



# Northamptonshire Archaeology

## Prehistoric land use and Saxon to medieval plots at Bendyshe Farm, Bottisham Cambridgeshire Excavation and watching brief 2010-11



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Northamptonshire  
County Council

Jim Brown

Report 12/44

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## OASIS REPORT FORM

<b>PROJECT DETAILS</b>		<b>OASIS No: 128740</b>
Project name	Prehistoric land use and Saxon to medieval plots at Bendyshe Farm, Bottisham, Cambridgeshire, Excavation and watching brief 2010-11	
<p>Excavations were conducted by Northamptonshire Archaeology at Bendyshe Farm, Bottisham, Cambridgeshire over the period 2010-11 as part of development.</p> <p>Evidence of scattered pits along the base of the slope, in the lower lying boggy ground, indicated periodic exploitation in the catchment of a natural water source during the late Neolithic/early Bronze Age and the middle Iron Age. Seed assemblages from a single late Iron Age pit, dating to the 1st centuries BC/AD, indicate cereal cultivation nearby.</p> <p>A single pit contained a few sherds of Roman pottery. Further agricultural activity did not occur until the middle to late Saxon period. The rear boundaries of plots divided enclosed land from the fields. In the late Saxon period a small stock enclosure was added to the rear of the plots.</p> <p>Following the Norman Conquest the land was completely reorganised and linear ditches defined rectangular plots in close proximity to where grain was processed and stored. The boundary ditches were filled in the 12th century. Thereafter the land remained open, it was acquired in 1329 by Thomas Bendish who built the moated site, but the immediate area of the modern development was not a focus of activity in the 14th-15th centuries.</p> <p>From the mid-16th century the east portion of land served as yard space to the nearby red brick Bendish House, within the moated area. A number of latrine pits were excavated, and deposits of soil indicated that other waste material was brought here and levelled out. The land continued to be used in this way until the replacement of Bendish House with a grey brick building at the beginning of the 19th century.</p> <p>The 19th-century Bendyshe Manor was the forerunner of the modern farm and the gradual addition of ancillary farm buildings around a rectangular yard space is depicted by the cartographic record to the present.</p>		
Project type	Area excavation and watching brief	
Site status	None	
Previous work	DBA CgMs (Francis 2007); evaluation NA (Foard-Colby and Soden 2009)	
Current land use	Residential	
Future work	None	
Monument type/period	Late Iron Age, Saxon, medieval and post-medieval	
Significant finds	Worked flint, pottery, tile, glass, metal finds, animal bone and human remains	
<b>PROJECT LOCATION</b>		
County	Cambridgeshire	
Site address	Bendyshe Farm, Bottisham	
Study area	c1.25ha	
OS NGR	TL 544 604	
Height a OD	c10-11m	
<b>PROJECT CREATORS</b>		
Organisation	Northamptonshire Archaeology	
Project brief originator	Kasia Gdaniec, Cambridgeshire County Council	
Project Design originator	Simon Mortimer, CgMs Consulting	
Director/Supervisor	Chris Jones and Mark Patenall, Northamptonshire Archaeology	
Project Managers	Iain Soden and Jim Brown, Northamptonshire Archaeology	
Sponsor or funding body	David Wilson Homes, South Midlands	
<b>PROJECT DATE</b>		
Start date	April 2010	
End date	March 2011	
<b>ARCHIVES</b>	Location (Accession no)	Content (eg pottery, animal bone etc)
Physical	Cambridgeshire County Store ECB3367	Worked flint, pottery, tile, glass, metal finds, animal bone and human remains
Paper		Context sheets, permatrace plans & sections, site registers, photographic archive, background documents
Digital		Client PDF report
<b>BIBLIOGRAPHY</b>		
Journal/monograph, published or forthcoming, or unpublished client report		
Title	Prehistoric land use and Saxon to medieval plots at Bendyshe Farm, Bottisham, Cambridgeshire, Excavation and watching brief 2010-11	
Serial title & volume	Northamptonshire Archaeology report 12/44	
Author(s)	Jim Brown	
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**PREHISTORIC LAND USE AND SAXON TO MEDIEVAL PLOTS AT  
BENDYSHE FARM, BOTTISHAM, CAMBRIDGESHIRE  
EXCAVATION AND WATCHING BRIEF 2010-11**

*Abstract*

*Excavations were conducted by Northamptonshire Archaeology at Bendyshe Farm, Bottisham, Cambridgeshire over the period 2010-11 as part of development.*

*Evidence of scattered pits along the base of the slope, in the lower lying boggy ground, indicated periodic exploitation in the catchment of a natural water source during the late Neolithic/early Bronze Age and the middle Iron Age. Seed assemblages from a single late Iron Age pit, dating to the 1st centuries BC/AD, indicate cereal cultivation nearby.*

*A single pit contained a few sherds of Roman pottery. Further agricultural activity did not occur until the middle to late Saxon period. The rear boundaries of plots divided enclosed land from the fields. In the late Saxon period a small stock enclosure was added to the rear of the plots.*

*Following the Norman Conquest the land was completely reorganised and linear ditches defined rectangular plots in close proximity to where grain was processed and stored. The boundary ditches were filled in the 12th century. Thereafter the land remained open until was acquired in 1329 by Thomas Bendish who built the moated site, but the immediate area of the modern development was not a focus of activity in the 14th-15th centuries.*

*From the mid-16th century the east portion of land served as yard space to the nearby red brick Bendish House, within the moated area. A number of latrine pits were excavated, and deposits of soil indicated that other waste material was brought here and levelled out. The land continued to be used in this way until the replacement of Bendish House with a grey brick building at the beginning of the 19th century.*

*The 19th-century Bendyshe Manor was the forerunner of the modern farm and the gradual addition of ancillary farm buildings around a rectangular yard space is depicted by the cartographic record to the present.*

## **1 INTRODUCTION**

In the period between April 2010 and March 2011 Northamptonshire Archaeology (NA) carried out a series of archaeological excavations at Bendyshe Farm, Bottisham, Cambridgeshire (NGR TL 544 604; Fig 1). The work was carried out for CgMs Consulting on behalf of David Wilson Homes in advance of residential development.

The site is located on the north-west side of a former medieval moated manor, which is now a Scheduled Monument (SM33269). An archaeological desk-based assessment was conducted by CgMs Consulting (Francis 2007). This was followed by trial excavation, which revealed pits, ditches and postholes dating from the 9th century onwards that were likely to be affected by the construction works (Foard-Colby and Soden 2009). While the foregoing evaluation did not suggest dense or widespread archaeological remains, it did indicate that low-density features were present over much of the site. Following these preliminary investigations Cambridgeshire County Council, as archaeological advisors to the planning authority, required that a further programme of archaeological mitigation works be undertaken prior to development (Gdaniec 2010). A *Specification for Archaeological Excavation* was compiled by CgMs

Consulting (Mortimer 2010) that contained a capability statement and project design produced by NA (Soden 2010). The excavations were monitored by Cambridgeshire County Council in discussion with CgMs Consulting and in accordance with the agreed specification. Guidance on appropriate environmental sampling was provided throughout the fieldwork by Allen Environmental Archaeology in consultation with all parties (Allen 2010a-d; 2011).

Given the relative simplicity of the archaeology, it was agreed that post-excavation assessment could move directly to full analysis without an Updated Project Design. This report represents a synthesis of all the archaeological work conducted and will form the basis of an article for the consideration of the *Proceedings of the Cambridgeshire Antiquarian Society* journal.

## **2 BACKGROUND**

### **2.1 Archaeological background**

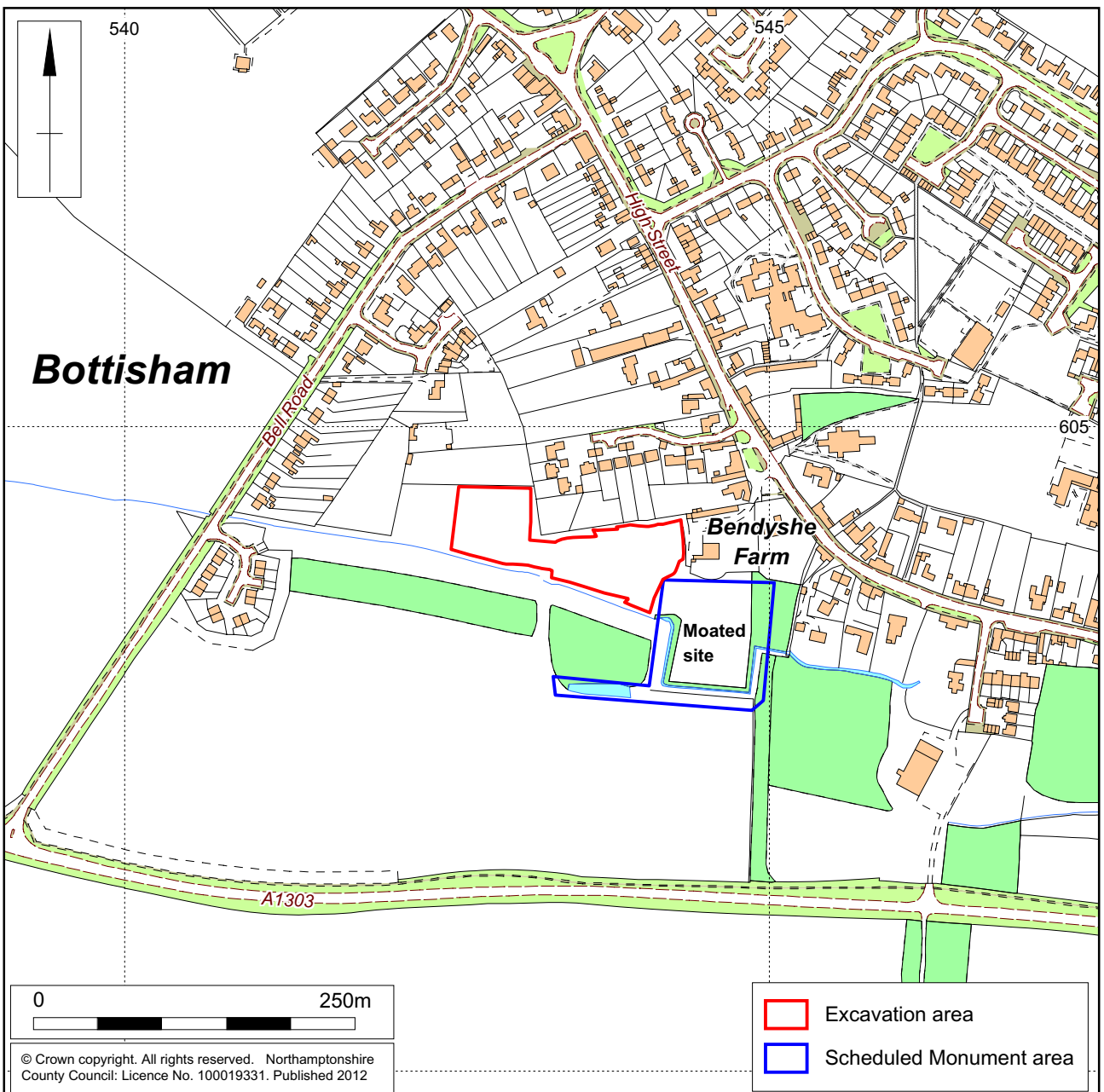
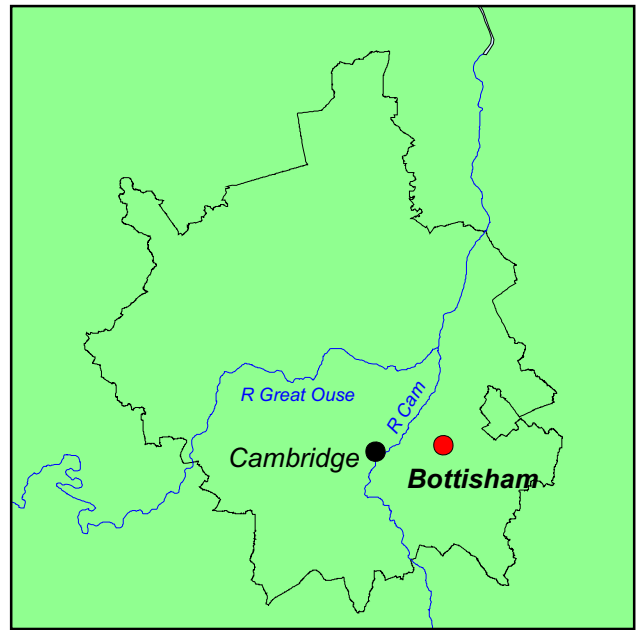
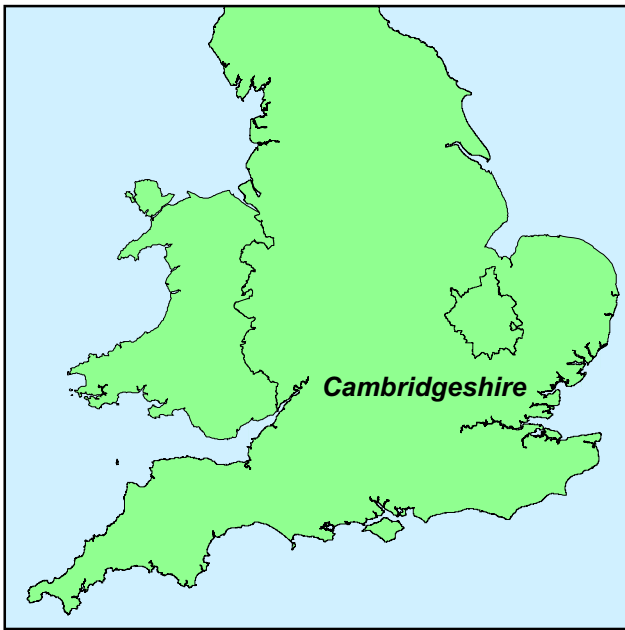
The medieval moated site of Bendish Hall and its associated fishpond (SM33269), comprise a rectangular island measuring approximately 60m from east to west and at least 70m from north to south. The ground level within the moated area is raised by at least 0.5m above the surrounding land. The moat lies on the east, south and west sides, and is up to 9m wide by 2m deep. The north side of the moat, and the northern end on the west side, have been filled and are probably buried features.

Immediately adjacent to the west of the southern arm and on the same alignment, is a fishpond, 80m long by at least 10m wide. The moated site is believed to be associated with Thomas de Bendish, who held an estate in the parish in 1288. A large red brick house with a chapel at one end purportedly stood upon the island and was demolished in the early 19th century; this is thought to have been a post-medieval building replacing an earlier manor house.

Despite some partial infilling, the moated site and associated fishpond survive well. The island is likely to retain evidence for structures and other features relating to the period of occupation. The buried silts in the base of the moat and pond probably contain both artefacts relating to the period of occupation and environmental evidence for the landscape in which the moated site was set.

#### ***Archaeological desk-based assessment***

The desk-based assessment by CgMs Consulting identified Bottisham and the surrounding area as having plentiful evidence of medieval settlement in the form of a deserted medieval village and moated sites, particularly the Scheduled Monument located adjacent (Francis 2007). A search of the Cambridgeshire Historic Environment Record (HER) was conducted within a 1km radius of the site for evidence of other periods and was checked again prior to trial trench evaluation and site mitigation works for more recent additions (Foard-Colby and Soden 2009, 2-4).



Scale 1:5000

Site location Fig 1

### *Prehistoric*

Mesolithic finds from Bottisham include two tranchet axes found in association with flint flakes (HER06583); and an unspecified number of Mesolithic flakes and blades found together with two tranchet axes near the centre of the village (HER06595).

Neolithic finds comprise seven Greenstone axes, made of Great Langdale tuff (HER06580); and a polished stone axe found in a drainage ditch off Lode Road (HER09208). A scatter of retouched flint tools and waste flakes probably bridged the early Neolithic and late Bronze Age (HER06531).

Bronze Age entries included two barbed-and-tanged arrowheads (HER06591; 06598). The latter tool, found in association with another worked flint, was found close to the Holy Trinity Church. A double ring-ditch exists as a cropmark c650m east of the development (HER06626).

Hall has observed that prehistoric activity in the Bottisham area falls into two main types: lithic sites in the fen; and round barrows and ring ditches. The latter are mostly situated on the high sandy ground, with a few ring-ditches on the chalk slopes (Hall 1996, 108). Two more ring ditches, of possible Bronze Age date have been identified by aerial photography to the east of Bottisham, around Chalk Farm. These ditches probably represent barrows and are considered as outliers of the Hare Park Bronze Age group, located c4 km to the south-east of Bottisham (*ibid*, 112).

A few chance prehistoric finds have been recovered in the wider area, including Mesolithic and Neolithic axes from Hare Park and from Swaffham Fen. Recent fieldwalking has demonstrated that there are no lithic sites on the chalk slopes, but a great concentration in the fens to the west. These sites are concentrated along the course of palaeochannels running from Lode to Burwell, to the north of Bottisham (*ibid*, 108).

### *Roman*

Scatters of Roman pottery and coins were recovered c500 and c700m to north of the site (HER04133; 06586), whilst unprovenanced Roman finds from Bottisham include a brown clay pottery jug with trefoil mouth (HER06581) and a set of iron shackles found in a gravel pit in the 1850s (HER06582). Further afield, Roman coins and pottery have been recorded at Lode and Long Meadow, and a Roman building has also been found.

An archaeological evaluation was conducted at Tunbridge Hall Farm, c600m to the north, which revealed the presence of a potentially high status Roman settlement or villa (cAD200-450) with stone-footed buildings and painted wall plaster (HERCB15605). A further Roman farmstead was identified at Tunbridge Lane, c550m to the north, dated to the 2nd century AD (HERCB14806).

Four canals exist locally at Bottisham, Swaffham Bulbeck, Reach and Burwell and serve to connect the villages on the chalk belt to the River Cam. It has been suggested that the lodes have Roman origins but this has not been proven but were certainly used during the medieval period (Taylor 1973, 59). A late Saxon origin during the acquisition of re-founded monastic estates at Ely and Ramsey has also been suggested (Kirby & Oosthuizen 2000, 32).

### *Saxon*

Bottisham is a Saxon place-name, meaning 'Boduc's Ham or farm' (Taylor 1973, 56; Ekwall 1981, 54). The village has been variously known over time as *Bidichseye* meaning 'the dry ground near the ditches' (1043-5); *Bodichessha* (1066); *Bodkesham* (c1210). The first syllables of the name originally meant 'by ditches', describing the settlement's proximity to the drains on the fen (Scarfe 1983, 43).

A Royal Charter of King Edward the Confessor, dating to 1061, records land granted by the King to Ramsey Abbey; and confirmation of privileges and of land throughout the country, including Bottisham (Sawyer 1968, 306).

An 11th-century copper-alloy disc brooch showing a beast biting its own back was found by metal detector c350m to the east (HER06599). Saxo-Norman archaeological features, including a well and pit, were identified during at Beechwood Avenue, c450m north-east (HERCB15746).

### *Medieval*

Prior to Domesday, the land was held by Earl Harold and Alric of the Abbey of Ramsey. Bottisham is recorded in Domesday Book (1086) as *Bodichessha*, comprising land within the Staine Hundred, held by Walter Giffard (Rumble 1981, 17; Williams 1990). Domesday records that the land was extensive, with enough arable land for 10 plough teams (each with their 8 oxen), plus 25 villagers with 12 smallholders and another 14 ploughs. There were 4 watermills, meadow for 6 ploughs, and marshland with 3 ploughshares and 400 eels. Traces of ridge and furrow earthworks from the cultivation of the medieval open fields survive around the periphery of the parish (HER06705; 06706; 06697).

The closest medieval activity to the site is represented by the earthwork remains of Bendish Hall (HER01120), which is the medieval moated site and Scheduled Monument (SAM33269) located immediately adjacent to the south-eastern boundary of the development. Taylor has observed that Bottisham originally comprised two or three separate parts, perhaps the product of tenurial separation (Taylor 1973, 59). One of these was located around a former village green situated opposite to the church, which lies immediately to the north-east of the development.

Two other medieval moated sites lie at Tunbridge Hall (HER01131), c900m to the north-east, and on the west side of the drive leading to Bottisham House (HER06460A), c450m to the east.

A triangular earthwork enclosure forms part of a deserted village (HER01124), 1.2km to the north at Bottisham Park, consisting of at least eight house platforms with encircling ditches. The name of the village is unknown, but may be the lost hamlet of *Angerhale*, recorded in the 11th century. By the 13th century there were as many as six nucleated settlements of various sizes within Bottisham parish forming satellites around the original settlement (*ibid*, 58). A medieval ditch lay to the west of the deserted village (HER10554). Four moated sites were arranged in a line on the side of the narrow valley at Bottisham Park and were filled from the same stream using a complex system of ditches (*ibid*, 127).

### *Post-medieval*

Following late 18th-century enclosure there was little alteration to the nearby moated site. The construction of Bendyshe farmhouse and its associated buildings was largely located outside the monument on its north and north-west sides.

The land was rough scrub and pasture prior to development and contained a standing late 18th-century timber and brick barn which formerly belonged to the post-medieval

farm, and was the successor to the moated manor site. A couple of late 19th- or early 20th-century buildings were also present, comprising an overgrown timber range in a state of advanced decay and a free-standing Dutch Barn, all of which were abandoned. There were no Listed Buildings within the area of the proposed development site but many medieval and post-medieval examples lie within 1km radius. The closest Listed Buildings are two post-medieval timber-framed houses located to the east, on the High Street (HER 06383; DCB901), and the Church of The Holy Trinity (HER06730; DCB1315), located to the north-east. A medieval milestone (HER06550) is located to the north of the Newmarket Road. The western edge of the Bottisham Conservation Area coincides with the eastern boundary of the development.

The site was probably utilised as farmland associated with the medieval moated site of Bendish Hall and subsequently with its post-medieval successor, Bendyshe Farm. The potential for evidence of medieval, post-medieval and industrial periods was considered high, whilst it was thought there would be low potential for other periods.

A variety of metal finds have been recovered by metal detection within the village, together with pottery (HER06552; 06586A; 06589; 08746A; 11064). Two 16th-century timber-framed houses stand at Stocks Close and 89 High Street: (HER 06590; 06594). The closest post-medieval building to the site is the early 19th-century Bendyshe Farmhouse (HER 06587) from which the site takes its name. The farmhouse was an L-shaped building of white brick with slated, hipped roofs (RCHME 1972, 9). The angle between the wings was filled in the mid 19th century.

The 1805-1836 Cassini historical 1" Ordnance Survey map of Bottisham depicts the moat and fishpond associated with the site of Bendish Hall and also Bendyshe Farm to the north within its own enclosure (Francis 2007, fig 6).



Bottisham enclosure award map, 1808 Fig 2

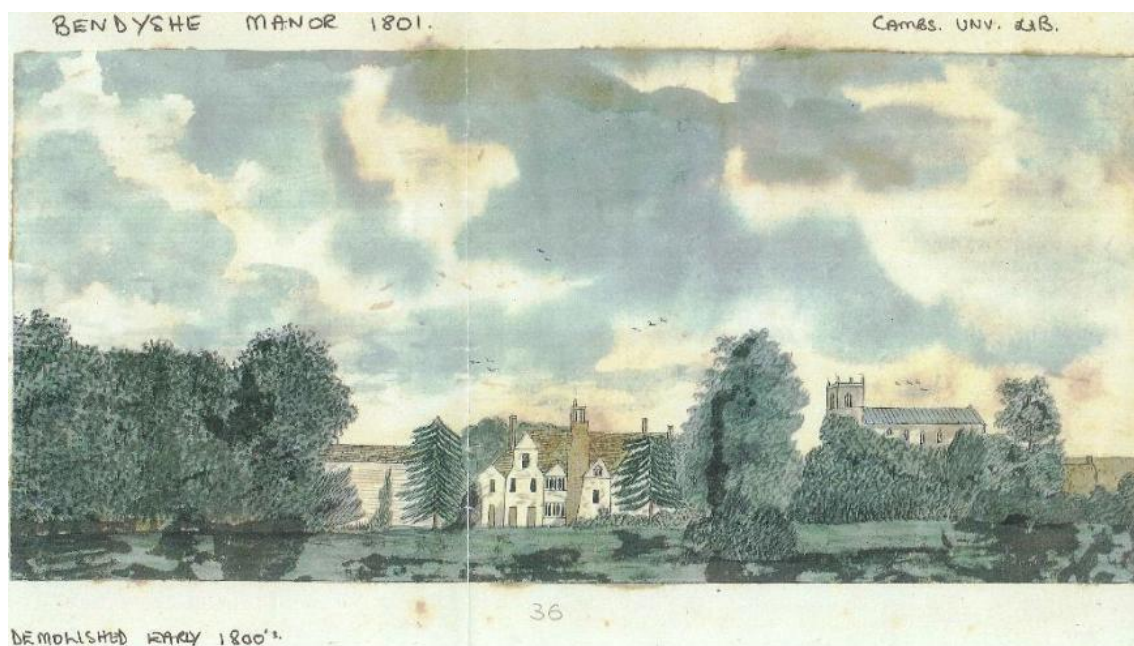
The 1808 Enclosure award map shows the western half of the proposed development site as land owned by Benjamin Kettle (CRO Q/RDc 12; Fig 2). The eastern half of the site area, including the Scheduled Monument, was owned by St Peter's College. The Scheduled Monument is depicted in much the same layout as witnessed in 2011. A



boundary ditch separated the two parcels of land that crossed the excavation area from north-east to south-west. The ditch at the southern edge of the site is depicted. An elongated building at Bendyshe Farm probably represented an earlier building with a line of barns to its west.

The 1887 Ordnance Survey map depicts the modern arrangement of Bendyshe Farm with fewer outbuildings (Francis 2007, fig 8). The southern end of the barns from 1808 remained, but the elongated farmhouse had been reduced in size to create an enclosure or walled garden to the east, and a yard area to the west, with outbuildings along the north side. A track led from Bendyshe Farm southwards, passing through the east extent of the excavated area, and then between the moat and the fishpond, but was no longer depicted by 1972 (*ibid*, fig 13).

Editions of the Ordnance Survey after 1887 depict various arrangements of the farm focused around the farmyard, with the gradual addition of ancillary structures (*ibid*, figs 9-14). By 1902 a rectangular building had been constructed in the centre of the farmyard (*ibid*, fig 10), and by 1972 a barn had been erected within the western extent of the excavation area (*ibid*, fig 13). The only distinct changes to the Scheduled Monument were specifically to the fishpond, which seems to have been enlarged or flooded on its north side, as shown by the maps dated 1902-1994 (*ibid*, figs 10-14).



Bendyshe Manor, painting, 1801, looking north Fig 3

### **Further historical sources**

Two additional sources have been consulted since the desk-based assessment, through the Cambridge University Library and the Victoria County Histories.

The rental documents and the map of the farm (dated 1802) that are held at the Cambridge University Library do not provide further information for the use of the land within the excavated area or any differing arrangement to the buildings depicted on other cartographic sources. However, a print taken from a painting, dated 1801, depicts the south elevation of the Bendyshe Manor house with the church in the background. No indications of the moated site are shown, but the orientation clearly indicates that the viewer should be looking across the Scheduled Monument towards the house (Fig 3). The building depicted may be the large red brick house with a chapel at one end

that perhaps stood within the moated area and was demolished in the early 19th century. However, the building that is shown, and the probable barn to its west side, also correlate quite well with the buildings depicted on the 1808 enclosure award map and it is the description in the Victoria County History that helps to clarify this potential confusion (Wareham and Wright 2002, 196-205).

The old Bendish House is also described within a moat south-west of the church, and was a large, irregular, red brick building. The structure was probably 16th century, of 2½ storeys, whose south front had a large central bay window. In 1604 it included a hall, parlour, and other chambers, and, when let to Samuel Shepherd in the 1740s, had a chapel on the top floor. It ceased to be used as a gentleman's residence after its rental period to the Lushington family, 1775-95, and was replaced after inclosure with a grey brick house at Bendyshe Farm, a little to the north.

The Victoria County History also contains a fairly extensive account of the various manors and other estates within Bottisham and its neighbouring parishes (*ibid*). Amongst this information is a specific reference to the estate of the Bendish family. The land was acquired by Thomas Bendish in 1329, and remained within a junior branch of the family until the 16th century. In c1593 the Bendish estate was passed by marriage to Thomas Webb, at Tunbridge Hall, until his death in 1604. Then through his daughter, Joan Webb's marriage to Robert Clench, the estate passed to the Clench family for four generations until it was sold in 1743 to Peterhouse, Cambridge. The college owned over 235 acres until Bendish farm was sold in 1965.

### ***Trial excavations***

#### ***94 High Street***

A recent test pit excavation in the back garden of 94 High Street, which is located to the north of the Bendish Hall moated site, indicated stratified layers of soil suggestive of fill deposits within a much larger ditch, pit or hollow-way than the test pit could more fully explain (Astill undated; ECB3482). The excavation was conducted by a local student as part of an A-level project, supervised by curatorial archaeologist, Kasia Gdaniec. The contexts refer to separate trowel spits, each 100mm thick, to a total depth of 0.70m. It is not clear if the natural substrate was exposed. The lowest context (7) produced a piece of St Neots-type shell gritted pottery, worked flint flakes, fire-cracked flint, shell and animal bone. The context (6) above this produced further animal bone, fire-cracked flint, a piece of Stamford ware and two pieces of undiagnostic 12th to 13th-century pottery. This was overlain by context (5), which contained animal bone, shell, fire-cracked flint, three worked flint flakes, including a possible blade, and five pieces of pottery; the base of a glazed 13th/14th-century dish, three pieces of medieval greyware and one St Neots-type shell gritted sherd. The upper 400mm of the test pit clearly contained modern artefacts amongst residual medieval and other finds. Overall, there was a clear indication of well stratified material, probably overlying Saxon, medieval and later features below an overburden of modern garden soil.

#### ***Bendyshe Farm***

Trial trench evaluation was undertaken by Northamptonshire Archaeology in advance of the present development at Bendyshe Farm, Bottisham, Cambridgeshire (Foard-Colby and Soden 2009). The evaluation identified pits, ditches and postholes to the north-west of the Bendish Hall medieval moated site. There was a clear indication that features within the site dated from the 9th century onwards. In addition there were the remains of two post-medieval chalk block walls and a chalk cobbled surface in the north-east of the site.

The thirty-two pieces of worked flint consisted of abraded flakes, blades and an end scraper, broadly dated to the late Mesolithic to late Neolithic but all were judged to be

residual in later contexts. Dispersed archaeological features in the western field are largely undated.

A few pieces of ceramic roof tile, probably residual, were the only Roman finds.

The group of pottery sherds were from the middle to late Saxon period through to the 12th century. Saxon pottery was found in Trench 17, but it lay either in a re-cut ditch or later in a sequence of features so could have been residual. Trench 19 also produced late Saxon pottery from alluvium. A few pits suggested there was 12th-century medieval activity, particularly in Trenches 13 and possibly 17, but the evaluation did not identify a focus of activity. The features were thought to be related to the activity of the moated site or properties fronting onto High Street and the former green opposite to the church.

Most of the finds were from higher ground, north of the maximum spread of alluvium. Trenches to the west of the site contained deposits at their base that were rich in molluscs which, in number and species present, suggested land subject to inundation and was corroborated by alluvium above the 12th-century ditches. An initial alluvial layer encountered in Trench 7 (703) was already present when a 14th-century horseshoe was deposited in it. A considerable build-up of alluvium was encountered in Trenches 19 and 20 close to the Scheduled Monument, where it was traced consistently along the southern half of the entire site. A few sherds of 16th-century pottery attested to the presence of post-medieval occupation, which was expected amongst later features and deposits.

Hardstanding and the remains of two walls were part of the late post-medieval and modern farmyard. Features were identified beneath the farmyard buildings and surfaces, as indicated by Test Pits 25, 26 and 27, 35 and 36. A series of dumping levels and large rubbish pits, containing building rubble, were located in the southern and central areas of the site and to the west of the moated site. These may be associated with the demolition of the former manor buildings during the 19th century and activity generated during the life of the farm.

The trial trench evaluation found dispersed archaeological features of middle to late Saxon, Norman, medieval, post-medieval and late post-medieval date. The features were well defined and at varying depths, with earlier features cut into natural chalk beyond the extent of the alluvial wash along the southern perimeter of the site. The post-14th-century features cut the alluvium. The range of finds recovered was good, although numbers were very small indeed. Most were suggestive of domestic activity but the scarcity of finds meant that any physical focus was located elsewhere. Dating across the site was sparse and environmental evidence whilst well represented, was not securely dated.

## **2.2 Topography and geology**

The site is situated on the south side of Bottisham, within the historic core of the present settlement, at c10-11m above Ordnance Datum. The total site area is c1.25ha. The land is bounded to the north and west by the rear gardens of properties fronting onto Bell Road and High Street. To the east and south-east are the moated remains of the former medieval manor and present Scheduled Monument (SM33269). The south side is bounded by a modern fen drain, along which water flows westward, and which eventually empties into the Bottisham Lode to the north-west. This canalised watercourse begins slightly to the east of the moated site, and is therefore very close to the spring head.

The land lies on higher ground overlooking the fens to the north. The solid geology below the village is entirely Lower Chalk (BGS 2001). However, this is overlain in part by a Pleistocene deposit of Head Gravel identified at Hare Park (Hall 1996, 108), as well as first Terrace Gravels in the fen, and there are deposits of sand and gravel that line the edges of Pleistocene channels within the fen and excavation has demonstrated patches of diamicton (Anglian till) that account for occasional variations in the superficial deposit.

