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**THE ARCHAEOLOGICAL INVESTIGATION AT LONG LANE/
RECTORY LANE, FOWLMERE, CAMBRIDGESHIRE**

RESEARCH ARCHIVE REPORT

Authors:	Peter Thompson (Preparative research) Kevin Trott (Report) Antony Mustchin (Editor)	
Illustrations:	Kathren Henry	
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ARCHAEOLOGICAL SOLUTIONS LTD

**98-100 Fore Street, Hertford SG14 1AB
Tel 01992 558170**

**Unit 6, Brunel Business Court, Eastern Way,
Bury St Edmunds IP32 7AJ
Tel 01284 765210**

**e-mail info@ascontracts.co.uk
www.archaeologicalsolutions.co.uk**



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THE ARCHAEOLOGICAL INVESTIGATION AT LONG LANE/ RECTORY LANE, FOWLMERE, CAMBRIDGESHIRE

RESEARCH ARCHIVE REPORT

SUMMARY

Between May and July 2004, Archaeological Solutions Ltd (AS) conducted an archaeological excavation on land adjoining Long Lane/ Rectory Lane, Fowlmere, Cambridgeshire (NGR TL 4206 4600). This followed preparative works including a desk-based assessment and archaeological evaluation carried out by AS in March and April of the same year.

The desk-based assessment highlighted the potential for medieval and post-medieval archaeological remains. The site is located in the northern sector of the historic core of Fowlmere village, adjacent to a rectangular enclosure and a post-medieval outbuilding (SMR 09895), and within 100 meters of the medieval church of St. Mary's, elements of which date back to AD 1150. Prior to archaeological works, the site comprised wooded areas and overgrown scrubland.

The trial trench evaluation recorded archaeological features in most of the trenches. These comprised ditches, pits and postholes, almost exclusively medieval in date. Two large, parallel boundary ditches and a substantial pit (yielding a significant quantity of horse bone), all of apparent early medieval date, required further investigation.

As part of the mitigation strategy for the site, Cambridgeshire County Council (County Archaeology Office; CCC CAO) required that a programme of archaeological investigation be carried out ahead of, and during planned residential redevelopment of the site. The excavation revealed six phases of occupation, dating from the early 9th century to the 19th century. The principal features revealed comprised Saxo-Norman and later medieval boundary ditches, demonstrating a shift in occupation and/ or the division of land within the excavated area. Several late medieval quarry pits, a number of post-medieval refuse pits and an early modern well were also encountered.

1 INTRODUCTION

1.1 This report comprises the research archive for excavations on land at Long Lane/ Rectory Lane, Fowlmere, Cambridgeshire (NGR TL 4206 4600; Fig. 1) carried out by Archaeological Solutions Ltd between May and July 2004. It has been compiled in accordance with EH MAP 2, Section 7 and Appendix 6. It follows the *Desk-Based Assessment and Evaluation* (Thompson *et al.* 2004), *The Excavation and Interim Site Narrative* (Crank *et al.* 2004) and the *Post-Excavation Assessment and Updated Project Design* (O'Brien 2004).

1.2 The project was conducted in accordance with a brief issued by Cambridgeshire County Council (County Archaeology Office; CCC CAO) dated

14/04/2004, Planning App. S/2035/00, and a specification prepared by AS, dated 16/04/2004. The project adhered to the Institute of Field Archaeologists' (IfA) *Standard and Guidance for Archaeological Excavation* (last updated October 2008) and *Standards for Field Archaeology in the East of England* (Gurney 2003).

1.3 The objectives of the project, as set out in the brief were:

- to preserve the archaeological evidence contained within the site by record
- to attempt to reconstruct past land use and the history of the site

Methodology

1.4 Based on the results of the Trial Trench Evaluation (see below), and in consultation with CCC CAO, four areas were selected for open area excavation; these encapsulated nine of the eleven trial trenches (Fig. 2). In these areas, topsoil and undifferentiated overburden were removed mechanically, under close archaeological supervision, by a 360° tracked mechanical excavator fitted with a 2m wide flat ditching bucket. Thereafter all excavation was undertaken by hand; although by agreement with CCC CAO, the upper fills of some of the larger ditches that had previously been sectioned by hand were machine excavated/ stepped for reasons of health and safety. Exposed surfaces were cleaned by hand and examined for archaeological features. All archaeological features and deposits were recorded using *pro forma* recording sheets, drawn to scale and photographed as appropriate. The results of a concurrent programme of archaeological monitoring and recording are included in the description of results presented below.

2 DESCRIPTION OF THE SITE

2.1 Location

2.1.1 The site is located at the junction of Long Lane and Rectory Lane, to the rear of two existing residential properties, within the historic core of the village of Fowlmere in south Cambridgeshire (Figs. 1 and 2). The village lies along the modern B1368, c. 14km south-south-west of Cambridge. The site is bounded to the west by Long Lane, to the north by Rectory Lane, and by existing residential plots on all other sides.

2.2 Topography, geology and soils

2.2.1 The site occupies a gentle slope, ranging between 26m AOD and 23.5m AOD, south to north. The main gradient occupies the central part of the site. The site lies on a solid geology of predominantly Lower Chalk and chalky drift with small areas of overlying Tasele Gravel and Alluvium. The soils are of Swaffham Prior association, described as well drained calcareous and fine loamy soils over chalk rubble, with deep non-calcareous loamy soils in places and striped and polygonal soil patterns locally (SSEW 1983, 8).

2.3 Archaeological and historical background

Summary

2.3.1 The parish of Fowlmere encompasses 945ha (919ha prior to 1965). The parish is chiefly delimited by ancient trackways and boundaries of historical/archaeological importance. Four kilometres to the south of the village runs the Icknield Way, while 2km to the south-west is Bran Ditch, a Saxon bank and ditch system still in use in the Late Anglo-Saxon or medieval period. The village lies on the crossing point of the Wallington Brook and is located on the eastern border of its parish. High Street, running through the centre of the modern village, follows the line of ancient Ashwell Street.

Prehistoric

2.3.2 A number of isolated prehistoric finds have been made within the parish of Fowlmere. These include a Palaeolithic hand axe and scraper (SMR 07870a and 11694), a Neolithic polished stone axe head (SMR 07870a), a polished tuff stone axe imported from the Lake District (SMR 4028) and a large, patinated flint scraper (SMR 11694).

2.3.3 A variety of cropmarks have been identified, located mainly to the west and north-west of the current site, which although undated are quite possibly of prehistoric or Roman date. Excavations to the east of the site have recorded Iron Age activity.

Roman

2.3.4 During the Roman period, the settlement appears to have shifted to the north-west, indicated by large quantities of artefacts recovered from the local plough soil. Ditches and pits forming part of Roman field system, dating between 1st and 4th centuries AD, are present to the north of the site (within 1km).

Anglo-Saxon

2.3.5 Bran Ditch is one of four great Cambridgeshire dykes cutting routes across the ancient east-west aligned Icknield Way. Excavations between High Street and the Round Moat (SMR 14599) revealed evidence of Anglo-Saxon occupation including an early Anglo-Saxon *grubenhäuser* (sunken featured building; SFB) and a pony burial (SMR 14599).

Medieval and post-medieval

2.3.6 The village was known as *Fuelmere* in Domesday Book, meaning 'Wild Birds Mere', and it was probably named after the marshy area to the west, equidistant between Fowlmere and Melbourn. Domesday, the earliest record, states that the manor was held by Aluric Campe of King Edward prior to AD 1066. The village appears to have been a comparatively prosperous centre in medieval times growing from a population of 36 'households' at the time of Domesday to around 100 households (possibly 500 people) by 1279 (Hitch 1993; Taylor 1997). In 1207, it was

prosperous enough to be granted a fair and by 1260 it was situated on the main London to Kings Lynn road. The population sharply declined during the 14th century but had recovered to 70 households by the late 15th century (Keeling 1982).

2.3.7 Various medieval remains have been excavated in Fowlmere, and buildings/ structures of this period remain extant in the village. The medieval church of St Mary's is located within 100m of the current site and contains material dating back to AD 1130. St Mary's was built on the site of an earlier church, providing testament to the early date of the village. The Round Moat, an embanked and ditched 'ringwork' enclosing 0.45ha, situated to the south of the church was formerly known as Whites Close after Robert White who appears on the rent roll of 1447. Excavation in 1906 found animal bone and medieval pottery. In 1975, an area between the moat and the church was excavated revealing 11th to 14th century, but predominantly 13th century pottery (Spoerry 1994). Structural remains, animal bone and metal objects were also encountered (SMR 04222). In 1993, further excavations between the High Street and Round Moat revealed medieval archaeology, including indications that the upcast from recutting the moat had sealed earlier occupation evidence. The earlier Anglo-Saxon SFB was surrounded by a medieval post-built structure (SMR CB14600). A smaller moated site known as "Crows Parlour" lies to the south of the Round Moat. The closest known medieval site to the development area is a possible moat (SMR 01256) across the road to the north, although this does not appear to relate to a domestic site.

2.3.8 Historically the economic base of the village was centred on agriculture, predominantly sheep farming, as indicated by large numbers recorded between 1086 and the 20th century. Fowlmere had large areas of common land for grazing, and common rights for the gathering of animal waste and for the excavation and use of clay until 1845 (Taylor 1997, 48). Around 1850, the land was enclosed and the mere drained for use as cattle pasture.

Cartographic evidence

The 1847 Tithe Map (Fig. 3) depicts an outbuilding situated on the northern edge of the development area, as well as a north-north-east to south-south-west aligned plot boundary and two approximately perpendicular boundaries in the northern part of the site. The 1st edition OS map (dated 1885) depicts the development of ten small buildings and associated gardens/ yards along the northern edge of the site, fronting Rectory Lane; a further building and associated garden/ yard is shown in the west of the site (Fig. 4). The plot boundaries depicted differ from those shown on the Tithe Map; all but the south-east corner of the site appears to have been under orchard. Subsequent cartographic sources depict no obvious shifts in land use.

2.4 Previous archaeological investigations

2.4.1 In May 2003 four geotechnical test pits were excavated across the site by Hertfordshire and Essex Site Investigations (Gray and Smith 2003). The results of their findings suggested the presence of variable depths of topsoil and subsoil across the whole site and a layer of peat located in the west of the site.

2.4.2 In March and April 2004, eleven evaluation trenches were excavated by Archaeological Solutions Ltd (Fig. 2), the majority of which contained archaeological features. These comprised ditches, gullies, pits and postholes, almost exclusively of medieval date, suggesting settlement activity, although some of the larger pits may have been for quarrying. Relatively little pottery was present (235 sherds), though a sizable assemblage of animal bone (1275 fragments) was recovered. The archaeological remains revealed were broadly contemporary with medieval remains previously encountered in Fowlmere. A small number of post-medieval features were present, including pits, ditches and a possible 'floor' or area of hard-standing.

3 RESULTS

3.1 Phasing

3.1.1 Based upon analysis of the site's pottery assemblage and associated stratigraphic evidence, an assessment of the dating of on-site activity was conducted. Six separate chronological phases of archaeological activity were identified (Table 1; Fig. 5). Features were mainly pits (39 in total), but ditches, gullies, postholes and two wells were also present. Significant features were a 9th to 11th century ditched enclosure and a 15th to 16th century well containing a large amount of horse (*Equus caballus*) bone, thought to have been deposited by a knacker.

