**Report BAU2318**

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# An Archaeological Watching Brief at Caister Castle Moat, Norfolk

HER 6871

**Prepared for**
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| Location: | Caister Castle, West Caister, Norfolk |
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| Client: | The Trustees of Caister Castle |
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## *Summary*

*An archaeological watching brief was conducted for The Trustees of Caister Castle during clearing, dredging and restoration works of the moat at Caister Castle. The south-west facing wall of the castle was observed in three test pits to a depth of 0.7m below the water level of the moat. A very hard mortar was encountered bonding the brickwork in these test pits which may have been due to the use of a hydraulic lime. There is some evidence that significant demolition and collapse of the south-west facing wall may have occurred during the 1700s. The presence of this rubble layer which is likely to be 1700-1800 in date indicates the moat at least in this area had not been dredged in recent years. Other parts of the moat contain evidence that it had been used as a rubbish dump for domestic waste and was likely to have been quite an unpleasant body of water in the 18th century. The oldest artefact recovered was a tobacco pipe of mid to late 17th-century date.*

*During the recent the dredging and clearing works, the south-west and north-west facing arms of the moat were successfully cleared of soft organic rich sediments and no alteration to the line or slope of the banks occurred.*


## 1.0 INTRODUCTION

Fig 1

A programme of moat clearance and dredging was proposed at Caister Castle, West Caister, Norfolk (TG 504 122). Caister Castle is a Scheduled Monument (NF1) and Scheduled Monument Consent had been granted by English Heritage subject to a condition including a programme of archaeological works.

This work was undertaken to fulfil the requirements of Scheduled Monument Consent set by English Heritage and a Brief issued by Norfolk Landscape Archaeology (Ref. CNF42607). The work was conducted in accordance with a Project Design and Method Statement prepared by NAU Archaeology (Ref. BAU2318/DW/v2). This work was commissioned by Andrew Granger & Co. on behalf of their client The Trustees of Caister Castle.

The archaeological watching brief was designed to observe the dredging and clearance of the moat to ensure that only modern sediments were removed and to identify and record any archaeological material encountered. A record

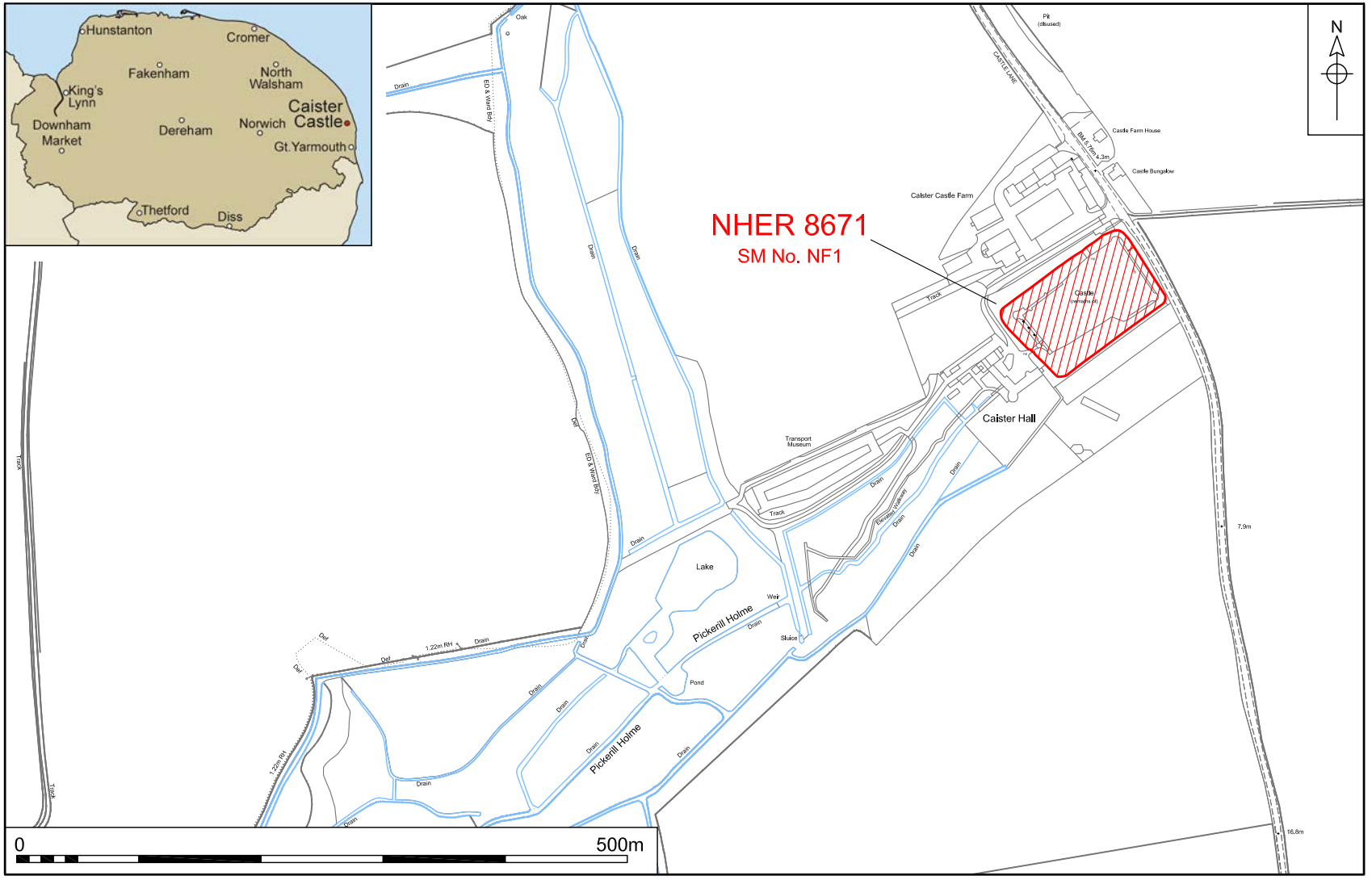




Figure 1. Site location. Scale 1:5000

was made of both wall and moat deposits observed in test pits excavated against the castle wall to assess the repairs required to the brickwork below water level.

The site archive is currently held by NAU Archaeology and on completion of the project will be deposited with the Norfolk Museums and Archaeology Service (NMAS), following the relevant policies on archiving standards.

## 2.0 GEOLOGY AND TOPOGRAPHY

Caister Castle is located at West Caister, a few kilometres north of Great Yarmouth and 2.5km inland from the coast and Caister-on-Sea. The castle is found at just below 5m OD at the head of a stream known as Pickerill Holme, (sometimes referred to as Pykerell Fleet) and the land rises gently to 10-15m OD in all directions except to the south-west where the stream exits along its valley. Pickerill Holme is a tributary of the River Bure, which it joins 4km to the south, at Mautby Marsh. The geographic setting of Caister Castle enabled a moat to be created and allowed an efficient transportation of bricks for the construction of the castle itself.

The underlying Quaternary geology in this area is the Anglian Cromer Till (brown and bluish grey sandy clay with some chalk and Scandinavian erratics) together with Corton sands (fine to medium grained sands with sandy gravels and Scandinavian erratics) (Sheet 52N 00 Quaternary, British Geological Survey) below which is the Pleistocene Norwich and Red Crag lying over Eocene London Clay (Sheet 52N 00 Solid Geology, British Geological Survey).

Preparatory works prior to removal of sediments from the moat included a borehole survey of deposits in the south– and north-western arms of the moat undertaken in 2009 (Boreham 2009)

## 3.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Fig 2

The parish of West Caister in which the castle is located is rich in archaeological remains. The earliest recorded archaeological evidence is prehistoric flints including Neolithic flint found at Caister Castle in the 19th century. Earlier prehistoric remains also include a probable Neolithic mortuary enclosure (HER8645) *c.*1km to the north-west of the castle.