The soils are of the Moulton Association, comprising shallow well-drained calcareous silty soils over argillaceous chalk, and is also associated with deeper well-drained coarse loamy soil in places (M Allen pers comm). Soils of the Swaffham Prior Association are located across the majority of the village to the north of the site which are calcareous coarse and fine loamy soils that have developed over chalk and chalky drift.

### **3 EXCAVATION STRATEGY**

#### **3.1 Aims and objectives**

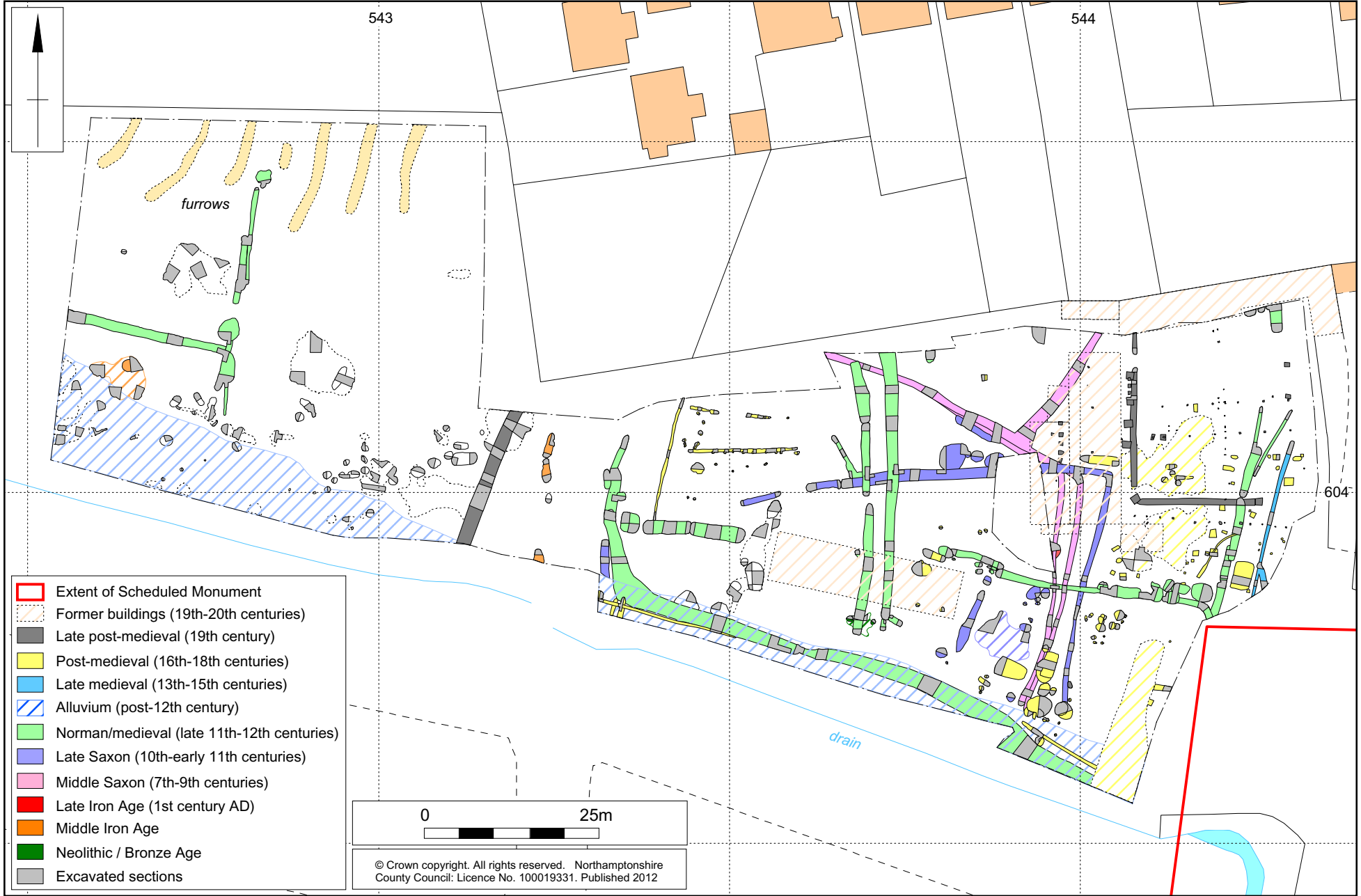
The fieldwork and a subsequent programme of analysis were conducted with the following objectives in mind, relating to the section 4.2 of the archaeological brief (Gdaniec 2010).

- Establish the date, development and character of the archaeological remains on the site, paying particular attention to Anglo-Saxon remains and their potential continuity, or otherwise, into the medieval period.
- Reach greater understanding of the landscape changes which have taken place on the site due to natural and man-made agencies by recourse to environmental sampling.
- Reach greater understanding of the evidence for farming, domestic occupation, trade, industry and economy between the Anglo-Saxon and post-medieval periods and their expansion and contraction over time through study of artefactual assemblages.
- Establish the extent of the changing sphere of influence of the adjacent moated site from the former historical focus to that of the current site, not least by water-management, as opposed to the competing or complementary focus of the wider village.
- Appreciate and understand the contribution made by a small documentary record held by Peterhouse, Cambridge, former owners of the site. This collection has since been examined.

These objectives and any others that were subsequently considered relevant during the course of excavation are based upon the guidelines and regional research agenda for the Eastern Counties (Glazebrook 1997; Brown and Glazebrook 2000; Gurney 2003; Medlycott and Brown 2008; Medlycott 2011).

Scale 1:750 (A4)

Area of excavation depicting features of all periods Fig 4



### 3.2 Methodology

The open area excavations were conducted over the course of several visits to the site as each area of ground became available for investigation, prior to development (Fig 4). A total 0.82ha of open area excavations comprised 65.6% of the development area (1.25ha).

The open area excavations were planned to scale and set against the Ordnance Survey base map using a combination of survey grade GPS (Leica System 1200) and digitised hand-drawn permatrace sheets. Topsoil deposits were removed to the surface of the subsoil using a tracked 360° mechanical excavator, fitted with a toothless ditching bucket and operating under archaeological direction. Spoil was initially stacked separately adjacent to the excavation and was later removed from site during using road haulage dump trucks. Excavation proceeded to the surface of the significant archaeological horizon or, where this was absent, the natural substrate. Movement of machinery during site preparation was conducted in such a manner as to avoid impact on the archaeology.

Each excavation area was cleaned sufficiently to enable the identification and definition of archaeological features. A hand drawn site plan of all archaeological features was made at scale 1:100, related to the Ordnance Survey. All archaeological deposits and artefacts encountered during the course of excavation were fully recorded. The recording followed the standard NA context recording system with context record sheets using unique context numbers for each feature or deposit, cross-referenced to scale plans, section drawings and photographs in digital, and both 35mm monochrome and colour film (NA 2006). Deposits were described on *pro-forma* record sheets to include measured and descriptive details of the context, its relationships, interpretation and a checklist of associated finds. Archaeological sections of sampled features were drawn at scale 1:10 or 1:20, as appropriate, and all levels were related to Ordnance Survey datum. Spot heights were measured in across the site.

Representative samples of all exposed archaeological features were excavated using sections of between 1-3m length and allowing them to weather to expose smaller variations within them. All structural features were fully excavated, pits were 50% excavated and a representative portion of all linear boundaries were excavated. Artefacts were collected by hand and from sieved samples. Spoil and the surface of archaeological features were scanned with a metal detector to ensure maximum finds retrieval. The field data has been compiled into a site archive with appropriate cross-referencing.

Environmental bulk soil samples were collected for archaeobotanical remains from principal contexts, 40 litres per context where possible, or the entire context for smaller deposits. Separate soil samples were also collected in smaller quantities of 2-5 litres for the study of molluscs. Soil was stored in sealable buckets from securely stratified deposits considered to have the minimal risk of contamination (EH 2002). Bulk soil for archaeobotanical remains were processed at Northamptonshire Archaeology by specialist staff using the flotation technique to retrieve seed, charcoal and other remains. Those samples taken for the study of mollusca were processed by Mike Allen. The resultant residues were hand sorted to retrieve bones and other finds.

All works were conducted in accordance with the Institute for Archaeologists' guidance (IfA 2008a and c) and the *Code of Conduct* (IfA 2010), and the environmental and project management recommendations of English Heritage (EH 1991; 1997; 2002; 2005; 2006; 2007). The site archive has been compiled in accordance with best practise (IfA 2008b; MGC 1992) and the finds have been prepared for long term storage in a stable environment (Walker 1990; Watkinson and Neal 1998).

## 4 THE EXCAVATED EVIDENCE

The natural substrate across the site comprised greyish-white chalky till with outcrops of chalk. The archaeological and surface deposits were fairly evenly distributed above this geological horizon, with principal features cut into the chalk and till. Prehistoric, Roman, Saxon, Norman and medieval features were partially overlain by mid greyish-brown alluvial clay alongside the modern fen drain, indicating that it is the successor of a former watercourse.

The quantity of datable artefacts recovered during excavation was fairly low and a great many features have been ascribed to a particular period using perhaps only a couple of sherds of pottery. Many more had no finds and are placed within the chronological sequence by association with the continuation of a dated ditch, or because they have a stratigraphic relationship with a dated feature or deposit above, or because they lie within a group of similar dated features. Many more, particularly pits in the west of the excavation are completely undated, and could easily belong to any of the periods represented within the site.

### 4.1 Summary of the site chronology

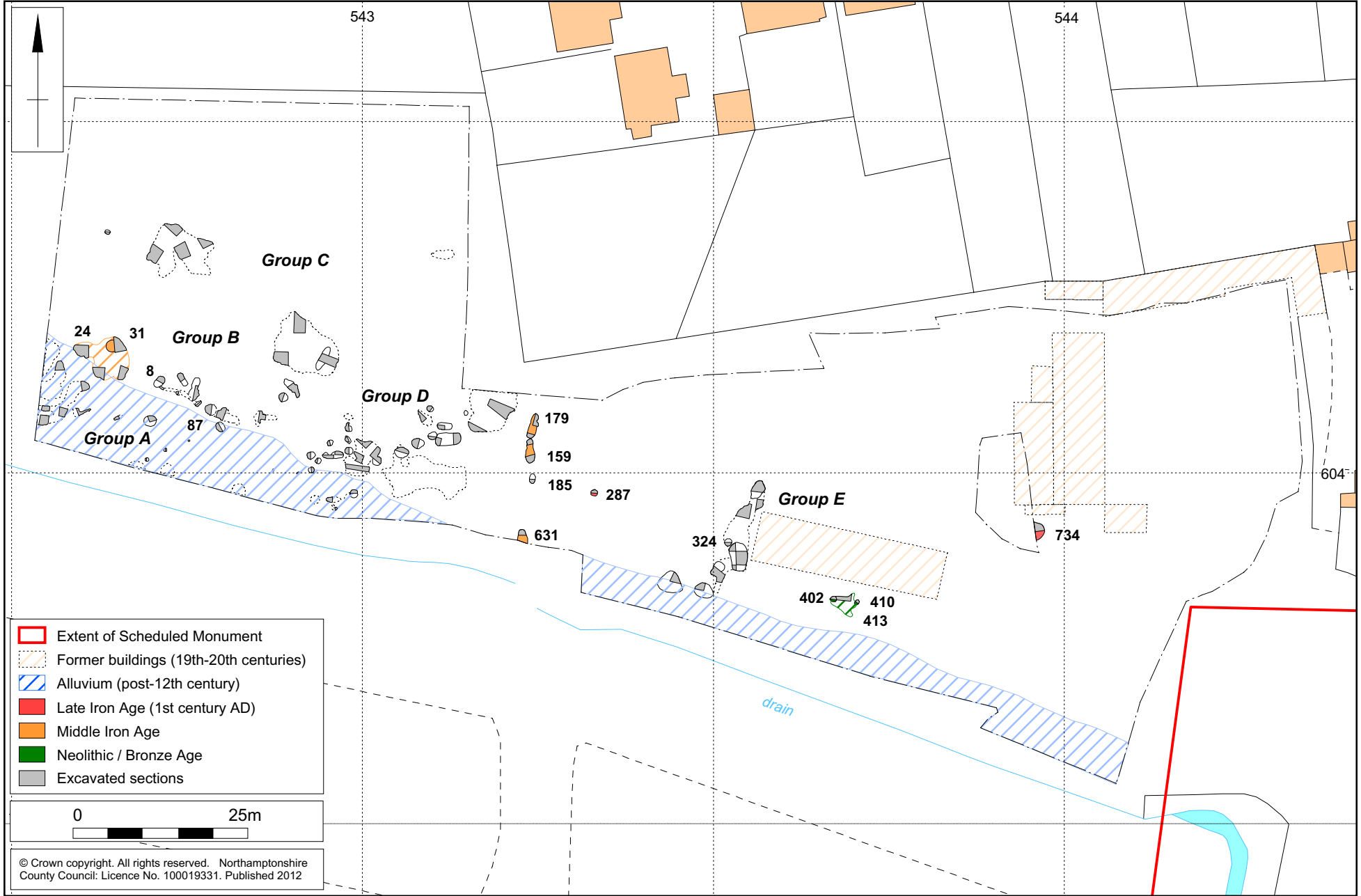
*Table 1: Site chronology*

<b>Period</b>	<b>Nature of activity</b>
Late Neolithic/early Bronze Age (c3,000-1,500 BC)	A small pit group with associated flint scatter, burnt stone, charred materials and surrounding layer
Middle Iron Age (c400-150 BC)	Scattered discrete isolated pits along a water source with associated pottery
Late Iron Age (1st centuries BC / AD)	One isolated pit containing pottery sherds
Roman (1st-4th centuries AD)	One isolated pit containing pottery sherds
Middle Saxon (late 7th-9th centuries AD)	Early boundary features, probably delineating the back of plots associated with dwellings fronting the green
Late Saxon (10th-early 11th centuries AD)	Sub-rectangular enclosure, possible animal pen or shelter, cereal processing and other organic waste amongst pit fills
Norman and medieval (late 11th-12th centuries AD)	Complete reorganisation of boundaries to create small plots and formalise restructuring of land use
Late medieval (13th-15th centuries AD)	Lack of evidence for continuity of occupation and land use, gradual accumulation of alluvial/colluvial deposits
Post-medieval (16th-18th centuries AD)	Latrine pits and levelling deposits, possible planting or trellis posts to the west
Late post-medieval (19th century AD)	Establishment of Bendyshe Farm and the gradual addition of ancillary buildings with associated drainage

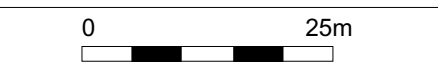
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Prehistoric, Roman and other pits

Fig 5



- Extent of Scheduled Monument
- Former buildings (19th-20th centuries)
- Alluvium (post-12th century)
- Late Iron Age (1st century AD)
- Middle Iron Age
- Neolithic / Bronze Age
- Excavated sections

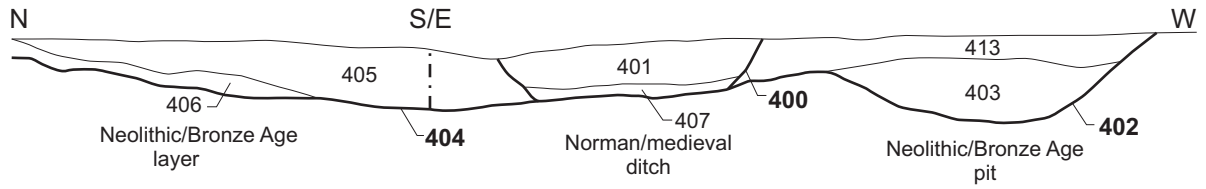


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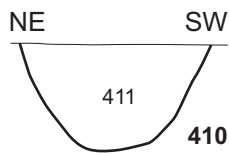


## Neolithic/Bronze Age

### Pits 404, 400 and 402

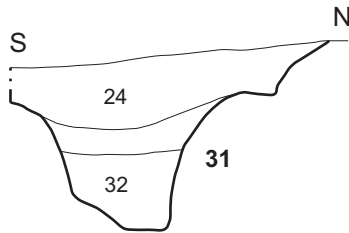


### Pit 410

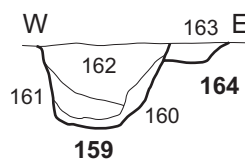


## Middle Iron Age

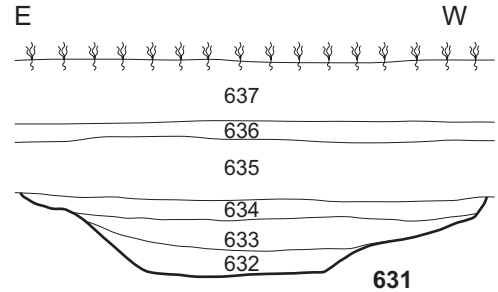
### Pit 31



### Pit 159

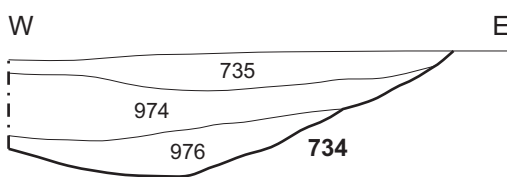


### Pit 631

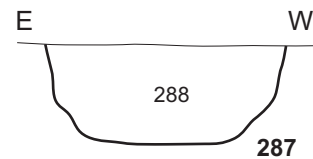


## Roman

### Pit 734



### Pit 287

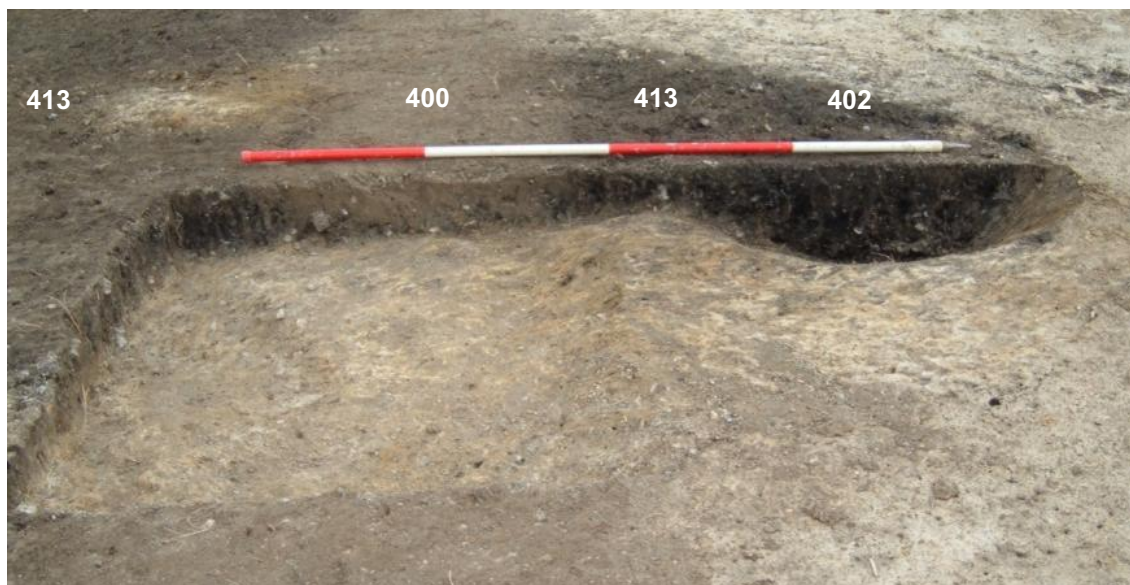


## 4.2 Possible late Neolithic or early Bronze Age pits

There were two pits that may be of significantly earlier prehistoric origin than those features dated by pottery elsewhere on the site (Figs 5-6). Pits 402 and 410 were over 1.0m in diameter and both were rounded in plan (Table 2). Pit 402 had fairly gently sloping sides and a broad flat base, whilst pit 410 was steeper and narrower at the base. They were characterised by the high concentration of burnt stone, mainly flint, within their fills, which was not observed in the same quantity elsewhere upon the site. Although there is no pottery from these features, a leaf-shaped arrowhead was retrieved from pit 402. A 100% soil sample (130 litres) from pit 402 produced mainly charcoal with some other burnt residues.

Table 2: Possible late Neolithic or early Bronze Age deposits

Fill / Feature	Length (m)	Width (m)	Depth (m)	Fill description	Finds
405 / layer 413 / layer	4.00	3.80	0.18	firm dark brownish-grey silty clay with chalk flecks, moderate charcoal, occasional burnt flint <40mm Ø and gravel <10mm Ø	other worked flint
406 / layer	-	-	0.06	firm brownish-grey silty clay, merges with 405 above, slightly lighter in colour	leaf-shaped arrowhead
403 / pit 402	1.02	0.94	0.21	firm black silty sandy clay packed with burnt flint <30mm Ø, extremely high charcoal content, no <i>in situ</i> scorching	-
411 / pit 410	0.70	0.66	0.35	soft dark brown silty clay with moderate burnt flint <30mm Ø	-



Pit 402 and layer 413, cut by medieval ditch 400, looking south Fig 7

Soil surrounded and overlay both pits, comprising layers 406 and 405/413 which merged together (Figs 6-7). Movement around the area of the two pits had incorporated charcoal, burnt flint and a small assemblage of worked flint including a leaf arrowhead. A 50 litre soil sample from the deposit produced similar results to pit 402, and two charred cereal grains are thought to be intrusive from the post-Conquest ditch that cut the deposit. All of these deposits were fully excavated.

Prehistoric pits of this kind are generally associated with water heating. Given the proximity of the features to a small modern tributary stream it may be supposed that the nearby water source was a potential focus for periodic hunter-gatherer activity.

### 4.3 Middle Iron Age waterholes, late Iron Age pit

#### *Middle Iron Age*

Three pits that produced exclusively middle Iron Age pottery were discrete from neighbouring features (Figs 5-6). Pits 31, 159 and 631 were each different in character and yet all exhibited silting episodes within their makeup. Their only other apparent relationship was their date and location near to the water source (Table 3).

Table 3: Middle and late Iron Age deposits

Fill / Feature	Length (m)	Width (m)	Depth (m)	Fill description	Finds
<b>Middle Iron Age</b>					
24 / layer	8.25	6.30	0.60	firm light-mid grey silty clay, frequent gravel <50mm Ø	-
32 / pit 31	-	-	1.13	firm mid grey silty clay, occasional mixed pebbles <150mm Ø	pottery, red deer antler
162 / pit 159	2.50	0.88	0.40	friable dark grey silty clay, occasional mixed gravel and burnt flint <40mm Ø	pottery
161 / pit 159	-	-	0.50	firm mottled grey and orange clay silt, frequent chalky flecks, moderate pebbles <100mm Ø	-
160 / pit 159	-	-	0.55	firm light grey silty clay, frequent chalky flecks, few pebbles <10mm Ø	-
163 / cut 164	3.40	1.26	0.14	firm light grey silty clay, occasional chalk flecks	-
634 / pit 631	1.80	3.08	0.13	friable mid-dark grey silty clay	-
633 / pit 631	<	-	0.34	firm light-mid grey silty clay with orange-brown patches, occasional pebbles <20mm Ø	-
632 / pit 631	-	-	0.49	firm light whitish-grey silty clay with orange-brown patches, few pebbles <20mm Ø	pottery
<b>Late Iron Age</b>					
735 / pit 734	1.80	1.46	0.11	firm light black sandy loam, moderate flint pebbles <30mm Ø	pottery, flint

Pit 31 was a narrow steep-sided sub-rectangular pit with a flattish base (Figs 6 and 8). The pit was surrounded by a much larger area of ground, mainly extending down slope toward the stream, which was covered by layer 24. The deposit filled a depression within the natural substrate and also the sag infill of the pit, which seems to have been an abandonment silting deposit. On this basis pit 31 was thought to have been excavated as a shallow well, with pottery found at the base, which after abandonment quickly pooled water and silted up by natural means.



Pit 31, looking west Fig 8

By contrast, pit 159 was totally different (Fig 6). This pit formed a long narrow trough, aligned north-south, with steep sides and a flattish base. The edges of the pit were characterised by a slight shelf, which was perhaps eroded through trample, 163. The fill of pit 159 was a later accumulation; a silt deposit had formed at the base of the pit, but instead of being cleaned out was abandoned and filled in at the surface with darker soils that also carried burnt materials and pottery. Its purpose was uncertain, but it is likely that the association with water was the same and the disturbance around the edge may suggest use as a water trough along which a receptacle could be dragged. A very similar pit, 179, lay immediately on its north side, which was of comparable proportions and on the same alignment, but contained no pottery. Both features were fully excavated.

Pit 631 was exposed at the southern extent of the excavated area, due south of pit 159 and on the same alignment and there was a small undated tree hollow, 185, directly between them which was 0.82m wide by 0.32m deep. The portion of pit 631 within the mitigation area was fully excavated and found to be a broad shallow pit, with gradual gently sloping sides and flattish base containing a sequence of light silty fills, suggestive of natural in-wash. Pottery was recovered at its base and it was shallow enough to have been used by animals as a drinking hollow without falling in and was still deep enough to fill pots. However, mollusc species suggest such water quickly stagnated making it unsuitable for permanent use, thus requiring continued re-excavation of cleaner sources.

The apparent attention to water collection by excavating pits suggests that the modern tributary stream, which has been canalised, was probably not a topographical feature all the year around. Whilst the spring head may have welled up to the surface during particularly wet seasons, perhaps causing inundation along a seasonal watercourse, it is possible that for the majority of the year it was necessary to tap into the ground water flow. This is also indicated by the variations in molluscs and their preferred habitats.

### **Late Iron Age**

Although the majority of pottery sherds (39, 830g) from pit 734 were of an Iron Age character, four sherds (45g) were 1st century AD grogged ware. The pit, 734, was sub-circular and the sides were gently sloped, which curved into a rounded base (Figs 5-6). The fill material contained considerable burnt waste including charcoal, herbaceous seeds and cereal grains. This material was not burnt *in situ*, but was cast into the pit once cool. Lumps of chalk and clay in the fill indicated that part of the infill was probably also upcast material.

The pit had a relatively short period of use, and given its shallow depth and constituent charred seed assemblage, seems to have served as the disposal for a small fire, perhaps burning weed plants separated from an arable crop during harvest. This may account for the isolated location of the pit, out in the fields, and general lack of associated period features.

#### **4.4 Roman pits**

The pit, 287, containing Horningsea type pottery (two sherds 64g), was probably a good deal later than the preceding Iron Age pit 734, given the long period of pottery production at that centre. This feature was very badly truncated by a medieval ditch. What survived was elliptical and had near vertical sides and a narrow flat base. Other than the two sherds of pottery there was nothing else of particular note to aid further interpretation.

Given that the pottery was so low in quantity, its occurrence was not out of place with the prehistoric activity that preceded it and continued to represent chronologically widely spaced episodes of activity.

*Table 4: Roman deposits*

<b>Fill / Feature</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Fill description</b>	<b>Findings</b>
288 / pit 287	0.80	0.65	0.35	firm dark grey silty clay, occasional pebbles <30mm Ø	pottery
974 / pit 734	-	-	0.25	firm grey sandy loam, occasional chalk patches <60mm Ø	pottery, flint
976 / pit 734	-	-	0.40	firm yellowish-brown sandy loam, moderate clay and chalk lumps <60mm Ø	-

#### **4.5 Other undated pits**

In parts of the site, particularly to the west, but also in small groups in other areas, were pits or pit-like depressions that are without clear explanation. The overall lack of datable material and general inconsistency in the character of the features makes a single interpretation both problematic and misleading. What is likely is that amongst the excavated features were a variety of pits belonging to different periods, but without finds, and scattered amongst various less obvious natural pit-like features. What was apparent in terms of the overlying stratum, where observed, was that all of these features were covered by alluvium. The relationship between the alluvium and datable features showed that it was largely the product of silt accumulations after the 12th century. Therefore the majority of undated pits and pit-like features beneath it predated that episode of deposition. The wider distribution of undated features can be characterised in groups (Fig 5).

**Groups A & C**

Amorphous deposits of firm light grey silty clay had settled within large irregular hollows. A stratigraphic relationship with pit 31 seemed to suggest that the layers formed after the middle Iron Age and are likely to have been consistent with the abandonment of a water hole and appeared to be the lower horizon of alluvial material that had settled upon the uneven surface of the substrate.

**Group B**

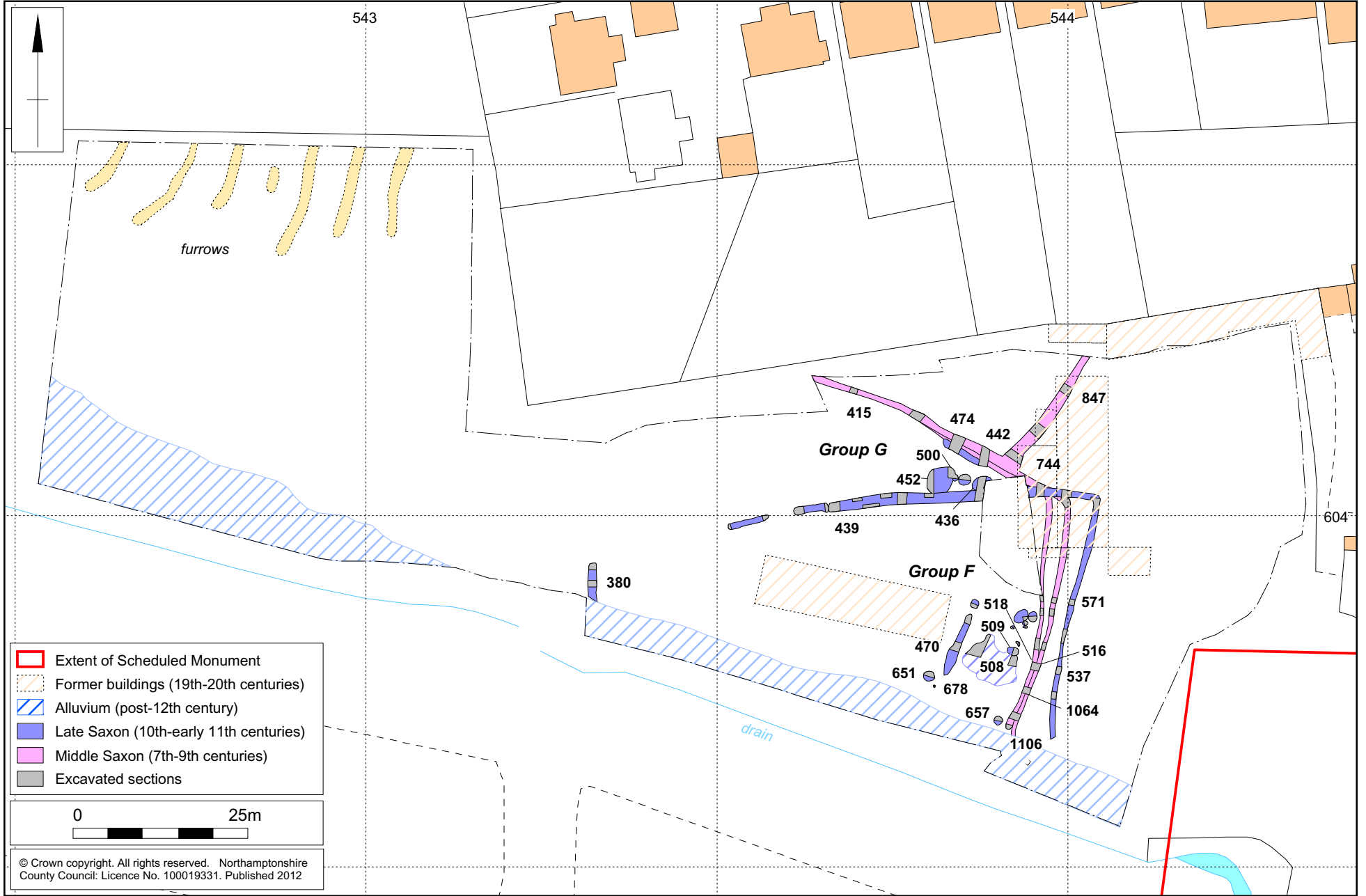
These features are clustered together in close proximity to the end of a medieval ditch. Amongst these pits, hollows, and sinuous gullies there was no distinct pattern or structural arrangement. The fill materials were generally mixed and profiles were inconsistent with many steeper sides often irregular and undercut with shallow gullies wound between them. The most plausible explanation for the group is that this was the site of a substantial mature tree, the stump of which was subsequently burned out.

**Group D**

For the most part these pits were difficult to explain satisfactorily. There were c26 pits in a swath across the excavated area, roughly scattered south-west to north-east, all of them devoid of secure finds. Not all of the pits were discrete, some were intercut. Most of the features were fairly small, being less than 1.0m across. Roughly 30% of these features were less than 200mm deep, 40% were up to 0.50m deep and the remaining 30% were up to 0.78m deep, providing a fairly even range between them. Many were probably the product of post-depositional root action and were irregular and often shallow. Amongst the group were some that were circular and had fairly sharp, often steep, sloping sides and a distinct flat or rounded base. The distinction of the fills was less helpful, largely light greyish silty clay and occasionally merging mottled orange-brown sandy clay, was similar to all of the other undated features in the vicinity. Infrequent charcoal smears and a lack of darker silty clay indicated that the features may simply have filled with water and been buried by natural silt accumulation. Despite a lack of datable pottery some of these undated pits could match prehistoric exploitation of springs in the vicinity but the lack of undisturbed contexts makes further analysis spurious at best.

