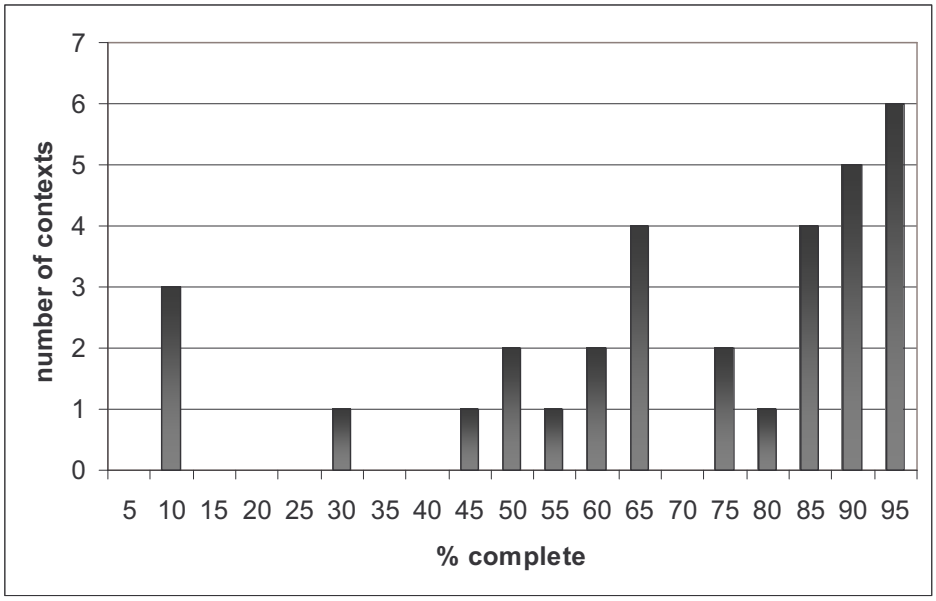

Figure 2: *Completeness of individuals from Area 3*

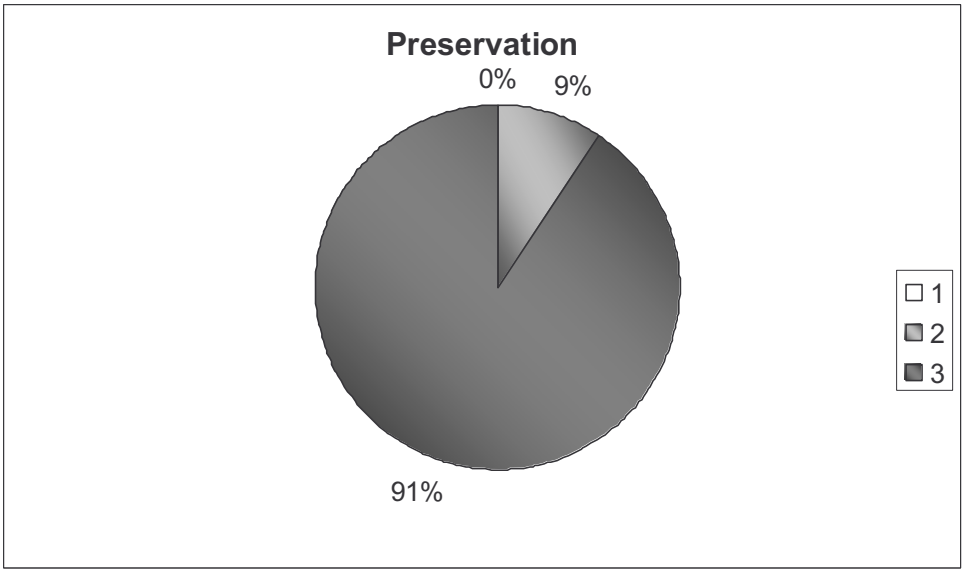

Figure 3: *Preservation of skeletons from Area 3*

Inhumation SK3062 from early Roman P304 was a partially complete adolescent (aged 13-16 years at death).

The assemblage from P305 was predominantly composed of adults (84%: 26/31): the majority were male or probably male (16/26: 62%), with a male to female ratio of 2.7:1 (Table 41). Sixteen percent (5/31) of the graves contained

the remains of subadults. The absence of dentition prevented estimation of age in one cases, though metric and epiphyseal fusion data will enable this to be carried out at analysis. Burial SK3343 was that of a neonatal individual and the remaining three were adolescents who had died between the ages of 13 and 16 years. The skull of the neonate SK3343 (L310) was missing but a foetal calf skull was found in the vicinity. It is not yet clear whether this is of interpretative significance.

	n	% adults
Male	11	31
Possible male	5	14
Intermediate	0	0
Possible female	2	6
Female	4	11
Undetermined	4	11
Total	***26***	***72***

Table 41: *Adult sex distribution from P305*

Very little paleopathological change was noted amongst the inhumations from P305, possibly in part an artefact of poor cortical preservation. Decapitation burial SK3102 was that of an adult female, no cut marks were visible, but a number of the cervical (neck) vertebrae appeared to be absent.

Twelve adults had evidence of spinal joint degeneration (12/26: 46%), including nine males and one female. Schmorl's nodes were present in four adults (4/23 torsos present: 17%) six individuals had osteoarthritic changes, most often noted in the cervical spine, three had intervertebral disc disease and six had spinal osteophytes.

Of these individuals, male SK3403 also had degeneration in the small joints of the hands, affecting a number of carpals. Probable male SK3337 had marginal joint changes in both hips.

Adult female SK3183 and adolescent SK3360 had *cribra orbitalia* (lesions in the orbital roof) usually thought to result from iron deficiency anaemia, though other deficiency disease have also been suggested to cause this condition. The cranial vault of adult female [3436] was thick with prominent grooves for the meningeal vessels and a tentative diagnosis of Paget's disease of bone is suggested.

Of the 21 adults with extant dentitions, 17 had suffered some form of dental pathology (81%). Caries was present in 12 cases (12/21: 57%) and 12 adults had lost teeth during life. Dental calculus was present in eight individuals (8/21: 38%) and two adults had evidence of periapical lesions as the result of dental abscesses (2/21: 9.5%). Adult male SK3368 had extreme dental wear of the anterior teeth and chipped dental enamel, possibly suggesting that he had been using his teeth as a tool. Adult female SK3197 had suffered from enamel hypoplasia. No dental disease was present in the three extant adolescent dentitions, but SK3360 had retained deciduous molars. A summary of the results can be seen in Table 42.

Skeleton	Condition	% complete	Skull	Dentition	Torso	Pelvis	Legs	Feet	Arms	Hands	Age	Sex	Pathology comments	Joint disease		Trauma		Metabolic/ endocrine		Misc		Dental	
3059	3	50	0	0	1	1	2	1	1	1	7	1	SN	1	0	0	0	0	0	0	0	0	0
3074	3	75	0	0	1	1	2	0	2	2	7	1	IVD, vert OA	1	0	0	0	0	0	0	0	0	0
3083	3	90	1	1	1	1	2	2	2	2	7	1	SN, OP, cervical OA	1	0	0	0	0	0	0	0	1	2
3102	3	95	1	1	1	1	2	2	2	2	7	5	SN	1	0	0	0	0	0	0	0	1	1,3
3117	3	10	0	0	0	0	2	0	0	0	7	9	none	0	0	0	0	0	0	0	0	0	0
3127	3	90	1	1	1	1	2	2	2	2	7	2	none	0	0	0	0	0	0	0	0	0	0
3136	3	65	1	1	1	1	2	0	2	2	7	2	lumbar OA	1	0	0	0	0	0	0	0	1	1,2
3139	3	10	1	1	0	0	0	0	0	0	7	9	none	0	0	0	0	0	0	0	0	0	0
3182	3	75	1	1	1	1	2	2	2	2	7	4	none	0	0	0	0	0	0	0	0	0	0
3183	2	95	1	1	1	1	2	2	2	2	7	5	none	0	0	0	0	1	1001/2	0	0	1	1,2,3,6
3197	3	90	1	1	1	1	2	2	2	2	7	5	none	0	0	0	0	0	0	0	0	1	1,4
3200	3	60	1	0	1	1	1	0	2	0	7	9	IVD	1	0	0	0	0	0	0	0	0	0
3260	3	65	1	1	1	1	2	2	2	2	7	2	none	0	0	0	0	0	0	0	0	1	3
3314	2	95	1	1	1	1	2	2	2	2	7	1	OP	1	0	0	0	0	0	0	0	1	1,2,3,6
3337	3	80	1	1	1	1	2	0	2	2	7	2	OP, IVD, marginal lipping hips	1	0	0	0	0	0	0	0	1	1,2,3
3343	2	60	0	0	1	0	2	1	2	0	0	0	none	0	0	0	0	0	0	0	0	0	0
3345	3	65	1	1	1	1	2	2	2	2	7	4	cervical OA	1	0	0	0	0	0	0	0	1	1,2,3
3349	3	55	1	0	1	0	2	0	1	0	12	0	none	0	0	0	0	0	0	0	0	0	0
3360	3	85	1	1	1	1	2	2	2	2	3	0	deciduous retention	0	0	0	0	1	1001/2	1	1055	0	0
3368	3	95	1	1	1	1	2	2	2	2	7	1	OP, cervical OA, extreme dental attrition (teeth as tool?) and	1	0	0	0	0	0	1	1055	1	2

													chipping of enamel									
3372	3	95	1	1	1	1	2	2	2	2	7	1	none	0	0	0	0	0	0	0	0	1	1
3374	3	85	1	1	1	1	2	2	2	2	7	1	none	0	0	0	0	0	0	0	0	1	1,2,3
3381	3	70	1	1	1	1	2	2	2	2	7	1	none	0	0	0	0	0	0	0	0	1	1,2
3389	3	85	1	1	1	1	2	2	2	2	7	1	none	0	0	0	0	0	0	0	0	1	1,2
3401	3	65	1	1	1	1	2	0	2	2	7	2	OP, heavy anterior dental attrition	1	0	0	0	0	0	0	0	1	2
3403	3	90	1	1	1	1	2	2	2	2	7	1	OA L carpals, SN, OP	1	311	0	0	0	0	0	0	1	3
3415	3	30	1	1	1	0	2	0	0	0	3	0	none	0	0	0	0	0	0	0	0	0	0
3433	3	45	1	1	1	1	2	0	1	1	7	1	none	0	0	0	0	0	0	0	0	0	0
3436	3	85	1	1	1	1	2	2	2	0	7	5	possible Paget's disease - skull thickened with prominent meningeal grooves	0	0	0	0	0	0	1	1050	1	1,2
3457	3	10	0	0	0	0	0	0	1	1	7	9	none	0	0	0	0	0	0	0	0	0	0
3464	3	90	1	1	1	1	2	2	2	2	3	0	none	0	0	0	0	0	0	0	0	0	0

Table 42: *Phase 305 (Period 10) human skeletons from Area 3*

6.2.2.2 Burnt bone

Four deposits of burnt bone dated to Period 10 were examined. Contexts (3179) and (3187) contained only animal bone, confirming they were non-funerary in nature.

Cremation deposit (3159) and (3007) were in close proximity to adolescent inhumation SK3062. The former contained 47g of highly fragmentary and well burnt bone, with only a small percentage of identifiable elements. However, it was clear that the remains were from an adult as fully formed third permanent molar teeth were present. This raises the potential for further data to moderately good. Deposit (3007) contained 121.5g of efficiently burnt bone and although the largest fragment size was greater than that of (3159), identification and demographic potential was poor. The remains were probably from an adult.

6.2.2.3 Wet sieved bone

Twenty-two ecofactual samples produced poorly preserved bone fragments, recovered by wet sieving (5.6mm residues), were examined. All dated to Period 10 and were associated with known skeletons. Most samples contained the small elements of the hands and/or feet, small cranial and torso fragments (Table 43). At this stage, no attempt was made to re-associate the remains with the burial from which it originated, but all appear consistent.

Context (3137) contained a fragment of shell, but no other artefacts or animal bone fragments were present.

Context	Sample	Preservation	Total weight (g)	Age?	Sex?	Finds	Comments
3346	3013	3	39.6	Adult	N	None	Torso fragments
3128	3000	3	34.7	Adult	N	None	Torso, cranial vault and hand fragments
3137	3001	3	0.1	N	N	Shell	2 small fragments
3181	3004	2	47.7	Adult	N	None	Hand and pelvic fragments
3261	3011	3	36.7	Adult	N	None	Torso, long bone and hand fragments
3315	3012	2	23.6	Adult	N	None	Torso, foot and cranial fragments
3338	3014	3	53.3	Adult	N	None	Torso and hand fragment
3350	3017	3	5.9	Subadult	n/a	None	Cranial vault and tooth (will allow accurate aging)
3359	3018	3	6	Subadult	N	None	Rib and hand fragments
3369	3019	3	11.3	Adult	N	None	Torso and hand fragments
3371	3020	2	89.3	Adult	N	None	Torso and hand fragments
3375	3021	2	49.3	Adult	N	None	Torso and hand fragments
3380	3023	3	101.3	Adult	N	None	Torso and hand fragments
3390	3022	2	55.3	Adult	N	None	Older adult cervical vertebra, hand and foot bones
3400	3025	3	17.2	Adult	N	None	Torso fragments and tooth

3404	3026	2	65.1	Adult	N	None	Torso, cranial and hand fragments
3414	3027	2	4.2	Subadult	n/a	None	Tooth (will allow accurate ageing)
3437	3028	2	24.4	Adult	N	None	Torso fragments
3465	3037	2	38.6	Subadult	N	None	Torso, hand and humeral epiphyses fragments
3177	3009	2	63.3	Adult	N	None	Torso and hand fragments
3198	3007	3	23.5	Adult	N	None	Torso and hand fragments
3201	3008	3	36.8	Adult	N	None	Hand, long bone and torso fragments

Table 43: *Phase 305 (Period 10) wet sieved human bone from Area 3*

6.2.3 Area 5

6.2.3.1 Inhumations

Two inhumations were found on Area 5. From Period 10 (Romano-British) SK5038 was the poorly preserved and largely incomplete remains (skull and torso fragments only) of an adult of undetermined sex (Table 44). This context was in fairly close association with cremation deposit (5007).

Early-middle Saxon (Period 11) inhumation SK6821 was that of a subadult, the legs and feet only remaining. Age at death of this individual may be better estimated following full analysis (Table 45).

6.2.3.2 Burnt bone

Two contexts of burnt bone from Area 5 were examined, both dating to the first to second centuries (Period 10). Deposit (5465), P504 was found to contain animal bone only, confirming the interpretation as a non-funerary feature. From P505, deposit (5007) contained 51.3g of fairly well burnt adult human bone, a femoral fragment displaying charring of the internal structures whilst the cortex was calcined. The largest (39 mm) and mean (20 mm) fragment sizes and small sample size resulted in poor potential for obtaining further data.

