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ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE
A MULTIDISCIPLINARY INVESTIGATION OF THE CASTLE GARDEN

Sarah Newsome, Matt Canti, Jim Leary, Louise Martin and Paul Pattison

ENGLISH HERITAGE

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A Multidisciplinary Investigation of the Castle Garden

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SUMMARY

In 2006 English Heritage undertook a multidisciplinary research project to examine the garden at Ashby de la Zouch Castle. The aim was to gain a better understanding of the nature, date and context of the garden in order to enhance visitor experience through the production of a new guidebook and on-site interpretation. The research involved analytical earthwork survey, coring, geophysical survey and excavations, supported by a programme of documentary research. This report draws together the various strands of research and aims to provide the reader with a single report from which they can gain a synthetic overview of the results. All technical reports and methodologies are incorporated as appendices, including the specialist finds reports.

The research has demonstrated that the garden was once part of a wider designed landscape that probably had its origins in the later medieval period. Whilst it is possible that the garden buildings were constructed by the 1st Earl of Huntingdon in the mid-1500s as a way of displaying his wealth and status, the surviving garden earthworks are likely to be a product of several redesigns, particularly in the late 16th or earlier 17th century when there are a number of possible historical contexts for their creation. The research has shown that the sunken areas of the garden were not ponds, though geometric water gardens were constructed to the west of the castle. Excavations also revealed the foundations of a probable third garden building and evidence of the castle's Civil War defences. The castle and garden are an English Heritage guardianship site.

CONTRIBUTORS

Sarah Newsome and Paul Pattison undertook the earthwork survey of the garden; Matt Canti the coring; Louise Martin the geophysical surveys and Jim Leary directed the excavations. Extensive documentary research was undertaken by John Goodall and Twigs Way. General photography was undertaken by Alun Bull.

ACKNOWLEDGEMENTS

The project team would like to thank everybody involved with the project, including all those involved in the excavations. Particular thanks go to the Visitor Operations Staff at the castle, especially Emma Johnson. Thanks also go to the curators of Ashby Museum for their kind help and permission to reproduce items from the museum collection in this report and to Brian Dix who commented on the final draft.

ARCHIVE LOCATION

The project archive is located at English Heritage, Fort Cumberland, Portsmouth with the exception of the earthwork survey archive which is located at the National Monuments Record, Swindon.

DATE OF RESEARCH

The work detailed in this report was undertaken between February and August 2006.

CONTACT DETAILS

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1. INTRODUCTION

1.1 Background to project

In 2006 English Heritage began a programme of research aimed at 'evaluating the archaeological, architectural and historical evidence for the extent, layout and planting of the landscape' at Ashby de la Zouch castle (Brown 2006). The research was necessary in order to fully understand the gardens, the results of which could be used in the future management and interpretation of the whole site. The potential outcomes of the research included new site interpretation panels, a new guidebook and a virtual reconstruction of the garden (NB The guidebook and interpretation panels were completed in 2007 and included an artist's reconstruction of the garden in the 1630s). Outreach events were also planned in order to engage with the local community. The stimulus for this programme of work was a grant provided for improving the visitor experience of the garden by The Wolfson Foundation Garden Challenge Fund which was match funded by English Heritage.

Figure 1: Ashby de la Zouch Castle, looking south, in July 2000. As well as showing the earthwork remains of the sunken garden to the south of the ruins, the photograph also demonstrates the close proximity of the parish church to the castle site (NMR SK3616/2 (17464/14) 17-JUL-2000 © English Heritage).

The garden (SAM 17121, NMR SK 31 NE 77, MLE 4287) is located to the south of the castle ruins, within both the castle's scheduled area and the area open to the public under the

guardianship of English Heritage. It comprises a large rectangular area with walkways which define the perimeter and divide the interior, creating sunken compartments. The whole is enclosed by the remains of a brick wall, with brick garden buildings at the south-west and south-east corners. The area is loosely known as the 'Wilderness', a term which was first used for a garden at Ashby in the early 17th century.

In most accounts of the castle the garden has been assumed to date to the 16th century, based on the form of the earthworks and the architectural style of the towers (e.g. Jones 1980, 12; Henderson 2005, 161). This would make Ashby an important and rare example of a Tudor garden. However, there has been little examination of these assumptions and little attempt to understand how the garden relates to the castle, the wider manorial landscape or the historical contexts in which the castle's owners, the powerful Hastings family, played the central role. Not only has this lack of study led to the garden being neglected in the numerous histories of the castle (Fosbrooke's 1913 account being a notable exception) but it has also meant that the significance of this part of the historic monument has been missing from the visitor experience, not least because it is hard to convey to a visitor that which is poorly understood.

1.2 Multidisciplinary approach

The project provided an opportunity to draw on a wide range of English Heritage expertise and produce a multi-disciplinary programme of work (see Appendix 1). The project involved a series of inter-related investigations comprising: analytical survey of the earthworks and structural elements of the garden, geophysical and borehole surveys of the buried archaeology, and excavations. Concurrent with the archaeological investigations, substantial documentary research was also undertaken, focussed on understanding the buildings, gardens and the wider castle landscape.

1.3 Summary of project aims

The aims of the research project (see Brown 2006) were, in summary:

- to understand the date, form and motivation for the creation of garden or gardens

- to understand the historical and cultural context or contexts for the garden or gardens

- to understand the landscape context for the garden, including its relationship to the castle buildings

- to establish the different phases of garden which may be present and which may help us to understand why the garden appears as it does today

- to assess the preservation of below ground deposits

- in the long-term to provide information about what the garden looked like to support some form of reconstruction

2. TOPOGRAPHY AND GEOLOGY

2.1 Location

Ashby de la Zouch is located in north-west Leicestershire, close to the county's border with Derbyshire. The ruins of the castle (SAM 17121, NMR SK 31 NE 3, MLE 4285), are located on the eastern side of the modern town, to the south-east of the South Street and St Helen's Church (Figures 2 and 3). Late 19th- and early 20th-century maps show the castle, which should be more properly described as a grand manorial complex, on the south-east periphery of historic Ashby, though it has been suggested that the oldest part of the settlement is on the eastern side of the modern town, close to the castle (K Hillier, pers comm).

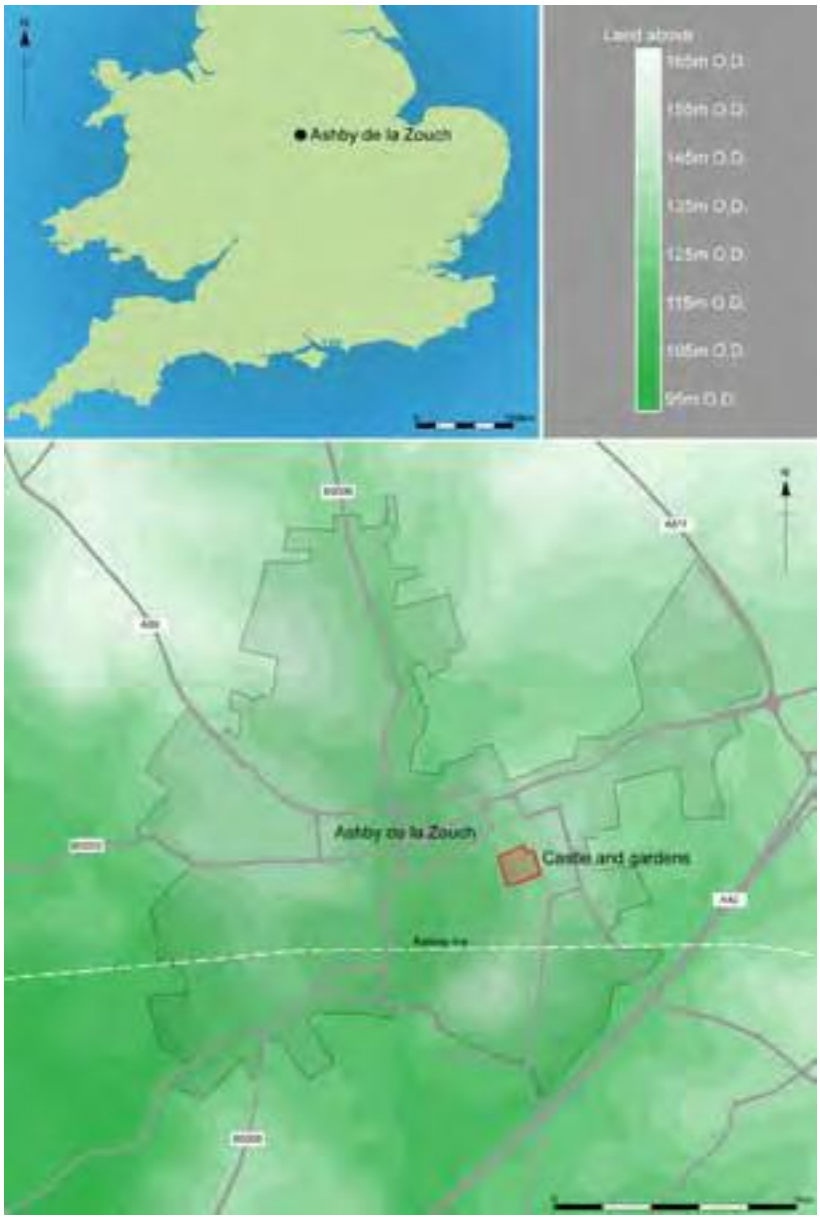


Figure 2: The location of Ashby de la Zouch castle.

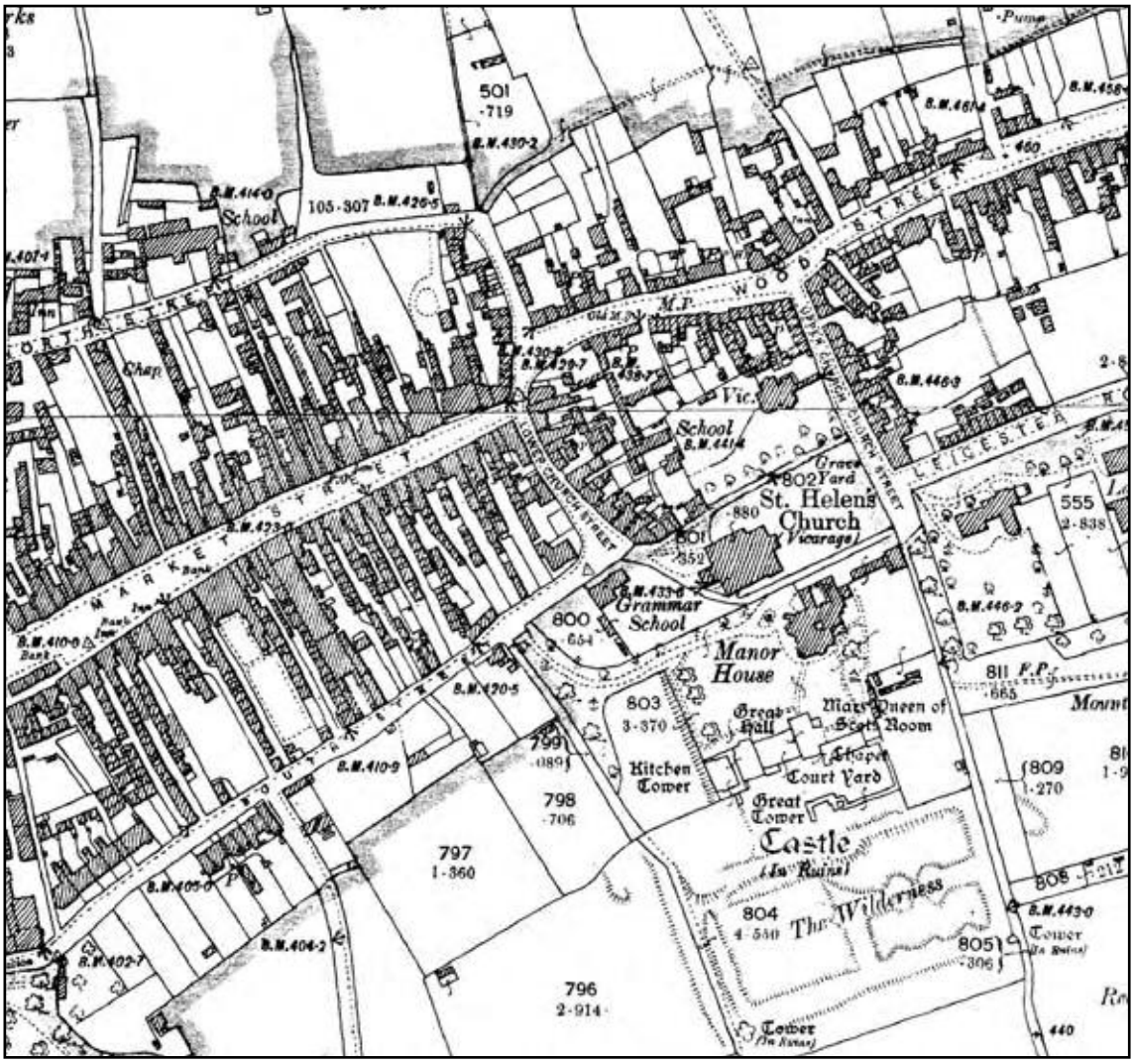


Figure 3: Ashby de la Zouch in 1903. The castle and church are located immediately to the south of an area of irregularly laid-out settlement which may be the earliest, pre-Norman, part of the town. A much more regular, and probably later, street plan can be seen to the west along Market Street. Reproduced from the 1903 Ordnance Survey map (2nd Edition 25 inch).

2.2 Geology and topography

The castle is located to the south-east of Ashby town centre on the gently sloping western side of a low hill at around 130m AOD. The now culverted Giliwiskaw Brook originally ran along the base of the hill. The castle lies on slowly permeable, seasonally waterlogged, loamy over clayey and fine silty soils of the Bordsey association (Soil Survey of England and Wales 1983, sheet 3 Midland and West England), developed over shale with sandstone beds and many coal seams (British Geological Survey 1976, sheet 141, Loughborough, solid and drift). The solid geology immediately underlying the garden is a dark yellowish-brown sandstone, the upper part of which was revealed to be weathered on excavation.

3. HISTORICAL BACKGROUND

In order to understand the modern appearance of the garden and to put the research programme into context, the historical background to the site is summarised below.

3.1 The Norman period

Nothing is known of the pre-Conquest history of the castle site and the earliest physical evidence for occupation is the 12th-century fabric within the castle's standing remains. The earliest reference to a settlement at Ashby is in the 1086 Domesday survey where it is recorded that Ivo held the manor of 'Ascebi' for his father Hugh de Grentmeisnil (Jones 1980, 16; Nichols 1804, 561). It is reasonable to assume that the manor house was on the same site as the castle (no other potential sites have been identified) and that it could have already been occupied for many years. This assumption is supported by an apparent early settlement core visible in the irregular property boundaries to the north of the church (see Figure 3). Jones (1980, 16) states that William the Conqueror had given Hugh de Grentmeisnil the manor of Ashby as part of the largest single land holding in the county, that of the earls of Leicester (Goodall 2007, 21), but that Ivo was of minor influence. The manor was valued at 10 shillings (Way 2006, 17) and it is hard to gauge its status at that time.

In 1100 Robert de Beaumont, Count de Meulan, took over the whole of Hugh de Grentmeisnil's estates. His power was reinforced when he was made Earl of Leicester. Robert Belmeis became his sub-tenant at Ashby. A descendant, Philip Belmeis, demonstrated the importance of the family at this time by founding an abbey in Lilleshall, Shropshire in the 1140s and giving the church at Ashby to the abbey. Masonry in the hall and buttery may relate to this period (Fosbrooke 1913, 29; Jones 1980, 17).

3.2 The Zouches

Alternatively, the earliest remaining parts of the castle may relate to the Zouch period (Coppack, unpublished) which began around 1160 when Philip Belmeis died leaving no male heir. His son-in-law Alain de Porrhoet la Zouche (Fosbrooke 1913, 3) was granted the estate by the earls of Leicester in return for military service (Goodall 2007, 21) and began two hundred years of ownership of the castle by the Zouches. The family was a major landholder in Brittany and England and that status is reflected in their completion of a stone hall and solar at the castle by the end of the 12th century (Jones 1980, 17).

Though the Zouches remained important through the 13th century little evidence of this period is visible in the ruins today (Jones 1980, 17) despite one Alan de la Zouche being Henry III's Warden of London and Constable of the Tower and allegedly 'flaunting his wealth and status' (Way 2006, 17). However the town was flourishing; a market was granted in 1219 (Pevsner 1984, 77) and around 1230 the town gained the 'de la Zouch' suffix. In 1314, Sir William Mortimer of Richard's Castle, Shropshire, and second cousin of the previous lord of the manor, Alan la Zouch, (Fosbrooke 1913, 3) inherited and was created Baron Zouch of Ashby though there is some discrepancy in the published sources as to when this occurred (Jones 1980, 17; Fosbrooke 1913, 3). A description of 1347 records 'a ruinous old hall, a new chamber not yet roofed… and a long house called

the bakery, brewhouse and kitchen' (Goodall 2007, 21). In the second half of the 14th century, due to the manor's state of disrepair, he or his successors entirely rebuilt the hall, changing it from a two-storey to single-storey structure. He also added a new solar and kitchen and converted the old solar into a buttery and pantry (Jones 1980, 18).

The Zouch presence at Ashby ended with the death of Hugh la Zouch in 1399. The next sixty years in the history of the manor are poorly understood though, as Jones (1980, 18) states, the manor changed hands several times, perhaps due to a protracted ownership dispute (Goodall 2007, 21). Fosbrooke (1913, 4) writes that the manor passed to Sir Hugh Burnell via Hugh la Zouch's cousin who, when he died in 1420, passed it to James Ormond, Earl of Wiltshire (Goodall 2007, 21). It is not clear who was responsible for the extension of the solar in the early 15th century (see Jones 1980, 18).

3.3 William, Lord Hastings

The Wars of the Roses was a pivotal event in the history of the castle. James Ormond, the then lord of the manor was beheaded as a Lancastrian traitor after the Battle of Towton and the Crown took possession of his estates (Jones 1980, 18; Fosbrooke 1913, 4). Paradoxically, the Wars were the making of William Hastings, a minor Leicestershire nobleman, who was knighted on the battlefield at Towton where he supported Edward and the Yorkist cause (Horrox 2004).

Between 1461 and his execution in 1483 by Richard of Gloucester, later Richard III, William, Lord Hastings, became one of the most influential men in Edward IV's court. He was made steward or receiver of many duchys across the country, became Lord Chamberlain and was given the lordship of many places including Hastings. He received, as well as many honours, a great deal of forfeited land including, in 1462, Ashby de la Zouch. Perhaps most significantly he was given 'full power to receive persons into the king's grace at his discretion' (Horrox 2004). After their return from exile in 1471 the King made Hastings Lieutenant of Calais and he received pensions and annuities from foreign kings as his power continued to grow.

The developments made by William at Ashby reflect his wealth, power and influence. In April 1474, the King gave Hastings licence to enclose and empark land on a number of his estates including 3000 acres at Ashby de la Zouch (Nichols 1804, 568). At the same time he was granted licence to build new fortified houses at Bagworth, Kirby Muxloe (the Hastings seat) and Ashby de la Zouch. Unlike Kirby Muxloe where a brand new fortified manor house was begun in brick (Figure 4), Hastings began extending and adding to the existing buildings at Ashby. It seems that Hastings intended Ashby to be his principal seat (Goodall 2007, 23), establishing his dominance over the East Midlands.

It was in this period that Hastings' Tower was constructed. Towerhouses were particularly fashionable at this date and the tower combined security with the provision of new and spacious accommodation. Its style may have been influenced by Hastings' visits to Burgundy and by other towers built at this time such as Tutbury and Nottingham (J Goodall, pers comm). Hastings also constructed other buildings on the site including a very grand chapel (Jones 1980, 20). This work appears to have happened before the construction of the tower and may be referred to in the 1472-3 Compotus Roll

(Huntington MAP DRAWER 11 U2) which dates before the licence to build a fortified house was granted in 1474. Alternatively such a close associate of the King might have risked having the licence issued retrospectively (J Goodall, pers comm). At Ashby, as at Kirky Muxloe, the execution of William Hastings in 1483 probably meant that his plans were never completed. Dugdale, writing in 1677, states,

'that which was the greatest ornament to it, was two stately large towers built of perfect asheler stone, covered with lead and embattled. Which towers stood backwards towards the garden, on the south and southwest sides of the house: as it should seem and as by tradition it hath been told, built in such a figure, that two more might be placed at convenient distance to equal them'

(Huntington Hastings Miscellaneous Box 13 – Dugdale MSS 1677).

This quote seems to reinforce the idea that we now only see part of the scheme for Ashby and that Hastings intended to build a very grand residence with tower on each side with linking ranges creating a square plan (J Goodall, pers comm).

Figure 4: The unfinished remains of William, Lord Hastings' complete rebuild of the family seat at Kirby Muxloe.

3.4 Hastings' descendants

Despite Hastings' untimely demise, his title and lands were rapidly restored to the family, who remained at Ashby (Goodall 2007, 24). Edward (circa 1465 - 1506), William's son, regained the favour of Richard III at the Battle of Bosworth Field (Jones 1980, 20). Very little is know about Edward's relationship with Ashby but it appears that he spent much

time away before his death in 1506 (Anon. 1852, 17). It is, however, worth noting that one of a succession of royal visitors, Henry VII, is recorded as having visited Ashby in 1503 (Jones 1980, 21).

The relationship of Edward's son George (1486/7 – 1544) with Ashby is also ambiguous and it has been suggested that he preferred his mother's estate at Stokes Poges in Buckinghamshire. This seems to be supported by the fact that he was buried there (Cross 2008a) rather than in the family chapel at Ashby. George, like his predecessors, appears to have had influence at court, being made a Knight of the Bath as a teenager and becoming a close friend of Henry VIII (Cross 2008a). Significantly, he was made Earl of Huntingdon in 1529. It may have been George who made improvements to Ashby in brick (Goodall 2007, 26). However by 1538 keeping up appearances at court may have been causing him financial strain (Cross 2008a) and by the time he died in 1544 he had debts of around £10,000 (Cross 2008a).

Francis Hastings (1513/14 – 1560) was also closely involved in court affairs from a young age. He made an important marriage to Catherine Pole, a descendant of Edward IV, and was made a Knight of the Bath at Anne Boleyn's coronation in 1533 (Goodall 2007, 26; Cross 2008). His career went from strength to strength with the accession of Edward VI: he eventually became a member of the Privy Council. He was briefly imprisoned by Mary for his involvement in the attempt to crown Lady Jane Grey. By the time he died in 1560 he had managed to reach a place of importance within the Elizabethan court. He is buried at Ashby.

Figure 5: Tomb of Francis Hastings, second Earl, and Katherine Pole in Ashby Church

Henry Hastings (1536? – 1595) became the third Earl of Huntingdon at the age of 24. Mary Queen of Scots visited Ashby as a prisoner in 1569 and then again in 1586 after Henry's role as custodian had ceased (Jones 1980, 21; Fosbrooke 1913, 10). Initially it seems that Henry was not held in high regard by Elizabeth, but by 1570 he had begun to rise in importance, being made a Knight of the Garter and then, two years later, Lord President of the Council of the North (Goodall 2007, 27). Henry founded a school in

Ashby in 1567 (Anon. 1852, 24). By the time of his death Henry had accrued huge debts and had sold off a great deal of his lands (Anon. 1852, 24; Cross 2008b). Like his father, he is buried at Ashby.

George Hastings (? – 1604), fourth Earl of Huntingdon, who inherited the estate from his heirless brother in 1595, was Lord Lieutenant of Leicestershire. Little seems to be recorded about George but not only did he acquire the Castle Donington estate to which the family were eventually to move after the Civil War, he also hosted Anne of Denmark and Prince Henry when they visited Ashby in 1603 (Jones 1980, 21; Anon. 1852, 26) which he may have arranged in order to help his petition to James I for debt relief (Goodall 2007, 27).

By the time Henry Hastings (1586 – 1643), George's grandson, became the fifth Earl of Huntingdon in 1604 the family estate was not as valuable as it once had been and Henry could barely maintain his lifestyle (Knowles 2006). For these reasons he allegedly had less impact in national politics than his predecessors. However, of most relevance to the garden at Ashby is his purported patronage of the arts and interest in gardening (Knowles 2006). The grand masque that the fifth Earl staged in 1607 (Knowles 2006; Fosbrooke 1913, 11) epitomises these interests particularly at a time when there was probably little money to spare.

In 1612, 1614 and 1617 James I visited Ashby and Henry continued to appear to be living beyond his means, using his local power and influence to host the King and his entourage in suitable style (Jones 1980, 21; Way 2006, 47). These visits were followed in 1634 by one from Charles I and Henrietta Maria, perhaps highlighting that the Hastings' reduced wealth and influence should be considered in the context of the heady heights which they had once attained.

3.5 The Civil War

Ferdinando, Henry's son, became the sixth earl of Huntingdon in 1643 coinciding with the start of the Civil War. However, it was his brother Henry who became a significant player in Royalist activities in the region (Jones 1980, 21), his main opponent in the area being the head of the Grey family who declared for Parliament, continuing a long standing rivalry (Goodall 2007, 29). In October 1642 Ashby became Henry's base and was subsequently fortified and prepared for a siege (Fosbrooke 1913, 13). To create the town's defences several houses and the grammar school were demolished (Goodall 2007, 29). References to the use of tunnels at Ashby and a new defensive work called the 'Irish Fort' are made in a Parliamentarian diary entry for November 16th 1644 (Fosbrooke 1913, 15). Probably erroneously, the fort has traditionally been identified as the triangular Mount House, located to the north-east of the castle. Fosbrooke (1913, 16) describes early plans showing a tunnel linking the castle and the fort, perhaps referring to the plan in Hextall's 'Ashby-de-la-Zouch' (Anon. 1852, 60).

In late 1644 the garrison appears to have been largely confined to the castle by the Parliamentarians and details of a letter dated December 31st imply that all but Hastings Tower was captured (Fosbrooke 1913, 16). Hastings surrendered in February 1646 (Goodall 2007, 30; Jones 1980, 24) and it was agreed that the castle should be

'sleighted and unfortified' (Fosbrooke 1913, 20). The 'sleighting' was undertaken in 1648 (Fosbrooke 1913, 24), perhaps as a direct result of his participation in the Essex rebellion of that year (Bennett 2008). Slighting processes are poorly understood for most sites, though at Ashby the demolition was undertaken with 'undermining and gunpowder' (Fosbrooke 1913, 24). It is unclear to what extent the present state of the buildings is related to this phase in the site's history.

3.6 The end of the Civil War and beyond

The published histories of the castle and consequently the family's relationship with the site become sketchy after the Civil War. It is recorded that the Hastings family moved to their nearby Donington estate (Anon. 1852, 43; Fosbrooke 1913, 25). That parts of the building complex seem to be roofed and habitable on the 1730 Buck engravings of Ashby may imply some continuity of occupation (e.g. Jones 1980, 24) and references to repairs to the buildings exist from 1724 (Goodall 2007, 30). However, a very poorly understood 80 years remain in the castle's history when at least part of it may have been occupied, including the hall where the medieval windows were replaced. This modification probably occurred sometime after 1645 - when the arms of Francis, second Earl, were recorded in the window glass (Goodall 2007, 5) - presumably because rooms previously available in Hastings' tower were no longer in a suitable state for occupation.

Theophilus Hastings, seventh Earl of Huntingdon, succeeded Ferdinando in 1656 at the age of five and the task of running the impoverished estate fell to his mother, Lady Lucy Hastings (Jeffries 2004). Theophilus was born at Donington Park in 1650 and in his early years apparently lived both there and at Ashby (Patterson 2004). Strangely the 17th-century buildings supposedly built for James I's visit (Fosbrooke 1913, 60) are not shown on the Bucks' engraving of 1730 but are shown on the Grose print of 1759 (Jones 1980, 24). The estate map of 1735 clearly shows the range of buildings adjoined and extending northwards from the castle remains. The adjoining plot of land is marked as 'Place Garden' and it may be possible that the 17th-century range has been erroneously identified with the later Ashby Place, constructed sometime between 1730 and 1735, though Jones (1980, 24) suggests it was built in 1724.