**Group E**

This group of pits lay within an area that was enclosed during the 12th century and, whilst undated, were filled with friable light or mid grey or greyish-brown silty clay loam similar to other medieval features. Plant macrofossil assemblages from pit 324 were in keeping with medieval assemblages that indicated that organic refuse was being burned and then buried.



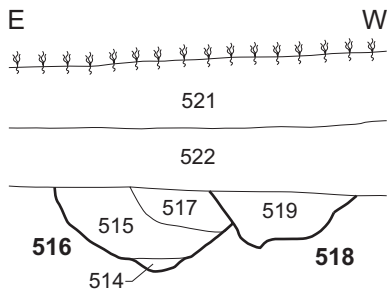
- Extent of Scheduled Monument
- Former buildings (19th-20th centuries)
- Alluvium (post-12th century)
- Late Saxon (10th-early 11th centuries)
- Middle Saxon (7th-9th centuries)
- Excavated sections



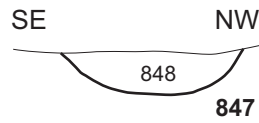
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**Middle Saxon boundaries**

**Ditches 516 & 518**



**Ditch 847**

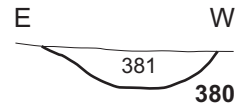


**Ditch 415**

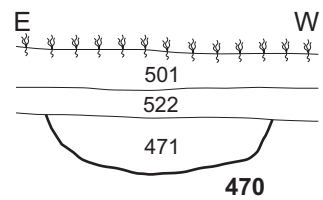


**Late Saxon boundaries**

**Ditch 380**



**Ditch 470**



**Pit Group F**

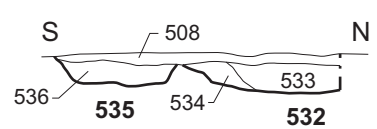
**Pit 476**



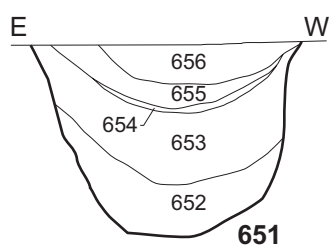
**Pit 509**



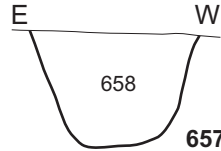
**Pits 535 & 532**



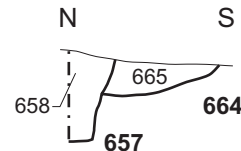
**Pit 651**



**Pit 657**

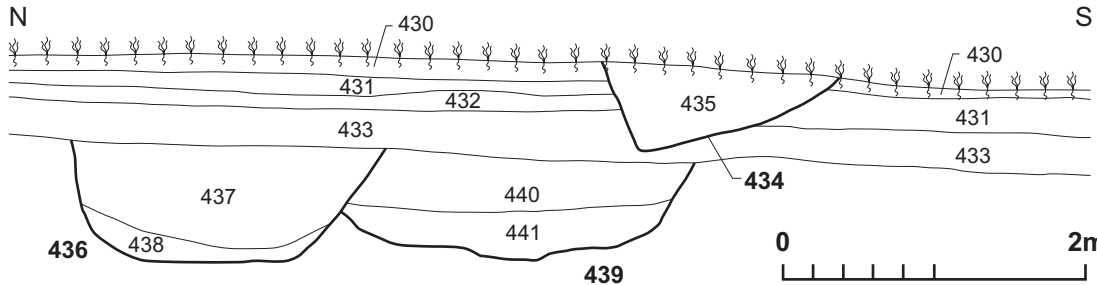


**Pits 664 & 657**

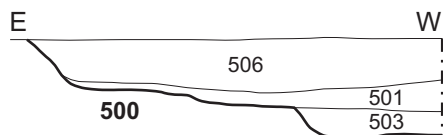


**Pit Group G**

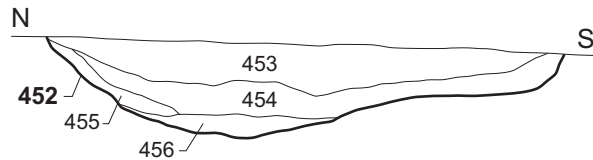
**Pits 436, 439 & 434**



**Pit 500**



**Pit 452**







Ditch 516 and its recut, 518, looking north Fig 11

#### 4.6 Middle Saxon boundaries

The earliest boundaries, which were functioning during the 8th century and might have appeared as early as the late 7th century, were probably part of land arrangements extending to the north and east of the site (Fig 9). Two principal ditches were excavated; ditch 415 was aligned north-west to south-east and then turned south; ditch 847 was aligned north-east to south-west and connected with ditch 415.

##### *Principal boundary ditches*

At its north-western end, ditch 415 was 1.44m wide by 0.36m deep, it had fairly steep 45° sloping sides that met fairly abruptly with a flattish base (Fig 10). The fill comprised firm light brown sandy clay with chalk flecks and small flint or chalk pebbles <30mm in size. Towards its southern end the same ditch, 516, was 1.18m wide by 0.56m deep

(Fig 10). The basal fill was loose greyish-brown silty clay loam with orange flecks and mixed chalk/flint pebbles. The main fill was darker greyish-brown silty clay loam with a dump of blackish-brown silty clay loam at the surface containing pottery and animal bone.

Along the southern course it was evident that the boundary had been recut by ditch 518, which was narrower at 0.66m wide by 0.31m deep (Fig 11). This was filled by firm light greyish-brown silty clay loam with occasional mixed chalk/flint pebbles and charcoal flecks. Soil samples from three sections along the boundary (ditches 474, 744 and 1064) all indicated cereal cultivation nearby. Pottery from this boundary tended to be of middle Saxon date (late 7th-9th centuries) with intrusive later Saxon sherds from the 10th-11th centuries introduced in areas where pits had been created. The boundary was lost at its southern extent where later pits had obliterated its continuation.

The connecting boundary ditch, 847, was 1.25m wide by 0.28m deep (Fig 10). By comparison this had shallow rounded, sides that curved into a flattish base and was filled by loose dark brown silty loam. This was again likely to have been the product of deliberate infill. The boundary would probably have been between neighbouring plots or at one end of a row of adjoining plots.

The middle Saxon ditches as a whole showed some natural silting, but seemed to have been mostly loamy backfill, punctuated by small individual dumps of waste, including animal bone.

#### **4.7 A late Saxon enclosure and pits**

The use of the land probably remained associated with cultivation until around the 10th century. By this time the two neighbouring enclosures to the north and east were no longer in evidence, the boundary between the two, ditch 847, and the separation from the fields were both filled in. The land division was probably still partially observed, however, since the southern extent of the ditch was reused in the creation of a rectangular enclosure on land that was formerly part of a field. This seemed to be of non-domestic nature, and may have been for keeping animals. A small area of activity at its east end, where pits were concentrated, may have been the location of an animal fold with associated bedding material disposed of nearby.

##### ***The enclosure***

A sub-rectangular enclosure was laid out, the remainder of which extended south of the excavated area (Fig 9), although perhaps only as far as a speculative early watercourse along the modern drain.

On the northern side, a ditch 439 was 2.34m wide by 0.65m deep, while the eastern boundary was 0.72m wide by 0.37m deep (Fig 10). In both instances the sides of the ditch were steep and well defined, but were truncated. The base of the ditch along both sides was fairly broad and flat, indicating a more substantial cut than its forebear. The basal deposit comprised firm mid brownish-grey silty clay with chalky flecks, charcoal smears and gravel <20mm in size that had accumulated as wash material, 0.32m thick. The upper fill was firm light brownish-grey silty clay with slightly more chalk occurring as lumps <80mm in size, gravel and charcoal smears.

The west side of the enclosure was not easily identifiable, as this was subsequently incorporated into a post-Conquest pattern of enclosure. Ditch 380 was aligned north to south, 1.16m wide by 0.26m deep, with well defined edges and a flat base (Fig 10). The fill was firm light whitish-grey silty chalk clay with brownish-orange patches and moderate chalk lumps <30mm in size, similar to ditch 439, but there were no finds on which to base a contemporary date.

**Feature group F**

Inside the enclosure there was a cluster of seven pits (group F) at the east end that produced pottery, mainly of late Saxon date, but also with residual middle Saxon sherds, together with quantities of animal bone. This focused on a small rectangular area covering c250 sq m, 20m long by 12.5m wide (Fig 9). The area was not formally delineated, but lay between the east side of the enclosure and a short length of ditch, 470. The north and south ends were obscured by medieval ditches, and it is not known if other boundaries had existed.

Ditch 470 lay parallel to the east side of the enclosure boundary and was 9.5m long by 1.47m wide by 0.38m deep (Fig 10). Firm, slightly loose, light grey silty clay loam filled the ditch, which seemed to have been an infill deposit. A single posthole, 678, lay at its southern end which was 0.50m wide by 0.18m deep. The sides were steep, the base slightly rounded, and it was filled by firm mid greyish-brown silty loam.

*Table 5: Late Saxon feature group F*

<b>Fill / Feature</b>	<b>Length (m)</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Fill description</b>	<b>Finds</b>
477 / pit 476	1.20	0.90	0.27	friable brownish-grey silty clay loam, occasional pebble flint <60mm Ø, moderate chalk	-
510 / pit 509	1.10	0.85	0.32	hard grey silty clay, occasional pebble flint <60mm Ø	animal bone, flint
533 / pit 532	1.30	1.20	0.20	compact dark brownish-grey silty clay, occasional pebble flint and chalk <50mm Ø	animal bone
534 / pit 532	-	-	0.30	compact yellowish-grey and brown silty clay, chalk flecks, infrequent pebbles <30mm Ø	-
536 / pit 535	0.80	0.65	0.15	compact light grey silty chalk clay, occasional pebble flint <40mm Ø	-
656 / pit 651	1.80	1.80	0.26	firm mid grey silty clay, frequent charcoal <5mm Ø	flint
655 / pit 651	-	-	0.41	firm light whitish-grey chalk lens	-
654 / pit 651	-	-	0.46	loose dark brownish-black clay silt, moderate charcoal flecks	-
653 / pit 651	-	-	0.92	firm light grey silty loam, few chalk lumps <40mm Ø, charcoal flecks	-
652 / pit 651	-	-	1.27	hard dark grey silty clay, moderate chalk <30mm Ø	pottery
658 / pit 657	1.30	1.10	0.76	firm dark greyish-brown silty loam	-
665 / pit 664	0.70	0.70	0.24	firm mid greyish-brown silty clay loam, few pebbles <30mm Ø	animal bone

The seven pits lay towards the edges of the area, with the central portion occupied by a diffuse and amorphous layer of greyish-white silty chalk clay, 508, 6.5m long by 4.5m wide and 80mm thick. The pits were generally sub-circular and, whilst substantial, were of differing proportions. They seem to have been for the disposal of waste. Soil from pits 651 and 657 demonstrated a mixture of seeds, but not in meaningful quantities that could indicate cereal processing or otherwise, and could easily have been amongst more general organic waste animal feed or bedding. The pits and the soil deposit seem likely to have been associated with non-domestic activity within the enclosure, perhaps including a small shelter without earthfast foundations.

Table 6: Late Saxon pit group G

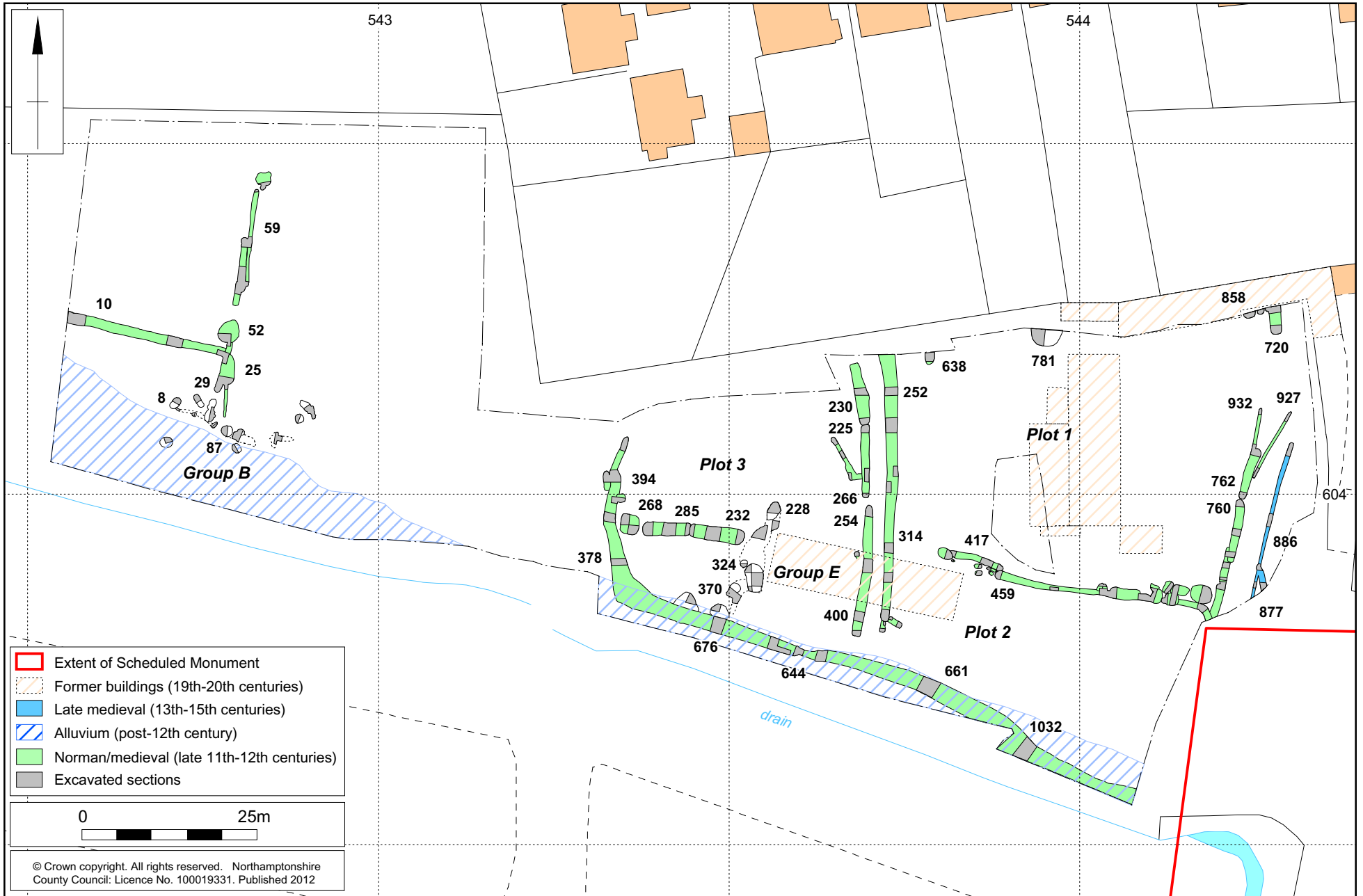
Fill / Feature	Length (m)	Width (m)	Depth (m)	Fill description	Finds
437 / pit 436	3.50	2.10	0.67	firm dark greyish-brown silty clay, occasional gravel and chalk <50mm Ø charcoal <5mm Ø	pottery, animal bone
438 / pit 436	-	-	0.77	firm light greyish-brown silt, occasional chalk <30mm Ø, infrequent charcoal <4mm Ø	-
453 / pit 452	4.70	5.50	0.25	hard dark grey silty chalk clay, moderate pebble flint <50mm Ø, charcoal pieces <10mm Ø	pottery, flint
454 / pit 452	-	-	0.46	hard grey chalky clay, moderate pebble flint <40mm Ø	-
455 / pit 452	-	-	0.47	hard whitish-grey chalky clay, occasional pebble flint <40mm Ø	-
456 / pit 452	-	-	0.63	hard light grey silty chalk clay, occasional pebble flint <30mm Ø	-
506 / pit 500	6.50	4.10	0.35	firm brownish-grey silty clay, occasional pebble flint <30mm Ø	pottery, flint, animal bone
501 / pit 500	-	-	0.22	firm greyish-brown silty clay, moderate pebble flint <30mm Ø	-
503 / pit 500	-	-	0.22	firm light brownish-grey silty clay, moderate pebble flint <25mm Ø	-

### Pit group G

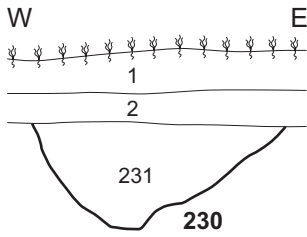
To the north side of ditch 439, outside the enclosure, were two pits (group G) (Fig 9). One of these, pit 452/500 was excavated in two parts, having been sectioned in the middle by test trench 17 (Foard-Colby and Soden 2009, fig 3). Pits 436 and 452/500 cut the enclosure ditch and were therefore stratigraphically later features (Fig 10). Pottery was mainly late Saxon with one residual middle Saxon sherd. Soil from the two darker pits was analysed and pit 452 contained sparse seeds, suggesting general crop cultivation in the vicinity. However, pit 436 was highly productive with an assemblage suggestive of a primary dump of cereal processing waste containing predominantly oats and barley, with lower quantities of wheat and a range of herbaceous cultivation weeds. What was not apparent was whether the pits themselves had been created for the purpose of waste disposal at the edge of cultivation or if they had another use and were subsequently levelled up with waste material. Their location outside of the enclosure, next to the ditch, suggests disposal.



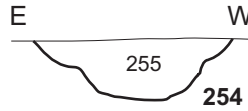
Pit 452, looking east Fig 12



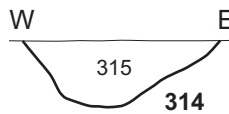
**Ditch 230**



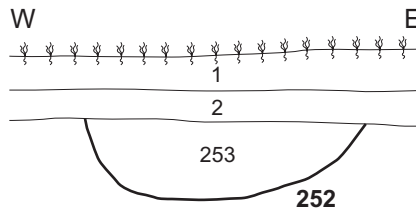
**Ditch 254**



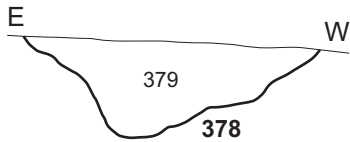
**Ditch 314**



**Ditch 252**



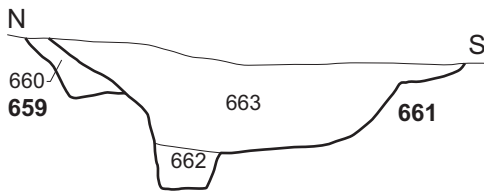
**Ditch 378**



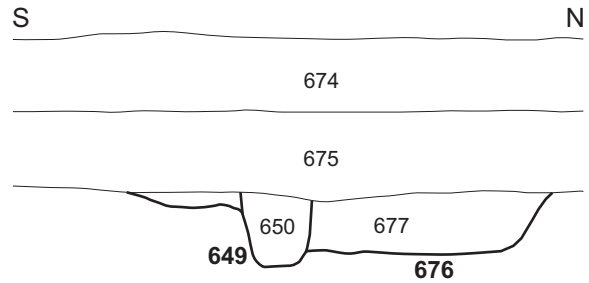
**Ditches 420, 428 & 417**



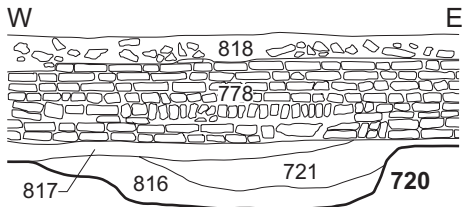
**Ditch 661**



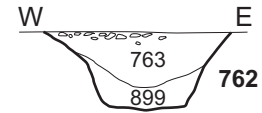
**Ditch 676 and channel 649**



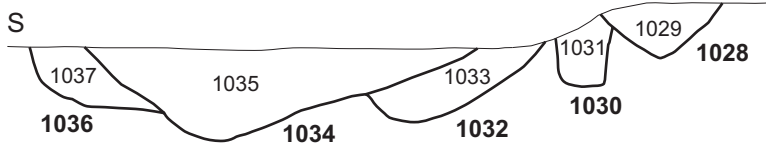
**Pit 661**



**Ditch 762**



**Ditches 1032, 1034 and channel 1030**



### ***Ridge and furrow***

Cultivation furrows were identified in the west of the site, at the northern edge of excavation. The furrows were spaced at 11-13m intervals and were aligned north to south, with their southern ends terminating at the edge of the wet ground. The furrows were poorly preserved; the best example was 1.85m wide by 0.16m deep. The cultivation soil comprised light yellowish-brown sandy clay loam with chalky flecks. Whilst no pottery was retrieved to date the furrows, they are likely to have existed from the late Saxon period until parts of the open field nearest to the back of the Saxon plots were enclosed following the Norman Conquest.

## **4.8 Norman and medieval enclosure**

A marked contrast was evident in the organisation of the site following the Norman Conquest. An entirely different arrangement of boundaries emphasised the probable disuse of the middle Saxon boundary and presumably was coupled with a newly imposed land regime. The precise date at which they were laid out is not certain, but pottery indicated that they were filled in the 12th century and would logically have been in use immediately following the Conquest.

The land was partitioned into fairly small units, which included three principal plots and further ditches that suggested enclosure of land to the west (Fig 13).

### ***The enclosed plots***

Three plots formed a group covering just over 50% of the excavated area and continuing to the north and east. The total coverage was c0.37ha, and, although the full extent is unknown, their general character was of small agricultural units that formed a part of a much larger body of land. The group as a whole was bounded on its south and west sides by a boundary comprising two lengths of ditch, which was examined at several points.

On the west boundary, ditch 378 was 1.96m wide by 0.64m deep, with a steeply angled, but slightly ragged profile, which met in a narrow rounded base (Fig 14). The fill was mid to dark greyish-brown silty clay with occasional chalk and flint pebbles <50mm in size. As the ditch turned, becoming southern boundary ditch 676, it splayed outward at the surface, spreading across the ground on either side. The relationship of the ditch and its overlying alluvial layers was examined towards the base of slope (Fig 14). At this point the ditch, 676, had become a broad flattish channel that was 2.70m wide by 0.40m deep, filled by firm mid-grey silty clay, and was cut by a narrow sheer-sided post-medieval drain, 649. At the mid-point of the boundary, the west portion and the south-east portion met as two independent terminals.

At its south-east end the ditch contained three principal cuts, 1032, 1036 and 1034 (Fig 14). The earliest two cuts bore no physical relationship to each other, having been truncated by the latest and most substantial cut, 1034. The earlier cuts were 0.40-0.50m deep, the latest was 2.70m wide by 0.60m deep. The profile was poorly defined in section with gradually sloping sides at 45° that met in a narrow rounded base. The fills comprised variations of light greyish-white silty clay with frequent darker charcoal smears, but little to distinguish between them, suggesting a predominantly silting deposit with occasional dumps of waste. Smaller, narrower post-medieval drains cut into the north side of the ditch, 1028 and 1030. Further to the west only two cuts were visible, a shallow ditch, 659, at the north edge was 0.26m deep, and truncated by the much more substantial cut of ditch 661 (Fig 14). This later cut was comparable with ditch 1034, 2.74m wide by 0.94m deep, with steep sloping sides and a broad flat base. Within the base was a narrow channel, which may have eroded away further to the

south-east. The fill materials were mid-grey silty clay with a darker tone towards the surface, speckled with chalky stones <30mm in size.

The primary fill, at the south-east end of the ditch, cut 1032, produced a substantial seed assemblage that was perhaps the product of annual cleaning of a grain storage barn. Along the mid-section the relationship between the ditch fill and the alluvium was examined and snail columns were retrieved to assist in understanding environmental changes in the Norman and medieval period. Soil from the west boundary of the ditch, 378, was almost devoid of seeds. A combination of dumping and in-wash silt along this boundary seems to have been sufficiently high that it was recut at the south-east end. The whole of the boundary did not serve a drainage function since it was broken into two main sections; had they been primarily to carry water, they should have drained to the west with the topography. Only the south-east portion of the boundary acted as a drain towards the moat, but the size of the individual cuts implies that this boundary was not part of the moat itself.

To the north and east, the three plots probably served a combined purpose, the exact nature of which was less apparent, but seems to have produced a sizeable by-product of organic refuse. It is likely that, given the close proximity of the site to settlement, the agricultural activities here were associated with daily management practises, either of a smallholding or serving a manorial farm that would have incorporated a range of cereal processing and livestock rearing activities.

#### *Plot 1*

The north-eastern plot 1 was 0.17ha in size, extending to the north (Fig 13). The boundaries enclosed a roughly rectangular area, 48m long by over 36m wide. An entrance lay on the east side, which was over 10m wide, and a further crossing point into plot 2 lay in its south-west corner, which was 6.5m wide. The larger part of the interior was clear of contemporary features.

The boundaries along the south-east side comprised a series of short lengths of ditch and pits, each ditch was 7-15m long by up to 1.2m wide and up to 0.40m deep, most of the pits were generally elongated, shallow and of similar depth (Fig 14, ditch 417). The short lengths of ditch along the east side were slightly more substantial, with a sharp, steep-sided profile and flat base 1.25m wide by 0.50m deep (Fig 14, ditch 762). However, this boundary also incorporated two long narrow thin gullies, 932 and 927, that were 0.32m wide by 0.09m deep, with a thin wide layer at the surface to either side. The gullies lay on the south side of the entrance to the plot. On the north side the probable continuation of the boundary lay beneath 19th-century building foundations, where the ditch, 720, was much wider at 2.40m wide by 0.45m deep (Fig 14).

In most instances the fills were variations on firm mid to dark silty clay loam, occasionally with animal bone or pottery, but generally not in the quantities that might be expected from midden clearance. In most instances it would be necessary for one pit or short ditch length to have been filled before the next could have been created and in this way they appear to represent a series of interventions that gradually extended the length of the boundaries, but at the same time incorporated the periodic disposal of largely organic detritus. Since the pits and short lengths of ditch followed boundaries the formal division of the plots may have been by wattle fences, the archaeological remains of which did not survive.

The west side of plot 1 was defined by a single continuous ditch, 252/314. This was 1.30-1.85m wide by 0.44-0.52m deep, with steep sloping sides and a rounded base (Fig 14). The fill was firm mid brown silty clay with chalk flecks and orange sandy patches, and with occasional pebble flint <30mm in size, which appeared to be a natural accumulation of in-wash.



Pits that lay along the north side of the enclosure, at the edge of excavation, may indicate that a further boundary lay east to west just beyond the limit of excavation. Pit 781, which formed a shallow sub-circular depression, was 4.30m long by over 2.36m wide by 0.20m deep, and thinned out at the edges. This had filled with an accumulation of firm light greyish-orange silty clay, and seems likely to have been a natural collection point for water. Pit 638 was truncated at 1.40m wide by 0.20m deep with shallow sloping sides and a broad flat base, filled with light greyish-orange silty clay loam.

#### *Plot 2*

The south-eastern plot 2 was probably just over c0.09ha in size, continuing a little to the east. A sub-rectangular area of ground was enclosed, over 45m long by 17m wide. An entrance from plot 1 lay in its north-west corner, 6.5m wide, and there was a crossing point 6m wide and probably later reduced to 3m into plot 3, to the west. The pits and short lengths of ditch along the north boundary, shared with plot 1, could have originated from activity in either area. The dumping of charred cereal waste in the south-east corner of boundary ditch 1032, would tend to suggest disposal of organic waste was not confined to pits along the boundaries, and that any peripheral boundary location was acceptable.



Plot 3, looking north-west Fig 15

#### *Plot 3*

On the west side there was a rectangular area, c0.11ha in size, over 34m long by 31m wide, which continued to the north. Whilst the west and south sides were bounded by ditch 378/1032, the east side was bounded by a double ditch (Fig 15). The east side of this ditch was shared with the other plots, ditch 314, and the west side was comprised of short lengths in a similar fashion to those investigated along the partition between plots 1 and 2.

Ditch 230 was 1.67m wide by 0.70m deep, with steep, slightly uneven, sloping sides and a narrow flat base, whilst ditch 254 was 1.30m wide by 0.42m deep with a broader base (Fig 14). The fill materials bore a marked contrast to those in the parallel ditch, 314. The fill of ditch 314 had been fairly consistent in terms of its composition of accumulated silty clay in-wash. By direct contrast the other ditches reflected the same kind of variations in firm mid to dark silty clay loam seen along the boundary between plots 1 and 2 and on the east side of plot 1. Whilst soil from ditch 314 contained very little in the way of seeds, the samples from ditches 230 and 254 had far more examples of both cereal grains and herbaceous seeds, as might be expected amongst organic refuse. A short ditch, 234, connected to the boundary which was 0.63m wide by 0.13m deep with shallow sloping sides and a broad flat base, heavily disturbed by root activity. The fill comprised friable brown silty clay with occasional chalk and flint pebbles <40mm in size.

What may be likely is that a fence, bank or hedgerow formed a boundary on the west side of ditch 314, along which these short ditch lengths were later added.



Pit 268 in the foreground, pit 232 at the far end, looking east Fig 16

### *Pits within plot 3*

Within the plot, the area was subdivided between north and south by a line of pits and short ditches, 18.2m in length (Fig 16). Each of these pits was fairly substantial, pit 268 was a discrete rectangle 2.80m long by 2.68m wide by 0.41m deep, others were longer and overlapped, demonstrating that they represented a series of periodic interventions, but there was very little variation in width or depth. For the most part the sides of these pits were vertical, with a gentle curve towards a broad flat base.

In all cases the fill comprised firm light brownish-grey silty clay loam, speckled with chalk flecks and containing infrequent pebble flint <50mm in size. Soil taken from either end of the pit line demonstrated that there was a higher proportion of charred wheat

and barley than any other seeds, although the quantities were low. The pits appeared too regular to be simply for disposal purposes, and they lacked the conventional clay lining that might be expected with storage pits. They did not exhibit signs they were processing the cereal since there was a lack of chaff and weed seed contaminants. Some charred organic residues indicated remains from combustion, but like the coal dust this could have been intrusive and the quantity of charcoal was fairly low.

### ***Enclosure to the west***

Several features in the west part of the excavated area indicated that at least part of the nearby open field was probably enclosed in the Norman period. There was a ditch, 10, which was aligned roughly east-west, 23m long (Fig 13). The ditch was 1.5m wide by 0.30m deep with slightly curved sloping sides and a rounded base. The firm light brown silty sandy clay was indicative of gradual accumulations of in-wash material. The main length of the ditch contained no pottery, however, at its east end it met with a perpendicular arrangement of boundary features that provided minimal dating evidence.

Two short lengths of ditch, 29 and 59, had been recut on at least one occasion. These ditches were both 0.72-78m wide by 0.32-35m deep and contained slightly more greyish loamy fill than ditch 10. At either end of these ditches were pits and hollows indicative of tree root action, which seemed to have been a part of the boundary arrangement. The southern tree roots (group B) produced a sherd of middle Saxon pottery from feature 87, which is thought to be residual. In addition, the north-south boundary ditches were also cut by pits 25 and 52.

Pit 25 was oval, 2.0m long by 1.2m wide by 0.83m deep, it had steep sides and a flat bottom and represented a dump of mid-brown sandy loam covering the burial of an adult dog. Whilst pit 52, which appeared to lie on the south side of a 6m wide entranceway, was sub-circular and 2.44m wide by 1.10m deep. This had a steep, near vertical side and flat base, which was filled by a sequence of merging shades of firm greyish-brown silty clay, the central fill of which produced a single sherd of 12th-century pottery. These features were fairly poorly dated, but they may fit with the Norman and medieval plots. It is also possible that they could have been fragments of pre-parliamentary enclosure of later date, but there is no record of them amongst the subsequent cartographic sources and judging by the high occurrence of late post-medieval finds in the former farm yard, had these features been of a similar date, we might have expected to find more pottery and tile amongst them.

## **4.9 Late medieval activity in the 13th-15th centuries**

Since Thomas de Bendish acquired the land of the moated site in 1329, it might have been expected that more material of this date would have been present. However, there was a general dearth of evidence for activity in the later medieval period. Very few artefacts were recovered from secure contexts that dated within this period. All previous enclosure had been reinstated, and no new plots were laid out. Possibly the land was allowed to go to pasture, an attractive scene for the setting of the house, and similarly it would have been preferable to keep it clear of midden waste and other material.

A single boundary belonged to the period, ditch 886, and recuts 758, 877 (Fig 13). The boundary was orientated north to south, parallel with, but slightly east of, the projected western arm of the moated site. However, there was no evidence for the continuation of the moat or for the vast amount of earth that would have been excavated from it. The initial ditch, 886, had near vertical sides and a flat base 1.02m wide by 0.40m deep. It was filled with dark greyish-black sandy silt containing chalky flecks. The recut, ditch

758, was along the same alignment and slightly wider at 1.10m wide by 0.33m deep, also with steep sloping sides and a broad flat base. This had, however, silted up with light yellowish-grey sandy silt containing a greater quantity of chalk and pebbles <80mm in size. The distinct difference in fills indicates a change in land use between the earlier and the later cut, since both fills were the product of in-wash rather than dumping. However, the nature of the change is speculative.