The Bronze Age is well represented by barrows and probable field systems; less than 1km to the south of Caister Castle on the north-west and west facing slopes of the Pickerill Holme valley. Cropmarks indicate the presence of three ring ditches and hengiform ring ditches (HERs 12187, 27380 and 27381). These are part of a cluster of eight similar ring ditches which lie on the slopes of the Pickerill Holme valley connecting to the River Bure to the south. The ring ditches (HERs 12187 and 27380) are likely to be Bronze Age barrows and the interrupted ring ditch of HER27381 is more likely to be a hengiform monument, barrow or round house of Bronze Age or Iron Age date. A Bronze Age field system (HER12828) is recorded 1km to the north of the castle around Nova Scotia Farm. Other prehistoric finds from the area include a Late

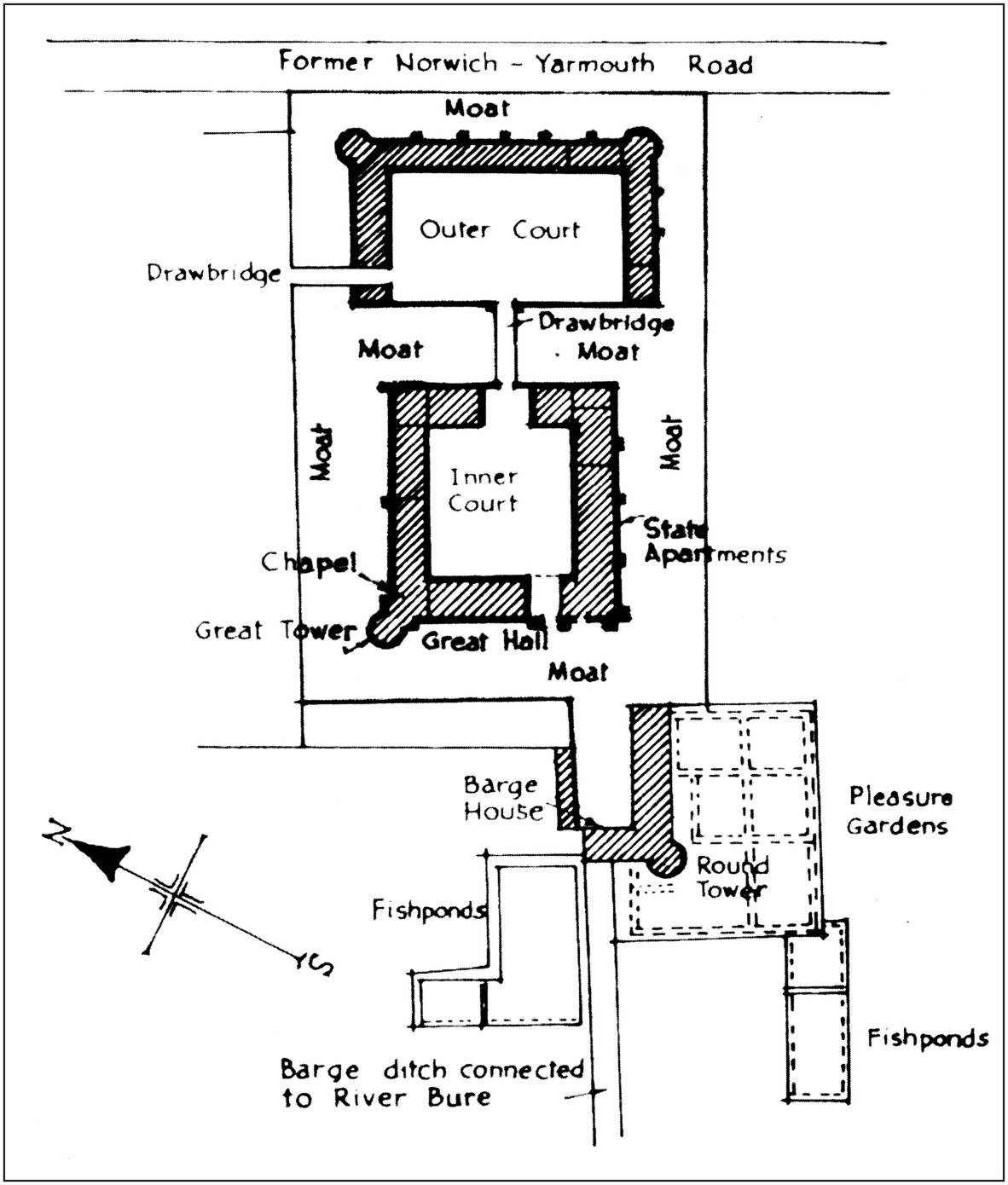


Figure 2. Original plan of castle by Henry Swinden, 1760
(from MSS in British Museum)

Bronze Age hoard (HER12872 which included a socketed axe) found during metal detecting during construction of the Caister-on-Sea bypass.

No Iron Age finds have been found in West Caister but it is probable that some of the Roman field systems had their origins in the Iron Age. The Roman Fort at Caister (HER8675) lies less than 2km to the east of the castle and evidence of Roman activity is widespread across the landscape. Close to the Roman Fort, along the line of the Caister bypass, excavation in 1986 revealed pits and ditches corresponding to civilian settlement associated with the fort; a hoard of Roman coins was also found during fieldwork in advance of construction of the by-pass (HER12872). A Roman farmstead and associated field systems (HER27512) are recorded less than 1km to the north. To the west of the Castle, Iron Age and Roman field boundaries (HERs 27399 and 27382) have been identified from aerial photographs and Roman artefacts have been found during field walking and metal detecting. Probable Roman pottery glass was found close to the Castle at Castle Farm during an excavation in 1996 by NAU (HER11655).

There is less evidence of Saxon activity in the area than for earlier periods but finds do include a Middle Saxon coin (HER11655) found at Caister Hall Farm. Sherds of Middle Saxon pottery and a Saxon coin were also found along the line of the Caister bypass

A series of north-east to south-west orientated field boundaries (HER27398) parallel to the castle and perpendicular to the modern road have been identified from cropmark evidence to the north-west of the castle. These field boundaries are likely to be medieval to post medieval and contemporary with the castle. To the south-east medieval coins and pottery were found through metal detecting HER14764. These included a silver penny of Edward I (1272-1307) and a silver penny of Henry III (1272-1307) cut to a half penny.

**Caister Castle**

Caister Castle is a Scheduled Monument (NF1) and is an important 15th-century building, being described by Pevsner (1988) as one of the most impressive 15th-century castles in England. The building is also credited with having some of the finest medieval brickwork in the country (Barnes and Simpson (1951) and is also considered to be the first important medieval building in England to use brick. The Castle was built between 1433 and 1448 by Sir John Fastolfe, who was born in the manor house which previously occupied the site; he gained great acclaim during a long career in military service in France. Much is known about the 15th-century castle since there are contemporary building records (Barnes and Simpson 1951), an inventory of Sir John Fastolfe's possessions and the 15th-century Paston letters (which present a valuable insight into 15th–century family and national concerns).

A moated manor house and chapel stood on the site of the existing castle when it was acquired by the Fastolfe family in 1363. It is possible that the manor house moat may have been re-incorporated into the new moated castle. The Castle is constructed from locally made brick and Caen stone imported from Normandy. A plan of the castle (drawn up from a plan by Henry Swindon in 1760 in Smith 1980 (Fig. 2) shows how there was originally an inner and outer court surrounded by a moat and connected by a drawbridge.

The overall form of the castle is rectangular with angle towers. This style of castle is unusual in Britain with few parallels, one such being Kirby Muxloe in Leicestershire which was built fifty years after the Caister example. The form of castle is based on a Rhenish *Wassenburg* (water-ringed castle) and closely resembles Schloss Kempen in the Lower Rhineland (Barnes and Simpson 1951).

Pevsner observed the northern part of the castle seems older than its assigned 15th-century date and has arrow slits, whereas, the southern part has gun ports. These defences were more than an architectural design to illustrate the wealth of the owner; Sir John was concerned about Flemish attack and the castle is well defended with high curtain walls, a moat and projecting towers and there is a record of long bow, cross bow and cannon being kept in the castle. In the original layout of the castle it was separated from the southern (Inner) court by a moat (Fig. 2). The striking 98ft circular tower still stands in the south-west corner of the southern court although its original stairs have been removed.