6.2.4 Area 7

6.2.4.1 Inhumations

A moderately well preserved inhumation SK7119 from Area 7, Period 10 was found in isolation. It consisted of the substantially complete remains of an adult probable female with dental caries, antemortem tooth loss and calculus deposits (Table 46).

Land use area	Skeleton	Condition	% complete	Skull	Dentition	Torso	Pelvis	Legs	Feet	Arms	Hands	Age	Sex	Pathology comments	MNI	General comments
528	5038	3	25	1	0	1	0	0	0	0	0	7	9	none	1	None

Table 44: *Phase 505 (Period 10) human skeletons from Area 5*

Land use area	Skeleton	Condition	% complete	Skull	Dentition	Torso	Pelvis	Legs	Feet	Arms	Hands	Age	Sex	Pathology comments	MNI	General comments
503	6821	2	20	0	0	0	0	2	2	0	0	12	0	none	1	None

Table 45: *Phase 508 (Period 11) human skeletons from Area 5*

Phase	Skeleton	Condition	% complete	Skull	Dentition	Torso	Pelvis	Legs	Feet	Arms	Hands	Age	Sex	Pathology comments	Dental		MNI	General comments
704	7119	2	85	1	1	1	1	2	2	2	2	7	4	None	1	1,2,3	1	None

Table 46: *Phase 718 (Period 10) human skeletons from Area 7*

Area	Period	Context	Sample	Total weight (g)	Approx % Identifiable fragments	Largest fragment (mm)	Mean fragment size (mm)	Age?	Sex?	Finds	Colour	Comments	Animal bone
1	8	1185	1045	2.1	0%	21	10	N	N	None	100% off white	possible animal bone	?
1	8	1185	1048	404.5	80%	133	50	Adult	?Y	None	100% off white	none	N
1	8	1186	1046	114.2	50%	101	50	Adult	N	None	100% off white	trabecular bone appears largely unburnt	N
1	8	1187	1047	566.9	60%	85	35	Adult	?Y	None	100% off white	Very well preserved with lots of trabecular bone. Internal structures of proximal tibia appear not to have been burnt. Most body areas represented	N
1	8	1189	1049	79.4	30%	54	20	Adult	N	None	100% off white	permanent third molar root, cranial and vertebral fragments	N
1	8	1190	1050	15	20%	20	15	Adult	N	None	100% off white	tooth root, vertebrae and skull fragments	N
1	8	1191	1051	29.9	30%	31	15	Adult	?M	None	100% off white	mastoid, cranial and tooth fragments	N
3	10	3007	301	121.5	10%	43	15	?Adult	N	None	90% off white, 10% light grey blue	None	N
3	10	3159	3002	47	10%	20	15	Adult	N	None	90% off white, 10% dark grey blue	Third permanent molar teeth present	N

3	10	3179	3003	13.8	10%	21	10	N	N	None	50% off white, 20% beige, 30% charred/dark grey	Charred, unburnt and calcined animal bone and teeth. 5.6mm fraction	Y
3	10	3187	3006	1.6	n/a	16.5	10	n/a	n/a	None	90% dark blue grey, 10% light blue grey	Animal bone only	Y
5	10	5007	5000	51.3	25%	39	20	Adult	N	None	90% off white, 10% dark grey blue	femoral fragments charred on inside	N
5	10	5465	5004	-	-	-	-	N	N	None	n/a	Animal bone only	Y
8	10	8011	8001	144.8	10%	29	20	?Adult	N	None	90% off white, 10% light grey blue	predominantly long bone cortical fragments	N

Table 47: *Summary of burnt bone from Areas 1, 3, 5 and 8, all periods*

6.2.5 Area 8

6.2.5.1 Inhumation (identified by Mark Maltby)

A partial skeleton of a human infant was identified during assessment within the animal bone assemblage. It derived from deposit (8378) within the terminal of boundary ditch G8034 (L813).

6.2.5.2 Burnt bone

Cremation deposit (8011) contained 144.8g of burnt bone dated to Period 10. This unurned burial has been associated with a small square structure, at present thought to represent a shrine or mausoleum. The burnt bone contained a small percentage of identifiable fragments and consisted predominantly of long bone cortical fragments, probably from an adult. The colour of the bone indicated it had been subjected to efficient cremation at high temperature

6.3 Summary by Chronological Period

6.3.1 Period 6: Late Neolithic-early Bronze Age

Six inhumations (five adults and an adolescent) were recovered from Area 1. Four of the five adult inhumations were male. The burials were fairly complete but poor preservation of the cortex compromised the observation of fine surfaces changes. Spinal joint disease, dental disease and heavy dental wear were noted together with a traumatic injury to the elbow of one male.

6.3.2 Period 7: Late Bronze age- early Iron Age

A single context of human bone dated to this period and was recovered from Area 1. The poorly preserved adult leg and foot (1153) was recovered from one of the pits of pit alignment L105. This pit truncated the Period 6 mortuary monument and therefore these human remains are likely to be residual.

6.3.3 Period 8: Early-middle Iron Age

Five contexts (six samples) of burnt bone from a cremation burial on Area 1 dated to the early- middle Iron Age. These comprised the un-urned burial of an adult probable male.

6.3.4 Period 10: Romano-British

The largest number of burials dated to this period with remains from Area 3, 5 and 7. In total 35 inhumations and four cremation burials were identified. One of the cremations (from Area 8) was associated with a possible shrine or mausoleum, but unfortunately was highly fragmentary and incomplete. The inhumations comprised 28 adult and 6 subadult burials, the latter predominantly of adolescents. Sixteen males or probable males and 7 females or probable females were present. Dental and spinal joint disease was fairly prevalent and two individuals had evidence of *cribra orbitalia*. Decapitation burial SK3102 was that of an adult female.

6.3.5 Period 11: Early-middle Saxon

A single inhumation dated to the early-middle Saxon period. From Area 5, inhumation SK6821 consisted of the legs and feet of a subadult for whom an age estimate should be possible at full analysis from metric data. No pathological changes were present.

7. ANIMAL BONE (MARK MALTBY)

7.1 Methodology

Animal bones recovered from all excavated areas were scanned. The aim was to assess the potential of the assemblages to provide information about deposition, the meat diet of the inhabitants of the settlements and the exploitation of animals at different stages of their history. The following data were recorded for each context where appropriate:

a) context number
b) general assessment of bone preservation
c) approximate number of fragments provisionally identified to each species
d) approximate number of unidentified fragments
e) assessment of the state of preservation of the assemblage
f) number of mandibles with surviving teeth for each species
g) number of bones with epiphyseal fusion data for each species
h) number of measurable bones for each species
i) other comments

These details were recorded on to a relational database (Microsoft Access), which forms part of the area archive. Phasing and other contextual information were stored within the archive, enabling the assemblages from different areas and periods to be easily separated. Detailed records of anatomies represented, fragmentation, gnawing, butchery marks, pathology, ageing and metrical data were not made, although brief comments were made about specimens with notable features, such as obvious butchery marks and pathological changes. The presence of associated bone groups was also noted.

Bones from sieved contexts were not recorded on to the database at this stage. The bags were scanned, however. There is little identifiable material within them.

7.2 Quantification and Assemblage Preservation

Bones from nine areas and 621 contexts were scanned, producing a total of approximately 5,640 fragments. The majority of the material was found on Area 5, but this area and Area 3 were the only ones to produce faunal samples of over 1,000 elements (Table 48).

The preservation of the assemblages from each context was assigned to one of five grades ranging from excellent to poor. Most of the assemblages are moderately preserved, indicating high levels of both ancient and modern fragmentation, some gnawing, but relatively little surface erosion. A substantial number of assemblages are less well preserved, falling into the "quite poorly preserved" category generally indicating a relatively high proportion of slightly eroded and heavily fragmented bones and in a few cases a high proportion of burnt bones. Most of the better preserved assemblages are from Area 5 but small numbers of well preserved assemblages were also found on several other areas (Table 48).

			Preservation				
Area	Contexts	NISP*	Excellent	Good	Moderate	Quite Poor	Poor
1	71	692		6	30	24	11
2	10	39		1		8	1
3	81	1112	3	5	33	26	14
5	338	3217		63	201	74	
7	11	110	1	6	2	1	1
8	95	379	1	6	59	29	
9	2	14				1	1
10	11	56			2	3	6
11	2	21					2
Total	**621**	**5640**	**5**	**87**	**327**	**166**	**36**

Table 48: *Summary of animal bone assemblage sizes and preservation by area*

*NISP = number of individual specimens

7.2.1 Area 1

A total of 71 contexts produced a sample of 692 animal bone fragments. With a few notable exceptions, bone assemblage preservation was, at best, moderate and sometimes quite poor or poor (Table 48).

7.2.1.1 Phase 101 (Period 6 late Neolithic – early Bronze Age)

Four land use areas produced approximately 206 elements. Nearly all of these are from three cattle skeletons (Table 49). G1031 in L101 was associated with four crouched inhumations placed in the base of a mortuary enclosure ditch. G1031 was an animal burial located in the southern part of segmented ditch G1033. This animal bone group consists of around 80 bones from an adult animal. All parts of the body are represented although some bones of the limb extremities are missing. The animal was laid on its left side and orientated NNW-SSE. It was articulated except for the skull, which had been placed between the legs. A cursory examination did not produce any evidence for butchery marks.

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Unid	Total
1	1												2	2
Period 6: LN-EBA														
101	100	Field/Enc											1	1
101	101	Mort Enc	80		1									81
101	102	Mort Enc?					1							1
101	104	Animals	121										2	123
Period 7: LBA-EIA														
102	105	Pit Align	11	3		5							30	49
Period 8: E-MIA														
103	106	Farmstead	6	8		1							9	24
103	107	Enclosure	2										6	8
103	108	Enclosure											2	2
103	109	Farmstead	4	6									10	20

103	110	Enclosure		1									3	4
103	121	Pits	102	13	3								42	160
103	122	Pits	20	10		15	17						33	95
103	124	Pits	3	12	41								11	67
Period 11: E-MS														
106	114	SFB	9	4	5								37	55
Total			**358**	**57**	**50**	**21**	**18**	**0**	**0**	**0**	**0**	**0**	**188**	**692**

Table 49: *Summary of animal bone species from land use areas on Area 1*

L104 produced two cattle burials in discrete graves. Their proximity to the mortuary enclosure has led to the belief that they are contemporary. The more complete skeleton (G1037) consists of about 80 elements from an adult animal with all parts of the body represented. It was orientated NE-SW and laid on its right side with the head at the NE end of the grave. G1036 consists of about 40 elements of another adult. It was laid on its right side, and orientated NNW-SSE. The skull was folded back onto the body and the front and hind legs had been folded in so that they were touching. The bones in this group are more fragmented and no bones of the limb extremities were recovered. However, no evidence of butchery was noted during the scan.

7.2.1.2 Phase 102 (Period 7 late Bronze Age – early Iron Age)

Forty-nine animal bone elements were recovered from the pit alignment (L105). These include small numbers of cattle, horse and sheep/goat (Table 49).

7.2.1.3 Phase 103 (Period 8 early-middle Iron Age)

Approximately 380 faunal elements were recovered from eight land use areas. Most of the bones were recovered from pits in L121, L122 and L124 (Table 49). A number of associated bone groups were recovered. S1122 in a large oval pit G1018, (L121) produced over 50 bones of cattle. Many of these probably belonged to one sub-adult animal and some of the bones were noted to be articulated. However, at least two different animals are represented by scapulae and radii. There is evidence of some gnawing damage on some of the bones but no clear evidence of butchery was noted during the cursory examination. A fragmentary skull of a calf and a pair of calf pelves were found in the same pit.

Fragmentary associated remains of an immature horse were found in pit G1022 (L122), consisting of cervical vertebrae and some ribs. Tertiary fill (S1143) of a pit in G1020 (L122) produced associated foot bones and some ribs of an adult dog. L124 produced over 40 bones of a piglet (S1194) in the secondary fill of one of the pits of G1026. A femur and pelvis of a lamb were found in the same context.

Cattle and sheep/goat are the most commonly represented amongst the other material. Few pig, horse and dog elements were found apart from those in the partial skeletons (Table 49).

7.2.1.4 Phase 106 (Period 11 early – middle Saxon)

Sunken feature building G1067 produced 55 animal bone fragments but only 18 were provisionally identified as cattle, sheep/goat or pig (Table 49). These include three associated cattle ribs and three associated pig vertebrae.

7.2.2 Area 2

Ten contexts produced a total of approximately 39 animal bone fragments, mainly from quite poorly preserved assemblages (Table 48).

7.2.2.1 Phase 201 (Period 6 late Neolithic – early Bronze Age)

Animal bones were found in only one isolated pit (L213). These comprised a small piece of red deer antler and one fragment each of sheep/goat and unidentified mammal.

7.2.2.2 Phase 203 (Period 11 early – middle Saxon)

Thirty animal bone fragments were found in five contexts associated with a sunken feature building (L205). Small numbers of pig, cattle, sheep/goat and bird (not identifiable) were recovered (Table 50).

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Unid	Total
Period 6: LN-EBA														
201	213	Pit		1					1				1	**3**
Period 11: E-MS														
203	205	SFB	2	2	5							1	20	**30**
Period 14: P-M														
204	209	Field Bdy			1									**1**
204	217	Quarry											2	**2**
Period 15: Modern														
205	219	Subsoil	1	1										**2**
Period 20: Unassigned														
200	204	Pit											1	**1**
Total			**3**	**4**	**6**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**24**	**39**

Table 50: *Summary of animal bone species from land use areas on Area 2*

7.2.2.3 Phase 204 (Period 14 Post-Medieval)

Only three animal bone fragments were recovered including a complete pig metacarpal from a field boundary (L209).

7.2.2.4 Phase 205 (Period 15 Modern)

One fragment each of cattle and sheep/goat were recovered from subsoil L219.

7.2.3 Area 3

Animal bones were recovered from 81 contexts, most of which produced moderately preserved or quite poorly preserved assemblages. Approximately 1,112 elements were retrieved (Table 48).

7.2.3.1 Phase 302 (Period 8 early-middle Iron Age)

Sixteen animal bone fragments were found in pits associated with a probable farmstead (L300). Only cattle (2) and sheep/goat (2) were provisionally identified.

7.2.3.2 Phase 303 (Period 9 late Iron Age – early Romano-British)

Five animal bone fragments were recovered in pits associated with the activity focus L302. Only cattle (2) and sheep/goat (2) were provisionally identified.