One clearly apparent stratigraphic relationship that was present across the whole of the south of the excavation was the accumulation of alluvial deposits. The alluvium overlay features that had been filled in the 12th century, and it was cut by features that were created in the 16th century. These deposits were up to 1.12m thick, although much thinner in the west of the site, and had been laid down gradually at the base of slope, draining towards the west. The process of deposition produced a soil profile that merged from one shade and texture towards the next, such that the distinctions were between the upper and lower layers rather than throughout (Fig 14, ditch 676).

The earliest alluvial deposits were characterised by firm mid-greyish-brown clay silt, 675, with occasional small mixed flint, pebbles and chalk, <20mm in size and up to 0.59m thick. The lower alluvial deposit merged gradually towards an upper layer, the top of which had probably been turned with the subsoil by the 19th-century plough. This was characterised by firm to friable light whitish-grey and brown silty clay loam, 674, with darker orange-brown silty clay loam towards the surface, containing frequent small mixed gravel, <20mm in size, 0.53m thick.

The accumulation of alluvium marks a distinct change in the hydrological processes on site that are probably the combined result of climate, agricultural practise and the creation of the moated site and fishpond, immediately to the south and east.

#### **4.10 Post-medieval activity in the 16th-18th centuries**

The majority of post-medieval activity lay at the eastern extreme of the site. According to the Victoria County History this land lay immediately to north-west of the old Bendish House, a large irregular 16th-century red brick building within the moated site (Wareham and Wright 2002, 196-205). According to rental documents this property was occupied until 1795, after which it was replaced by a grey brick house, a little further to the north. It is likely this land served a back yard function to both houses and will have suffered the effects of having material moved around considerably.

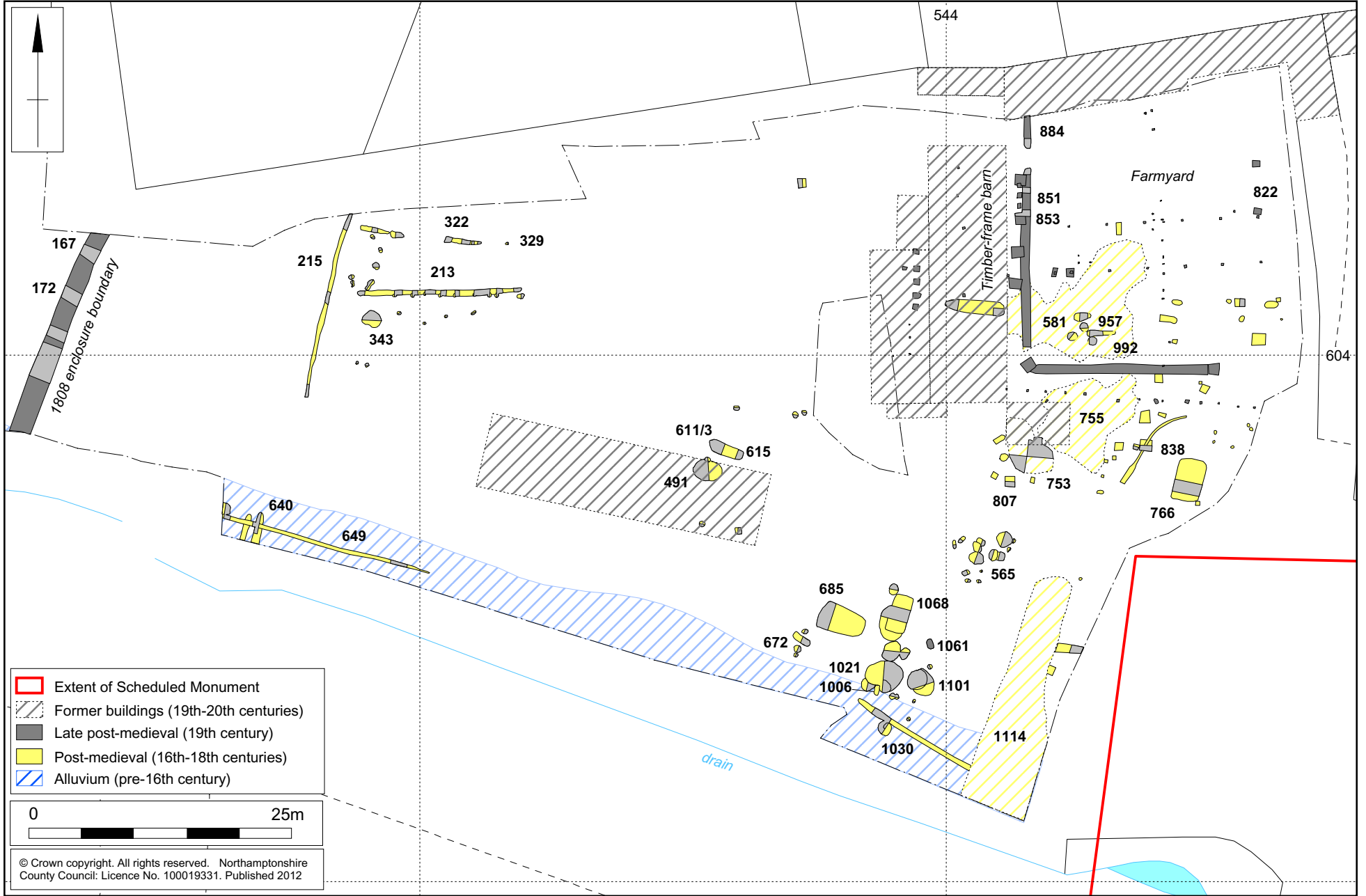
##### ***Latrines***

There were eight pits which were created during the 16th-17th centuries and a further six that were undated but lay within the same stratigraphic horizons (Fig 17). These earlier post-medieval latrines were scattered within the east portion of the site and at a time before the farmyard had come into existence.

Most of these pits seem to have been fairly substantial, and in these cases they generally had a uniform rectangular shape and vertical sides with a flat base. The proportions varied slightly with sides in the range of 1.0-1.5m and the depth, clearly truncated, at 0.30-0.40m. Most of them also had darker loamy fill constituents, as a result of the accumulation of night soil. Pit 491 contained a clay tobacco-pipe bowl, dating from c1660-80, whilst latrine pits 807, 822, 853 and 992 were all dated by pottery. In the case of similar undated pits in close proximity to pit 992, these were all covered by layer 581, which contained red earthenware; a post-medieval fabric in use from the 16th-19th centuries. There were also a range of clay tobacco-pipe bowls dating from the 18th century in a further five latrine pits; 807, 822, 838, 853, 982.

Scale 1:500 (A4)

Post-medieval features and farmyard Fig 17



### ***Post-medieval road and yard surface***

Deposits of mid to dark greyish-brown silty clay loam with occasional chalky flecks occurred across large areas (Fig 17). The stone content was moderate to high comprising a mixture of larger cobbles and coarse gravel, <120mm in size, with most of the stone concentrated closer to the surface horizon. The deposits formed a rough, compact, surface that was no more than 0.30m thick, surviving mainly above natural hollows. Surface layers 581, 753, 755 and 1114 all contained red earthenware and layer 753 contained three clay-tobacco pipe bowls from c1640-80. The extent lay mainly within the former farmyard area, and also in a corridor from north to south down the east side of the excavation where a former trackway is mapped by the 1887 Ordnance Survey (Francis 2007, fig 8).

### ***Planting features***

Planting features, comprising the gullies and postholes of trellis-type supports, were located in the central area of excavation (Fig 17). There were two main east-west gully slots, but which were not parallel, 15.5m long and 6m apart. Gully 213 was 0.36m wide by 0.12m deep, formed by a shallow scoop (Fig 18). Gully 322 was slightly off alignment, and badly truncated such that three patchy fragments survived with little to provide good measurements. The fills comprised soft friable light greyish-white chalky loam with sparse pebble flint <30mm in size. Soil from gully 213 contained wheat, barley and a range of herbaceous seeds, but in minute proportions and other finds were equally sparse.

Gully 213 was cut by nine postholes, forming the main alignment, and a further ten postholes lay between the two gullies. Gully 322 was formed by three fragments and a single posthole, 329, at the eastern end. There were four postholes scattered to the south of gully 213 and a further three outliers further south still. As remains of a potential structure, the arrangement makes no meaningful sense, even when truncation is considered. The most substantial posthole was circular, 0.32m in diameter and 0.17m deep, with near vertical sides and a flattish base. Most were significantly less well founded. Fill materials were generally firm light greyish-brown silty clay, tending towards loam, and charcoal was scarce. They are thought more likely to be the product of planting trenches for crops such as vines, hops or other plants requiring supports.



Nearby pits, 217 and 343, were the result of vegetation disturbance. Both were irregular in plan and the profile of the sides showed no specific cut. Neither feature was more than 0.12m deep, showing narrow hollows and random twisting gullies through the substrate, with speckled staining on the face of the exposed natural.

Cultivation gully 213 and posthole 296, looking east

Fig 18

### ***Drainage channels***

The planting features lay almost perpendicular to a north-east to south-west gully, which survives in the modern property boundaries to the north of the site as a fence line. Gully 215 was 0.33m wide by 0.34m deep with vertical sides and a flat base. The fill consisted of firm brown sandy clay with occasional pebble flint <30mm in size, that seemed to be natural in-wash.

At the base of slope and cutting the alluvium were several narrow drainage channels. Two fragments of a channel, aligned east to west, were identified at either end of the excavation area (Fig 17). Ditches 649 and 1030 may well have been part of the same drainage line, as they were quite similar, but were also difficult to distinguish within the surface of the alluvium. The ditches were 0.32-0.55m wide by 0.23-0.50m deep (Fig 14). Both had vertical sides and a narrow flat base. They were filled with compact light greyish-white clay silt with occasional chalky flecks and grit. Other narrow channels, 640, lay on the same alignment as gully 215, at the southern edge of excavation, and it is likely that the extent between these was lost to truncation. Gully 640 was 0.58m wide by 0.38m deep, with near vertical sides and a flat base, filled by light greyish-orange silty clay with moderate chalky wash.

### ***Animal burials***

The skeletal remains of a juvenile pig, estimated at 7-11 months old, were excavated in pit 672 (Fig 19). The pit was roughly rectangular, 1.2m long by 0.56m wide and 0.14m deep. The fill comprised dark grey silty loam.



Pit 672, containing skeletal remains of a juvenile pig, looking north Fig 19

### ***Quarry pits***

Pits within the south-east part of the site indicated that a low level of quarrying activity was undertaken, perhaps for the extraction of chalk for use in lime, fertiliser or as a flux for metalworking. Pits were generally clustered together with smaller pits, postholes and shallow surface deposits scattered in their vicinity, some of which may have represented temporary post slots and general working areas (Fig 17). The most substantial rectangular pits; 685, 766 and 1068, were up to 3.80m long by 3.36m wide

by 0.65-1.12m deep. They were characterised by steep near vertical sloping sides, occasionally with a narrow ledge or step, and a squared cut with a broad flat base. Pits 1021 and 1101 were also fairly substantial, although rounded in plan, they were 3.20m wide by 1.52m deep and 1.90m wide by 0.52m deep, respectively. The sides were steep, sloping down at 50-80°, to meet with broad flattish bases. In all instances the large scale extraction of the chalk had been filled with waste materials and soil, comprising a series of dumps, and incorporating a mixture of post-medieval artefacts with earlier residual finds. The soils that made up the fill were characterised by dark greyish- and blackish-brown silty clay loam, often with moderate to frequent chalky fragments <120mm in size. A substantial component of the organic waste in quarry pit 685 was horse and cattle bone.

#### 4.11 A late post-medieval farmyard

After the grey brick Bendyshe Manor replaced the 16th-century Bendish House at the turn of the 19th century the area at the eastern end of the excavation became the focus for agricultural development. Cartographic sources from 1805 onwards steadily depict the growth and expansion of the farm to incorporate a greater number of buildings over time (Francis 2007, figs 7-14). Remains of some buildings were still upstanding and were the subject of an archaeological watching brief during demolition (Figs 20-22).

As the buildings were taken down other materials such as vegetation and modern rubbish were also cleared from the site. The structures were reduced to ground level without disturbing the topsoil and once the area was cleared the process of topsoil/subsoil removal was conducted under the direction of an archaeologist (Figs 23-24). Open area excavations in the former farmyard demonstrated that most recent farm features were associated with pottery, brick, tile, ironwork and other farm materials and could be compared well to historic maps.



The 19th-century timber-framed barn, looking west Fig 20





The barns along the north side of the farmyard, looking north Fig 21



The 19th-century timber-framed barn, looking north-west Fig 22

Ditch 172, toward the west of the excavated area, is depicted upon the 1808 enclosure award dividing the site into two parts (Figs 3-4 and 17). The ditch was aligned north-east to south-west and was 0.70m wide by 0.45m deep. The sides of the ditch were straight, sloping steeply at 50°, with a sharp break of slope to a flat base. The fill comprised dark greyish-brown silty loam with residual medieval pottery, the result of deliberate infill.



Demolition and clearance, looking north-east Fig 23



The site of the former 19th-century timber-framed barn, looking north Fig 24

## 5 THE FINDS

### 5.1 Worked flint by Andy Chapman

A total of 147 flints were recovered from contexts widely scattered across the site, largely as residual finds in features and deposits of Iron Age or later date. A small number may be associated with contemporary deposits. A further 32 flints recovered during evaluation in 2009 have been reported previously (Wolframm-Murray 2009). These finds have not been included in the present quantification, although they have been examined to confirm that they show the same general characteristics. The material is in poor condition as the patinated pieces in particular show much later edge damage, which has obscured identification of primary working and retouch.

#### *The raw material*

The raw material is a vitreous flint ranging from medium brown to dark grey in colour. The cortex is typically white to light brown. The largest piece is an irregular cortical flake 80mm long, which appears to have come from a good quality flint nodule, probably derived directly from the chalk, and many smaller flakes are of similar appearance. Other pieces, mainly the smaller flints, may have come from smaller flint nodules from river gravel deposits.

#### *Quantification*

During the quantification of the assemblage it became apparent that the flint falls into two groups (Table 7). Just over a half of the material (53%) is heavily to moderately patinated, with the surfaces varying from white all over to extensive areas of white to blue-grey mottling. The remainder of the flint (47%) is either fresh vitreous flint or has limited mottles of pale grey patination. While the extremes are quite distinct, the division between the moderate and lightly patinated flints is inevitably unclear.

The differing character of these two groups indicates that the division has a chronological basis, with the heavily patinated flint earlier in date, probably late Mesolithic to early Neolithic, while the less heavily patinated flints probably date more broadly to the late Neolithic to early Bronze Age.

*Table 7: Quantification of the flint assemblage*

Flint type	Total		Patinated		Unpatinated	
	No	%	No	%	No	%
flake	55	37	24	31	31	45
flake (cortical)	43	29	19	24	24	35
blade	31	21	28	36	3	4
core	4	3	2	3	2	3
scraper	4	3	2	3	2	3
oblique blade	1	<1	1	1	-	-
leaf arrowhead	1	<1	-	-	1	>1
knife	1	<1	-	-	1	>1
misc retouch	6	4	2	3	4	5
chunk	1	<1	-	-	1	>1
<b>Totals</b>	<b>147</b>		<b>78</b>	<b>53</b>	<b>69</b>	<b>47</b>

### ***The patinated flint***

The defining attribute of this group is the presence of numerous blades, making up over a third (36%) of the group. These have been struck from prepared cores, and the majority of the examples are quite small, 40-50mm long and 10-17mm wide, along with shorter pieces from broken blades. Among this group, from fill 383 of ditch 384, there is a single microlith, an obliquely-truncated blade with serrated retouch on the oblique surface (Fig 25, a). There are only four other pieces with retouch. From fill 286 of pit 285 there is a blade, 38mm long (broken) by 19mm wide, with the end simple fashioned to form an end scraper (Fig 25, b). A blade from fill 416 of ditch 415, 51mm long by 21mm wide, has worn and damaged retouch along one edge and may be a heavily used serrated blade (Fig 25, c). There is also an end/side scraper worked on a small oval cortical flake, 40mm long by 29mm wide, from fill 9 of ditch 10 (Fig 25, d). A large blade-like flake, struck from a blade core (SF 96), 50mm long by 40mm wide, has partial retouch on both edges and may have been utilised as a knife. There are no complete cores, but there are two core rejuvenation flakes, one of which is from a core producing blades around 12-14mm wide.



Patinated worked flints: a) obliquely blunted blade, b) serrated blade c) blade/end scraper and d) oval end/side scraper (Scale 20mm) Fig 25

The presence of the microlith, the end scraper fashioned on a small blade, a possible serrated blade and the high proportion of blades, indicates a late Mesolithic/early Neolithic date for the group as a whole.

### ***The lightly patinated flint***

The group of fresh or lightly patinated flint contained only three blades, 4% of the group, which is dominated by flakes (80%). However, a fine blade in fresh flint, 37mm long (broken) by 22mm wide, struck from a prepared core was recovered in the evaluation. The flakes are often squat and irregular, indicating that they come from a later assemblage. There are two cores; one producing short broad flake, no more than 14mm long, and the other piece is fragmentary, retaining a single platform used to produce semi-regular, blade-like flakes. From deposit 406, there is a complete leaf

shaped arrowhead, 41mm long, up to 21mm wide and no more than 4mm thick (Fig 26, e). From fill 669 of pit 668 there is a large cortical flake, 59mm long by 32mm wide, with a pressure flaked cutting edge (Fig 26, f). This piece may be an unfinished plano-convex knife. In addition, there is a small end scraper and a burnt piece struck from an irregular flake core that has been partially worked to form a discoidal scraper, probably unfinished (Fig 26, g). This scraper comes from layer 405/413, which overlay the probable prehistoric pits 402 and 410. In addition, four flakes have short lengths of retouched edge, either denoting casual use as cutting flakes or abandonment of working at an early stage of tool preparation.



Lightly patinated flint: e) leaf arrowhead, f) pressure-flaked knife and g) unfinished discoidal scraper worked on a flake core (Scale 20mm) Fig 26

Leaf arrowheads span the early to late Neolithic, while the dominance of irregular flakes, the rare occurrence of blades, along with the possible discoidal scraper and plano-convex knife, suggest a late Neolithic/early Bronze Age date for the fresh or lightly patinated flint.

## 5.2 The burnt flint by Andy Chapman

Four contexts produced quantities of calcined flint, comprising irregular chunks 40-70mm in diameter and heated to a high enough temperature to turn the flints light grey to mid-grey in colour, with the surfaces crazed with fine cracks. Pit 8 produced 297g, and pit 63 produced 378g. There was 208g of material redeposited in medieval ditch 400 and fill 403 of a nearby possible prehistoric pit 402 produced the largest quantity, 788g. In addition, single or a small number of pieces, weighing between 16-93g came from undated pits 139, 141 and 189, and also as residual material in ditches 442 and 1064.

### 5.3 Iron Age pottery by Andy Chapman

Six features produced 117 sherds of Iron Age pottery, weighing 1275g, producing an average sherd weight of 10.9g. The assemblage is small, but is generally in good condition as the fabrics are hard. The material from the six features have consistent fabrics and forms and can be regarded as all broadly contemporary.

#### *Fabrics*

Sandy	Hard, with a coarse surface texture, except when burnished, containing fine quartz and occasional small pieces of flint, no more than 1mm, 16 sherds (14%)
Fine flint	Hard, with a coarse surface texture, similar to the sandy fabric but containing frequent small pieces of flint, up to 1mm, and sparse angular flint, 2-3mm, 58 sherds (50%)
Coarse flint	Hard, with a coarse surface texture, containing frequent to dense larger pieces of angular flint, up to 7mm, which frequently erupt through the surface, 43 sherds (36%)

Three fabric groups were defined, although the boundary between them is vague as the material all appears to be in a single sandy fabric, with variations in the size and density of the flint inclusions. The sandy fabric is the smallest group, coming from the thinner walled vessels, and is quite distinct from the other fabrics in that it contains only sparse and very small pieces of flint. These vessels include one with coarse surfaces from pit 31, but the other two vessels, from pit 734, are small open bowls with smoothed to burnished surfaces. The distinction between the fine and the coarse flint fabrics is more arbitrary, both contain quantities of crushed flint, with the coarse fabric tending to contain more and larger pieces, as perceived by eye.

The sherds typically have dark brown to dark grey cores, with the surfaces similarly varying from dark grey through dark brown to orange-brown and light brown. The body sherds are typically 6-10mm thick.

*Table 8: Quantification of the Iron Age pottery*

Fill/Feature	Sandy fabric	Fine flint fabric	Coarse flint fabric	Sherd count	Weight (g)	Sherd families
32 / pit 31	6	13	0	19	95	2
162 / pit 159	0	1	0	1	5	1
525 / pit 524	0	19	0	19	75	1
632 / pit 631	0	0	37	37	210	2
735 / pit 734	10	23	6	39	830	4
1072 / ditch 1070	0	2	0	2	60	1
<b>Totals</b>	<b>16</b>	<b>58</b>	<b>43</b>	<b>117</b>	<b>1,275</b>	

#### *The assemblage*

Pits 31, 524 and ditch 159, all produced small groups of body sherds in fabrics consistent with the larger groups. The material from pit 524 comprised sherds with a smoothed to burnished surface, from a single vessel in a uniform grey fabric similar to the burnished bowl from pit 734, but slightly larger and in a coarser fabric.

From pit 631 there is a flat-topped rim, with a crudely-formed uneven lip around the outer edge. A different vessel from the same fill had an abrupt high shoulder, and both vessels are small to medium sized jars.

The largest group came from pit 734, with 830g of pottery coming from at most four separate vessels. There is a flat base, 110mm diameter and 17mm thick at the slightly domed centre, in the coarse fabric containing larger pieces of flint. This may have been the base for a tall storage jar, but none of the body sherds appear to be from this vessel. There are body sherds from a jar, with a base c100mm in diameter, with the surface showing worn remnants of fine semi-regular near vertical scoring, best preserved near the base. This vessel has a flat-topped rim and showed its manufacturing technique, see below (Fig 27). In contrast to the two coarser vessels, there are sherds from two thin-walled open bowls in a fine fabric with smoothed to burnished surfaces. One is a uniform dark grey throughout and the other has a mottled light brown to light grey external surface and a light grey internal surface. The light vessel has a well-formed footring base, 75mm diameter, while the dark grey vessel has a round shoulder and a concave neck, with a simple everted rim, with a diameter of c150mm (Fig 28). Four sherds, weighing 45g, of grogged ware, dating to the early to middle decades of the 1st century AD, may be contamination or deposition into the latest fill.

From ditch 1070, there are two sherds from a flat base, 70mm diameter.

### ***Manufacturing techniques***

The jar from pit 734, which may have stood about 200mm high, provides an illustration of the manufacturing technique employed for these vessels (Fig 27). There is a base sherd standing 45mm high, but with a ragged break, indicating that the base and lower body were probably fashioned as one up to a wall height of at least 50mm. The larger body sherds are up to 95mm tall between oblique joins, where the vessels has fractured, with clay being drawn up from the outside and down from the inside. However, a slight wasting on these larger sherds and a single shorter body sherd with oblique joins indicates that the body was formed in two parts, the lower standing 60mm high and the upper 40mm high, but evidently this join was secure around at least part of the body. The top of the body occurs at the point of greatest diameter. The neck and rim are 45mm high, with an oblique join at the base of the neck. It would appear, therefore, that this jar, standing around 200mm high, was probably formed in four parts using four slabs of clay: base and lower body, central body, upper body and, finally, the neck and rim.

### ***Chronology***

Although the group is small and is dominated by body sherds, it shows all of the characteristics of a typically middle to late Iron Age assemblage from eastern England. As is typical of such material, more precise dating is problematic, but given the presence of a high proportion of smaller vessels with smoothed to burnished surfaces it is suggested that a date spanning the 2nd and 1st centuries BC is probably most appropriate for this group, although the presence of a few sherds of grogged ware in pit 734 suggest that the final filling occurred in the early to middle decades of the 1st century AD.



Sherds from a jar with oblique joins, showing the manufacturing technique (Scale 50mm)



A small open bowl, with burnished surfaces and an everted rim (Scale 50mm)

Fig 27

Fig 28

#### 5.4 Querns by Andy Chapman

There is a single small fragment, 50mm long by 12mm thick and weighing 32g, which has come from the worn surface of a quern in lava stone in medieval pit 232. Lava querns were imported from the Eifel region of Germany particularly in the Roman and early/middle to late Saxon periods, with the trade declining following the Norman Conquest.

#### 5.5 Roman pottery by Rob Perrin

There are seven sherds that all belong to the Roman period. Grog, as well as grog and sand tempered ware fabrics were produced in the area in the late Iron Age but production continued for a few decades after the Roman conquest. Kilns producing grog tempered wares are known at a number of sites in the vicinity, such as Swavesey (Willis *et al* 2008), 20km to the north-west, but there are likely to have been other, as yet unknown, production sites. Vessels in these fabrics do not occur after the 1st century. The Horningsea kilns, 6km to the west, supplied local markets from the Flavian period onwards and production continued until the late 4th century. The Horningsea sherd from pit 287 does not have any characteristics which allow closer dating. The other sherd from the same pit is not a Horningsea product, but is likely to be from another local source. Numerous kiln sites are known to the east and south of Cambridge within 10km (Swan 1984, 134). The sherd cannot be closely dated.



The Roman pottery comprises:

1 sherd (45g) in a hard grey ware with a dark grey-brown core and light grey-brown surfaces. A product of the Horningsea kilns. Roman pit 287, fill 288

1 sherd (19g) in a hard grey ware with a dark grey-brown core and external surface, and red-brown core edges and internal surface. Abundant quartz inclusions up to 1 mm in size, clearly visible on surface. Roman pit 287, fill 288

1 sherd (51g) in a hard grog and sand ware with a dark grey-brown core and a reddish-yellow external surface. Grog inclusions up to 2mm in size. Residual in 17th-century latrine pit 807, fill 808

4 sherds (45g) in a hard grogged ware with a grey-brown core and brown surfaces. Abundant, ill sorted grog inclusions, up to 5mm in size. Iron Age pit 734, fill 974

## 5.6 Saxon, medieval and post-medieval pottery by Paul Blinkhorn

The pottery was initially bulk-sorted and recorded on a computer using DBase IV software. The material from each context was recorded by number and weight of sherds per fabric type, with featureless body sherds of the same fabric counted, weighed and recorded as one database entry. Feature sherds such as rims, bases and lugs were individually recorded, with codes used for the various types. Decorated sherds were similarly treated. In the case of the rimsherds, the form, diameter (mm) and the percentage remaining of the original complete circumference were all recorded. This figure was totalled for each fabric type to obtain the estimated vessel equivalent (EVE).

The terminology is defined by the Medieval Pottery Research Group (MPRG 1998; 2001). All the statistical analyses were carried out using a DBase package, which interrogated the original or subsidiary databases, with some of the final calculations made by calculator, and according to Orton (1998-9, 135-7).

### ***Fabrics***

The assemblage comprises 202 sherds with a total weight of 4,306g. The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference is 0.61.

The following were noted:

F1: Early-middle Saxon chaff-tempered ware, cAD450-850. Hand-built. moderate to dense organic voids up to 10mm. No other visible inclusions. 2 sherds, 28g, EVE = 0

F90: North French ware, 8th-9th century? (Blackmore 2003). Hard, wheel-thrown, slightly sandy and micaceous fabric with reddish-brown, burnished outer surfaces, mainly jugs made in Northern France and the low countries. 1 sherd, 175g, EVE = 0

Ipswich ware, AD725-850 (Blinkhorn 2012). Middle Saxon, slow-wheel made ware, manufactured exclusively in the eponymous Suffolk *wic*. The material probably had a currency of AD725-740 to mid 9th century at sites outside East Anglia. There are two main fabric types, although individual vessels which do not conform to these groups also occur:

F95: Group 1, hard and slightly sandy to the touch, with visible small quartz grains and some shreds of mica. Frequent fairly well-sorted angular to sub-angular grains

of quartz, generally measuring below 0.3mm but with some larger grains, including a number which are polycrystalline in appearance. 3 sherds, 94g, EVE = 0.

F96: Group 2, like Group 1, mostly dark grey in colour. Their most prominent feature is a scatter of large quartz grains (up to c2.5mm) which either bulge or protrude through the surfaces of the vessel, giving rise to the term "pimply" Ipswich ware (Hurst 1976, 14). This characteristic makes them quite rough to the touch. However, some sherds have the same groundmass but lack the larger quartz grains which are characteristic of this group, and chemical analysis suggests that they are made from the same clay. 3 sherds, 38g, EVE = 0.

F97: Maxey-type ware. Exact chronology uncertain, but generally dated cAD650-850 (Hurst 1976). Wet-hand finished, reddish-orange to black surfaces, soft to fairly hard, with abundant fossil shell platelets up to 10mm. Vessels usually straight-sided bowls with upright, triangular, rim-mounted pierced lugs. 1 sherd, 6g, EVE = 0.

F98: Buttermarket-type Ipswich ware, AD725-850 (Blinkhorn 1990). Fabrics as above, but forms a range of distinctive, highly-decorated bottles and jugs, and squat jars with combed girth-grooves. 2 sherds, 126g, EVE = 0.

F100: St Neots-type ware, cAD900-1100 (Denham 1985). Fabric moderate to dense finely crushed fossil shell, with varying quantities of quartz and/or ironstone, usually purplish-black, black or grey, with fairly fine, dense inclusions. Main forms were small jars with sagging bases, although a few lamps are known. 6 sherds, 21g, EVE = 0.10.

F102: Thetford-type ware, 10th-12th centuries (Rogerson and Dallas 1984). A range of reduced, wheel-thrown and hand-finished fabrics mainly comprising quartz sand up to 1mm. Produced at many centres in eastern England, although most of these appear to be from the eponymous Norfolk centre. 43 sherds, 1,143g, EVE = 0.16.

F301: Ely ware, mid 12th-15th centuries (Spoerry 2008). Generic name for a quartz sand and calcareous tempered group of pottery fabrics mainly manufactured in Ely, but also with a second possible source in Huntingdonshire. Jars, bowls and jugs dominate the assemblage. Earlier vessels hand-built and turntable finished, later vessels finer and usually wheel-thrown. Wide distribution, including King's Lynn, where it was originally identified as Grimston software. 2 sherds, 21g, EVE = 0.

F320: Lyveden/Stanion B ware, cAD1225-?1400 (Steane and Bryant 1975, Blinkhorn 2008a). Coil-built, wheel finished, well-sorted moderate to dense limestone ooliths c0.5mm, although rare examples up to 2mm. Sparse to moderate red ironstone up to 10mm, although usually smaller. Rare shelly limestone, quartz, flint up to 20mm. Mainly jugs, often with yellow slip stripes and/or stamped pads, external dull olive-green glaze with large colour variation, usually grey fabric with dark grey or brown, buff or orange surfaces. 1 sherd, 3g, EVE = 0.

F327: Hedingham ware, late 12th-14th centuries (McCarthy and Brooks 1988, 300-2). Fine orange micaceous glazed ware. 2 sherds, 9g, EVE = 0.

F330: Shelly coarseware, AD1100-1400 (McCarthy 1979). Products of numerous kilns on the Jurassic limestone of East Northamptonshire and West Bedfordshire. Pale buff through virtually all colours to black, moderate to dense shelly limestone fragments up to 3mm, and any amount of ironstone, quartz and flint. Full range of medieval vessel types, especially jars, bowls, and 'Top Hat' jars. 5 sherds, 73g, EVE = 0.16.

F331: Developed Stamford ware, AD1150-1200 (Kilmurry 1980). Wheel-thrown, hard, very fine white fabric, sparse sub-angular quartz c0.1mm. Very rich, glossy copper green

glaze, vessels often decorated with incised combing or thumbed applied strips. Primarily jugs. 1 sherd, 7g, EVE = 0.

F360: Miscellaneous sandy coarsewares, 12th-14th centuries. A range of quartz-tempered coarsewares that are found throughout the East Midlands and East Anglia. 10 sherds, 63g, EVE = 0.07.

F401: Bourne D ware, c1450-1637 (McCarthy and Brooks 1988, 409). Production as the A ware. Fairly hard, smooth, brick-red fabric, often with a grey core, some vessels have sparse calcitic inclusions up to 2mm. Full range of late medieval to early post-medieval vessel forms, jugs, pancheons, cisterns etc. often with a thin, patchy exterior white slip, over which a clear glaze had been applied. 2 sherds, 43g, EVE = 0.12.

F402: Late medieval oxidized ware, mid 15th-16th centuries. Very hard orange sandy ware in a range of developed late medieval utilitarian forms, some with a dark green glaze. Numerous kiln sites throughout the south-east midlands, at places such as Glapthorn in Northamptonshire (Johnston 1997). Similar to material from many sites in the region, such as the Orange sandy ware from Denny Abbey (Coppack 1980). 3 sherds, 24g, EVE = 0.

F405: German stonewares, AD1480+. A range of hard, grey, salt-glazed fabrics produced at numerous sites in the Rhineland and beyond (Gaimster 1997). 1 sherd, 27g, EVE = 0.

F410: Anglo-Dutch tin-glazed earthenware, 17th-18th centuries (Orton 1988). Fine white earthenware, occasionally pinkish or yellowish core. Thick white tin glaze, with painted cobalt blue or polychrome decoration come as a range of table and display wares such as mugs, plates, dishes, bowls and vases. 7 sherds, 40g.

F411: Metropolitan slipware, 17th-18th centuries (Davey and Walker 2009). Similar fabric to Red earthenware, with geometric designs in white slip under the glaze. Produced at a number of centres, particularly Harlow in Essex. 1 sherd, 91g.