Phase	Period	Date Range
Phase 1	Saxo-Norman	9 th to 11 th century
Phase 2	Early medieval	11 th to 12 th century
Phase 3	High medieval	13 th to 14 th century
Phase 4	Late medieval to early post-medieval	15 th to 16 th century
Phase 5	Early post-medieval	16 th to 18 th century
Phase 6	late post-medieval/ early modern	late 18 th to early 19 th century

Table 1: Chronological phasing

3.2 Description of Results

Phase 1: Saxo-Norman (9th to 11th century)

3.2.1 No structural remains were attributable to this phase, although part of an enclosure comprising five ditches with five associated narrow linear features was identified, along with three scattered pits.

3.2.2 Ditches F1053, F2142 (=F2074, F2046) and F2007, marking parts of the southern and western sides of a probable sub-square or sub-rectangular enclosure, were identified in Areas 1 and 3 of the excavation (Fig. 5); Posthole F2070 cut the northern edge of Ditch F2046. These boundaries were both wide (c. 5m) and deep (c. 2m) (Fig. 6), suggesting that the enclosure was a substantial landscape feature (Fig. 7). Parallel Ditches F2046 and F2007 formed the inner and outer visible part of the southern side of the enclosure; the inner ditch was seen to continue, turning northwards (as F2074 and finally F2142) to form the western side of the enclosure. The line of the outer ditch lay beyond the excavation, although it most probably continued parallel to the inner. The northern terminus of the inner Ditch F2142 was

separated by a gap of c. 9m from the southern terminus of Ditch F1053, which is thought to have formed the (inner) northern part of the western enclosure boundary; the gap is thought to represent the entrance to the enclosure. No features were identified to suggest the presence of any structure or upstanding features marking the entrance.

3.2.3 The Phase 1 ditch fills were broadly similar, comprising alternating deliberate secondary backfilling and silt deposits with occasional deposits of slumped natural chalk, mainly deposited from the inside of the enclosure. Several fragments of human bone were recovered from the upper ditch deposits, post-dating the deliberate backfilling, and a complete human mandible was recovered from the primary fill of Ditch F1053. The ditches forming the southern enclosure boundary were truncated by Phase 2 Beam Slot F2037 and Gully F2044.

3.2.4 A series of narrow linear gullies (F2016, F2018, F2100, F1018, and F1043) were consistently present, running parallel to the inner enclosure boundary c. 2.1m from its inner edge (Fig. 5). The northernmost of these, F1043, terminated approximately in line with the terminus of Boundary Ditch F2142. The gullies were morphologically similar (c. 0.50m wide and c. 0.20m deep), though F2018, F2100 and F1018 displayed distinctive vertical sided, flat based profiles. Postholes F2096 and F2098 appeared aligned with the southern terminus of F2100. It is thought that these features were trenches for sleeper beams, into which posts forming a palisade fence may have been set.

3.2.5 The three Phase 1 pits (F1020, F1011 and F1102) were partially exposed in Trenches 4, 5 and 9 of the evaluation. Pit F1011 was notable because of its large size (at least 6.5m x 0.93m x 1.0m), and the presence of a posthole cut into its base. It had been backfilled with natural chalk deposits and resembled the fills of Ditches F2046 and F2074.

Phase 2: Early medieval (11th to 12th century)

3.2.6 Phase 2 features were identified in Area 1 of the excavation and Trench 5 of the evaluation (Figs. 5 and 8). Pit F1032 (Evaluation Trench 5) is thought to have been a quarry pit. It was large and deep (2.00m x 1.67m x 0.78m) and contained seven fills, one of which yielded small quantities of early medieval pottery and animal bone.

3.2.7 Three parallel, intercutting features (Ditch F2033, Beam Slot F2037 and Gully F2044) were recorded running north-north-east to south-south-west across Area 1. Two of these cut the upper fill of Phase 1 Ditch F2046. Pit F2041 lay to the west of these features, and Pit F2051, which contained finds consistent with the deposition of domestic waste, truncated them, obscuring the relationship between Ditch F2033 and short, linear Feature F2049 (aligned perpendicular to it). Beam Slot F2037 was the earliest of these features; no associated structural evidence was present. Gully F2044 truncated the eastern edge of F2037 and extended beyond it, and beyond the limits of Area 1, to the south-south-west. Ditch F2033 ran parallel to Gully F2044, but close to its terminus it curved westwards to cut both the gully and F2037. It appears that following the abandonment of the Phase 1 enclosure, a new boundary was established on this alignment, marked by three successive linear features of

different types, being modified during the latter stages of Phase 2 to turn westwards rather than continuing on its original course. This boundary was maintained and extended westwards during Phase 3.

Phase 3: High medieval (13th – 14th century)

3.2.8 Phase 3 was represented by a boundary ditch and six pits (Figs. 5 and 9). Ditch F2039 entered Area 1 from the north. For a short distance, this feature ran broadly parallel to Phase 2 linear features (see above) before turning sharply to the west-south-west and extending beyond the excavation edge. Gully F2072 may have formed the terminus of F2039, suggesting that the latter curved sharply northwards immediately beyond the edge of Area 1 (Fig. 5). The relationship between these features remains tentative however. It is possible that part the north-north-east to south-south-west boundary alignment created during Phase 2 was maintained throughout Phase 3, with the addition of a c. east-west 'arm'.

3.2.9 The five Phase 3 pits (F1034, F1051, F2117, F2120 and F2157) were spread across the length of the site from north to south, though displayed no obvious spatial patterning. The fills of these features were consistent with the disposal of domestic refuse, and F2157 (not on plan) was noted for its large pottery assemblage.

Phase 4: Late medieval to early post-medieval (15th to 16th century)

3.2.10 In addition to pits and an isolated section of ditch (F1040; Figs. 5 and 10), Phase 4 features included a well (F2004; Fig. 10) containing the bones of at least 15 horses (Plate 1). The nine Phase 4 pits included three large intercutting pits in Area 1 (F2090, F2089 and F2091, from earliest to latest) and three (F1003, F1005 and F1007) in Trench 3 of the evaluation. It is possible that these were initially excavated for chalk quarrying, though the fills of the Area 1 pits contained moderate chalk fragments. The small amounts of pottery and animal bone recovered from all of these pits were not suggestive of refuse disposal, although the blackish brown silty loam fills of the Trench 3 pits might suggest the presence of decomposed organic material.

3.2.11 Pits F2113, F2115 and F2128 formed a short north-north-west to south-south-east alignment in Area 3. All three were sub-circular in plan (c. 0.9m to 1.1m in diameter) and shallow (c. 0.2m); they may have represented truncated postholes. The position of this alignment coincided with that of the entrance to the Phase 1 enclosure, running north-north-west from the terminus of Ditch F2142, but this is thought to be coincidental. There is no reason to suppose that the positions of the Phase 1 enclosure ditches remained apparent during the 15th to 16th centuries. The similarity in alignment of this line of pits/ postholes and of Ditch F1040, c. 20m to the east, may (tentatively) indicate that the formed elements of the same system of landscape division.

3.2.12 The most significant of the Phase 4 features was Well F2004 (Fig. 11; Plate 1). This feature was circular in plan (c. 3.6m in diameter) with steep, slightly irregular sides; its full depth was not ascertained by excavation for health and safety reasons, although the water table was encountered at 20.38m AOD. F2004 truncated three undated pits. Fifteen successive deposits were encountered within this feature, and

were thought to represent episodes of dumping and slumping from the well's sides. The lower fills of F2004 were sterile, with the exception of animal bone from L2105 and L2076, the latter of which also yielded late medieval pottery. L2006 was a brown friable loam containing a total of 1254 animal bone fragments; of these, 435 were identified as horse bone and a further 501 as probable horse bone (Phillips, this report). The bone represents a minimum of 15 individuals, all of relatively advanced age, and displays butchery evidence indicative of skinning, defleshing and dismemberment; this assemblage is thus thought to constitute knackers waste. A small quantity of domestic animal bone and 15th to 16th century pottery was mixed with this deposit. Uppermost Fill L2005, sealing the horse bone deposit, contained further 15th to 16th century pottery sherds, shell and animal bone consistent with the dumping of domestic waste. This deposit completely filled the top of F2004, leaving a level ground surface.

Phase 5: early post-medieval (16th to 18th century)

3.2.13 Phase 5 features comprised only a single Ditch (F2110) and three pits (F2136, F2138 and F2130) in Area 3 of the excavation (Figs. 5 and 12). Pits F2136 and F2138 may have been deliberately positioned to continue the line of Ditch F2110, beyond its east-south-eastern terminus. The pits contained probable domestic refuse (animal bone, pottery and oyster shell); F2138 also yielded fragments of flat roof tile.

Phase 6: late post-medieval/ early modern (late 18th – early 19th century)

3.2.14 Phase 6 features were encountered in Areas 2a and 3 only (Figs. 5 and 13). The main feature was a 'floor' comprising a layer of compact chalk (L3006) overlying a layer of loose chalk rubble, flat roof tile and pottery (L3011), packed into an undulating hollow. This was truncated by Gully F3007, which was in turn cut by Pit F3009. F2140, the only Phase 6 feature identified in Area 3, comprised a large, circular (c. 2.20m wide) well containing a considerable assemblage of 19th century pottery, animal bone and CBM.

4 SPECIALIST FINDS AND ENVIRONMENTAL REPORTS

4.1 The pottery

Peter Thompson

Introduction

The archaeological investigations recovered 380 sherds weighing 5.333kg in a mixed condition. A range of time periods is represented from prehistoric to modern, but the site is essentially medieval with approximately two thirds of the sherds dating to the Saxo-Norman or medieval periods (Table 2). The pottery was examined under x35 binocular microscope and quantified by ware/ fabric per context on Excel database. Diagnostic attributes such as rims, bases, decoration and other observations are also recorded.

Period	Sherd count	Weight (kg)	% of whole assemblage
Iron Age	2	0.013	0.53
Roman	12	0.145	3.15
Late Saxon	32	0.539	8.42
Saxo-Norman	60	0.766	15.78
Medieval	191	1.862	50.3
Early Post-medieval	17	1.151	4.46
Late Post medieval to modern	66	1.857	17.36
<i>Totals</i>	<i>380</i>	<i>6.333</i>	

Table 2: Quantification of pottery by period fabrics

Fabrics

Iron Age and Roman

A single residual sherd from Ditch F2074 in sand and flint temper is probably a fragment of Iron Age neck cordon; a similar sherd was recovered from Pit F1034. They are probably residual, as are the twelve sherds of wheel-made Roman pottery recovered from Phase 1 to 4 contexts. Roman grey ware sherds were the only pottery from Pit F1082; this might tentatively date the feature as Roman. A sherd from Pit F2052 has micaceous surfaces and two from Pit F2005 have black surfaces but all the sherds can be classed as local sandy grey wares of probable mid 1st to 2nd century date.

Anglo-Saxon

These sherds are in the main not diagnostic but the presence of a sagging base and part of a globular profile indicates they are Anglo-Saxon, albeit not closely datable. Some are residual in medieval and post-medieval contexts whilst others appear with Saxo-Norman sherds suggesting a late middle to late Anglo-Saxon date is likely. All the sherds were handmade and four main fabrics are present, described below:

- F1:** soft, dark grey with the external surface oxidised orange and inclusions comprising grass and sub-rounded limestone (8th to 11th century)
- F1a:** harder fabric than 1a with only faint oxidation on the outer surface with grass, limestone, sand and occasionally rare very coarse flint (8th to 11th century)
- F2:** hard, dark grey fabric with brown surfaces containing moderate to common medium to very coarse angular flint and sand with a little grass temper (8th to 11th century)
- F3:** hard dark grey fabric with lighter surfaces containing sand and moderate very coarse angular quartz (9th to 12th century)

Saxo-Norman and medieval (Table 3)

Over 66% of the assemblage comprises Saxo-Norman and medieval wares, potentially spanning a period of 5 or 6 centuries. St Neots ware (39 sherds) is the best represented Saxo-Norman ware, with Thetford ware (21 sherds) also present,

but no Stamford ware was recovered. The most common medieval wares are Ely-type (46), Essex-type wares (46) and late medieval wares (47).