George, eighth Earl of Huntingdon, succeeded his father Theophilus in 1701 (Guerrini 2004). Theophilus, ninth Earl of Huntingdon, ? – 1746 married Selina Shirley in 1728. She managed the practical aspects of his estates whilst being involved in a variety of religious movements (Schlenther 2008). She fell from favour due to her support of the Jacobites and there seems to be no likely context for garden creation at this time (Way 2006, 64). Their son Francis succeeded as earl and he died in 1789. The building know as Ashby Place, built on the site of the manor house, was reputed to be the home of Selina Hastings though how this link was established is unclear (Fosbrooke 1913, 26). The 1735 survey marks Ashby Place as under a different ownership to the re-occupied castle buildings (cf Goodall 2007, 30).

In 1789 the estates passed to Francis, Lord Moira, on the death of the last earl of Huntingdon (Goodall 2007, 31). The castle began to attract attention once more in the earlier part of the 19th century when Ashby featured as the setting of a tournament in Ivanhoe, published around 1819 (Fosbrooke 1913, 26). Fosbrooke suggests that the

publication was the impetus for the restoration of the castle under Francis the first Marquis of Hastings. The novel was a sensation, selling 10,000 copies within two weeks (http://www.walterscott.lib.ed.ac.uk/ works/novels/ivanhoe.html) and had a major impact on the town: the Ivanhoe Bath was built in 1822, an ambitious venture as the water had to be brought in via a five minute train journey (Anon. 1852, 110). Edward Mammatt, Lord Moira's agent, repaired the ruins of the castle to open it as a tourist attraction (Goodall 2007, 31). In 1830, John Mammatt, Edward's son, gained permission to have Ashby Place, then in use as a House of Industry, demolished in order to construct the Ashby Manor now part of the school (Goodall 2007, 31; Fosbrooke 1913, 26).

The history of Ashby during the rest of the 18th century and the beginning of the 19th century is unclear. Jones (1980, 24) mentions preservation works on the ruins and alterations to the chapel. It is not clear whether any of the restoration work affected the garden or garden buildings, though it seems likely. It was noted around 1852 that 'the foundations of a wall connecting the two [garden] buildings was discernible but a few years ago' (Anon. 1852, 66). Fosbrooke (1913) described extensive clearance and restoration works at the start of the 20th century and in 1912 the family were given money for remedial works (NA WORK 14/1191). Alongside these works was the publication of a number of guidebooks to the site and the castle appears to have been a charging visitor attraction by 1913 (Fosbrooke 1913, 26).

3.7 Guardianship

The castle and garden became the responsibility of the Ministry of Works, a predecessor of English Heritage, on 5 April 1932 (Jones 1980, 24) though it remains in the ownership of a descendant of the Hastings family, the Right Honourable Barbara Huddlestone, Countess Loudoun.

Little is known about activity in the garden since it became a guardianship monument but Ministry of Works plans and photographs (NMR PF/AZC and AL0503) document repairs to the buildings and earthworks in this period. It has been stated that repairs using hard cement mortar and cement grout were undertaken in the 1930s and badly eroded masonry was on occasion replaced (Coppack, unpublished, 12). It is interesting to note that the grounds (rather than the castle itself) were not open to the public prior to the guardianship agreement and that the Ministry of Works suggested that it would be beneficial to include them (NA WORK 14/1191). The castle became an English Heritage property in 1984.

4. PREVIOUS ARCHAEOLOGICAL RESEARCH

No modern archaeological investigations had been carried out in the garden area prior to the current programme of research and all but one of the find spots on the Leicestershire Historic Environment Record (MLE4285) refer to locations beyond the modern boundary of the site and add little to the understanding of the landscape. The Leicestershire HER records 'many finds included a key, buckle, spur and dagger' from the castle (MLE4285), whilst the upper stone of a quern was found in a railway cutting in the mid-19th century some 300m to the south of the site (ref. MLE8291) and 'Four sherds of Cisterian/Blackware similar to that produced at Ticknall…. All date AD1550-1600', were found on Castle Track on Upper Church Street (ref. MLE15755) *c.*250m to the north of the site.

Fosbrooke, writing in 1913, states 'within the last few years, excavations have been made on a much larger scale than hitherto, disclosing foundations of walls hitherto unknown' (Fosbrooke 1913, 26) though the tone of the passage hints that the works may have been driven by restoration rather than archaeological interest. It is possible that the 'many finds' from the castle described above were recovered during these excavations. It also implies that there were earlier undocumented excavations at the castle though again their purpose is not clear. Correspondence (NA WORK 14/1318) mentions the discovery of one bronze and one pewter vessel in a well but these excavations were again most likely to have been for clearance rather than archaeological purposes and seem to have taken place immediately after the site became the responsibility of the Ministry of Works in the 1930s.

Measured drawings and plans of the castle buildings were made for management purposes at various points in the 20th century but none of these related to architectural or archaeological research (NMR PF/AZC) and the recent programme of archaeological investigations started from a point of almost no knowledge of any aspect of the garden.

5. PROJECT METHODOLOGY

The project metholodogy comprised a number of different techniques. These are summarised below, along with the details of how the different techniques informed each other. See Appendices 2-5 for more details.

5.1 Analytical earthwork survey

The analytical survey of the garden remains involved a detailed measured survey of the earthworks and basic descriptions of the garden buildings and remaining stretches of garden wall (Figure 6).

The survey was undertaken at 1:500 scale using both electronic and graphical techniques. All earthworks and structures within the garden were recorded regardless of their assumed date or function. Aerial photographs from the National Monuments Record were also examined and walk-over survey was conducted of the surrounding landscape in order to examine the landscape context for the garden remains. See Appendix 2 for the full survey methodology.

5.2 Geophysical survey

Two geophysical techniques were employed: magnetometry survey to try and identify the buried remains of brick-built structures within the garden and earth resistance survey to try and identify differences in moisture content that might be present in paths or planting beds (Figures 7 and 8). Both techniques were applied across the site except where physically impossible due to the steepness of the earthworks or the presence of services. See Appendix 3 for full details of the methodology and results.

5.3 Coring

Twelve cores were taken across the site to determine the basic stratigraphy of the garden (Figure 9). Limited knowledge of the buried services constrained the work to areas well away from the existing buildings. Each hole was drilled, photographed and recorded.

Holes 1, 2 and 3 were positioned to examine the stratigraphy at the bottom of the southern section of the eastern sunken garden.

Holes 4, 5 and 6 were drilled to explore the stratigraphy of the terraced walkway separating the two main sunken areas of the garden.

Holes 7, 8, 9 and 12 were planned to test the theory that the original (pre-garden) buried surface might be preserved across the site (as Cores 4, 5 and 6 suggested) by examining the terraced walkways on the south and west sides of the garden.

Holes 10 and 11 were drilled to look for any major differences to explain the large rectilinear resistance anomaly discovered by geophysical survey in the western sunken area (see Figure 7 [R9]).

See Appendix 4 for full details of the methodology and results.

5.4 Excavation

The results of the earthwork, geophysical and coring surveys influenced the location the evaluation trenches within the garden. The number of trenches was limited to three as the garden lies within the castle's scheduled area. The excavation aimed to:

- Evaluate the strong geophysical anomalies detected on the floor of both sunken areas of the garden.
- Determine the form and linings of the sunken areas in the garden.
- Investigate the evidence for a small building or fountain in the break in the east-west terrace that divides the eastern sunken area into two.
- Investigate the apparent remodelling of the north edge of the eastern sunken area.
- To investigate the multiple, linear geophysical responses along the south edge of the garden, which may represent walls (including the main garden enclosure wall) and/or terracing.

The trenches were located as follows:

Trench 1 - This L-shaped trench ran across the western sunken area and through the southern terraced walkway. It was designed to examine a number of geophysical anomalies including the rectangular area of low earth resistance thought likely to be the footings of a building, as well as the linear low earth resistance anomaly R9 and positive magnetic anomaly M9 (see Figures 7 and 8) and to investigate the possibility of the western sunken area having originally had a dividing causeway similar to the eastern area.

The southern extension of Trench 1 was excavated to clarify the nature of the multiple, linear geophysical responses running between the towers along the south edge of the garden, thought to represent walls (including the main garden enclosure wall) and/or terracing.

Trench 2 - This L-shaped trench was positioned in the southern half of the eastern sunken area and was intended to help identify the reason for the break in the dividing walkway, perhaps a demolished garden building or a fountain, as suggested in the earthwork survey (see Figure 6). The return of Trench 2 was intended to define the geophysical anomalies R6, R7 and M11 (see Figures 7 and 8) which were thought to be indicative of construction or infilling processes, possibly with brick material or small quantities of ironwork.

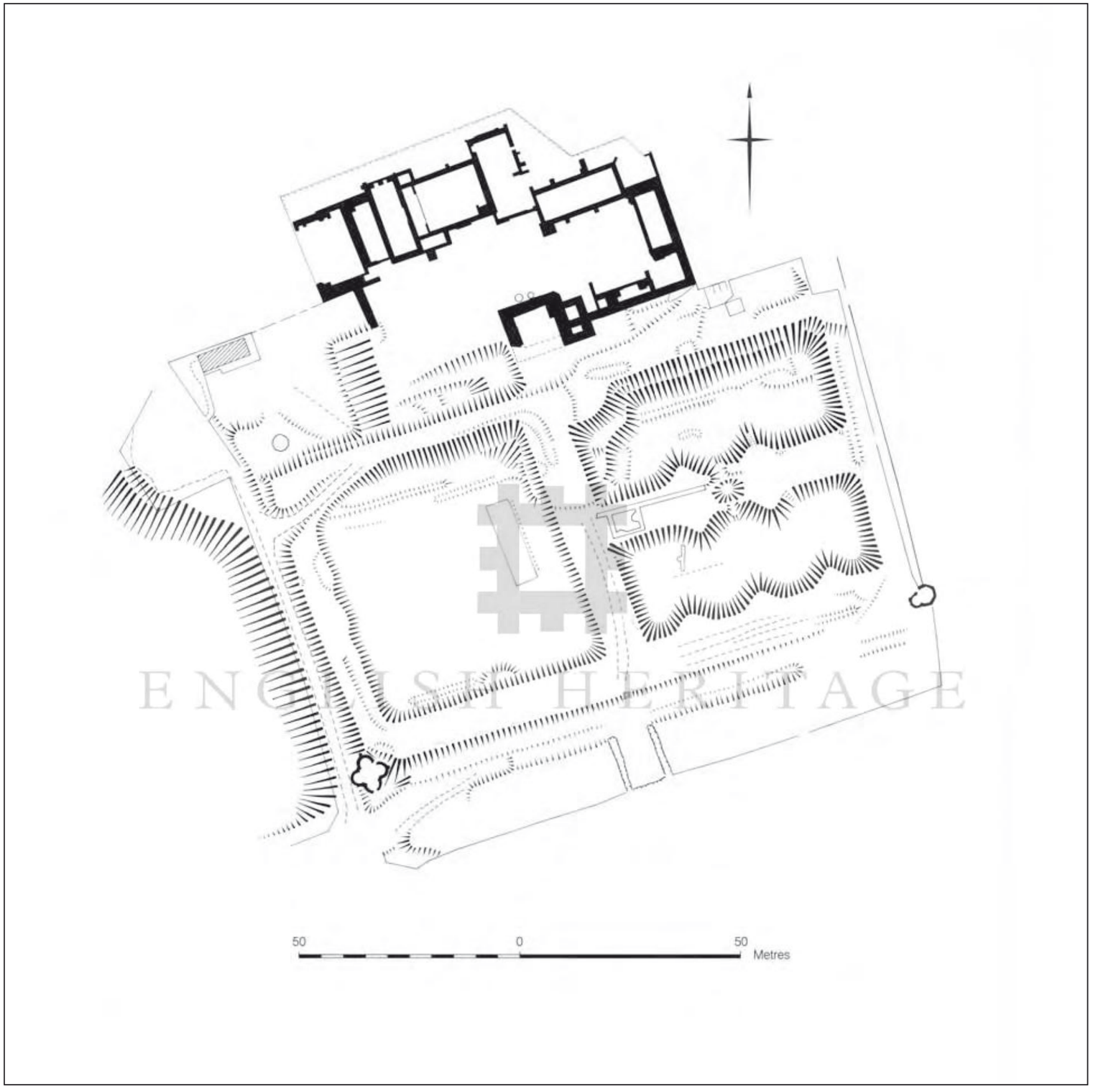


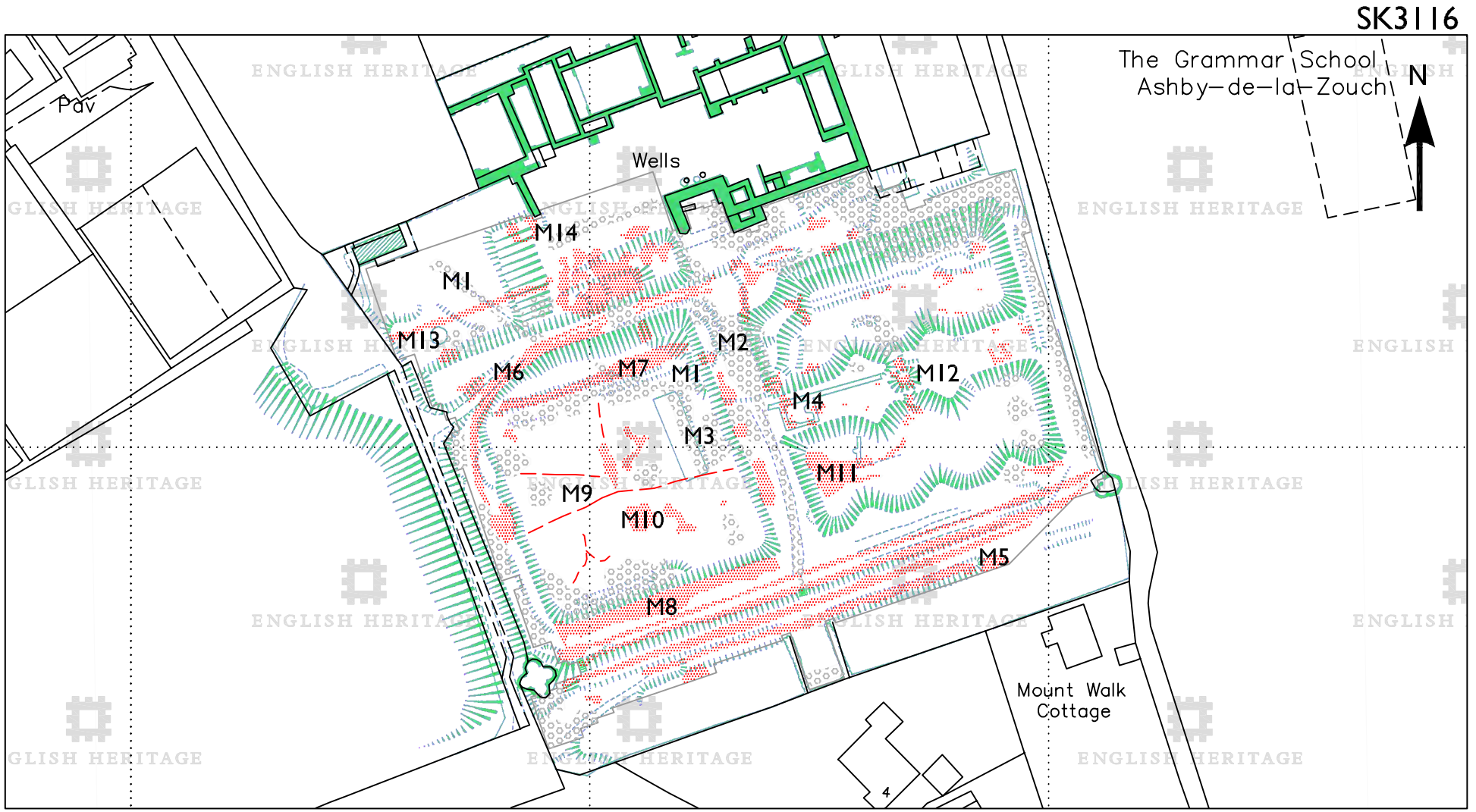
Figure 6: Analytical earthwork survey at 1:1000 scale

(Drawing by Deborah Cunliffe)

ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE

Figure 7

Graphical Summary of Significant Magnetometer Anomalies, April 2006



Positive Magnetic Anomaly

Tentative Positive Magnetic Anomaly

Area of Magnetic Noise

Earthwork survey

0 60m

1:1250

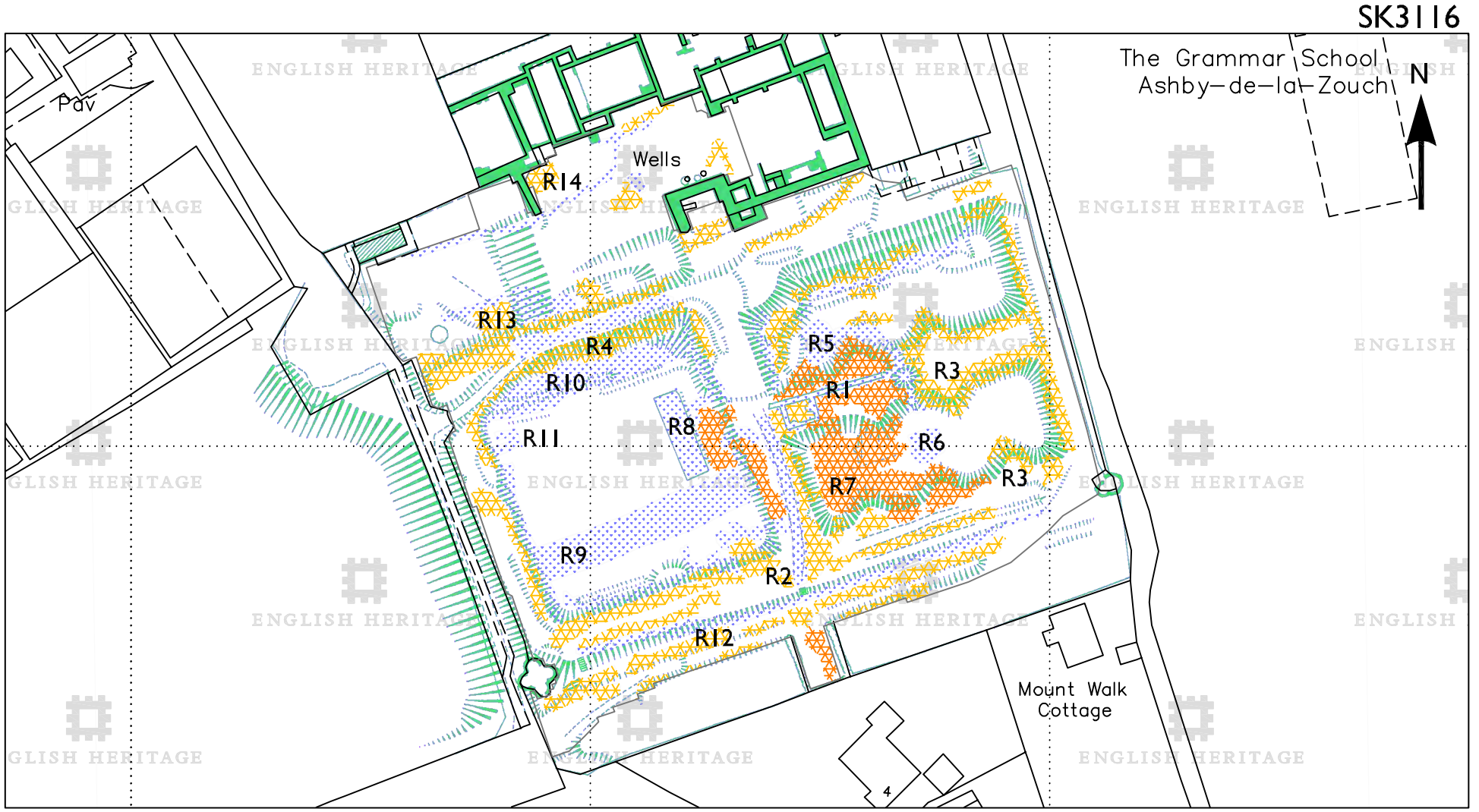
Geophysics Team 2008.

ENGLISH HERITAGE

ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE

Figure 8

Graphical Summary of Significant Earth Resistance Anomalies, April 2006



Geophysics Team 2008.

Very High Earth Resistance Anomaly

High Earth Resistance Anomaly

Low Earth Resistance Anomaly

Earthwork survey

0 60m

1:1250

ENGLISH HERITAGE

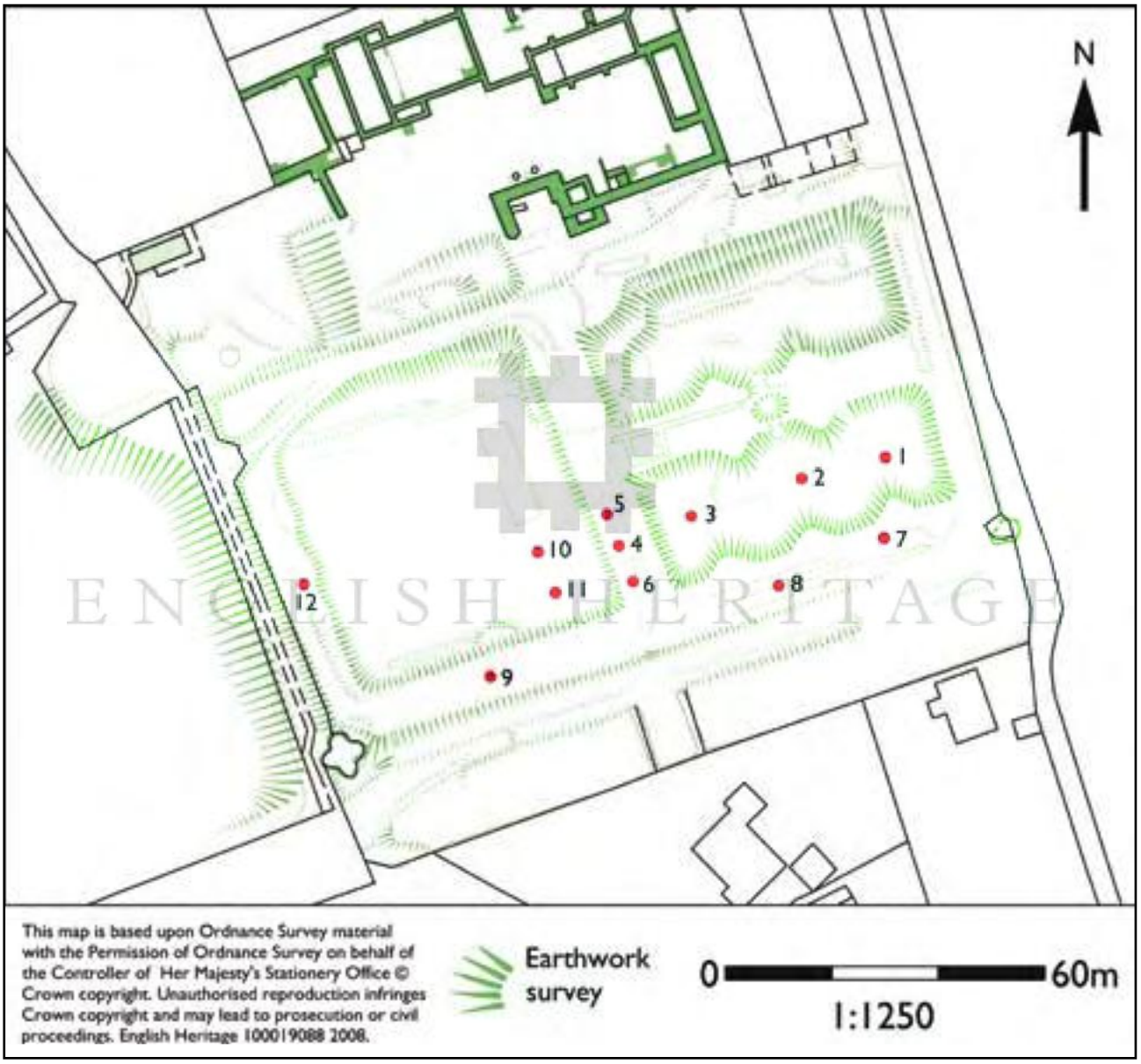


Figure 9: Core locations (not to scale)

Trench 3 - Located on the northern terrace, this trench was designed to investigate the apparent remodelling of the north edge of the eastern sunken compartment as well as the original make up of the sunken area earthwork.

The archaeological excavation recorded the location, extent, date range, character and function of all the archaeological features and deposits encountered within the excavation area. All the excavations were undertaken by hand as no vehicles or motorised machinery were allowed on site due to the delicate and uneven state of the ground surface. See Appendix 5 for further details on methodology and results.

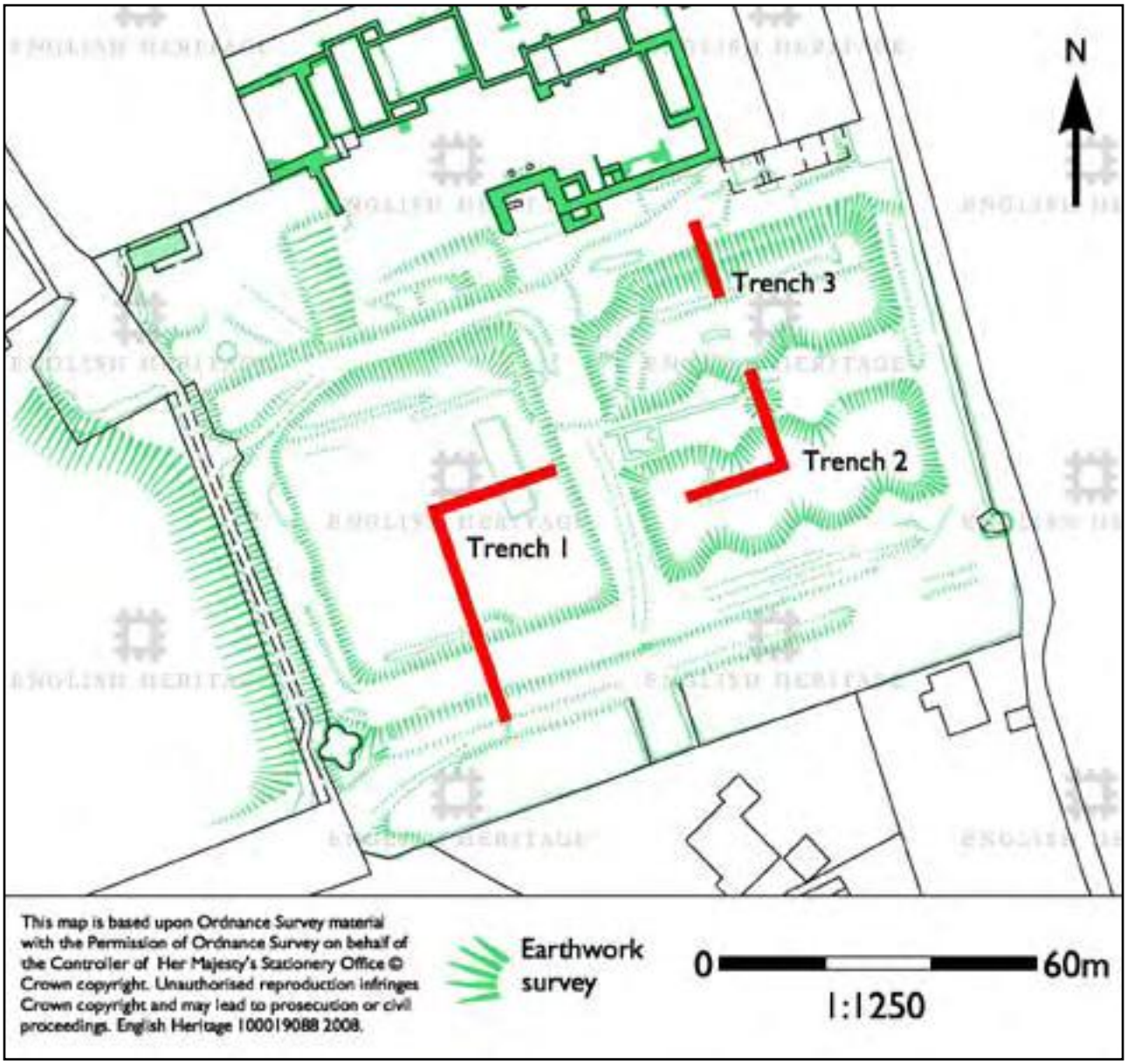


Figure 10: Trench locations

5.5 Documentary research

The documentary research for the project had three strands. The first was the examination of secondary sources undertaken by the archaeological teams in order to contextualise the surveys and excavations. The second was research undertaken by John Goodall on primary sources focused on the castle buildings in particular, but also noting references relating to the garden and park. This included a rapid appraisal of the Hastings papers in the Huntington library in California. The third was the research undertaken by specialist garden historian Twigs Way into the documentary references to the garden, its context and comparative gardens of the period (Way 2006).