F412: Midland blackwares, AD1580-1700 (Brears 1969). Hard, brick-red fabric with sparse to moderate quartz up to 0.5 mm, glossy black glaze, usually on both surfaces. Distributed throughout the South Midlands. Manufactured in a range of utilitarian forms, particularly mugs and tygs. 16 sherds, 167g.

F413: Cologne/Westerwald stoneware, 17th century+ (Gaimster 1997). Hard, grey fabric with a clear salt glaze, vessels include jugs with moulded decoration and chamber-pots, often with blue and purple manganese and cobalt decoration. 1 sherd, 7g.

F425: Red earthenware, 16th-19th centuries (Brears 1969). Fine sandy earthenware, usually with a brown or green glaze, occurring in a range of utilitarian forms, such 'country pottery' was first made in the 16th century, and in some areas continued in use until the 19th century. 70 sherds, 1949g.

F436: English stoneware. 1680+. Hard, grey fabric, often with a brown, iron-rich, exterior wash in a range of utilitarian vessels, particularly mugs. 1 sherd, 2g.

F433: Staffordshire salt-glazed stoneware, AD1720-1780. Hard, white fabric with a distinctive white orange peel textured glaze in a range of fine tablewares such as mugs, tea bowls and plates. 10 sherds, 130g.

F1000: Miscellaneous 19th-20th-century wares. Mass-produced white earthenwares, stonewares etc. 8 sherds, 19g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Tables 10 and 11. Each date should be regarded as a *terminus post quem*. The range of fabric types is fairly typical of sites in the region, and indicates that there activity from the early Anglo-Saxon period, c5th-7th centuries, to the present, with perhaps a break around the late 13th-15th centuries where very few period sherds were deposited. Other than the North French sherd, the range of Anglo-Saxon and later pottery is typical of most contemporary sites in the region, such as Cottenham (Hall 2000)

### **Pottery occurrence**

The pottery occurrence by number and weight of sherds per period is shown in Table 9. The data shows that the main periods of activity, in terms of pottery deposition, were in the late Saxon to early medieval and post-16th-century periods, although there appears to have been more or less unbroken activity at the site from around the beginning of the middle Saxon period, with a possible break in the late 13th-15th centuries.

*Table 9: Post-Roman pottery occurrence by period*

Period	Date	Sherds	Weight (g)	EVE
early/middle Saxon	cAD 450-700	1	11	0.00
middle Saxon	cAD 700-850	8	412	0.00
late Saxon	cAD 850-1100	19	205	0.18
Norman/medieval	cAD 1100-1300	48	1,108	0.00
late medieval	cAD 1450-1550	5	67	0.12
post-medieval 1	cAD 1550-1600	41	1,001	0.16
post-medieval 2	cAD 1600-1720	40	758	0.08
post-medieval 3	cAD 1720-1800	16	354	0.00

### **The pottery**

The assemblage was, in the main, sparse and scattered, with most contexts only yielding a few sherds of pottery, mostly all from different vessels. There were no cross-fits, other than with individual contexts. A relatively large group of Thetford ware storage jar sherds did occur in ditch 417, and appears to be part of a primary dump of material, but the rest of the assemblage, other than some of the post-medieval wares, appear to be the product of secondary deposition, suggesting any foci of Saxon or medieval occupation lies outside the excavation area.

#### *Early to middle Saxon*

The earliest Anglo-Saxon material from the site is the hand-built wares, of which there were just two sherds, both in a chaff-tempered fabric. Such pottery was in use in various areas of the country from the 5th-9th centuries, although it is rare in the Kingdom of East Anglia after the beginning of the 8th century, when most of the ceramic in use was Ipswich ware (Blinkhorn 2012). In East Cambridgeshire, the county conforms to the East Anglian pattern of pottery consumption, comprising Ipswich ware with a little hand-built pottery, which appears to be the case here, as none of the contexts produced both greater amounts of hand-built pottery than Ipswich ware.

This suggests very strongly that the hand-built pottery from the site pre-dates the 8th century. Ascribing a more accurate date to this material is somewhat problematic since the sherds are both undecorated. Dating of early Saxon 5th-6th-century hand-built pottery is almost entirely reliant on decorated sherds. The Anglo-Saxons generally

stopped decorating hand-built pottery in the 7th century (Myres 1977, 1), but it cannot be said that an assemblage which produced only plain sherds is 7th century in date, and sherds with simple linear decoration can also be of 7th century date. Usually, decorated hand-built pottery only comprises around 3-4% of domestic assemblages, as was the case at sites such as West Stow, Suffolk (West 1985). An assemblage of plain hand-built Anglo-Saxon pottery has a broad period date of the 5th-7th century, although Hamerow (1993) did note that chaff-tempered pottery was by far the most common type at Mucking, Essex in the 7th century deposits, so it is entirely probable that the two sherds from this site are of a similar date.

The Ipswich ware reflects other general patterns in the region. Nearly all the sites outside Norfolk and Suffolk are within 5km of a Roman road and/or a major river (Blinkhorn 2012).

The North French jug is a typical product of the tradition, and is virtually identical in terms of form and decoration to one which occurred at Maidenhead, Berkshire (Fig 29, 1; Blinkhorn 2002, fig 4.2, 11), and numerous examples are known from London and Southampton (Blackmore 2003; Hodges 1981). Until recently, such pottery was very rare in Cambridgeshire, although in the past few years, a number of sites have yielded a few sherds, with this one being the sixth. Three sherds of North French blackware occurred alongside an assemblage of Ipswich ware at the Lady Chapel, Ely (Blinkhorn in archive), seven sherds were noted at a probable middle Saxon nunnery at Castor in the extreme north-west of the county (Green *et al* 1987), two sherds are known from Trumpington (Blinkhorn in archive) and single sherds occurred at Chatteris (Blinkhorn 2006) and Willingham (Blinkhorn 2008b). Occasional sherds occur at rural sites in Norfolk, usually close to the sea, such as at West Walton (Blinkhorn 2005, 179), and a small number are known from rural Lincolnshire, such as at Riby Crossroads (Steedman 1991). There are otherwise extremely rare finds at inland sites in the region, other than those of high-status such as North Elmham (Wade-Martins 1980).

It is possible that the presence of the sherd indicates that there may have been a higher status settlement nearby in the middle Saxon period, but the increasing number of finds of such material in the Cambridge region mean that it may be a result of trade patterns, and that there was a fair site or trading centre in or around what is now Cambridge.

#### *Late Saxon to medieval*

The late Saxon assemblage comprises entirely Thetford ware and St. Neots ware. Stamford ware, which often occurs at sites in the Cambridge region, such as Cottenham (Hall 2000, 23), is entirely absent, other than a sherd of the developed medieval type. As such pottery represented just c1% of the Cottenham assemblage, and given that the late Saxon assemblage from this site is somewhat smaller, the lack of pre-conquest Stamford ware may reflect the very low sherd counts overall.

The Thetford ware from this site, as is usually the case, is generally very difficult to date other than within the broad late Saxon period. Just two jar rimsherds were noted, one of which is from the smaller end of the size range, suggesting that it dates to early in the production span of the industry (Rogerson and Dallas 1984, 125), and a single sherd with rouletted decoration, another characteristic of early Thetford ware (*ibid*), was present. A single St Neots ware jar rim was from a small vessel, which suggests that it is also earlier (Denham 1985).

The bulk of the Thetford ware assemblage was a single group of sherds of mainly storage jars with thumbled applied strip decoration from ditch 417. These tend to become more common later in the lifespan of the industry (Rogerson and Dallas 1984, 126). In addition, there was also a large fragment with a curved, thumb-frill ridge, with a

similar sherd, almost certainly from the same vessel, from context 1904 in the evaluation (Fig 29, 2; Blinkhorn 2009). This appears to be the upper angle of a curfew or fire-cover. Curfews are largely post-Conquest in date, and are unknown in the Thetford ware tradition from excavations at kiln-sites (Rogerson and Dallas 1984; Dallas 1993). However, there is an identical and more complete example of the same vessel form in Thetford ware from Furnells manor, Raunds, Northamptonshire (Pearson 2008, 161 & fig 6.6; 57), which was interpreted as the curving base of a large jar reused as a curfew. This example had a smoke blackened and heat damaged interior, which is absent on the two sherds from Bendyshe Farm. However, it does seem possible that these may be rare examples of pre-Conquest curfews in Thetford ware. The ditch which produced this Thetford ware group also yielded a single sherd of medieval shelly ware, and the context from the evaluation which produced the other fragment of the flanged, thumbled base-herd also had a shelly ware jug handle, a typical 12th-century product. On this basis, the ditch was probably accumulating material at that time and there had been more or less unbroken activity since the middle to late Saxon periods.

The assemblage of 12th to 13th-century pottery is fairly typical of sites in the region, comprising Thetford ware, shelly wares and grey sandy coarsewares, along with smaller quantities of glazed Stanion, Hedingham and developed Stamford wares. A large proportion of the material of this date is the dump of Thetford ware storage jar fragments, which seem likely to be a clear-out of old pottery. More than one vessel is represented, and most of the body sherds have heavily abraded and flaking inner surfaces. This is typical of pots which have been used for brewing or the storage of acidic liquids such as beer or sour milk (Perry in press).

#### *Post-medieval*

The post-medieval assemblage is an entirely typical domestic assemblage from a reasonably well-to-do household dating to the mid 16th-18th centuries comprising a mixture of utilitarian Red earthenwares and fine tablewares such as tin-glazed ware, Westerwald and white salt-glazed stonewares.

### **Illustrations**

Fig 29

- 1 Jug, North French Ware. Large body sherd. Pale orange-brown, slightly sandy and micaceous fabric with a light grey core in the thicker parts of the body. Smoothed outer surfaces with traces of burnishing, particularly on the handle terminal. Pit 1021, fill 1023
- 2 Curfew, two non-joining sherds possibly from the upper angle. Thetford ware. Light grey fabric with darker surfaces, some flaking to the inner surface. Ditch 417, fill 419, and pit 1021, fill 1023

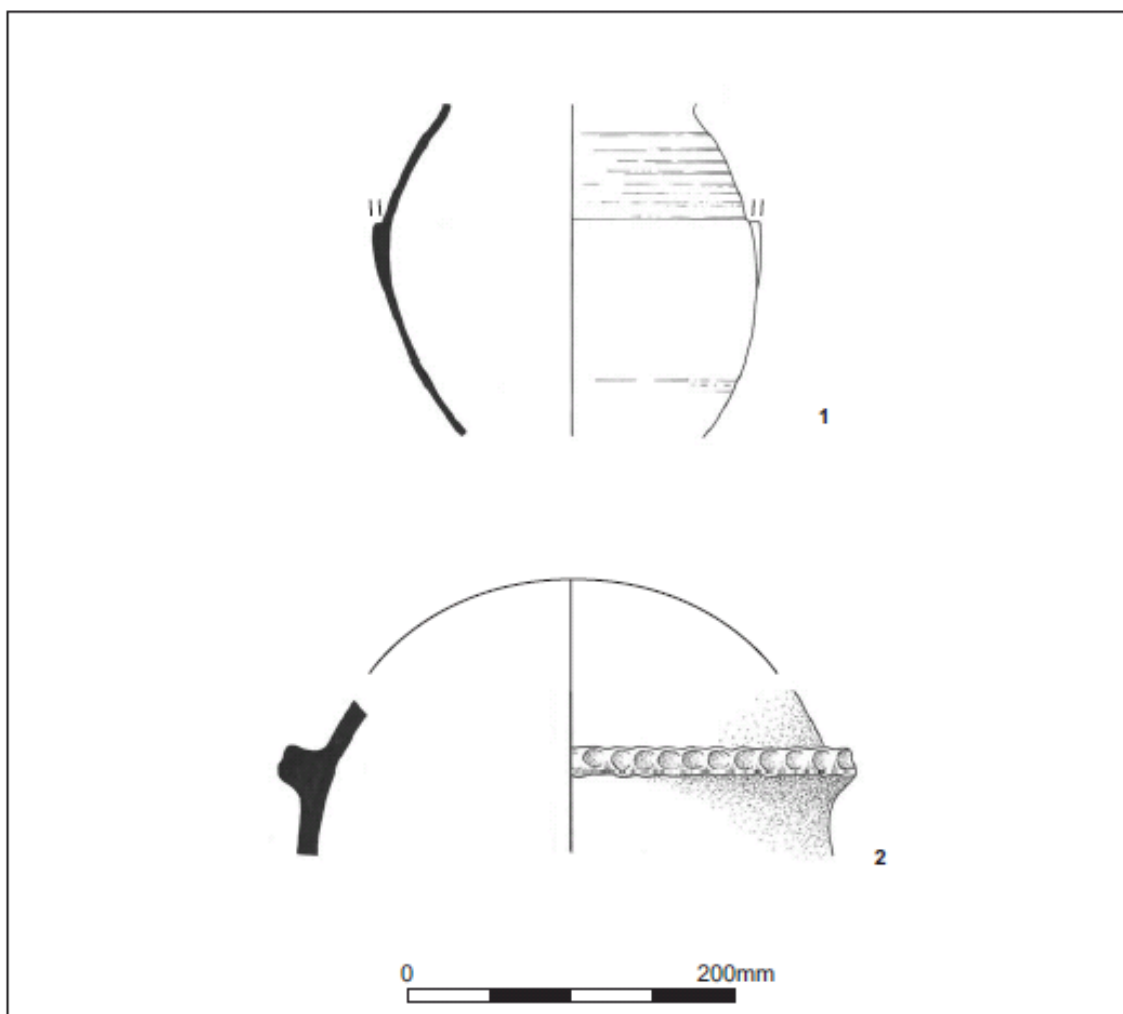
Table 10: Pottery occurrence by number and weight (g) of sherds per context by fabric type, Anglo-Saxon and medieval contexts

Fill/ feature	F1		F90		F95		F96		F97		F98		F100		F102		F320		F327		F330		F331		F360		F401		F402		Date		
	No	Wt	No	Wt	N	Wt	No	Wt	No	Wt	No	Wt	N	Wt	No	Wt	N	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt			
54/ pit 52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	6	-	-	-	-	12thC	
88/ tree hole 87	-	-	-	-	-	-	-	-	-	-	1	118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax	
128/ pit 127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	8	M15thC		
173/ ditch 172	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	5	-	-	-	-	-	-	-	-	12thC	
233/ pit 232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	20	-	-	-	-	-	12thC	
269/ pit 268	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	1	23	-	-	1	4	-	-	-	-	12thC
286/ pit 285	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	3	13	-	-	-	-	-	-	M12thC
315/ ditch 314	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
419/ ditch 417	-	-	-	-	-	-	1	19	-	-	-	-	-	-	29	972	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	12thC
437/ pit 436	-	-	-	-	-	-	-	-	-	-	-	1	8	4	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
443/ ditch 442	-	-	-	-	1	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax
453/ pit 452	-	-	-	-	-	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax
461/ ditch 459	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	7	-	-	-	-	-	-	-	-	-	-	-	-	L12thC
475/ ditch 474	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	12thC
506/ pit 500	-	-	-	-	-	-	-	-	-	-	-	-	-	3	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
508/ layer	-	-	-	-	-	-	-	-	-	-	-	-	-	1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
510/ pit 509	1	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	E/MSax
517/ ditch 516	-	-	-	-	1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax
519/ ditch 518	-	-	-	-	-	-	-	-	-	-	-	-	1	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
538/ ditch 537	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
572/ ditch 571	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
578/ ditch 577	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
652/ pit 651	1	17	-	-	-	-	-	-	-	-	-	-	-	1	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
721/ ditch 720	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax
759/ ditch 758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
782/ pit 781	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	1	19	-	-	-	-	-	-	-	-	-	12thC
848/ ditch 847	-	-	-	-	1	65	1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax
859/ pit 858	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	9	M15thC	
861/ pit 860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
879/ ditch 877	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	43	1	7	M15thC	
1002/ ditch 998	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13thC
1023/ pit 1021	-	-	1	175	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MSax
1099/ pit 1101	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LSax
<b>Total</b>	<b>2</b>	<b>28</b>	<b>1</b>	<b>175</b>	<b>3</b>	<b>94</b>	<b>3</b>	<b>38</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>126</b>	<b>6</b>	<b>21</b>	<b>42</b>	<b>1135</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>4</b>	<b>51</b>	<b>1</b>	<b>7</b>	<b>9</b>	<b>45</b>	<b>2</b>	<b>43</b>	<b>3</b>	<b>24</b>			

Table 11: Pottery occurrence by number and weight (g) of sherds per context by fabric type, post-medieval contexts

Fill/ feature	F102		F301		F327		F330		F360		F405		F410		F411		F412		F413		F425		F433		F436		F1000		Date
	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	
34/ pit 33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	19thC
251/ trial trench	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	8	19thC
492/ pit 491	-	-	1	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	36	-	-	-	-	-	-	-	M16thC
493/ pit 491	-	-	-	-	-	-	1	22	-	-	-	-	-	-	-	-	-	-	-	11	202	-	-	-	-	-	-	-	M16thC
581/ surface	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	15	-	-	-	-	-	-	-	M16thC
612/ pit 611	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	88	-	-	-	-	-	-	-	M16thC
615/ pit 613	-	-	1	8	1	2	-	-	-	-	-	-	-	1	91	-	-	-	-	6	207	-	-	-	-	-	-	-	17thC
753/ layer	-	-	-	-	-	-	-	-	-	-	-	4	14	-	-	13	141	1	7	11	279	-	-	-	-	-	-	-	17thC
755/ layer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	18	-	-	7	224	-	-	-	-	-	-	-	M16thC
763/ ditch 762	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	68	-	-	-	-	-	-	-	M16thC
767/ pit 766	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	75	-	-	-	-	-	-	-	M16thC
808/ pit 807	1	8	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17thC
824/ pit 822	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	17	-	-	-	-	-	-	-	M16thC
840/ pit 838	-	-	-	-	-	-	-	-	-	-	-	-	1	18	-	-	-	-	-	2	192	5	85	-	-	1	2	19thC	
852/ ditch 851	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	15	-	-	-	-	-	-	-	M16thC
854/ pit 853	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	8	-	-	2	18	-	-	-	-	-	-	-	L16thC
855/ pit 853	-	-	-	-	-	-	-	-	-	-	-	-	1	7	-	-	-	-	-	10	302	5	45	-	-	-	-	-	E18thC
885/ ditch 884	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4	19thC	
888/ pit 766	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	149	-	-	-	-	-	-	-	M16thC
993/ pit 992	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	32	-	-	-	-	-	-	-	M16thC
1000/ ditch 998	-	-	-	-	-	-	-	-	-	-	1	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	M16thC
1062/ burial	-	-	-	-	-	-	-	-	1	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	19thC	
1114/ layer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	30	-	-	1	2	-	-	-	L17thC
<b>Total</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>21</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>22</b>	<b>1</b>	<b>18</b>	<b>1</b>	<b>27</b>	<b>7</b>	<b>40</b>	<b>1</b>	<b>91</b>	<b>16</b>	<b>167</b>	<b>1</b>	<b>7</b>	<b>70</b>	<b>1949</b>	<b>10</b>	<b>130</b>	<b>1</b>	<b>2</b>	<b>8</b>	<b>19</b>	





The middle and late Saxon pottery, 1-2 Fig 29

## 5.7 Ceramic building materials by Pat Chapman

### **Brick**

There are two complete bricks and 48 brick fragments, together weighing 11.6kg, from eighteen contexts (Table 12). These are virtually all handmade. Forty-three bricks are made in fine clay fabrics and seven from sandy fabrics. Twenty-four of the fine clay fabric bricks, including the two complete examples, are made in a hard fine yellowish-white fabric with pale red to red-brown streaks with the folds of the clay clearly visible in the broken surfaces. This would suggest a local origin for these bricks reflecting the geology of calcareous soils overlying chalk.

A further nineteen brick fragments have been made in seven different fine clay fabrics, although differential firing would account for some differences. There are nine hard fine orange to orange-brown bricks. Six bricks are hard purplish-brown. There is a small fragment from a very fine hard bright yellow brick. Of the three brown bricks the one from layer 753 is a dense uneven 'slab'. This latter item could be clay infill from timber framing.

The sandy fabric comprises seven fragments, six made from fine sandy slightly friable bright red-brown clay, one fragment, from pit 565, has a remnant of possible moulding. The other fragment is made from a coarse sandy-red fabric with occasional large sub-rounded gravel inclusions up to 20mm long.

Table 12: Quantification of brick

Context/feature	Number	Wt (g)	Dimensions (mm)
492 / pit 491	4	1,714	- x 105 x 44 45 thick 55 thick
493 / pit 491	1	271	45 thick
497 / ditch 496	1	115	-
560 / pit 559	1	1,172	245 x 110 x 50
564 / pit 563	1	425	53 thick
566 / pit 565	2	1,450	45-50 thick
583 / posthole 582	1	397	50 thick
612 / gully 611	1	187	43 thick
615 / pit 613	5	2,446	45 thick
615 / pit 613	1	1,650	215 x 105 x 50
753 / layer	3	212	35 thick
759 / ditch 758	8	400	45 thick
761 / ditch 760	1	100	-
824 / pit 822	9	128	-
852 / ditch 851	2	210	-
854 / pit 853	6	250	-
889 / layer	2	415	c 35 thick
1062 / an. burial 1061	1	67	-
<b>Totals</b>	<b>50</b>	<b>11,609</b>	

The two complete bricks measure 215mm by 105mm by 50mm (8½ x 4⅛ x 2 inches) from pit 613 and one broken but cross joining from different features, pits 559 and 565, measures 245mm by 110mm by 50mm (9⅝ x 4⅜ x 2 inches). The remaining measurable dimensions include one brick width of 105mm and several thicknesses 45-55mm (1¼ and 2⅛ inches) and two only 35mm thick (1⅜ inches).

The majority of these bricks are very basic locally made products, probably for the farm buildings, as footings for timber buildings, and could be datable to between the 17th and 19th centuries. The fine sandy red bricks, including the one with the moulding, and the bright yellow brick could be the scattered remnants from a better quality building of the same date range.

### Roof tile

This is an assemblage of 80 plain roof tile sherds from 24 contexts. Nearly all are flat tiles with one pantile sherd and fragments from a ridge tile, and one reused pottery rim sherd, altogether weighing 3.5kg. The sherds are typically small with mortar covering the surfaces to a greater or lesser extent.

The predominant fabric is hard fine silty pale yellow clay with pinkish-brown streaks to a greater or lesser extent for 28 sherds or 35% of the whole. There are 15 sherds made from fine sandy orange clay and 17 sherds made from fine sandy red-brown clay with a black core. The remaining sherds are coarse sandy red-brown, fine sandy orange-brown, fine pale brown, variants of other fabrics dependent on mix and firing.

Nearly all the tiles are 10-15mm thick. Only one tile width is measurable, c175mm wide by 11mm thick from pit 766. Of ten surviving pegholes, five are round, four are square and one is rectangular. There are no nibs on the flat tiles.

One large plain roof ridge tile sherd in three joining pieces made from fine orange-brown sandy clay comes from pit 491. It has a large flat-topped nib or discontinuous flange, 60mm long and 23mm wide, partway round the curved edge. This could either

be part of a segmented air vent tile, whereby a smaller ridge tile would be fitted over the flange leaving space for a ventilation hole in the ridge tile, or a version of the half round stop end on a ridge for decorative effect. A small roughly-made sherd from pit 766, only 40mm wide at the top, has a curved triangular shape with a remnant square peghole. This could be a remnant hip or valley tile. A pantile sherd, which would date from the late 17th century onwards, comes from layer 1081.

The yellow sherds have yellow lime mortar adhering to them, with one white exception, while the other sherds have white lime mortar adhering.

*Table 13: Ceramic roof tile quantification*

Context / feature	Number	Wt (g)	Context / feature	Number	Wt (g)
484 / ph 481	1	30	824 / pit 822	7	202
492 / pit 491	3	547	839 / pit 838	1	20
497 / ditch 496	1	18	840 / pit 838	1	33
556 / gully 555	4	34	852 / ph 852	1	26
560 / pit 559	1	70	854 / pit 853	4	130
566 / pit 565	1	58	855 / pit 853	3	102
615 / pit 613	4	226	879 / ditch 877	2	50
747 / ditch 746	1	27	888 / pit 766	10	650
753 / layer	17	615	889 / layer	4	150
767 / pit 766	10	747	1081 / layer	1	70
808 / pit 807	5	130	1107 / ditch 1106	1	93
816 / pit 720	1	10	-	-	-
823 / pit 822	2	60	<b>Totals</b>	<b>81</b>	<b>3,500</b>

Originally these sherds came from roofs covered mainly in yellow tiles with some orange or reddish tiles either for decoration, or for separate buildings. Since then the sherds have become fragmented and scattered. The rim fragment of a clear-glazed earthenware pancheon of 18th-19th century date, covered in mortar, from pit 807, indicates that this, together with some tile sherds, were reused as repairs and patching for structures subsequently demolished.

### **Floor tiles**

There are four small floor tile sherds, weighing 247g. A small fragment made of fine orange-brown sandy clay, c25mm thick, from pit 324; a similar fragment, 28mm thick, from ditch 375 with a thin skin of white mortar; and two sherds from trench backfill made from hard fine pale yellow clay with a fine thin brown surface slip.

### **Summary**

The brick and tile are locally made products dating from the 17th century onwards. Their small and fragmentary nature indicates the processes of reroofing, demolition and repair over the lifetime of the farm buildings and associated structures.

## **5.8 A late Saxon finger ring** by Tora Hylton

The finger ring was recovered from the fill of boundary ditch 577, together with a single sherd of Thetford-type pottery dating to the 10th to 12th centuries. The ring is complete but the hoop is damaged, it has a large flat lozengiform bezel, 19mm by 20mm, which is decorated with a stamped motif (Fig 30). The motif comprises two rows of three opposing triangles positioned horizontally at the centre; each triangle is recessed and contains three dots in relief.



Late Saxon finger ring (20mm high) Fig 30

The triangles are surrounded by an arrangement of ring and dot decoration, each one comprising a recessed ring with a single dot raised in relief. Surviving within the recesses of one of the triangles, and some of the rings, are the remains of a black substance, possibly niello, a mixture of metallic sulphides used as an inlay on silver or gold (Cronyn 1990, 164). The white of the silver would have contrasted well with the black of the niello. Copper-alloy examples exhibiting similar stylistic traits, but without niello inlay, have been recorded on the Portable Antiquities Database from Suffolk (ID: SF-2D4Cao), North Yorkshire (ID: SWYOR- 380021) and Norfolk (ID- NMS-D65631). Stylistically, finger rings of this type date to the late 9th-10th centuries and correspond well with the date of the pottery recovered.

#### 5.9 Metalworking debris by Andy Chapman

The bulk soil samples from four contexts contained small quantities of metalworking debris: fill 231 of ditch 230; fill 286 of pit 285; fill 269 of pit 268 and fill 437 of pit 436. In all four instances the material is the same and comprises flat hammerscale, including occasional pieces as much as 3-4mm long. All of these features are believed to have been of medieval origin, except pit 436, where the pottery has been dated to the late Saxon period.

#### 5.10 Medieval finds by Tora Hylton

A copper-alloy buckle-plate, together with part of the buckle frame was recovered from pit 781. The buckle-plate is one piece manufactured from rectangular-shaped sheet metal, folded widthways, and secured with a single rivet (28mm by 15.18mm); the sides of the plate are recessed for the frame and there is a slot for the pin. The inside edge of the plate is decorated with a linear motif of punched triangles, two wavy lines flanked either side by two straight lines. The plate and the type of buckle represented

suggest a date in the 13th-14th centuries. Part of another copper-alloy buckle-plate was also recovered from topsoil deposits.

A complete horseshoe was recovered from the fill of ditch 1091. Although covered in corrosion deposits, the X-ray reveals that it is relatively early in date. Typologically it represents a "Norman" shoe or Clarke's Type 2 (1995, 86), which dates to the 11th-12th century. This type of horseshoe is distinct, small and the outer edge of the shoe has a wavy outline. The nail holes are circular within an oval countersinking and there are just three nail holes per branch. Another similar example was recovered from alluvial deposits in Trench 7 during the evaluation (Foard-Colby and Soden 2009).

### **5.11 Post-medieval finds** by Tora Hylton

Four iron objects (excluding nails and small fragments) were submitted for X-ray by Kelly Abbot of Wiltshire Conservation Service. This provided a permanent record and enabled identification of technical details not previously visible.

With the exception of the structural debris presumably relating to the demolition of buildings sited nearby (lead window came, window glass, nails), items of post-medieval date include fragments of vessel glass and clay tobacco-pipes. In addition topsoil finds include an iron key for a mounted lock, a biconical lead weight (173g, equivalent to 6.1 ounces) and a possible lead token furnished with a compass drawn geometric design.

#### ***Window glass***

Twenty fragments of colourless clear window glass were recovered from six contexts dating from the mid-16th to the 19th centuries. There are seven fragments which accompanied late 17th-century pottery in ditch 998 and from layer 1114, whilst thirteen sherds were recovered from two 19th-century pits, 491 and 838. Of the former, two fragments still retain vestiges of the original grozed edge, indicating that they are parts of quarries that would have been held in place by lead window comes. In one case where the edge of the quarry survives, the presence of a marked lead shadow indicates that the quarry was in place long enough for surface decay to occur.

#### ***Window lead***

Eight pieces of lead window came were recovered. The lead comes are H-sectioned strips used for securing shaped glass quarries in place. The fragments measure up to 180mm in length and two pieces still retain fragments of the original clear glass. Seven fragments were recovered from a late 17th-century surface 1114 and one from 19th-century pit 853. The fragments appear to be of the same type, they are reeded, with a 2mm space between each reed and they measure c8mm wide. No inscriptions were observed on the internal surfaces.

#### ***Vessel glass***

Sixteen fragments of vessel glass were recovered from nine contexts, dating from the mid-16th to 19th centuries. Although much of the assemblage comprises undiagnostic body sherds, three fragments are from 17th-18th-century wine bottles and a wine goblet. An almost complete neck from a wine bottle was recovered from ditch 998, together with a stem from a wine goblet; both had presumably been discarded amongst domestic waste. The neck of the wine bottle is long and tapering and there is a wide gap between the rim and the string, typologically it resembles that of a 'shaft and globe' bottle dating to c1650-1680 (cf. Biddle and Webster 2005, fig 126).

The stem fragment from a wine/beer goblet, in greyish colourless glass (soda glass) has a hollow-blown spherical-knop (cf. Willmott 2002, fig 59b) with applied decorative

mereses above and below for joining the foot and the bowl. A vestige of the bowl survives and its form suggests that it would have been funnel-shaped. Stylistically this form dates to about the 17th century.

### **Clay tobacco-pipes**

A group of 84 clay tobacco-pipe fragments were recovered from fourteen individual contexts. The majority were recovered from the fills of 17th to 18th-century pits 613, 752, 766, 774, 807, 822, 853 and layer 1114. In addition a small number were recovered from 19th-century pits 838 and 853. The assemblage comprises thirteen complete or fragmented pipe-bowls and 71 stem fragments. In total nine bowls are sufficiently complete to enable dating, following Oswald's simplified typology using bowl and foot/spur forms (1975, 37-41). The pipe bowls range in date from 1640-1780. Chronologically the earliest bowl form is Oswald's Type G5, which dates to c1640-60 (two examples). All the bowls are unmarked and therefore cannot be attributed to an individual maker. The majority of bowls and stems are burnished and one bowl, Oswald Type G5, is ornamented with a milled band/groove set just below the lip of the bowl, a common motif until c1710. The stem fragments are up to 95mm long and three examples retain mouthpieces.

*Table 14: Clay tobacco-pipe types by context*

Feature	Pit 491	Pit 613	layer 753	Pit 766	Pit 774	Pit 807	Pit 822	Pit 853	Pit 838	Pit 838	Pit 853	Pit 853	Ditch 982	layer 1114
<b>Fill</b>	<b>493</b>	<b>615</b>	<b>753</b>	<b>767</b>	<b>775</b>	<b>808</b>	<b>823</b>	<b>824</b>	<b>839</b>	<b>840</b>	<b>854</b>	<b>855</b>	<b>981</b>	<b>1114</b>
Oswald's type														
1640-1660 (G5)	-	-	2	-	-	-	-	-	-	-	-	-	-	-
1660-1680 (G6)	-	-	1	-	-	-	-	-	-	-	-	-	-	-
1660-80 (G7)	1	-	-	-	-	-	-	-	-	-	-	-	-	-
1680-1710 (G9)	-	-	-	-	-	1	-	-	-	-	-	-	-	-
1700-1740 (G10)	-	-	-	-	-	-	-	1	-	-	-	-	-	1
1730-1780 (G12)	-	-	-	-	-	-	-	-	-	-	-	2	-	-
bowl fragments	-	1	-	-	-	-	-	-	-	-	-	-	-	-
stems	2	8	19	2	2	6	3	6	1	9	1	9	1	2
<b>Totals</b>	<b>3</b>	<b>9</b>	<b>22</b>	<b>2</b>	<b>2</b>	<b>7</b>	<b>3</b>	<b>7</b>	<b>1</b>	<b>9</b>	<b>1</b>	<b>11</b>	<b>1</b>	<b>3</b>

### **Nails**

Nineteen hand-forged nails with square-sectioned shanks were recovered from 17th-century deposits, pits 557 (five examples) and 752 (14 examples). The nails range in recorded length from 45-100mm. The larger examples have a substantial head and would have secured structural timbers.