Fabric	Sherd Total	% of 235
St Neots	39	15.5
Thetford	21	8.36
Developed St Neots	2	0.8
Blackborough End-type	3	1.2
Ely	46	18.3
Grimston	18	7.17
Other 12 th -14 th	29	11.55
Hedingham	7	2.78
Other Essex wares	39	15.54
Other 14 th -16 th	47	18.72
<i>Totals</i>	<i>251</i>	

Table 3: Medieval fabric types

Dating of the Pottery by Feature

Late Anglo-Saxon and early medieval sherds

Phase 1 Ditch F2046 contained 24 sherds which are among the earliest stratified pottery from the site. These included three hand-made wares (in F1, F1a and F2 fabrics), including a probable globular profile and sagging base in F1a and a thick carinated sherd in F2. A chaff tempered sherd was recovered from Phase 1 Pit F1020.

Phase 2 Pit F2041 contained a thick cooking pot body sherd in a hard fired F3 fabric which contained angular quartz, suggesting a 10th to 12th century date. Another Phase 2 pit (F2128) contained a late St Neots sagging base, as well as another hand-made cooking pot sagging base in a sandy fabric, 28 cm in diameter; together these are indicative of an 11th to 12th century date. Other Saxo-Norman sherds were also present in Phase 2 features, including Gully F2044 and Ditch F2033. The former contained only very abraded and fragmented Anglo-Saxon, St Neots and Thetford-type wares, which (judging by their poor preservation) are likely to have been residual. Saxo-Norman sherds from Ditch F2033 included a wheel-made St Neots flanged rim from a deep bowl (approximately 28cm across; Fig. 14.1) with an inturned angle, similar to an example from Dimmock's Cote, Cambridgeshire (although in a paler fabric; Hurst 1956, 57 and figs. 3 & 13). A wheel-made cooking pot rim, of 16 to 18cm diameter was also present and quite similar to examples from St Neots. Phase 2 Feature F2049 contained similar large well-preserved rim sherds, including a handmade St Neots deep bowl (Fig. 14.2) with a profile that is quite similar to a pre-conquest example from Cottenham (Hall 2000, 30 No 15). This was associated with a large Thetford thumb decorated rim approximately 22cm in diameter with a broken strap handle (Fig. 14.3) probably to a storage jar (although there is evidence for a patch of sooting inside). It quite closely matches an example from Norwich where the pottery is believed to date between the late 10th and early 12th century (Jennings 1983, 84, No. 98 and 91). It seems likely that the sherds from these two features are pre-Conquest, thus suggesting an early date within Phase 2 for features F2033 and F2049.

Abraded and fragmented Anglo-Saxon, St Neots and Thetford-type wares, like those recovered from Gully F2044, were present in Phase 3 Ditch F2039, and two thick, hard fired conjoining sherds in F3 fabric containing angular quartz were recovered from its possible continuation (F2072).

High to late medieval sherds

Phase 2 Pit F2157 contained 64 sherds including the spout of a Glazed Grimston ware jug decorated with brown iron slip (Fig. 14.4), a large glazed Ely-type ware strap handle with finger decoration (Fig. 14.5) and a small rod handle with finger nail decoration. A body sherd with applied thumb impressed strip is also in Ely fabric, whilst a 22cm diameter cooking pot rim in a dark sandy fabric is similar in profile to Blackborough End forms but could possibly be an Ely copy. This assemblage is probably 13th century in date but could be as late as the mid-14th century. Ely-type ware was also recovered from Phase 4 Pit F2113, which yielded a pouring lip of a rounded jug in an Ely-type orange-brown fabric of likely 14th to 15th century date (Fig. 14.6).

Intercutting Phase 3 Pits F2117 and F2120, located in the north of Area 3, contained sherds from a Hedingham glazed jug of approximately 14th to 16th century date. In Area 1, the latest pottery was recovered from intercutting Phase 4 pits, though only that from Pit F2091 is closely datable. This feature contained a Hedingham jug rim from Essex of probable mid-14th to early 16th century date (Hall *pers. comm.*), another oxidised Essex sherd with white slip under clear glaze in Sgraffito style, and an Ely-type cooking pot base. A 15th to early 16th century date is likely for this feature.

In Area 4, Phase 4 well F2004 yielded 40 late medieval sherds, the majority being red Essex wares and reduced late medieval coarse wares, including a probable bowl rim in a brown fabric (Fig. 14.7). Small fragments of late medieval pottery were also recovered from Phase 4 Pits F1005, F1007 and F1003, to the south of the well. Late medieval transitional pottery was recovered from Phase 5 Pit F2130, in Area 3. This included a substantial heavy bowl sherd with internal green glaze and several sherds from a baluster jug in an orange-brown sandy fabric with clear external glaze.

The latest datable pottery came from Phase 5 Pit F2138, Phase 6 Pit F2140 and Phase 1 Ditch F2142, all late post-medieval to modern in date. Phase 6 Well F2140 contained one of the largest quantities of pottery from the site (21.6%), comprising 68 sherds weighing 2.44kg including post-medieval red earthenware's, cream ware, and modern china.

Comparison with the High Street excavation

Previous excavations were carried out at Fowlmere in 1994 on the High Street Frontage and adjacent to the Round Moat, from which approximately 50 pottery sherds were recovered. Fabrics comprised Thetford ware, Developed Stamford ware, early to high medieval reduced coarse wares and generally later medieval oxidised wares (including Essex wares). The latter include a Mill Green-type sherd and a twisted green glazed rod handle in Hedingham ware dated between the late 13th to 15th centuries. Potentially, the earliest pottery from High Street was an un-

diagnostic flint tempered sherd of possible Iron Age date. Also recovered were several residual Roman grey wares, one oxidised sherd and a shell tempered tile. This assemblage is similar to that from the current site in that the whole medieval period is represented, although the Anglo-Saxon sherds from Long Lane/ Rectory Lane may suggest slightly earlier settlement. No medieval shelly wares such as Lyveden/ Stanion ware were noted on either site, though two shell and quartz tempered sherds were found at High Street. Essex red wares were being imported in comparatively large quantities sometime after the mid-14th century. Contrasts between the sites are the lack of St Neots wares and Grimston wares at High Street and the lack of Stamford wares at the current site. No Ely-type sherds were recorded at High Street. In the post-medieval period Frechen stoneware and later English Stoneware's were found at High Street.

Conclusion

Other than the residual Iron Age and Roman sherds, the earliest pottery present is of late Anglo-Saxon/ Saxo-Norman date. The earliest diagnostic pottery are rim sherds from Phase 2 Ditches F2033 and F2049 (Figures 14.1, 14.2 and 14.3) which were in good condition, being large and un-abraded (suggesting primary deposition), whilst the dark fabrics and relatively small vessel sizes suggests a pre-conquest date. Phase 3 Ditch F2072 contained only late Anglo-Saxon/ early medieval pottery, but was assigned to phase 3 because of its spatial association with stratigraphically later features. Among the later medieval sherds present are Ely and Grimston wares with imports from Essex coming in probably during the late 14th to 15th century.

List of Illustrations

- Fig. 14.1 St Neots in-turned rim to deep bowl (AS: 801. 2036).
- Fig. 14.2 St Neots bowl rim (AS: 801. 2050).
- Fig. 14.3 Thetford thumb decorated pitcher rim (AS: 801. 2050).
- Fig. 14.4 Grimston glazed spout to jug decorated with trailed brown iron slip (AS: 801.1009).
- Fig. 14.5 Ely-type glazed rod handle with finger decoration (AS: 801. 1009).
- Fig. 14.6 Ely-type pouring lip to rounded jug (AS: 801.2114).
- Fig. 14.7 Brown sandy coarse ware bowl rim (AS: 801.2005).

4.2 The ceramic building material

Andrew Peachey

A total of (2569g) of ceramic building material (CBM) was recovered from four phases at Fowlmere. The CBM derives from Phase 1, 2, 5 and 6 features and is in a poor condition. The assemblage was examined at x20 magnification and two fabrics were identified (see below). The thickness of fragments was recorded but no other dimensions were completed.

The flat roof tile present in Phase 1 Ditch F2046 (L2064/ L2068), Phase 2 Ditch F2033 (L2036), Gully F2049 (L2050) and Pits F1100 (L1101) and F2128 (L2129), Phase 5 Pit F2138 (L2139) and Phase 6 Well F2140 (L2141), floor hollow (L1061/ L1065/ L3011), Pit F3004 (L3005/ L3009) and Gully F1066 (L3008), is all 13mm thick with the fragments in F2140 exhibiting traces of mortar on their lower surfaces.

A fragment of mortar (22g) was also recovered from a Phase 2 Pit F2128 (L2129). The fragment of brick from Phase 5 Gully F2110 (L2139) is approximately 49mm thick but is in very poor condition. A large assemblage of broken bricks was also recovered from Phase 5 Well F2140 (L2141).

Fabric Descriptions

- F1:** A very hard fabric oxidised red throughout (2.5YR 5/8), with slightly abrasive feel. Inclusions are restricted to common quartz and iron rich grains (<0.2mm) with occasional white and clear polycrystalline quartz grains ranging up to 0.7mm.
- F2:** A very hard pale oxidised fabric (5YR 7/6) with lighter surfaces (10YR 7/4), and a slightly abrasive to soapy feel. Inclusions comprise Common red iron rich grains/clay pellets (<2mm) and sparse clear quartz (<0.5mm) set in finely calcareous clay. The clay frequently appears to have pale streaks running through it.
- Mortar:** A white, highly calcareous paste with sparse chalk and quartz inclusions (<8mm).

4.3 The miscellaneous finds

Nina Crummy

L1009, F1010 (=F2044). Phase 2. Iron nail or bolt fragment with small round flat head. Length 28mm.

L2139 F2138. Pit fill. Phase 5. a) Iron nail with roughly oval flat head. Length 49mm. b) Fragment of a flat tapering iron strip. Length 44 mm, maximum width 17mm.

L3008 F3007. Gully fill. Phase 6. Two iron nails, one with large round flat head (now damaged), the other with small round flat head. Lengths 77mm and 70 mm. (3008). Unphased. Thin iron shaft, curved more or less into a semicircle. Possibly the handle from a bucket or similar container. Diameter of curve 243mm; diameter of shaft 4mm.

L3010 F3009. Phase 6. a) Large clenched iron nail with flat round head. Length (bent) 89mm. b) Tapering iron strip, bent at the terminal. There are traces of wood on both faces. Probably a structural tie or a nail shank, the present strip-like form caused by corrosion. Length 102mm.

L2111 F2110. Ditch fill. Phase 5. Fragment of the stem of a clay tobacco pipe. Length 57mm, diameter 9mm, bore hole diameter 2.5mm. The size of the stem and bore hole suggests it dates to the 18th or early 19th century (Oswald 1975).