6. DESCRIPTION AND RESULTS

6.1 The wider garden landscape

Whilst most of the archaeological investigations were restricted to the modern garden area immediately adjacent to the castle, the analytical survey and historical research also examined the wider landscape in order to understand the context of the garden remains and their relationship to other landscape elements.

The castle garden was set into an existing landscape that comprised deer parks, a warren, fishponds and mills (Way 2006, 17). Numerous examples exist of 14th-century designed landscapes associated with high status houses, such as Framlingham and Bodiam (Way 2006, 21), and even in the period that the Zouches owned the castle, a designed landscape demonstrating the power of the owners to the local community and beyond may have been present at Ashby. In the 14th century it is recorded that the manor had three mills, a park of 60 acres and a dovecote, despite the assertion that the manor was worth very little at this time (Way 2006, 18). The Zouches were probably aware of early designed landscapes, such as at Kenilworth, and another branch of the family was involved in landscaping in this period, at Harrington in Northamptonshire (Way 2006, 18). Whorlton Castle in North Yorkshire has been noted as being particularly comparable to the probable layout at Ashby (Way 2006, 21).

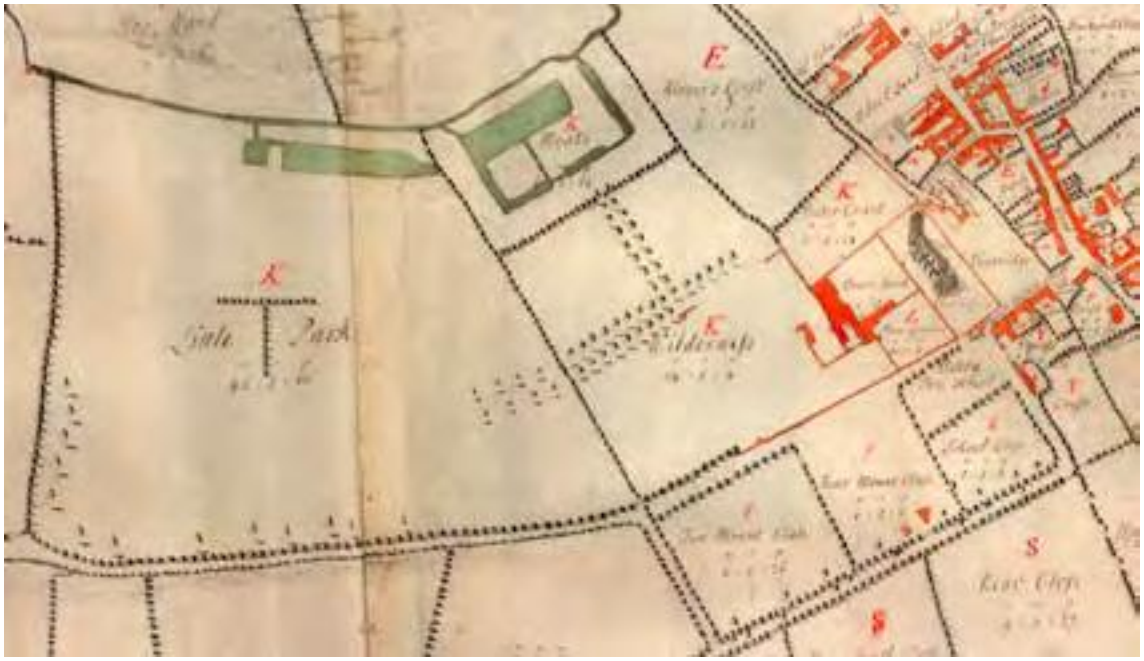


Figure 11: 1735 estate map by William Gardiner (Reproduced with kind permission of Leicestershire, Leicester and Rutland Record Office DG 30/Ma/249/1) NB North is to the right.

Cantor (1983, 10) states that on the death of Alan la Zouche in 1347 it was recorded that there was 'a rabbit warren, surrounded by a ditch, and two fishponds'. The geometric pond complex recorded on Gardiner's estate map of 1735 (see Figure 11) may have been the location of the warren and ponds mentioned by Cantor, views of would have been afforded from the site of the manor, but with later elaboration as they are clearly an

integrated element of the later formal landscape depicted on the map.

The infilled remains of these ponds are visible as earthworks and swampy vegetation on the Bath Recreation Grounds. Their nature and extent might be untangled by detailed survey (P Pattison, pers comm) and they have the potential to preserve archaeological deposits. The ponds and the other elements of the medieval manorial landscape potentially influenced the laying out of the later gardens.

The boundary of the pre-Hastings park mentioned by Cantor (1983, 10) is not clear from the documentary sources but interestingly the areas marked as 'Little Park', 'Wilderness' and 'Moats' on the Gardiner estate survey of 1735 add up to just over 60 acres (Figure 11) and encompass the area to the south of the castle between the Gilwiskaw Brook and Mount Walk / Packington Lane. Therefore the park of 60 acres mentioned in the 14th century may equate with the later 'Little Park', with an area taken out to create the formal garden (Way 2006, 63).

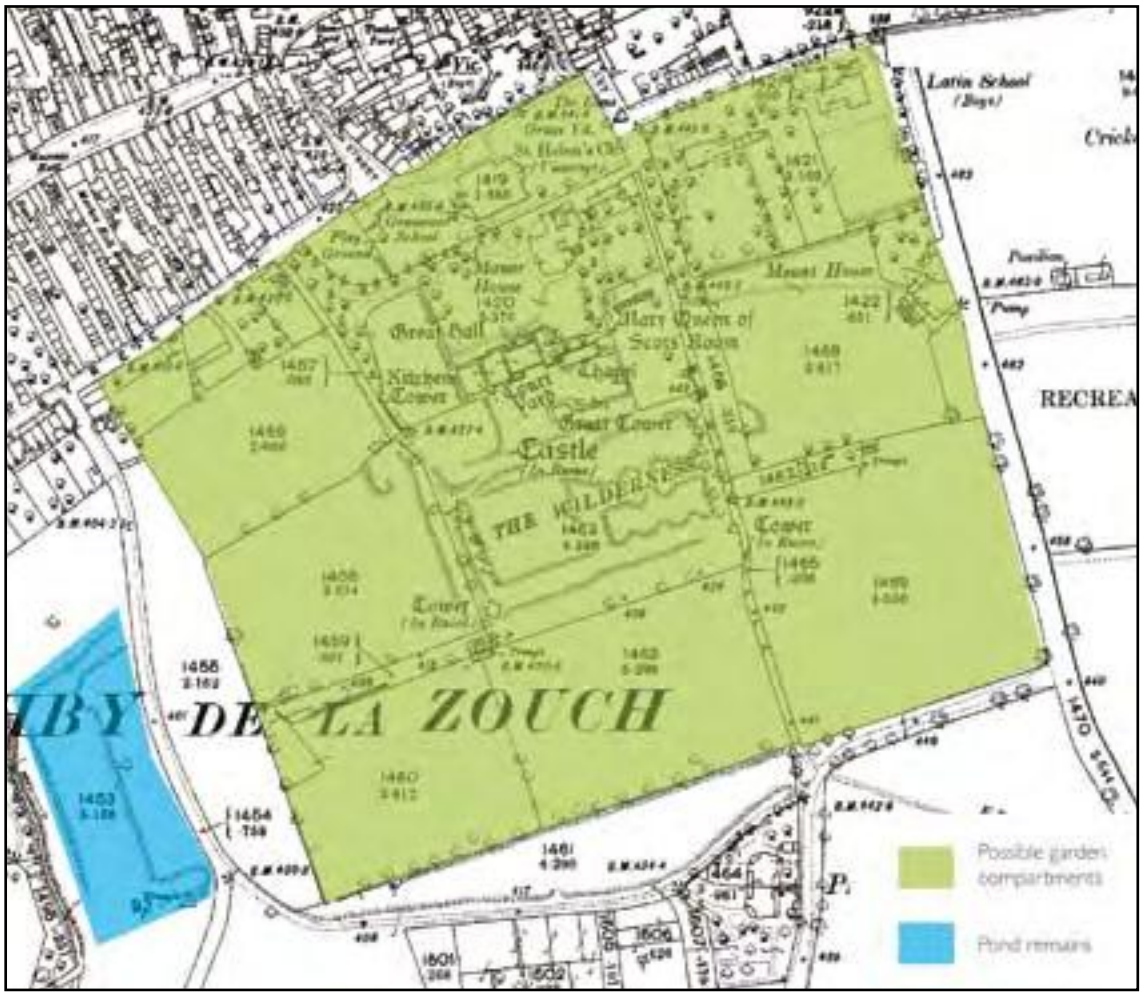


Figure 12: 1883 map showing the possible formal garden compartments surrounding the castle and the earthwork remains of the geometric ponds to the west. Reproduced from the 1883 Ordnance Survey map (1st Edition 25 inch).

Mount Walk is a narrow lane that runs roughly north to south along the eastern side of the church and castle garden towards the village of Packington, apparently cutting through the middle of the later formal garden compartments (Figure 12). It seems unlikely that a public track would have run through the later garden, though the asymmetrical nature of the eastern garden compartment suggests that the route existed prior to the garden's creation and somehow constrained its layout. Gardiner's survey of 1735 (Figure 11) appears to show that the lane may have been diverted further to the east along what is now Leicester Road, perhaps when William Hastings developed the site or when the formal garden compartments were first laid out.

Figure 13: The castle and surrounding landscape in 1951. Very regular ridges (A) are visible in the compartment to the south-west of the castle garden, whilst slightly less regular ridge and furrow, presumably relating to medieval pre-emparkment cultivation can be seen curving across fields to the south (B). At point (C) this ridge and furrow appears to either respect or is truncated by the southern boundary of the formal gardens. All these areas have been levelled or built over. (RAF 540/630 4076 12-NOV-1951 English Heritage (NMR) RAF Photography)

Aerial photographs from the 1940s and 1950s show broad ridge and furrow cultivation curving across fields to the south of the formal garden (see Figure 13), but within the area named as 'Little Park' on the 1735 survey map. This suggests that the area was

cultivated prior to the creation of the Little Park which occurred in either the 14th century as suggest above or at the time of William Hastings' developments. In one area the ridges either respect the southern boundary of the formal garden or are truncated by it, the latter option being the more likely as it also suggests the area was in open arable cultivation before the medieval park was created.

It is also worth noting that the 1735 Gardiner estate survey appears to show a very clear landscape block, defined by curving boundaries that seem to suggest former parkland, extending southwards beyond the boundary of the Little Park, also noted by Way (2006, 76). Nichols (1804, 7) states that the town lies between 'three parks, Prestop Park, the Great Park (commonly called Ashby Old Park), and the Little Park, which last was the homestead to the castle'. Way (2006, 49) notes that in 1622 Burton depicts the Great Park as lying to the north of the town and Prestop Park lying to the west. These two parks are still identified by modern place names and park boundaries can still be identified either in curving fossilied field boundaries or by the limits of the strip fields seen on historic maps, though less so for Prestop Park (see Ordnance Survey 6 inch 1st edition maps dated 1885 and 1888; Figure 14). The map evidence appears to suggest that the Little Park was extended, perhaps around the time William Hastings received his licence to empark.

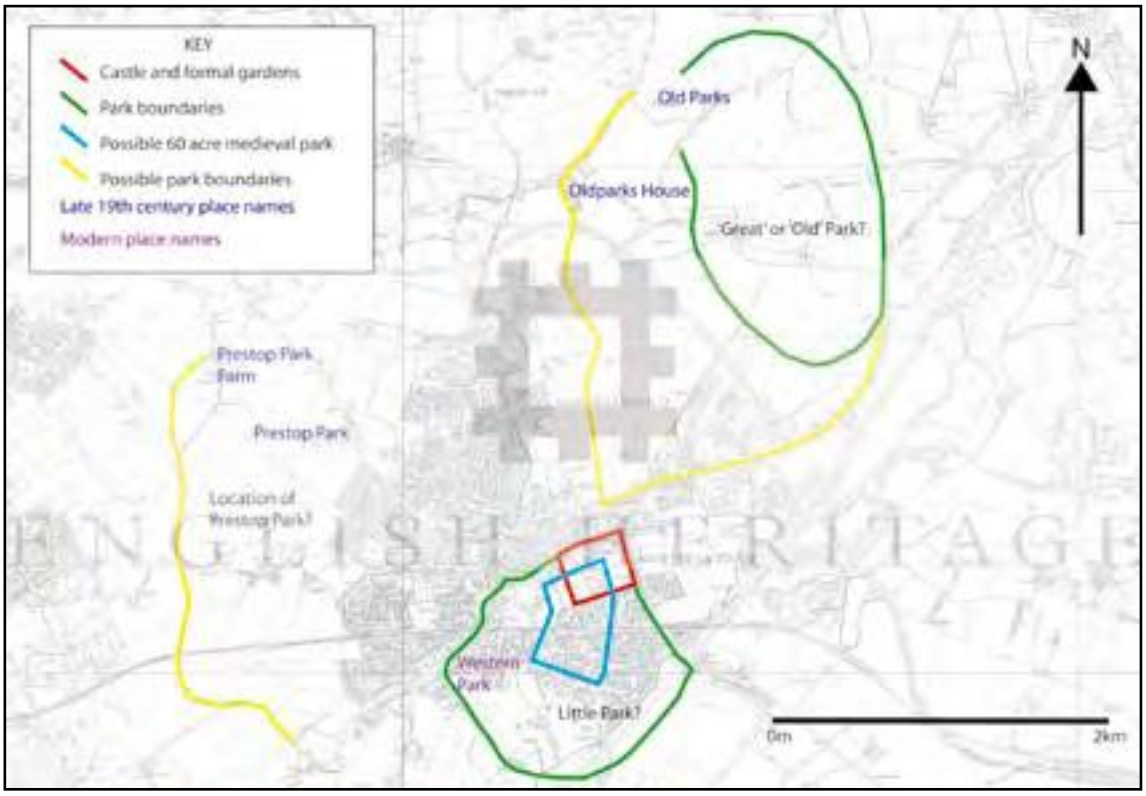


Figure 14: Parks associated with Ashby castle, as visible in 18th- and 19th-century field boundaries, including of park of approximately 340 acres extending to the south of the castle.

However, the use of the name 'Ashby Old Park' for the 'Great Park' might suggest that the 60 acre medieval park was on the north side of the town and that the relict cultivation ridges do date from the period of William Hastings' major park expansion.

When William Hastings took possession of Ashby in the mid-15th century there was already a manorial landscape, probably including a park adjacent to the castle. A 1467 reference to the 'magni gardini prope manerium' – 'the great gardens near the manor house' suggests gardens existed at Ashby before Hastings began his remodelling of the house in 1474 (Way 2006, 29; J Goodall, pers comm), though these are not mentioned directly in papers relating to Hastings's changes (Way 2006, 31). However it is likely that the 'great garden' was at least in part if not wholly a Hastings creation. A similar architectural development at Ralph, Lord Cromwell's house at Tattershall, also in the late 15th century, involved a significant amount of landscaping including the creation of a pleasance (Way 2006, 38). In addition, large windows on both the parlour above the kitchen and Hastings' tower suggest the existence of an aesthetically pleasing and symbolically imbued garden or landscape beyond.

16th-century references to the gardens at Ashby are sketchy (based on Way 2006) but in the early 17th century there are references to the 1607 masque and to gardeners, indicating that there was a garden at this date. Prior to that, in 1596, 'the little turret on the east side of the garden' is mentioned in an inventory of the belongings of the late Henry third Earl of Huntingdon (original thought to be in Huntington Library). In 1616 there are records of the sealing and wainscoting of the garden turret. The term 'Wilderness' was first recorded in 1615 (HAM Box 55) and gates and locks are bought for the garden and the Wilderness, suggesting that the names defined two different areas of the garden at this time, though by 1883 the 'Wilderness' appears to only refer to the walled garden (Figure 12). The early 17th-century 'wilderness' was probably located in one of the compartments to the south of the sunken garden.

Despite the existence of these references to the garden, its nature and extent remains unclear and we can only infer the former garden layout from map evidence and the physical remains within the surrounding landscape. The brief survey of the Hastings' papers in the Huntington Library revealed that all maps had been removed from the collection prior to their deposition (J Goodall, pers comm). Nevertheless, other Tudor gardens, known from earthwork remains or documentary evidence, suggest that the garden was one piece of a much larger formal landscape. The two standing garden buildings also imply access from the sunken garden, presumably into further garden compartments.

The earliest map to show any details of the garden layout is the 1735 survey by Gardiner (Figure 11). It depicts the two garden buildings at the end of the terrace and the remains of the walled enclosure on the western and eastern side of the garden. It also shows elements of the designed landscape extending beyond the area of the existing garden, including avenues of trees dividing up the land closest to the castle into roughly equal sized compartments, most of which survived long enough to become fossilized in the late 19th-century field boundaries (Figure 12). The series of geometrically-shaped ponds to the west of the castle are also depicted, marked 'moats'. Though they may have earlier origins (see above), their orientation and the tree avenue leading to the ponds from the sunken garden demonstrate that they were an integral part of the castle's 16th- or 17th-century designed landscape. Interestingly the 1735 map (Figure 11) shows the wall of the garden extending southwards down Mount Walk past the eastern garden building. This may be evidence for the laying out of the formal garden compartments as one scheme

rather than in a piecemeal fashion. It is also worth noting that the map shows a tree avenue heading for south-east corner of the Little Park to a kink in Packington Lane, suggesting access to the castle from the south was through the formal garden.

Evidence of these formal garden compartments is still visible on the ground, particularly in the area to the west of the present garden. This includes the continuation southwards of the terrace to the west of the sunken garden, beyond the current southern boundary of the site, and the terrace that runs westwards from the western garden building towards the ponds, shown on the 1735 map as the avenue of trees mentioned above (Figure 11 and 15). Aerial photographs taken in the 1940s and 1950s show that the compartment to the south-west of the castle garden may have been an orchard or may have supported trees in a 'wilderness'. Though now levelled, the photographs show broad ridges running parallel with the boundaries of the compartment indicating that they are unlikely to relate to medieval cultivation and are contemporary with or later than the compartment within which they are enclosed (Figure 13). There are documentary references to the planting of fruit trees in the early 17th century in the Hastings' papers but it is not clear whether these relate to Ashby or Donington (Way 2006, 48). Alternatively the ridges may represent more recent efforts to drain the area.

Figure 15: View eastwards along the terrace between the western garden building and the ornamental ponds, marked on Gardiner's 1735 survey as a tree-lined avenue.

A final potential element of the wider garden landscape is Mount House, described in its Listed Building description (187618) as 15th or 16th century. It is a low triangular, two-storey sandstone building with a flat roof and equal sides, measuring 36ft (Fosbrooke 1913, 43) though now much extended. Jones (1980, 21-22) states it was built in 1644, according to a contemporary diary, as a fortified outpost and garrison in order to separate the Irish and English troops. In Hextall's history of Ashby de la Zouch (1852) a letter written by a Parliamentarian mentions tunnels between each 'fort' at Ashby and

how the garrison have 'lately made a new fort, a very strong work, and it is called the Irish fort' (1852, 35). The history notes that the fort is probably Mount House.

It seems unlikely, however, that the 'Irish fort' was Mount House or that Mount House was built during the Civil War. The construction of a substantial two-storey blockhouse of this nature during the Civil War is unknown (P Pattison, pers comm; Harrington 2004) and earthwork and timber bastioned defences were favoured. A triangular building would have given narrow fields of fire and three large blind-spots. Furthermore the building has no loops, embrasures or flanking capability. However the earthwork visible around the fort on the Bucks' 1730 engraving (Figure 16) *may* be the remains of temporary earthen defences built during the conflict (Jones 1980, 23). Mount House may have only been new to the Parliamentarian that described.

Figure 16: Detail of Mount House from an engraving by Samuel and Nathaniel Buck (1730).

As Goodall (2007, 30) has pointed out it is also unclear why this building was left standing when Hastings' tower and the other town defences were slighted after the end of the war. Other triangular buildings in Britain were intended to convey a message rather than be defensible, such as Rushton Triangular Lodge, built 1593 – 1597 to symbolise the Catholicism of its owner. The sandstone construction of Mount House does suggest that it relates to the same period that saw Hastings' Tower built in the late 1400s. If indeed there was a long tunnel stretching from Mount House back to castle it also seems likely that the two structures may have been contemporary. It might have been some form of hunting stand or lodge with viewing platform, as constructed in the late 13th century by some of the Zouchs' relatives at Harrington (Way 2006, 19). However it does not afford the most commanding views of the Little Park and some larger windows might be expected. Though Cantor (1983, 10) implies the warren with surrounding ditch was related to the ponds (and the 1735 survey could be interpreted as supporting this) this is an assumption. An alternative interpretation may be as a warreners' lodge sited to make a visual impact as people travelled along the Leicester Road. Grand 15th-century warren lodges, such as at Thetford, are well documented, though the 33ft triangular lodge at Rushton was not built until the 1590s (Williamson 2006). Whether Mount House dates from the 15th century or the Tudor period it is clear that Packington Lane had been diverted along Leicester Road by the time the structure was built, bringing this area of land within the castle's immediate domain.

6. 2 16th- and early 17th-century garden

6.2.1 The garden

The garden and its associated buildings are located directly to the south of the main living compartments of the castle and were clearly meant to be viewed from Hastings' Tower (Figure 1). The garden is located on a gently sloping artificial terrace, approximately 135m by 91m, created by both the cutting in and building up of earth in order to provide a relatively level surface from the natural topography, which slopes gently down to the south and west (Figure 17). This construction method was clearly demonstrated by the coring and excavations (see Appendices 3 and 5). The gentle slope of the terrace may have been retained to complement the symmetry of the pre-existing castle buildings already constructed to compensate for the sloping ground. The terrace is defined by scarps dropping down to the west and south with the castle remains to the north. On the southern and western sides the now demolished garden wall probably served to revet the terrace, as demonstrated by the excavations in Trench 1 (see Section 6.2.2). The eastern side of the terrace is bounded by a brick wall which contains fabric of the earlier, original, garden wall. This wall probably defined further garden compartments to the east.

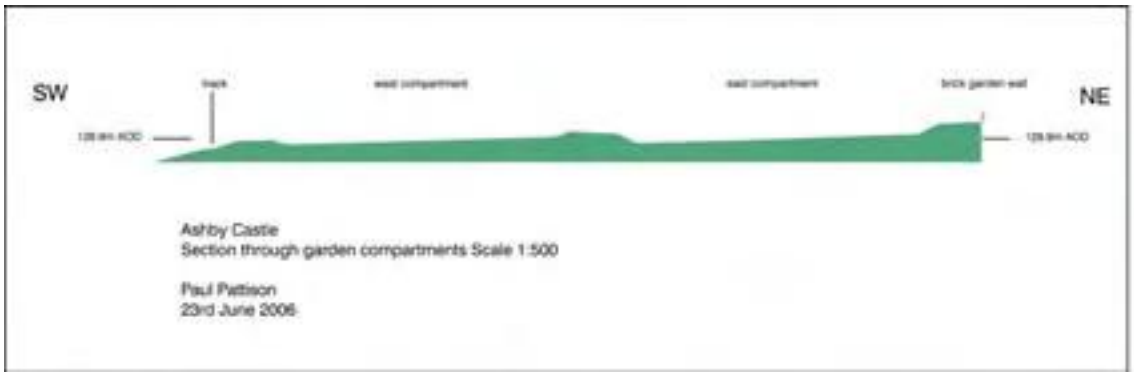


Figure 17: East-west profile through the garden terrace – not to scale.

Cores taken across the terrace suggest a dramatic remodelling of the land surface was necessary in some areas to create the garden (see Appendix 3). The east sunken garden was cut through the pre-garden surface or earlier garden (recorded in the excavations as a layer of greyish-brown silty, sandy clay in all three trenches and perhaps as the old land surface initially identified in the cores taken from the central causeway). In Trenches 2 and 3 this layer contained 15th/16th- and 13th/14th-century pottery respectively and in both cases was cut by garden features (see Appendix 5, p 107). Cores taken from the southern and western walkways contained much disturbance suggesting that the landscape in these areas was completely remodelled before, though perhaps only immediately before, the walkways were constructed. However the excavations identified an earlier land surface or garden preparation layer beneath the wall in Trench 1 (see Appendices 3 and 5) which was not identified in the cores from this area. Remodelling could have taken place at the time the walls and the garden buildings were constructed and it is not surprising that the areas where the effects of the natural slope are greatest saw the most dramatic reworking.

The amount of brick in some of the cores taken through the walkways (see Appendix 3) suggests that some of the material used to build up the garden terrace came from the sunken garden areas themselves after the walls and garden buildings were constructed or that the banks were reshaped after the wall's partial demolition. In Trench 1 material piled against the garden wall to create the terrace contained 15th- and 16th-century pottery and possible charred wood related to garden clearance, whilst the material dumped against the outside of the wall contained late medieval rubbish including pottery and animal bone. The final layer on top of the terrace deposits contained 16th-century pottery and a clay tobacco pipe stem of 1610 to 1710. The stem may suggest that the bank was renewed at some point in the 17th century though it could easily be intrusive (see Appendix 5, p. 108, 148). A phase of renewal is also suggested by the recovery of a Nuremburg jeton dating to 1586-1635 from the top layers of the terrace (Figure 18). Well-preserved charred plant remains also came from this context, again suggesting clearance for a redesign of the garden rather than its establishment (see Appendix 5, p. 148) especially considering the wall and bank had already been constructed. However it has been noted that the precise nature of this layer cannot be ascertained due to the limited nature of the excavation (B Dix, pers comm). The fact that one of the highest deposits on the bank (from a ditch) contained late 15th- and 16th-century pottery highlights the perils of potential residual finds within garden features constructed with material from unknown locations.

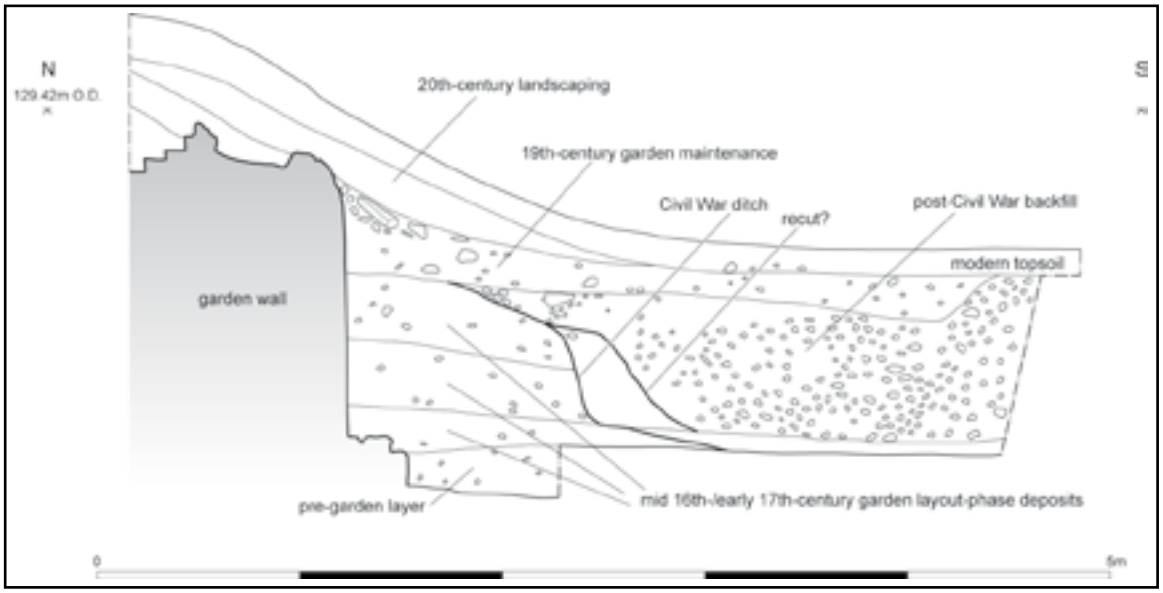


Figure 18: Section from southern end of Trench 1 showing terrace deposits piled up against the garden wall (see Appendix 5 for more details).