7.2.3.3 Phases 304-305 (Period 10 Romano-British)

Animal bones were recovered from contexts in ten land use areas associated with the periphery of the farmsteads. Five land use areas from the earlier farmstead (Phase 304) produced a total of 342 fragments and 748 were retrieved from five land use areas associated with the later farmstead (Phase 305). Just over 600 bone fragments are identifiable and the samples are dominated by cattle (235) and sheep/goat (193). Many of the horse (58) and dog (47) elements form associated groups. Pig elements (21) are poorly represented and there are also small numbers of bird (8), red deer (6), hare (2) and cat (1). Amphibian bones (31) and a single fish bone were also recovered (Table 51). Bird bones include those of domestic fowl and at least one species of duck.

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
3	3	Null		1											**1**
Period 8: E-MIA															
302	300	Pits	2	2										12	**16**
Period 9: LIA-ERB															
303	302	Pits	2	2										1	**5**
Period 10: RB															
304	303	Enclosure	6	6		3	3							6	**24**
304	304	Enclosure	10	9			1							8	**28**
304	307	Enclosure	3	10		4	1					1		21	**40**
304	308	Enclosure	38	34	9	5			1		1	3	31	61	**183**
304	314	Pits	10	34		2								21	**67**
305	305	Enclosure	18	6		4	3							32	**63**
305	306	Cemetery	10	18				1				1		20	**50**
305	309	Enclosure	119	48	11	17	29		5			3	1	253	**486**
305	310	Enclosure	12	8		22	2				1			24	**69**
305	312	Enclosure	9	20	1	1	8							41	**80**
Total			**239**	**198**	**21**	**58**	**47**	**1**	**6**	**0**	**2**	**8**	**32**	**500**	**1112**

Table 51: *Summary of animal bone species from land use areas on Area 3*

Phase 304: Early Romano-British

The small sample from enclosure L303 includes three associated thoracic vertebrae from a small equid from ditch G3041, a large cattle horn core and a skull fragment of a hornless sheep. A slightly larger sample from enclosure L304 (Table 51) includes a maxilla of a small dog and associated parts of a pelvis, sacrum and a caudal vertebra of an adult cow from ditch G3012.

L307 includes a sawn radius and ulna of a horse found in S3321. A fragmentary calf skull and a radius of quite a large dog were recovered from pit G3021. All but nine fragments of the sample from L308 are from pit G3019. The primary fill produced a number of frog and toad bones indicating that it was left open for at least a short time. A domestic fowl skull was also found in this fill. Most of the bones are from tertiary fills. They include a set of very large horse metacarpals, a tibia of a large pig and another of a large sheep/goat and a partial horse skull. There are two hornless sheep/goat skull fragments and two chopped associated pig thoracic vertebrae. A red deer metatarsal bearing knife cuts is also present. Some of the bones, particularly the horse metacarpal and the pig tibia, are unusually large for Romano-British material, being of a size more usually associated with post-medieval deposits. On the other hand, a cattle scapula and mandible bear chop marks typical of Romano-British butchery techniques. All the 67 elements from L314 are from pit G3016. These include several burnt bones in a deposit containing a high percentage of fragmented sheep/goat elements. Many of these could have belonged to the same animal.

Phase 305: Later Romano-British

The assemblage from enclosure boundary L305 includes the complete skull and mandibles of a dog from the lower fill of a terminal (S3058). Other ditch fills produced fragmentary remains of a partial cattle skull and a cattle scapula butchered in a characteristic Roman fashion. The small assemblage from the inhumation cemetery (L306) did not produce any unusual faunal remains apart from a cat bone, although sheep/goat bones are generally well represented. Enclosure L309 provided a substantial assemblage dominated by cattle elements, particularly amongst the sample from G3093 (Table 51). These again include bones from some quite large animals. Several ribs and vertebrae may be from the same animal (S3015). There are several associated dog bones in this group but at least three different animals, ranging from very small to quite large in size, are represented. Bones of very large horse and pig and quite large sheep were also found in various contexts. Five red deer bones were also found. The assemblage from farmstead enclosure L310 produced a high proportion of horse elements that were derived mainly from an associated group of foal bones from the final infilling of the kiln G3038. The small sample from enclosure L312 includes four bones from a medium-sized dog (fill of ditch S3200). A complete skull of an adult dog (S3196) was also recovered. Another fragment of hornless sheep skull was also found.

7.2.4 Area 5

A total of 338 contexts produced a large sample of 3,217 animal bone fragments. Bone assemblage preservation was usually moderate but there are no very poorly preserved assemblages (Table 48).

7.2.4.1 Phase 502 (Period 9 late Iron Age – early Romano-British)

Two land use areas located at the periphery of the major settlement produced a small sample of 62 animal bone fragments mainly from trackway L518. Only elements of domestic species are present, with cattle and sheep/goat the best represented (Table 52). The scan produced no evidence for any of the butchery

marks associated with specialist processing of cattle carcasses that are a feature of the assemblages from the Romano-British phases of this area. A large portion of an adult dog skull was found in the secondary fills of the SW-NE boundary ditch (S5016; G5005).

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
5	5	Null	3	3		1								4	**11**
Period 9: LIA-ERB															
502	515	Enclosure	3	5			1							6	**15**
502	518	Trackway	16	6	2	2	3							18	**47**
Period 10: RB															
503	501	Trackway	9	5	1	1	1							12	**29**
503	502	Enclosure	20	8	2	2	6						2	17	**57**
503	504	Enclosure	10	11	2		1							8	**32**
503	505	Roadway	25	23	5									41	**94**
503	527	Enclosure	4		1										**5**
503	534	Enclosure	3		1									1	**5**
504	506	Trackway	143	9	3	5								130	**290**
504	507	Enclosure	17	19										31	**67**
504	509	Enclosure	74	54	7	12	2					1		147	**297**
504	510	Enclosure	242	159	28	8	8			2		7		397	**851**
504	511	Roadway	7	8	2		1					2		14	**34**
504	512	Enclosure	45	23	5	1						3		60	**137**
504	519	Enclosure	3	6										11	**20**
505	508	Enclosure	13	4	1	2								13	**33**
505	514	Enclosure	9	10			1					1		7	**28**
505	517	Enclosure	13	19	2	1								29	**64**
505	520	Enclosure	24	11	1	8								48	**92**
505	521	Dom. Focus	50	7	7	6	3							54	**127**
505	522	Enclosure	37	30	6	3								50	**126**
505	523	Roadway	22	35	2	1						1		46	**107**
505	524	Enclosure	29	17		3	2							36	**87**
505	526	Enclosure	6	1	3	2	1					1		8	**22**
505	528	Dom. Focus	35	13	2	7						1		46	**104**
505	535	Enclosure	7	6			1							9	**23**
506	516	Dom. Focus	80	44	4		6							155	**289**
506	537	Dom. Focus		14										7	**21**
507	531	Layer	4	10	1									12	**27**
Period 11: E-MS															
508	503	SFB?	9	9		1	1							11	**31**
Period 13: Medieval															
509	533	Fields				1									**1**
Period 15: Modern															
510	536	Topsoil	14	4	1									24	**43**
Period 20: Unassigned															
501	530	Alluvium		1											**1**
Total			**976**	**574**	**89**	**67**	**38**	**0**	**0**	**2**	**0**	**17**	**2**	**1452**	**3217**

Table 52: *Summary of animal bone species from land use areas on Area 5*

7.2.4.2 Phases 503-507 (Period 10 Romano-British)

Features dating to this period produced a relatively large, fairly well-preserved and important Romano-British sample. In total, approximately 3,068 animal bone elements were recovered from 27 land use areas associated with the southern part of the major settlement at Kempston Church End. At least 1,679 of these are identifiable and include over 900 cattle and over 500 sheep/goat elements, which provide about 55% and 33% of the identified elements respectively. Pig provide only 5% of these elements and horse (4%) and dog (2%) are also present (Table 52). Most of the 17 bird bones that were provisionally identified belonged to domestic fowl but other species including raven and goose are also present. Wild mammals are represented only by two bones of roe deer, although some of the pig bones are large enough to be from wild boar. Two bones of frog were also recovered.

Phase 503: Late 1st-2nd Century AD

The six land use areas produced a total of 222 animal bone fragments, mainly from roadway L505 and enclosure L502 (Table 52). Cattle provide almost half (71) of the 143 identifiable elements. These include a fragmented skull and associated mandibles of an adult in pit G5008 in L502. Present in the same subgroup (S5032) are a very large cattle horn core and radius, a pair of dog mandibles and four bones of an immature dog. The recovery of two frog bones indicates that the pit was open to the elements for at least a short period. The tertiary fill of the pit produced an almost complete cattle scapula, which bears chop marks that are not typical of the marks made by specialist butchers. Indeed, the provisional scan produced only one cattle femur (S5350) with filleting marks characteristic of specialist processing. This was found in the tertiary fill of a posthole (G5032) in enclosure L504 along with two sherds of later Roman pottery.

Another small group of associated cattle bones (in S5809) was found in the roadside ditch (G5049) of L505. It consists of the metatarsal and two of the tarsals.

Phase 504: 2nd Century AD

The seven land use areas produced a substantial sample of nearly 1,700 animal bone fragments, including 906 potentially identifiable elements. About half the bones were associated with enclosure L510. Enclosure L509 and roadway L505 both produced nearly 300 fragments (Table 52).

Cattle elements (531) provide the majority of the assemblage, providing 59% of the potentially identifiable elements. They are particularly abundant (89%) in the recut ditches bordering trackway L506. This is largely due to the discovery of a discrete dump of at least 82 cattle upper limb bones (humerus, radius, femur, tibia) in the secondary fill (S5578) of the ditch (G5138). These bones show abundant evidence of filleting with a cleaver blade, and axial splitting. They represent the disposal of specialist processing of upper limb bones for their marrow (Maltby 2007). Most of the other smaller assemblages from L506 also include cattle bones with distinctive processing marks,

including several scapulae with blade marks at the base of the lateral spine and other split cattle upper limb bones.

Only cattle and sheep/goat elements were noted in the scan of the much smaller assemblage from the non-domestic enclosure L507 (Table 52). There is no evidence for dumps of cattle processing waste, although blade marks were noted on a cattle scapula. A tibia of an infant human was included amongst the animal bones from S5325, the first primary fill of cess pit G5029, and needs to be reunited with the rest of the human remains.

The assemblage from enclosure L509 is mainly from pit G5120. The cattle assemblage from L505 includes a few butchered bones but no discrete large dumps. There are some bones of large cattle, sheep and pig within this assemblage. A fragmented horse skull including both maxillae was found in S5079, the tertiary fill of enclosure ditch G5017. A four-horned sheep skull fragment was recovered from S5928 in pit G5158. This may be a genetic abnormity. A skull of a sub-adult sow was found in G5120 (S5244).

The assemblage from enclosure L510 also includes large numbers of cattle (53%) and sheep/goat (35%) amongst its identified assemblage. There is abundant butchery evidence including a few split upper limb bones and other evidence for specialist processing but no large discrete dumps of waste. Again there are some large specimens of all the domestic mammals and one or two of the pig bones are large enough to be from wild boar.

The small sample from roadway L511 includes at least two split cattle upper limb bones. Two wing bones probably from the same raven were recovered from the primary fill of the roadside ditch (S5931).

The assemblage from enclosure L512 is also dominated by cattle and sheep/goat elements (Table 52). The cattle assemblage again includes small amounts of specialist processing waste. The small assemblage from enclosure L519 also contains one or two cattle bones that bear distinctive specialist processing marks.

Phase 505: 2nd -3rd Century AD

The 11 land use areas produced another substantial faunal sample of over 800 fragments including at least 467 identifiable elements. Cattle (52%) are well represented followed by sheep/goat (33%). Isolated cattle bones with distinctive specialist butchery marks were found in L522, L524, L526 and L528. L521 produced greater concentrations of such bones including small discrete accumulations of upper limb bones in the tertiary fill (S5583) of ditch G5138. A pair of cattle horn cores, a pair of mandibles and a maxilla of an adult dog, and a calcaneus of a very large pig (possibly wild boar) were found in the same fills.

L528 produced four vertebrae and a rib from the same adult horse from the tertiary fill (S5146) of pit G5106. Substantial parts of an adult horse skull

including the maxilla were found in tertiary fill S5096 of boundary ditch G5021 (L520).

Phase 506: 4th Century AD

Most of the bones from this phase were found in the unenclosed domestic focus L516. These include another discrete dump of cattle (and unidentified large mammal) upper limb bones from the post hole (S5491) cut into the tertiary fill of roadside ditch G5139. This may be residual material from earlier dumps of specialist processing waste. However, some of the bones have been split more intensively than the other groups and it is more likely therefore to represent a separate dumping episode.

Elsewhere in this phase sheep/goat elements are generally more common than cattle. These include the distal tibia, astragalus and calcaneus of a sheep in S5767 in hearth G5164 (L537). Knife cuts are present on the astragalus.

Phase 507: 5th Century? AD

Post-settlement layer L531 produced a small faunal assemblage. The elements include several split cattle upper limb bones that are likely to be residual from earlier phases.

7.2.4.3 Phase 508 (Period 11 early – middle Saxon)

Thirty-one animal bone fragments were recovered from the possible SFB L503, of which 20 are identifiable (Table 52). Cattle, sheep/goat, horse and dog are present.

7.2.4.4 Phase 509 (Period 13 Medieval)

A single horse element was found in L533.

7.2.4.5 Phase 510 (Period 15 Modern)

The topsoil L536 produced 43 animal bone fragments. S5890 includes a small group of cattle upper limb bones with typical Roman butchery marks and these are presumably residual from that period.

7.2.5 Area 7

Eleven contexts from seven land use areas produced a small sample of 110 animal bones. Preservation in most contexts was good (Table 48), as a substantial amount of the bones consists of associated bone groups.

7.2.5.1 Phases 705-706 (Period 13 Medieval)

Only 16 animal bone fragments were recovered, mainly from the trackway L703 (Phase 705). Only horse and dog were identified (Table 53). At least two dogs are present, one of which was represented by very large metatarsal. Horse is represented by three associated ribs and a large radius and ulna. The nature of the horse remains is very similar to those from the Phase 707 and it is therefore likely that they are of post-medieval origin.