L2036 F2033. Ditch fill. Phase 2. One plate from a bone clamp made from a straight-sided fragment of long bone with one end straight and the other roughly pointed (Fig. 15). A large perforation has been cut out close to the pointed end. The edges of the hole are worn but all the outer edges of the fragment are rough. One

long edge has slight notches set at irregular intervals along its length and there is a small group on the opposite side just below the hole. Length 73mm, width 22mm. Similar clamps (or two halves of one clamp) made of antler were found at York in late 10th century contexts (MacGregor *et al.* 1999, 1996-7).

4.4 The slag

Jane Cowgill

A small hearth bottom fragment (102g) derived from the by-product of iron smithing was recovered from Phase 3 Pit F2157. The slag is encrusted with soil but may have evidence for charcoal fuel attached.

4.5 The worked flint

Tom McDonald

Burnt and worked flint was recovered from 22 contexts within layers and fills assigned to Phases 1, 2, 3 and 5. The material is probably a prehistoric assemblage that includes flakes, chips and a single blade (not retouched); this material has probably been dispersed by later settlement/ occupation activities.

Several pieces of Burnt flint were present in Phase 1 Ditch Fills L2061, L2067, L2069, L2147, L2143 and L2148, Phase 2 Layer L1087, Phase 3 Pit L1037, Phase 4 Ditch L2012 and Phase 5 Gully Fill L2122. Individual pieces of worked flint were recovered from several contexts, including Phase 1 Pit Fill L1103 and Ditch Fills L1120, L2030, L2061, L2067, L2143, L2148 and L2148, Phase 2 Ditch Fills L2036, L2045 and L2073, Phase 4 Well Fill L2006 and Pit Fill L1006, and Phase 5 Gully Fill L2122. A single blade was recovered from a Phase 3 Gully Fill L2073.

4.6 The human bone

Carina Phillips

Introduction

Eight fragments of human bone were found at Fowlmere (Table 4), seven identified during the analysis of the animal bone. All the bone was of poor preservation, with a high degree of surface erosion and fragmentation. The bone was found in four features (all components of the Phase 1 enclosure).

Results

Context	Feature	Bone
L1054	F1053	Mandible
L2012	F2007	Rib fragment
L2067	F2046	Humerus shaft (fragmented)
L2069	F2046	Rib and Femur fragments
L2147	F2142	Molar

Table 4: Human bone

The mandible was excavated from the primary fill of Ditch F1053 (L1054) and had eight intact teeth. Ageing based on tooth wear suggested the mandible belonged to

an individual aged between 17 and 25 years at time of death (Brothwell 1972). However, ageing based on tooth wear is not considered to be particularly reliable due to differences in diet and related tooth abrasion.

The remaining human bone was identified during archaeozoological analysis. F2046 (L2067 and L2069) yielded parts of the shaft of a left humerus and fragments of a rib and femur shaft. A rib fragment was also found in F2012 (L2007). A loose mandibular molar was found in F2142 (L2147). The molar is not associated with the mandible from Ditch F1053 and exhibits greater wear than the intact molars reported above.

Discussion

The human bone from Fowlmere was fragmented and poorly preserved. It is possible that most of the bones are the remains of one individual, as bones are not duplicated and the remains were all found in ditches forming the Phase 1 (9th to 11th century) enclosure. However, the single mandibular molar from F2142 (L2147) is not part of the mandible from Ditch F1053 and exhibits greater wear, indicating it is from another, possibly older individual.

4.7 The animal bone

Carina Phillips

Introduction

The animal bone assemblage from Fowlmere comprises 1724 fragments. 1672 of these came from phased features. Preservation of the bone was moderate in most contexts, although severe erosion had occurred to some bone fragments, particularly from phase 1 contexts.

Phase 4 produced a substantial assemblage (1304 fragments) including 1254 fragments from the penultimate fill of Well F2004 (L2006). Seventy-four per cent of this 'dump' comprised horse (*Equus caballus*) bone, most of which was disarticulated. Analysis suggests that the partial remains of at least 15 horses were deposited in this feature. The majority of the bone was substantially complete, although some modern fragmentation had occurred. Preservation was good with no sign of weathering or gnawing, thus suggesting rapid deposition. Cut marks comprise the only butchery evidence, their position suggesting skinning, defleshing and dismemberment prior to deposition. It is suggested that horse bone from F2004 represents knackers waste.

Method

Bone was identified and recorded to element and species when possible. The category sheep/ goat is used due to the difficulties in clearly differentiating between sheep (*Ovis aries*) and goat (*Capra hircus*); unless a clear identification was possible. Tooth wear for cattle (*Bos taurus*), sheep/ goat and pig (*Sus scrofa*) were recorded according to Grant (1982) and ages assigned according to Crabtree (1989). Tooth wear ageing for horses follows Farbenfabriken (1994). Measurements were taken when viable following the methods of Jones *et al.* (1976)

and von den Driesch (1976); these are available in the site archive. Withers heights for horses were calculated according to Kiesewalter (in von den Driesch and Bosseneck 1974) and for dogs following Harcourt (1974). When available, the fusion state of identifiable bone was also recorded and ages were assessed following Silver (1969). Fragments not identified to a particular species were recorded under the categories of 'large sized', consisting of cattle, large deer (cervidae), and horse sized fragments, and 'small sized' consisting of sheep/ goat, pig and dog (*Canis familiaris*) sized bone fragments. The unidentifiable bone fragments were recorded as such. Butchery evidence, burning and gnawing was also recorded, as was deliberately smashed bone.

The data were separated by phase for analytical purposes; the bone from Well F2004 (L2006) was considered individually. The minimum number of individuals (MNI) of a species was calculated from most frequently occurring left or right skeletal element. Minimum number of elements (MNE) was also calculated. Due to the very large amount of horse bone from Well F2004, a more refined MNI method was employed to avoid counting the same element twice due to fragmentation. In this case, the MNE was based on a visual count the most frequent part of the bone present. For example, only a substantially complete acetabulum of the pelvis was counted to avoid counting the same pelvis more than once.

Results

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Cattle	29	4	2	67	7	2
Sheep/ goat	16	7	0	40	6	2
Pig	14	1	0	11	2	0
Horse	7	17 (8*, 3*)	1	936	1	3
Dog	0	7 (2*, 4*)	4	6	0	2
Cat	0	12 (12*)	0	2	0	0
Domestic Fowl	2	0	0	0	0	0
Goose	1	0	0	0	0	0
Fish	1	0	0	0	0	0
Large ungulate	28	37	2	25	2	4
Small ungulate	18	6	3	15	2	3
Unidentifiable	56	37	3	202	0	17
Total	172	128	15	1304	20	33

Table 5: Phased NISP (number of identified specimens/fragments). n*= number of bones belonging to one animal

Phase 1

The Saxo-Norman (late 9th to 11th century) assemblage comprised 172 fragments (Table 5), 41% of which could be identified to species. It is felt that identification was affected by the poor preservation of some of the assemblage, 38% of which had suffered erosion. Cattle, sheep/ goat, pig and horse were all present in small numbers. The only age calculations possible, based on tooth wear, were for a sheep/ goat mandible (aged 4-6 years) and a mandible from a young piglet; further comment on these species is impossible due to the small number of bones. Other species identified included domestic fowl (*Gallus sp.*), goose (*Anser/ Branta sp.*) (1 fragment) and fish (1 fragment), all from Ditch F2007 (bar one domestic fowl

fragment from Ditch F2142). Evidence of butchery included very small numbers of chopped (3), cut (1) smashed (5) and burnt mammalian bone fragments.

Phase 2

Phase 2 yielded a small animal bone assemblage (128 fragments; Table 5). Horse, cattle, sheep/ goat, pig and dog were identified. Horse was identified in the highest numbers; 8 articulated vertebrae from Ditch F2033 (L2036). The five lumbar vertebrae and one thoracic exhibited osteophyte formation on some of the centroms and facets, with some examples of centrum fusion similar to that seen on the phase 4 bones (see below). A single horse incisor from a c. 15 year old animal was also present from L2036. The spinal pathology exhibited could have been caused by mechanical strain, possibly traction-related, whilst the older age of the horse tooth suggests horses were not utilised for meat. Five horse bones were yielded by L2052 (F2051), of which a left metatarsal and 1st and 2nd phalanges were articulated. The metatarsal exhibited a cut mark on the distal shaft, similar to those on Phase 4 horse bone from Well Fill L2006. A fully fused, complete horse pelvis (disarticulated) was also found in L2052 exhibiting a cut mark on the edge of the pubic symphysis (the left side), most likely the result of defleshing. A horse mandible from this context was aged at 15 years. Also from L2052 were 12 cat (*Felis catus*) bones (rib, vertebrae and skull fragments) four dog bones from an animal aged 12 to 15 months (calculated according to Silver (1969)). Age calculations were not possible for any other species.

Examples of smashed (4 fragments), burnt (2 fragments) and cut (1 fragment) bones were present in small numbers. A large, worked long bone fragment was also assigned to Phase 2 (from F2036; see Crummy, *this report*).

Phase 3

A very small assemblage of only 15 fragments was dated to Phase 3. Horse, cattle and dog were identified in the assemblage. Two smashed fragments (a cattle humerus and a large sized long bone) were the only examples of 'butchery' evident.

Phase 4

Phase 4 yielded the largest amount of animal bone, totalling 1304 fragments (Table 6). Of these, 1254 fragments came from Well Fill L2006 (F2004); a large amount of this bone was identified as horse. Due to the unusual nature of this assemblage, the bone from L2006 is discussed separately.

Well F2004

Fill L2006 of Phase 4 Well F2004 (Plate 1) produced a large quantity of animal bone. This context was tightly packed with horse bone, most of which was disarticulated. The horse bone was in good condition; however, some fragmentation had occurred during excavation due to the tightly packed position of the bones. Due to this fragmentation, a slightly modified recording method was employed (see above). Some domestic refuse appears to have been included in the deposit; such waste is

distinctive due to species type and poorer preservation (including gnawing and butchery evidence).

	Phase 4 (total)		L2006		Excluding L2006	
	NISP	MNI	NISP	MNI	NISP	MNI
Horse	435	15	433	15	2	-
Probable horse	501	-	501	-	0	-
Cat	2	1	1	1	1	1
Cattle	67	4	50	3	17	1
Dog	6	1	5	1	1	1
Pig	11	3	9	3	2	1
Sheep/goat	40	3	33	4	7	3
Sheep	2	1	2	1	-	-
Large sized	25	-	10	-	15	-
Small sized	13	-	13	-	0	-
Unidentifiable	202	-	197	-	5	-
Total	1304		1254		50	

Table 6: Phase 4 bone (both inclusive of and excluding elements from L2006)

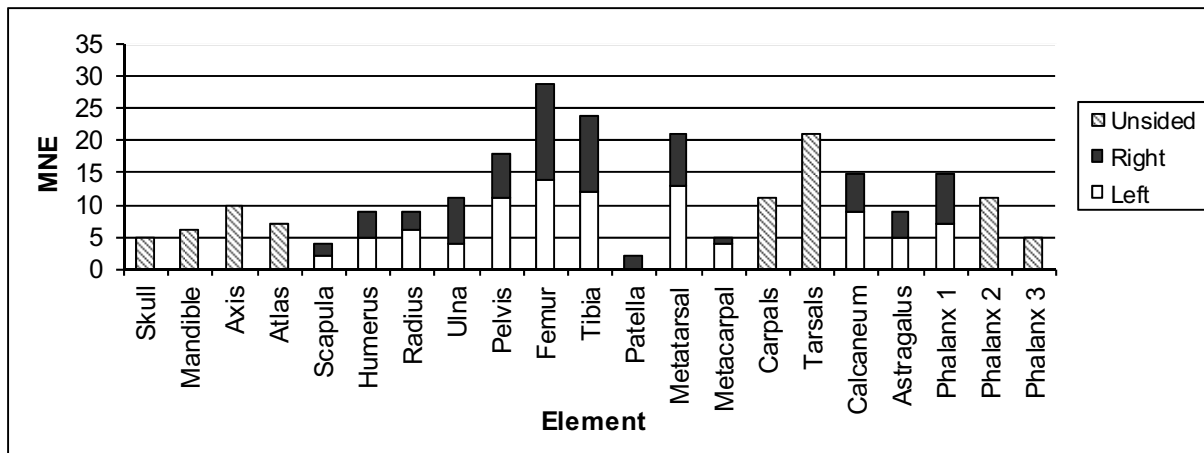
The horse bone

The horse bone from Well Fill L2006 (F2004) displayed good preservation. Gnawing was only present on two fragments (both proximal ulnae). Modern breaks occurred during excavation due to the tightly packed nature of the deposit and have led to some fragmentation (see method).