Sunken gardens

The two sunken gardens, both roughly 50m square, are separated by a terraced walkway approximately 9m wide which extends south from Hastings' Tower. It is worth noting that though the walkway is clearly laid out on the same axis as the tower, it does not approach it directly but is off-set slightly to the west (see Figure 6). This layout may have been influenced by an already existing door into the tower or by a high-level oriel window similar those surviving on its northern elevation. Space between the sunken areas and the terrace edges (i.e. where the garden wall was located) allows

for a walkway of roughly 8m wide around the edge of the whole garden. Both the geophysical surveys and the excavations revealed evidence for possible drains and path surfaces on the terrace to the south of the western sunken garden (see Appendix 4 and 5). High readings from the earth resistance survey suggest that the sides of both sunken gardens may have been reinforced with compacted stone or similar material (see Figure 8 and Appendix 4) though this is not evident in some areas, particularly on the north side of the eastern garden which is likely to have been damaged during or after the Civil War.

Western sunken garden

The western garden consists of a square sunken area, measuring 57m by 52m, with sloping sides surrounded by terraced walkways (Figure 19). The sunken area varies between 0.8m and 1.1m in depth and there is a drop in height of roughly 1.4m from north-east to south-west, echoing the natural slope.

Figure 19: Western sunken garden

The presence of a silty 'pre-garden' layer at the lowest level in the southern end of Trench 1, as well as the coring results, suggests huge amounts of earth were piled up against the garden wall to construct the walkways, at least on the southern and western sides. The responses from the magnetometry survey (see Figure 7 and Appendix 4) indicated that there may be buried brick foundations, perhaps for a revetment wall, at the northern side though the anomaly appears to respect the north-western corner of the sunken area (modified by a modern vehicle access) perhaps suggesting the sub-surface feature post-dates the relatively modern entrance into the garden from the western

side. Unlike the eastern garden, the sides of this compartment are generally smooth. Undulations on the western side, as well as a slight earthwork fan in the centre of the southern side, were initially interpreted as remains of spurs similar to those in the eastern garden, but no evidence for this was found on excavation of Trench 1 (see Appendix 5).

Internal features within western sunken garden

Within the garden a number of internal features are visible as surface earthworks but the survey and excavations suggest that these are all likely to belong to later garden phases (see Section 6.4). The earth resistance and magnetometer surveys suggested some linear anomalies but none that could be confidently attributed to garden features such as paths, beds or other dividing walkways (see Appendix 4).

Excavations within the western sunken garden were limited to 11.5m at the eastern end of Trench 1. At the level expected for natural ground two layers of coloured sandstone were recorded. The more recent layer consisted of bands of pink, purple, yellow and orange sandstone, which, although being plausibly natural, had the appearance of being laid in the form of a pattern. It is possible that the sandstone bands could represent the remains of an emblematic garden which used 'non-plant material to create a pattern of some meaning or relevance to the Hastings family or their visitors' (Way 2006, 24). However these colours *are* naturally occurring and the excavations were too limited to make a confident interpretation. These coloured sandstone layers were bordered by a low terrace of sandstone fragments topped with white clay that may have run around the edge of the sunken area (see Appendix 5, p. 110; Plate 2). Other features excavated in Trench 1 relate to the late 17th- and 18th-century use of the garden (see section 6.4.1).

Function of western sunken garden

The western sunken garden has been known as the 'Bowling Green' (Jones 1980, 21) but this tradition may have been started by Fosbrooke (1913, 42) who quotes John Mackay in around 1720 saying that the inhabitants of Ashby play bowls on the only green in the area and then equates it with the western sunken garden. Whilst the bowling green described above is likely to have been at the castle, it was not necessarily located in the western sunken garden and may not explain the original form of this area. Tudor bowling appears to have taken place in narrow alleys (see Thurley 1993, 188-190), rather than on greens, as seen at William Cecil's house on the Strand and in Lord Burghley's sketch of Theobalds (Henderson 2005, 10; 86). The area may have been used as a bowling green at a later date when greens became more fashionable. The significant slope may also suggest that bowls was an unlikely pastime in this part of the garden.

Eastern sunken garden

The eastern sunken garden is slightly larger than its western counterpart, measuring approximately 58m by 59m. It is divided into two roughly equal-sized sections by a terraced walkway which runs west to east across its centre (Figure 20). The walkway is approximately 9m wide (the same width as the main walkway which divides the two garden compartments), apart from where it widens towards the centre due to the spurred design.

Figure 20: Eastern sunken garden.

An oval hollow, roughly 7m by 5m, is located in the centre of the walkway halfway along its length. The area surrounding the hollow, including the main scarps, has been cut by an early 20th-century gravel path, identified during the excavations, and later modern tracks. Excavation of Trench 2 revealed the foundations of a third red-brick structure (see Appendix 5) in this hollow. It was inserted into the walkway and may have facilitated access into the sunken areas via a stair (see Section 6.2.2 for further details on the structure itself). The excavated evidence suggests that the walkways in this area were created by both the cutting in and piling up material. Vegetation marks and geophysical anomalies on the western portion of the walkway appear to relate to relatively modern activity (see Section 6.4).

Southern section

The southern section of the eastern sunken garden consists of a rectangular hollow measuring approximately 57m by 23.5m and ranging from 1.6m to 1.8m in depth. There is a change in level from one end of the base to the other of 1.6m from east to west due to the sloping ground surface. The southern and northern sides of the sunken area are formed in a geometric design of inter-linking spurs which appears to have been mirrored in the northern section of the compartment. The excavation of Trench 2 demonstrated that the smooth shape of the spurs may reflect relatively modern maintenance and repair. The line of a drain cut through the layer of the silty loam at the bottom of one of the spurs suggested that they were originally much more angular, as the 1730 Buck engraving suggests (Jones 1980, 22). The drain was filled with sandstone blocks and contained a

dark silt perhaps from run-off from the spur (see Figure 21 and Appendix 5).

The excavation of Trench 2 also revealed more information about how the sunken area was created. The bottom 0.5m of the spur was cut out of the natural sandstone and then, at the western end at least, the ground was raised, with some of the material being deposited before the garden building was inserted (see Appendix 5, p. 110). This may have been to create a level surface or to introduce topsoil. It seems that the drain around the bottom of the spur was covered by these layers, which contained 16th- and 17th-century pottery, and was not intended to be seen. 17th- and 18th-century material in these layers, including pipe stems, was thought to be intrusive. This area of the enclosed garden appears to be the least altered by later garden phases and the few internal features within this section of the compartment probably reflect modern activity on the site (see Section 6.4).

Figure 21: The drain excavated in Trench 2 suggesting that the spurs were originally more angular.

Northern section

The northern section of this compartment is slightly larger and slightly deeper than the southern section (measuring approximately 60m by 26m), highlighting the sub-square nature of the eastern sunken garden as it widens slightly to the north. The sunken area varies between 1.9m and 2.1m in depth and there is a change in the level of the base of 1.4m from east to west. On the southern scarp, spurs mirroring those in the southern section are visible, but this does not appear to have been repeated on the northern side where excavation of Trench 3 revealed a 6m wide ditch, with a small bank to its north, that enhanced the natural slope in front of the castle buildings (see Appendix 5, p. 111). It

is not clear whether this ditch was part of the garden layout but pottery recovered from its natural siltings dates to the 16th century suggesting it may have been incorporated rather than backfilled when the garden was laid out. Rather than being a defensive 'rampart' it may be the earliest identified example of landscaping within the sunken garden, perhaps excavated to enhance the setting of Hastings' late medieval tower. There were substantial modifications made to this scarp in later periods (see Section 6.3).

There are number of other earthworks in the northern section of the eastern sunken area particularly in the western corner which has been substantially modified with a curving step or terrace created leading down into the hollow. There are also a number of geophysical anomalies in these areas but as with the earthworks they are not necessarily contemporary with the sunken areas (see Section 6.4).

Function of eastern sunken garden

The two sunken areas at the eastern side of the garden have been traditionally identified as ornamental ponds (Jones 1980, 21) or defensive features (Fosbrooke 1913, 42), interpretations which persisted until this research project began. The earthwork survey cast doubt on the pond interpretation by demonstrating that the slope across the sunken areas was so great that the ponds would have needed to be brim-full at the western end to cover the base at the eastern end. Nor was a water source identified during either the earthwork or geophysical surveys. The topography and the need to sink wells within the castle do not suggest a water source nearby. The readings from the magnetometer survey in these areas were not indicative of water-lain deposits (see Appendix 4) and this was confirmed on excavation. In addition a third garden structure with an entrance from the base of the southern part of the sunken garden was excavated in Trench 2 and deposits related to pond lining or silting were not discovered (see Appendix 5).

6.2.2 The garden buildings and boundary walls

The main garden terrace was originally enclosed by a red-brick wall on its western, southern and eastern sides and probably by a range of castle buildings, now demolished, to the north. The garden buildings stand at what would have been the western and eastern corners of this walled enclosure. The wall and garden buildings are constructed of the same narrow red brick (20cm by 4.5cm by 9cm) and appear contemporary.

The walkway to the northern side of the garden is situated on a raised terrace. To its north is a series of earthworks that are unlikely to be directly related to the garden itself. These include two rectangular hollow areas, with perpendicular scarps forming internal divisions, orientated on the same axis as the remaining castle buildings. One of these hollow areas is 21m by 5m and may represent the location of a now demolished range of buildings. Positive magnetic anomalies detected by geophysical survey in this area (Figure 7 and Appendix 4) may represent demolition rubble from the removal of these buildings when Hastings undertook his remodelling of the castle.

The northern wall of the main garden is likely to be represented by the linear positive magnetic anomaly [M13] identified by the geophysical survey (Figure 7 and Appendix 4) as possibly representing a revetment or boundary structure. This linear feature is aligned

on the northern scarp defining the possible demolished range of buildings to the west of Hastings' Tower (see above) and on the wall which defines the northern boundary of the garden to the east. This may suggest that the garden area was defined when Hastings undertook his remodelling in the 15th century even though the features of the garden we see today may not have been constructed at that time. Some of the scarps around the northern walkway may be related to the apparent breach in the main north-south walkway shown on the plan by Fosbrooke (1913, drawing 1) and on 1938 photographs (NMR AL0503 A1145) which appears to have been repaired by the Ministry of Works some time before 1948.

Boundary walls

It is likely that all sections of the garden wall were coursed in English bond. Though substantially rebuilt with either Victorian brick or reused original bricks, a section of the original wall still survives up to 13 courses high in the modern boundary on the eastern side of the garden. This wall is wider at the base and tapers above a height of 0.8m, reflecting its practical function of retaining what was probably another garden terrace to the east. Scars on the western garden building show that this tapering was also a feature on the southern and western sections of the wall and also suggests that the wall on the eastern side of the garden would originally have stood much higher. This may have been necessary to restrict the view into the garden from the rising ground to the east.

Figure 22: Masonry, probably reset, marking the possible position of gateways into the garden from Mount Walk.

Two possible blocked entrances marked by dressed masonry pieces are visible towards the northern end of this section of wall (Figure 22). Whether these mark the site of an original entrance to the garden is unclear due to the rebuilding of the wall in this area, though a painting of the castle dated between 1828-1830 does show a blocked entrance in this location (Goodall 2007, 30) and there must have been access to the garden compartments to the east.

Surface evidence for the existence of the wall on the western and southern sides of the garden can be seen as scars on both of garden buildings. The position of those scars indicate the wall's likely role in revetting the main garden terrace. The excavation of Trench 1 confirmed the existence and position of the buried remains of the southern wall, previously indicated by brickwork revealed by erosion close to the modern steps

and by the magnetometer and earth resistance surveys (Figures 7 and 8 - [M5] and [R12] and Appendix 4). The excavated portion of the wall was 0.95m wide and surviving to 1.45m (or 20 courses) in height though brickwork and scarring on the western garden building reveals that the wall originally rose to approximately 2.6m above the main garden terrace. The wall was constructed on a footing of loose, unmortared rubble in English Bond with a lime mortar (Figure 23 and Appendix 5, p. 108). Like the remains of the eastern wall, this wall also tapered, its substantial width and deep foundations reflecting its role in retaining the terrace (see Appendix 5, p. 108).

Figure 23: The foundations of the garden wall exposed in Trench 1.

It is likely that the enclosing wall, standing at a height of around 2.6m above the walkways, was intended to create a private space to which only the privileged had access. However, as Way points out (2006, 27), these walls were probably pierced or balustraded to provide views across the wider garden, as seen at Hampton Court, Montecute, Blickling Hall, and Windsor in the Tudor period (Henderson 2005, 145). It is also likely that the main north-south walkway would have ended at a gate in the southern wall allowing access to the next garden compartment (Way 2006, 27). The need to dig a ditch along the southern walkway as part of the Civil War defences may in some way relate to the height of the wall on this side of the garden (see section 6.3).

The assumption that the garden walls and buildings are contemporary makes the solid dating of these structures crucial in the understanding of the garden. As no solid dating evidence was recovered for the possibly 'earlier garden' or 'preparation layer' on which the southern wall was constructed and the only datable material was recovered from the bank deposits piled against the wall (15th- and 16th-century pottery that could have been redeposited and the late 16th- or early 17th-century clay pipe and jeton from the final

deposition of material on the walkway – see Appendix 5), the dating of the construction of the buildings either by architectural or documentary means remains the key to dating the garden walls (see Appendix 5). It is worth noting at this point that the material piled up against the outside of the wall (seen in Trench 1) may have been introduced to provide a depth of soil for the planting of trees along the south side of the wall, as seen at Kirby Hall, Northamptonshire (B Dix, pers comm).

A kitchen garden?

A wall of narrow brick in English bond also forms part of the northern boundary of the modern garden, butting up against the kitchen building. The wall increases in height by approximately 0.2m from west to east reflecting the natural slope on to which the wall was originally built and suggesting that this area of the garden has been levelled since the wall was constructed. Comparison of the scars on the garden buildings, as well as the northern wall's dog-tooth string course and ornamental brick coping, suggests that this wall was different to those on the other sides of the garden (Figure 24A). Similar decoration can be seen on garden walls at Cotes, where an acolyte of the Hastings family, William Skipwith, built his house around 1580 (Shaw and Shaw c1997, 34). A blocked entrance, 1.64m wide, is also visible at the eastern end of this wall, defined by masonry pieces, possibly inserted.

Three blocked alcoves are visible in the wall, spaced just under 4m apart. The alcoves are rectangular and topped by a rough segmental arch (Figure 24B). They are 0.84m wide, around 0.96m high and at least 0.2m deep. Their height relative to ground level, like the height of the wall, increases from west to east, again suggesting that the ground in front of the wall has been levelled since it was built. The form and location of the alcoves suggests that they were probably bee boles (Crane and Walker 2000, 808-809) though an alternative interpretation as alcoves or niches for ornaments is possible (Way 2006, 56). If they were bee boles their width suggests they may have held two skeps (Crane and Walker 2000, 809). Large and important houses usually had large numbers of bee boles (Crane and Walker 2000, 810). A late 18th-century engraving possibly by James Hogg (Hillier 1988), and perhaps the 1730 Buck engraving (Jones 1980, 22) if examined closely, seem to show there were at least five bee boles originally and they may have continued along the whole length of the wall.

Henderson (2005, 149) notes the importance of bees in the Tudor garden but the niches themselves can only be dated with reference to the age of the wall, which has the appearance of being of 16th-century date. Numerous examples of bee boles associated with 16th-century gardens are known, for example similar alcoves exist at Roydon Hall, Kent and are thought to be contemporary with the construction of the house around 1535 (http://www.ibra.org.uk/beeboles/). The proximity of this stretch of the wall to the kitchen tower and the presence of the probable bee boles suggests that this may be the remains of a smaller kitchen garden rather than the northern wall of the main sunken garden (Figure 25). A reference from 1673 to the 'kitchen garden Wildernesse kept for the mille horses' (Huntington HAM Box 54) may refer to this part of the garden. A terrace to the west of this area could be the edge of another smaller garden compartment but, like the series of scarps located close to Hastings Tower and the other castle buildings, it may relate to relatively recent landscaping and excavations of the

buildings in order to present them to the general public.

Figure 24: A - Section of the northern boundary wall showing one of the partially blocked bee boles, the dog-tooth string course and the ornamental coping. B - Detail of blocked bee bole.

Dating of the walls

The garden walls and the two garden buildings at either end of the terrace are all built of the same narrow red brick and are thought to belong to the same construction phase. The excavation of the wall foundations in Trench 1 demonstrated that the garden wall had been built and then the earthwork terrace built up against it (see Appendix 5). It seems likely therefore that the western garden building at least was also constructed before the terraces. This is supported by the amount of brick rubble found in the cores taken through the terrace earthworks (see Appendix 3) suggesting a large amount of brick was on site when the terraces were constructed.

Garden buildings

Western garden building

The western building is the larger and more complex of the two standing buildings, being 7.6m in diameter internally and quatrefoil in plan (Figure 26). It had at least three storeys and a basement. It is located astride the south-western corner of the garden terrace and bridges the level change between what was the inside and the outside of the walled garden. It is laid to English Bond, though this is not wholly consistent due to the challenges of the building's unusual shape. All the windows have stone surrounds with square-headed hood moulds and stone mullions and transoms (Figure 27A).

Figure 25: Reconstruction of the garden as it may have looked in the 1630s.

A door, located in the curtain between the northern and eastern lobes, gave access to the main garden terrace. It has a square moulded stone surround and a four-centred arch. The surround terminates 0.74m above the current ground level due to landscaping or excavation in this area. A moulded stone cordon, visible on the curtain at a high level, is repeated between the northern and western lobes. Part of a window is visible in the eastern lobe, looking into the walled garden. The 1730 Buck engraving (Jones 1980, 22) also shows a chimney in this lobe above where the fireplace is located. The staircase was located in the northern lobe of the building. The eastern face of this lobe, with views into the walled garden, is blank but three windows are located one above the other in the western face, giving views over the wider garden and park.

A doorway into the wider garden is located in the centre of the southern lobe at basement level. The whole of this side of the building appears to have been rebuilt (Figure 27B) with major repairs occurring as late as 1970 (NMR AL0503 A8307/3). One side of the door has a stone surround similar to that on the other door, but it appears to have been reset and an arch head used as the sill. A large portion of brickwork on the eastern side of the door has been rebuilt to the wrong line, ignoring the plinth that is clearly visible. Above the door are the remains of a large curving window which had at least one transom. On the next level up are fragments of a row of three windows which have stubs of mullions and transoms, each probably having four lights (Figure 27A). To the west of the doorway a patch of stone ashlar is visible, again probably reset, though a photograph published in 1913 seems to suggest this patching was more extensive (Fosbrooke 1913, Plate 8).

Figure 26: The western garden building.

Next to this in the western face of this lobe a large hole is visible. Though all the elements of doors and windows on this side of the building appear to have been reset, both Fosbrooke's sketches (1913, drawing 8) and the Bucks' engraving of 1730 (Jones 1980, 22) appear to show an original entrance on this side. In the western lobe there is a large window similar to that in the southern lobe, again with two, possibly three, windows above it. All have stone surrounds with stubs of mullions and transoms suggesting that they had four lights. Grooves for window glass are also visible as well as possible later sockets for iron bars. A small window is located at the lower level.

Inside the building a stone-paved floor is visible at ground level and joist holes indicate that the first floor was level with the door from the walled garden. The eastern lobe is partitioned at basement level by a brick wall, possibly built to provide extra support for the load-bearing wall above. The implication that this is the stub end of the garden wall between the two buildings as shown on the 1855 Vavasour plan (Ashby Museum) and Fosbrooke's plan (1913, drawing 8) was not borne out by the recent survey.

In the northern lobe there is the brick-base for the newel post of the staircase and evidence for a spiral staircase with hand rail. Chamfered brickwork and the remains of an internal arch at the upper level suggest that the staircase was open to the interior at this point. At first floor level in the eastern lobe a fireplace with a Tudor arch and

chamfered edges is visible. There is a curious alcove to the left-hand side of the fireplace that is blind ended. In addition there is some evidence of internal rendering.

Figure 27: Western garden building. A - Window detail. B - Reconstructed south face.

Eastern garden building

The building located at the south-eastern corner of the garden terrace is smaller and simpler in form than its western counterpart, with the main tower measuring 3.6m in internal diameter (Figure 28). It is constructed of the same brick and in English Bond. The building is octagonal in plan with a stair turret, 3m in diameter, on its western side. Externally the turret is also octagonal though it intersects with the main chamber and is circular internally. On the faces that would have been located outside the walled enclosure there is a 'plinth' course around 1.15m above ground level.

The turret has two small rectangular windows of the same size, one above the other, located to light the stair well. Both windows have stone surrounds and hood moulding. The turret may have projected above the level of the main chamber as moulded stonework with a carved finial at the corner can be seen projecting from the wall top on the south face of the main chamber, perhaps at eaves level.

Figure 28: Eastern garden building. A – North-west elevation. B - 1855 sketch of eastern elevation by MAE Vavasour (Reproduced with the kind permission of Ashby Museum.)

However this may be part of a stone cordon as seen on the western building and in sketches by Vavasour (Figure 28B) and Fosbrooke (1913, drawing 8). A piece of hood moulding is also visible on the southern face of the main chamber, possibly part of the window depicted in the 1855 sketch by MAE Vavasour held in Ashby Museum (Figure 28B). MAE Vavasour may have been the vicar (Anon, 1852, 82) or his daughter (K Hillier, pers comm).

The main chamber has a doorway in its north-west side with a carved stone surround, square-headed hood moulding and a four-centred arch. What appear to be acanthus leaves are carved into the right-hand spandrel. The stone moulding may have been reset and there is evidence of relatively modern brick patching on the lower right of the doorway. The chamber appears to have the remains of a truncated window with a stone surround in its northern wall but these pieces may also have been reset or may relate to the window on the 1855 sketch plan of the tower by Vavasour (Figure 28B). The eastern side of the main chamber (which projects on to Mount Walk) has been rebuilt above a height of 0.8m - the same height above which most of the adjoining garden wall has also been rebuilt - in large red brick.

The 1855 sketch by Vavasour shows the east elevation of the building, most of which has now been lost (Figure 28B). Three large windows with hood moulding can be seen at first floor level, with a stone cordon similar to that on the western building shown above. These windows lend support to the assertion that there were further garden

compartments to the east of the castle. Though on the Vavasour plan it has been noted as a window, the sketch shows what appears to be a small door with squared-headed hood moulding at the upper terrace level, now Mount Walk. This agrees with an apparently more realistic floor plan shown by Fosbrooke (1913, drawing 8) and indicates the building bridged a change in level, as does its western counterpart. It is worth noting that Vavasour appears to show diaper work (similar to that at nearby Bradgate House) on the east elevation, though no sign of this pattern is visible on the faces of the building that still stand. It is possible that the pattern on the sketch in fact represents the iron tie rods which 'for many years held together' the building (Fosbrooke 1913, 42). Both the Vavasour sketch (Figure 28B) and the Fosbrooke drawing (1913, drawing 8) appear to show a chimney on the southern elevation. This may have been a later addition as the remains of hood moulding for a window, perhaps blind, can been seen on the wall above.

Internally, on the southern side of the main chamber the remains of a doorway to the stair turret are visible. Part of the stone surround of a Tudor arch remains, though it appears to have been reset. Remains of the first step may also be visible. The spiralling staircase is visible only as rebates where the treads have been removed. The angle at which the stairs ascend suggests that the staircase was not a continuous spiral and chamfering on the south side of the turret wall, above the entrance to the stair, suggests the turret was open to the chamber at first floor level and that the staircase was wooden.

Garden building in the centre of the eastern sunken garden

The foundations of a third garden structure were unearthed in Trench 2 in a hole that had been identified as the potential site of a fountain or garden building during the earthwork survey (Figure 29). It appeared to be the remains of a circular brick building (see Appendix 5, p. 111) with what has been interpreted as an entrance to the south leading into the sunken garden. The entrance is stone paved with brick sides suggesting a small porch and was built on top of two layers of material representing ground raising or earlier garden phases.

An alternative interpretation is that the brick wall carried a stair which ran from the level of the walkway into the sunken area though the paving suggests this is unlikely. The northern side of the structure was not excavated but the building's internal diameter can be estimated at 3m. It seems likely that there was a similar entrance on the northern side allowing access into the northern sunken garden and the building may have allowed access from the walkway level into these areas giving it both a practical and decorative function similar to the two other garden buildings.

The structure appears to have been inserted into the existing walkway. Excavated pottery suggests a 16th-century date for the construction of the building, though some of the finds are contradictory (see Appendix 5 for further details). The earliest possible date for the construction of the building is based on the assumption that the causeway into which this garden building is inserted is the same date as the main garden terrace excavated in Trench 1, i.e. 16th century. Unlike the two buildings on the ends of the terrace, this building is not shown on the Bucks' engraving of 1730 (Jones 1980, 22) or Gardiner's estate survey of 1735 (Figure 11) suggesting it had already been demolished,

perhaps after the Civil War (see Section 6.3). A large amount of 18th-century pottery recovered from the demolition debris in the entrance way also supports this suggestion (see Appendix 5).

See Appendix 5, Figure 5, Plates 4 and 5 for illustrations of the building.

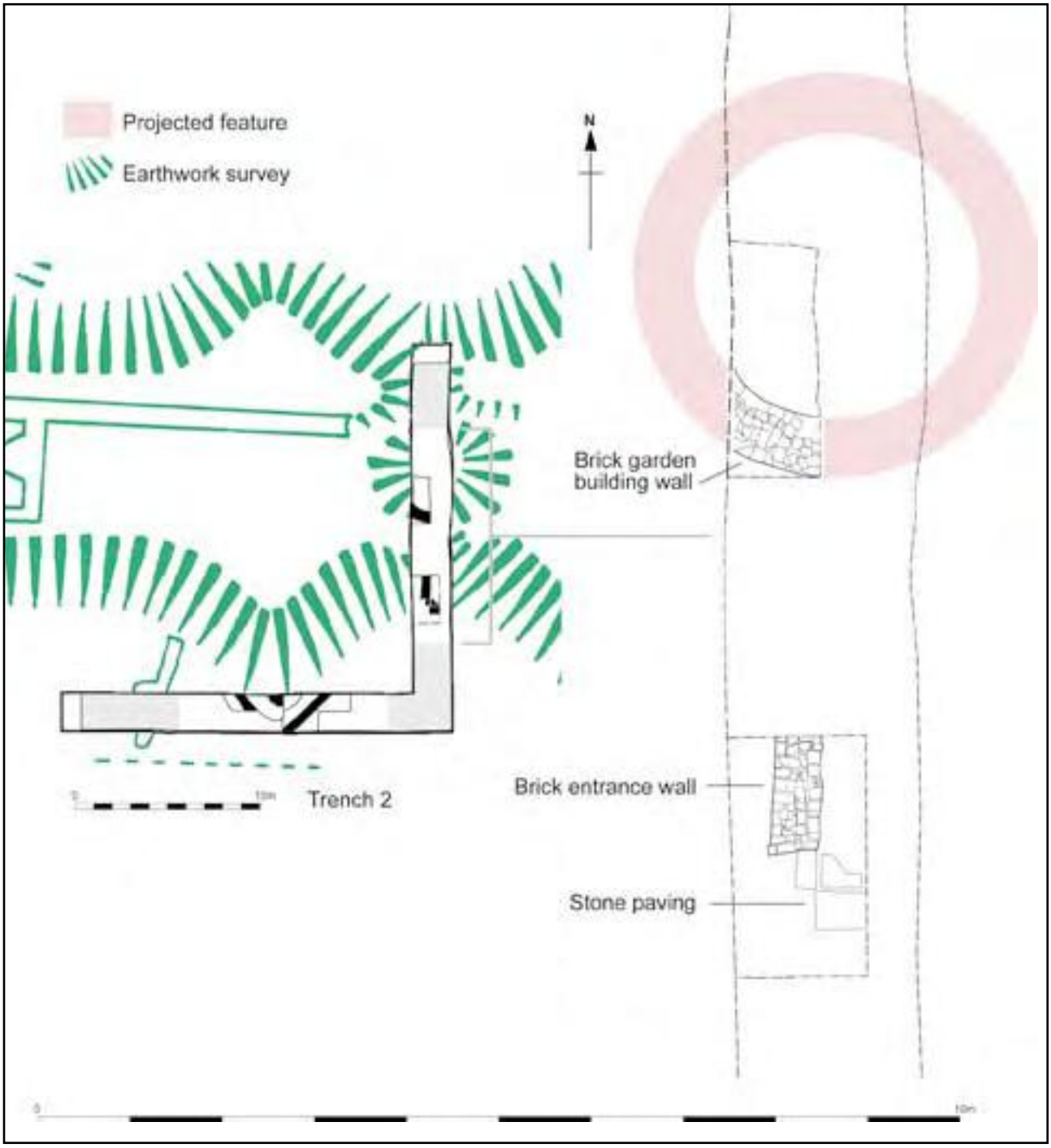


Figure 29: Plan of Trench 2 showing the remains of the central garden building and its projected footprint.