The castle was left by Sir John to the Paston family on his death in 1459. However, the Duke of Norfolk took the castle by force (with the help of 4 knights and three thousand men) ten years later in 1469. The castle returned to the ownership of the Pastons in 1475 following the death of the Duke of Norfolk and the Paston family lived at the castle until 1599 when the owners moved to Oxnead Hall and from this time onwards the castle became increasingly neglected (Barrett 1896).

Interestingly, a ground plan of 1776 (Grosse in Barrett 1896) shows the buildings were still largely complete at this time, with two drawbridges where the moat can be crossed today and a third which connected the two courtyards. Stonework from the castle was robbed and reused in the following centuries. There is a record of the newel from the tower with its 122 stone steps being removed by Parson David Collyer shortly after 1776. A map of 1842 (Barrett 1896) shows that the inner moat was still open at this time but only part of the outer moat. A major phase of remodelling the moat occurred sometime between the publication of this map in 1842 and a further map in 1893 (Barrett 1896). By 1893 the inner moat was infilled and the south-eastern side was dug out and altered in shape. It is quite possible that the 15th-century betrothal ring found in the moat 1881 and a Neolithic flint found sometime in the 19th century were recovered during these works.

There are no records of when the moat was last cleaned out but sedimentation rates are suggested to be high by Boreham (2009) given that agricultural run off is probably significant and it is likely there has been episodic cleaning out of the moat over time, probably with lesser frequency in the years following the castle falling out of use.

Other later finds from the moat recorded in the HER are a post-medieval jug found in 1950 and a human skull found in 1963 both of which presumably were found during some sort of clearance of the moat.

The castle and its grounds were made into a motor museum in the mid 1960s by the owner Dr P.R Hill and it remains as such today.

## 4.0 METHODOLOGY

The objective of this watching brief was to preserve by record any archaeological remains disturbed by clearance and restoration works to the moat and associated retaining brickwork at Caister Castle.

The Brief required that '….*only modern sediments are cleaned from the moat and that the original moat edges are not disturbed. The upcast sediments cleared from the moat will be stockpiled and scanned for the recovery of artefactual material. The sediment to be removed will not exceed 1m in depth (measured at the centre of the moat). Where deeper excavation is required to facilitate repairs to the retaining brickwork, any exposed deposits will be appropriately recorded and a photographic record made of the brickwork*'. Spoil, exposed surfaces and features were scanned with a metal-detector. All metal-detected and hand-collected finds were retained for inspection. No environmental samples were taken.

All archaeological features and deposits were recorded using NAU Archaeology pro forma. Trench locations, plans and sections were recorded at appropriate scales. Colour, monochrome and digital photographs were taken of all relevant features and deposits where appropriate.

Site conditions were fair to good, with the work taking place during the winter and spring months in both freezing and fine weather.

Plate 1

## 5.0 RESULTS

Fig. 3; Plates 1-10

Over the period December 2009 and March 2010 dredging and clearing of the Caister Castle Moat was monitored.

A series of photographs illustrating the moat during dredging and clearing are shown below, Plates 1-10. They run in sequence from the bridge on the south-west facing side of the castle (Plates 1 and 2), past the tower and along the north-west facing side of the castle towards the gate keeper's cottage to the smaller tower in the northern corner of the castle (Plates 3-6) with views along the north-east facing wall (Plates 7-9) with a final view of the south-west facing wall of the castle on the southern side of the bridge looking back to the square bridge in the southern corner of the castle (Plate 10).

It can be confirmed that only modern and very limited amounts of post medieval material was removed from the moat and that the edges of the moat were not disturbed

Plate 2

Plate 3

Plate 4

Plate 5

Plate 6

Plate 7

Plate 8

Plate 9

Plate 10

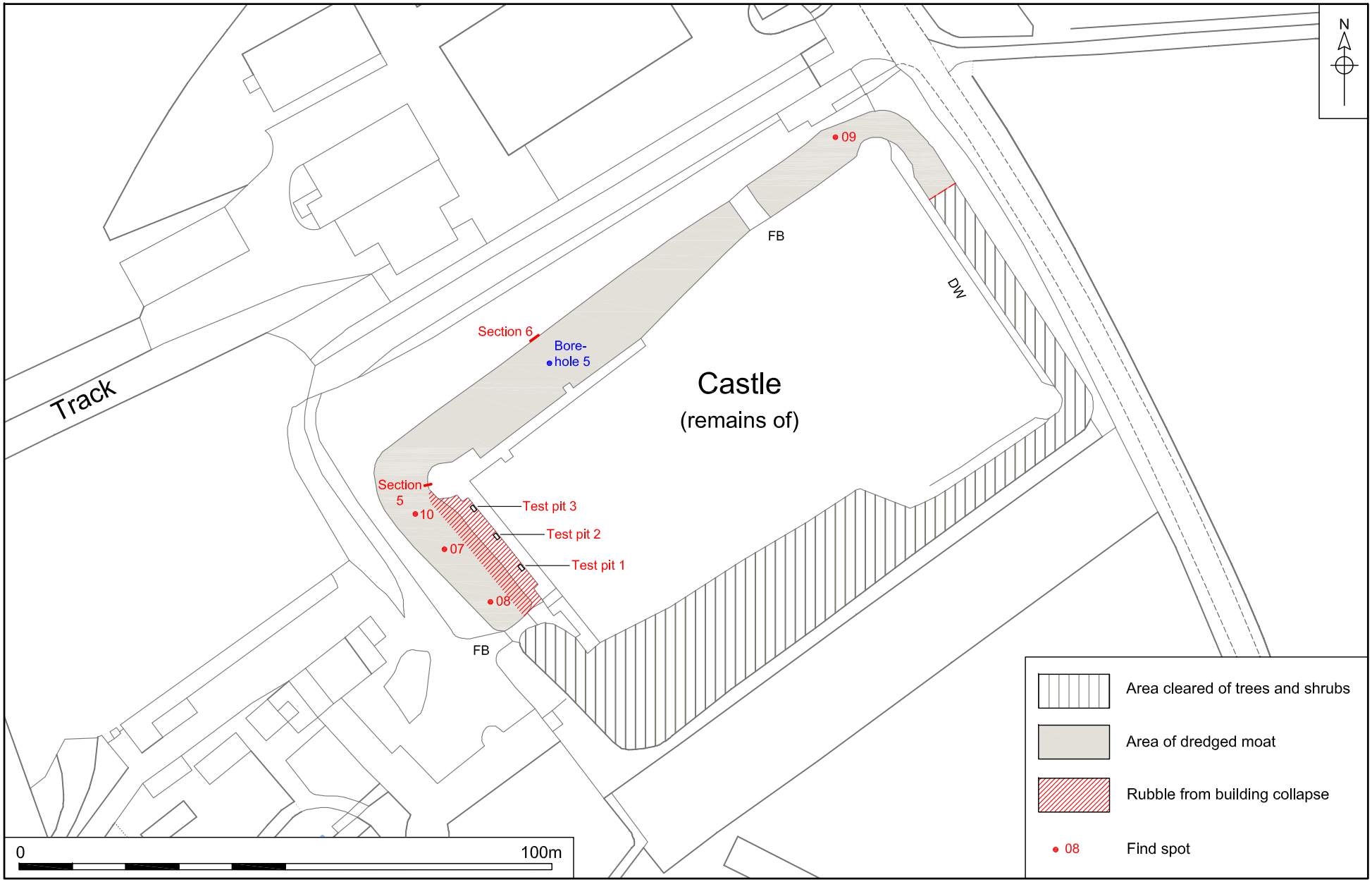




Figure 3. Area of moat dredged between December 2009 and March 2010, location of Test pits 1-3 and find spots 07 - 10. Scale 1:1000