Partial articulation of the horse bone was recorded for two spinal elements. Some bones, such as the ankle bones and some vertebrae, also appear to have been articulated when deposited. However, the majority of the horse bone was disarticulated. The butchery evidence (see below) indicates that at least some elements were dismembered prior to deposition. It is possible however that some semi-articulated elements 'slumped' as a result of deposition and subsequent decomposition.

Skeletal elements

Of the 1254 animal bone fragments from Fill L2006, 433 were identified as horse and 501 are almost certainly horse, based on condition and size. Four hundred and thirty-five of these are rib fragments (high fragmentation of this element occurred) and 40 are vertebrae. A minimum number of 15 horses are represented. The anatomical distribution is presented in Graph 1. Almost all skeletal elements are represented, but in varying numbers, indicating that complete skeletons were not deposited. The bones from the hind legs, in particular the femurs, were most frequent; pelvic bones were also recorded in high numbers. It appears that other elements were utilised/ deposited elsewhere.



Graph 1: Anatomical representation of horse bone from L2006, excluding loose teeth, vertebrae and ribs

Age

Almost all the horse bones from L2006 were fully fused; all horse bones are fused by 4-5 years and most by 3.5 years (Silver 1969). The exceptions from L2006 were a proximally fusing femur, from an animal aged approximately 3-3.5 years and a pelvis with an un-fused acetabulum, an element which should be fully fused by 4.5-5 years (*ibid.*). It is possible that these bones are from the same animal, although this cannot be confirmed. Incisors provide a more precise age estimate. Five mandibles and three skulls with maxillae, one of which was paired up with an aged mandible, had intact incisors. All mandibles and skulls were from animals aged 15-24 years. These ages follow the 'very worn' (without infundibulum) and 'extremely worn' (labio-lingual diameter is greater than mesio-distal diameter) categories defined by Cornevin and Lesbre (1894) and Levine (1982; Table 7). The advanced age of the animals from L2006 (15-24+ years) would class them as 'horses in decline', according to market data from Oxford for the post-medieval period (Wilson and Edwards 1993, 47), indicating they were seen as old aged animals at the end of their working life.

Element	Age, after Farbenfabriken (1994)	Age, after Cornevin and Lesbre (1984) and Levine (1982)
Mandible	15 years	Very worn
Mandible	15 years	Very worn
Skull/ maxilla	15 years	Very worn
Mandible and Maxilla	15-24 years	Very worn
Skull/ maxilla	15-24 years	Very worn
Mandible	24 years	Extremely worn
Mandible	24 years	Extremely worn

Table 7: Ages based on incisor wear, after Farbenfabriken (1994, 207), Cornevin and Lesbre (1984, 102) and Levine (1982, 230)

Size

Withers heights were calculable for 57 horse bones from Well Fill L2006 and ranged between 128.8cm and 156.1cm. This equates to approximately 13-15 hands (after Clutton-Brock 1974, 94). A mean of 143.2cm or 14.1hands was calculated. A pony

of modern standards is classified as under 14.2hands (Hambilton-Dyer 2003). A majority of the horses at Fowlmere were slightly larger than horses found in similar medieval assemblages, e.g. Haverhill, Suffolk (Jackson 1998), Kingston-Upon-Thames (Serjeantson *et al.* 1992) and St Albans, Hertfordshire (Locker 1996). The Fowlmere animals are more comparable to the medieval and early post-medieval horses at Market Harborough, Leicestershire (Baxter 1996) and the post-medieval horses at Witney Palace, Oxfordshire (Wilson and Edwards 1993) and Dudley Castle, Birmingham (Thomas and Locock 2000).

Butchery

Knife cut marks were the only forms of butchery evident on the horse bones from Well Fill L2006. Only small numbers of cut marks were evident and were found most frequently on femurs and metapodials.

A single cut mark was recorded on a fragmented skull (on the lateral side of the left nasal process of the incisive), probably the result of skinning (after Yvinec *et al.* 2002). Cut marks were evident on two left metacarpals, four left metatarsals and two right metatarsals. They were recorded in varying positions along the distal shaft, suggesting that they were also caused by skinning. However, they may also relate to the cutting of tendons/ ligaments on the cannon/ fetlock joint (*ibid.*).

Two small ventral cut marks were found on the posterior side of the greater trochanter on seven femurs (four left; three right). The presence of these cut marks indicates that the inner muscles of the *obturator internus*, *obturator externus*, *quadratus femoris* and *gemillus* and the outer muscles the *biceps femoris*, *semitendinosus* and *semimembranosus* were all cut through (Getty 1975), suggesting that the horses from L2006 were defleshed. The position of these cut marks suggests that the animals would have been placed on their backs and their legs parted in order to cut down through the listed muscles, resulting in a marked femur. Such a position may have been more easily achieved by hanging the carcass from a hook (Jones *pers. comm.*). One femur exhibited the two ventral cut marks described above on the greater trochanter, in addition to a number of other cut marks found on femoral head across the condylar fossa and on the proximal medial shaft below the head. The position of these cut marks indicates dismemberment of the hip joint, by cutting through the joint capsule and ligament.

The positions of these cut marks indicate that skinning, defleshing and dismemberment were carried out on at least some of the horse carcasses from L2006. The evidence of dismemberment accounts for the disarticulated state of most of the bone from this context. The use of a knife to carry out these procedures is possibly related to the de-fleshing and muscle removal taking place, perhaps a more careful method was required (see discussion). The paucity of cut marks on the bones suggests that the processing of these carcasses was carried out by a skilled, possibly specialist individual.

Pathology

A number of examples of pathologies were present on the horse remains from L2006 and are displayed below (Table 8). They occurred most frequently on the hind legs and lower back.

Bone	Pathology
Tarsi, metatarsal, 1 st and 2 nd phalanges (left)	Ring Bone caused ankylosis of the 1st and 2nd phalanges (pastern joint); Bone Spavin caused fusion of the metatarsal and 3 rd & central tarsi (hock joint)
Tarsi and metatarsal (left)	Bone Spavin caused fusion of the metatarsal and 3 rd & central tarsi (hock joint)
Tarsi and metatarsal (left)	Bone Spavin caused fusion of the metatarsal and 3 rd & central tarsi (hock joint)
Tarsi and metatarsal (left)	Bone Spavin caused fusion of the metatarsal and 3 rd & central tarsi (hock joint)
Tarsi and metatarsal (left)	Bone Spavin caused fusion of 3 rd and central tarsi, but had not yet fused to metatarsal. Congenital marks on top of central tarsal.
Calcaneus and Astragalus (left)	Bone spavin causing fusion (broken post-mortem)
Calcaneus (left)	Bone spavin causing fusion (broken post-mortem)
Lumbar Vertebrae	Ankylosis of two lowest lumbar vertebrae caused by ossification of the intertransverse ligaments
Lumbar Vertebrae	Ankylosis on left centrum of two lumbar vertebrae, with slight twisting to the left
Thoracic Vertebrae	Ankylosis on right centrams of two thoracic vertebrae, with slight twisting to the right
Lumbar Vertebrae	Fusion across articular processes, twists to left. Caused by ossification of the interspinous ligaments
Thoracic and Lumbar Vertebrae	Fusion of the last thoracic and 1 st & 2 nd lumbar vertebrae across articular processes on both sides More pronunciation on the right, twisted towards the left. Caused by ossification of the interspinous ligaments
Mandible (left)	Bone growth, possibly caused by abscess and loss of 2 nd molar ante-mortem

Table 8: Pathologies present on horse bone from L2006

Ring Bone

Ring bone is associated with an upright pastern conformation (locking of the joint), and is the result of trauma, underlying bone disease, nutritional deficiency or infection (Rose and Hodgson 1993; Rosedale and Wreford 1974). It was the cause of fusion of the 1st and 2nd phalanges (the Pastern joint) on the bones from the left hind leg of one animal that also exhibited bone spavin (see below).

Bone spavin

Bone spavin usually affects the tarsal/ hock joint, although is occasionally seen elsewhere in the skeleton. It causes exostoses which limits movement of the joint and results in lameness until fusion (ankylosis) of the joint takes place. Once ankylosis takes place the animal is suitable for slow work (Baker and Brothwell 1980, 118). This explains why the animals were not slaughtered during the period of lameness; instead owners would have known the animal would later recover to some extent.

Bone spavin was exhibited on tarsal/ hock joint of the same articulated leg exhibiting ring bone (above) and has caused the fusion of the metatarsal and 3rd and central tarsal (hock joint). Six other examples of bone spavin were recorded; on four left tarsal joints (as described above), one having not yet reached complete fusion, on a left calcaneus and articulating astragalus and on a single left calcaneus (associated bones were missing). There are thought to be a number of causes for spavin including faulty shoeing, heavy work or working on hard surfaces (Baker and Brothwell 1980, 118). Based on these examples, at least five animals from Well Fill L2006 suffered from bone spavin, four with advanced or complete fusion and one with a lesser degree of fusion. A (Phase 4) example of bone spavin found elsewhere on the site (L2137) is described below.

Spinal Pathologies

Five instances of spinal pathologies were recorded see Table 8 for details. All were cases of fusion and almost all occurred on the lumbar vertebrae. Such pathologies may have been caused initially by mechanical stress, possibly as a result of load-bearing (Cowie and Pipe 1998, 243), although trauma may also be a cause. It is possible that the recorded instances of hind limb lameness are related (after Rose and Hodgson 1993).

Congenital lesions

A centro-quartal tarsal (from a metatarsal with bone spavin) exhibited lesions on the superior-anterior surface. The lesions comprised numerous lines, resembling cut marks, with slight eburnation around the area, suggestive of sideways movement of the joint. It is proposed that the lesions are congenital, although examples of similar lesions could not be found.

The occurrence of these work/ traction-related pathologies, coupled with the advanced age of most of the aged animals from L2006, suggests that the assemblage is made up of working animals that had reached the end of their economically useful lives.

Other Phase 4 Bone

The non-horse bone from Well Fill L2006 comprised 320 individual fragments. Preservation of this bone was poorer than the horse bone from this fill, with some evidence of gnawing and weathering. Preservation and fragmentation of this bone affected identification, hence 62% of the assemblage was unidentifiable and 7% could only be categorised as large or small mammal. The identifiable bone included cattle, sheep/ goat, sheep, pig, dog and cat (Table 6). Smashed and chopped bones were the most frequent forms of butchery, occurring on 12% of the assemblage. The condition of the non-horse bone from L2006 suggests it is of a different nature to the associated horse bone and is most likely to be contemporary domestic and butchery waste.