Dating of the garden buildings

As discussed in the previous section the excavations only provided dating evidence for the foundations of the garden building located in Trench 2, dating it to the 16th or early 17th century. A reference to the 'little turret on the east side of the garden' in a probate inventory taken on the death of Henry, third Earl in 1596 (original thought to be in Huntington Library) suggests that at either the eastern garden building or the central building in the eastern sunken garden had been constructed by that date. It is feasible that the inventory may refer to the central building as the western building is not mentioned. However the inventory records that three stills were kept in the turret and this seems unlikey for such a small building in the middle of the formal garden. Therefore the other two buildings can only be dated via their relationship with the garden terrace, stylistic grounds and in comparison with other buildings from gardens of a similar date.

Figure 30: Garden buildings at Roydon Hall (left) and Hales Place (right), Kent. Each has a counterpart at the other end of the terrace. © English Heritage.NMR

The excavated evidence from Trench 1 revealed that the garden walls (and therefore by reasonable assumption the corner buildings) were built prior to the construction of the garden terrace, though this could be a matter of only months rather than years, in the mid-16th to early-17th century. Stylistically the buildings have been dated to the mid-16th century, perhaps being as early as the 1530s (J Goodall, G Coppack, pers comm) though clearly they could have been built to emulate an earlier building style.

There are many examples of similar buildings spanning the whole of the mid-16th century to early 17th-century period suggested for the construction of the Ashby buildings. Small independent buildings were not a feature of the gardens prior to the 1530s (Way 2006,

41) and the first examples are seen in very high status gardens such as Hampton Court (Henderson 2005, 156) and Thomas More's garden at Chelsea (Way 2006, 42). A good range of examples are also available of paired buildings at either end of a garden terrace, such as those at Roydon Hall thought to have been built circa 1535 (Way 2006, 42) or Hales Place in Kent (Henderson 2005, 126;159) where the two octagonal buildings could be entered from either the level of the terrace or the sunken area of the garden (Figure 30). However the fashion for garden buildings persisted into the 17th century; the banqueting houses at Chipping Campden, Gloucestershire are located at either end of a terrace, can be accessed from the upper and lower terrace as at Ashby and were built between 1609 and 1629 (Everson 1989).

Elements of the design of both buildings are present throughout the period when they were thought to have been constructed. Octagonal garden buildings are known from Windsor in the 1570s and from Melford Hall from the early 17th century (Henderson 2005, 159; National Trust 2005) and Henry VIII's Hampton Court towers from the 1530s displayed the huge variety of possible designs.

6.3 The garden in the Civil War

Although it was clear from the analytical earthwork survey, the geophysical survey and documentary sources that the Tudor garden had been much disturbed in the succeeding centuries, the excavations highlighted the significant impact of the Civil War and subsequent slighting of the castle (see Appendix 5, pp. 111-112).

During the Civil War the southern garden wall appears to have been used as part of the castle's defences. Excavation of Trench 1 uncovered two ditches which were probably dug in this period, one at either side of the wall. The full width of the ditch outside the wall was not fully excavated but it was 0.7m deep with a flat bottom was probably intended to make the wall defendable (see Figure 18). It was backfilled with material containing pottery from the second half of the 17th century making a Civil War date plausible. The second ditch was located on top of the terrace on the north side of the wall. This ditch measured around 0.5m in depth, was 2m wide and contained good dating evidence in the form of a clay pipe from circa 1630-1660 (see Appendix 5, pp. 111, 148). The flat bottom of the ditch appears to have contained a trampled layer of rubble and clay and may have been dug to adjust the firing position of troops defending the wall (see Section 7).

Excavation of Trench 3 also revealed that the substantial bank and ditch located close to the castle in the eastern sunken garden was enhanced at this time, probably for defensive purposes. The bank was raised by almost a metre in height and the deposits incorporated a tobacco pipe bowl dating from around 1630-60 and one dating to the 17th century. One layer deposited during this episode contained burnt material that may relate to the clearing of garden vegetation for lines of sight (see Appendix 5). To be of any defensive use this ditch must have continued to the west and may explain both the breach in the central walkway and the breach on the western terrace at the point of the modern vehicle access. A discrete group of marks from musket or cavalier shot on the castle buildings to the east of Hastings Tower may represent firing practice or even the

location of executions, as seen at Burford Church, Oxon. (J Leary, pers comm).

6.4 Later garden developments

Though the history of the garden from the end of the Civil War onwards is poorly understood there is significant archaeological evidence for activity at this time.

The earthwork survey identified a number of features which may relate to the post-Civil War garden landscape. Within the western sunken garden a number of internal features are visible including a narrow trench measuring approximately 17m by 2m which runs along the southern edge of the sunken area at the foot of the scarp. This feature disappears at the point where it meets an earthwork fan. In the north-east corner the main scarp has been modified and a fan is visible sloping down into the sunken area. This may have been an access way into the garden, formed by erosion or by steps that have now been removed, or it could relate to the reconstruction of the central walkway at this point. The excavations suggest that all these earthwork features are likely to belong to a much later phase of the garden. Linear anomalies detected by the earth resistance and magnetometer surveys may also be related to this period of activity as they do not appear to be original garden features such as paths, beds or dividing walkways (see Figures 7 and 8 and Appendix 4).

A slight, irregular-shaped platform can also be seen at the foot of the main scarp in the north-western corner of the eastern sunken garden and a number of slight linear scarps run parallel to its northern side. These are also visible on the earth resistance survey (see Figure 8 and Appendix 4) and all appear to be secondary modifications of the garden, perhaps in many cases from the 19th or 20th century (see Section 6.4.2). Just to the north of the eastern sunken garden a small rectangular platform is located directly opposite the central hollow in the dividing walkway. This may have been the location of a piece of garden furniture or a small building but it is probably not contemporary with the sunken areas.

6.4.1 Late 17th- and early 18th-century garden

Excavated evidence from Trench 1 suggests that the two ditches cut at either side of the garden wall were both deliberately backfilled after the Civil War, with the one outside the wall containing four sherds of mid 17th-century pottery (see Appendix 5, p. 111). The ditch in Trench 3, immediately to the south of the castle, may also have been backfilled at this time though no dating evidence was recovered. The backfilling of these trenches suggests that the garden was reinstated after the end of the Civil War. The later inhabitants of the castle were still incorporating this southern side of the castle grounds into their formal gardens, an idea possibly supported by the insertion of large 17th-century windows into the southern side of the hall in this period (Jones 1980, 21).

Dating based on pottery evidence from Trench 2 suggests that the garden building in the centre of the eastern sunken garden was also demolished at some point in the 18th century, rather than during the Civil War, as indicated by a cohesive pottery assemblage located in demolition rubble from the entrance area (see Appendix 5, p. 113). The stems

of two later clay pipes may be intrusive. This could suggest that, by design, at the time of the Civil War, it did not stand to a height which might cause any defensive disadvantage; or that it was partially demolished during the Civil War with the porch being demolished at a later date. The excavated evidence supports the documentary evidence that suggests the central garden tower and much of the garden wall enclosure had been demolished by the 1730s, neither appearing on the 1730 Buck engraving (Jones 1980, 22) or Gardiner's 1735 survey (Figure 11). It was noted around 1852 that 'the foundations of a wall connecting the two [garden] buildings was discernible but a few years ago' (Anon. 1852, 66) but this may only refer to the low remains of the wall.

Excavated evidence from Trench 1 suggests that a layer of sandy loam was introduced into the western sunken garden in the late 17th or early 18th century, perhaps to cover the earlier garden or introduce more topsoil. The clay pipes indicate that this was probably before 1730 and suggest a significant phase of garden activity in this period (see Appendix 5, p. 113, 148). This is contradicted by a reference to the 'kitchen garden Wildernesse' being used to keep mill horses in 1673 [HAM Box 54] though perhaps it is to this activity that the clay pipes relate. Way (2006, 64) also notes that the garden does not appear to be being maintained on the 1735 survey map. A soil horizon was also identified as belonging to this period and seems to support the evidence for the area, including the walkways, being grassed over as shown on the 1730 Buck engraving. Plantings bed and pits seem to have been identified cutting this late 17th-/ early 18th-century layer (see Appendix 5) and are possibly related to a later garden phase, a conclusion supported by their absence on the Buck engraving.

6.4.2 19th- and 20th-century activity in the garden

In the 19th and 20th centuries restoration and consolidation of the castle began in order to turn it into a tourist attraction. Initially, this was undertaken by the Hastings family and then, from 1932, by the Ministry of Works and its successors (see Section 3.7). Many of the earthworks and geophysical anomalies could relate to landscaping from this period. One of the most noticeable features from this time runs along the central walkway between the western and eastern sunken garden. This was noted as a vegetation mark and in the magnetometry and earth resistance surveys (Figures 7 and 8; Appendix 4) and relates to a gravel path shown on photographs taken in 1938 (NMR AL0503 A752).

Western sunken garden

Along the northern side of the sunken area, two low linear banks can be seen running parallel to the main scarp. These appear to be linked to very slight perpendicular linear features and may represent the foundations of rectangular buildings, perhaps of a temporary nature, such as pig pens (K Hillier, pers comm). A large rectangular low resistance area was detected in this location during the earth resistance survey, suggesting a possible planting bed (Figure 8, [R10] and Appendix 4). A photograph held in Ashby Museum also shows what appear to be tennis courts in this area, probably in the early 20th century, which had been removed by 1938 (NMR AL0503 A1145).

Aligned parallel to the eastern side of the sunken area a rectangular vegetation mark

19m by 5.5m is also visible. This was identified as a modern feature during the landscape survey and as the potential footings of a building by the earth resistance survey (see Appendix 4). It was also visible as a grass mark in the dry summer of 1976, along with a perpendicular rectangular area that was recorded by the earth resistance survey (Figure 31 and Figure 8, [R9] and Appendix 4) and is visible on aerial photographs taken in 1951 (RAF 540/573 3142-3 30-JUL-1951; OS 76075 057-058 06-JUN-1976). On excavation these two features were found to be clinker and gravel paths belonging to a 19th- or 20th-century garden phase (see Appendix 5, p. 114). Documentary evidence suggests that these must have been pre-1938 (NMR AL0503 A1145). It is interesting to note that the orientation of the smaller path appeared to relate to a planting bed assigned to the late 17th-/ 18th-century garden phase suggesting elements of this garden were still visible when the paths were laid out. It is also worth noting that the much larger gravel area is not parallel to the side of the sunken garden suggesting that it is a much later feature and was not conceived as part of a garden design though coincidentally it fits more closely to the alignment of Hastings' tower.

Trench 1 also revealed evidence for the landscaping over of the southern garden wall in the 19th or 20th centuries (see Appendix 5, p. 111). Evidence seems to suggest that the breach of the main causeway between the east and west garden was also repaired in this period, after 1938 (NMR AL0503 A1145) and before the earliest aerial photographs examined were taken in 1948. The clay pipe evidence for this period attests to disturbance within the garden deposits (Appendix 5, p. 148).

Eastern sunken garden

The north-western corner of eastern sunken garden may have been substantially modified in this period and a curving step or terrace has been created leading down into the hollow. These earthworks may be related to the reconstruction of the breach shown in the main walkway on the plan by Fosbrooke (1913) and on the 1938 photographs (NMR AL0503 A1145). A slight, irregular-shaped platform can also be seen at the foot of the main scarp in the north-eastern corner of the eastern sunken garden and a number of slight linear scarps run parallel to the northern side of the compartment. These are also visible on the earth resistance survey (see Appendix 4) and all appear to be secondary modifications of the garden related to temporary structures, landscaping or the deposition of spoil from excavations around the castle buildings.

Vegetation marks on the western portion of the dividing walkway are related to modern activity. These marks correspond with positive magnetic response [M4] and low earth resistance anomaly [R1] from the geophysical surveys (see Figures 7 and 8 and Appendix 4). A small building is shown in this location on the Ministry of Works plan of the site from January 1949 though the building is not visible on any of the historic aerial photographs (RAF 541/28 4029-4030 17-MAY-1948). Inspection of the Ordnance Survey mapping shows the small buildings were actually in place by 1923 and probably removed by 1938 (Ordnance Survey 25 inch 3rd edition 1923; NMR AL0503 A1145) and the 1949 Ministry of Works plan uses a map base which is out of date (Figure 32).

ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE

Figure 31

Earth Resistance Survey, April 2006

Geophysics Team 2008.

ENGLISH HERITAGE

The excavated evidence from Trenches 2 and 3 shows that a layer of silty loam was spread over the southern sunken area which contained 19th- and 20th-century finds (see Appendix 5, p. 114). Planting pits and bedding trenches were cut through this layer, including a bedding trench picking out the bottom of the earthwork spur, which also contained 19th- and 20th-century material. The excavations also revealed that the crater in the central walkway was partially backfilled at this time and a gravel path was laid over the top. Magnetic anomalies [M11] and [M12] and high resistance anomaly [R7] may represent where material was transported along this path and then deposited in the western end of the southern section of the sunken area (see Figures 7 and 8; Appendix 4).

Planting

Trees and tree throws were recorded as part of the earthwork survey (and possibly the geophysical survey). Some correspond to trees shown on historic photographs (Ashby Museum). Where any pattern in planting is visible, such as along the eastern side of the garden, it appears to be 19th century in date and may relate to landscaping activities that were undertaken in the 1820s before the site was first opened to the public (K Hillier, pers comm). On the western side of the garden the tree throws represent the position of line of trees similar to those which remain on the eastern side of the garden and may have been part of the same planting scheme. These trees are shown on the 1st edition 25 inch Ordnance Survey map of 1883 and some are visible on 1930s photographs (NMR AL0503). The remaining tree throws do not appear to represent any particular planting patterns. A row within the western compartment, running in a line along the southern side. The excavations were too limited to reveal any patterns in the planting pits or trenches. Documentary references exist to a plum hedge marking the line of the southern garden wall in 1938 (NA WORK 14/642) which is visible on top of the terrace on 1938 photographs (NMR AL0503 A1133).

Vehicular access

Damage caused by vehicles is visible in various parts of the site. Surface marks from a recent or brief period of vehicle movement can be seen on the main walkway between the two sunken gardens and on the stretch of walkway to the south of the eastern sunken garden. The effects of more prolonged vehicle movements can be seen at the north-western corner of the western sunken area and to the south of the site, where shallow linear scarps running parallel to the garden terrace mark the more prolonged use of this area for vehicle access.

A number of anomalies relating to modern disturbance across the site and services within the area near the site hut were also recorded during the geophysical surveys (see Appendix 4).

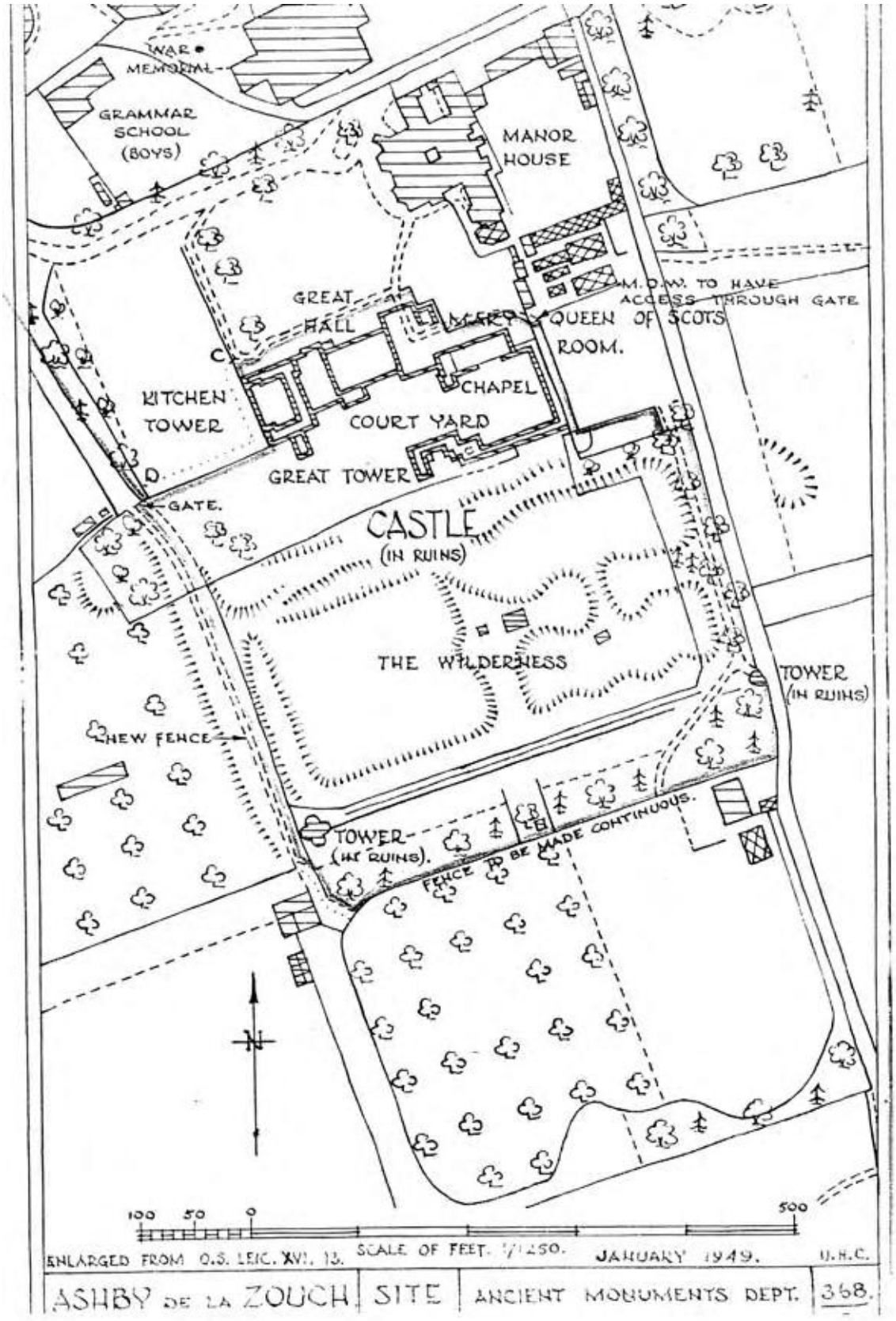


Figure 32: Ministry of Works plan dated January 1949. The plan uses an out-dated map base and the small buildings had been removed by 1948.

7. DISCUSSION AND CONCLUSIONS

7.1 A summary of the evidence

Medieval period

Ashby Castle's sunken garden was inserted into a landscape that had been manipulated from the medieval period onwards to reflect and emphasise the importance and influence of its owners in the local area. Although the research project did not provide concrete archaeological evidence of a pre-existing medieval designed landscape, 14th-century references to mills, a warren, ponds and a park suggest this may have been present at Ashby. Some of these elements, such as the ponds, may have been incorporated into the later formal gardens and early landscape elements, such as Mount Walk, may have influenced their layout. The medieval park was probably located to the south of the castle and became known as the Little Park in later periods.

William Hastings

The first documentary references to the 'great garden' date to the mid- to late 15th century. Though no archaeological evidence for garden creation exists from this period, the architectural developments both at Ashby and Kirkby Muxloe, as well as the documented creation of designed landscapes accompanying other contemporary architectural development schemes, make it inconceivable that William Hastings did not undertake (or intended to undertake) some sort of garden or designed landscape creation around the castle. The archaeological excavations produced very little information regarding the landscape prior to the creation of the sunken garden. A sandy/silty clay layer, identified in all three of the trenches, was dated broadly to the late medieval period but provided no information on the nature or form of the earlier garden. It is possible that a ditch and bank recorded close to the castle may date from this period: they do not sit well with the rest of the sunken garden design and may have served to enhance the setting of Hastings' architectural developments. Architectural evidence of Hastings creating a designed landscape around the castle may survive, however, in the form of the triangular Mount House. Its sandstone construction could suggest it is contemporary with Hastings's developments and its location on high ground to the east of the castle might suggest it was sited to make a visual impact as people travelled along the Leicester Road.

After William Hastings

The excavations confirmed that the main elements of the sunken garden probably originated at some time in the mid-16th or early 17th century. They also proved that the brick wall and corner buildings were built before the terrace they enclose, though possibly not much before, and that the western and southern walls were designed to retain the earthworks of the garden terrace. Material dumped against the north side of the southern garden wall contained pottery that can be broadly dated to the 16th century, suggesting that the walls were constructed no earlier than 1500. That the process of creating the accompanying terrace bank happened reasonably soon after is supported by the amount of brick rubble found in the cores on the terrace and the lack of weathering on the retaining brick wall. Clay pipe pieces and a Nuremburg jeton from

the top layers of the bank seem to suggest that it was either finished off or renewed in the late 16th or early 17th century. It is reasonable to assume that the western walkway, also retained by the garden wall, was created at the same time. Whilst it is likely, but not proven, that all the garden walls and terraces in the sunken garden were conceived as one scheme (with the possible exception of the northern wall containing the bee boles), the area within may have been altered many times, the eradicating the archaeological evidence for the previous garden. Documentary evidence records the eastern garden building (and presumably its western counterpart) was in place by 1596 though no direct dating evidence for the corner garden buildings is available.

The excavations and geophysical survey suggested that the western sunken area never had bisecting walkways as seen in the eastern sunken area and its simple form may be its original design. The surrounding walkways and the proximity to Hastings Tower suggest that both the western and eastern garden were probably meant to be viewed from above. Tentative evidence for the layout of the western garden came from the excavations where a possible 'emblematic' garden was identified. However the area of the sandstone stripes exposed was too limited to be confident of this interpretation, especially as the colours are naturally occurring. These layers were dated to the mid-16th to early 17th centuries on stratigraphic grounds and gardens containing heraldic motifs formed of plants or other materials are documented throughout that period (Way 2006; Henderson 2005).

Finds evidence also dated the main excavation of eastern sunken area to the 16th or early 17th centuries. The third garden building appears to have been inserted into the dividing walkway in the same period though the time gap between the creation of the walkway and the insertion of the building is difficult to ascertain. Though it is comparable to the two other garden buildings it may not be the same phase. Two layers identified under the entrance to the building as 'ground raising' could represent phases of the sunken garden prior to the construction of the building.

The garden wall may represent the formalisation of an already defined 'privy' garden area next to the castle but the terraces are more likely to be part of a coherent major garden design scheme, where different elements of the garden were designed to provide different experiences and views for the visitor. Historic maps show a series of formal compartments, fossilised in later landscape boundaries, of which the sunken garden is in the central compartment with the main castle and church buildings to the north. A pond complex to the west and a 'wilderness' garden were part of the scheme. Some of these boundaries are still visible as earthwork terraces within the wider landscape. It is not clear at what point these garden compartments were laid out or to what extent they were influenced by elements of the late medieval landscape. However, they almost certainly date to before the Civil War as it is unlikely that the family spent the money laying out a formal garden of this type after they moved their main seat to Castle Donington.

The Civil War

The role of Ashby as a Royalist garrison during the Civil War is well known and the excavations revealed the significant impact of this period on the garden. The southern

garden wall was fortified with an external ditch and used as a defensive line, forming one element of what would have been a complex and layered system of defences around the castle. An internal ditch was also constructed at this time on the top of the southern walkway, possibly to alter the firing position over the wall. The top of the terrace may have had gabions to provide extra protection from enfilading fire from the higher ground to the east, though this flank *may* have been protected by a garrison at Mount House. Though the garden wall would have provided little protection from cannon fire it would have made an ideal defensive point against infantry. The area immediately to the south of the castle buildings also appears to have been fortified at this time, perhaps explaining the breaches in the main north-south and western walkways shown later maps.

Post-Civil War

In the period after the Civil War, Ashby became less important for the Hastings family but it is clear that the house was still occupied. It therefore seems likely that the garden was still in use and the excavated evidence from the clay pipes seems to suggest a period of activity in the late 17th or early 18th century. However, it seems that this activity is unlikely to relate to its use as a formal garden as a late 17th-century reference suggests horses were being kept in the area and the 1735 survey seems to suggest the garden was in a state of disrepair. In the early 19th century the castle became a tourist attraction and so began an ad hoc programme of repair and maintenance. Possible planting pits excavated in the garden were tentatively assigned to this period though whether these relate to Victorian formal gardens as seen to the north of the castle or to other activities such as the keeping of animals or tennis courts is unclear.

7.2 The likely context for the creation of the sunken garden

It therefore seems likely, though it is not proven beyond all doubt, that the garden walls, corner buildings and main terrace were created as part of a coherent scheme in the mid- to late 16th century (before 1596), encompassing an area close to the castle that probably contained some sort of pre-existing garden. Whether the internal features of the sunken garden (including the central garden building) were also laid out as part of the same phase is open to debate as the excavated evidence suggests changes were being made to the garden in the early 17th century. A key feature of gardens of this period is that they changed rapidly with fashions, especially if their owner needed to demonstrate his wealth, power and culture to his peers.

Formal garden compartments, as identified in Ashby's wider landscape, are a feature of the Renaissance garden rarely seen in Britain until Henry VIII created his royal gardens such as Hampton Court. Therefore they were probably laid out between the 1520s (though they are unlikely to be so early) and 1630s, before the family's main seat moved to Castle Donington (and before 1596 if we accept the idea that the apparent date of the eastern garden building can be applied to a coherent formal garden scheme). Apart from the impression of the garden wall continuing past the eastern garden building on the 1735 survey this relationship between the sunken garden and the other compartments cannot be proven and the landscape could represent later or piecemeal expansion, especially as the area to the east of the castle may have already been part of William Hastings' garden. Certainly similar formal compartments are seen more

frequently in the early 17th century but late 16th-century examples are known of early renaissance gardens including Raglan, Wollaton Hall and Theobalds (Way 2006). However, the archaeological dating is too coarse to indicate which Lord Hastings was responsible for a particular garden phase. Subsequently attempts to further refine the date, and therefore historical context, of garden creation at Ashby rely on the available documentary evidence and comparisons to other contemporary formal gardens.

As there appears to be a direct relationship between the corner garden buildings, wall and garden terrace (and *potentially* the whole garden scheme) the dating of these buildings remains crucial. Though their construction appears to date to the 16th century (prior to 1596) it is difficult to assign a definitive construction date on stylistic grounds alone, though Way (2006, 45) notes the differences in the two standing towers means they are unlikely to have been constructed in the 17th century when symmetry became the norm. Their construction may be related to other major architectural changes at Ashby in the 16th century, including the insertion of the huge grid window into Great Chamber (Goodall 2007, 8). It has been suggested that the buildings may be as early as the 1530s or 1540s but most garden buildings known from this date are from royal contexts such as Hampton Court and others, such as those at Roydon Hall and Hales Place in Kent, are dated by association with the construction date of the main houses.