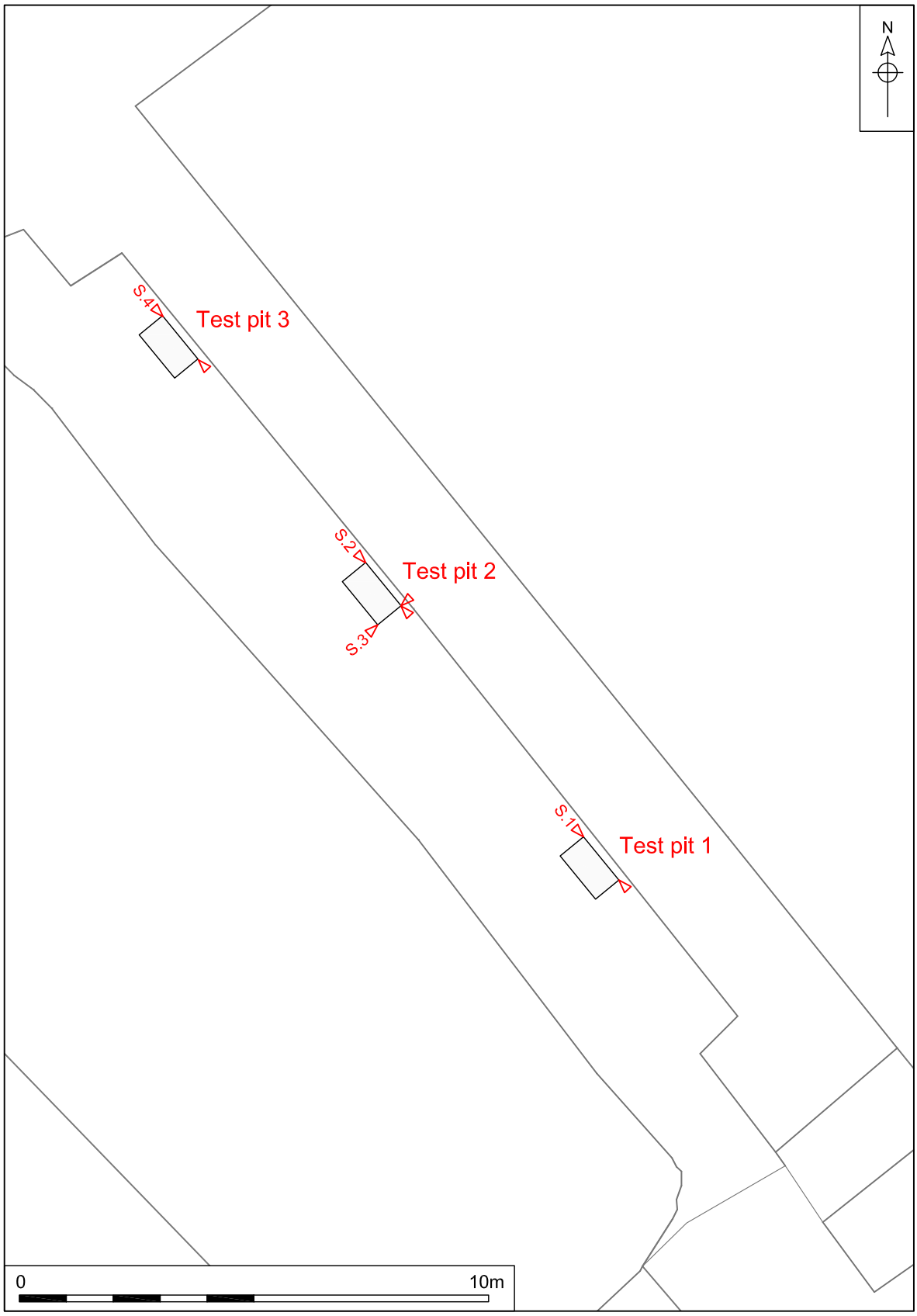




Figure 4. Location of sections 1 - 4. Scale 1:125

**Three Excavated Test pits**

Figs 3-8 and Plates 11-15

In order to assess the amount of repair required on the brickwork at and below the water table of the moat three test pits (Test pits 1-3) were excavated along the south-west facing wall by the building contractors (Figs 3 and 4). These pits were 1-1.2m long, *c*.0.7m wide and measured up to 0.7m deep and revealed a fine sequence of medieval brickwork below a 0.20m coping stone layer of Caen limestone.

Plate 11. Location of Test pits 1-3 along the south west facing wall of castle

The three test pits illustrated in Figures 4-8 and Plates 12-14 show the brickwork in the wall of the castle above the layer of worked Caen limestone to be a little mixed but generally laid in Old English Bond i.e. a course of headers alternating with a course of stretchers. The brickwork closest to the water table was heavily affected with many bricks being hollowed out. The bricks were variable in colour and size, from being well-fired to rarely over-fired hard bricks and unlike many Norfolk red bricks they were not very sandy. The overall colour of the wall was buff to pinkish with some bricks being buff-green with straw imprints, others reddish orange with a swirling pattern of colour and, less commonly, some were purple highly fired very hard bricks. The bricks themselves were notably thin and long ranging in size from 200-230mm long and 50-70mm high bonded with a soft lime mortar in joints 5-20mm thick.

Plate 12. Test pit 1 (Section 1)

The coping stones, cut from Caen limestone imported from Normandy under special licence, were 200mm deep and *c*.600mm long with a sloping upper face (Fig. 5 Section 1, Fig. 6 Section 2 and Fig. 8 Section 4). These coping stones would have marked the surface of the water in the moat when it was originally built and would have formed a striking boundary between brickwork and water.

Below the coping stones the brickwork is more random and is best described as English Garden Bond with two to three or more courses of stretchers with a single course of headers. The first four to five courses of bricks below the limestone coping course were often in poor condition and had been badly affected by wetting and drying (and probably freezing and thawing) whereas those lower down were better preserved. In Test pit 1 (Fig. 5. Section 1) and Test Pit 3 (Fig. 8 Section 4) it was notable that the mortar below the water level and up to 0.8m above the coping stones was distinctly harder than that above. It is of interest that the water and damp rises naturally into the brickwork to approximately 1m above the water table and the change from a soft mortar to hard mortar occurs at a similar level. It is possible this is a post depositional effect with calcium carbonate precipitating out of the water into the lime and concreting it. There certainly was a suggestion that some of the bricks below the water table had a post depositional thin layer of calcium carbonate on the surface of them. Examination of the mortar behind some of