## **6 FAUNAL AND ENVIRONMENTAL EVIDENCE**

### **6.1 Animal bone** by Laszlo Lichtenstein

There are 2245 animal bone elements and fragments, weighing 41.88kg, from a range of features and layers, of which 98% of the specimens were hand-collected and the remaining 2% were from sieved samples. A total of 1497 fragments were identifiable from dated contexts belonging to the Saxon, medieval and post-medieval periods. Following cleaning and drying all the fragments were recorded and analysed using standard zooarchaeological methods.

The animal bone was identified using the author's vertebrate reference collection, and further guidelines from Schmid (1972), Driesch (1979), Sisson & Grossman (1953) and Feher (1990). Due to anatomical similarities between sheep and goat the criteria set out by Boessneck (1969) was used to separate the two species, which are otherwise

classified as sheep/goat. Ageing data, epiphyseal fusion and tooth wear evidence were categorised according to Bull and Payne (1982), Grant (1982), Hillson (2005), Schmid (1972) and Silver (1969), with the identification of juveniles after Amorosi (1989) and Schmid (1972).

All the animal remains were counted and weighed, and where possible identified to species, anatomical element, fragmentation, side, zone, fusion, age and sex; also noting any cuts, wear or gnawing. Bones that could not be identified to species were, where possible, categorised according to the relative size of the animal represented. The presence of large and medium vertebrae and ribs were recorded for each context, although these were not counted, except for the first two cervical vertebrae, which were identified to species. Measurements were taken according to von den Driesch (1976), using digital calipers with an accuracy of 0.01 mm. The minimum number of individuals (MNI) was calculated on the most frequently occurring bone for each species, taking into account left and right sides, as well as epiphyseal fusion. All identifiable fragments were counted in the calculation of the number of identified fragments per species (NISP). All teeth and a restricted suite of parts of the postcranial skeleton were recorded and used in counts. All fragments were recorded.

### **Middle Iron Age**

Red deer antler was found in pit 31. Antler was commonly used for crafting (Grant 1984a, 525). Evidence for antler working or cut signs was not noted on ten fragments, but alone they do not indicate hunted game.

### **Middle and late Saxon**

A total of 226 hand-collected and sieved animal bone elements and fragments, weighing 5.43kg, were examined and 184 specimens (81.4%) were identified to taxa and parts of anatomy, representing cattle, horse, pig, sheep/goat and domesticated fowl species (Table 15). The MNI indicated eight other animals.

The bones were generally in good condition and fragmentation was moderate with the minority (46.4%) being less than 50mm in size. No complete long bones were recorded, because the proximal and the distal ends were damaged, but some measurements were possible.

Low level of surface abrasion was observed. Measurement of cattle metatarsals was possible using Nobis's index (1954), GL 21.5, with estimated shoulder height c114.6cm.

*Table 15: Animal species present by fragment count, including teeth, middle to late Saxon features*

Species/taxa	MNI	Middle to late Saxon	
		Number	%
Cattle - <i>Bos taurus</i> L.	3	147	65.0
Horse - <i>Equus caballus</i> L.	1	19	8.4
Pig - <i>Sus scrofa domesticus</i> B.	2	4	1.8
Sheep/goat - Ovicaprid	1	11	4.9
Fowl - <i>Gallus domesticus</i> L.	1	1	0.4
Large ungulate	-	25	11.1
Small ungulate	-	15	6.6
Unidentified	-	4	1.8
<b>Totals</b>	<b>8</b>	<b>226</b>	<b>100.0</b>

One fragment from a small ungulate, pit 500, had been butchered. Burning was observed on an ovicaprid pelvis fragment from ditch 474 and an unidentified bone fragment from ditch 442.

Little ageing data was available. Two cattle could be aged, a young beast of 3-4 years from layer 508 and a mature animal, over 10 years, from ditch 1106. All of the horse bone fragments were mature.

### Summary

The fragmentation was moderate and 81.4% of the assemblage could be identified to species. The assemblage is dominated by cattle (65%), followed by horse (8.4%) and sheep/goat (4.9%). There are lower numbers of pig (1.8%) and domesticated fowl (0.4%). Small ungulate bones (6.6%) indicate at least one sheep/goat or pig. The bones belonged exclusively to domestic animals, mainly food domesticates. Horse was present perhaps for transportation or traction. The animal bone seems largely to be the result of domestic waste disposal.

The state of preservation for bone on the site in this period was generally poor and the amount of material retrieved was consistent with low level domestic occupation nearby. Cattle were the most important species in terms of food and dairy value and carried a much greater carcass weight. None of the horse bones had any evidence for butchery, and they are likely to have been working animals given their maturity. The species present and their relative proportions are not unusual for the Saxon period.

### Norman and medieval (12th century)

A total of 248 (c4.7kg) of hand-collected and sieved animal bone elements were analysed, of which 201 specimens (81%) were identified to taxa and parts of anatomy, representing cattle, horse, pig, sheep/goat, dog and domestic fowl (Table 16). The majority of bones came from cattle (45.2%) and horse (14.2%).

Table 16: Animal species present by fragment count, including teeth, Norman and medieval (12th century) features

Species/taxa	MNI	Number	Percentage (%)
Cattle - <i>Bos taurus</i> L.	4	112	45.2
Horse - <i>Equus caballus</i> L.	2	35	14.2
Pig - <i>Sus scrofa domesticus</i> B.	1	4	1.6
Sheep - <i>Ovis aries</i> L.	1	11	4.4
Ovicaprid	-	2	0.8
Fowl - <i>Gallus domesticus</i> L.	1	1	0.4
Dog - <i>Canis familiaris</i> L.	1	1	0.4
Large ungulate	-	62	25.0
Small ungulate	-	13	5.2
Unidentified	-	7	2.8
<b>Totals</b>	<b>11</b>	<b>248</b>	<b>100.0</b>

Bone preservation was generally good, the fragmentation was moderate, with the smaller portion (40%) being less than 50mm in size. Only low level of surface abrasion was observed. Ditch 225 contained a measurable horse tibia, GL 356mm. Using Kiesealter's index (1888), the estimated shoulder height is c155.2cm. Ditch 644 contained a measurable cattle metatarsus, GL 188.1mm, Bp 55.3mm. Using Nobis's index (1964), the estimated shoulder heights is c113.4cm. Canid gnawing was seen on an ovicaprid metatarsus diaphysis bone fragment from pit 370. Burning was observed on an unidentified bone fragment from ditch 230 and a large ungulate diaphysis fragment of long bone from pit 268. A total of 1.5% of bone was butchered, chopping



marks were noted on a large ungulate pelvis fragment from ditch 760, accompanied by a humerus with saw marks suggesting that some bone was worked.

Cattle, pig and dog teeth were aged from wear, eruption and bone fusion. Worn down cattle molars from pit 228 and ditch 252, indicated two adult beasts of 8-9 years. Little ageing data was available from the cattle mandible tooth wear stages from ditch 20 except to say that it was an adult beast, mature at death. Ditch 230 contained a juvenile pig mandible fragment, 7-11 months old at death. Dog teeth from ditch 264 belonged to a hound over a year old. All of the horse tooth and bone fragments were part of adult animals.

Pit 25 produced 55 elements (448g) from an adult dog. Biometrical data can not be taken of this skeleton because the degree of fragmentation and the missing parts of long bones. No evidence for butchery, burning, canid gnawing or bone working was observed.

### *Summary*

The bones were generally in good condition, the fragmentation was moderate and 81% of the assemblage could be identified to species. The assemblage is dominated by cattle (45.2%), with lower numbers of horse (14.2%) and sheep/goat (5.2%). Domestic fowl were present, indicated by one rib fragment; as were dogs. The dog bones were from one adult burial in pit 25, and also a single broken mandible with premolar and molars from ditch 264. Cut marks were absent and it is unlikely that the dog had been skinned, dismembered or in any way utilised for meat. The animal may have been a herding animal, a guard dog or even a pet. Dog gnawing was found on only one bone. Butchery was in evidence, as was some bone working, but burning seemed not to have been a preferred method of disposal. The species are typical of the medieval period and the dominance of cattle is not unusual.

### ***The 16th-18th centuries***

A total of 560 (18.44kg) of hand-collected animal bone was analysed, of which 410 specimens (73.2%) were identified to taxa and parts of anatomy, representing cattle, horse, pig, sheep and goat species (Table 17). The majority of bones came from cattle (31.9%) and horse (30.9%). Body part concentrations were observed from pits 491 and 613. In addition pit 685 produced 129 elements of horse bone and 74 elements of cattle bone. The four horse distal epiphysis fragments of tibia are from the dexter hind quarters and suggest at least four different individuals. The cattle mandibles suggest at least two individuals. These bones have been dismembered and scattered between two contexts within the same feature and bear many butchery marks. A red deer diaphysis fragment of femur was also recovered from pit 685. This meat-bearing limb bone is a candidate for the consumption of venison.

One pig skeleton, comprising 321 bone fragments (1562g) from pit 672 is not included in this quantification. Tooth wear stages and bone fusion indicated that the pig was a juvenile animal, 7-11 months old.

The bones were generally in very good condition, the fragmentation was low with the minority (21.6%) being less than 50mm in size. Some long bones were complete and many measurements were possible. Many bones were smashed in antiquity signifying a chosen method of disposal. More than 16.4% (92 fragments) had been butchered and canid gnawing was generally high. Chopping marks were noted on 19.6% of the bones, 1.7% had been cut by knife and 1.1% had been smashed in antiquity. Out of the total 11.2% of the chop marks were on cattle bones. Smashing marks were present on 4.1% of horse bones. Lower numbers of ovicaprid bone showed signs of butchery, with knife cuts on 7.4% of the bone. There was no evidence for burning or working.

Pathological conditions were found in two cases. Pit 613 produced two elements, a horse cervical vertebra and a fragment of proximal epiphysis of radius, which show signs of exostosis. Probably both fragments came from the same horse skeleton.

Table 17: Animal species by fragment count, including teeth, 16th-19th century features

Species/taxa	16th-18th centuries			19th century		
	MNI	No	%	MNI	No	%
Cattle - <i>Bos taurus</i> L.	5	179	31.9	1	39	44.8
Horse - <i>Equus caballus</i> L.	5	173	30.9	1	2	2.4
Pig - <i>Sus scrofa domestica</i> B.	2	7	1.3	1	19	21.8
Goat - <i>Capra hircus</i> L.	1	6	1.1	-	-	-
Sheep - <i>Ovis aries</i> L.	4	27	4.8	1	1	1.1
Ovicaprid	3	18	3.2	-	-	-
Fowl - <i>Gallus domesticus</i> L.	-	-	-	1	2	2.3
Large ungulate size	-	125	22.3	-	17	19.5
Small ungulate size	-	2	0.4	-	7	8.1
Unidentified	-	23	4.1	-	-	-
Dog - <i>Canis familiaris</i> L.	-	-	-	1	72	-
<b>Totals</b>	<b>20</b>	<b>560</b>	<b>100.0</b>		<b>159</b>	<b>100.0</b>

Table 18: Animal species by elements and taphonomy, 16th to 18th century features

Species/taxa and element	Equus				Bos				Large ungulate size				Ovis				Count
	ch	kn	sm	at	ch	kn	sm	at	ch	kn	sm	at	ch	kn	sm	at	
Cranium	1	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	3
Mandible	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
Cervical vert.	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	2
Thoracal vert	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Costa	7	-	-	2	3	1	-	5	1	-	-	2	-	-	-	-	21
Scapula	3	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	4
Humerus	5	-	1	-	-	-	-	-	1	-	-	-	-	1	-	-	8
Radius	9	-	1	-	2	-	-	2	-	-	-	-	-	-	-	-	14
Ulna	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Metacarpus	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Pelvis	1	-	-	-	1	-	-	1	1	-	-	-	-	-	-	-	4
Femur	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2
Tibia	5	-	5	-	2	-	-	2	-	-	-	-	-	-	-	1	15
Calcaneus	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	2
Astragalus	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	3
Metatarsus	-	-	-	-	2	-	2	-	-	-	-	-	-	-	-	-	4
Phalanx 1	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	2
Long bone	-	-	-	-	2	-	-	-	1	-	-	-	-	-	-	-	3
<b>Count</b>	<b>34</b>	<b>-</b>	<b>7</b>	<b>3</b>	<b>20</b>	<b>3</b>	<b>2</b>	<b>12</b>	<b>6</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>2</b>	<b>-</b>	<b>1</b>	<b>92</b>
<b>Percentage of the NISP total (%)</b>	<b>19.6</b>	<b>-</b>	<b>4.1</b>	<b>1.7</b>	<b>11.2</b>	<b>1.7</b>	<b>1.1</b>	<b>6.7</b>	<b>4.8</b>	<b>-</b>	<b>-</b>	<b>1.6</b>	<b>-</b>	<b>7.4</b>	<b>-</b>	<b>3.7</b>	<b>16.4</b>

Key: ch = chop marks, kn = knife marks, sm = smashed, at = animal tooth marks

Some data was available from tooth wear and bone fusion (Table 19). Cattle premolars and molars from pit 491 indicate a young and an adult animal. A cattle mandible from pit 1101 indicated an adult animal over 9 years, accompanied by severely worn molars from a mature horse. There are worn down molars from another adult/mature beast from pit 613. All of the horse teeth are mature and the most epiphysical fusion was recorded for horse bones. At least four of these animals were mature at death. Tooth

wear from ovicaprid mandibles suggest three adult individuals in pit 491 and at least one of them was a goat. Pits 611/3 contained three adult sheep mandibles, one juvenile sheep/goat mandible and another adult mandible. A pig mandible with an erupted but slightly worn down molar 3 from pit 957 was 18-24 months old at death.

*Table 19: Animal species ageing data, 16th to 18th century features*

Fill/ feature	Species	Years
492-3/ pit 491	horse	Adult
	horse	Mature
	goat	Adult (TWS F, 3-4 years)
	sheep/goat	Adult (TWS F, 4-6 years)
	sheep/goat	Adult (TWS D, 1-2 years)
	cattle	Adult, 8 years
	cattle	Juvenile, 2 years
612/ pit 613	sheep	Adult (TWS F, 3-4 years).
	sheep	Adult (TWS G, 4-6 years).
615/ pit 613	cattle	Adult, 8 years
	sheep	Adult, older than 3 years
	sheep/goat	Adult, (TWS I, 8-10 years)
	sheep/goat	Juvenile, (TWS D, 1-2 years)
	pig	Juvenile
957/ ditch 956	cattle	Juvenile
	pig	Juvenile, 18-24 months

A non-fused proximal epiphysis was recorded on a pig femur from pit 613 and a non-fused distal epiphysis was on a cattle metatarsus from pit 957, indicating young individuals.

### *Summary*

The fragmentation was very low and 42.7% of the assemblage could be identified to species. The assemblage is dominated by cattle (31.9%), with almost as many horse bones (30.9%). Ovicaprid bones (9.1%) and pig remains (1.3%) were significantly lower.

Most butchery marks were associated with dismemberment and were found proximally, mid-shaft and distally on long bones, as well as mandible, vertebra, costa, scapula, pelvis, calcaneus, astragalus and phalange. Butchery marks occurred on 41 horse bones, which represent more than 20% of the whole. Many long bones were chopped through the shaft, which may suggest that the meat-bearing leg bones of horses and/or the marrow of the humerus, radius, femur and tibia was utilised. The canid gnawing signs on these remains support a close association with dogs. Cut marks around the lower limb bones, which are often regarded as evidence of skinning were not present. The longitudinal splitting of a horse tibia and radius from pit 491 may also be connected to boneworking.

Canid gnawing occurs on 3.2% of the assemblage amongst horse, cattle and sheep bones, which suggest that bones were also left exposed for a time before burial.

### ***The 19th century***

A total of 87 (1.2kg) of hand-collected animal bone was analysed, of which 63 specimens (72.4%) were identified to taxa and parts of anatomy, representing cattle, horse, sheep, pig and domestic fowl species (Table 17). A partial dog skeleton (72 bone fragments) was identified in pit 807.

The bones were generally in good condition and fragmentation was very low with the minority (31%) being less than 50 mm in size. One pig ulna fragment from ditch 167

showed signs of canid gnawing. A proportion of 3.4% of bones had been butchered. Knife marks was noted on a pig distal epiphysis fragment of humerus from ditch 167, chopping marks were on large ungulate costa fragments from pits 838 and 853. However, there was no bone working, burning and only one bone with dog gnawing.

The dog cast into latrine pit 807 is an adult individual with an estimated shoulder height of c369mm based on the radius, femur and tibia using Koudelka's in system (1885), and making it a dog of medium height.

Little ageing data was available from the tooth wear and bone fusion. A cattle mandible with milk molar and erupted but unworn molar 3 indicated a young animal, 2-3 years, from ditch 167 and a half erupted premolar 4 indicated a 2-3 year old cow from ditch 172, together with a broken pig mandible, with erupting premolar, belonging to a 12-18 month old beast. The epiphyseal fusion of the cattle, horse and sheep/ goat bones, suggest that the majority of these animals were mature at death.

One horse canine indicates that the individual from pit 565 was an adult stallion.

### *Summary*

The fragmentation was very low, most bones were smashed in antiquity and 72.4% of the assemblage could be identified to species. The assemblage is dominated by cattle (44.8%), followed by lower numbers of pig (21.8%). The horse remains were relatively infrequent in this period, accounting for only 2.4% of the assemblage. The presence of ovicaprid bones was also low (1.1%) and domestic fowl were represented by one broken radius from pit 853. The much lower frequency of dog gnawing may indicate that the animals were no longer being deliberately fed with scraps or allowed to scavenge.

More animal bone was recovered from the 16th-18th-century contexts than from the 19th-century contexts. Cattle remained the most important species in terms of food value on account of the much greater carcass weight and dairying capability. In the 19th century the range of skeletal elements found indicates that horses, cattle, sheep and pig were all utilised.

The bones and teeth of horses were common, accounting for 3.5% of bone in the 16th-17th centuries and 6.2% in the 19th century. The later bones bore no evidence of butchery, and were probably working animals that reached maturity.

### ***Undated animal bone***

A total of 748 (10kg) of the hand-collected and sieved animal bone was undated. The state of preservation of the bones is generally good and the fragmentation is moderate. Some of the bone surfaces are abraded.

Most species were found in similar quantities to those found in the securely dated contexts. The bones were almost exclusively from domestic animals, mostly cattle and horses, with lower numbers of pig and sheep/goat.

### *The following material warrants a mention:*

The ulna of a small wild bird of indeterminate species was found in a pit 781 together with a partial donkey or mule skeleton. Further interpretation of this undated assemblage would probably be misleading, although the pit is thought to fit within the Norman and medieval pattern of enclosure.

## 6.2 Marine shells by Jim Brown

The presence of marine species indicates trade with the coast in all periods. Both oysters (*Ostrea edulis*) and mussels (*Mytilus edulis*) were present. In earlier periods they are likely to have been mainly a food supplement, but from the Roman period onwards oyster shells were often crushed after consumption for use as fertiliser. One of the shells from the late Saxon period was perforated and may have been used for decoration or jewellery.

Table 20: Marine shells by period

Period	Species	Weight (g)	Fill/ Feature	Notes
mid-late Saxon	Mussel	4	538/ gully 537	large size
late Saxon	Oyster	46	229/ pit 228	perforated shell
12th century	Oyster	22	956/ ditch 957	left and right valves, 3-4 years old
	Oyster	12	46/ pit 44	left valve, 3+ years old
post-medieval	Oyster	671	854/ pit 853 855/ pit 853	left and right valves, 2-4 years old

## 6.3 Plant remains by Val Fryer

There were twenty-three samples assessed for plant macrofossil assemblages, of these, only the sample from medieval ditch 1032 merited full quantification, as it offered an opportunity to study a comprehensive deposit of cereal storage/processing waste. This report is a synthesis of the assessment and further quantification.

The samples were bulk floated by Northamptonshire Archaeology using standard techniques, and the flots were collected in a 300 micron mesh sieve. The dried flots were sorted under a binocular microscope at magnifications up to x16. The plant macrofossils and other remains are listed in Tables 21-24, in which counts of cereal grains include only whole grains and/or embryo ends. Plant macrofossils and mollusc shells were identified by comparison with modern reference specimens. Nomenclature within the table follows Stace (1997). All plant remains were charred, but de-watered macrofossils and mineral replaced seeds were noted within other assemblages. Modern roots, moss fronds, seeds and arthropod remains were present within most samples.

### **Sample composition**

Cereal grains, chaff elements and seeds of common weeds were present, mostly at a low to moderate density, within all but two of the assemblages studied. Preservation was generally quite poor, with many of the grains being severely puffed and distorted, probably as a result of combustion at very high temperatures.

Oat, barley, rye and wheat grains were recorded, with wheat being predominant throughout. Wheat formed 85% of the total grain assemblage from ditch 1032. Rachis nodes of both bread wheat type (with diagnostic crescentic glume inserts) and rivet wheat type (with bulbous glume bases and attached trapezoidal internodes) were also present within ditch 1032, with bread wheat chaff forming 51% of the total chaff assemblage. However, cereal chaff was scarce within all other assemblages.

Of the other cereal types, barley occurred slightly more frequently than oats in most instances, although late Saxon pit 436 contained a moderately high density of oat grains. Within ditch 1032, rye grains were the most common after wheat, although they still only accounted for 3% of the total grain assemblage (Table 24). Possible evidence for wheat/rye mixed crops or 'maslins' has been suggested from contemporary sites

elsewhere with the Midlands and Eastern England, such as at West Cotton, Raunds, Northamptonshire (Campbell and Robinson 2010), but in most of these instances the assemblages contained moderate to high densities of both cereal types. As this was clearly not the case at Bottisham, it was considered far more likely that the rye grains were indicative of main crop contamination, probably in the form of persistent grains from an earlier cropping regime. A similar source is also suggested for many of the barley and oat grains, particularly those within the assemblage from ditch 1032, where a small number of cultivated oat florets/floret bases, with characteristic straight basal abscission scars, probably indicated that oats were being deliberately cultivated within the local area. Other potential food plant remains were extremely scarce, although a single, large angular pulse seed of possible field bean type was also noted from ditch 1032.

Weed seeds were generally scarce, with most occurring as single specimens within an assemblage. Segetal species were predominant, with taxa noted including corncockle, stinking mayweed, brome, cornflower, eyebright/bartsia, poppy, dock, campion and vetch/vetchling. Possible field margin weeds included knapweed, dead-nettle and ribwort plantain. Within the sample from ditch 1032, a number of the corncockle seeds were still clumped together within fragments of the fruiting capsule and stinking mayweed capitula fragments, comprising eight or more seeds, were also noted. Although scarce, charred wetland/aquatic plant macrofossils, including nutlets of sedge, saw-sedge and spike-rush, were recorded along with de-watered duckweed fruits and seeds of water crowfoot. Tree/shrub macrofossils, comprising a single fragment of charred hazel nutshell and de-watered elderberry seeds were also recovered.

Charcoal/charred wood fragments were present throughout, although only at a very high density within the assemblages of prehistoric date. Other plant macrofossils were scarce, but included small pieces of charred and de-watered root/stem, including a possible fragment of heather stem, indeterminate buds, culm nodes, inflorescence fragments and a possible charred tuber.

Black porous and tarry residues were present within most of the assemblages studied, and although some were probably derived from the combustion of organic remains, including cereal grains, at very high temperatures, other pieces were very hard and brittle and were almost certainly bi-products of the combustion of coal. Numerous small (<2mm) fragments of coal dust were also recorded, and it is thought most likely that these, along with the aforementioned residues, were probably derived from the use of steam traction engines around the farmyard in the recent past. As bioturbation, including worm/mollusc/rodent burrowing and root penetration, readily moves such material through the soil column, such contamination is commonly recorded on sites of all dates. Mollusc shells were present at varying densities within all twenty-four of the assemblages studied during assessment, the species noted amongst the archaeological sieved samples was passed on to Mike Allen.

## **Discussion**

### *Prehistoric features (Table 21)*

The remains within pit 402 and layer 413 are possibly derived from accumulated scattered detritus. Both assemblages contain very high densities of charcoal/charred wood fragments, and it is probably of note that many of the pieces are very rounded and abraded, possibly indicating that the material was exposed to the elements for some considerable period prior to deposition. The assemblages from Iron Age pit 734 contain a small number of charred cereal grains and weed seeds, the density of material is very low, and it would appear most likely that all are derived from scattered refuse, some or all of which was accidentally incorporated within the fills.

*Middle and late Saxon features (Table 22)*

The seven Saxon pit and ditch assemblages all contain some cereal grains and weed seeds, although in pit 436 primary deposition is indicated. Although small (<0.1 litres in volume), this assemblage includes a moderate density of oat and barley grains, along with a range of segetal weed seeds, and it is tentatively suggested that the assemblage may be derived from a small deposit of cereal processing waste, probably from an advanced stage of cleaning, where it only remained for the larger contaminants (ie the oats, barley and larger weed seeds within a batch of wheat) to be separated by hand immediately prior to consumption. This assemblage contains a number of nutlets of saw-sedge, a plant often used in thatching. The remaining assemblages all contain lower densities of plant materials, which although probably derived from domestic or agricultural activities, all appear to be in secondary contexts as scattered refuse.

*Norman and medieval (12th century) features (Table 23)*

Most of these assemblages are probably derived from low density scatters of refuse or charred agricultural waste. The material from ditch 1032 is of particular note as it is both large (c0.9 litres in volume) and almost entirely composed of cereal grains, with wheat being particularly common. The accurate interpretation of a single assemblage in isolation from other corroborative evidence is always difficult, particularly when, as in this instance, the material appears to have been dumped in a secondary context. However, the following factors are almost certainly of significance when considering the taphonomy of the material:

- The assemblage appears to be derived from material generated during a single period of activity. Successive deposition is not indicated and it is, therefore, assumed that the remains are not mixed with material from other sources.
- The cereals within the assemblage, and the wheat grains in particular, are generally in a very poor condition. Many specimens have concave sides and hollowed or enlarged embryo ends, and a small number of grains still retain *in situ* sprouts. Such preservation is common within assemblages where grains have either been deliberately germinated (ie during malting) or have accidentally sprouted during storage.
- The weed seeds are mostly large or present as intact capitula or seed capsules. Such remains, which would persist after winnowing and sieving because of their similarity in size to the grains, are commonly seen within batches of prime grain or cereal at a very late stage or processing such as those from the 12th-13th-century granary at Boreham Airfield, Essex (Fryer and Murphy 2003).
- The puffed condition of the grains, and the bias within the chaff assemblage towards the more robust rachis nodes, probably indicates that the remains were burnt quickly in a well-aerated fire.

Given all of these factors, and considering that wheat was rarely malted for the purposes of brewing during the medieval period, it is suggested that the material within ditch 1032 may be largely derived from the waste generated during the annual cleaning of a grain store or barn. Once burnt on open bonfires, such material would often be dumped within ditch fills, particularly if suitable middens or refuse pits were not situated within the near vicinity. Similar assemblages were noted within the peripheral areas of the mill and sub-enclosures at Boreham Airfield (*ibid*) and at West Cotton, Raunds (Campbell and Robinson 2010), with some evidence from the latter that cereal chaff may have been used as a fuel both for the drying of grain and for the subsequent burning of any refuse.

### ***Conclusions***

Although the intensive and prolonged use of this area of land and the subsequent bioturbation of the soil column has resulted in both the intercutting of features and the apparent contamination of some deposits with both residual and intrusive remains, it is possible to trace some broad trends in site use. Cereals, and most particularly wheat, which is well suited to production on the local clay soils, were possibly being processed on or near the site from the Saxon period onwards, with the resulting burnt waste being scattered around or dumped on middens. Similar activities, some of which were possibly associated with the adjacent moated site were certainly occurring during the early medieval period, although a more systematic approach to the processing and storage of cereals and the disposal of waste grain is indicated by the assemblage from ditch 1032.



Table 21: Plant remains from prehistoric, Iron Age and undated features

Fill	403	413	974	976	7	88
Feature	pit 402	layer	pit 734	pit 734	tree hole 8	tree hole 87
Period	Neo/ Bronze Age	Neo/ Bronze Age	late Iron Age	late Iron Age	10th-12th century	10th-12th century
<b>Cereals</b>						
Oat (grains)	-	-	-	X	-	-
Barley (grains)	-	-	xcf	X	-	-
Wheat (grain)	-	X	X	XX	-	X
Indeterminate cereal (grains)	-	X	X	X	-	X
<b>Herbs</b>						
Goosefoot	-	-	xw	-	-	-
Brome	-	-	-	xcf	-	-
Wild legumes	-	-	-	X	-	-
Black bindweed	-	-	xcf	-	-	-
Deadnettle	-	-	xw	-	-	-
Medicago/Trefoil/Lotus	-	-	X	-	-	-
Field madder	-	-	xcf	-	-	-
Stinging nettle	-	-	xw	-	-	-
<b>Tree/shrub macrofossils</b>						
Common/black elder	-	-	xxw	xw	-	-
<b>Other plant macrofossils</b>						
Charcoal <2mm	xxxx	xxxx	xxx	xx	xxxx	xx
Charcoal >2mm	xxxx	xxxx	xx	X	xx	xx
Charcoal >5mm	xxx	X	-	-	-	-
Charcoal >10mm	xx	-	-	-	-	-
Charred root/stem	-	-	X	-	X	-
Waterlogged root/stem	-	-	-	X	-	-
<b>Other remains</b>						
Black porous 'cokey' material	X	xx	xx	X	-	X
Black tarry material	X	xxx	xx	xx	X	X
Bone	X	X	X	-	-	x xb
Burnt stone	xx	X	-	-	-	-
Coal fragments	X	xxx	xxx	xxx	X	X
Mammal/amphibian bones	X	-	-	X	X	-
Vitreous material	-	X	X	X	-	-
<b>Sample volume (litres)</b>	<b>130</b>	<b>50</b>	<b>40</b>	<b>40</b>	<b>20</b>	<b>20</b>
<b>Volume of flot (litres)</b>	<b>0.6</b>	<b>0.3</b>	<b>0.1</b>	<b>&lt;0.1</b>	<b>0.3</b>	<b>0.1</b>
<b>% flot sorted</b>	<b>25%</b>	<b>50%</b>	<b>100%</b>	<b>100%</b>	<b>50%</b>	<b>100%</b>

## Key to tables

x = 1-10 specimens    xx = 11-50 specimens    xxx = 51-100 specimens    xxxx = 100+ specimens  
 cf = compare    w = de-watered    m = mineral replaced    fg = fragment    b = burnt

Table 22: Plant remains from middle and late Saxon features

Fill Feature	652 pit 651	453 pit 452	475 ditch 474	437 pit 436	658 pit 657	903 ditch 744	1065 ditch 1064
<b>Cereals and food plants</b>							
Oat (grains)	xcf	-	x	xxx	-	x	-
Barley (grains)	x	x	x	xx	xcf	x	x
Barley (rachis node)	-	-	-	x	-	-	-
Barley/Rye (rachis nodes)	x	-	-	-	-	-	-
Wheat (grains)	x	x	x	x	-	x	xx
Indeterminate cereal (grains)	x	x	x	xx	x	x	xx
Pea/Bean	x	-	-	-	-	-	-
<b>Herbs</b>							
Common corncockle	-	x	-	-	-	-	-
Stinking mayweed	-	-	-	x	-	-	-
Brome	-	x	xcf	x	-	-	-
Goosefoot	-	-	-	x	-	-	xw
Wild legumes	x	-	-	x	-	-	x
Black bindweed	x	-	-	-	-	-	-
Goosegrass	-	-	-	x	-	-	-
Deadnettle	-	-	-	-	-	xw	xw
Nipplewort	x	-	-	-	-	-	-
Field/Corn gromwell	-	-	-	xm	-	-	-
Lovage	-	-	-	x	-	-	-
Medicago/Trefoil/Lotus	-	-	-	x	-	-	-
Large grasses	-	-	-	x	-	-	-
Dock	-	x	x	x	-	-	-
Dock/Sedge	x	-	-	-	-	-	-
Campion/Catchfly	-	-	-	-	-	-	xw
<b>Wetland/aquatic plants</b>							
Sedges	-	-	-	-	-	-	-
Sawtooth sedge	-	-	-	xx	-	-	-
Spikerushes	-	x	-	-	-	-	-
Duckweed	-	-	-	-	-	-	xw
Water crowfoot	-	-	-	-	-	-	xw
Bulrush/Cattail	-	x	-	-	-	-	-
<b>Tree/shrub macrofossils</b>							
Common/black elder	-	-	-	-	-	xw	xw
<b>Other plant macrofossils</b>							
Charcoal <2mm	xxx	xx	x	xxx	xxx	x	xx
Charcoal >2mm	xx	x	x	xx	x	x	x
Waterlogged root/stem	-	-	-	-	-	xxxx	xx
Indeterminate seeds	-	-	-	-	x	-	-
<b>Sample volume (litres)</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>
<b>Volume of flot (litres)</b>	<b>&lt;0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>&lt;0.1</b>	<b>0.1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>% flot sorted</b>	<b>100%</b>	<b>50%</b>	<b>50%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
<b>Other remains</b>							
Black porous 'cokey' material	x	xxx	xx	x	-	x	x
Black tarry material	-	xxxx	xx	x	x	x	xx
Coal fragments	-	xx	xxxx	x	x	-	-
Vitreous material	-	x	x	x	-	x	-
<b>Sample volume (litres)</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>
<b>Volume of flot (litres)</b>	<b>&lt;0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>&lt;0.1</b>	<b>0.1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>
<b>% flot sorted</b>	<b>100%</b>	<b>50%</b>	<b>50%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Table 23: Content of soil samples from Norman and medieval features