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
Period 13: Medieval															

705	703	Trackway				3	4							7	14
706	712	Woodland				2									2
Period 14: P-M															
707	702	Trackway		1		2								6	9
707	704	Field Bdy	8			40								15	63
707	716	Tree Clear		1		7								1	9
Period 15: Modern															
708	710	Ploughsoil				3								4	7
Period 20: Unassigned															
7	7	Null	1	1										4	6
Total			**9**	**3**	**0**	**57**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**37**	**110**

Table 53: *Summary of animal bone species from land use areas on Area 7*

7.2.5.2 Phase 707 (Period 14 Post-Medieval)

Most of the 81 animal bone elements were found in the field boundary ditch L704. These were dominated by bones of large horse. These represent the remains of at least three animals. The horse remains from the other Land Uses are from horses of similar size. No evidence of butchery was noted during the scan and it would seem that several horses were buried in this area and their remains subsequently disturbed.

7.2.5.3 Phase 708 (Period 15 Modern)

Seven animal bones from ploughsoil L710 include three horse bones from animals of similar size to those from Phase 707. These are therefore likely to be of post-medieval origin.

7.2.6 Area 8

Ninety-six contexts produced a total of approximately 379 animal bone fragments. Most assemblages are moderately preserved although a significant number are less well preserved (Table 48).

7.2.6.1 Phase 801 (Period 10 Romano-British)

Only ten animal bone fragments were recovered including only three that are identifiable (Table 54).

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
Period 10: RB															
801	800	Shrine?												1	**1**
801	801	Cultivation	2			1								6	**9**
Period 12: Saxo-Norman															
802	802	Field		2										5	**7**
802	803	Trackway												5	**5**
803	804	Field	2	2			1							7	**12**
803	805	Enclosure	2	1				1				1		6	**11**
803	806	Enclosure	2	3	1	1						1		4	**12**
803	807	Enclosure	3											3	**6**
803	808	Enclosure		3		1		4						4	**12**
Period 13: Medieval															
804	810	Enclosure	6	3	2	2		2						30	**45**

804	811	Enclosure	2	1		7								6	**16**
804	812	Enclosure	1			1								3	**5**
804	813	Enclosure	19	2	3	1								10	**35**
804	814	Enclosure	4	2	2	2								5	**15**
804	815	Fields					1							8	**9**
804	819	Trackway	3	2	2	7								19	**33**
806	809	Enclosure	2											3	**5**
806	818	Enclosure		2		1								3	**6**
806	832	Focus												1	**1**
806	833	Pond	1		1									11	**13**
Period 14: P-M															
807	820	Pond				1								2	**3**
808	822	Field	2	4	4	5						3		26	**44**
808	823	Field												4	**4**
808	830	Pit	6			46	2							10	**64**
808	831	Field		2										2	**4**
Period 15: Modern															
810	828	Drainage	1												**1**
Period 20: Unassigned															
8	8	Tree-hole												1	**1**
Total			**58**	**29**	**15**	**76**	**4**	**7**	**0**	**0**	**0**	**5**	**0**	**185**	**379**

Table 54: *Summary of animal species from land use areas on Area 8*

7.2.6.2 Phases 802-803 (Period 12 Saxo-Norman)

The seven land use areas produced a total faunal sample of 65 fragments, of which approximately 34 are identifiable. Small numbers of sheep/goat, cattle, cat, horse, pig, dog and domestic fowl are present (Table 54). Three cat bones from S8111 (tree throw) are probably from the same kitten (L808).

7.2.6.3 Phases 804 and 806 (Period 13 Medieval)

Animal bones from ten land use areas provide a sample of 183 animal bone fragments. About 84 of these are identifiable. These include bones of all the domestic mammals present in the Saxo-Norman deposits but no bird bones were recovered (Table 7).

Cattle (38) are the most commonly represented. These, however, include an associated bone group consisting of a pair of metatarsals and most of the phalanges of an adult animal found in S8113 (northern ditch terminal of non-domestic enclosure L813). Knife cuts were observed near the proximal end of the right metatarsal made when the feet were disarticulated.

Horse elements (21) are also unusually well represented, most of them being found in domestic enclosure L811 and trackway/yard L819. The latter includes an associated atlas and axis and a tibia from a large animal. Two groups of maxilliary teeth of adult horses were also recovered.

7.2.6.4 Phases 807-808 (Period 14 Post-Medieval)

Five land use area produced a total of 119 animal bone fragments, of which at least 75 are identifiable. Most of the identifiable material consists of horse elements (52) with small numbers of cattle, sheep/goat, pig, bird and dog also

present. Most of the horse bones were found in the tertiary fill (S8332) of pit G8092 (L830). Although described as disarticulated, these represent the associated bones from at least three large horses. The horse bones from other land use areas are similar in nature.

7.2.6.5 Phase 810 (Period 15 Modern)

A single cattle element was found in drainage features L828.

7.2.7 Area 9

7.2.7.1 Phase 902 (Period 10 Romano-British)

Two poorly preserved assemblages from two pit contexts in L902 produced a total of 14 unidentified fragments only (Table 55).

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
Period 10: RB															
902	902	Pits/PHs												14	**14**
Total			**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**14**

Table 55: *Summary of animal bone species from land use areas on Area 9*

7.2.8 Area 10

Eleven contexts produced a sample of 56 animal bone fragments, of which only 12 elements are identifiable (Table 56). Most of the assemblages are poorly preserved (Table 48).

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Unid	Total
Period 7: LBA-EIA														
1002	1000		1	1		2							25	**29**
1002	1001		1											**1**
1002	1006		1										2	**3**
1002	1008		2										4	**6**
Period 14: P-M														
1005	1005		1	2									12	**15**
Period 15: Modern														
1006	1011					1								**1**
Period 20: Unassigned														
10	10												1	**1**
Total			**6**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**44**	**56**

Table 56: *Summary of animal bone species from land use areas on Area 10*

7.2.8.1 Phase 1002 (Period 7 late Bronze Age – early Iron Age)

Four land use areas produced 39 animal bone fragments, including only eight potentially identifiable elements. Cattle, sheep/goat and horse are represented (Table 56).

7.2.8.2 Phase 1005 (Period 14 Post-Medieval)

Fifteen animal bone fragments were recovered from cobbled trackways L1005. Only three are identifiable. One of the two sheep/goat elements is a tibia of a very large animal. One cattle element was also recovered (Table 56).

7.2.8.3 Phase 1006 (Period 15 Modern)

One horse element was recovered from ploughsoil L1011.

7.2.9 Area 11

7.2.9.1 Phase 1103 (Period 10 Romano-British)

Twenty-one animal bone fragments were recovered in two poorly preserved assemblages. Only one horse element was identified from trackway L1109.

Phase	Land Use	Description	Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
Period 10: RB															
1103	1103	Activity												20	**20**
1103	1109	Trackway				1									**1**
Total			**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**21**

Table 57: *Summary of animal bone species from land use areas on Area 11*

7.3 Summary by Chronological Period

7.3.1 Period 6: late Neolithic/early Bronze Age

Areas 1 and 2 produced a total of 209 animal bone fragments (Table 58). Most of the bones are from the three cattle skeletons found in association with the mortuary enclosures of Area 1. These are important groups and the survival of epiphyseal fusion, tooth ageing, sexing and metrical data (Table 59 and Table 60) will provide further detailed information about the cattle chosen for burial. The preliminary scan provided no evidence for skinning or butchery but a more detailed investigation is needed to confirm this. Skeletons of cattle dating to this period in Britain have been rarely found and their discovery is of zooarchaeological significance. The association of significant numbers of cattle with some burial monuments of this period in the East Midlands has been noted at Irthlingborough (Davis and Payne 1993) and Gayhurst (Deighton and Halstead 2004) in Northamptonshire. This area may provide another example of this association.

Period		Cow	S/G	Pig	Hor	Dog	Cat	Red	Roe	Hare	Bird	Oth	Unid	Total
6	Late Neolithic/Early Bronze Age	201	1	1		1		1					4	**209**
7	Late Bronze Age/Early Iron Age	16	4		7								61	**88**
8	Early-Middle Iron Age	139	52	44	16	17							128	**396**
9	Late Iron Age/Early RB	21	13	2	2	4							25	**67**
10	Romano-British	1168	739	107	122	80	1	6	2	2	25	34	1917	**4203**
11	Early-Middle Saxon	20	15	10	1	1					1		68	**116**
12	Saxo-Norman	9	11	1	2	1	5				2		34	**65**
13	Medieval	38	12	10	27	5	2						106	**200**
14	Post-medieval	17	10	5	101	2					3		80	**218**
15	Modern	16	5	1	4								28	**54**

Table 58: *Animal Bones by Period*

Epiphyseal Fusion Data										
Area	**Cow**	**S/G**	**Pig**	**Hor**	**Dog**	**Cat**	**Red**	**Roe**	**Bird**	**Total**
1	148	7	19	4	8					**186**

2	2	1	5							**8**
3	71	30	6	25	28	1	5			**166**
5	212	76	15	23	9			1		**336**
7	3			31	3					**37**
8	19	3	1	41	2	1				**67**
9										**0**
10	1	1								**2**
11				1						**1**
Total	**456**	**118**	**46**	**125**	**50**	**2**	**5**	**1**	**0**	**803**
Mandibular Tooth Ageing Data										
Area	**Cow**	**S/G**	**Pig**	**Hor**	**Dog**	**Cat**	**Red**	**Roe**	**Bird**	**Total**
1	10	12	1		1					**24**
2										**0**
3	8	28	3	1	4					**44**
5	49	60	9	2	9					**129**
7				1						**1**
8			2	1		2				**5**
9										**0**
10		1								**1**
11										**0**
Total	**67**	**101**	**15**	**5**	**14**	**2**	**0**	**0**	**0**	**204**
Metrical Data										
Area	**Cow**	**S/G**	**Pig**	**Hor**	**Dog**	**Cat**	**Red**	**Roe**	**Bird**	**Total**
1	45	2		2	3					**52**
2			1							**1**
3	18	13	1	7	17	1	4		5	**66**
5	91	45	6	17	12			1	9	**181**
7	3	1		15	3					**22**
8	4	1		21	1					**27**
9										**0**
10										**0**
11										**0**
Total	**161**	**62**	**8**	**62**	**36**	**1**	**4**	**1**	**14**	**349**

Table 59: *Animal Bone Ancillary Data by Area*

Epiphyseal Fusion Data										
Period	**Cow**	**S/G**	**Pig**	**Hor**	**Dog**	**Cat**	**Red**	**Roe**	**Bird**	**Total**
6	87	1								**88**
7	3									**3**
8	57	5	16	3	8					**89**
9	8			1	1					**10**
10	271	106	21	48	36	1	5	1		**489**
11	6	2	7							**15**
12			1		1					**2**
13	14	2		13	3	1				**33**
14	7	1	2	57	2					**69**
15	2			1						**3**
Total	**455**	**117**	**47**	**123**	**51**	**2**	**5**	**1**	**0**	**801**

Mandibular Tooth Ageing Data										
Period	**Cow**	**S/G**	**Pig**	**Hor**	**Dog**	**Cat**	**Red**	**Roe**	**Bird**	**Total**
6	6				1					**7**
7										**0**
8	4	11	1							**16**
9	2	3			1					**6**
10	55	84	12	3	11					**165**
11		1			1					**2**
12						1				**1**
13			2			1				**3**
14		1		2						**3**
15										**0**
Total	**67**	**100**	**15**	**5**	**14**	**2**	**0**	**0**	**0**	**203**
Metrical Data										
Period	**Cow**	**S/G**	**Pig**	**Hor**	**Dog**	**Cat**	**Red**	**Roe**	**Bird**	**Total**
6	21									**21**
7										**0**
8	24			2	3					**29**
9	1			1	2					**4**
10	107	57	7	23	27	1	4	1	14	**241**
11		3								**3**
12				1						**1**
13	2	1		7	3					**13**
14	6	1	1	27	1					**36**
15	1			1						**2**
Total	**162**	**62**	**8**	**62**	**36**	**1**	**4**	**1**	**14**	**350**

Table 60: *Animal bone ancillary data by period*

7.3.2 Period 7: late Bronze Age/early Iron Age

Areas 1 and 10 produced a total of 88 fragments, of which only 27 are identifiable (Table 58). The assemblage will provide very little ancillary data (Table 60) but may provide supplementary information to the data obtained from the Bovis excavation (Maltby 2008, 152-153).

7.3.3 Period 8: early – middle Iron Age

A total of 396 animal bone fragments were recovered, all but 16 from Area 1. Although this is a relatively small sample, the presence of several associated bone groups is of interest regarding disposal. The cattle bones from this area can provide a fair amount of ageing and metrical information and there is a modest sample of sheep/goat mandibles with tooth ageing information (Table 60).

7.3.4 Period 9: late Iron Age/early Romano-British

A total of 67 animal bones were recovered from Areas 3 and 5, all but five coming from the latter area. Although the sample from Area 5 is very small, and will provide only limited ancillary data (Table 60), the possibility of the presence or absence of butchery marks is significant.

7.3.5 Period 10: Romano-British

Five areas produced Romano-British faunal assemblages, providing a substantial sample of 4,203 fragments. However, the samples from Areas 8-9 and 11 are all very small and poorly preserved. The assemblages from Areas 3 and 5 are much more important. The assemblage from Area 3 is of modest proportions (1,090 fragments) but has some unusual characteristics for areas dating to this period. There are a number of bones of large domestic stock, particularly horse. Initial examination suggests that the assemblage provides some evidence of specialist carcass processing but on a much smaller scale than at Area 5.

Area 5 provided a fairly well preserved assemblage of approximately 3,068 fragments. It has produced clear evidence for specialist processing of cattle carcasses and discrete accumulations of waste from these activities. The presence of specialist butchers in Roman Britain appears to be related to the size and nature of the settlement involved (Maltby 2007). There is also a substantial amount of ageing and metrical data available to be recorded from this area (Table 60).

7.3.6 Period 11: early –middle Saxon

Three areas produced a total of 116 fragments including only 48 identifiable elements (Table 58). There is only a modest amount of ancillary data available (Table 60).

7.3.7 Period 12: Saxo-Norman

Faunal material of this date was recovered from Area 8 only. The sample of 65 fragments includes only 34 identifiable elements (Table 58) and minimal ancillary data (Table 60).

7.3.8 Period 13: Medieval

Two hundred animal bone fragments were recovered from three areas, all but 17 from Area 8. Only 94 elements are identifiable (Table 58). The scan produced evidence for the disposal of a cow's hind feet after they were removed from the rest of the carcass and the presence of larger number of horse bones than usually encountered in medieval samples.

7.3.9 Period 14: Post-Medieval

Animal bones were recovered from four areas producing a total of 218 fragments. Most of the bones were found on Areas 7 and 8. Both areas have produced evidence for the disposal of horse bones sometimes forming significant accumulations. Provisional investigation showed no evidence for skinning or other butchery.