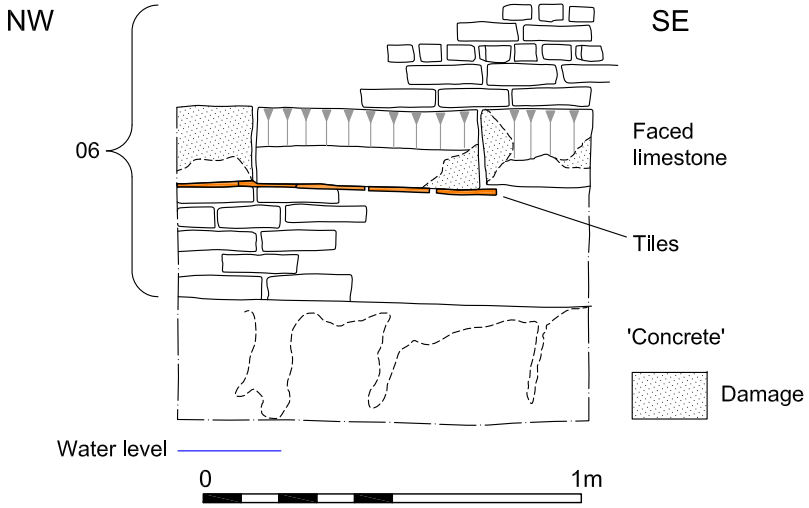


Figure 5. Test pit 1, section 1, showing wall of castle. Scale 1:20

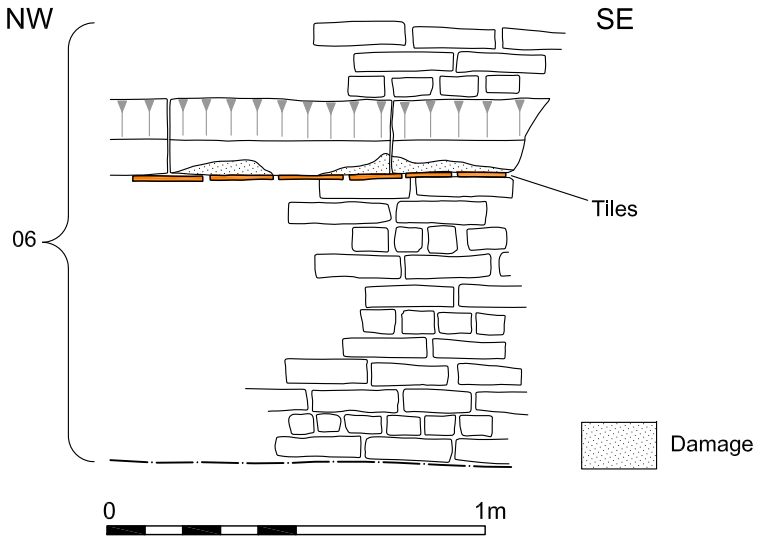


Figure 6. Test pit 2, section 2, showing wall of castle. Scale 1:20

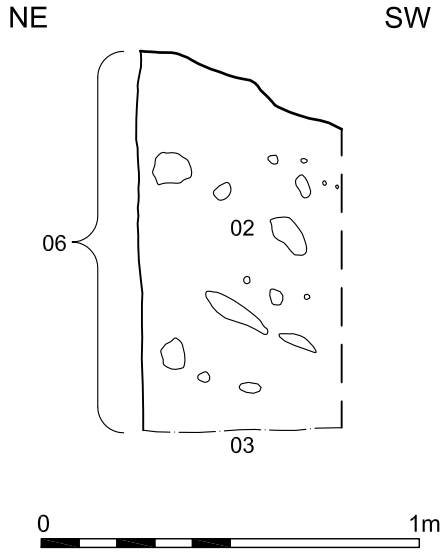


Figure 7. Test pit 2, section 3, showing demolition debris. Scale 1:20

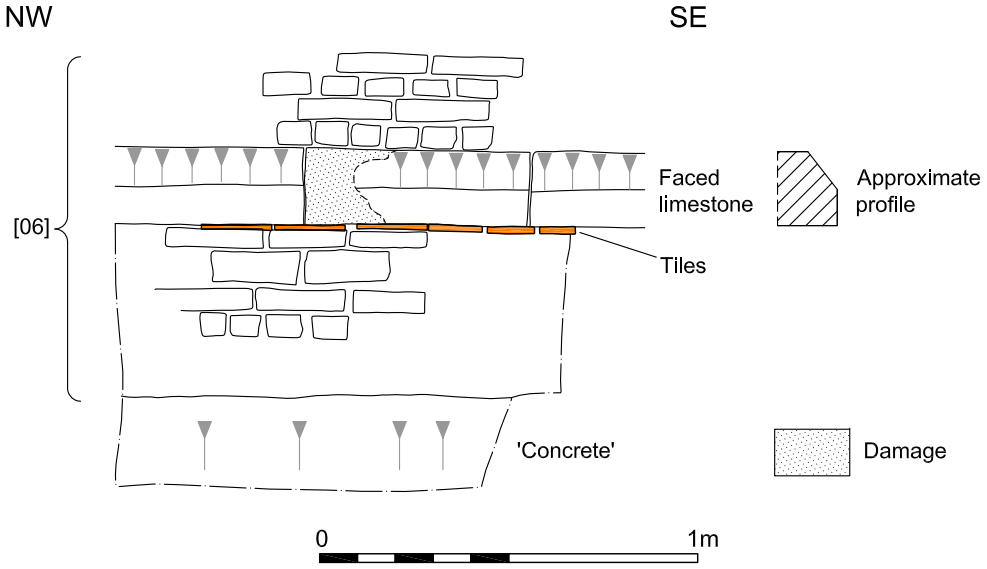


Figure 8. Test pit 3, section 4, showing wall of castle. Scale 1:20

the highly-weathered bricks, indeed some had almost weathered away, showed that the hard mortar was present there also, making it unlikely to be the result of recent pointing and repair. This hard concreted mortar was found in the wall at the base of Test pits 1 (Fig. 4 Section 1) and 3 (Fig. 7 Section 4) where it either sealed brickwork or a rubble wall behind it. A very similar very hard lime mortar also encountered at Kirby Muxloe Castle in the bricks beneath the water table and reported by Gowland in the Leicestershire Archaeological and Historical Society Autumn Newsletter (2004). Although a post-depositional alteration of lime mortar is possible a hard hydraulic concrete may have been used originally. There is a record of such hard waterproof concrete being used in the medieval period in the construction of the Port of Candia in Crete (Gertwagen 1988). Such concreted lime mortar uses hydrated non hydraulic lime with a hydraulic binder which when mixed together created hydraulic cement which is very hard and can be used below the water table. Such material was used extensively by the Romans but ceased to be generally used in medieval Europe until the 1800s.

Plate 13. Test Pit 2 (Section 2)

The test pits not only gave an opportunity to record the wall below the water table but also to observe deposits which had banked up against the wall below the water. Section 3 (Fig. 7; Plate 15) in Test pit 2 illustrates the typical deposits which were found in all three test pits.

Plate 14. Test pit 3 (Section 4)

Plate 15. Test pit 3 (demolition rubble)

A rubbly demolition deposit [02]=[04] was found to a depth of 1m banked up against the wall in Test pits 1 and 2, burying the limestone coping to a depth of 0.1m or so. This rubble deposit extended into the moat for six or seven metres and was composed of brick, roof tile, floor brick and floor tile, occasional animal bone and occasional sherds of glass in a soil and crushed lime mortar sandy matrix. Some of the bricks from this deposit were recovered whole and are illustrated below (Plates 18 and 19) together with floor tile (Plate 20) and roof tile (Plate 21)). The bricks are medieval bricks derived from the collapse or partial demolition of this south-west facing wall of the castle. One of the floor bricks recovered had a white sandy fabric and may date from the 17th to 19th centuries (Anderson 2005, 92); a large square pamment in sandy salmon pink fabric may be produced from the Cambridgeshire Gault clays and could be contemporary with the medieval phase of the castle (Percival below). The roof peg-tiles are of medieval to early post-medieval date (Drury 1993, 168) and are likely to be from the original castle roof. A single large fragment of olive green bottle glass from the base of an 18th-century onion bottle or spirit flask helps date at least part of the demolition rubble to the 1700s and may correspond to the time when there are records that some of the building's architectural features were being robbed-out. The test pits also show that below the rubble layer was a soft organic mud [03]=[05] from which no dating material was recovered. Moderate quantities of animal bone with lesser amounts of oyster shell, and very occasional pieces of (undatable) building material were recovered from this deposit which infilled the entire moat in this area. The animal bone was mostly butchered and would have been derived from the food waste from domestic food mammals, cattle in particular.

Plate 16. Brickwork at base of tower

The base of the round tower was clearly visible as a result of dredging and is recorded in Section 5 (Fig. 9, located on Fig. 3) and on Plate 16. Visible below the coping stone course was a thin layer of red tile and below were six courses of a mix of Header Bond brickwork with Old English Bond (as was the rest of the tower above the coping stones). Below this the wall was faced in hard concreted mortar which was observed up to a depth of 0.3m below the brickwork. It is unknown whether this cement-like mortar face hides foundations constructed of brickwork or rubble.

**Sediments at the edge of moat**

Fig 10 and Plate 17

After the soft sediment had been removed there was an opportunity to record the sediments which formed the margins of the moat. A record of the sediments which occurred on the south-east facing bank of the north-east to south west orientated arm of the moat are shown in Section 6 (Fig. 10, located on Fig. 3; Plate 17). In this location the top bank of the moat stands more than 3.5m above the bottom of the moat. By comparison the south and south east edge of the moat is almost level with the land around it.