Fill	269	286	231	255	325	395	379	237	315	1033
Feature	pit	pit	ditch	ditch	pit	pit	ditch	pit	ditch	ditch
	268	285	230	254	324	394	378	232	314	1032
<b>Cereals and food plants</b>										
Oat (grain)	-	-	x	-	xcf	-	-	-	-	xx
Oat (awn fragments)	-	-	-	-	-	-	-	-	-	x
Oat (floret)	-	-	-	-	-	-	-	-	-	xcf
Barley (grains)	x	x	xcf	x	x	xcf	-	x	-	xcf
Barley (rachis node)	-	-	xcf	-	-	-	-	-	-	-
Barley/Rye (rachis nodes)	-	-	-	-	-	-	-	-	-	xxx
Cereal rye (grains)	-	-	-	-	-	-	-	x	-	x
Wheat (grains)	x	xx	x	x	x	x	-	x	x	xxxx
Wheat (rachis internode)	-	-	-	-	-	-	-	-	-	xfg
Bread/Club Wheat (rachis nodes)	-	-	-	-	-	-	-	xcf	-	xxx
Indeterminate cereal (grains)	xcf	-	xx	x	x	x	x	x	x	xxxx
(detached embryos)	-	-	-	x	-	-	-	-	-	x
(awn fragments)	-	-	-	-	-	-	-	-	-	xxx
(basal rachis nodes)	-	-	-	-	-	-	-	-	-	x
Broad/Field bean	-	-	-	-	-	-	-	-	-	xcf
<b>Herbs</b>										
Common corncockle	-	-	x	-	-	-	-	-	-	x
Scarlet pimpernel	-	-	-	-	-	-	-	-	-	xcf
Stinking mayweed	-	-	x	-	-	x	-	-	-	xx
Brome	-	x	x	-	x	-	-	-	x	-
Knapweed/Cornflower	-	-	-	-	-	-	-	-	-	xx
Fat hen	-	-	-	xw	-	-	-	-	-	-
Wild legumes	-	-	x	x	-	-	-	-	-	x
Goosegrass	-	-	-	-	-	-	-	-	-	x
Field/Corn gromwell	-	-	-	-	-	-	-	-	-	-
Pale poppy	-	-	-	-	-	-	-	-	-	x
Ribwort plantain	-	-	x	-	-	-	-	-	-	-
Small grasses	-	-	x	x	-	-	-	-	-	-
Large grasses	x	-	-	-	x	-	-	x	-	x
Mignonette	-	-	-	xw	-	-	-	-	-	-
Dock	-	-	xx	-	x	-	-	-	-	-
Campion/Catchfly	-	-	x	xw	-	-	-	-	-	x
Common chickweed	-	-	-	-	-	-	-	-	-	x
Stinging nettle	-	-	-	xw	-	-	-	-	-	-
<b>Wetland plants</b>										
Duckweed	-	-	-	-	-	-	-	-	-	xxw
Bulrush/Cattail	-	-	-	-	-	-	-	-	-	xcf
<b>Tree/shrub macrofossil:</b>										
Common hazel	-	-	-	-	-	-	xcf	-	-	-
Common/black elder	-	-	-	xw	-	-	-	-	-	-
<b>Other plant macrofossils</b>										
Charcoal <2mm	xx	x	xxx	xx	x	xx	xx	xx	x	xxx
Charcoal >2mm		x	xxx	x	x	xx	x	x	-	x
Charcoal >5mm	-	-	x	x	-	-	-	-	-	-
Charred root/stem	-	-	-	x	-	x	-	-	-	x
Heather (stem)	-	-	xcf	-	-	-	-	-	-	-

Fill	269	286	231	255	325	395	379	237	315	1033
Feature	pit	pit	ditch	ditch	pit	pit	ditch	pit	ditch	ditch
	268	285	230	254	324	394	378	232	314	1032
Culm nodes	-	-	-	-	-	-	-	-	-	xx
Inflorescence fragments	-	-	-	-	-	-	-	-	-	x
Indeterminate seeds	-	-	x	-	-	-	-	-	-	x
Indeterminate tubers	-	-	-	-	-	-	-	-	-	xcf
<b>Other remains</b>										
Black porous 'cokey' material	xx	x	x	x	xx	x	xx	xx	x	xxxx
Black tarry material	xx	x	xx	x	xx	x	x	-	xx	x
Burnt organic concretions	-	-	-	-	-	-	-	-	-	x
Bone	-	-	-	-	x	x	x xb	x	-	-
Eggshell	-	-	-	-	x	x	-	-	-	-
Fish bones	-	-	-	-	x	-	-	-	-	-
Coal fragments	x	-	x	x	xx	xx	xx	xx	xx	-
Mammal/amphibian bone	-	-	x	x	x	x	x	-	-	-
Vitreous material	x	-	x	x	xx	x	x	x	x	-
<b>Sample volume (litres)</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>
<b>Volume of flot (litres)</b>	<b>0.1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>	<b>&lt;0.1</b>	<b>0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>&lt;0.1</b>	<b>0.9</b>
<b>% flot sorted</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>50%</b>	<b>50%</b>	<b>50%</b>	<b>100%</b>	<b>&lt;12.5%</b>

Table 24: Cereal processing waste from fill 1033 of medieval ditch 1032

Cereals	Total
Oat (grains)	240+160cf
(awn frags.)	32
Cultivated oat (florets)	48cf
(floret bases)	32cf
Barley (grains)	224+112cf
(rachis nodes)	400
Barley/Rye type (rachis nodes)	880
Rye (grains)	448+128cf
(rachis nodes)	624
Wheat (grains)	14,944
(germinated grains)	32
(rachis internode frags.)	96
Bread wheat type (rachis nodes)	2,400
Rivet wheat type (rachis nodes)	16+176cf
Indeterminate cereal (grains)	1,152
(detached embryos)	96
(basal rachis nodes)	160
<b>Herbs</b>	<b>Total</b>
Corncockle	736
Stinking mayweed	576
(capitula frags.)	48
Indeterminate pinks/carnations	1cf
Centaurea sp. (Cornflower, Knapweed etc)	224fg
Cornflower	80cf

<b>Cereals</b>	<b>Total</b>
Knapweed	128cf
Eyebright	64
Poppy	48
Small grasses	16
Large grasses	32
Campion	240
Vetch or vetchling	112
Common vetch	16cf
<b>Wetland plants</b>	<b>Total</b>
Spike-rush	32cf
<b>Other plant macrofossils</b>	
Charcoal <2mm	xx
Charcoal >2mm	x
Charcoal >10mm	x
Charred root/stem	x
Indeterminate buds	16
Indeterminate culm nodes	496
Indeterminate inflorescence fragments	xxxx
Indeterminate seeds	112
<b>Other remains</b>	<b>Total</b>
Black porous 'cokey' material	xxx
Black tarry material	x
Burnt organic concretions	x
<b>Sample volume (litres)</b>	<b>40</b>
<b>Volume of flot (litres)</b>	<b>0.9</b>
<b>% flot sorted</b>	<b>100%</b>

#### 6.4 Geoarchaeology and molluscs by Mike Allen

A series of sequences through dated features and colluvial/alluvial deposits were described to provide a geoarchaeological framework for the site (Appendix 1), and 16 samples were taken specifically for Mollusca. In addition to samples taken and processed specifically for molluscs, Val Fryer noted that 24 of the bulk samples contained molluscs. Following programmes of assessment (Allen 2012; Fryer 2012, table 3), 12 samples were selected for mollusc analysis, and together with the geoarchaeological records made from five site visits, these provide a long history of the landscape and land-use development. These two elements were considered to provide the key information about local landscape and land-use in the probable absence of the pollen survival in these bioturbated calcareous deposits.

The site lies on Moulton Association soils typical argillic brown earths over Lower Chalk, with localised alluvial facies associated with the former water course, which seal and bury archaeological evidence, as well as contain geoarchaeological and palaeo-environmental information. The soils are observed on site and in the immediate vicinity can be described as brown calcareous earths of the Swaffam Prior Association and brown rendzinas of the Newmarket 2 Association.

### ***Geoarchaeology and sampling***

A series of 19 profiles were selected during the excavation programme for description and interpretation were a combination of the main alluvial/colluvial sequence, and a range of dated features (mainly ditches and pits), with the aim of characterising sedimentation and infill histories, but also in examining changing sediment patterns over the occupation phases. The descriptions are presented in Appendix 1. Samples for snails were analysed from discrete features and one alluvial/colluvial profile. A series of 16 mollusc samples were assessed, from which nine were selected for analysis. In addition three further bulk samples from phases not sampled specifically for snails were also analysed.

### ***Key aims***

The aims of the combined snail and geoarchaeological records were to provide an indication of the local land-use and environments from the Neolithic and Iron Age activity to post 12th century, and define the nature of the landscape setting. In particular changes in the local environments, particularly relating to the status of and hydrology of the 'floodplain' during the occupation periods (ie Neolithic and Iron Age to 12th century), were a main focus to indicate if changes in local environment may have had an impact on the nature, location and distribution of human activities as recorded in the excavated record. In addition to providing a record of local feature infill histories a subsidiary aim was to also determine the nature of the water within features (eg waterhole/pit 31), and the define the alluvial component to their infilling history.

### ***Samples and sediment sequences***

The profiles described (Appendix 1) were a combination of the main alluvial/colluvial sequence and a range of dated ditches and pits. The alluvial/colluvial deposits were only ascribed a date based upon the archaeological features they sealed, rather than any artefacts, or distribution of artefacts contained within them (cf Bell 1983; Allen 1988). Nevertheless, this sequence was described in three locations; two towards the eastern end of the site, one of which sealed a 12th-century ditch (ditch 676). Sequences of samples for snails were taken at two of these locations, and analysed from the longer sequence overlying ditch 676.

Samples for land snails were a combination of spot samples from individual contexts, and a sequence through the 12th-century ditch 676 into the post 12th-century overbank alluvium which sealed many of the features, particularly on the southern, downslope, portion of the excavated area. No buried soils were present. Saxon features that were indicated in the field were shallow with deposits heavily mixed by modern rooting and bioturbation. A number of mollusc assemblages were recovered from the bulk samples: two from late Neolithic contexts and one from a Saxon pit were analysed for molluscs.

### ***Methods***

All profiles were described in the field after cleaning back sections. Nomenclature followed Hodgson (1976). Due to the fact the deposits were considered to be only weakly to moderately calcareous their suitability for shell preservation was in doubt. After comparison with analyses from a number of other published sites in East Anglia (eg Barnack and Bainton, French 1985a; Etton, French 1998; 2005a; 2005b; Fengate, French 1980; Maxey, Evans 1972; French 1985b, and Flag Fen, Pryor 2001 see archive assessment), sample sizes of 2.0-2.5kg where possible, were deemed more appropriate, rather than the standard 1.0kg sample (cf Evans 1972). Air dried samples of between 1400g and 2500g for snails were processed by standard methods (Evans 1972); weighed air-dried samples were processed by laboratory bucket wash-over flotation with the flots and residues retained on a 0.5mm mesh. The dried residues were weighed (archive), and molluscs extracted from the flots and the 0.5mm, 1mm,

2mm and 4mm residues and identified using a stereo-binocular microscope under  $\times 10$  to  $\times 30$  magnification. Bulk samples were processed by Val Fryer, with flots and residues retained on 300 $\mu$ m mesh and residues only to 1mm. These samples were considerably larger (40 to 130 litres) and consequently yielded up to 955 shells (excluding *Cecilioides acicula*). The flots and residues were sorted by the writer for molluscs. Nomenclature follows Anderson (2005) and the results are presented in Table 25, where totals exclude the burrowing, and thus palaeo-ecologically insignificant species, *C. acicula*. Species habitat preference follow Evans (1972; 1984) and Kerney (1999) for terrestrial species, and Sparks (1961), Sparks and West (1959), Robinson (1988) and Kerney (1999) for freshwater and aquatic species (Appendix 2).

### **Molluscan evidence**

Mollusc samples were concentrated upon archaeological features and the alluvial/colluvial deposits sealing them (Table 25). The deposits were all largely almost stone-free, calcareous or weakly calcareous, coarse silts and fine sandy loams, with varying degrees of biotic activity homogenising many of the fills. Although 12 samples have been analysed, these cover six distinct defined phases (Table 25) and cover some 3½ to 4 millennia. The samples, only represent up to two or three per phase, many taken from the same feature-specific location, so some caution needs to be extended, especially for instance, for the Saxon period where only one sample was suitable for analysis. Feature-specific micro-environments or topographically-specific site locations may play a role in what will be seen to be a rich, changing and diverse mosaic of complex local environments.

Despite concerns over shell preservation, most assemblages were large, although molluscs per litre/kg varied from 12 to 351. A total of 5197 shells were identified (excluding *C. acicula*), of which 33% were freshwater, aquatic or slum species (cf. Kerney 1999; Macan 1977; Ellis 1978). The prehistoric to Saxon assemblages were dominated by terrestrial species, with a low percentage of freshwater species present (up to 7.5%), but in the 12th century and later deposits, freshwater species represent 67-73%. The terrestrial assemblages are dominated by the *Vallonia* species and *Trochulus hispidus*, often accounting for over 30% (and up to 65%) of the assemblages. Similarly *Galba (Lynmaea) truncatula* and *Anisus leucostoma* dominate the freshwater assemblages; these two species accounting for up to 89% of the aquatic taxa. A number of slum and marsh species are present from the late Neolithic to post 12th-century deposits, but few moving-water species are present, confirming the presence of overbank flooding, high groundwater tables and seasonally wet, damp and potentially marshy land locally. The nature and changing history of this is discussed below, and in particular in relation to the potential for settlement, occupation and agriculture in the vicinity, although as the distribution of the overlying overbank floodplain alluvium and colluvium show (Fig 31), some of these environments may have been highly localised.

#### *Late Neolithic/Early Bronze Age*

Two bulk samples taken from pit 402 and layer 413 were considered to be of late Neolithic to early Bronze Age date, though the layer was reported to contain some intrusive 12th-century material (J Brown pers comm). Both samples contained similar assemblages. Although mollusc numbers per litre were low to moderate (12 and 76) the large bulk samples produced high shell numbers (557 and 995) and were dominated by terrestrial species (over 93%), with some shade-loving species (eg *Acicula fusca* and *Merdigera obscura*) only being recorded in these samples. The assemblages are dominated by *V. cf. excentrica* and *T. hispidus* with low, but significant, numbers of a range of shade-loving species (Evans 1972, 194-6; 1984) such as *Vertigo pusilla*, *Discus rotundatus*, and Zonitidae (Table 25). Many of these shade-loving species are also common in more open conditions. Damper and wet

conditions existed locally, as evidenced by the slum and marsh species *Vertigo angustior*, *Vertigo moulinsiana* and amphibious species *Galba truncatula* and *Anisus leucostoma*. They also included *Vertigo angustior* which is rarely recorded in Britain but is common in moist open floodplains and meadows (Kerney 1999, 101). The occurrence of *Acicula fusca* (layer 413) is also a relatively rare species, but is found in flushes on meadows and floodplains, as is *Vertigo angustior* of which large numbers were present in layer 413. These mixed and very rich assemblages (up to 38 terrestrial taxa) indicate a complex local environmental mosaic and an ecotonal location. Overall this clearly indicates a post clearance, open landscape, and dry land (*V. excentrica*, *Vertigo pygmaea*) with long mesic herbaceous vegetation and on the fringes of damper habitats, with high ground water and potentially prone to flooding (*A. leucostoma*, *G. truncatula*, *Vertigo* etc.). The sampled feature itself (pit 402), however, seems unlikely to have held a permanent body of water, but like many other local scoops and depressions the seasonally high ground water levels and possible overbank flooding were conducive to temporary bodies of standing water in them surrounded by ungrazed herbaceous vegetation, with wetter and marshier conditions in the vicinity. Although pit 402 contained burnt stone and burnt flint, none of the shells themselves were burnt, and they are likely to represent the local shallow pit and surrounding environment.

#### *Middle Iron Age*

Samples were taken from the Middle Iron Age pit 31 (and possible waterhole) by the excavators and the assemblages are superficially similar to the late Neolithic/early Bronze Age ones reported above. Terrestrial assemblages continue to dominate with a small (5-8%) freshwater element present. Open conditions and long ungrazed herbaceous vegetation is suggested by the terrestrial assemblage (Table 25), especially *T. hispidus*, *Vallonia*, *Carychium* etc. Although the proportion of the shade-loving species expands to 25-30%, they are largely represented by *Carychium tridentatum*, which is common in long grassland, and low numbers of many of the more catholic, shade-loving species, indicate local mesic conditions rather than any true woodland. Amongst the *Carychium* is *C. minimum*, which distinctly prefers wet places; generally fens and marshes and is virtually amphibious and can tolerate prolonged winter flooding (Kerney 1999, 44). The slum and marsh assemblage include a range of species including wetland species *Vertigo anitivertigo* mainly found in lowland marshes, fens and reedswamps, but also *V. moulinsiana* found in areas adjacent to those inhabited by the true aquatic species, such as in wet calcareous swamps, fens and marshes. It is stenotopic and usually lives on the stems of *Carex* sp. or *Glyceria maxima* in fen environments (Butot and Neuteboom 1958; Bishop 1974; both quoted by Evans *et al* 1992, 68). Also present is *V. angustior*, in significant but lower numbers than in late Neolithic/early Bronze Age layer 413, which here probably inhabits a niche of rich marshy meadows and damp meadow vegetation, rather than the low mossy habitats it can frequent (Norris and Colville 1974). These species also tend to suggest stable conditions (ie that have not been tilled or disturbed), but that could be in state of slow transition between, or on the junction of, marsh to meadowland (cf. Norris and Colville 1974, 151).

Only a few true freshwater aquatic species are present; predominantly the amphibious species *G. truncatula*. Localised water is indicated by the presence of *Pisidium*, *Valvata* and *Gyraulus albus*, which are probably allochthonous and their low occurrence probably a result of overbank flooding of a former watercourse. There is little evidence that this feature held a permanent body of water, but seasonally ponding, ground- and flood-water might be expected. This, and similar features, are unlikely to be waterholes for animals to drink from due to the wet local environments and pools of standing water, but digging these features would have resulted in seasonally ponding shallow water.



### *Late Iron Age*

A short sequence of two samples was taken from Iron Age pit 734 (Table 25). Shell numbers decline in the main fill which contains evidence of some dumping (Appendix 1), but the assemblages are similar in general character to those from the Middle Iron Age pit 31. Key and significant differences are the almost total lack of freshwater species, the absence of slum and marsh species, and terrestrial assemblages with increasingly higher proportions of open country species (70%, Table 26), to the detriment of shade-loving snails. The assemblages are also much more restricted with only 11 and 14 terrestrial taxa present and dominated by *V. excentrica*, *T. hispidus* and *Helicella itala*. This indicates a phase of locally drier, and more importantly drying, conditions. A stable drier meadow or pasture is suggested, and the presence of moderate numbers of the xerophile *Helicella itala* from the base of the pit might even suggest short-grassland and grazed or trampled conditions of even possibly tillage.

Whether this feature was upslope of the then existing wetter ground or whether this local change represents the management of the local watercourse, and the arresting of flooding by canalisation or embankment, or just the natural movement of the watercourse southward away from the excavated area cannot be determined. We can, however, see these changes as relatively ephemeral as the wetter conditions returned in ensuing phases. The excavated area in the late Iron Age phase, however, would clearly have been drier, less prone to as extensive seasonal (winter flooding) and more suitable for pasture and tillage. However, by the Saxon period there is evidence of a return to more extensive seasonal overbank flooding, higher groundwater levels, and ephemeral pools of standing water.

### *Saxon*

Only a single Saxon sample was suitable for mollusc analysis; this was a bulk sample processed for charred plant remains from the base of pit 61 which was nearly 1.3m deep. The single assemblage although dominated by terrestrial species has a return of both freshwater (6%) and slum and marsh (5%) species. The terrestrial component is once more dominated by very high numbers of *T. hispidus*, with *V. excentrica* and *Cochliopa lubrica*. *Oxychilus cellarius*, a common shade-loving species, occurs in moderate numbers and is frequent in waste ground and unkempt vegetation as well as ground litter in woodland (Kerney 1999, 144), and is frequent in tall grass (Evans 1972, 188), where at ground level the micro-environment is shady and damp. The reoccurrence of *V. moulinsiana* and *V. angustior* along with amphibious freshwater species (*G. truncatula*, *A. leucostoma* and *Aplexa hynorum*) indicates a return to seasonal dampness and higher groundwater, pools of water and overbank flooding. Although similar conditions to those in the Iron Age and prehistory, this seems to be transitionary and becoming wetter, but the excavated area was dry and existed on the edge of wetter pasture, meadow and marsh.

### *12th century and post 12th century AD*

A sequence of five contiguous samples embraced the 12th-century ditch 676 and the overlying 0.5m of alluvial/colluvial deposit which is post 12th but pre 16th century and provides the environmental history for the later part of the site. The deposits in both are clearly in part waterlain (ie alluvial), but also include a colluvial component, and the base of the main sequence includes a possible incipient buried soil (see below). The five assemblages (Table 25) are markedly different from previous samples, as they are, on the whole, dominated by freshwater and aquatic species (52-72%), and show subtle changes through time.

The terrestrial assemblages contain a significant component of slum and marsh species (to 55%). *T. hispidus* is predominant and rises in significance to 34% of the assemblage and with *V. excentrica* continue to co-dominate the drier elements of the

fauna. Nearly all samples contain evidence of the catholic species *Cornu (Helix) asperum (aspersa)* a Roman introduction (Kerney 1966). Significant changes are seen the presence of the *Succinea/Oxyloma* group which although catholic, generally live in wetland, vegetated fens, meadows and floodplains. Both *V. pulchella* and *C. minimum* are present throughout the sequence, as are *V. moulinsiana* and *V. angustior*, but in lower numbers and proportions than from the Saxon pit.

The freshwater element is the most significant change here (Tables 25 and 26). It is dominated by high numbers of the amphibious species *Anisus leucostoma* common in swampy pools, especially those subject to drying and desiccation in the summer, and the constant presence of *G. truncatula* with *Radix (Lymnaea) balthica (peregra)* a more aquatic species. Also present are *Hippeutis complanatus* which likes well-vegetated slowly moving water in lowland habitats and up to four species of *Pisidium* which inhabit bodies of water. The most numerically significant is *P. personatum* which lives in poor aquatic habitats, grassy pools, hillside flushes and areas subject to desiccation, but higher up the profile gives way to *P. casertanum* typical of larger bodies of water and mud but also can resist summer drought.

Table 25: Molluscs from Neolithic to post 12th century AD contexts at Bottisham

Phase	LNI EBA		Mid Iron Age		Late Iron Age		Saxon	12th century		Post 12th century		
Feature	pit	layer	pit	pit	pit	pit	pit	ditch	ditch	alluvium		
Feature	402		31	31	734	734	651	676	676			
Context	403	413	32	32	976	974	652	677	677	675	675	675
Percentage sorted	35%	25%	100	100	100	100	50%	100	100	100	100	100
Sample	14	21	11	12	46	45	36	31	32	33	34	35
Depth (cm)								60-75	45-60	30-45	15-30	0-15
Wt (g) / vol (L)	130L	50L	2500	2500	1400	1450	40L	2000	2000	2000	2000	2000
<b>MOLLUSCA</b>												
<b>Terrestrial</b>												
<i>Pomatias elegans</i> (Müller)	-	20	3	5	7	4	-	+	+	+	+	1
<i>Acicula fusca</i> (Montagu)	-	2	-	-	-	-	-	-	-	-	-	-
<i>Carychium tridentatum</i> (Müller)	2	153	17	39	9	3	11	15	12	14	10	8
<i>Carychium minimum</i> (Risso)	-	-	-	35	-	-	2	-	-	-	-	-
<i>Carychium cf. minimum</i> (Risso)	-	-	1	-	-	-	-	2	2	3	2	2
<i>Carychium</i> spp.	-	-	4	8	-	-	-	-	1	-	-	3
<i>Succinea cf. putris</i> (Linnaeus)	4	-	-	2	-	-	-	-	48	74	59	38
<i>Oxyloma Pfeifferi</i> (Risso)	2	2	3	8	-	-	-	2	-	-	-	-
<i>Succinea/Oxyloma</i>	-	-	-	-	-	-	1	-	7	22	23	16
<i>Cochlicopa lubrica</i> (Müller)	33	41	5	2	2	4	27	4	3	3	12	8
<i>Cochlicopa lubricella</i> (Porro)	3	2	1	-	1	-	1	-	-	-	-	-
<i>Cochlicopa</i> spp.	1	-	4	5	-	-	5	-	5	2	4	3
<i>Columella edentula</i> (Draparnaud)	-	1	-	1	-	-	-	-	-	-	-	-
<i>Truncatellina cylindrica</i> (Férussac)	-	-	-	-	-	-	-	1	-	-	-	-
<i>Vertigo pusilla</i> (Müller)	1	-	-	3	-	-	-	-	-	-	-	-
<i>Vertigo antvertigo</i> (Draparnaud)	-	-	-	10	-	-	-	-	-	-	-	-
<i>Vertigo substriata</i> Jeffreys	-	1	-	-	-	-	-	-	-	1	-	-
<i>Vertigo pygmaea</i> (Draparnaud)	12	28	6	-	-	-	14	4	2	5	4	2
<i>Vertigo moulinsiana</i> (Dupuy)	3	27	1	2	-	-	4	1	1	1	2	3
<i>Vertigo angustior</i> Jeffreys	6	73	2	13	-	-	9	1	3	2	2	2
<i>Vertigo</i> spp.	-	-	-	7	-	-	-	-	-	-	1	-
<i>Pupilla muscorum</i> (Linnaeus)	25	22	-	9	6	5	6	-	-	2	4	2
<i>Vallonia costata</i> (Müller)	11	26	8	35	1	2	2	-	4	-	2	7
<i>Vallonia cf. excentrica</i> Sterki	120	106	31	94	21	50	74	14	20	11	17	22
<i>Vallonia excentrica/pulchella</i>	14	6	-	26	-	1	4	2	2	2	6	4
<i>Vallonia pulchella</i> (Müller)	3	2	3	15	-	-	4	1	2	-	8	1
<i>Vallonia</i> spp.	-	-	5	12	-	-	-	-	-	-	1	-
<i>Acanthinula aculeata</i> (Müller)	7	11	-	3	-	-	-	-	-	1	-	-
<i>Merdigera obscura</i> (Müller)	1	1	-	-	-	-	-	-	-	-	-	-
<i>Punctum pygmaeum</i> (Draparnaud)	1	3	4	14	-	1	1	-	1	-	-	-
<i>Discus rotundatus</i> (Müller)	17	59	+	4	5	-	2	3	+	+	1	-
<i>Vitrea pellucida</i> (Müller)	-	-	2	-	-	-	-	-	-	-	-	-
<i>Vitrea crystallina</i> (Müller)	1	-	1	3	-	-	-	-	-	-	-	-
<i>Vitrea contracta</i> (Westerlund)	4	6	2	5	-	-	-	1	-	-	-	-
<i>Nesovitrea hammonis</i> (Ström)	2	4	-	-	-	-	-	-	-	-	-	-
<i>Aegopinella nitidula</i> (Draparnaud)	11	25	4	17	3	-	4	2	2	1	1	1

Phase	LNI/EBA		Mid Iron Age		Late Iron Age		Saxon	12th century		Post 12th century		
Feature	pit	layer	pit	pit	pit	pit	pit	ditch	ditch	alluvium		
Feature	402		31	31	734	734	651	676	676			
Context	403	413	32	32	976	974	652	677	677	675	675	675
Percentage sorted	35%	25%	100	100	100	100	50%	100	100	100	100	100
Sample	14	21	11	12	46	45	36	31	32	33	34	35
Depth (cm)								60-75	45-60	30-45	15-30	0-15
Wt (g) / vol (L)	130L	50L	2500	2500	1400	1450	40L	2000	2000	2000	2000	2000
<i>Aegopinella pura</i> (Alder)	1	13	-	2	-	-	-	-	-	-	2	-
<i>Oxychilus cellarius</i> (Müller)	6	11	1	4	2	-	18	4	3	-	2	2
<i>Zonitoides nitidus</i> (Müller)	-	-	-	-	-	-	5	-	1	-	1	-
Limacidae	-	10	-	2	-	1	-	1	2	4	4	3
<i>Cecilioides acicula</i> (Müller)	189	85	-	-	46	20	15	4	2	1	4	5
<i>Cochlodina laminata</i> (Montagu)	1	1	-	-	-	-	-	-	-	1	-	-
<i>Clausilia bidentata</i> (Ström)	2	2	-	3	1	-	-	1	1	+	2	-
<i>Helicella itala</i> (Linnaeus)	5	3	3	-	17	4	2	-	-	-	1	-
<i>Trochulus hispidus</i> (Linnaeus)	194	255	11	39	36	13	196	22	37	29	43	70
<i>Trochulus striolatus</i> (C. Pfeiffer)	22	4	1	2	-	-	16	-	-	-	4	6
<i>Arianta arbustorum</i> (Linnaeus)	-	-	-	-	-	-	-	+	-	-	-	-
<i>Cepaea hortensis</i> (Müller)	-	-	-	-	1	-	-	-	-	-	-	-
<i>Cepaea/Arianta</i> spp.	-	-	-	-	-	-	-	3	1	-	-	-
<i>Cepaea</i> spp.	4	11	-	+	-	1	3	1	+	3	+	+
<i>Cornu aspersum</i> (Müller)	-	-	-	-	-	-	-	-	1	+	+	+
<b>Terrestrial total</b>	<b>519</b>	<b>931</b>	<b>123</b>	<b>429</b>	<b>112</b>	<b>89</b>	<b>411</b>	<b>85</b>	<b>161</b>	<b>181</b>	<b>218</b>	<b>204</b>
<b>Freshwater</b>												
<i>Valvata cristata</i> Müller	-	-	-	-	-	-	-	-	1	-	-	-
<i>Valvata piscinalis</i> (Müller)	1	-	-	1	-	-	-	-	-	-	-	-
<i>Aplexa hypnorum</i> (Linnaeus)	-	-	-	-	-	-	9	-	4	1	3	3
<i>Galba (Lymnaea) truncatula</i> (Müller)	16	17	6	15	-	-	8	30	19	10	8	8
<i>Radix (Lymnaea) balthica (peregra)</i> (Müller)	2	-	-	-	-	-	-	9	6	4	12	16
<i>Anisus leucostoma</i> (Millet)	18	6	2	-	-	1	7	171	129	338	443	295
<i>Anisus vortex</i> (Linnaeus)	-	1	-	1	-	-	-	3	3	-	-	-
<i>Gyraulus albus</i> (Müller)	-	-	-	1	-	-	-	-	1	7	3	9
<i>Hippeutis complanatus</i> (Linnaeus)	-	-	-	-	-	-	-	2	5	3	6	30
<i>Pisidium casertanum</i> (Poli) valve ÷ 2	1	-	-	1	-	-	-	3	2	3	2	1
<i>Pisidium personatum</i> Malm valve ÷ 2	-	-	-	-	-	-	-	6	5	2	5	3
<i>Pisidium cf. nitidum</i> Jenyns valve ÷ 2	-	-	2	2	-	-	-	-	-	-	1	1
<b>Freshwater total</b>	<b>38</b>	<b>24</b>	<b>10</b>	<b>21</b>	<b>0</b>	<b>1</b>	<b>24</b>	<b>224</b>	<b>175</b>	<b>368</b>	<b>483</b>	<b>366</b>
molluscs/litre - kg	12/L	76/L	53/kg	180/kg	81/kg	62/kg	22/L	155/kg	168/kg	275/kg	351/kg	285/kg
<b>TOTAL</b>	<b>557</b>	<b>955</b>	<b>133</b>	<b>450</b>	<b>112</b>	<b>90</b>	<b>435</b>	<b>309</b>	<b>336</b>	<b>549</b>	<b>701</b>	<b>570</b>

Overall this sampling point, at the southern edge of the excavated area suggests very damp marshy ground with pools of standing water. This was also subject to summer drying and seasonal groundwater changes, punctuated by hillside flushes and overbank flooding. Nearby are drier grassland meadow and pasture. Ditch 676 was wet, but the surrounding area temporarily became drier as in infilled with alluvium (and colluvium) in the 12th century. Eventually it, and the immediate surrounding area (from along the southern edge of the excavation and beyond southwards), was engulfed in overbank floodplain deposits from the south and colluvium from upslope activity on drier slopes to the north. Locally wetter conditions prevailed along the southern fringe of the excavated area and beyond, getting damper with standing water nearer to a former water course and water flush, if not an actual channel. The increase in *A. leucostoma* through the deposits above the ditch and concomitant decline in *G. truncatula* and *R. balthica* show clear changes in local habitats. In the very upper most (and pre-16th century) sample of this deposit, the occurrence and rise in *Gyraulus albus* and *H. complanatus*, together with the reduction of many of the terrestrial species, indicates increased levels of standing water, and perhaps more prolonged periods of sheets of standing water. The cessation of both colluviation and alluviation and the cutting of 16th-century pits into this deposit suggest much drier local conditions prevails at that time, but we have no direct palaeo-environmental evidence to substantiate that likelihood.