7.3.10 Period 15: Modern

Five areas produced small numbers of bone. Some of those from Area 5 are clearly residual from the Romano-British period.

8. CHARRED PLANT REMAINS (JOHN GIORGI)

8.1 Methodology

A total of 417 flots from environmental bulk soil samples were assessed from nine areas (1, 2, 3, 5, 7, 8, 9, 10 and 11), with the number of samples from each area ranging from seven (Area 9) to 113 samples (Area 2); just over 50% of the flots were from Areas 1 (106 samples) and 2 (113 samples). The samples were collected from 15 different feature types, although the vast majority (82% of all flots) were from pit fills (108 samples), ditch/gully fills (100 samples), post-hole/structural cut fills (83 samples) and grave fills (52 samples).

In terms of period representation, samples were collected from the late Neolithic through to the post-medieval/modern period although the majority (77%) of the assigned sampled contexts were from prehistoric (186 flots) and Romano-British features (138 samples). The number of samples by period for all areas is shown in Table 61 and then a breakdown by area in Table 62.

Period number	Period	Nos of samples	% of total
6	Late Neolithic/Early Bronze Age	95	23%
7	Late Bronze Age/Early Iron Age	13	3%
8	Early-middle Iron Age	72	17%
9	Late Iron Age to early Romano-British	13	3%
10	Romano-British	131	31%
11	Early-middle Saxon	8	2%
12	Saxo-Norman	12	3%
13	Medieval	31	7%
14	Post-Medieval	25	6%
15	Modern	1	<1%
20	Unassigned	16	4%

***Table 61**: Number of ecofact samples by period (all areas)*

Period Number	Period	Areas
6	Late Neolithic/Early Bronze Age	1 (14); 2 (81)
7	Late Bronze Age/Early Iron Age	1 (9); 10 (4)
8	Early-middle Iron Age	1 (69); 2 (2); 3 (1)
9	Late Iron Age to early Romano-British	1 (5); 3 (1); 5 (5); 7 (1); 11 (1)
10	Romano-British	1 (2); 3 (36); 5 (56); 7 (8); 8 (3); 9 (6); 10 (4); 11 (16)
11	Early-middle Saxon	1 (3); 2(5)
12	Saxo-Norman	8 (12)
13	Medieval	1(1); 7(1); 8(27); 11(2)
14	Post-Medieval	1(2); 2(17); 7 (1); 8(3); 11(2)
15	Modern	8(1)
20	Unassigned	1(1); 2(8); 5(1); 8(2); 9(1); 10(1); 11(1)

***Table 62:** Ecofact samples by period and area (with number of samples in brackets)*

The Romano-British period was the best sampled period, with samples coming from eight different areas although the majority were from Areas 3 and 5. The Late Neolithic/Early Bronze Age was the next best sampled period although

the samples were only from two areas mainly Area 2. The early-middle Iron Age period was also well sampled, although virtually all the samples were from Area 1. The other periods produced far fewer samples. Sixteen sampled features have yet to be dated.

Soil samples of between one litre and 80 litres were collected from individual features although the majority were between ten and 30 litres in volume. Just over half of the samples were processed in their entirety while soil (volumes ranging from one to 60 litres but mainly ten litres) was retained from 200 samples. Between one and 40 litres of soil was processed from every sample (the norm being ten to 20 litres). Processing was carried out using a 'Siraf' type flotation tank with mesh sizes of 0.25mm and 1mm for the recovery of the flot and residue respectively. Once floated, the 'flots' were dried and bagged and presented to the author for assessment.

The size of the individual flots varied from under 1ml to 320ml although the vast majority were fairly small with only seven samples producing flots greater than 100ml and over 90% of the flots being 30ml or less.

The assessment of the individual flots was carried out using a binocular microscope with a magnification of up to x40. The flots were initially divided into different size fractions using a stack of sieves for ease of scanning the material. Approximate item abundance and species diversity of botanical and any other biological remains was recorded onto paper records using the following rating system:

Item frequency: 1 = 1-10 items; 2 = 11-50 items; 3 = 50+ items
Species diversity: low = 1-4 species; moderate = 5-10 species; high = 10+ species

Notes were made of easily identifiable botanical material and on the general character of the plant assemblage or flot. The information from the flots was then inputted onto a MoLSS database together with processing data. Excel tables were then produced showing sample details (period, phase, Land Use area, group, feature type) and processing details (including the volume of soil processed, any retained and flot size), plus comments on each assemblage (Table 3). The range of biological remains by area is also shown in an excel table (Table 4). A discussion of the assessment results by area is presented below. This discussion is by period, phase, land use area and if appropriate, by group.

8.2 Discussion by area of provenance and phasing

8.2.1 Area 1

8.2.1.1 Plant remains

One hundred and six flots were assessed from Area 1. These were from storage pit fills (27 samples), pit fills (24), ditch/gully fills (21), grave fills (20) and post-hole fills (14 samples). Samples were from features dating from the late Neolithic to post-medieval period although the majority (64%) of the

samples were from Period 8 (early-middle Iron Age), while the earlier Periods 6 and 7 (late Neolithic to early Iron Age) made up another 22% (23 samples) of the flots from Area 1. Later periods contained much fewer samples: Period 9 (five samples), 10 (two samples), 11 (three samples), 13 (one sample), and 14 (two samples). One sample was from an undated feature.

Charred cereal grain was present in 45 of the flots although 35 of these samples only produced occasional grains, with moderate amounts in just five samples and a high frequency (i.e. greater than 50 grains) in one sample. Most of the grains appeared to be wheat (*Triticum* spp.) including hulled cereals, emmer/spelt (*Triticum dicoccum/spelta*), and free-threshing wheat (*Triticum aestivum/turgidum* type), plus barley (*Hordeum* spp.) including hulled barley (*Hordeum vulgare*). A few oat (*Avena* spp.) grains were also noted in several samples. The preservation of the cereal grains was not particularly good. Occasional wheat glume bases were also recorded in four samples testifying to the presence of hulled wheat on the area. Sixteen flots contained very small numbers, and three samples moderate numbers, of charred seeds of weeds/wild plants, including dock (*Rumex* sp.), *Polygonum* species, stinking mayweed (*Anthemis cotula*), vetch/tare/vetchling/pea (*Vicial/Lathyrus/Pisum* spp.), sedges (*Carex* spp.) and grasses, including brome (*Bromus* spp.); some of these seeds may be from arable weeds harvested with the cereals. Species diversity, however, was low.

Variable, albeit mainly small, amounts of very fragmented charcoal was present in virtually all of the samples (98 of the 106 flots) from Area 1, with nine of the sampled features containing a small number of potentially identifiable fragments; these were from seven early-middle Iron Age features - contexts (1443) L111, (1077) L122, (1431) L122, (1899) L110, (1164) L110, (1196) L110, (1207) L124, a Late Iron Age/early Romano-British context (1445), - and from two early-middle Saxon features - contexts (1222) and (1229), both from L114.

Uncharred seeds were present in 103 flots although only in occasional (67 flots) and moderate amounts (34 samples) with only two sampled contexts (1220) G1008 and (1222) G1067, from Periods 13 and 11 respectively, producing more than 50 items. These seeds were from a range of disturbed and waste ground plants (including high-seed producing species) with the most common remains being from goosefoots (*Chenopodium* spp.), oraches (*Atriplex* spp.), various *Polygonum* species – knotgrass (*Polygonum aviculare*), black bindweed (*Fallopia convolvulus*) -, bedstraws (*Galium* spp.) and shrubs/hedgerow plants such as elder (*Sambucus nigra*) and brambles (*Rubus* spp.). Small amounts of fragmented wood were also noted in two samples with occasional stem and straw fragments in another flot. This material, however, is probably intrusive and may have passed through the soil profile by earthworm activity or through root cavities; variable quantities of roots and rootlets were present in virtually all (101) of the flots from Area 1.

8.2.1.1.1 Phase 101 (Period 6 late Neolithic – early Bronze Age)

The assessment results by period at Area 1 show that 14 samples were assessed in Period 6, all from Phase 101, from ditch/gully fills (nine samples) and grave fills (five samples) within L100, L101, L102 and L104. These samples only produced very small flots, consisting mainly of roots and small amounts of very fragmented charcoal. Just two samples, from L100, G1000, and L101, G1032, contained occasional grains.

8.2.1.1.2 Phase 102 (Period 7 late Bronze Age – early Iron Age)

The nine pit fill samples assessed from Period 7 were all from Phase 102, L105; these also produced very few charred plant remains, with small flots consisting mainly of roots plus a little fragmented charcoal and molluscs in several samples. Only one flot contained several charred grains from a pit fill G1115.

8.2.1.1.3 Phase 103 (Period 8 early-middle Iron Age)

The assessed samples from Period 8, all from Phase 103, produced the richest charred plant assemblages from Area 1. The 69 samples were assessed from a range of features, from the fills of pits, storage pits, post-holes, ditches and graves, within a number of land use areas, L106 to L110, L117 and L120 to L125. Flot size was again small (10ml or less), with mainly rootlets and fragmented charcoal, but 21 flots contained charred plant remains consisting mainly of cereal grains. There were occasional grains in 16 samples from L106, L107, L108, L110, L122, L123, L124 and L125; moderate sized assemblages (cereal grains and a few chaff and weed seeds) in four samples from L121, G1092 pit fill (1438), G1018 storage pit fill (1290) and L122, G1020 storage pit fills (1072) and (1431); and a rich cereal assemblage consisting mainly of hulled barley, from a storage pit fill (1077) L122, G1020.

8.2.1.1.4 Phase 104 (Period 9) and Phase 105 (Period 10 Romano-British)

The five ditch, post-hole and pit fills samples from Period 9, Phase 104, L111, and the two samples from Period 10, Phase 105, L112 and L113, produced very small flots, consisting mainly of roots and some burrowing snails with no identifiable charred plant remains. There was, however, identifiable charcoal in pit fill (1445) from Period 9, Phase 104, L111.

8.2.1.1.5 Phase 106 (Period 11 early-middle Saxon)

Three samples were assessed from Period 11, Phase 106, L114, with two post hole fill samples G1067, one containing occasional grains and the other, from post hole fill (1222), producing a moderate number of grains and a large amount of fragmented charcoal.

8.2.1.1.6 Phase 107 (Period 13 Medieval) and Phase 108 (Period 108 post-medieval)

The one ditch fill sample from Period 13, Phase 107, L115, and two post-hole fill samples from Period 14, Phase 108, L116, all contained small flots consisting mainly of roots, uncharred seeds and burrowing molluscs but with no identifiable charred plant remains.

8.2.1.2 Other biological remains

Other biological remains in the flots from Area 1 consisted of small amounts of fragmented large mammal/human bone in three samples, occasional small mammal bone in 11 samples, occasional beetle fragments in 13 samples and a few pupae in one sample. There were variable amounts of terrestrial molluscs in 26 flots although in low quantities in 20 of these samples with a high frequency in just three, from post-hole fill (1390) (Period 14), ditch fill (1489) (Period 10, Phase 105, L112) and pit fill (1133) (Period 7). The majority of these snails, however, are probably intrusive with the burrowing snail *Ceciolioides acicula*, being common in many of these flots. The insect and small mammal bones may also be intrusive although it is possible that some of the other bone (including possible human bone) may be contemporary with the sampled features.

8.2.2 Area 2

8.2.2.1 Plant remains

One hundred and thirteen flots were assessed from Area 2. These were mainly from post-hole fills (52 flots) and pit fills (56 flots). The bulk (73%) of the samples were from features dating to the Late Neolithic/Early Bronze Age period (Period 6), with just two samples from Period 8, five samples from Period 11, and 17 samples from Period 14. Seven flots were from undated features.

There were very few identifiable charred plant remains in the samples from Area 2. Occasional charred cereal grains were present in 21 samples with wheat including hulled grains (emmer (*Triticum dicoccum*) and emmer/spelt), and free-threshing wheat grains, plus hulled barley. Preservation of this material was not particularly good. There were a few charred seeds of weeds/wild plants in just five samples including *Polygonum* species, vetch/tare/vetchling/pea, and sedges; it was interesting to note the possible presence of cultivated flax (cf. *Linum usitatissimum*) in two samples (from contexts (2116), (2307)). Occasional charred hazelnut (*Corylus avellana*) shell fragments were noted in five samples. Variable amounts of very fragmented charcoal were present in virtually all of the samples (109 of the 113 flots), with potentially identifiable fragments in 36 flots.

Uncharred seeds were present in 77 flots although only in occasional (60 flots) and moderate amounts (15 samples), with only two flots producing more than 50 items. These seeds were from a similar range of disturbed and waste ground plants (including high-seed producing species) to those from Area 1, with the most common remains again being from goosefoots, oraches, knotgrass, black bindweed, bedstraws, brambles, plus chickweeds (*Stellaria media*), poppy (*Papaver* spp.), fool's parsley (*Aethusa cynapium*) and medick/trefoil (*Medicago/Trifoilum* spp.). There were also uncharred stems/straw fragments in five samples, with large amounts in the sampled context (2126). It is likely, however, that these remains are intrusive, passing through the soil profile by earthworm activity or through root cavities; variable quantities of roots and rootlets were present in virtually all (112) the flots from Area 2.

8.2.2.1.1 Phase 201 (Period 6 late Neolithic – early Bronze Age)

The assessment results by period at Area 2 show that 82 samples were assessed in Period 6, Phase 201, with samples from L200 (ten samples), L201 (13 samples), L202 (25 samples), L203 (11 samples), L213 (two samples) and L214 (20 samples); all these samples were from pits and post hole fills. Fourteen of the flots from these samples contained occasional charred cereal grains in post-hole and pit fill samples from L202 (G2031, G2034, G2037, G2030, G2032,) L203 (G2041, G2042) and L214 (G2021). A few charred hazelnut shells were also noted in three samples from L201 (G2014 and G2015), L202 (G2036) and L203 (G2017). Possible charred flax seeds were noted in a pit fill (G2021) (L214). The majority of the flots from Period 6, however, consisted of only small amounts of fragmented charcoal and roots, with occasional intrusive uncharred seeds.

8.2.2.1.2 Phase 202 (Period 8 early-middle Iron Age

One of the two pit fill samples assessed from Period 8, Phase 202, L211, contained a few charred grains, weed/wild plant seeds and hazelnut shell (G2049).

8.2.2.1.3 Phase 203 (Period 11 early – middle Saxon)

All five pit and post-hole fills assessed from Period 11, Phase 203, L205 produced occasional charred grains (G2002 and G2003).