Plate 17. Sequence of deposits on the margins of the north-west facing arm of the moat

The lowest 0.2-0.3m of the exposed sequence of deposits in this section is a pale greenish brown silty clay with pockets of fine sand and small sub rounded and sub angular flint gravel [11]; this is likely to be Anglian Cromer

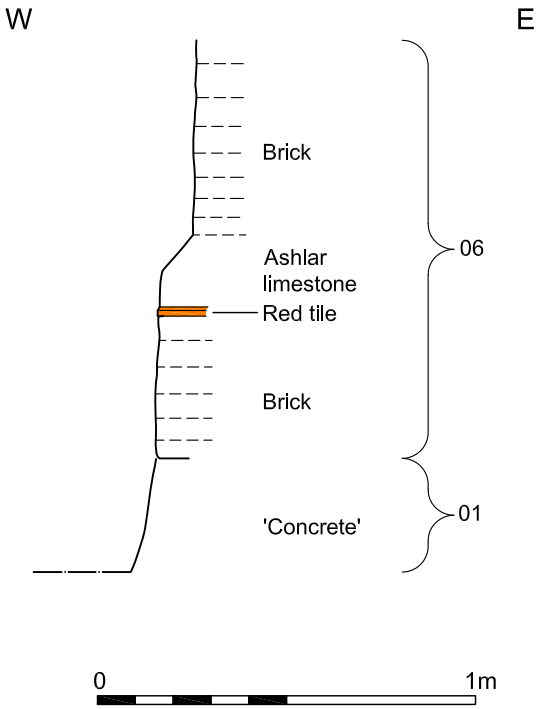


Figure 9. Section 5, showing brickwork at base of tower. Scale 1:20

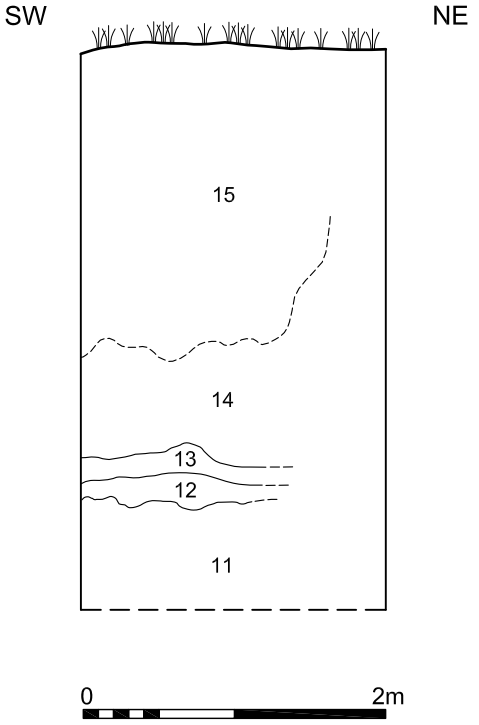


Figure 10. Section 6, through probable early moat deposits and overlying colluvium. Scale 1:50

Till. Above this is a 0.2m deep sequence of greyish silt with twigs and occasional pebbles and black organic silt and laminated sand with twigs and

organic sand (layers [12] and [13]); these deposits are likely to have formed within the moat. Above these deposits is at least 0.4m of clean-looking reddish pink silt [14] with rare small rounded flint stones and what appears to be some sort of loess or colluvium, perhaps derived from the slopes beyond the adjacent farm. Above this and draping the entire section up to 2m in depth is a modern top soil [15].

This sequence is slightly difficult to interpret since it is likely the loessic deposits [14] predate the castle and its moat and are likely to be Quaternary in date rather than historic. It is possible that the organic moat sequence is deposited within an undercut into the pink loessic silts. Alternatively if the pink silts represent more recently derived colluvium deposits and lie above early moat deposits this suggests the moat was originally wider in this position.

The results from Borehole BH5 (Boreham 2009) that was taken from the centre of the moat in line with the location of Section 6 (Fig. 3) indicates that moat itself is more than 1m deeper than the lowest deposit recorded in Section 6.

Incidentally, there is a reference in the Norfolk Historic Environment Record to the Festival of Britain Tree Walk from the Battersea Park Festival Gardens, London in 1951 being relocated to Caister Castle in the early 1970s. It is possible that the impressive avenue of trees running from the gate keeper's cottage onto the high bank on the north-west facing arm of the moat is that same avenue of trees.

**Moat deposits**

Fig. 3

The borehole survey by Boreham (2009) indicates that prior to dredging the water depth was approximately 0.5-0.6m deep and although the sequences were not directly comparable between boreholes the fill of the moat was identified to a depth of 1.25m to 1.7m below the sediment surface. The area dredged during this period is illustrated in Fig. 3 and the location of the finds within the moat deposits is also indicated (Find spots 07-10).

The sediments which were removed from the moat were soft and sloppy and few finds were easily recovered. The semi-liquid sediments were spread out on adjacent fields to a considerable depth and walking on them at this stage would have been hazardous. Many of the finds listed in Appendix 2a and described in 6.0 The Finds below, were recovered by the contractors themselves as they dredged the moat. A large collection of animal bone was found close to the bridge on the south-west facing arm of the moat [08]. This bone consisted of butchered cattle and an unbutchered bone of an old horse (Curl below).

The oldest artefact recovered from the fill of the moat was a fine tobacco pipe found in the centre of the moat [07] by one of the machine drivers. The bowl is a small capacity bulbous or waisted type with a rouletted mouth and is dated to the mid to late 17th century (Ames below).

A collection of late 19th- to early 20th-century glazed ceramic fragments were found in moat sediments [09] adjacent to the gate keeper's cottage and had probably been dumped over many decades in the moat as part of refuse disposal from the cottage.

The most recent find from the moat sediments was a glass bottle labelled 'Hubbly Bubbly' a children's fizzy drink of the 1960s or 1970s made by a Newport Pagnell company. It was found in the fill of the moat close to the tower [10] and it can easily be is imagined that it was thrown into the moat during a day out at Caister Castle in the mid 20th century.

## 6.0 THE FINDS

All finds are listed in Appendix 2a Finds by Context and more detailed descriptions are presented below, ordered by material.

## 6.1 Pottery

Sarah Percival

A total of fourteen sherds of pottery weighing 543g were recovered from the fill of the moat adjacent to the cottage [09]. The assemblage (Plate 18) is entirely composed of late 19th-century domestic plates and cups in industrial slipware and refined earthenwares with transfer-printed decoration and almost certainly represents Victorian or Edwardian household waste disposed of in the moat.

Plate 18. Fragments of 19th- and early 20th-century ceramics from deposit [09]

## 6.2 Ceramic Building Material

Sarah Percival

### *6.2.1 Brick, floor brick and floor tile*

Five bricks or brick fragments weighing 7,185g were recovered from demolition rubble in Test pits 1, 2 and 3, contexts [02] and [04] (Plates 19 and 20). Four bricks are of Drury's early brick group B and are made of estuarine clays with one strawed surface (Drury 1993, 164). These bricks were in use predominantly in the late 14th to 15th centuries although a few examples have been found in 13th-century contexts in Norwich (Anderson 2005, 89). One of the specimens from the moat has a corner cut off at 45°. Anderson notes that such 'closer bricks' were often used to complete the bonding pattern around window or door openings and a number were found in 15th-century contexts at Dragon Hall in Norwich (Anderson 2005, 90).