Table 2: Mollusc species habitat preferences and species diversity

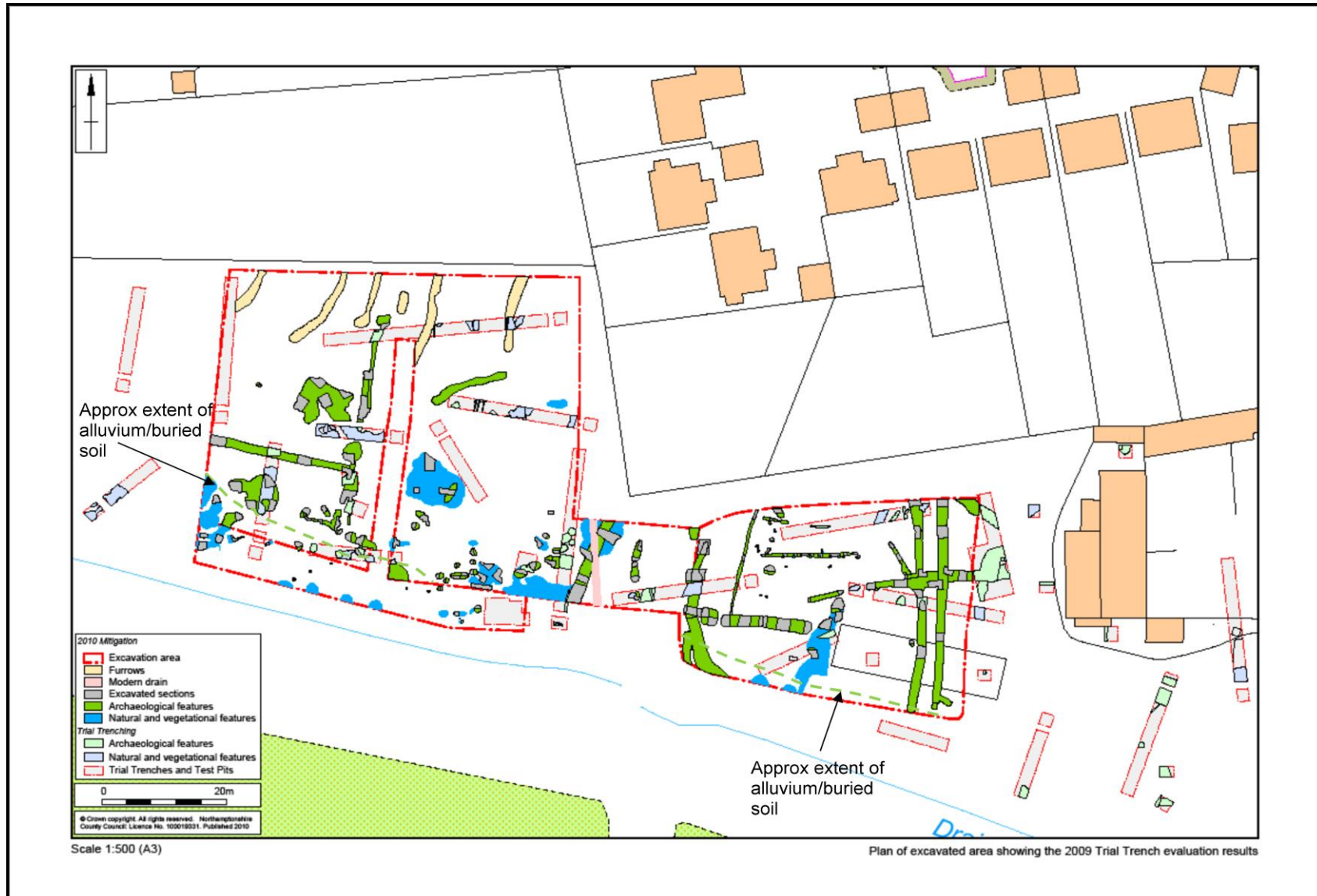
Phase	LN/ EB/	LN/ EB/	MIA	MIA	LIA	LIA	Sax	12 C	12 C	Post 12 C		
Feature type	Pit	layer	pit	Pit	Pit	Pit	Pit	ditch	ditch	alluvium		
Feature	402		31	31	734	734	651	676	676			
Context	403	413	32	32	976	974	652	677	677	675	675	675
Sample	14	21	11	12	46	45	36	31	32	33	34	35
depth	-	-	-	-	-	-	-	60-	45-	30-	15-	0-15cr
								75cm	60cm	45cm	30cm	
Wt (g) / vol (L)	130L	50L	2500	2500	1400	1450	40L	2000	2000	2000	2000	2000
% terrestrial	93	97	92	95	100	99	94	28	48	33	31	36
% freshwater	7	3	8	5	0	1	6	72	52	67	69	64
% Shade-loving	15	16	25	30	18	3	13	33	13	12	11	11
% Catholic	46	37	24	16	42	27	57	36	31	23	29	42
% Open country	37	21	46	46	40	70	26	26	28	11	20	19
% Slum	3	11	5	8	0	0	5	5	37	55	40	29
Terrestrial taxa	38	31	21	28	14	11	21	19	20	17	22	18
<b>Terrestrial total</b>	<b>519</b>	<b>931</b>	<b>123</b>	<b>429</b>	<b>112</b>	<b>89</b>	<b>411</b>	<b>85</b>	<b>161</b>	<b>181</b>	<b>218</b>	<b>204</b>
% Group 1: amphibious	89	100	80	76	0	100	100	94	91	95	95	84
% Group 2: catholic	5	0	20	14	0	0	0	5	7	4	5	15
% Group 3: ditch aquat	0	0	0	0	0	0	0	0	+	0	0	0
% Group 4: moving water	5	0	0	10	0	0	0	1	1	1	+	+
Freshwater taxa	5	3	3	6	0	1	3	7	10	8	9	10
<b>Freshwater total</b>	<b>38</b>	<b>24</b>	<b>10</b>	<b>21</b>	<b>0</b>	<b>1</b>	<b>24</b>	<b>224</b>	<b>175</b>	<b>368</b>	<b>483</b>	<b>366</b>
<b>TOTAL</b>	<b>557</b>	<b>955</b>	<b>133</b>	<b>450</b>	<b>112</b>	<b>90</b>	<b>435</b>	<b>309</b>	<b>336</b>	<b>549</b>	<b>701</b>	<b>570</b>

### Geoarchaeological evidence: sediment and feature fills

The sediment records help to characterise the nature of the feature fills between domestic/agricultural debris and natural deposits (cf. Evans 1972, 321-8; Limbrey 1975, 290-300). Examination of deposits from the mid-late Saxon to mid-16th century enable changes in the floodplain hydrology to be identified, and combine with the longer alluvial sequence that buries some of the archaeology.

Soil samples for molluscs from middle Iron Age pit (waterhole) 31 (samples 11 and 12) were of silty clay with coarse silts and some fine sand, with common small chalk pieces typical of the colluvial fills seen in many other features, but that these had settled under standing water. The middle Iron Age and late Iron Age features (see for instance pit 734, Appendix 1) contained a fine silty clay matrix, but also contained more small rounded chalk pieces (possibly a part of a colluvial component) than many of the later feature fills. Mollusc samples from pit 31 (thought on site to be a waterhole) did not indicate any waterlogging. The mid and late Iron Age (pits 31, pit 734) and Saxon (ditches 436, 744, 439 and pits 504, 651) indicate infills derived from the feature sides, the former subsoil profile, the occupation activity and colluviation. Only the upper fills of ditch 744 indicate possible waterlain modification or alluvial input. In contrast although some of the 12th-century features indicate some colluvial infill (eg ditch 252) most of them are mainly alluvial, that is overbank floodplain alluvium, hillside flushes or even ground water modified (eg ditches 742, 285, 244 / 266, 312, pits 720, 268, and quarry pit 781). Many of these are, in turn sealed by post-12th century alluvium with some colluvial input

The distribution of the alluvium was confirmed by excavation (Fig 31). The main sediment sequence along the southern edge of the site is a combination of colluvium derived from upslope (north) and alluvium from overbank flooding events from the water course to the south. These constituents can also be seen in many of the feature fills. The main thickness of alluvium is restricted to the southern boundary of the site (Fig 32), the lower portion of which is slightly darker in colour and possibly slightly humic which may reflect the former soil, and/or the nature of the initial alluvial deposits.



Plan of the site showing approximate extent of the alluvium/colluviums Fig 31



Ah alluvial brown earth ('topsoil')  
– context 1

Overbank floodplain alluvium  
– context 2a

Transition – context 2b

Relict truncated buried soil /  
initial alluvium - context 3

Summary of the main post 12th-century alluvial facies Fig 32

Field examination and description clearly showed a relict incipient buried soil/darker finer grained initial overbank alluvium preserved beneath the main alluvium (Fig 32), and that the overlying deposit was a coarse silty alluvium typical of overbank floodplain alluvium from a former water course. Examination of the deposits indicates:

- an overbank floodplain alluvial component / hillside flush
- a colluvial component
- that the nature of the alluvial facies changes over time (and this is also reflected in the snail assemblages – see above)

The alluvial sediments are stone-free and coarsen upwards. They comprise the following main units (see Fig 32):

- relict (truncated) buried soil (context 3)
- transition zone (overbank alluvium and soil material) (context 2b)
- overbank alluvium fining downwards (context 2a)
- present alluvial brown earth soil (context 1)

It is possible that some alluviation relates to the Iron Age activity, and certainly some of the fills in Iron Age features had been deposited when ground watertables were moderately high allowing sediment to settle underwater (as was apparent in present day conditions). However, it is likely that the onset of the main overbank alluviation post-dates this phase, and may be associated with the post-Roman activity, thus largely engulfing and preserving the buried soil and slowly accumulating up to c0.9m of alluvial deposits.

### ***Discussion and conclusions: a land-use history***

The excavated area formerly formed a part of a complex range of micro-habitats according to their positions along the slope of the valley. Although the topographical relief is very minor, the presence of former wetlands, marshes, floodplain and water

flushes or even watercourses, fringed the drier higher land of Bendyshe Farm itself. Such habitats were neither consistent spatially or over time.

#### *Complex local environments*

The molluscan assemblages are very rich and diverse indicating that they include evidence of mollusc communities surviving in several different highly localised and small habitats. We can broadly define those environments and loosely map them over the site and the local topography, but must remember that these are dynamic and the distribution of each also changes over time. Further, the geoarchaeology and palaeo-molluscan interpretations are biased towards the wetter land which had generated both molluscs, but also, more importantly the deposits (alluvium) which contain them. The colluvial element in the deposits sealing the features, and infilling the features, is often minimal, as the mollusc assemblages as well as the field geoarchaeological interpretations confirm.

The habitats or environments that have been discerned can be identified as follows, but not all existed in every phase:

A body of probably flowing water either as a hillslope or valley flush, or in a former wide, but shallow, palaeo-channel, existing to the south and beyond the area excavated;

'Waterside' environments of fen and marsh, with emergent plants, reeds (*Carex* sp., *Glyceria maxima* and *Phragmites*), and wet areas adjacent lying largely to the south of the excavated area, but just abutting in at times and in certain places;

Long damp grassland floodplain and meadow with occasional pools of shallow seasonal standing water, existing largely south of the excavations but in some periods extending into the southern edge of the excavated area, and long mesic grassland extending up the slope well into the excavated area at times;

'Floodplain' of varying nature, but receiving sediments settling out, under standing floodwater;

Open grassland pasture, with shorter grazed grassland and tillage (in some periods) on the upper slopes and ridge (dryland and farmland).

#### *Was there a former palaeochannel?*

It is clear that there was a body of water to the south of the excavation. This may have been a broad shallow channel flowing in the winter months, but liable to dry up in some warmer summers, or a valley flush with high groundwater levels leading to the development of a sheet of water, or water flowing over and through the damper herbaceous vegetation in the low-lying areas beyond the excavation. Even as a sheet of water it would have flowed slowly, and drained preventing it from becoming stagnant. The fact that no channel is readily evident today is probably because it lies beyond the excavation boundaries, and is in part obscured by the canalised more recent drain, and if broad and shallow would have been readily obscured by alluvial and colluvial infill, and be buried below present farmland.

#### *When is the evidence of flooding?*

Localised and seasonal flooding of the watercourse would have occurred regularly and there is evidence of such from the Neolithic period onwards. Only in the late Iron Age period was there no evidence of flooding in the southern margins of the excavated area. This had, however, resumed by the Saxon period. Seasonal flooding events were associated with higher winter groundwater levels and resulted in locally wet

waterlogged ground, and the floodwater dispersed shells and other detritus but carried relatively little particulate or minerogenic material. Few of the features contained any significant sediment that could be attributed to alluviation. Many fills were predominantly well-sorted silty deposits, and the fill matrix may have included a component of water borne fine-grained sediment. In the later phases during the medieval and early post-medieval periods sediment accumulated at the footslope as a result of water lain fine-grained silts, combined with colluvium from arable activity on the slope and ridge of the northern part of the excavated area.

From the 12th to the 16th centuries, a bank of colluvial alluvium formed along the southern edge of the excavated area, and extended out of the excavated area further down slope towards the former water body.

*What was the nature of flooding?*

Flood events were typical overbank floodplain events, with water and some detritus spilling from the channels and flooding adjacent land and floodplain. Sheets of shallow water would have stood temporarily at the foot of the slope and for even shorter periods may have extended onto the edge of the excavated area. Water soon subsided leaving almost imperceptible skims of mud (alluvium), soon obliterated by new herbaceous vegetation and grass growth. Occasionally patches of mud and small pools of water in deeper hollows, or even archaeological features, would have lasted longer. Even deeper features and pools would have dried up during the summers in most periods. During wetter months the low-lying land would have been less useable and accessible, but cattle could be watered at its edges and graze in much of it.

*How did any flooding effect the nature and distribution of human activities?*

Most of the archaeological evidence suggests that human activity was concentrated on the higher and drier slopes and the ridge of Bendyshe Farm itself. Tillage was certainly a possibility in the late Iron Age/Roman period, and much of the area could have been permanent pasture at sometime. Only the lower fringes of the excavation were damper with saturated and soggy soils and long dank meadow vegetation. Permanent settlement and many occupation activities would necessarily have been restricted to the drier slopes

*Land-use development summary*

In summary, the Neolithic and Iron Age period saw seasonal watercourses or water flushes at the footslope fringed with zones of progressively drier vegetation habitats. These were bands of fen and marsh, and then a zone of long damp herbaceous vegetation and wet meadow with occasional water pools and grading into drier grassland and pasture and potential farmland. During the late Iron Age period there is no evidence of such wet habitats, suggesting the possibility of a drier phase and of restriction or cessation of annual winter flooding. Concomitant with this is evidence of dry grassland pasture and of land within the excavated area suitable for tilling. This may in part be a feature of the topographical location of the sampled feature, but the changes in the molluscan record seem to indicate quite different environment to those recorded in other samples. Wetter winter conditions and the re-establishment of a small strip of localised marsh and fen had redeveloped by the Saxon period.

In the medieval and ensuing phases a combination of winter floodwater laden with fine calcareous silts, and summer or autumn colluviation of dry calcareous chalky soils on the slopes lead to an accumulation of between 0.5 and 1m of alluvial and colluvial deposits at the footslope. This footslope deposit was further topographically defined, in more modern times, by the canalisation and ditching canal to take the present water drain.



## 7 HUMAN REMAINS by Sarah Inskip

A single left human femur was recovered from post-medieval quarry pit 685. The preservation of the bone is good with over 75% of the cortical bone remaining. The mid third and distal third of the shaft are present, with post-mortem fractures at both ends. There is no evidence for gnawing, cut marks or excessive weathering.

The size and density of the bone suggests an individual over 18 years but a more precise estimate is not possible due to the absence of epiphyses. It is not possible to determine gender. There was no evidence for pathological change on the femur. The density of the cortical bone is normal and evidence for periostitis, exostosis and trauma are absent. No metric or non-metric traits are present owing to fragmentation. No further observations can be made, the bone is clearly residual and has been disturbed from a grave elsewhere.

## 8 SUMMARY

There was an extremely broad range of archaeological evidence contained within the development area that encompassed an extended chronological range of activity alongside environmental resource exploitation, farming and settlement.

The earliest activity began with late Neolithic/early Bronze Age burnt residues, including burnt stone, but excluding charred seed grains. Such material is often cited in conjunction with water heating processes for a variety of applications, which are most often identified close to readily available water sources. Middle and late Iron Age activity seems to have reflected a similar purpose in the collection of water, although in later prehistoric periods there was no evidence that the water was being heated on site and it may well have been transported to a focus of settlement beyond the development area. The land appears to have been at a point of transition between marsh and meadowland, in close proximity to a possible seasonal watercourse, prone to periodic episodes of shallow water pooling in the lower parts of the valley.

Cultivation was probably being undertaken nearby from the late Iron Age onwards, with charred seed forming part of the material deposited amongst fill materials. However, the extent of associated features within the development area prior to the Saxon period remained sparse and it would seem that long-term fluctuations in the ground conditions on the site, as indicated by the changes in proportions of mollusc species between marshland and more stable drier meadow, did not encourage an identifiable change in land use until the establishment of boundary ditches in the middle Saxon period.

The activity from the Saxon period marked the first clear indication that land within the development area was partitioned by boundaries and this, presumably, would have been associated with the designation of land units. Cereal processing waste was recovered that may indicate that land in the immediate vicinity could have been cultivated, although at least some of the material is also thought to derive from thatch and could have been dumped from settlement nearby, perhaps fronting the road to the north. The late Saxon development of a small enclosure was seemingly for the purpose of livestock, and may also indicate that the meadow, which had returned to its previously wetter conditions, was in use as grazing rather than cultivation.

Ridge and furrow was identified at the north-west extent of the development area, but did not extend fully south to the wetter margins of land. The cultivation remains are not well dated, and although they are generally associated with open fields from the later Saxon period onwards, in this instance the cultivation may be later. A fairly mature tree

was cleared after the Norman Conquest as part of a wider re-organisation of boundaries in which several plots were created, seemingly to serve a similar purpose, and in which the generation of large quantities of organic refuse was frequently deposited in pits and along ditches at the edges of the plots. Whilst the principal boundary ditch at the southern edge of the development area was wet in this period, the surrounding grassland, meadow and pasture seems to have remained drier and would have been consistent with the continued use of the valley for grazing. However, after the 12th-century these plots were filled and the land was subject to major overbank flood events that deposited large quantities of mixed alluvial and colluvial material substantiated by an abundance of freshwater molluscs.

Since the flood episodes were substantial and are only dated relative to the features that they covered as post-12th century, but it is not clear how soon after the disuse of the Norman and medieval plots the flooding took place. The possibility is that the plots were deliberately abandoned as a response to increased flooding, but it is equally possible that the flooding took place a good deal later and their abandonment simply marked the reversion of the land to open grassland. What does appear more certain is that by this time a watercourse probably existed beyond the extent of the development, perhaps along the modern drain to the south, which would have been affected by activities elsewhere along its course.

When Thomas Bendish acquired the site in 1329 it is not known if there was already a precursor to the moated site. Had there been alterations upstream to a nearby watercourse in the preceding centuries this could well have accounted for the rapid changes in hydrological behaviour requiring the abandonment of the plots. There was a dearth of deposited material from the establishment of the moated site in the 14th century, other than for a single ditch extending from its north side. The land probably remained subject to flooding, enabling up to 0.59m of material to accumulate over an extended period, so at least some of the alluvium in its upper horizons may well be associated with the water management engaged with the establishment of the moated site and its fishponds.

The apparent risk to flooding seems to have alleviated by the 16th century after which time features were identified cutting alluvial levels. The Bendish estate passed hands to Thomas Webb of Tunbridge Hall in 1593 and probably included the old red-brick building that was described in 1604. It is thought that this building stood within the moated site. The majority of the pits within the east portion of the development area are probably associated with this settlement, providing both latrines and also perhaps the quarry pits to supply lime for building materials. Further away from the house, to the west, there seems to have been some cultivation activity involving trellis style supports, which may even have constituted gardens rather than the production of foodstuffs.

The former red-brick building of Bendish House was replaced after inclosure by a grey-brick building, following the sale of the land to Peterhouse, Cambridge, in 1743. This building was the precursor of Bendyshe Farm that stood outside the moated site, a little to the north, and was the subject of continued modifications that were depicted upon the enclosure award map of 1808 through subsequent editions of the Ordnance Survey. Coupled with the use of the property as an operating farm, the whole of the north-east portion of the development was built upon with farm structures with associated latrines and drains. During the age of steam powered traction, the site was an operating farm yard. Coal dust found its way into the soil by percolation and bioturbation.

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## APPENDIX 1 – GEOARCHAEOLOGICAL SOIL DESCRIPTIONS

## Late Iron Age

Feature	Context	Description
Pit 734	974	The upper 32cm; dark greyish-brown to brown (10YR 4/2-3) silty clay, essentially stone-free, with a number of clear thin (1.5cm) well defined horizontal chalky bands (individual dump/infill/capping lines), clear boundary COLLUVIAL and DUMP
	976	Lower 40cm; greyish-brown slight calcareous, silty clay sharp boundary with chalk natural PRIMARY FILL

## Mid - late Saxon

Feature	Context	Description
Ditch 436 section 138 (cuts F 439) generally slightly darker (?more humic) fills than F439	438	This upper fill mirrors that of context 440 (F436), but has a slightly darker hue COLLUVIAL
	437a	Homogeneous firm grey silty clay loam, weak large blocky subangular structure, few medium degraded chalk pieces and some small and medium sandstone pieces along boundary between 438 and 437a, some medium (typically 7-9mm) vertical macropores throughout, many lined with darker more humic material from overlying stratigraphy and former Ah horizons COLLUVIAL
	437b	This is the base of the context 437 which is distinctly slightly darker (?more humic), and from which pottery was reported as being found. COLLUVIAL

Feature	Context	Description
Ditch 744	745l	Dark yellowish-brown (10YR 4/4) silty loam almost stone-free, but with rare medium chalk pieces and degraded chalk comprised the upper 48cm, clear wavy boundary COLLUVIAL / ALLUVIAL
	745	The lower 92cm is a greyish-brown (10YR 5/2) silty loam, with common small and medium degraded chalk pieces – there is a thin band of greenish chalky silt loam on the southern side representing some primary fill/weathering PRIMARY

Feature	Context	Description
Pit 504	506 & 520	Greyish-brown silty clay loam, with context 520 containing zones of degraded chalky material, probably indicating dumping, backfilling and mixing rather than a more 'natural' sedimentary infill. COLLUVIAL
	505	Largely comprising degraded chalky material with common medium subrounded sandstone pieces – deliberate backfill, abrupt boundary DUMP
	523	Dark greyish-brown/dark brown compact silty clay with rare fine chalk flecking and very common very rare small and medium degraded chalk pieces (otherwise stone-free), has a very slight greenish-yellow hue which may indicate the presence of calcium phosphate mineralisation COLLUVIAL / DUMP

**Mid-Late Saxon**

Feature	Context	Description
<b>Pit 651</b>	656	Light grey (2.5Y 7/2) calcareous compact silt, rare small and medium chalky pieces, clear boundary COLLUVIAL / ALLUVIAL
	656	Grey (2.5Y 6/1) calcareous compact silt, rare small and medium chalky pieces, abrupt boundary COLLUVIAL
	654	Thin lens in the centre of the pit over 653 of very dark grey to black (2.5Y 3/1-2.5/1 humic silt loam, stone-free excepting one medium grave flint nodule, very fine strong brown mottling – incipient gley soil forming in the top of the pit, abrupt boundary GLEYPED COLLUVIAL
	653	Greyish-brown (2.5Y 5/2) greyish-brown stone-free silty clay loam with moderate large subangular blocky structure, clear to gradual boundary GLEYPED COLLUVIAL
	652	Dark greyish-brown (2.5Y 4/2) moist firm stone-free silty clay loam, but with lenses of chalky mud eroded from the sides PRIMARY

**Late Saxon**

Feature	Context	Description
<b>Ditch 439</b> section 138 (cut by F 436)	440	Homogeneous firm light grey to grey silty clay loam, weak large blocky subangular structure, few medium degraded chalk pieces, common medium (typically 7-9mm) vertical macropores throughout, many lined with darker more humic material from overlying stratigraphy and former Ah horizons, clear boundary. COLLUVIAL / ALLUVIAL
	441	Homogeneous firm light grey to grey silty clay loam, siltier with less fine sand, firmer and more compact than above and no structure evident weak large blocky subangular structure, few medium degraded chalk pieces, common vertical macropores throughout – as above. COLLUVIAL / ALLUVIAL

**12th century**

Feature	Context	Description
<b>Ditch 252</b>	253	Single fill 0.37m thick, greyish-brown 10YR 5/2 calcareous silty loam/silty clay loam with common very small and small subrounded chalk pieces and many medium subrounded chalk pieces – a typical chalkland feature fill COLLUVIAL

Feature	Context	Description
<b>Ditch 676</b>	677	A single fill of olive to greyish-brown (5Y 5/3 – 2.5Y 5/2) firm malleable plastic silty clay, stone-free–water influenced/sorted deposition no inclusions, rare snails inc <i>Lymnaea</i> and <i>Pisidium</i> . ALLUVIAL

## 12th century

Feature	Context	Description
Ditches 74: ( 750, 938)	743	Grey silty clay loam with many small and fewer medium degraded chalk pieces. In the base of the U shaped north, the deposit was a calcareous chalky grey (10YR 5/1) silt loam with many chalk pieces and degraded chalk, with no signs of any water lain deposits, but a batch of slightly darker grey ( (10YR 5/2 – 4/1) possibly presenting for soil material – weathered base with largely weathering and infilled ditch [742] COLLUVIAL / ALLUVIAL / PRIMARY

Feature	Context	Description
Pit scoop 720	816	Dark yellowish-brown (10YR 3/4) ?slightly humic, stone-free silty clay loam – reminiscent of A horizon (topsoil) material, but not formed <i>in situ</i>
	816	Greyish-brown (10YR 5/2) silty loam with many fine and degraded chalk pieces, sharp contact with soft basal chalk, little weathering – rapid primary fill of dump DUMP

Feature	Context	Description
Quarry pit 781	782a	Upper 44cm ; dark greyish-brown (10YR 4/2) coarse silty loam with rare medium flints, common small and medium fleshy-woody roots, a collection of animal bones at the base of the context, claret boundary – dumped infill DUMP
	782b	Lower 12cm; greyish-brown (10YR 5/2), distinctly darker hue, silty clay with many very small chalk pieces, many small and some medium roots – weathering and primary fill with ?Ah (topsoil) material – contained Medieval buckle/belt clasp PRIMARY / ALLUVIAL

Feature	Context	Description
Ditch 244	?245	Brown humic mixed firm to stiff silty loam with many small and very small stones, ditch sediment infill
Ditch 266	267	Dark grey stone-free firm silty loam, typical ditch infill COLLUVIAL / PRIMARY

Feature	Context	Depth	Description
Ditch 285	286a	0-8cm	Dark greyish-brown loose weakly consolidated humic coarse silty loam, largely stone-free in the upper part (0-8cm), but then with common very fine chalk pieces, and many small and medium rounded flint gravel (typically iron stained) with many fine fleshy and fibrous roots, common vertical macropores typically 8mm but to 11mm, many containing similar material of or a darker more humic material (Ah material)weak small blocky structure giving way to weak large blocky structure, clear-abrupt boundary COLLUVIAL / ALLUVIAL
	286c	22-39cm	Dark greyish- brown firm, but unconsolidated humic silty loam with few stones ALLUVIAL
			Chalky marl: periglacial solifluction material <i>Parent material (aka 'natural')</i>

## 12th century

Feature	Context	Depth	Description
Pit 268	269a	0-8cm	Dark greyish-brown loose weakly consolidated humic coarse silty loam, largely stone-free in the upper part (0-6cm), but then in some sections with common very fine chalk pieces, and many small and medium rounded flint gravel (typically iron stained) with many fine fleshy and fibrous roots, common vertical macropores typically 8mm but to 11mm, many containing similar material of or a darker more humic material (Ah material) weak small blocky structure giving way to weak large blocky structure, clear-abrupt boundary ALLUVIAL
	269c		Dark greyish-brown firm, but unconsolidated humic silty loam with few stones ALLUVIAL
			Chalky marl: periglacial solifluction material <i>Parent material (aka 'natural')</i>

Feature	Context	Description
Ditch 312	313a	Firm light brown stone-free silty loam over
	313b	a light grey, silt with more calcareous, stone-free silty loam (many fine chalk pieces/chalk dust – hand lens), possibly alluvial ALLUVIAL

## Post 12th century

**Alluvium**

Depth	Context	Description
0-38cm	= 1	Humic A horizon with many roots
38-86	= 2a	Light grey silty fine (coarse silt fine sand) colluvial alluvium, rare small and medium subrounded stones COLLUVIAL / ALLUVIAL
86-92	= 2b	transition
92-99	= 3	Stiff, firm silty clay – sorted horizon, no structure present ?overbank floodplain alluvium ALLUVIAL

Alluvial sequences	Description post 12th century
<b>Context</b>	<b>west side S199, east side S201 (post-dates 12th century)</b> <b>The main colluvial alluvial deposits sealed ditch 676</b>
674 0-44cm	Light olive-grey to light brownish-grey (5Y 6/2 - 2.5Y 6/2) firm massive coarse silty loam with rare small chalk stones, weak very large subangular blocky structure, common vertical macropores (5-7mm) containing humic matter from above, common fine fleshy roots, predominantly in vertical macropores. (colluvial / alluvial), clear boundary COLLUVIAL / ALLUVIAL
675a 44-90cm	Firm greyish-brown (2.5Y 5/2) calcareous silty clay loam, large moderate subangular blocky structure, rare very small stones and very fine chalky pieces/flecks, – snails present including cf. <i>Lymnaea peregra/Succinea</i> , Planorbids, <i>Aegopinella</i> , <i>Cochlicopa</i> . (alluvial colluvial) ALLUVIAL / COLLUVIAL
675b 90-105cm	Firm greyish-brown (2.5Y 5/2) calcareous silty clay loam to silty clay weak large subangular blocky structure, stonefree, excepting some fine and very fine chalky flecks, – snails present including cf. <i>Lymnaea peregra/Succinea</i> , Planorbids, <i>Aegopinella</i> , <i>Cochlicopa</i> . <u>Abrupt boundary with 677</u> . (only occurs over F676 ALLUVIAL
<b>Description 12th century</b>	
<b>Ditch 676 context</b> 677 105-155cm	A single fill of olive to greyish-brown (5Y 5/3 – 2.5Y 5/2) firm malleable plastic silty clay, stone-free – water influenced / sorted deposition no inclusions, rare snails inc <i>Lymnaea</i> and <i>Pisidium</i> . ALLUVIAL

## Mid 16th century

Feature	Context	Description
<b>Pit 957</b>	Charcoal layer	Thin band of very dark brown-black with common fine comminuted charcoal pieces – no evidence of <i>in situ</i> burning ANTHROPOGENIC FILL / COLLUVIAL
	Main fill	Calcareous greyish-brown silty clay loam with common medium chalk pieces and degraded chalk pieces, sharp contact with natural chalk indicating little to no weathering – dumped chalky infill DUMP

**APPENDIX 2: FRESHWATER MOLLUSC ECOLOGIES AND HABITATS**

(After Sparks 1961; Sparks and West 1959; Robinson 1988)

**Group 1 species = Robinson's Amphibious species**

Slum species tolerating conditions of poor oxygenation and periodic drought.

***Anisus leucostoma***

***Pisidium casertanum***

*Pisidium obtusale*

***Pisidium personatum***

***Galba (Lymnaea) truncatula***

***Aplexa hynorum***

**Group 2 species**

Catholic aquatic species, tolerating a wide range of conditions, but excluding those conditions tolerated by the amphibious species.

***Radix (Lymnaea) balthica (peregra)***

***Gyraulus albus***

*Armiger crista*

***Pisidium nitidum***

*Pisidium subtruncatum*

*Bathyomphalus contortus*

***Hippeutis complanatus***

*Lymnaea palustris*

*Sphaerium corneum*

*Pisidium milium*

**Group 3 species**

Ditch aquatic species, mainly occurring in slow-moving plant-rich streams.

***Valvata cristata***

***Planorbis***

*Acroloxus lacustris*

*Pisidium pulchellum*

**Group 4 species**

Moving-water species, found in large streams or ponds where currents or wind effect water movement.

*Ancylus fluviatilis*

*Theodoxus fluviatilis*

***Valvata piscinalis***

*Bithynia tentaculata*

*Bithynia leachii*

*Physa*

*Lymnaea stagnalis*

*Pisidium amnicum*

*Pisidium henslowanum*

*Pisidium moitessierianum*

*Pisidium tenuilineatum*

**Marsh species**

Species confined to habitats that are damp and often flooded and that botanically are classified as marsh, swam and fen. They do not live under water though some can tolerate temporary submergence.

***Carychium minimum***

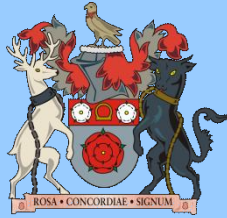
***Zonitoides nitidus***

***Vallonia pulchella***

***Vertigo antivertigo***

**Succineidae**

Species in bold are those recorded during the analysis phase of Bendyshe farm, Bottisham



Northamptonshire County Council

# Northamptonshire Archaeology



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