8.2.2.1.4 Phase 204 (Period 14 Post-Medieval)

Seventeen samples were assessed from Period 14, Phase 204, L216, from post hole and pit fills although none contained identifiable charred plant material with only rootlets and fragmented charcoal being present in these flots. Seven samples were assessed from undated features with several charred grains and seeds being noted in G2005.

8.2.2.2 Other biological remains

There were few other environmental remains in the flots from Area 2 except for occasional beetle fragments in five samples and a few terrestrial molluscs in 36 flots; many of these snails were the burrowing species, *Ceciolioides acicula*, suggesting that this material may be intrusive.

8.2.3 Area 3

8.2.3.1 Plant remains

Thirty-eight flots were assessed from Area 3. These were mainly from grave fills (24 flots) plus seven ditch fill samples, four pit fill samples and three hearth samples. Virtually all the samples were from features dating to the Romano-British period with just single samples from the early-middle Iron Age (Period 8) and the Late Iron Age/early Romano-British period (Period 9). Most of the flots were small, with 25 flots being 5ml or less, and only two samples producing flots greater than 30ml (sample 3015 with 140 ml and sample 3016 with 60ml).

Identifiable charred plant remains were present in 15 samples from Area 3, with charred cereal grains in 12 samples, although only in moderate to large amounts in five of these flots. The cereals included wheat, with hulled grains (emmer, emmer/spelt), and possibly free-threshing wheat grains, plus hulled barley. Small to moderate amounts of charred cereal chaff fragments of hulled wheat, including possibly spelt, were noted in four samples. Charred wild plant/weed seeds were present in seven samples with four of these flots containing moderate to large amounts of charred seeds. The weeds/wild plants included large numbers of leguminous seeds (vetch/tare/vetchling/pea), grasses, including brome and rye-grass/fescue (*Lolium/Festuca* spp.), docks, including sheep's sorrel (*Rumex acetosella*), corn cockle (*Agrostemma githago*), wild radish (*Raphanus raphanistrum*), buttercups (*Ranunculus* spp.), and possible flax seeds in one sample. There were possible occasional charred grass/cereal stem fragments in three flots. Variable amounts of very fragmented charcoal were present in all of the samples but in generally low amounts with six samples containing potentially identifiable fragments (in samples 3003, 3006, 3012, 3015, 3016, 3024).

Uncharred seeds were present in 36 flots although only in occasional (22 flots) and moderate amounts (14 samples). These seeds were mainly from disturbed and waste ground plants (including high-seed producing species), with the most common remains being from goosefoots and oraches, and the aquatic plant stoneworts (*Chara* spp.). Variable quantities of roots and rootlets were present in all the flots suggesting intrusive activity at the area.

8.2.3.1.1 Phase 302 (Period 8 early-middle Iron Age)

The assessment results by period at Area 3 show that the one pit fill sample (G3046) assessed from Period 8, Phase 302, L300, produced just a few charred grains plus possible identifiable charcoal (and molluscs).

8.2.3.1.2 Phase 303 (Period 9 late Iron Age to early Romano-British)

A single pit fill sample (G3002) from Period 9, Phase 303, L302, also contained a small number of charred cereal grains together with some molluscs and fragmented charcoal.

8.2.3.1.3 Phase 304 and 305 (Period 10 Romano-British)

The remaining assessed flots were all from Period 10, from two phases, Phase 304 (five samples), and 305 (31 samples); these were mainly from grave fills (24 samples) with the other flots being from seven ditch/gully fills, three hearth deposits and two pit fills. Thirteen of the 36 samples from Period 10 contained varying amounts of identifiable charred plant remains although most of the grave fill samples consisted mainly of roots and molluscs.

From Phase 304, occasional grains were noted in two ditch fill samples (L303, G3010, and L304, G3014) and a pit fill sample (L308, G3019), while a few charred weed seeds (and a few potentially identifiable charcoal fragments) were present in another pit fill sample from L314, G3016.

The results by land use area from Phase 305 were as follows;

- **L305**- occasional grains were noted in a ditch fill sample (G3008)
- **L306**- a few grains were present in one grave fill (G3034) and a few charred weeds seeds in another grave fill (G3033)
- **L309**- one ditch fill sample (G3015) from L309 also produced occasional charred weed seeds
- **L312**- a ditch fill (G3035) sample produced a moderate sized charred plant assemblage with grains, chaff and weed seeds while a grave fill (G3027) from the same area contained a few charred weed seeds and identifiable charcoal fragments
- **L310**-. the bulk of the charred plant remains from Area 3 were from deposits (G3038) from Kiln 3038. These three samples (3006, 3015, 3016) produced rich charred plant remains with large numbers of charred cereal grains and wild plant/weed seeds, moderate numbers of chaff fragments and a few charred stem fragments as well as potentially identifiable charcoal.

Other assessed flots from this phase, mainly from grave fills (11 samples from L315), and from a ditch fill (L311), produced no identifiable charred plant remains.

8.2.3.2 Other biological remains

Other environmental remains in the flots from Area 3 consisted of small amounts of very fragmented bone in nine samples, some of which may be human remains, and a few small mammal bones in three samples. Land molluscs were noted in all the flots with occasional snails in ten samples, moderate amounts in another ten flots and rich mollusc assemblages (more than 50 items) in another 18 samples; the presence of the burrowing species, *Ceciolioides acicula*, in virtually all these assemblages, could suggest, however, that some of this material is intrusive, given also the recovery of roots in all the flots.

8.2.4 Area 5

8.2.4.1 Plant remains

Sixty-two flots were assessed from Area 5. These were from a range of features, with ditch/gully fills (26 samples), pit fills (13 samples) and cesspit fills (eight samples), being the best sampled deposits. Smaller numbers of samples were taken from the other features, such as hearths (five samples), post-hole/structural cut fills (four samples) and well fills (two samples). Just over 90% of the samples were from Romano-British contexts (Period 10), with five samples from the preceding period (Late Iron Age/early Romano-British, Period 9) and from one feature yet to be dated. The flots were not particularly large, with 58 of the 62 flots being 30ml or less and the other four being up to 140ml.

Identifiable charred plant remains were present in a large number of the assessed flots, with 47 samples producing either grain or chaff or weed seeds or a mixture of all three. Charred grain was noted in 45 flots with occasional

cereals in 24, moderate grain numbers in 16, and rich grain assemblages in five samples. The cereals consisted mainly of wheat, particularly hulled grains (emmer, emmer/spelt), and possibly free-threshing wheat grains, hulled barley and oat. A few charred chaff fragments of hulled wheat including spelt, were noted in 12 samples with a moderate amount of chaff in one flot. A few charred wild plant/weed seeds were present in 29 samples with moderate numbers in three samples and large numbers in three flots. The weeds/wild plants included very large numbers of leguminous seeds (vetch/tare/vetchling/pea) and grasses including brome and rye-grass/fescue, with smaller numbers of seeds of docks, scentless mayweed (*Tripleurospermum inodorum*), *Polygonum* species, including black bindweed, and spike-rush (*Eleocharis* spp.). Variable amounts of very fragmented charcoal were present in 60 of the 62 samples but in generally low amounts, with 22 flots containing potentially identifiable fragments.

Occasional uncharred seeds were present in 30 flots, mainly from disturbed and waste ground plants (including high-seed producing species), with the most common remains again being from goosefoots and oraches, plus a few seeds of fool's parsley, elder, thistles (*Carduus/Cirsium* spp.) and chickweeds. There were several twig fragments in two flots. Variable quantities of roots and rootlets were recovered from 53 samples, suggesting intrusive activity at the area.

8.2.4.1.1 Phase 502 (Period 9 late Iron Age – early Romano-British)

Five samples were assessed from Period 9, Phase 502, with three of the flots producing charred plant remains; from L515, a small charred plant assemblage was present in a pit fill (G5035), while from L518 two ditch fill samples produced material with occasional grains from G5137; and a moderate number of grains and a few chaff and weed seeds in a sample from G5005.

8.2.4.1.2 Phase 503, 504, 505, 506 and 507 (Period 10 Romano-British)

Fifty six samples were assessed from Period 10, from features dated to five phases (Phase 503 to 507) within this period. Twelve samples were assessed from Phase 503, from L501, L502, L504 and L505, with nine producing occasional to moderate amounts of charred grains and weed seeds; from L502 (G5004, G5008, G5016) (four samples), L504 (G5145) (three samples), and L505 (G5049 and G5189) (two samples). Identifiable charcoal was present in samples from L502 (G5002) and L505 (G5189).

Twenty samples were assessed from Phase 504, from L506, L507, L509, L510, L512 and L519. Two ditch fill samples (G5138, 5139) from L506, and four samples from cesspit fills (G5029) and ditch fills (G5012) from L507, produced moderate sized charred plant assemblages (with grains, weeds and a little chaff) and identifiable charcoal in flots from both Land Use areas. Seven of nine samples (pit, cesspit and ditch fills) from L510 contained charred plant remains with occasional grains, chaff and weed seeds in G5038 and G5014, moderate numbers of grains in G5124, and a rich assemblage (with over 100 grains and weed seeds) from a pit fill sample (G5200). Identifiable charcoal was present in three of these groups. Moderate grain numbers, a few chaff

fragments and identifiable charcoal were present in a pit fill sample (G5115) from L512. A sample from an external dump (G5095) within L519 produced an extremely rich grain deposit, with thousands of charred hulled wheat grains, large numbers of leguminous seeds and occasional chaff fragments as well as identifiable charcoal. A few grains and identifiable charcoal were also identified in the other two assessed post-hole (G5196) and pit fill (G5166) samples from this Land Use area.

Eighteen samples were assessed from Phase 505 from seven land use areas - L508, L514, L517, L520, L522, L524 and L535. Fifteen of these flots produced varying amounts of charred plant remains; from L514, moderate grain and weed seed assemblages in three pit and ditch fill samples from G5103, G5155 and G5118 (with identifiable charcoal in G5103); from L517 a rich grain and weed seed assemblage (especially leguminous seeds) with occasional chaff fragments and identifiable charcoal from a make up deposit (G5059), and a few grain and identifiable charcoal fragments in two well deposits (G5044) from the same Land Use area; from L520, a few grains and weeds seeds from a ditch fill (G5021) sample; moderate amounts of grains and weed seeds and identifiable charcoal in three flots from L522 (G5206, G5142, G5149); small numbers of grains and weed seeds and identifiable charcoal in a ditch (G5018) and pit fill (G5123) samples from L524; and in L535, three rich ditch fill samples with charred grains, weed seeds, occasional chaff fragments and identifiable charcoal from G5019, with a few grains and weed seeds from G5126 within the same Land Use area.

Five hearth samples were assessed from Phase 506, from L516 (G5134) and L537 (G5164), with only occasional weed seeds in one sample from each area and identifiable charcoal in a sample from G5164. From Phase 507, one sample from L531 only produced identifiable charcoal.

8.2.4.1.3 Undated sample

One sample from an undated context (Period 20) from ditch fill (5397) (G50) produced a few charred grains and weed seeds.

8.2.4.2 Other biological remains

Other environmental material in the flots from Area 5 consisted of occasional small mammal bone fragments in five samples and terrestrial molluscs in 22 samples although with only moderately rich assemblages in seven of these flots. A few beetle fragments were present in three samples. It is probable that the beetles and possibly some of the molluscs are intrusive, given the presence of the burrowing species, *Ceciolioides acicula*, in most of the snail assemblages and the presence of roots in most of the flots.

8.2.5 Area 7

8.2.5.1 Plant remains

Twelve samples were assessed for charred plant remains from Area 7, with seven of the samples coming from grave fills, three from ditch/gully fills, one from a pit fill and one from an unknown feature. Eight of the 12 samples were

from the Romano-British period (Period 10), while single samples were assessed from Periods 9 (Late Iron Age/early Romano-British), 13 (Medieval), 14 (post-medieval) and 20 (undated). The flots were small, with ten samples producing 10ml or less, while the other two flots were just 15ml and 35 ml. The main component of most of the flots was roots and rootlets.

Identifiable charred plant remains were present in just three samples, with very occasional grains in three flots including possible free-threshing wheat, and a few indeterminate charred seeds in one of these flots. Very fragmented wood charcoal was present in 11 of the 12 samples although none of this material was of a sufficient size for identification purposes. There were a few 'waterlogged' seeds in two samples with occasional uncharred leaf and stem/straw fragments in several flots. Roots and rootlets were present in all the flots suggesting that the other 'waterlogged' material was intrusive.

8.2.5.1.1 Phase 703 (Period 9 late Iron Age-early Romano-British)

The one assessed pit fill sample (G7025) from Period 9, Phase 703, L715, produced a few charred grains and a few charred weed seeds.

8.2.5.1.2 Phase 704 (Period 10 Romano-British)

Of the eight assessed flots from Period 10, Phase 704, L701, a ditch fill sample (G7000) contained one or two charred grains, while the remaining seven grave fill samples from L718, G7031, consisted virtually entirely of roots.

8.2.5.1.3 Phase 705 (Period 13 Medieval) and phase 707 (Period 14 post-medieval)

The Medieval (Period 13, Phase 705) assessed ditch fill sample from L703, produced a few charred cereal grains, including possible free-threshing wheat, while the post-medieval (Period 14, Phase 707, L702) assessed ditch fill sample (G7001) sample consisted mainly of roots with no identifiable charred plant remains.

8.2.5.1.4 Undated sample

The undated sample (Phase 701, L717) produced mainly fragmented charcoal.

8.2.5.2 Other biological remains

Other biological material in the samples from Area 7 included occasional human bone fragments in three samples, and a few terrestrial molluscs in one flot including burrowing species; this material may be intrusive.

8.2.6 Area 8

8.2.6.1 Plant remains

Forty-eight flots were assessed from Area 8. These were from a range of features, particularly from ditch/gully fills (28 samples), with smaller numbers from pits (four samples) and cesspit fills (four samples), post-hole/structural cut fills (three samples), pond fills (two samples), tree-root disturbance (two samples) and single samples from the fills of a post pipe, a wheel rut, a furnace, a grave and a hearth. The best sampled periods were Period 12 (Saxo-Norman) with 12 samples, and Period 13 (Medieval) with 27 samples. Three

samples each were assessed from the Romano-British (Period 10) and post-medieval (Period 14) deposits. There was one sample from the modern period (15) and one from an undated feature (Period 20). The size of the flots ranged from 1ml to 320 ml, although most were fairly small, with 32 flots being 30ml or less; 12 flots were between 30 and 100ml while only four flots were larger than 100ml.