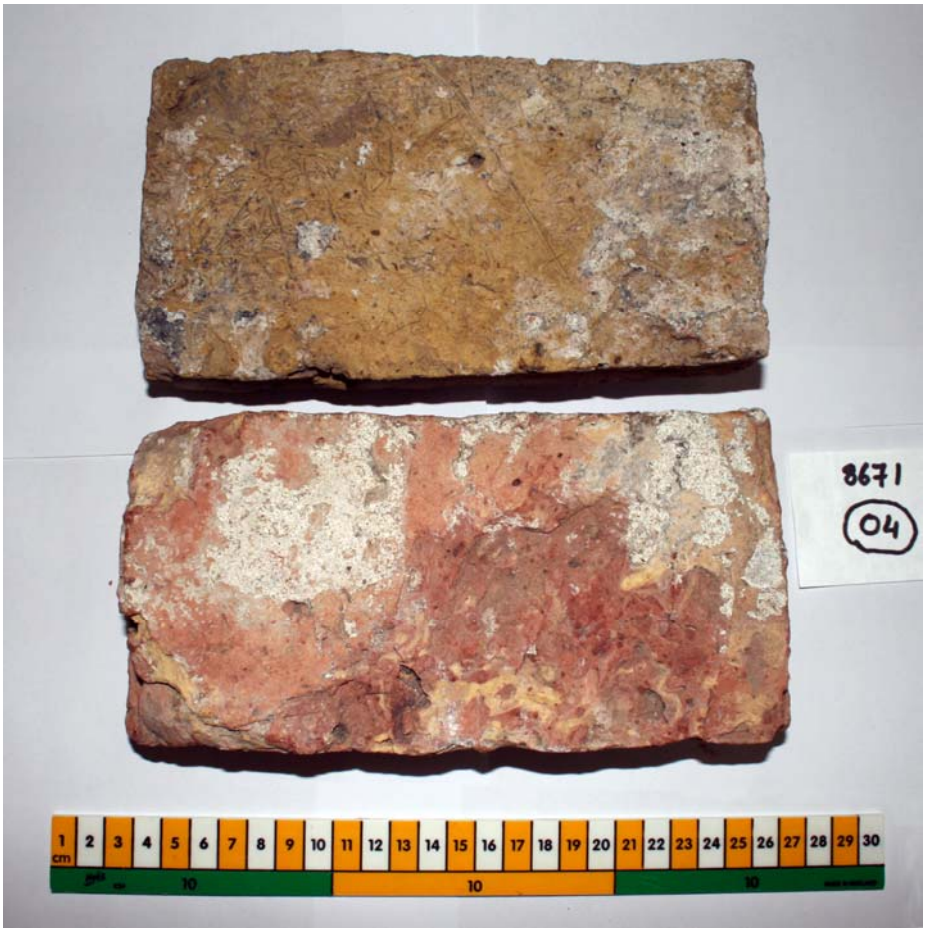


Plate 19. Bricks recovered from rubble [04]

A post-medieval floor brick in dense white sandy fabric was also recovered (Plate 21). The upper surface of the brick had been worn smooth with use. This type of flooring was common in the 17th to 19th centuries (Anderson 2005, 92).

A large square pamment in sandy salmon pink fabric was found in demolition rubble in Test pit 3 [04]. The distinctive salmon pink colour suggests that the tile may be a product of the Cambridgeshire Gault clays. The tile, which is worn smooth on the upper surface, is not closely datable.


Plate 20. Bricks recovered from rubble [04]


Plate 21. Floor tiles recovered from rubble [04]

### *6.2.2 Roof tile*

A total of eight pieces of roof tile weighing 784g were collected in red sandy fabrics. All are flat tiles and two have round peg holes indicating that they are peg-tiles of medieval to early post-medieval date (Drury 1993, 168). Seven

pieces of roof tile were found demolition rubble in Test pits 1 and 2, context (02) and one came from the fill from the moat in Test pit 3.


Plate 22. A sample of roof tiles recovered from deposits [02] and [04]

## 6.3 Glass

Sarah Percival

### *6.3.1 Window Glass*

A single shard of dark green post medieval window glass was found in the fill of the moat (09).

### *6.3.2 Bottle Glass*

Two pieces of bottle glass weighing 354g were collected. A shard from the base of an 18th-century onion bottle or spirit flask in pale olive green glass was recovered from demolition rubble in Test pit 3 [04] and a complete bottle with a printed label 'Hubbly Bubbly' (Plate 23) was found in the fill of the moat close to the tower [10]. Hubbly Bubbly was a subsidiary of the Newport Pagnell firm Taylors, which also made mustard. The soft drink was made under license and as well as being available in Britain it was widely distributed in South Africa throughout the 1970s.


Plate 23. 1970s? Hubbly Bubbly drinks bottle from deposit [10]


Plate 24. Clay pipe (17th century) from deposit [07]

## 6.4 Clay Pipe

John Ames

A complete clay tobacco pipe bowl was found in the fill [07] from the centre of the moat (Plate 24). The bowl is a small capacity bulbous or waisted type with

a rouletted mouth and a flat base and is typologically similar to a mid to late 17th-century example found at Dragon Hall in Norwich giving a date somewhere between 1640 and 1670 (Atkin 2005, fig. 88, 1).

## 6.5 Animal Bone

Julie Curl

### *6.5.1 Methodology*

The assessment was carried out following a modified version of guidelines by English Heritage (Davis 1992). All of the bone was examined to determine range of species and elements present. A note was also made of butchering and any indications of skinning, hornworking and other modifications. When possible a record was made of ages and any other relevant information, such as pathologies. Counts and weights were noted for each context. All information was recorded directly onto an Excel spreadsheet for quantification and assessment. A basic catalogue is included in the written report and the full assessment database is available in the digital archive.

### *6.5.2 The assemblage – provenance and preservation*

A total of 3,610g of faunal remains, consisting of twenty-four pieces was recovered from this excavation (Appendix 3). The remains were produced from four fills, with the vast majority of the bone yielded from organic mud fills in the moat. One single bone was found in the demolition rubble from Test pits 1 and 2. All of the assemblage is thought to be of a post-medieval to modern date.

Most of the bone in this assemblage is of a dark brown to black colour indicating deposition in rich, organic and waterlogged conditions for some time.

The bone is in generally good, sound condition, although some fragmentation has occurred from butchering and wear. Fine scratches were noted on the surfaces of some elements from deposit [08], the organic mud fill of the moat, close to the bridge. Such scratches are seen on bones that have been trampled, perhaps by other animals.

Two puncture marks were seen on an equid bone from [08], these holes are shallow (*c*.3-5mm deep) and are unlikely to be from tooth marks as there is no other gnawing present; these marks may also have occurred from trampling or pressure on the bone.

### *6.5.3 Species range and modifications and other observations*

Four species were identified, all representing domestic mammals i.e. cattle, horse (equid), sheep/goat (ovicaprid) and pig, in that order of frequency, with just single elements identified from the ovicaprid and pig. For both the cattle and equids, juveniles were present, which may indicate local breeding of these animals.

The cattle remains in deposit [03] included skull and horncore fragments from a large, long-horn breed of cattle, with substantial, downward-turning, horncore bases seen.

The equid remains included one juvenile metatarsal from deposit [03], the measurement of which suggests an animal of around 13 hands high and, taking into account the juvenile status of this animal, it lies well within the range for a larger pony or small horse. The metrical data from an adult equid tibia from layer [08] indicates an animal of around 16 to 17 hands high and suggests a more substantial horse.

The equid tibia from the larger horse in layer [08] shows some pathology and growth that suggests a mature animal under stress, probably indicative of a working animal. An equid mandible from deposit [03] exhibited well worn teeth and periodontal disease, suggesting a mature animal or perhaps one fed on a less healthy diet with a greater proportion of dried food.

### *6.5.4 General butchering*

Butchering was noted on many elements in this assemblage, although absent from the equid remains. Most butchering was in the form of chops on the larger bones where the animal had been dismembered and finer knife cuts from skinning and removal of the meat. A cattle femur from deposit [08] shows heavy chopping around the shaft that is likely to have occurred when the cut of meat was prepared. One bone, a cattle scapula from layer [05] had been sawn close to the articular end of the bone; this too would have occurred when the animal was dismembered and is a method of butchering used since the Roman period.

### *6.5.5 Conclusions*

The remains are largely derived from butchering and food waste from domestic food mammals, cattle in particular. The equid remains suggest at least two breeds of horse at this site; the elements in this assemblage do not show butchering on this species, although given the relatively sparse remains, this cannot be ruled out. The lack of small species of mammal, bird or herpetofauna (frogs, toads, newts etc) is surprising in such a location and might be expected in waterlogged conditions, but their absence is likely to be due to the limited circumstances for recovery.