Ashby's buildings are unlikely to be as early as those at Hampton Court though a potential context for their construction exists as the family rose in status at this time, a process which culminated in George, Lord Hastings, being made the first Earl of Huntingdon in 1529. George was a personal friend of Henry VIII and made powerful allegiances through his marriage to Anne Stafford, daughter of the Duke of Buckingham. He would have been aware of the innovative royal gardens and of the garden developments of local rivals: the Greys at Bradgate and Groby were also creating gardens at this time. However George died in 1544 leaving large debts and if he was responsible for their construction the buildings would have been unusual outside a royal context.

Garden buildings of this type become more common later in the 16th century and pairs of buildings at the ends of a terrace are documented or exist at Montecute, Cecil's house on The Strand, Roydon Hall and Hales Place, though the last two are generally taken to be mid-16th century. There were precedents for all three building shapes at Hampton Court by the 1540s and examples outside royal contexts in the late 16th and early 17th centuries (Way 2006).

The archaeological remains suggest it is more likely that one of George's descendants decided to develop (or redevelop) the garden, beginning with the construction of the garden wall though neither present a significantly stronger context than does the first Earl. If the two corner garden buildings did exist by 1596 Francis, second Earl of Huntingdon or Henry, third Earl of Huntingdon (or their wives) could have built the walled enclosure and laid out the formal garden compartments. Francis certainly does not appear to have had the financial or political stability to engage in a major garden development project (Way 2006, 32) but he cannot be completely ruled out. Henry also appears to have had a rather unstable political and financial career and does not appear to have spent much time at Ashby. Again, like Francis, he was heavily in debt at

the time of his death in 1595 but his influence on the gardens at Ashby cannot be entirely ruled out either. The fact that Francis's arms were retained in window glass in the Great Hall until after 1645 (Goodall 2007, 5) does however suggest that he was spending money at Ashby and perhaps that his successors were more restrained. It may be that his political and financial instability was both the reason for and a product of significant conspicuous consumption. This first stage of enclosing and creating the garden terrace occurred at some point between around 1530 and 1595.

As noted above, gardens were often redeveloped rapidly in this period and although the terrace, walls and corner buildings most likely date to the second half of the 16th century, the archaeological evidence suggest a broad mid 16th- to early 17th-century date for the features within the garden. The desire for 'uniqueness' in the construction of gardens from this period means that the garden design, particularly with the spurs in the eastern sunken garden, is unparalleled in surviving gardens or contemporary sources. Gardens were sometime created to make or complement one particular event such as a royal visit (B Dix, pers comm) exacerbating this problem. One possible, if tenuous, explanation of the design seen in the eastern garden compartment may lay with some sort of heraldic influence. The zigzag design bears a passing resemblance to an emblazon representing the Butler family in a coat of arms on Francis Hastings' tomb which is identified by Nichols (1804, 620) as belonging to Katherine Dudley, wife of the Henry, third Earl of Huntingdon, and which is visible within two panels of 16th century window glass, now found in the church but which may have originally come from the castle chapel (see Goodall 2007, 8). This line of enquiry might pay more exploration if it were proved that the western garden had in fact been laid out in an emblematic pattern. Gardens with heraldic designs laid out in plants or other materials are recorded throughout the 16th and into the 17th century (see Henderson 2005; Way 2006).

Although the eastern garden's central building dates broadly to the same mid-16th-century to late 17th-century period as other elements of the garden, it may not be contemporary with the walls and other buildings. There are few parallels for the siting of a building in the middle of a sunken garden, with the exception of Wimbledon where such a building dated to the late 16th century (Way 2006, 43). Its juxtaposition with two other buildings, and the apparent lack of symmetry in the layout, does not suggest a coherent design. Its location suggests that gaining a view of the whole garden was not the structure's primary function perhaps lending credibility to the idea that it was built to provide access and that it may not have been roofed.

Therefore, there is potential for some additional garden creation or redesign at Ashby in the early 17th century, during the time of George Hastings, the fourth Earl, and Henry, the fifth Earl, who succeeded him in 1604. The Hastings' were again gaining prominence at court and Ashby was subject to a royal visit from Anne of Denmark and Henry, Prince of Wales in 1603. Gardens were often redesigned for such important occasions. It is also possible that either the fourth Earl's wife or sister (Lady Dorothy) was referred to in *Nathaniel Baxter's Sir Philip Sidney's Ourania* (1606) as Kalandra, a classical reference suggesting that gardens were of importance to her or her family (Way 2006). Henry, the fifth Earl of Huntingdon, was extremely well connected at court and by family ties and this is manifest in the three visits James I made to Ashby in the 1610s and one by Charles

I and Henrietta Maria in 1634. He was connected by marriage to the Haringtons, famous garden creators of their time and married the daughter of the Dowager Countess of Derby, an extremely well-connected patron of the arts. It seems impossible that Henry would not have been aware of garden design and its ability to convey complex messages about power and wealth. It may be that the sunken garden and central building were built within the existing walled garden at this point.

In 1607 a masque, written specifically for the visit of the Dowager Countess of Derby, was performed at Ashby. The Hastings' papers in the Huntington Library detail the costs of the masque, which involved the Dowager Countess arriving and leaving through the garden, including the construction of an 'antique gate' for the event. They do not detail any specific alterations to the sunken gardens, but it seems unlikely that they would not have been a focal point as the Countess entered through the Little Park and headed for the castle. It also around this period that references to works in the gardens appear in the Hastings' papers though often it is not clear as to whether these refer to activity as Ashby or Donington.

It has been argued that although Henry may have had the knowledge and connections that suggest he was involved in the design or redesign of the gardens at Ashby he did not have money to undertake such activities (Way 2006, 47). However, the recent archaeological work seems to suggest the potential of the elements of the garden dating to the early 17th century, such as the 1610-1710 pipe stem and Nuremburg jeton dated 1586-1635 recovered from the more recent deposits of the southern walkway. In fact the dating of most of the earthwork elements of the garden could be pushed into this period, though the earlier date suggested for the garden building and retaining wall argues against this (see above). Interestingly, in the same year they visited Henry at Ashby, Charles I and Henrietta Maria also visited the Hastings' rivals the Greys at Bradgate where the garden had been extended after reoccupation of the house in the early 1600s. Events like these may have created pressure to maintain a garden even in the face of extreme debt. Way (2006, 48) also notes the very early use of the term 'Wilderness' in 1615 which also suggests that Henry may have been keeping up with fashion despite his apparently crippling debts. However, if the sunken gardens were in fact a creation of the fifth Earl or his wife then it is likely that the aforementioned resemblance of the design to the emblazon in the coat of arms of the third Earl's wife is spurious.

7.3 Conclusion

The garden at Ashby castle is part of a formal garden which was created within an already existing designed medieval landscape and then enclosed with a garden wall and two garden buildings, sometime within the second half of the 16th century in the time of either the second or third Earl. At this time the surrounding garden compartments were probably laid out, some within an area already defined as the 'Great garden' in the late medieval period. It then seems that the garden was restored or redeveloped (potentially more than once), probably in the early 17th century. This may have involved the creation of the sunken garden and construction of the third building, if they were not part of the initial design. Though there are a number of contexts for the activity in this later period,

the masque held by Henry fifth Earl, along with a number of royal visits that occurred in his time, offer very strong possibilities. After fortification during the Civil War, it appears that the garden was still being used in the late 17th and early 18th centuries but its status was probably on the wane. The castle's use as a tourist attraction from the 19th century onwards is evident in the more recent archaeological deposits in the garden and through the documentary sources.

The research project has demonstrated the benefits of a multidisciplinary approach. It has clearly defined the historical and landscape context within which the surviving remains should be considered and provided valuable new information about the dating and layout of the garden, particularly through the excavation of the southern boundary wall and terrace and the discovery of a third garden structure, which has fundamental implications for how people used the spaces within the garden. The work has highlighted the potential for discovering further buried remains within the garden, though it also demonstrated the potential for disturbance within the deposits due to the continuing use of the garden over the centuries.

There are a number strands of research that could further elucidate the story of the castle garden:

- It would be valuable to confirm or dismiss the possibility of an emblematic design in the western sunken garden through further excavation.

- Further investigation of the potential heraldic nature of the eastern garden design may be of some benefit, as well as a more detailed examination of the geometry and proportions of the different garden compartments.

- Full excavation of the central garden building has the potential to increase our understanding of how this structure functioned.

- It would be useful to clarify the relationship between the different sections of the garden terrace through further excavation trenches.

- It would be beneficial to have an experienced local buildings archaeologist examine the garden buildings to attempt to date their construction more precisely.

- Some investigations of the geometric ponds to the west of the castle would also be of value in terms of assessing the preservation potential of the area.

- Further research may be of benefit with regards to the Civil War archaeology of the site. A better understanding of the systems of defence around the town and castle might help to clarify the role of the garden in this period.

8. REFERENCES

Anon., 1852 *Hextall's Ashby de la Zouch.* White Lion Publishers (Facsimile edition 1974).

Bennett, M 2008 'Hastings, Henry, Baron Loughborough (1610–1667)', *Oxford Dictionary of National Biography*, Oxford University Press, Sept 2004; online edn, Jan 2008 [http://www.oxforddnb.com/view/article/12576, accessed 2 April 2008]

Brown, A 2006 *Brief for research in connection with the garden and landscape at Ashby de la Zouch Castle, Leicestershire.* English Heritage unpublished document.

Cantor, L 1983 *The Medieval Parks of England: a gazetteer.* Department of Education, Loughborough University.

Coppack, G unpublished *Draft Conservation statement for Ashby de la Zouch Castle, Ashby de la Zouch, Leicestershire*

Crane, E and Walker, P 2000 Wall recesses for bee hives. *Antiquity* **74**: 805-811.

Cross, C 2008 'Hastings, Francis, second earl of Huntingdon (1513/14–1560)', *Oxford Dictionary of National Biography*, Oxford University Press, Sept 2004; online edn, Jan 2008 [http://www.oxforddnb.com/view/article/12566, accessed 2 April 2008]

Cross, C 2008a 'Hastings, George, first earl of Huntingdon (1486/7–1544)', *Oxford Dictionary of National Biography*, Oxford University Press, Sept 2004; online edn, Jan 2008 [http://www.oxforddnb.com/view/article/12570, accessed 2 April 2008]

Cross, C 2008b 'Hastings, Henry, third earl of Huntingdon (1536?–1595)', *Oxford Dictionary of National Biography*, Oxford University Press, Sept 2004; online edn, Jan 2008 [http://www.oxforddnb.com/view/article/12574, accessed 2 April 2008]

Everson, P 1989 'The gardens of Campden House, Chipping Campden, Gloucestshire'. *Garden History* **17** (Part 2)

Fosbrooke, TH 1913 *Ashby-de-la-Zouch Castle, Leicestershire. Historic and Descriptive* Reprint, Leicestershire, George Brown

Goodall, J 2007 *Ashby de la Zouch Castle and Kirby Muxloe Castle.* London: English Heritage

Guerrini, A 2004 'Hastings, Lady Elizabeth (1682–1739)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004 [http://www.oxforddnb.com/view/article/12564, accessed 2 April 2008]

Harrington, P 2004 *English Civil War Archaeology.* London: Batsford

Henderson, P 2005 *The Tudor house and garden: architecture and landscape in the*

sixteenth and early seventeenth centuries. London: Yale University Press

Herbert, A 1932-33 'Ashby Castle' in T*ransactions of the Leicestershire Archaeological Society* **17**, 198-204

Hillier, K 1988 *The Castle of Ashby de la Zouch: A selection of prints and watercolours 1730-1988*. ?: Kenneth and Marjorie Hampson

Horrox, R 2004 'Hastings, William, first Baron Hastings (*c.*1430–1483)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004 [http://www.oxforddnb.com/view/article/12588, accessed 2 April 2008])

Jeffries, TC 2004 'Hastings , Lucy, countess of Huntingdon (1613–1679)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004 [http://www.oxforddnb.com/view/article/65147, accessed 2 April 2008]

Jones, TL 1980 *Ashby de la Zouch Castle* English Heritage, London

Knowles, J 2006 'Hastings, Henry, fifth earl of Huntingdon (1586–1643)', *Oxford Dictionary of National Biography*, Oxford University Press, Sept 2004; online edn, May 2006 [http://www.oxforddnb.com/view/article/40548, accessed 2 April 2008]

Leary, J 2006 *Ashby de la Zouch Castle and Gardens* (Wolfson Foundation Gardens Challenge Fund Project Number 4990) Project Design

National Trust 2005 *Melford Hall*

Nichols, J 1804 *The history and antiquities of the county of Leicestershire* Vol III Part II London: J Nichols & Son

Patterson, CF 2004 'Hastings, Theophilus, seventh earl of Huntingdon (1650–1701)', *Oxford Dictionary of National Biography*, Oxford University Press, 2004 [http://www.oxforddnb.com/view/article/12583, accessed 2 April 2008]

Pevsner, N 1984 *The Building of England: Leicestershire and Rutland.* 2nd Edition London: Penguin

Schlenther, BS 2008 'Hastings , Selina, countess of Huntingdon (1707–1791)', *Oxford Dictionary of National Biography*, Oxford University Press, Sept 2004; online edn, Jan 2008 [http://www.oxforddnb.com/view/article/12582, accessed 2 April 2008]

Shaw, J and Shaw, P circa 1997 'The ruins at Cotes' in Trubshaw, RN (ed.) *Wolds Reflections: Celebrating a decade of the Wolds Historical Organisation 1987 – 1997* p34-35

Thurley, S 1993 *The Royal Palaces of Tudor England*. London: Yale University Press

Way, T 2006 *The Designed Gardens and Landscapes at Ashby de la Zouch castle – Phase 3*

report – Commissioned by English Heritage

Williamson, T 2006 *The Archaeology of Rabbit Warrens*. Shire: Princes Risborough

http://www.ibra.org.uk/beeboles/ - visited 23/07/07

Other Sources

Ashby de la Zouch Museum

MAE Vavasour 1855 'Brick tower at the Castle, Ashby de la Zouche' x 2 – sketches

Huntington Library, San Marino, California

Hastings Miscellaneous Box 13 – Dugdale MSS 1677
MAP DRAWER 11 U2 - 1472-3 Compotus Roll ()
HAM Box 54 1673 Reference to horses in 'Wildernesse'
HAM Box 55 1615 Reference to term 'Wilderness'

Maps

Leicestershire, Leicester and Rutland Record Office - DG 30/ Ma/249/1 - 'A survey of the several estates in land belonging to the right honourable Lord Theophilus Hastings by William Gardiner Land Surveyor 1735'
Ordnance Survey 1883 25 inch 1st Edition
Ordnance Survey 1903 25 inch 2nd Edition
Ordnance Survey 1923 25 inch 3rd Edition

National Archives

WORK 14/1191
WORK 14/1318
WORK 14/1758
WORK 14/642

National Monuments Record

AL0503 - photographs
PF/AZC - plans

NB 1730 Engravings by Samuel and Nathaniel Buck are published in Jones (1980).

APPENDIX 1: PROJECT TEAM

Project Co-ordinator
Annabel Brown (Senior Landscape Historian)

Analytical Earthwork Survey
Paul Pattison (Senior Investigator - Archaeological Survey and Investigation)
Sarah Newsome (Investigator - Archaeological Survey and Investigation)

Geophysical Survey
Louise Martin (Archaeological Geophysicist)
Andy Payne (Archaeological Geophysicist)
R Briscoe (Student placement)

Borehole Coring
Matthew Canti (Geoarchaeologist)

Excavation
Jim Leary (Project Manager - Archaeological Projects)
Duncan Stirk
Jenny Ryder
Foxy Demeanour
James Cooper
Daniel Ramirez
Nicholas Witchall
Chris Gibson
Dave Fellows
Claire Jones
Brian Kerr
Rosy Phillipson
Tom Cromwell
Andy Roy
Dave Webb
Hannah Boston

Historians
John Goodall (Senior Properties Historian - Properties Presentation)
Twigs Way (Consultant Garden Historian)

APPENDIX 2: ANALYTICAL LANDSCAPE SURVEY METHODOLOGY

The earthwork survey plan was produced using a combination of total-station theodolite and traditional graphical survey techniques of taped baseline and offset/radiation.

Initially, a Trimble 5600-series Total Station was used to observe a four station ring traverse from which the detail was recorded. These stations were marked with wooden pegs. Additional red plastic pegs were used to create a network of temporary control points in order to add additional detail and record the positions of the coring (see Appendix 3) using graphical methods. Traverse observations, control point and electronic detail were all computed via Trimble Geosite software, transferred into AutoCAD 2007 and a plot produced at the elected scale of 1:500 for completion in the field. The final drawing was aligned to the Ordnance Survey National Grid using co-ordinates taken using survey-grade Trimble 4000 differential GPS equipment during the geophysical survey. The drawing was completed using traditional pen and ink techniques.

The garden is protected as a Scheduled Ancient Monument (17121) under the 1979 Ancient Monuments and Archaeological Areas Act. The placement of survey markers was authorised under the provision of the Ancient Monuments (Class Consents) Order 1994.

APPENDIX 3: GEOPHYSICAL SURVEY REPORT

ASHBY DE LA ZOUCH CASTLE, Leicestershire: April 2006.

Introduction

Geophysical surveys of approximately 1.3 hectares were conducted over the garden area to the south of Ashby de la Zouch Castle, Leicestershire. The aim of this geophysical survey was to better understand the original form of the garden and buried features within it and to inform a programme of limited excavation. The remnants of the 16th century boundary wall are visible to the north and west of the garden and it was hoped to detect the footings of the southern and eastern walls and also to clarify a number of parch-marks visible in the garden area.

The site (centred on NGR SK361166) lies on slowly permeable, seasonally waterlogged, loamy over clayey and fine silty soils of the Bordsey association (Soil Survey of England and Wales 1983), developed over shale with sandstone beds and many coal seams (British Geological Survey 1976).At the time of the survey the site was under short grass and enclosed as part of the English Heritage property, Ashby Castle.

Method

All areas for survey were gridded using a real-time kinematic Global Positioning System (GPS).

Magnetometer survey

The two ornamental towers at the southern corners of the garden and walling to the north and west are all brick built and it is presumed that other features may have been constructed of the same material. As bricks typically acquire a strong thermoremanent magnetisation on firing, magnetometry was chosen in an attempt to locate these features.

The survey was conducted over the shaded area in Figure 1 with two Bartington *Grad601* fluxgate gradiometers following the standard method outlined in note 2 of Annex 1. A plot of the data-set is superimposed over the Ordnance Survey (OS) base map and recent topographical survey at a scale of 1:1250 on Figure 2. Additionally an X-Y traceplot, linear greyscale plot and a false colour plot of the data are presented at a scale of 1:1000 on Figure 3.

Corrections made to the measured values displayed in the plots were to zero-median each instrument traverse to correct for instrument heading errors and to 'despike' the data through the application of a 2m by 2m thresholding median filter (Scollar, Tabbagh *et al.* 1990, 492). This latter operation reduces the distracting, localised, high-magnitude effects produced by surface iron objects. A Butterworth band-reject filter in the frequency domain was applied to the data from some grid-squares to remove the periodic artefacts caused by operator gait. To improve the visual intelligibility of the traceplot presented in Figure 3B, the data-set has had the magnitudes of extreme values truncated to 20nT/m.

Earth resistance survey

Subsequent to the magnetometer survey, an earth resistance survey was conducted over the site in order to locate garden features such as paths or planting beds which might be visible owing to their varying moisture contents.

The survey was conducted over the hatched area in Figure 1. Measurements were collected with a Geoscan RM15 resistance meter, MPX15 multiplexer and an adjustable PA20 electrode frame in the Twin-Electrode configuration. Readings were collected using the standard method outlined in note 1 of Annex 1 but with mobile electrode separations of 0.5m and 1.0m, taking readings at 1.0m along each traverse thereby producing two data-sets preferentially sensitive to features at different depths. The sample densities for these were 0.5m x 1.0m for the 0.5m electrode separation and 1.0m x 1.0m for the 1.0m electrode separation. All data has been 'despiked' to remove isolated high readings caused by poor contact. Additionally a Gaussian high-pass filter (radius 4m) was applied to both data-sets. A greyscale plot of the filtered 0.5m data is superimposed over the base OS map at a scale of 1:1250 in Figure 4. Plots of the raw data-sets are additionally presented as both an X-Y traceplot and equal area greyscale plot and the filtered data as a false-colour plot, all at a scale of 1:1000 in Figure 5 for the 0.5m data and Figure 6 for the 1.0m data.

Magnetic susceptibility measurements

During the excavations a patterned area of various colours of sandstone was discovered on the eastern edge of the base of the western sunken area. To assess the possibility that this was a deliberate feature of the garden, rather than a natural phenomenon, samples were taken from each of the different coloured sections. Fragments of each colour – orange, pink, yellow and purple – were analysed in a Bartington MS2 susceptibility meter in a 100cc sensor. However, all samples recorded very low susceptibilities ($< 5 \times 10^{-5}$ m^3Kg^{-1}) with little variation and it was deduced that that the there was not sufficient magnetic material within them to warrant further investigations.

Results

Magnetometer survey

A graphical summary of the significant anomalies discussed below is provided on Figure 7. Numbers in [ ] refer to annotations in this figure.

The general magnetic response in this area was good with background levels >±1nT/m. Modern disturbance is evident across the site and has been recorded at the edges of the sunken gardens, adjacent to boundaries, internal fencing and cabling and close to the castle ruins. In the area immediately adjacent to the standing buildings there were very high magnetic readings suggestive of modern pipelines and services, one of which [M1] possibly extends from the site office at the NW of the site across to the NE corner of the western sunken area. Elsewhere, the modern disturbance is typified by discrete zones of magnetic noise in the base of the earthwork features close to the banking. Several areas of extreme readings appear to correspond with features previously identified in

aerial photographs and during the topographical survey, including a probable pipeline [M2] running along the terrace between the two sunken areas and an area in the western part of the garden [M3] corresponding to the E edge of a rectilinear anomaly known from cropmarks and believed to be the footings of a possible building.

Positive magnetic responses at [M4] correlate with a rectilinear cropmark and the location of a Ministry of Works building known from a plan of 1949. Additionally, there are several areas of raised magnetic response which could be indicative of structural features within the garden area. A series of four parallel linear strong positive magnetic anomalies [M5] running between the towers to the south possibly represent walling and could be evidence of previous terracing. There are similar strength anomalies [M6] to the north of the W sunken area which may also represent brick foundations underlying the extant bank. At the base of the W sunken area, seemingly abutting its northern bank, is a long (~50m) positive magnetic rectilinear anomaly [M7]. A parallel anomaly of similar length [M8] is evident to the south of the sunken area. It is unclear to what these responses relate as their positioning does not obviously correspond to the extant features. In the area between [M7-8] several weak intersecting linear anomalies [M9] have been recorded, which may represent a previous internal subdivision. An amorphous positive anomaly [M10] may also be indicative of earlier activity in the base of this area.

The sunken area to the E exhibits generally less magnetic activity than to the W, however there is no evidence of significantly subdued areas (low background levels with virtually no noise) to suggest the silting which might be expected from a former pond bed. In the southern compartment there is an area of slightly disturbed positive magnetic response [M11] at the foot of the banking. These and further positive magnetic anomalies [M12] between the banks in the centre of the feature and extending south may represent evidence for construction or infilling processes.

In the area near the site office, it is possible that the positive linear anomaly [M13] may represent an earlier revetment or boundary structure, while the positive partial rectilinear anomaly [M14], whose northern extent is not defined by the survey, may be a structural feature due to its close proximity to the castle buildings.

Earth resistance

A graphical summary of the significant anomalies from the 0.5m and 1.0m datasets discussed below is provided on Figure 8. Numbers in [ ] refer to annotations in this figure.

The earth resistance survey gave good results with both the 0.5 and 1.0m electrode separations but background levels showed great variance across the site. A low resistance, rectilinear anomaly [R1] in the eastern part of the garden and an adjacent linear low resistance anomaly are probably the footings of a Ministry of Works building and an adjacent pipeline. This was one of several features known from aerial photographs and cropmarks which were identified in the survey. A further a low resistance feature [R2] was also visible in the earth resistance data and corresponds with the probable pipeline identified in the magnetometer survey.

High resistance readings [R3] were recorded along central causeway and southern revetments of the E sunken area, possibly indicating that the embankments were reinforced with compacted stone or similar material. Likewise, high readings [R4] along the northern and western bank of the western sunken area could be due to a similar process of reinforcement. The earth resistance survey also recorded several anomalies inside the sunken features. Two irregularly shaped areas of low resistance [R5-6] were recorded, one in each of the compartments of the E sunken area, the latter adjacent to an area of exceptionally high resistance [R7]. Anomaly [R7] correlates with the slightly noisy positive magnetic anomaly [M11] which may suggest infilling with some brick material or perhaps small quantities of ironwork, however, it is unclear whether these anomalies relate to modern disturbance or earlier, undetermined features.

In the western sunken area there was also a smaller region of extremely high resistance alongside an area of low resistance [R8], thought to represent the footings of the previously identified possible building of unknown date. To the N and S of [R8] and running orthogonal to it were two large, parallel rectilinear low resistance anomalies [R9-10] running across the base of the sunken area indicative of ditches. These anomalies, [R8-10], are all visible in both the 1m and 0.5m datasets suggesting that they are substantial features. However, the origin of the parallel ditch anomalies is unclear. Speculatively, they may represent planting beds but if so their position in relation to the rest of the sunken area is curious. The generally high readings in the area between [R9] and [R10] may be suggestive of compacted ground, while a partial rectilinear area of low resistance [R11] may possibly represent the remains of a garden feature.

To the south of the sunken areas are long linear anomalies of high and low resistance [R12] running between the two towers. These correspond with the area of possible walling identified in the magnetometer survey [M5] and are probably representative of the construction and in-filling of terraces.

In the garden area closest to the ruins three adjacent high and low resistance anomalies [R13] visible in the 0.5m data might represent the remains of an antiquarian archaeological investigation the precise location is unknown but believed to have been in the northern part of the garden. Closer to the ruins, the earth resistance survey clearly shows a high resistance rectilinear area [R14] which correlates with the adjacent vaulted cellar yet neither the 0.5m or 1m data shows evidence of the underground passage which links the Hastings Tower to the kitchen building. This is surprising as the tunnel is still open but it is possible that its conductive brick lining masks the high resistance response that would otherwise be expected from this air-filled void feature.

Conclusion

The surveys undertaken produced evidence of a variety of features within the garden area. Some of these, the Ministry of Works' building footings and pipelines, are clearly the result of known modern activity while others, such as the anomalies observed inside both sunken areas, may represent older activity. However, it is unclear whether these features can be associated with the construction or subsequent use of the garden.

Additionally, despite a total of four Ministry of Works' buildings known to have been constructed on the site, only one was evidenced by either survey technique, demonstrating that ephemeral structures are frequently undetectable by geophysical techniques.

There was no evidence for a water supply to the eastern area, and the general background response here was not indicative of a water-lain deposit. The response from the western area was very confusing. Large rectilinear areas of low resistance misaligned with the slopes of the sunken compartment were not indicative of flower beds, but no alternative explanation is obvious. Very faint magnetic responses were recorded criss-crossing the base of this compartment, which may relate to deliberate sub-division, but the patterning is too obscured by more intense modern responses to allow confident interpretation.

However, some anomalies identified in the survey could be more clearly associated with the construction of the earthworks in the castle garden. The high earth resistance readings along the banks of the W area are strongly indicative of the reinforcement of the revetments with compacted stone or a similar material. However, lack of uniform response around the whole course of the sunken feature suggests these might indicate modifications or repairs in which case the feature could have seen several phases of use. Additionally, the clear linear magnetic and resistance responses along the area between the two towers indicates a series of brick structures underlying the current bank, which are possibly the vestiges of an earlier terrace arrangement. Similar anomalies to the north suggest an enclosure of the garden S of the Hastings Tower.

Surveyed by: R Briscoe
L Martin
A Payne

Date of survey: 24-28/4/2006

Reported by: R Briscoe
L Martin

Date of report: 11/1/2008

Geophysics Team,
English Heritage.