Identifiable charred plant remains were well represented at this area, with 38 of the 48 samples producing either grain or chaff or weed seeds or a mixture of all three. Small charred botanical assemblages were present in nine samples, moderate amounts in another nine flots and large quantities in 20 flots. Charred cereal was noted in 36 flots, with occasional grains in eight flots, moderate numbers in nine samples and rich grain assemblages in 19 flots. The cereals consisted mainly of free-threshing wheat grains with smaller numbers of barley, rye (*Secale cereale*) and oat. A few wheat and barley rachis fragments were noted in five samples with a moderate amount of chaff in one sample. Charred wild plant/weed seeds were present in 30 samples, with occasional seeds in seven samples, moderate numbers in 13 samples and rich seed assemblages in another ten flots. There was a wide range and high species diversity of wild plants/weeds and some potential cultivars represented by these seeds, particularly legumes (vetch/tare/vetchling/pea) including the cultivated species, broad/horse bean (*Vicia faba*), grasses, including brome, and stinking mayweed, with smaller numbers of seeds of docks, bedstraw, corn cockle, ribwort (*Plantago lanceolata*), and knapweed/cornflower (*Centaurea* spp.). Charred stems, possibly from grasses/cereals, were noted in six samples, with occasional fragments in four samples and moderate amounts in two flots. Variable amounts of very fragmented charcoal were present in 44 of the 48 samples, with potentially identifiable fragments in 21 flots incluidng very large fragments in samples 8020 and 8031.

'Waterlogged' plant material was present in a large number of samples with occasional seeds in 21 samples and moderate amounts in another 20 flots, with most of this material being from goosefoots and oraches. There were also occasional waterlogged stem and straw fragments in three samples. This material is probably intrusive given the presence of roots/rootlets in virtually all the samples.

There were, however, a very large amount of 'waterlogged' seeds in sample 8021 with high species diversity, including many hedgerow/shrub species, eg. sloe/blackthorn (*Prunus spinosa*), hawthorn (*Crateagus monogyna*), elder, brambles, plus disturbed/waste ground plants for example nettles (*Urtica* spp.), black nightshade (*Solanum nigrum*), thistles (*Carduus/Cirsium* spp.), buttercups, and wetland species, eg crowfoots (*Ranunculus Batrachium* gp) and hemlock (*Conium maculatum*). This sample also included very large amounts of twigs and small branches, bud and moss fragments. This material was from a post-medieval pond fill and may be contemporary with the sampled feature with the wet conditions allowing the survival of these plant remains.

8.2.6.1.1 Phase 801 (Period 10 Romano-British)

Three ditch and grave fill samples were assessed from Period 10, Phase 801, L800 and L801 with occasional charred grains and weed seeds being found in two samples (G8013 and G8078) and identifiable charcoal being present in the grave fill.

8.2.6.1.2 Phase 802 and 803 (Period 12 Saxo-Norman)

Twelve ditch fill samples were assessed from the Saxo-Norman period (Period 12), with eleven flots producing charred plant remains (grains, chaff, pulses, weed seeds) including a number of rich assemblages. Five samples were examined from Phase 802, three of which contained material; from L802, G8033, sample 8047 contained hundreds of grains (mainly free-threshing wheat), moderate numbers of weeds seeds, occasional chaff fragments and identifiable charcoal; another sample from the same area contained a few charred grains. From L803, G8041, one sample contained a moderate number of grains, occasional weed seeds and identifiable charcoal.

The other seven Saxo-Norman samples were from Phase 803; four samples from L805 (G8086, G8088, G8091, G8094) produced very rich charred plant assemblages with large numbers of poorly preserved grain (mainly free-threshing wheat) and weed seeds and with large numbers of pulses in G8086. Two rich grain and weed seed assemblages (with mainly free-threshing wheat) and identifiable charcoal, were also present in two samples from L806, G8096, and L807, G8075, while occasional grains were noted in a sample from L808, G8036.

8.2.6.1.3 Phase 804 and 805 (Period 13 Medieval)

Twenty seven samples were assessed from medieval features (Period 13) with 22 flots examined from Phase 804, mainly from ditch and pit fills including cesspits. Twelve of these samples were from L810, 11 of which contained mostly rich charred plant assemblages with mainly grain (free-threshing wheat), weed seeds and occasional chaff and stem fragments and identifiable charcoal in many of the samples. Cess pit fill (8451) (G8101) produced thousands of grains, while hundreds of grains were noted in samples from G8095, G8098, G8101 and G8108, and moderate numbers in other samples from G8055, G8101, G8106, G8107 and G8109. Three ditch and cess pit fill samples were assessed from L811, with occasional charred grains and weed seeds in two of the samples (G8063 and G8067), and a very rich charred plant assemblage in cess pit fill (8464) (G8100) containing thousands of free-threshing wheat grains, large numbers of weed seeds, pulses, stem fragments and identifiable charcoal. Three ditch fill samples from L813, G8030, and L814, G8022, also produced rich charred grain and weed seed assemblages with identifiable charcoal, while a large number of pulses and occasional chaff fragments were also noted in the samples from L814. Three flots from L815, G8006 and G8019, and L819, G8061, contained occasional to moderate numbers of charred grains and weed seeds, with identifiable charcoal in L815.

The other five samples from the medieval period were from Phase 805, L829, with hearth and pit fill samples (G8066 and G8126) containing moderately

rich grain assemblages with some weed seeds and occasional chaff fragments, while from Phase 806, L809, one of three ditch fills produced a few grains and identifiable charcoal.

8.2.6.1.4 Phase 807 (Period 14 Post-Medieval)

Three samples were assessed from post-medieval (Period 14) features from Phase 807, with a pond fill sample (G8020) within L820, containing a very rich 'waterlogged' plant assemblage; this had a high percentage of shrub/hedgerow species, disturbed/waste ground and wetland plants, represented by fruits, seeds, buds and thorn fragments and twigs and small branches. This assemblage may be contemporary with the sampled feature.

8.2.6.1.5 Phase 810 (Period 15 Modern)

A modern (Period 15) ditch fill sample (Phase 810, L828, G8111) produced moderate numbers of charred grain and identifiable charcoal, while one of two samples from undated features (Period 20) contained over 100 grains and moderate numbers of weed seeds and identifiable charcoal with a few grains in the other sample.

8.2.6.2 Other biological remains

Other biological material in the flots from Area 8 consisted of occasional small mammal bone fragments in two samples, a few terrestrial molluscs in 11 samples, including the burrowing species *Ceciolioides acicula,* occasional insect (beetle) remains in five samples and a few ephippia in one flot. It is probable that the beetles and possibly some of the molluscs are intrusive given the presence of roots in most of the flots. The exception, however, are the beetle and ephippia remains from the post-medieval pond fill which may be contemporary with the sampled feature.

8.2.7 Area 9

8.2.7.1 Plant remains

Seven samples were assessed for charred plant remains from Area 9, from two pit fills and two post-holes/structural cut fills, a ditch fill, furnace fill and post pipe fill. Six of the samples were from the Romano-British period (Period 10) while one sample was from an undated context (Period 20). Most of the flots were small, 30ml or less, consisting mainly of roots, with only one sample 9006 being larger at 145ml and containing mostly fragmented charcoal.

Identifiable charred plant remains were present in just three samples, with occasional grains in three flots, a few rachis fragments in one sample and a moderate number of charred seeds, possibly of flax, in another flot. Fragmented wood charcoal was present in six of the seven flots albeit in small amounts with the exception of identifiable fragments in sample 9006. There were occasional 'waterlogged' seeds in five samples, mainly from goosefoots, with frequent roots and rootlets present in all the flots suggesting that the other 'waterlogged' material was probably intrusive.

8.2.7.1.1 Phase 902 (Period 10 Romano-British)

Only two of the six samples assessed from Period 10, all from Phase 902, contained identifiable charred plant remains, with a post-hole fill (G9004) from L902 producing occasional charred grains and identifiable charcoal and a pit fill sample from L905, G9015, also containing a few charred grains.

8.2.7.1.2 Undated sample

The undated pit fill sample from Period 20, G9017, produced a moderate number of possible charred flax seeds and occasional grain and chaff fragments.

8.2.7.2 Other biological remains

Other environmental material in the samples from Area 9 consisted of just a few terrestrial molluscs in three flots.

8.2.8 Area 10

8.2.8.1 Plant remains

Nine flots were assessed for charred plant remains from Area 10 from post-hole/structural cut fills and pit fills, four samples each from Late Bronze Age/Early Iron Age features (Period 7) and Romano-British deposits (Period 10), and one sample from an undated context (Period 20). Individual flot size was small, ranging from 1ml to 45ml.

Identifiable charred plant remains were present in six of the samples with occasional grains in three flots and moderate numbers in two samples, including hulled (emmer/spelt) and free-threshing wheat grains and barley. Small amounts of charred wheat glume bases (with possible spelt) were present in four samples with a larger amount in another sample. A few charred wild plant/weed seeds were noted in six flots, from leguminous plants, grasses and scentless mayweed. Fragmented wood charcoal was present in all of the flots with possible identifiable fragments in one sample. There were occasional 'waterlogged' seeds in seven samples, mainly from disturbed and waste ground species, eg. goosefoots, oraches, chickweeds, brambles, bedstraw, violets, and rushes (*Juncus* spp.), with roots and rootlets present in all the flots from Area 10; the 'waterlogged' plant remains are probably intrusive.

8.2.8.1.1 Phase 1002 (Period 7 late Bronze Age-early Iron Age)

Four pit and post-hole fill samples were assessed from Period 7, Phase 1002, from L1001, L1003 and L1006; most of these samples, however, contained only roots with just one flot from a post-hole fill sample (G10018) from L1003, producing a few charred weed seeds.

8.2.8.1.2 Phase 1003 (Period 10 Romano-British)

All four assessed samples from Period 10, Phase 1003, L1002, contained identifiable charred plant remains although only consisting of small assemblages of grain, chaff and weed seeds from G10004, G10007 and G10009.

8.2.8.1.3 Undated sample

An undated post-hole fill sample (G10023) from Period 20, contained very occasional grains, chaff and weed seeds and potentially identifiable charcoal.

8.2.8.2 Other biological remains

Other environmental material in the samples from Area 10 consisted of a few beetle fragments in three samples and occasional land snails in one flot; this material is probably intrusive.

8.2.9 Area 11

8.2.9.1 Plant remains

Twenty two samples were assessed for charred plant remains from Area 11, with samples taken from 13 ditch fills, four post-hole fills, three pit fills and two furnaces. Most of the samples were from Period 10, the Romano-British period (16 samples), with two samples each from Periods 13 (Medieval) and 14 (post-medieval) and one sample from the Late Iron Age/early Romano-British period (Period 9). One flot was from an undated feature (Period 20). Nineteen of the flots were very small (5ml or less), consisting mainly of roots and rootlets with one 10ml flot and two larger flots of 85ml and 90ml.
Only six of the 22 samples contained identifiable charred plant remains, consisting of a few poorly preserved, fragmentary and probably mostly unidentifiable grains in five flots, and a few charred weed seeds in two samples. Very fragmented wood charcoal was present in 17 flots, with possible identifiable fragments in one sample. There were a few 'waterlogged' seeds in nine samples, moderate amounts in two flots and large numbers in three samples, although this material consisted mainly of seeds of rushes with occasional seeds of chickweeds and oraches. There were also a few uncharred wood, leaf and stem/straw fragments in several flots while roots and rootlets were present in twenty of the flots; these 'waterlogged' plant remains are probably intrusive.

There were no identifiable charred plant remains in any of the assessed samples from Periods 9, 13 and 20, with the flots consisting mainly of roots and rootlets.

8.2.9.1.1 Phase 1103 and 1104 (Period 10 Romano-British)

Four of the 16 ditch, post-hole and pit fill samples from Period 10 contained identifiable material; from Phase 1103, there were occasional grains in a ditch fill (L1109, G11010) and post- hole fill (L1104, G11025), while another ditch fill (L1106, G11009) sample contained a few charred seeds. There were identifiable charcoal fragments from a post-hole fill (L1115, G11048). From Phase 1104, one sample from L1102, G11052, produced occasional charred grains and weed seeds. The other flots from Period 10 consisted mainly of roots and rootlets, with several also producing some fragmented charcoal.

8.2.9.1.2 Phase 1106 (Period 14 post-medieval)

In Period 14, Phase 1106, two assessed samples, from ditch (L1100, G11000) and post hole fills (L1122, G11024), contained a few charred seeds and grain respectively.

8.2.9.2 Other biological remains

There were fairly large amounts of small mammal bone fragments in two flots and occasional beetle fragments in another nine samples.

8.3 Summary by Chronological Period

8.3.1 Period 6: late Neolithic/early Bronze Age

Ninety-five samples were assessed from this period, from Areas 1 (14 samples) and 2 (81 samples). The quantity and quality of the charred plant remains from the Late Neolithic/Early Bronze Age, however, was poor. Only 21 flots produced identifiable charred plant remains; two samples from Area 1, Phase 101, from a grave (L101, G1032) and ditch fill (L100, G1000), produced occasional grains, while 19 samples from Area 2, Phase 201, contained a few remains from post-hole and pit fill samples – occasional charred grain in 14 flots from L202, L203 and L214, a few charred hazelnut shell fragments from four samples within L201, L202 and L203, and a few possible flax seeds in a sample from L214.

Twenty six samples from Period 6, Area 2 produced a few charcoal fragments potentially large enough for identification; these were all from Phase 201, from pit fills (2106), (2028), (2076), (2067), (2065), (2144), (2159), (2160), (2169), (2228), (2305), (2338), (2346), (2347), and post-hole fills (2069), (2109), (2110), (2117), (2194), (2196), (2279), (2281), (2340), (2335), (2343), (2353).

Soil was retained from four of the productive samples and thus it is recommended that the remaining soil should be processed for the potential recovery of further material; the samples in question are as follows; sample 1013 (Area 1, L100, G1000); sample 2096 (Area 2, L203, G2041); sample 2011 (Area 2, L203, G2017); and sample 2032 (Area 2, L214, G2021). The quantity of remaining soil was 10 litres with the exception of sample 2096 (30 litres).

8.3.2 Period 7: late Bronze Age/early Iron Age

Thirteen samples were assessed from this period from Areas 1 (nine samples) and 10 (four samples); very few plant remains were found in these flots consisting mainly of roots and occasionally very fragmented charcoal. Only two samples produced identifiable charred plant remains, with several charred grains in a pit fill sample (G1115) from Area 1, Phase 1102, L105, and a post-hole fill sample (G10018) from Area 10, Phase 1002, L1003. No soil remained from either of these two samples.

8.3.3 Period 8: early-middle Iron Age

Seventy-two samples were assessed from this period from three areas; 1 (69 samples), 2 (two samples) and 3 (one sample).