The condition of the bone in deposit [08] might possibly suggest that it may have been used for levelling or to provide support on wet ground.

## 6.6 Shell

Oyster shell was recovered from the demolition rubble in Test pits 1 and 2, context [02], and from contexts [03] and [05] - fills of the moat. The oyster shell represents food waste but is not closely datable.

## 7.0 CONCLUSIONS

The watching brief provided an unusual opportunity to record brickwork below the water level of the moat, to observe moat sediments and record finds from within those deposits and to contribute to the existing knowledge of the more recent history of this significant medieval brick built castle.

The use of an extremely hard cemented mortar (if indeed the cementation is not caused by post-depositional alteration to the lime mortar) in the construction of the castle's brickwork close to the water level is an interesting feature. This very hard mortar may indicate the use of hydrated lime, which was water-resistant and fell out of general use in medieval Europe to be reintroduced in the 1800s.

The sediments within the moat are likely to span a considerable period and although there is not direct evidence for this, it is likely that part of the moat has been selectively dredged in the past. There is cartographic evidence of considerable remodelling of the moat in the mid to late 19th century. At this time a central moat dividing the Inner and Outer courts of the castle was infilled; part of the moat that remains undredged on the south-east side of the castle was also much altered.

A tobacco pipe of the mid to late 17th century found within organic silts suggests at least some of the deposits are of post-medieval origin and post date by only a few decades the departure of the Paston family from the castle (the beginning of its fall into ruin).

There is some evidence that significant demolition and collapse of the south–west facing wall may have occurred during the 1700s. The presence of this rubble layer which is likely to be 1700-1800 in date indicates the moat (at least in this area) had not been dredged in recent years.

The moat had been used to dump a range of domestic waste including butchered bones of cattle, pig, sheep/goat and other food stuffs such as oyster shells. The remains of part of a juvenile horse and a mature worn horse were also found with no evidence of butchery suggesting that these animals may well have been thrown into the moat as whole animals perhaps at a date predating the 1800s. The moat at this time must have been a quite unpleasant and smelly body of water and was being used a refuse dump, probably for those occupying the adjacent barge house (Fig. 2). At a later date in the late 19th and early 20th century the occupants of the gate house also used the moat as a dump for at the very least broken domestic pottery.

Later artefacts such as the 1970s fizzy drinks bottle arrived in the moat as a result of visitors coming to enjoy the Castle and the car museum from the mid 1960s onwards.

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The report was illustrated by David Dobson and edited by Jayne Bown.

The finds were processed by Andrew Barnett and analysed by Sarah Percival with the exception of the clay pipe which was identified by John Ames and the animal bone which was analysed by Julie Curl.

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## Appendix 1a: Context Summary

| Context | Category | Description | Period |
|---|---|---|---|
| 01 | Masonry | Concreted mortar from castle wall | Med./Post-Med. |
| 02 | Deposit | Demolition rubble from Test pits 1 and 2 | Modern |
| 03 | Deposit | Organic mud fill of moat from Test pit 3 | Modern |
| 04 | Deposit | Demolition rubble from Test pit 3 (same as 02) | Modern |
| 05 | Deposit | Organic mud fill of moat from Test pit 3 (same as 03) | Modern |
| 06 | Masonry | Wall of castle | Med./Post-Med. |
| 07 | Deposit | Organic silty fill of moat (from centre) | Post-medieval |
| 08 | Deposit | Organic mud fill of moat near bridge | Modern |
| 09 | Deposit | Organic mud fill of moat next to cottage | Modern Early 20th century |
| 10 | Deposit | Organic mud fill of moat close to tower | Modern late 20th century |
| 11 | Deposit | Pale greenish brown clayey silt, with subrounded and sub angular flint gravel 5mm-20mm, extremely rare twig- could be intrusive | Possibly moat fill –medieval but could be Holocene or even earlier. |
| 12 | Deposit | Greyish silt with twigs and rare pebbles. Moat fill. | Medieval? |
| 13 | Deposit | Cream moderately coarse sand with pebbles and full of twigs. Moat fill. | Medieval? |
| 14 | Deposit | Reddish pink structureless silt with rare small rounded pebbles. | Medieval? |
| 15 | Deposit | Topsoil draped over section and developed on surface of edge of moat. | Medieval-modern |

## Appendix 1b: OASIS Feature Summary

| Period | Category | Total |
|---|---|---|
| Med | Masonry | 2 |

## Appendix 2a: Finds by Context

| Context | Material | Qty | Wt | Period | Notes |
|---|---|---|---|---|---|
| 01 | Mortar | 3 | 37g | Med./Post-Med. | |
| 02 | Ceramic Building Material | 7 | 742g | Med./Post-Med. | Roof tile |
| 02 | Ceramic Building Material | 2 | 1,835g | Med./Post-Med. | Brick |
| 02 | Shell | 2 | 17g | Unknown | Oyster (discarded) |
| 02 | Animal Bone | 1 | 33g | Unknown | |
| 03 | Shell | 1 | 7g | Unknown | Oyster (discarded) |
| 03 | Animal Bone | 15 | 1,684g | Unknown | |
| 04 | Glass | 1 | 80g | Post-medieval | Bottle glass |
| 04 | Ceramic Building Material | 1 | 4,750g | Post-medieval | Floor tile |
| 04 | Ceramic Building Material | 3 | 5,350g | Med./Post-Med. | Brick |
| 04 | Ceramic Building Material | 1 | 114g | Post-medieval | Floor tile |
| 05 | Ceramic Building Material | 1 | 42g | Med./Post-Med. | Roof tile |
| 05 | Animal Bone | 4 | 312g | Unknown | |
| 05 | Shell | 1 | 21g | Unknown | Oyster (discarded) |
| 07 | Clay Pipe | 1 | 14g | Post-medieval | C17th |
| 08 | Animal Bone | 4 | 1,581g | Unknown | |
| 09 | Pottery | 14 | 543g | Modern | |
| 09 | Glass | 1 | 8g | Post-medieval | Window glass |
| 09 | Clay Pipe | 1 | 1g | Post-medieval | Stem |
| 10 | Glass | 1 | 274g | Modern | Bottle glass |

## Appendix 2b: OASIS Finds Summary

| Period | Material | Total |
|---|---|---|
| Med./Post-Med. | Ceramic Building Material | 13 |
| | Mortar | 3 |
| Post-medieval | Ceramic Building Material | 2 |
| | Clay Pipe | 2 |
| | Glass | 2 |
| Modern | Glass | 1 |
| | Pottery | 13 |
| Unknown | Animal Bone | 24 |
| | Shell | 4 |

## Appendix 3: Animal Bone

| Context | Ctxt Qty | Wt | Species | NISP | Age | Butchering | Path | Comments |
|---|---|---|---|---|---|---|---|---|
| 02 | 1 | 33g | Sheep/ goat | 1 | a | ch, c | | stocky, probably goat |
| 03 | 15 | 1684g | Cattle | 7 | a and j | c, ch | | inc lge, long-horn hcs |
| 03 | | | Equid | 3 | a and j | | 1 | J (UF)MT:GI=237, periodontal |
| 03 | | | Mammal | 5 | | c, ch | | ch and c ribs |
| 05 | 4 | 312g | Cattle | 3 | a | c, ch, s | | Sawn scap @ artic.end |
| 05 | | | Pig | 1 | | ch | | right mandible, lge, no teeth |
| 08 | 4 | 1581g | Cattle | 3 | j | c, ch | | heavily chopped femur |
| 08 | | | Equid | 1 | a | | 1 | A (F) TIB, GL=380, stress/age |

**Key:**

NISP = **N**umber of **I**ndividual **S**pecies elements **P**resent.

Age = Estimate age based on fusion of bones and tooth wear; a = adult, j = juvenile, neo = neonatal, range = range of ages.

MNI = **M**inimum **N**umber of **I**ndividuals

Butchering = c = cut, ch = chopped, s = sawn

Path = Pathology