List of enclosed figures

Annex 1: Notes on standard procedures

1) *Earth Resistance Survey:* Each 30 metre grid square is surveyed by making repeated parallel traverses across it, all aligned parallel to one pair of the grid square's edges, and each separated by a distance of 1 metre from the last; the first and last traverses being 0.5 metres from the nearest parallel grid square edge. Readings are taken along each traverse at 1 metre intervals, the first and last readings being 0.5 metres from the nearest grid square edge.

   Unless otherwise stated the measurements are made with a Geoscan RM15 earth resistance meter incorporating a built-in data logger, using the twin electrode configuration with a 0.5 metre mobile electrode separation. As it is usually only relative changes in earth resistance that are of interest in archaeological prospecting, no attempt is made to correct these measurements for the geometry of the twin electrode array to produce an estimate of the true apparent resistivity. Thus, the readings presented in plots will be the actual values of earth resistance recorded by the meter, measured in Ohms (Ω). Where correction to apparent resistivity has been made, for comparison with other electrical prospecting techniques, the results are quoted in the units of apparent resistivity, Ohm-m (Ωm).

   Measurements are recorded digitally by the RM15 meter and subsequently transferred to a portable laptop computer for permanent storage and preliminary processing. Additional processing is performed on return to the Centre for Archaeology using desktop workstations.

2) *Magnetometer Survey:* Each 30 metre grid square is surveyed by making repeated parallel traverses across it, all parallel to that pair of grid square edges most closely aligned with the direction of magnetic N. Each traverse is separated by a distance of 1 metre from the last; the first and last traverses being 0.5 metre from the nearest parallel grid square edge. Readings are taken along each traverse at 0.25 metre intervals, the first and last readings being 0.125 metre from the nearest grid square edge.

   These traverses are walked in so called 'zig-zag' fashion, in which the direction of travel alternates between adjacent traverses to maximise survey speed. Where possible, the magnetometer is always kept facing in the same direction, regardless of the direction of travel, to minimise heading error. However, this may be dependent on the instrument design in use.

   Unless otherwise stated the measurements are made with either a Bartington *Grad601* or a Geoscan FM36 fluxgate gradiometer which incorporate two vertically aligned fluxgates, one situated either 1.0m or 0.5 metres above the other; the bottom fluxgate is carried at a height of approximately 0.2 metres above the ground surface. Both instruments incorporate a built-in data logger that

records measurements digitally; these are subsequently transferred to a portable laptop computer for permanent storage and preliminary processing. Additional processing is performed on return to the Centre for Archaeology using desktop workstations.

It is the opinion of the manufacturer of the Geoscan instrument that two sensors placed 0.5 metres apart cannot produce a true estimate of vertical magnetic gradient unless the bottom sensor is far removed from the ground surface. Hence, when results are presented, the difference between the field intensity measured by the top and bottom sensors is quoted in units of nano-Tesla (nT) rather than in the units of magnetic gradient, nano-Tesla per metre (nT/m).

3) *Resistivity Profiling:* This technique measures the electrical resistivity of the subsurface in a similar manner to the standard resistivity mapping method outlined in note 1. However, instead of mapping changes in the near surface resistivity over an area, it produces a vertical section, illustrating how resistivity varies with increasing depth. This is possible because the resistivity meter becomes sensitive to more deeply buried anomalies as the separation between the measurement electrodes is increased. Hence, instead of using a single, fixed electrode separation as in resistivity mapping, readings are repeated over the same point with increasing separations to investigate the resistivity at greater depths. It should be noted that the relationship between electrode separation and depth sensitivity is complex so the vertical scale quoted for the section is only approximate. Furthermore, as depth of investigation increases the size of the smallest anomaly that can be resolved also increases.

Typically a line of 25 electrodes is laid out separated by 1 or 0.5 metre intervals. The resistivity of a vertical section is measured by selecting successive four electrode subsets at increasing separations and making a resistivity measurement with each. Several different schemes may be employed to determine which electrode subsets to use, of which the Wenner and Dipole-Dipole are typical examples. A Campus Geopulse earth resistance meter, with built in multiplexer, is used to make the measurements and the Campus Imager software is used to automate reading collection and construct a resistivity section from the results.

References

British Geological Survey 1976 Loughborough, England and Wales, Solid and Drift Geology, Sheet 141, 1:50000.

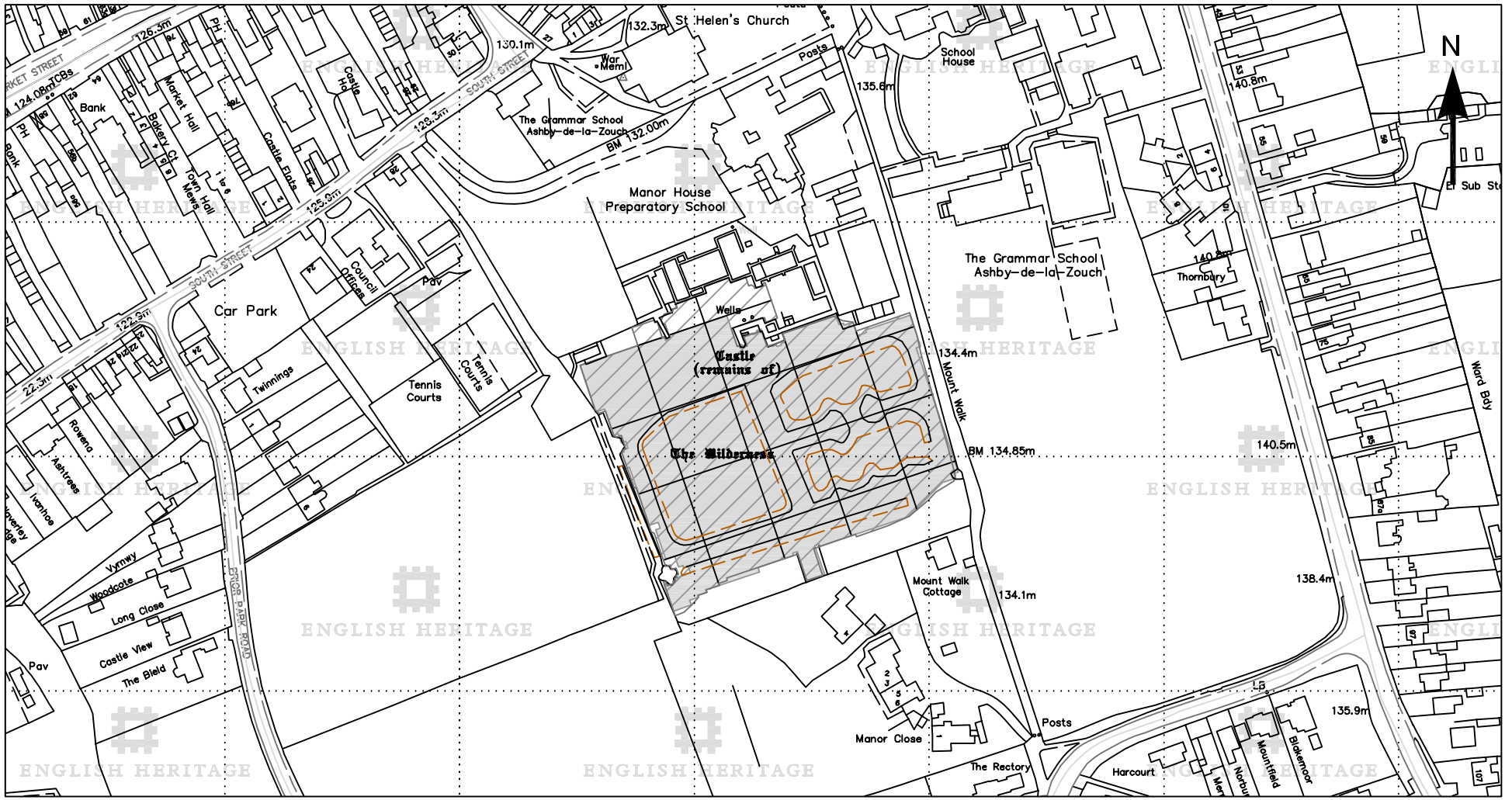
Scollar, I, Tabbagh, A, Hesse, A and Herzog, I (eds.) 1990 'Archaeological Prospecting and Remote Sensing' *Topics in Remote Sensing*. Cambridge: Cambridge University Press.

Soil Survey of England and Wales 1983 Soils of England and Wales, Sheet 3, Midland and West England, 1:250000.

ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE

Figure 1

Location of Geophysical Surveys, April 2006



Magnetometer survey

Earth resistance survey

0 90m

1:2500

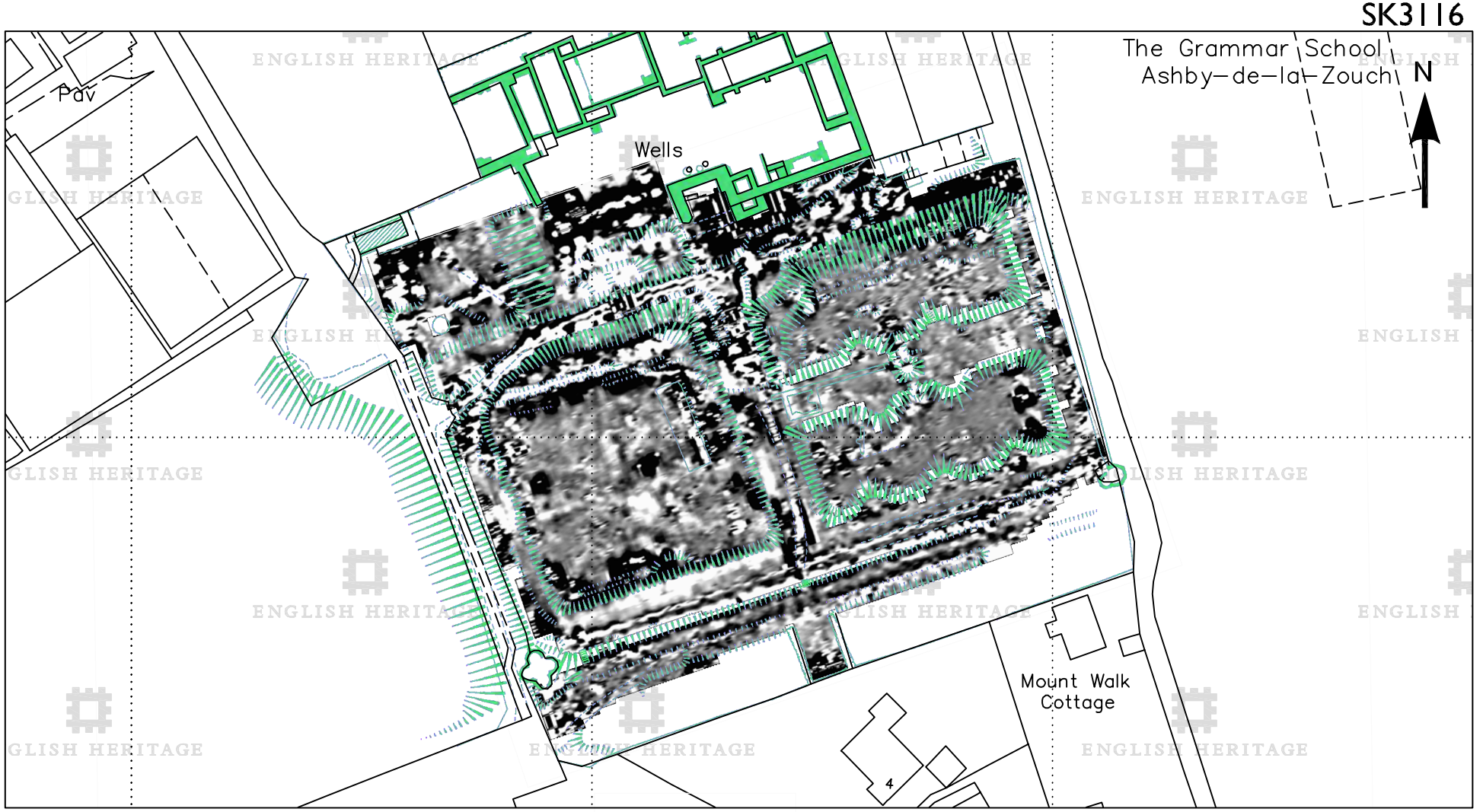
Geophysics Team 2008.

ENGLISH HERITAGE

ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE

Figure 2

Magnetometer Survey, April 2006



-5.00 -1.67 1.67 5.00
nT/m

Earthwork survey

0 60m

1:1250

Geophysics Team 2008.

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ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE
Fluxgate Magnetometer Survey, April 2006

Figure 3

A) Linear greyscale plot of raw data

B) Traceplot of raw data

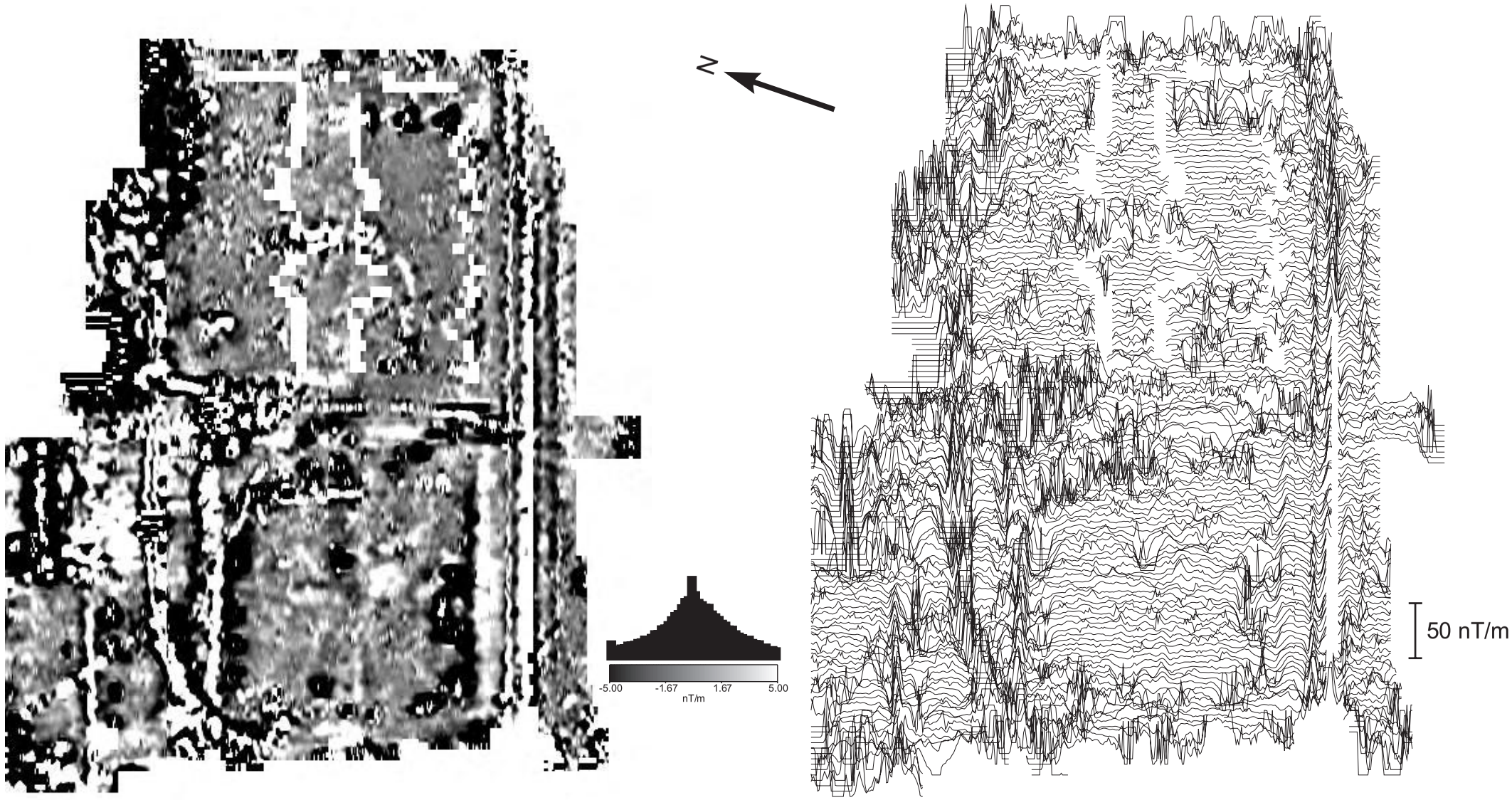

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Figure 4

Earth Resistance Survey, April 2006

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ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE
Earth Resistance Survey at 0.5m mobile probe separation, April 2006

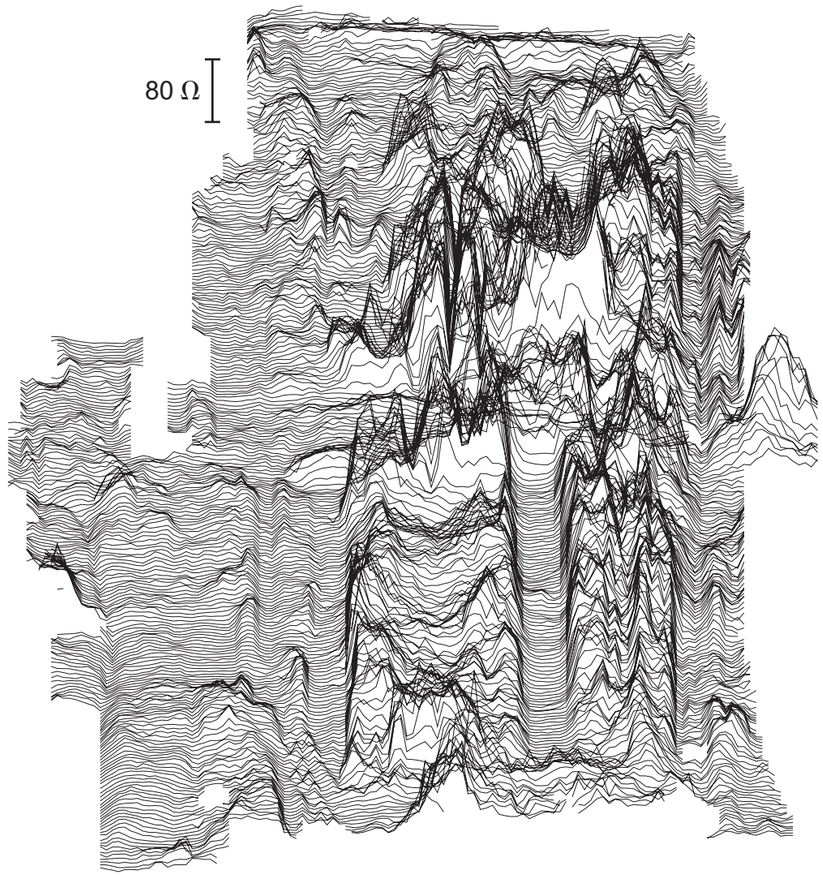
Figure 5

A) Greyscale plot of raw data

N

C) False colour plot of gaussian high pass filtered data

B) Traceplot of raw data



0 90m

1:1000

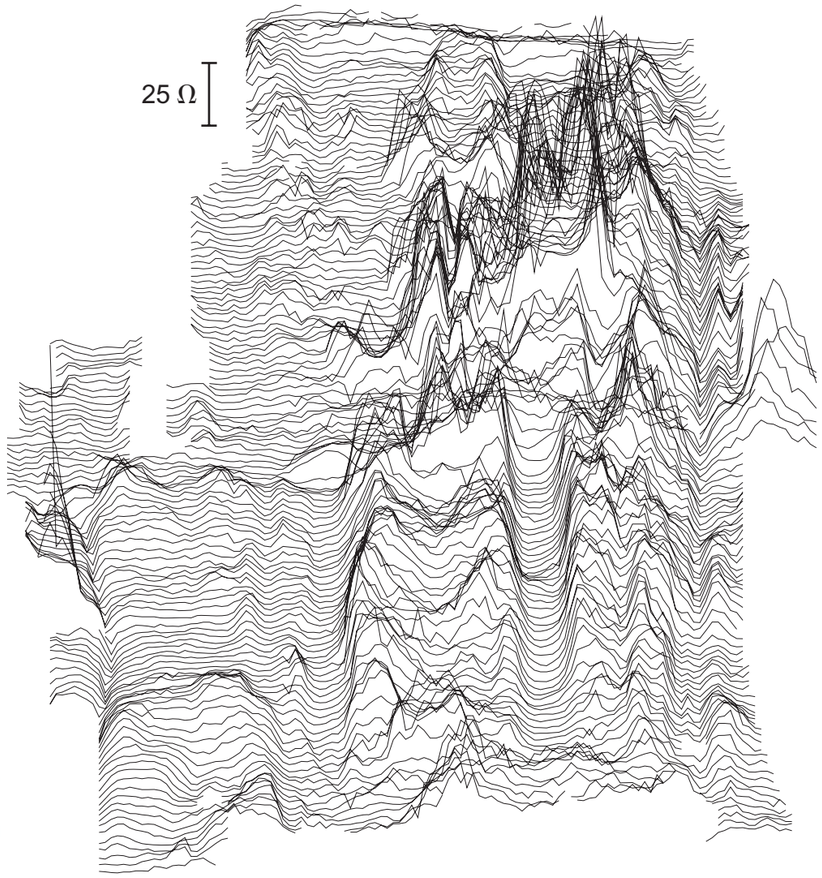
ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE
Earth resistance survey at 1.0m mobile probe separation, April 2006

Figure 6

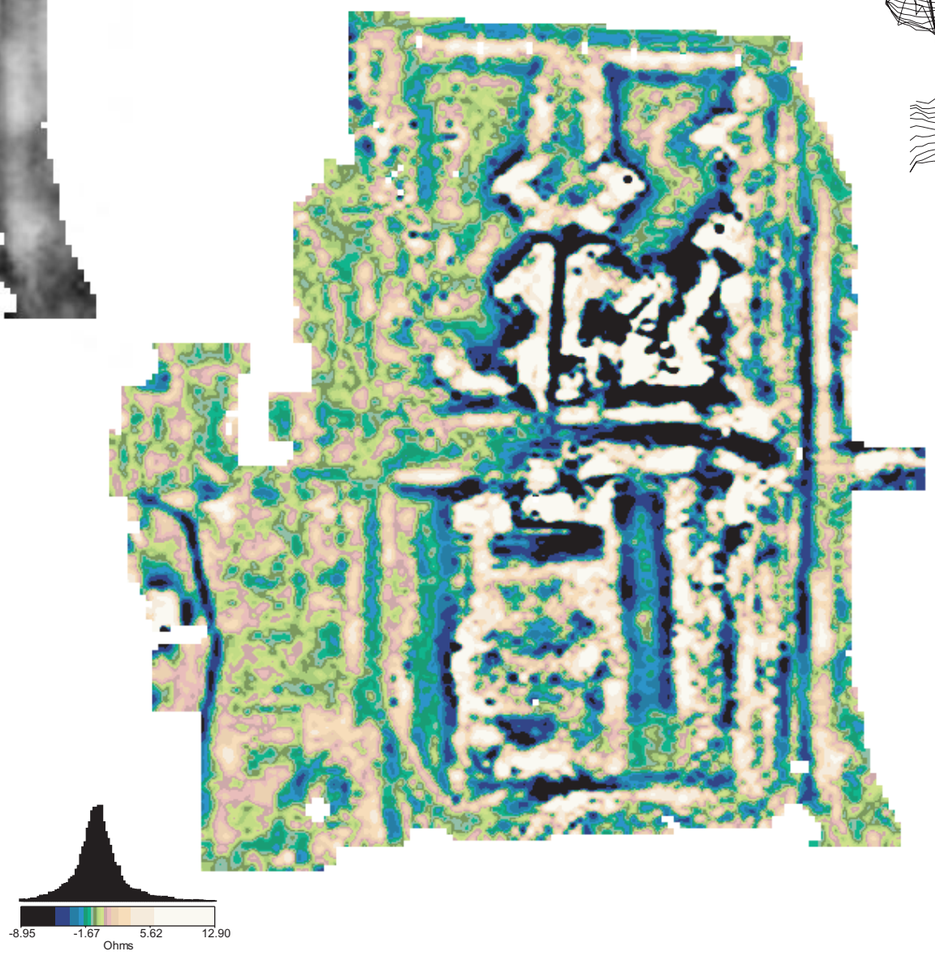
A) Greyscale plot of raw data

N

B) Traceplot of raw data



C) False colour plot of gaussian high pass filtered data



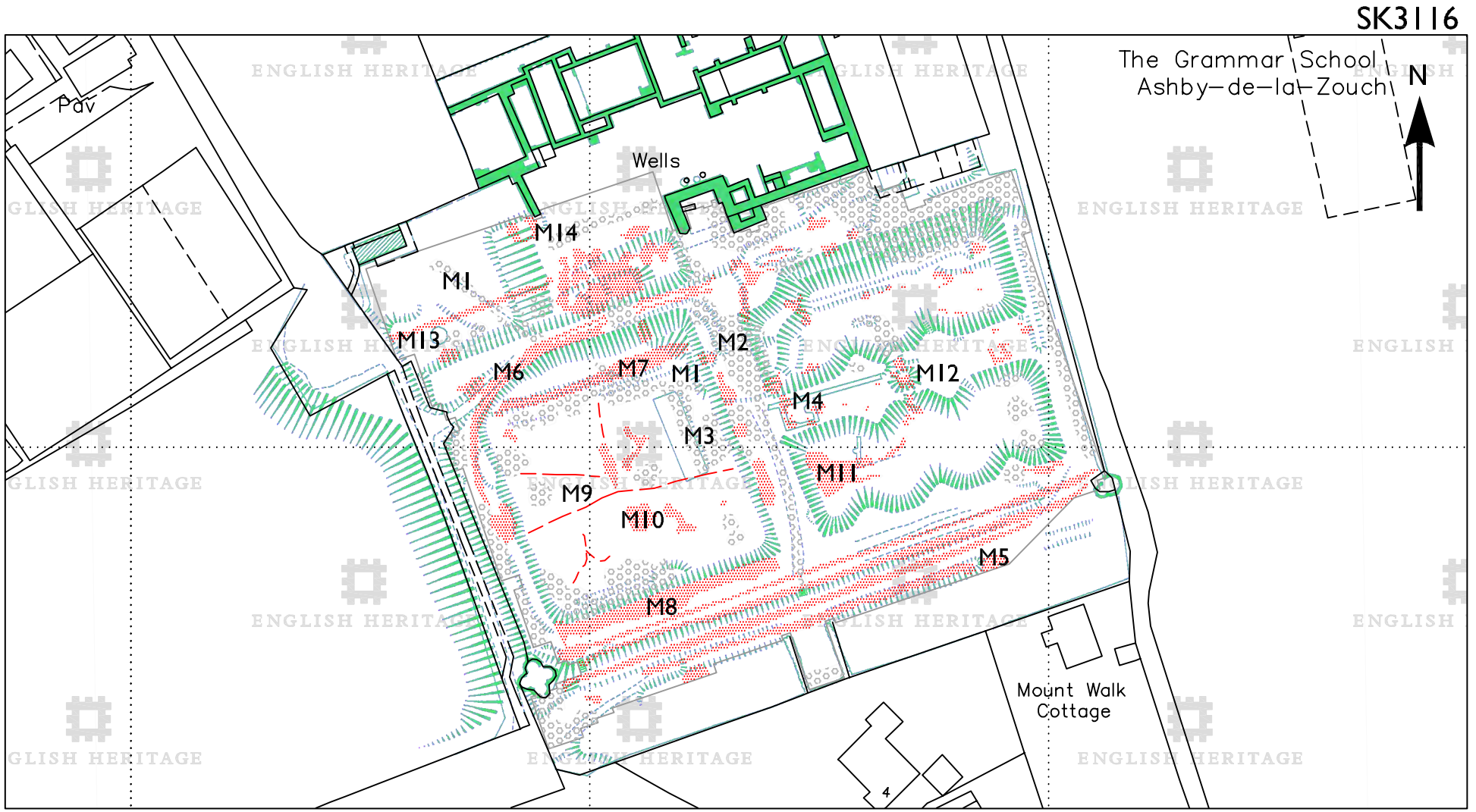
0 90m

1:1000

ASHBY DE LA ZOUCH CASTLE, LEICESTERSHIRE

Figure 7

Graphical Summary of Significant Magnetometer Anomalies, April 2006



Positive Magnetic Anomaly

Tentative Positive Magnetic Anomaly

Area of Magnetic Noise

Earthwork survey

0 60m

1:1250

Geophysics Team 2008.