Very little bone came from other Phase 4 features/ contexts. Only 50 fragments were recovered from contexts other than L2006 (Table 5). The general assemblage is very similar to the non-horse bone deposit from L2006. All species represented in

the L2006 fill were identified, though slightly higher quantities of butchery were observed (18%). Two horse bones were present, including a right ulna exhibiting a cut mark on the proximal end (from L2005 in F2004), possibly related to the horse bone from underlying L2006.

The Phase 4 assemblage in general, excluding the horse bone appears to consist of domestic and butchery waste. The other main domestic species (cattle, sheep/ goat and pig) were represented. Four sheep mandibles provided ages in this phase, two of 1-2 years and two of 4-6 years. Two pig mandibles were aged respectively as young piglet and adolescent. The skeletal elements recorded for all species include butchery waste, such as mandibles that have very little meat, and long bones that would have been used in cookery and disposed of as domestic refuse. Gnawing and erosion of the bone was evident on some of the assemblage indicating that this bone was not deposited immediately, unlike the horse bone. Fragmentation also occurred due to smashing of the bone which was recorded on 6% of the assemblage. Chop marks were present on 6% of the assemblage.

Phase 5

The Phase 5 assemblage comprised just 20 fragments of animal bone. Horse, cattle, sheep/ goat and pig were identified. Butchery was evident on three cattle long bones and one large sized vertebra; all were chop marks. The horse bone (counted as one) consisted of a fused metatarsal, tarsal and splint bone from L2137, the fill of Pit F2136.

Phase 6

The Phase 6 assemblage comprised just 33 fragments of animal bone. Horse, cattle, sheep/ goat and dog were identified in the assemblage. Two chopped bone fragments were the only examples of butchery from this phase.

Discussion

A majority of phases at Fowlmere produced small animal bone assemblages which restricted analysis and interpretation. The Phase 3, 5 and 6 assemblages were particularly small in size. The most common domestic species (horse, cattle, sheep/ goat and pig) were observed in phases 1, 2 and 4, in addition to cat and dog in Phases 2 and 4. Phase 1 included domestic fowl, goose and unidentifiable fish. Domestic fowl and geese were common in this period. Bird and fish were not identified in other phases. The only other notable bone is the horse bone in Phase 2, including five articulated lumbar vertebrae exhibiting ankylosis (as also seen in Phase 4) and a 15 year old horse tooth. Together, these indicate that horses were kept to at least mid/ old age, and most likely comprised mount, pack or draught animals, possibly the cause of recorded lower back pathologies (after Rackham 1995, 72). Due to the small size of the assemblages further comment is not possible.

The horse bone from L2006

The assemblage from Well Fill L2006 (F2004) contained an unusually large amount of horse bone. The tight packing of the deposit, lack of weathering and small amount of gnawing present suggests that it was buried quickly following butchery. Analysis indicates that the assemblage was formed of the partial remains of at least 15 horses of early post-medieval size. The majority of the horses ranged from 15 to 24+ years and would have been at or near to the end of their useful working lives at time of death. The type of pathology evident on the bones indicates mechanical stress consistent with the use of these animals for riding, draught or similar.

Butchery of the horses, involving skinning, defleshing and dismemberment, may have been carried out by a skilled individual, evidenced by the small number of cut marks recorded. Up until the 19th century the removal of skins resulted in a number of appendages remaining attached, including the hooves and tails (Thomson 1981). This may account for the small number of lower phalanges and scarcity of caudal vertebrae (only one was recorded) in the L2006 horse bone assemblage. If this is the case then the possible skinning marks on the distal metapodials may actually have been caused by the removal of the tendons, another potentially useful element (Yvinec *et al.* 2002).

Defleshing of the carcasses was evident, although probably not for human consumption; a ban on the consumption of horse meat in England was passed by Pope Gregory III in the 8th century (Thomas and Locock 2000, 89). One suggestion proposed for a similar assemblage was the use of horse meat to feed domestic carnivores; particularly hunting dogs (Wilson and Edwards 1993). An alternative is the use of the horse muscles for fat and grease; such a procedure involves removing the muscles from the bones (Yvinec *et al.* 2002).

Dismemberment would have allowed the carcasses to fit into a smaller space, as may have been necessary for their convenient disposal. However, dismemberment may also relate to the butchery and utilisation of the carcass. Analysis of the horse bone assemblage highlighted a disproportionate number of skeletal elements in the deposit, most frequently the back half of the animal (especially the hind legs). This may be associated with the way the carcasses were butchered and the number of people involved. For example, the animals may have been cut into parts to be worked on in different areas and/ or by different individuals, thus resulting in deposits with biased representation of skeletal elements.

Utilisation of the horse bones from this assemblage, for example for the extraction of fat and marrow, is not evident. However, the missing bones, such as the front legs, from the carcasses may have been utilised in a different manner. In fact, it has been suggested that horse bones were the least valuable part of the carcass, possibly due to the wide availability of cattle bones that could have been used instead, and religious taboos surrounding the consumption of horse meat (Yvinec *et al.* 2002). However, some bones, due to their tubular structure, would have been more favourable for certain craft activities (Yvinec *et al.* 2002).

In summary, the assemblage from Well Fill L2006 contains the partial remains of at least 15 old working horses, deposited once skins (including the mane and tail),

meat/ muscle and possibly tendons had been removed. Carcass dismemberment is likely to have occurred during the butchery process. The disposal of this assemblage appears to have been carried out quickly following butchery. Packing the remains into the top of Well F2004 was most likely a convenient method of disposal. Similarly butchered, pathological horse bone from other Phase 4 contexts does however indicate contemporary carcass disposal elsewhere on the site. A knacker is likely to have been responsible for carrying out the butchery and possibly the slaughter of the horses from L2006. The large quantity of bone and the effort required to move such an assemblage, suggests the presence of a knackers yard or similar processing area in the immediate vicinity of Well F2004. The position of Fowlmere close to the main Cambridge road may be significant, as the knacker would have had access to a number of horses used for transport, possibly offering the opportunity to purchase the old or injured animals no longer of use to their owners. The presence of horse bone in Phase 2 exhibiting similar cut marks and pathologies (tentatively) suggests that similar utilisation and butchery of old horses was also occurring in the 11th to 12th century. Long-term continuity of this 'trade' in the vicinity cannot be proven however.

Similar examples of horse bone assemblages have been recovered from both medieval and post-medieval sites in Britain. A possible knacker deposit was reported from Haverhill, Suffolk (Jackson 1998; Willet 2001). Here however, unlike at Fowlmere, the bones were smashed, possibly for marrow extraction. Other examples include Kingston-Upon-Thames, St. Albans, Hertfordshire (Locker 1996) and Elverton Street, Westminster (Cowie and Pipe 1998), St. John's Street, Bedford (Grant 1979) and Market Harborough, Leicestershire (a late medieval to post-medieval site; Baxter 1996). At Kingston-upon-Thames, St. John's Street and Market Harborough, large quantities of cattle horn cores were also recovered, suggesting that horses were not the only animals processed.

Examples of post-medieval sites with large horse bone assemblages include Witney Palace, Oxfordshire, where horses are thought to have been butchered to feed hunting hounds (Wilson and Edwards 1993). Similar assemblages are reported from Charter Quay, Kingston-Upon-Thames, Berkshire (Hambilton-Dyer 2003) and Dudley Castle in the West Midlands (Thomas and Locock 2000). All of these sites exhibited similar assemblages, not only in terms of quantity, but also of age-range, animal size and visible pathologies. At many, evidence of skinning, dismemberment and defleshing was also noted. In addition to Fowlmere, these sites indicate that utilisation of horse carcasses for the skin, hair, meat and possibly bones was commonplace across medieval and post-medieval England.

4.8 The shell

Carina Phillips and Kevin Trott

A small assemblage of fragmented shell was recovered from the archaeological investigations at Fowlmere. The species represented are oyster (*Ostrea edulis*, 15 fragments) and mussels (*Mytilus edulis*, 46 fragments). The oysters were recovered from Phase 2 Ditch F2033, Phase 4 Well F2004, and Phase 5 Postholes F2130 and F2136.

The mussels were recovered from Phase 1 Posthole F2129, Phase 3 Ditch F2039 and Phase 4 Well F2004. The shell is in a generally fragmented condition. Several unidentifiable shell fragments were also recovered from Phase 1 Ditch F2142, Phase 3 Ditch F2039 and Phase 4 Well F2004.

The marine shellfish recovered from the site are likely to be indicative of food waste associated with occupation activity in Phases 1 to 5. Poor state of preservation prevents further comment.

4.9 The macroscopic plant remains

Val Fryer

Introduction and method statement

Environmental samples were bulk floated by Archaeological Solutions, and the flots were collected in a 500 micron mesh sieve; eight samples (dating to Phases 1, 2 and 4) were submitted for analysis. The dried flots were scanned under a binocular microscope at magnifications up to x16, and the plant macrofossils and other remains noted are listed below (Table 9). Nomenclature follows Stace (1997) for the plant remains and Kerney and Cameron (1979) and Macan (1977) for the mollusc shells. Most plant remains were charred, although fragments of waterlogged/ de-watered wood were recorded within sample 9. Modern fibrous roots were abundant throughout.

Results

Plant macrofossils

With the exception of charcoal fragments, plant macrofossils were exceedingly rare. Charred cereal grains, including specimens of oat (*Avena* sp.) and wheat (*Triticum* sp.), were recorded from Samples 1, 4 and 13, but all were severely puffed and distorted, probably as a result of combustion at very high temperatures. Charcoal fragments formed the major component of the majority of the assemblages, although charcoal was not present within the Sample 9. Fragment size was generally small, and it is perhaps of note that some of the larger fragments, most particularly within Sample 13, were very rounded and abraded.

Molluscs

Mollusc shells were common or abundant in all eight samples. All four of Evans' (1972) ecological groups of terrestrial molluscs were represented, with open country species (particularly shells of *Pupilla muscorum* and *Vallonia* sp.) occurring most frequently. Marsh/ freshwater slum and freshwater obligate species including *Vertigo pygmaeum*, *Anisus leucostoma* and *Armiger crista*, were also present within five of the assemblages.

Other materials

Other material types/ ecofacts were only recorded within Samples 1, 4 and 9. The fragments of black porous and tarry material noted in Samples 1 and 4 are almost certainly residues of the combustion of organic remains (including cereal grains) at extremely high temperatures.

Conclusions

Charcoal is common within all but one of the samples, and it is assumed that some or all of the assemblages are derived from either small quantities of fuel/ hearth waste, which were being dumped within any available feature on the site, or accidental accumulations of scattered refuse. The exception to this is Sample 9 (L2108), which contains a number of small, degraded wood fragments and numerous freshwater obligate mollusc shells, possibly indicating L2108 was a water-lain or flood deposit.

Mollusc shells were common throughout, and formed the major component of the assemblages from Samples 1, 4 and 11. The composition of the assemblages suggests that dry, short turfed grassland conditions were locally predominant, although other habitats are also indicated. Woodland/ shade loving species were common within Sample 1 (L2006), possibly indicating that Phase 4 Well F2004 was at least partially shaded/ overgrown, whilst the presence of freshwater obligate species in the samples from Phase 1 Ditches F1053 (L2133, L2134; Samples 10 and 11) and F2142 (L2147 and L2148; Samples 12 and 13) suggests that these features were at least seasonally wet/ water filled. The abrasion noted within the charcoal assemblage from Sample 12 may also be indicative of periodic high velocity water conditions within Ditch F2142.