Twenty-three of the 72 samples produced identifiable charred plant remains with the bulk of the material being in 21 flots from Area 1, Phase 103,

particularly from storage pit fills within L122. From Area 1, there were occasional grains in 16 samples from L106, L107, L108, L110, L122, L123, L124 and L125, moderate numbers of grains (plus a few chaff and weed seeds) in four samples from storage pit fills within L121 and L122, while there was a rich charred cereal assemblage in one storage pit fill sample, also within L122. One pit fill sample from Area 2 (Phase 202, L211) and one from Area 3 (Phase 302, L300), contained a few charred cereal grains, weeds and hazelnut shell fragments.

Potentially identifiable charcoal fragments were also present in eight samples from Period 8, in Area 1 from storage pit fills (1077), (1431), (1207) (all L103), pit fills (1196), (1899) (L110), grave fill (1164) (L110), and from Area 3, pit fill (3039) (L300).

Soil remained from 13 of the productive samples, mainly from the storage pit fills from Area 1, with ten litre samples from samples 1068, 1083, (L121), samples 1010, 1012, 1001, 1004, 1079 (L122), samples 1054, 1094 (L124), and samples 1064 and 1100 (L125). From Area 2, 30 litres remained from pit fill sample 2030 (L211) and from Area 3, 20 litres from pit fill sample 3024 (L300).

8.3.4 Period 9: late Iron Age to early Romano-British

Thirteen samples were assessed from this period from five areas; 1 (five samples), 3 (one sample), 5 (five samples), 7 (one sample), and 11 (one sample). Five samples from Areas 3, 5 and 7, contained identifiable charred plant remains although the quantities of material were low, with mainly charred grain and occasional chaff and weed seeds; from the one pit fill sample from Area 3 (Phase 303, L302); from three pit and ditch fill samples from Area 5, Phase 502, L515 and L518; and from a pit fill sample from Area 7, Phase 703, L715. Identifiable charcoal was present in a pit fill (1445) from Area 1, Phase 104, L111. Soil (10 litre samples) has been retained from all five of these productive samples

8.3.5 Period 10: Romano-British

One hundred and thirty one samples were assessed from this period, from eight areas; 1 (two samples), 3 (36 samples), 5 (56 samples), 7 (eight samples), 8 (three samples), 9 (six samples), 10 (four samples), and 11 (16 samples). Seventy of the Romano-British areas produced identifiable charred plant remains with occasional grains and weed seeds in 37 samples, moderate sized assemblages in 24 flots and rich botanical assemblages in nine samples; the material consisted mainly of cereal grains and weed seeds with some chaff, pulses and stem fragments.

Charred plant remains were recovered from Romano-British features at seven of the eight sampled areas with the two samples from Area 1 producing no identifiable remains. Most of the charred plant remains, however, were from Area 5, with 44 of the 70 productive samples including most of the moderate sized (23 samples) and rich (six of the nine) charred plant assemblages from this period. Thirteen of the samples from Area 3 contained material including

three rich assemblages while the productive samples from the other Areas, 7 (one productive sample), 8 (two productive samples), 9 (two productive samples), 10 (four productive samples), and 11 (four productive samples), consisted of only occasional charred grains and weed seeds.

The 37 samples producing occasional charred grains and weed seeds were from the following areas, phases and Land Use areas: Area 3 (Phase 304, L303, L304, L308, L314 and Phase 305, L305, L306, L309, L312); Area 5 (Phase 504, L510, L519, Phase 505, L517, L520, L524, L535, and Phase 506, L516, L537); Area 7 (Phase 704, L701); Area 8 (Phase 801, L800), Area 9 (Phase 902, L902, L905); Area 10 (Phase 1003, L1002); and Area 11 (Phase 1103, L1109, L1104, L1106 and Phase 1104, L1102). The 24 moderately sized charred plant assemblages were virtually all from Area 5, Phase 503 (L501, L502, L504, L505), Phase 504 (L506, L507, L510, L512), and Phase 505 (L514, L522). The only other moderately sized sample was from Area 3, Phase 305, L312.

Three of the rich charred plant assemblages were from Area 3, Phase 305 all from hearth deposits within L310, with the other six rich samples being from Area 5, Phase 504 (L510, L519) and Phase 505 (L517, L535).

Potentially identifiable charcoal fragments were present in 26 samples, mainly from Area 5, from ditch fill (5230), pit fill (6411) (both L502), post-hole fill (6531) (L504), ditch fills (6206) (L505), (5215), (5298) (both L506), cesspit fills (5497), (6881) and ditch fill (5277) (L507), cesspit fills (5834), (6134), pit fill (5786) (all L510), pit fill (5927) (L512), external dump (5122) and pit fill (5255) (both L519), pit fill (5911) (L514), make-up (5121) and well fill (5072) (both L517), cess pit fill (5844) (L522), ditch fill (5921) (L524), ditch fills (5928), (5926) (both L535), hearth fill (6387) (L537), and layer (5741) (L531). One sample from grave fill (8011) (L800) on Area 8, and one from a post-hole fill (9059) (L902), also contained identifiable charcoal fragments.

Soil remained from 50 of the 70 productive samples, with quantities mainly of 10 litres but in some cases 20, 30 and 60 litre samples. Soil has been retained from 32 productive samples which contained occasional charred plant remains, from Areas 3 (sample numbers 3030, 3032, 3029, 3033) Area 5 (samples 5014, 5043, 5022, 5030, 5013, 5042, 5059, 5066, 5044, 5025, 5011, 5032, 5031, 5051, 5020, 5037, 5029, 5003, 5060, 5049, 5050, 5053, 5064, 5019), Area 7 (sample 7024), Area 8 (sample 8004), and Area 10 (samples 10002, 10018). Soil from flots which produced moderate sized assemblages remains from 12 samples; from Area 3 (sample 3031), Area 5 (samples 5035, 5033, 5052, 5038, 5039, 5041, 5010, 5046), Area 8 (sample 8037), and Area 10 (sample 10016, 10017). Soil also remained from six samples which contained rich charred plant assemblages, from Areas 3 (sample 3015, 3016, 3006) and 5 (samples 5047, 5062, 5063). The selection of some of these samples for further processing may increase species diversity of both cultivated and wild plants.

8.3.6 Period 11: early-middle Saxon

Eight samples were assessed from this period from two areas; 1 (three samples) and 2 (five samples). Seven of the eight samples produced identifiable charred plant remains albeit only represented by small numbers of charred grain; this material was from two post hole fill samples from Area 1, Phase 106, L114, with both contexts (1222), (1229) also containing identifiable charcoal fragments, while all five assessed pit, ditch and post-hole fill samples from Area 2, Phase 203, L205, contained a few charred grains. Three samples from Area 2, Phase 203, also contained potentially identifiable charcoal fragments, from pit fills (2137), (2154) and (2267).

Soil (quantities between 10 and 30 litres) remained from all the productive samples (samples 2027, 2037, 2041, 2070, 2097) from Area 2 and could be processed for the potential recovery of further material.

8.3.7 Period 12: Saxo-Norman

All 12 ditch fill samples assessed from this period were from Area 8; ten of the flots produced charred plant remains, including rich assemblages of mainly free-threshing wheat grains, many of which were poorly preserved, pulses, weed seeds, and occasional chaff and stem fragments. Rich charred plant assemblages were present in seven samples from Phase 802 L802, Phase 803, L805, L806 and L807, with a moderate amount of identifiable remains in a sample from Phase 802, L802, and occasional charred grains in two samples from Phase 803 L802 and Phase 803 L803.

Potentially identifiable charcoal fragments were present in seven ditch fill samples from Period 12; from (8197), (8571) (both L802), (8215), (8217), (8138), (8432) (all L805) and (8427) (L806). Soil (samples of 10 litres) had been retained from nine of the ten productive samples (numbers 8047, 8036, 8013, 8017, 8018, 8027, 8024, 8048 and 8006. This soil could be processed for the potential recovery of further identifiable charred plant remains.

8.3.8 Period 13: Medieval

Thirty-one samples were assessed from this period from four areas; 1 (one sample), 7 (one sample), 8 (27 samples), and 11 (two samples). The samples from Areas 1 and 11 produced no identifiable charred plant remains.

The one assessed sample from Area 7, Phase 705, L705, contained a few charred grains while 23 of the 27 flots from ditch, pit and cesspit fills from Area 8 produced very large amounts of charred plant material, with similarly rich assemblages to those found in the Saxo-Norman period from the same area, with predominantly free-threshing wheat grains, pulses, weed seeds, and occasional chaff and stem fragments. Rich charred plant assemblages were present in 14 samples from Phase 804, L810, L811, L813, L814, with thousands of grains in two cesspit fills (G8108 and G8100); moderately large assemblages in five samples from Phase 804, L815 and Phase 805, L829; and occasional charred grains in three samples from Phase 804, L811, and Phase 806, L809.

Potentially identifiable charcoal fragments were present in 11 samples from pit and cess pit fills and ditches, all from Area 8; from (8451), (8102) (8516), (8449), (8644) (all L810), (8464) (L811), (8366) (L813), (8303) (8305) (both L814), furnace fill (8076) (L815), and (8039) (L809). Soil remains from 19 of the productive samples with 10 litres from samples 8033, 8010, 8034, 8029, 8041, 8042, 8031, 8044, 8035, 8023, 8022, 8020, 8008, 8032, 8045, 8040, 8043, and 8009 (all from Area 8) and sample 7026 (Area 7). The soil from the richest samples could be processed for the potential recovery of further identifiable charred plant remains.

8.3.9 Period 14: Post-Medieval

Twenty-five samples were assessed from this period from five areas; 1 (two samples), 2 (17 samples), 7 (one sample), 8 (three samples), and 11 (two samples). There were very few plant remains recovered from this period with virtually all the flots being very small (less than 10ml) and with no identifiable charred remains in any of the pit, post-hole and ditch fills from Areas 1, 2 and 7.

Only three samples produced material; a pond fill sample from Area 8, Phase 807, L820, contained a very rich 'waterlogged' botanical assemblage that may be contemporary with the sampled feature, while two samples from Area 11, Phase 1106, contained occasional grains (pit fill in L1122) and a few charred seeds (ditch fill in L1100). There were identifiable charcoal fragments in three samples from Area 2, Phase 204, from pit fills (2246), (2332), and post-hole fill (2140). Extra soil remains from the pond fill sample 8021; this could be processed for the retrieval of insects as well as further plant remains if it is ascertained that the organic remains have been preserved and are not intrusive.

8.3.10 Period 15: Modern

The one sample assessed from this period was from Area 8, from a ditch fill (Phase 810, L828), and contained a moderate number of grains and identifiable charcoal fragments. Ten litres of soil remains from this sample.

8.3.11 Period 20: Unassigned

Sixteen samples were from undated features from seven areas; 1 (one sample), 2 (eight samples), 5 (one sample), 8 (two samples), 9 (one sample), 10 (one sample) and 11 (one sample).

Six samples contained identifiable charred plant remains from Areas 2, 5, 8 and 9 with moderately rich assemblages of poorly preserved grain and weed seeds in a pit fill sample (G8024) from Area 8, and a moderate number of possible flax seeds together with a few grains and chaff fragments in a pit fill (G9017) from Area 9. There were occasional charred grains, chaff and weed seeds in the other four productive flots, from Area 2 (G2005), 5 (G50), 8 (G8024), and 10 (G10023). There was identifiable charcoal in pit fill (2937), (2088), post-hole (2152) and an unknown feature (2184) (Area 2); in pit fill (8111) (Area 8) and post-hole fill (10065) (Area 10) while unprocessed soil remains from four of the productive samples with 10 litre samples from samples 2064 (Area 2), 5057 (Area 5), 8011 and 8046 (Area 8). This soil

could be processed for the potential recovery of further identifiable charred plant remains.

9. POLLEN (GILL CRUISE)

9.1 Methodology

Six column samples (1010-1015) from possible Romano-British cultivation trenches within Area 10 were assessed. Of particular interest was the potential of the samples to provide palynological evidence of Roman cultivation, and to provide data that could be compared to similar areas in neighbouring areas of Northamptonshire (pers. comm., Ben Barker, Mark Phillips). The six samples were unwrapped, examined and described as below (Table 63).

Column sample no.	Depth from top of column (cm)	Description	Pollen samples
1010	0-24	Sandy loam	17cm
	24-32	Yellowish brown sand	
1011	0-17	Silty loam	
	17-30	Sand with charcoal	
1012	0-31	Sandy loam becoming silty upwards	20 cm
	31-40	Sand and gravel	
1013	0-22	Compacted sandy loam	17 cm
	22-32	Sand	
1014	0-35	Sandy loam becoming silty upwards, frequent mottling and fine rootlets.	
	35-37	Sand	
1015	0-26	Olive brown sandy loam (2.5 Y 4/4) with fine flecks of charcoal, fine rootlets and orange and black (iron and manganese mottling). Compact structure.	20 cm
	26-34	Yellowish brown (10YR 5/6) sand with frequent mottling.	

Table 63: *Description of pollen samples*

The four samples selected for palynological assessment, were from parts of the cores where 1) the soil appeared to be slightly more organic than the other column samples, or (2) the presence of soil compaction in some of the samples may possibly, have helped preserve pollen in these highly minerogenic deposits (pers. comm. R.I. Macphail). The pollen preparations were carried out at Lampeter University, where the chemical preparation methods and methods for determining pollen concentrations were carried out as described in the published literature (Moore *et al*., 1991; Stockmarr, 1971). The slides were scanned, the observed pollen types were noted and a qualitative appraisal of the frequency of the taxa was made. Additional notes were also made on pollen concentrations and pollen preservation.

9.2 Results

The results are outlined in Table 64 and Table 65. Pollen concentrations are extremely low and pollen preservation is poor. Often only fragments of badly preserved pollen are present. The observed, identifiable pollen are dominated by resistant types such as Lactuceae and *Pteridium*, with only a very small number of other taxa.

Sample	1010	1012	1013	1015
Depth from top of sample	17 cm	20 cm	17 cm	20 cm
Herbaceous taxa				
Lactuceae	*	*	*	*
Poaceae	*			
Polygonum t.				*
Aquatics				
Nymphaea			*	
Spores				
Pteridium	*	*	*	
Pteropsida (monolete) indet.	*			

Table 64: *Frequency of pollen types and pollen preservation categories*

***	Abundant
**	Frequent
*	Present

Pollen concentrations	-	-	-	-
Pollen preservation				
Normal	*	*	*	*
Crumpled				
Corroded	*			
Degraded	**	**	**	**
Split	*			

Table 65: *Pollen concentrations*

++++	Very rich (eg. stabling/floor crust, rich peat/lake sediments)
+++	Rich
++	Countable
+	Countable with difficulty
-	Not countable

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