Sample No.	7	10	11	12	13	4	1	9
Context No.	L2064	L2133	L2134	L2147	L2148	L2036	L2006	L2108
Feature No.	F2046	F1053	F1053	F2142	F2142	F2033	F2004	-
Feature type	Ditch	Ditch	Ditch	Ditch	Ditch	Ditch	Well	Layer
Phase	1	1	1	1	1	2	4	-
PLANT MACROFOSSILS								
<i>Avena</i> sp. (grain)							xcf	
<i>Triticum</i> sp. (grains)					x	x	xcf	
(rachis internode)								
Cereal indet. (grains)						xx	xx	
Charcoal <2mm	xxx	xxx	xx	xxx	xxx	xx	x	
Charcoal >2mm	xx	xxx		xx	xx	xx	x	
Charred root/ stem				x		x		
Wood frags.								xxx
MOLLUSCS								
Woodland/ shade loving species								
<i>Aegopinella</i> sp.			x			x	xx	
<i>Carychium</i> sp.		xx	xx	xx			xx	
<i>Clausilia</i> sp.							x	
<i>Discus rotundatus</i>							xx	
<i>Ena</i> sp.							x	
<i>Oxychilus</i> sp.							x	

<i>Punctum pygmaeum</i>		x		xx			x	x
<i>Vitrea</i> sp.		x	x	x	x		x	
Zonitidae indet.							x	
Open country species								
<i>Helicella itala</i>	x	x	x	x			x	
Helicidae indet.				x		x		
<i>Pomatius elegans</i>							x	
<i>Pupilla muscorum</i>	xx	xx	xx	xxx	xxx	xx	x	
<i>Vallonia</i> sp.	xx	x	xx	xx xb	xx	xxx	xxx	
<i>V. costata</i>	x xb	x	x	x		xx	xx	x
<i>V. excentrica</i>	x xb			x				
<i>V. pulchella</i>		xcf	x		xx	x	x	
Catholic species								
<i>Cepaea</i> sp.							xcf	
<i>Cochlicopa</i> sp.	x	x	x	xx	xx	x	xx	x
<i>Nesovitrea hammonis</i>		x		x	x		x	
<i>Trichia hispida</i> group	x	x	x	xx xb	xxx	xxx	xx	
Marsh/ freshwater slum species								
<i>Lymnaea</i> sp.		x			x			x
<i>Vertigo</i> sp.		xx		x	x		x	
<i>V. angustior</i>				x xb				
<i>V. pygmaeum</i>		x	x	x				x
Freshwater obligate species								
<i>Anisus leucostoma</i>		x	x	xx	xx			xx
<i>Aplexa hypnorum</i>					x			
<i>Armiger crista</i>					x			xxx
<i>Bithynia</i> sp.								x
<i>Gyraulus albus</i>					x			
<i>Hydrobia ulvae</i>			x					
<i>Lymnaea glabra</i>								xcf
<i>L. peregra</i>		x						x
<i>L. truncatula</i>		x	x	x				
<i>Planorbis</i> sp.					xcf			x
<i>Valvata cristata</i>				x	x			x
Other materials								
Black porous 'cokey' material						xx	x	
Black tarry material						xx		
Bone						x	x	
Ostracods								x
Small coal frags.						x		
Small mammal/ amphibian bone							x	
Sample volume (litres)	15	20	30	30	30	15	15	15
Volume of flot (litres)	0.3	0.7	0.1	0.5	0.1	<0.1	<0.1	<0.1
% flot sorted	50%	100%	100%	100%	100%	100%	100%	100%

Table 9: Contents of the environmental samples

5 DISCUSSION

5.1 The archaeological investigation at Long Lane/ Rectory Lane, Fowlmere has produced evidence for occupation from late 9th century to the modern era, with only very little indication of any earlier activity on the site.

Phase 1: Saxo-Norman

5.2 The earliest excavated landscape feature was a double-ditched enclosure, measuring c. 470m² and encompassing the northern and eastern excavated area (Fig. 7). A substantial western entrance (c. 9m wide) situated within the northern limits of the site was represented by a break in the inner (and possibly the outer) boundary ditch.

5.3 The ditches sampled were approximately 5m wide and c. 2m deep with V-shaped profiles. The primary fills of these features, comprising natural silting and/ or 'slumped' material, suggested that, once established, the enclosure boundaries were not maintained on a regular basis; analysis of environmental samples from Ditches F2142 and F1053 indicates the presence of standing water, at least seasonally, possibly with periodic high velocity water conditions. This (tentatively) suggests that the ditches may have been connected to a nearby watercourse, beyond the excavated area.

5.4 The combined archaeological evidence does not support a defensive interpretation for this enclosure, although the boundary ditches were reasonably substantial. Several episodes of slumping and silting were evidenced by the basal deposits within these features, which had accumulated to depths of c. 0.5m. Subsequently, a period(s) of deliberate backfilling (from both sides of the ditches) had resulted in the build-up of various chalk loams and silts, containing artefacts and charred cereal remains.

5.5 Seven fragments of human bone were found within the ditch backfills, including a complete human mandible in the primary fill of Ditch F1053. A similar occurrence of human bone has been noted at other sites of this period (Reynolds 2003, 132), such as West Stow (West 1985, 58-9) and Little Paxton (Addyman, 1969), where individual human bone elements were found within or immediately adjacent to major boundary features. These were interpreted as representing abuse of a late Anglo-Saxon ecclesiastical regulation/ law prohibiting 'heathen practices' relating to 'ritual deposits' at rural settlement sites (Reynolds 2003, 132). A less fantastic interpretation might be that burials had been disturbed by later activity, resulting in the disarticulation and redistribution of remains. However, no funerary deposits were encountered at the current site and the human bone fragments were recovered from securely stratified contexts.

5.6 A series of narrow, straight-sided gullies, probably associated with the housing of a set of timber sleeper beams or palisade trench, were aligned with the inner enclosure boundary. The gullies were set c. 5m apart. A similar arrangement of gullies, probably housing sleeper beams, was recorded at West Fen Road, Ely where a complex set of ditched enclosures (of a similar date to Phase 1 at Fowlmere) abutted a double ditched enclosure containing palisade trenches

(Mortimer *et al.* 2005, 34). A nearby, wide entrance or gatehouse was also recorded. The abandonment of these linear features at Fowlmere may relate to the deliberate backfilling of both the internal enclosure ditch and the gullies (and Pit F1011) with a light-mid grey deposit recorded as L2057 and L2017. The nature of Pit F1011, which was only partly revealed in Trench 9 of the evaluation, remains unclear, and it is possible that it was the terminus of a substantial linear feature/boundary.

5.7 In relation to the archaeological and historical background of Fowlmere and its broader environs, the discovery of a late Anglo-Saxon double-ditched enclosure was not wholly unexpected, although little potential for remains of this date was attached to the current site. Excavations conducted in 1993 between High Street and the Round Moat recorded an early Anglo-Saxon *grubenhäuser* (sunken featured building; SFB), structural postholes, pits and a pony burial. This site lies c. 100m south-east of the current site and may reflect a northward shift in the focus of settlement and/ or the development and subdivision of additional land.

5.8 The historical reference to a late Anglo-Saxon/ pre-Norman manor at Fowlmere and the existence of the double-ditched enclosure excavated at Long Lane/ Rectory Lane, within the modern village, must be considered in light of recent suggestions that many rectilinear enclosures developed into medieval manorial or moated enclosures (Reynolds 2003, 98-136). Such Anglo-Saxon enclosures were associated with moderate to lower status sites and were usually of sub-rectangular form, measuring, on average, c. 60m in length. By the late Anglo-Saxon period ditched enclosures of this scale are found to contain manorial accommodation (*ibid.* 110). A comparable site with an entrance on its western side was excavated at West Stow, Suffolk (West 1989), a settlement with early Anglo-Saxon origins. Other relevant sites near Fowlmere include Little Paxton, Cambridgeshire (Addyman 1969), Rigby Crossroads, Lincolnshire (Steedman 1985), Cottenham, Cambridgeshire (Mortimer 1998) and Brandon, Middlesex (Carr *et al.* 1988).

5.9 The size of the Phase 1 enclosure is consistent with the (tentative) suggestion that it formed part of a manorial site (Oosthuizen 2002, 57-8). In this scenario, the enclosure would have contained buildings arranged in a 'courtyard' fashion, while further abutting enclosures would have contained a church, workshops and dwellings. Such rectilinear enclosures usually contained a single (c. 10m wide) main entrance, usually located either on the eastern or southern side, with smaller entrances providing access to the abutting enclosures. However, the lack of internal features at Fowlmere limits further interpretation. It is possible that features and/ or structures were present in the unexcavated parts of the enclosure, or that such features have been destroyed by later activity, a hypothesis supported by the presence of significant amounts of late Saxon pottery in subsequent phases. Alternatively, it may be that only a small number of features were originally present; the only features encountered within the enclosed area were two, heavily truncated, domestic refuse pits, one containing possible metal-working debris. An enclosure of similar date at Cottenham, Cambridgeshire (Mortimer 1998) also contained domestic and industrial pits, with associated metal-working residues from nearby hearths.

Phase 2: Early medieval

5.10 The area covered by the development site lay approximately 100m to the north-west of the 11th century church of St Mary's and 50m north of the medieval High Street. The Domesday Survey of 1086 lists a total of 36 'householders' within the village, suggesting that dwellings could well have extended as far as the current site: the excavation lay to the rear of any putative buildings fronting either the High Street or Long Lane/ Rectory Lane in the medieval period.

5.11 The limited scattered pits and timber beam slot, gully and ditch features were securely dated to the 11th and late 12th century. Recovered artefacts are not indicative of high status, and do not specifically indicate types of activity carried out in the immediate vicinity. Possible exceptions include butchery waste from Pit F2051. It seems probable that these features were located some distance from the foci of early medieval occupation. This area was probably open ground, though it may have been divided (presumably by boundaries which did not leave recognisable archaeological traces, e.g. minor fencelines or hedges) into individual tenement plots.

Phase 3: High medieval

5.12 The Phase 3 features comprised a curvilinear ditch and several pits. The pits were dated to the 13th and 14th century. There was nothing in the nature of the pits to suggest activity other than domestic refuse disposal, although Pit F2110 contained some residual metalworking debris. All the pits were large, with generally homogeneous fills containing variable quantities of pottery, shell and animal bone. Curvilinear Ditch F2039 yielded little Phase 3 artefactual material compared with contemporary pit fills, supporting the suggestion that this ditch probably functioned as a boundary, and for drainage, between fields or non-domestic plots.

Phase 4: Late medieval to early post-medieval

5.13 Phase 4 activity at the site was minimal in comparison with earlier phases. The three intercutting pits in Area 1 may have represented small-scale chalk quarrying, but the function(s) of the other Phase 4 features was not obvious. The alignment of pits/ postholes and Ditch F1040 likely represented plot divisions, but these were not resolvable, unlike others (both earlier and later) at the site, with those shown on later maps.

5.14 The fills of Well F2006 represented episodes of deliberate in-filling interspersed with occasional slumping; the small assemblages of pottery and animal bone recovered from them suggest that they had come from disturbed medieval deposits. L2006, the penultimate fill of this feature, contained 73% the total animal bone assemblage (NISP) from the site (96% of the Phase 4 assemblage). The bulk of this material comprised horse bone representing at least 15 individual animals, butchered (and possibly also slaughtered) by a knacker. The horses were all aged between 15 and 24+ years; recorded pathologies are consistent with carriage and draught-related stress. It seems probable that these horses, upon reaching the end of their economically useful lives, had been sent to the knacker for exploitation of their secondary products, with waste material and bone being conveniently

deposited in nearby 'open' features. The deposit from L2006 suggests a single slaughtering event; the lack of other similar features encountered by the investigation may indicate that this was a one-off event, perhaps the work of an itinerant knacker, rather than a permanently established tradesperson.

5.15 A square sided well/ pit (3.3m x 2m x 0.75m) of similar date to F2004 was encountered c. 24km to the west of Fowlmere at Hazel Stub, Haverhill, Suffolk (Jackson 1998). This feature was found to contain 3777 horse bone fragments, analysis of which suggested that the horses had been slaughtered at the end of their useful lives (around 20-25 years; *ibid.*). Identified pathologies were remarkably similar to the Fowlmere assemblage as were the ages-ranges identified. However, many of the Haverhill bones were broken and sawn in contrast to the Fowlmere examples, suggesting greater marrow exploitation in the Haverhill assemblage. Also, there was a dominance of phalanges at Haverhill compared with the comparatively small number from Fowlmere, suggesting that butchery did not occur on the excavated site, but was instead related to activity at nearby Burton End and Puddlebrook, Haverhill. Excavation of the latter revealed a late medieval knackers yard associated with the slaughtering and processing of horses, ponies and donkeys. This complex included cobbled trackways, livestock pens and a slaughterhouse. The excavator, Alexis Willett, suggests that the Hazel Stub site was closely linked with the Burton End and Puddlebrook site for the slaughtering, dismemberment and disposal of horse remains. It is thus possible that the knacker's deposit from L2006 at Long Lane/ Rectory Lane is related to an as yet undiscovered knacker's yard in Fowlmere.

Phases 5 and 6: Early post-medieval to early modern

5.16 The sparse Phase 5 features revealed by the excavation have little interpretable significance beyond demonstrating a continuation of activity at the site, specifically within the north-east corner of the excavation, beyond the latter part of the 16th century. The line of Ditch F2110 and Pits F2136 and F2138 was compared to plot boundaries depicted on 19th century maps, but no correspondence was apparent.

5.17 The 1847 Tithe Map and the 1885 Ordnance Survey map indicate a single structure fronting Rectory Lane in 1847, superseded prior to 1885 by ten small structures and associated rear or shared garden plots. No direct evidence for these was revealed by the archaeological investigations, though the chalk surface (L3006) in Area 2a may represent a structure or area of hardstanding towards the rear of the plots. The finds assemblage from Pit F2140 attests to domestic occupation close to the site.

6 CONCLUSIONS

6.1 The evidence from Long Lane/ Rectory Lane has added significantly to our current understanding of Fowlmere's past. The earliest activity in the area was probably during the Bronze Age, based on crop marks and a ring ditch located around Lower Farm and Manor Farm, respectively to the north and south-east of the current site. By the Iron Age, activity appears to have shifted northwards to North

Farm, an area displaying 'settlement' continuity well into the Romano-British period. Romano-British field systems are known to exist to the north-east of the village and pottery has been found within Fowlmere itself. A temporary Romano-British military camp has also been identified to the west of the village in the area of Manor Farm. A shift of settlement activity during the Anglo-Saxon period focuses on the village of Fowlmere and is attested both historically and archaeologically. The current project is the first investigation to the north of High Street, and has identified probable occupation dating from the 9th or 10th century. Previous excavations south of High Street located early Anglo-Saxon occupation and later medieval structures. Combined, the current evidence attests to the communal growth and development of Fowlmere from the post-Roman period.

6.2 Although the road frontages lay beyond the excavated area, the combined archaeological, environmental, documentary and cartographic evidence provides information on the development of the site from the 11th century, with a possible decline in the 14th century, and subsequent recovery during the 15th century. However, the large area of the site not subject to investigation means that such a statement is tentative at best.

6.3 The investigation revealed the south-western portion of a substantial Saxo-Norman enclosure of uncertain function. Although detailed interpretation is not possible, the presence of such a feature fits well with what is already known of Fowlmere in the late Anglo-Saxon period. Any future investigations in this part of the village have the potential to reveal further evidence regarding the development of Fowlmere prior to the Norman Conquest.

6.4 Any subsequent medieval activity was probably situated behind properties fronting Long Lane and/ or Rectory Lane, but was little represented on the current site. Excavated boundary features may however indicate the instigation of land divisions which endured into the 19th century. A small amount of possible metal working debris may also indicate some small-scale industrial activity at this time. The most significant feature of the late medieval to post-medieval site is the deposit of knacker's waste from Well F2004. This may relate to a knacker's yard situated outside of the area of investigation, though a single event resulting from the presence of an itinerant knacker is also possible. The later post-medieval features are consistent with the 19th century cartographic evidence, suggesting occupation along the Rectory Lane frontage.

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APPENDIX 1: CONCORDANCE OF FINDS BY FEATURE

Feature	Context	Trench	Area	Segment	Description	Spot Date	Pottery (g)	CBM (g)	A.Bone (g)	Flint (g)	Other
1053	2122			C	Ditch Fill					143	
1053	2122		3		Ditch Fill						Glass Fragments (2), 6g
1053	2122		3		Ditch Fill				344		
1053	2135		3	C	Ditch Fill				275		
1053	2132			B	Ditch Fill				32		
1058	2123		3			18th - 19th c.			81		
2004	2006	3			Pit Fill	16th - 18th c.					Mussel Shells (3), 7g
2004	2006	3			Pit Fill					7	
2004	2005	3			Pit Fill	18th - 19th c. (intrusive)					Shell (1), 6g
2004	2006	3			Pit Fill						Shell (4), 27g
2004	2006	3			Pit Fill						Oyster Shell (1), 11g
2004	2005	3			Pit Fill						Wood Fragments (2), <1g
2004	2005	3			Pit Fill				575		
2004	2105		3		Pit Fill				568		
2004	2076	3			Pit Fill	13th - 15th c.			175		
2004	2005	3			Pit Fill				523		
2004	2006	3			Pit Fill				785		
2004	2006	3			Pit Fill				10		
2007	2027		1	B	Ditch Fill		2				
2007	1009	3			Ditch Fill	13th - 14th c.					Iron Fragment (1), 5g
2007	2012				Ditch Fill			3			
2007	1009	3			Ditch Fill						Shell (18), 125g
2007	1009	3			Ditch Fill						Slag (1), 103g
2007	2012				Ditch Fill					26	
2007	2030		1		Ditch Fill					35	
2007	2012				Ditch Fill				223		
2007	2031	3			Ditch Fill				12		
2007	2009	3			Ditch Fill				345		
2010	2111		3		Ditch Fill	17th - early 18th c.					Clay Pipe Stem Fragment (1), 7g
2010	2111	3			Ditch Fill				212		

2033	2036		1		Ditch Fill	11th-13th/14th c.			987		
2033	2036		1		Ditch Fill						Oyster Shell (1), 7g
2033	2036		1		Ditch Fill			29			
2033	2036		1		Ditch Fill		83				
2033	2036		1		Ditch Fill					2	
2033	2036		1		Ditch Fill				3		
2033	2036				Ditch Fill				11		
2039	2040		1	C	Ditch Fill	11th to 13th/14th c.					Mussell Shell Fragments (4), 3g
2039	2040		1		Ditch Fill	late 9th - mid 12th/13th c.					Charcoal (1), 1g
2039	2040		1	E	Ditch Fill	late 9th - mid 12th/13th c.			11		Stone (1), 66g
2039	2040		1	C	Ditch Fill				63		
2039	2040		1		Ditch Fill				55		
2039	2040		1	C	Ditch Fill				46		
2041	2143		3		Pit Fill	medieval 10th - 12th c.				122	
2041	2043		1		Pit Fill	11th - 14th c.			54		
2041	2042		3	B	Pit Fill				23		
2044	2045		1	D	Gully Fill	?IA & late 9th - 12th c.	1			<1	
2044	2045		1	I	Gully Fill				14		
2046	2069				Ditch Fill					43	
2046	2064		1		Ditch Fill			181			
2046	2068		1		Ditch Fill			427			
2046	2056		1		Ditch Fill	?medieval, saxon or prehistoric		452			
2046	2061		1		Ditch Fill					123	
2046	2062				Ditch Fill			64			
2046	2067		1		Ditch Fill				323		
2046	2067		1		Ditch Fill		87				
2046	2067		1		Ditch Fill					41	
2046	2056		1		Ditch Fill				92		
2046	2068		1		Ditch Fill				22		
2046	2064		1		Ditch Fill	?medieval or earlier			170		
2046	2147		3		Ditch Fill	medieval			124		
2046	2062		1		Ditch Fill				54		
2046	2065		1		Ditch Fill				17		

2046	2061		1		Ditch Fill				3		
2046	2068		1		Ditch Fill				4		
2046	2069		1		Ditch Fill				19		
2046	2060		1		Ditch Fill				11		
2049	2050		1		Fill of Linear Feature	late 9th - 12th c.		14			
2049	2050		1		Fill of Linear Feature				235		
2051	2052		1		Pit Fill	?Roman			1692		
2051	2052		1		Pit Fill				1168		
2072	2073		1	A	Gully Fill	medieval 13th -14th c.				7	
2089	2093			B	Pit Fill	10th - 13th c.			1		
2090	2094			A	Pit Fill				176		
2090	2094			B	Pit Fill	medieval			47		
2091	2095			A	Pit Fill	15th to 16th c.			14		
2117	2118		3		Pit Fill				5		
2117	2118		3		Pit Fill				62		
2120	2121		3		Pit Fill		7				
2128	2129		3		Pit Fill	11th - 14th c.					Mussel Shells (39), 31g
2128	2129		3		Pit Fill			21			
2130	2131		3		Pit Fill	16th - 18th c.					Oyster Shells (2), 22g
2130	2131		3		Pit Fill				313		
2136	2137		3		Pit Fill	16th - 18th c.					Oyster Shells (2), 18g
2136	2137		3		Pit Fill						Oyster Shell (2), 13g
2136	2137		3		Pit Fill				536		
2136	2137		3		Pit Fill				177		
2138	2139		3		Pit Fill	17th - 18th c.	12	362			Iron Nails (2), 14g
2140	2141		3		Well Fill	19th c.		136	194		
2142	2147		3		Ditch Fill						Stone (1), 290g
2142	2147		3		Ditch Fill					5	
2142	2147		3		Ditch Fill					418	
2142	2147		3		Ditch Fill						Fragment of shell (1), <1g
2142	2148		3		Ditch Fill						Stone (2), 432g
2142	2148		3		Ditch Fill					29	
2142	2148		3	E	Ditch Fill				162		

2142	2143		3		Ditch Fill			4		
2142	2148		3		Ditch Fill			13		
2142	2147		3	F	Ditch Fill			16		
2142	2149		3	H	Ditch Fill			46		
2142	2145		3		Ditch Fill			59		
2142	Unstrat.		3		Ditch Fill			336		
-	2001	4			Subsoil	17th - 18th c.		72		
-	Unstrat.							5		

APPENDIX 2: OASIS DATA COLLECTION FORM