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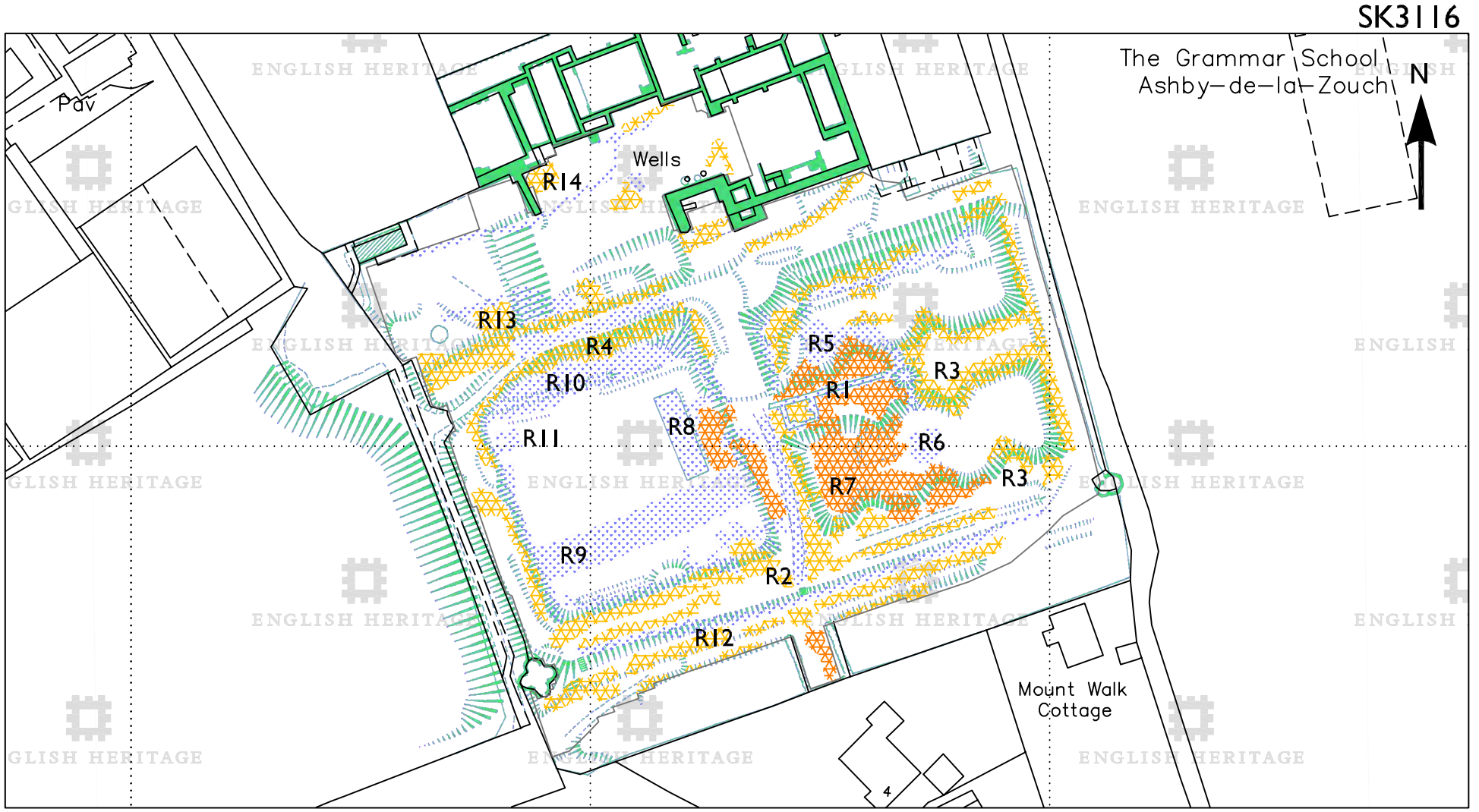
Figure 8

Graphical Summary of Significant Earth Resistance Anomalies, April 2006



Geophysics Team 2008.

Very High Earth Resistance Anomaly

High Earth Resistance Anomaly

Low Earth Resistance Anomaly

Earthwork survey

0 60m

1:1250

ENGLISH HERITAGE

APPENDIX 4: CORING AT ASHBY DE LA ZOUCH

Matthew Canti and Sarah Newsome

Introduction

Coring was carried out in the gardens of Ashby de la Zouch castle during May and June 2006, to try and determine the basic stratigraphy of the garden construction. Limited knowledge of the buried services constrained the work to areas well away from the existing buildings. Twelve holes (see Figure 1) were drilled, photographed and recorded. The core descriptions and interpretations derived from them are presented below.

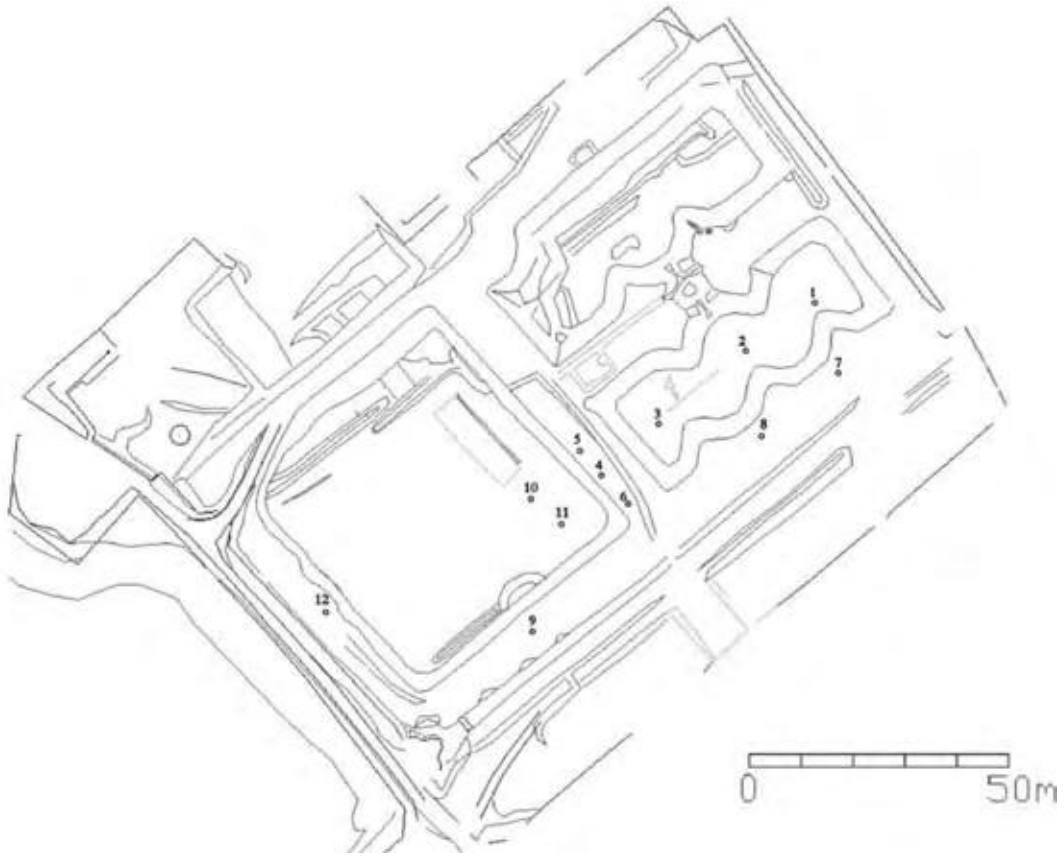


Figure 1. Layout of the 12 holes drilled in May and June 2006.

Holes 1 - 3

These three holes were positioned to examine the stratigraphy at the bottom of the deep NE compartment.

Hole 1

0 – 24/26 cm	Dark greyish brown (10 YR 4/2) clay loam, no stones. 2 cm boundary to:-
24/26 – 100 cm	Yellowish brown (10 YR 5/8) and yellowish brown (10 YR 5/4) rotted stone with virtually no matrix.

Figure 2. 1 metre core from Hole 1

Hole 2

0 – 20/22 cm	Dark greyish brown (10 YR 4/2) clay loam, no stones. 2 cm boundary to:-
20/22 – 44/45 cm	Yellowish brown (10 YR 5/4) clay loam with 5% small yellowish brown (10 YR 5/6) stones of < 5mm. 2 cm boundary to:-
44/45 – 100 cm	Densely packed yellowish brown (10 YR 5/8) rotted stone with and yellowish brown (10 YR 5/4) mottling.

Figure 3. 1 metre core from Hole 2

Hole 3

0 – 8/10 cm	Very dark greyish brown (10 YR 3/2) silty clay loam with no stones. 3 cm boundary to:-
8/10 – 37/39 cm	Dark yellowish brown (10 YR 4/4) clay loam, with 5% stones < 5mm. 1 cm boundary to:-
37/39 – 50 cm	Yellowish brown (10 YR 5/8) and yellowish brown (10 YR 5/4) rotted stone with virtually no matrix.
50 – 100 cm	Solid rock.

Figure 4. 1 metre core from Hole 3

Interpretation of cores from Holes 1 – 3. In each of the cores from Holes 1 - 3, a yellowish brown or dark yellowish brown subsoil rests on rotted or shattered bedrock. Bearing in mind the likely cutting-in required to landscape the hollow (see Figure 5), the original soil surface is probably now lost; the current surface was most likely produced by digging down then bringing in subsoil to make the base for a good quality lawn.

Figure 5. Cores from Holes 1 – 3 showing their landscape positions Detailed views of these cores can be found on Figures 2, 3 and 4.

Holes 4 - 6.

Holes 4, 5 and 6 were drilled to explore the stratigraphy of the NW-SE causeway separating the two major compartments of the garden.

Hole 4

0 – 5 cm Gap

5 – 10/11 cm	Humic mat overlying very dark grey (10 YR 3/1) silty clay loam with no stones. 1 cm boundary to:-
10/11 – 30/31 cm	Dark brown (10 YR 3/3) clay loam, with no stones. 0.5 – 1 cm undulating boundary to:-
30/31 – 74/76 cm	Chaotic mix of light olive brown (2.5 Y 5/4) sandstone, yellowish brown (10 YR 5/8) sandstone and red (2.5 YR 4/8) tile or brick. Variably interspersed with brown (10 YR 4/3) clay loam matrix. 2 cm boundary to:-
74/76 - 100 cm	Brown (10 YR 4/3) clay loam with occasional (2.5 YR 3/6) rotting sandstone, charcoal and brick fragments.

Second core:-

0 – 16 cm	Gap
16 – 25/26 cm	As previous core (brown (10 YR 4/3) clay loam with occasional (2.5 YR 3/6) rotting sandstone, charcoal and brick fragments) but getting sandier towards the base. 0.5 cm boundary to:-
25/26 – 63/64 cm	Dark brown (7.5 YR 3/2) silty clay loam fading gradually downwards to brown (7.5 YR 4/2). < 5%, 2- 5 mm sandstone fragments and occasional charcoal. 1 cm boundary to:-
63/64 – 100 cm	Densely packed yellowish brown (10 YR 5/8) rotted stone with and yellowish brown (10 YR 5/4) mottling.

Figure 6. 2 m core from Hole 4

Hole 5

0 – 6 cm	Gap

6 – 33/36 cm	Humic mat overlying very dark greyish brown (10 YR 3/2) clay loam with occasional charcoal flecks but no stones. 3 cm boundary to:-
33/36 – 82/84 cm	(10 YR 4/4) clay loam matrix with 50% 1 – 5 cm stones comprising sandstone brick and tile. Charcoal fragments. 2 cm boundary to:-
82/84 – 100 cm	Yellowish brown (10 YR 5/8) clay loam with occasional stone fragments and corroded iron mass.

Second core:-

0 – 22 cm	Gap
22 – 68/71 cm	Yellowish brown (10 YR 5/8) clay loam with occasional stone fragments and corroded iron mass. 3 cm boundary to:-
68/71 – 100 cm	Yellowish brown (10 YR 5/8) and yellowish brown (10 YR 5/4) rotted stone with virtually no matrix. Solid rock at base of core.

Figure 7. 2m core from Hole 5

Hole 6

0 – 23/25 cm	Dark brown (10 YR 3/3) clay loam, no stones and occasional charcoal flecks. 1 cm boundary to:-
23/25 – 100 cm	Dark brown (10 YR 3/3) clay loam with yellowish brown (10 YR 5/4) sandstone and red (2.5 YR 4/8) tile. Patches of brownish yellow (10 YR 6/8) clay and light brownish yellow (10 YR 6/2) clay. A single burnt stone at 84 cm.

Second core:-

0 – 20 cm	Gap

20- 39/40 cm	Brown (10 YR 4/3) clay loam with 2% rotting sandstone fragments. 1 cm boundary to:-
39/40 – 76/82 cm	Mixture of brownish yellow (10 YR 6/8), yellowish brown (10 YR 5/6) and brown (10 YR 4/3) clay loam. Undulating 0.5 cm boundary to:-
76/82 - 100 cm	Yellowish brown (10 YR 5/8) and yellowish brown (10 YR 5/4) rotted stone with little matrix.

Figure 8. 2 m core from Hole 6

Interpretation of cores from Holes 4 - 6. Hole 4 showed a clear buried soil starting at around 1.25 m depth. A weak equivalent could be seen in Hole 5, and Hole 6 contained some topsoil-like materials at a comparable depth although the stratigraphy was less clear. From these observations, it was initially thought that the original (pre-garden) buried surface might be preserved across the site, and Holes 7, 8, 9 and 12 were planned to test the theory by examining the causeways on the south-east and south west side of the garden.

Hole 7

0 – 30/32 cm	Brown (10 YR 4/3) clay loam with no stones. Concentrations of charcoal at 28-30 cm. 2 cm boundary to:-
30/32 – 100 cm	Yellowish brown (10 YR 5/6) clay loam with grey (10 YR 5/1) and yellowish brown (10 YR 5/8) mottles and 15% rotted yellowish brown (10 YR 5/6) sandstone fragments, 1 – 10 mm. Small patch of dark brown (10 YR 3/3) at 98 – 100 cm.

Second core:-

0 – 10 cm	Gap
10 – 59/60 cm	Yellowish brown (10 YR 5/6) clay loam with 10%, 1- 10 mm, sandstone fragments yellowish brown (10 YR 5/4).

59/60 - 60/61 cm	Gap
60/61 – 100 cm	Brown (10 YR 5/3) clay loam with 10%, 1- 5mm, sandstone inclusions and mottles of pale brown (10 YR 6/3) and yellowish brown (10 YR 5/8).

Third core:-

0 – 55/57 cm	Brown (10 YR 5/3) clay loam with 10%, 1- 5mm, sandstone inclusions and mottles of pale brown (10 YR 6/3) and yellowish brown (10 YR 5/8). 2 cm boundary to:-
55/57 - 100 cm	Brown (10 YR 5/3) clay loam with mottles of dark greyish brown (10 YR 4/2) and yellowish brown (10 YR 5/8).

Figure 9. Three metres of Hole 7.

Hole 8

0 – 25/28 cm	Dark yellowish brown (10 YR 4/4) clay loam with 20%, 1 – 5mm stones. 3 cm boundary to:-
25/28 – 40/41 cm	Dark yellowish brown (10 YR 4/4) clay loam with occasional of brick, charcoal and sandstone, 1 – 15 mm. Sharp boundary to:-
40/41 – 53 cm	Brick rubble.
53 – 90/92 cm	Dark yellowish brown (10 YR 4/4) mottled with yellowish brown (10 YR 5/8) clay loam with 20%, 1 – 30 mm sandstone inclusions, flecks of charcoal and rotted brick. 2 cm boundary to:-
90/92 cm – 100 cm	Brownish yellow (10 YR 6/6) sandy clay loam with 10%, 1 – 20 mm sandstone fragments.

Second core:-

0 – 15 cm	Gap
15 – 73/76 cm	Yellowish brown (10 YR 5/6) sandy clay loam with 10%, 1 – 20 mm sandstone. 3 cm boundary to:-
73/76 – 100 cm	Yellowish brown (10 YR 5/8) rotting sandstone.

Figure 10. Two metres of Hole 8.

Hole 9

0 – 2 cm	Gap
2 - 28/30 cm boundary to:-	Brown (10 YR 4/3) clay loam with 10%, 1 – 3 mm stones. 2 cm
28/30 – 78/80 cm	Dark yellowish brown (10 YR 4/4) clay loam with 10%, 1 – 20 mm brownish yellow (10 YR 6/6) sandstone inclusions as well as charcoal and brick fragments. Mottled with brown (7.5 YR 5/4) and brownish yellow (10 YR 6/8). 2 cm boundary to:-
78/80 – 100 cm	Brown (10 YR 4/3) clay loam with brick and charcoal.

Second core:-

0 – 30 cm	Gap
30 – 100 cm	Dark brown (10 YR 3/3) and dark yellowish brown (10 YR 4/4) clay loam with large lumps of brick and charcoal.

Third core:-

0 – 11 cm	Gap
11 – 74/77 cm	Brown (10 YR 4/3) clay loam with brownish yellow (10 YR 6/8) sandstone inclusions and flecks of charcoal. 3 cm boundary to:-
74/77– 100 cm	Brown (7.5 YR 4/4) weathered sandstone.

Figure 11. Three metres of Hole 9.

Hole 12

0 – 5 cm	Gap
5 – 45/46 cm	Very dark greyish brown (10 YR 3/2) clay loam with <10%, 1 – 5 mm stones. 1 cm boundary to:-
45/46 – 100 cm	Dark yellowish brown (10 YR 4/4) clay loam with large sandstone and brick inclusions, mottles of yellowish brown (10 YR 5/6), and charcoal fragments.

Second core:-

0 – 18 cm	Gap
18 – 55 cm	Dark brown (10 YR 3/3) clay loam with <10 %, 1 – 10 mm sandstone fragments, small charcoal flecks and brownish yellow (10 YR 6/8) mottles.
55 – 100	Dark brown (10 YR 3/3) sandy clay loam with mix of inclusions – sandstone brownish yellow (10 YR 6/6) and reddish brown (5 YR 4/4), white quartzite pebble, brick, and charcoal.

Third core:-

0 – 18 cm	Gap
18 – 35 cm	Very dark greyish brown (10 YR 3/2) clay loam with decayed brick/tile yellowish red (5 YR 5/6) to yellow (10 YR 7/6). 3 cm boundary to:-
35 – 100 cm	Brown (7.5 YR 4/2) sandy clay loam of weathering sandstone.

Figure 12. Three metres of Hole 12.

Interpretation of cores from Holes 7, 8, 9 and 12. The positions of Holes 7, 8, 9 and 12 were chosen to test for further evidence of a buried soil like the one initially interpreted from Hole 4. If present, it would be expected either somewhere in the middle of the causeway's height (assuming hollows were chiselled into the old surface) or at the base of the causeway (assuming causeways were piled up onto the old surface). Neither of these options has emerged. Instead, clear evidence for disturbance can be found to at least 1.0 m depth at Hole 7, 2.0 metres (possibly as much as 2.74 m) at Hole 9, and 2.35 metres at Hole 12. None of the holes showed evidence for in-situ buried soils, so the conclusion must be that the gardens represent a complete remodelling of the original landscape rather than simply a single phase of earthwork construction.

Holes 10 and 11

Holes 10 and 11 were drilled to look for any major differences to explain the large rectilinear ENE-WSW aligned resistance anomaly reported by Louise Martin in the western compartment.

Hole 10

0 – 2 cm	Gap
2 – 14 cm	Dark brown (10 YR 3/3) clay loam with no stones. Boundary partly void space:-

14 – 18/22 cm	Dark brown (10 YR 3/3) clay loam (as above) but with 80 - 90% l imestone chippings 5 – 20 mm. 4 cm boundary to:-
18/22 – 64/66 cm	Dark yellowish brown (10 YR 4/4) clay loam with 10%, 1 – 10 mm sandstone fragments. 2 cm boundary to:-
64/66 – 100 cm	Yellowish brown (10 YR 5/8) weathering bedrock – 40% large sandstones up to 30mm.

Figure 13. One metre of Hole 10.

Hole 11

0 – 3 cm	Gap
3 – 33/35 cm	Dark brown (10 YR 3/3) clay loam with <5%, 1 – 10 mm sandstone fragments. 2 cm boundary to:-
33/35 – 63/65 cm	Dark brown (10 YR 3/3) clay loam with large fragments of sandstone and brick. 2 cm boundary to:-
63/65 – 90/91 cm	Yellowish brown (10 YR 5/6) sandy clay loam with 30%, 1 – 20 mm sandstone fragments. 2 cm boundary to:-
90/91 – 100 cm	Yellowish brown (10 YR 5/8) bedrock sandstone.

Figure 14. One metre of Hole 11.

Interpretation of cores from Holes 10 and 11.

Hole 10 was located within the resistance anomaly and Hole 11 outside it. The main difference between the two holes was a distinct layer of limestone chippings at around 15 – 20 cm. This can be seen in the core on Figure 13 and in the walls of the hole on Figure 15. It is suggested that the extent of this layer, and its relationship to the anomaly could be most efficiently tested with a spade since the chippings are found within the top spit.

Figure 15. View down Hole 10 after extraction of the core showing limestone chippings at 15 – 20 cm depth.

Discussion

The buried soil originally found in Hole 4 is now interpreted as representing some anomalously-preserved remnant of the old land surface or a long-lived surface in an earlier version of the garden. Overall, based on this coring exercise, the stratigraphy of the Ashby-de-la-Zouch gardens is clearly unpredictable except at the simplest level. The floors of the deep compartments have shallow soils often less 0.5 m before the C horizon is reached, and the causeways can show anything between 1.00 and 2.5 m of disturbed deposits, frequently being more than 2m deep, especially on the south eastern and south western causeways.

APPENDIX 5: ARCHAEOLOGICAL ASSESSMENT REPORT

Ashby de la Zouch Castle Garden
Wolfson Foundation Gardens Challenge Fund

Project Number 4990

Archaeological Assessment Report

Compiled by Jim Leary

NB This is an edited version of the Archaeological Assessment archive report. This version only differs from the archive report in that it does not repeat information contained in the main report or contain Project Design information. It does repeat some of the figures used in the main report to assist the reader.

Document Control

Version	Date	Compiler	Reason
1.0	20/06/07	JL	Draft report
2.0	29/01/08	JL	Draft report with revisions
3.0	08/04/08	JL	Final report with illustrations
4.0	20/05/08	SN	Edited for inclusion in Research Department Report Series

Contents

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Appendices

1 Designation and permissions

Ashby de la Zouch Castle is a scheduled ancient monument (No 17121) and an historic property owned by the Countess Loudoun and in the care of English Heritage (Deed of Guardianship dated 5th April 1932). Scheduled Monument Class Consent (SMCC6) was required prior to the excavation work. This was applied for and duly given on 24th July 2006.

2 Aims and Objectives

The aim of this research project is detailed in the main report.

3 Methodology

3.1 Trench Locations

Figure 1 shows the locations of the excavation trenches.

The locations were chosen to maximise the potential for archaeological discovery whilst minimising the level of disturbance for the site as a whole. The choices of the trench locations were determined by geophysical and topographical anomalies that could not be answered through any other means.

The objective of this excavation was to define remains rather than totally remove them, and therefore full excavation was confined to those deposits that were necessary to achieve the objectives.

Trench 1

Trench 1 was situated within the western sunken area and was located to define areas of low earth resistance as well as positive magnetic anomalies. This trench was also located over the southern bank in order to provide clarification of the multiple, linear geophysical responses running between the towers along the south edge of the garden. The trench was an L-shape, measuring 25m x 2m east west with the return measuring 25m x 2m north south.

Trench 2

Trench 2 was another L-shaped trench, measuring 20m x 2m east west and 20m x 2m north south and was positioned in the south eastern sunken area. It was hoped that this trench would identify the reason for the break in the east west causeway, as well as define geophysical anomalies.

Trench 3

Located on the northern terrace, Trench 3 measured 15m x 2m north south and was designed to investigate the apparent remodelling of the north edge of the eastern compartment as well as the original make up of the earthwork.

3.2 Excavation Methodology

The archaeological excavation recorded the location, extent, date range, character and function of all the archaeological features and deposits encountered within the excavation area of the site.

Prior to excavation, the turf was carefully removed and stored for re-instatement following completion of the works.

All archaeological excavation was undertaken by hand as no vehicular traffic or motorised machinery was allowed on site.

The spoil removed was scanned using a metal detector to retrieve any metallic finds.

Deposits were excavated stratigraphically and with the minimum level of intrusion required to achieve the project's aims and objectives. Excavation was in accordance with English Heritage standards and procedures as set down in the English Heritage Recording Manual (2006 – hereafter referred to as the 'Recording Manual').

The character, composition and depositional sequence of the site's archaeological remains were recorded on pro-forma sheets, with a unique context number allocated to each distinct deposit, feature or structure. A drawing record was produced with each context recorded on a plan, section or elevation drawing as appropriate, and in accordance with the guidelines set down in the Recording Manual.

All features encountered were photographed in colour transparency and monochrome print according to the recording Manual. In addition, general photographs were taken of the trenches at appropriate intervals, as well as "working shots" of the excavation progress. A digital camera was used to supplement the site photographic record.

Finds and samples from relevant contexts were retrieved and processed in accordance with the procedures set down in the Recording Manual and detailed in sections 3.3 – 3.5 below.

The position of the trenches was surveyed using Total Station EDM and located within the Ordnance Survey grid co-ordinates.

On completion of the excavation, the trenches were backfilled and the turf re-instated. A geotextile membrane (Terram) was used to cover some of the archaeology prior to backfilling.

Permissions

Ashby de la Zouch castle and gardens is a Scheduled Ancient Monument (SAM 17121) in the Guardianship of English Heritage. As such an application for Scheduled Monument Consent was submitted to and approved by the Inspector of Ancient Monuments responsible for the site (Glyn Coppack) before works on site commenced. Permission to excavate was sought from the landowner prior to the excavations.

3.3 Finds Methodology

A total finds retrieval and retention policy was adopted for all areas of the excavation. All finds work was carried out in line with the principles and techniques outlined in the Recording Manual and under the guidance of the Project Finds Officer (Sarah Jennings), who visited the site on a number of occasions, and the on-site Project Finds Supervisor (Foxy Demeanour).

The upper levels of the trench were subjected to a metal detecting sweep by two volunteers from a local metal detecting group. Finds were not removed during the sweep, but were recorded for consideration by the archaeologists during excavation. The spoil heaps were also subjected to a metal detecting sweep.

Most of the initial finds processing work (washing, cleaning) was undertaken on site, led by the Project Finds Supervisor following guidelines laid out in the Recording Manual, and appropriate facilities were provided. Bulk finds were quantified by context and objects and items defined as *small finds* were individually recorded. Storage was in line with the principles and techniques outlined in the Recording Manual.

Bulk finds were washed, marked, and bagged and boxed in standard-sized cardboard boxes by context, for transport to Fort Cumberland. Any small or fragile items were boxed separately and clearly labelled. The finds will be examined during the post-excavation phase by the appropriate specialists. The nomenclature used for the pottery fabrics and wares will be the common names in use in the area and linked to National and/or Local Fabric Reference Collections where possible. Unidentified fabrics will be given a brief description.

3.4 Conservation Methodology

Initial care of finds was in line with the principles and techniques outlined in the Recording Manual.

During fieldwork, English Heritage conservators were available to advise on and assist with the retrieval of finds, although this was not necessary.

After selection, metal finds were X-rayed by English Heritage Conservation staff at Fort Cumberland.

3.5 Environmental Methodology

Under advice and guidance from Gill Campbell (Head of English Heritage Environmental Studies), who visited the site, some deposits were sampled in order to assess the character of the environmental remains present at the site.

A standard flotation (bulk) sample of forty litres was taken from the identified deposits following the procedures laid out in Recording Manual.

Samples have been transported to Fort Cumberland for processing following the

procedures laid out in the Recording Manual and under the guidance of the Project Environmental Officer (Matt Canti).

Following discussions on site with Gill Campbell, no monolith samples were taken.

3.6 Archives

On site the archive was stored in a secure and clean environment, and staff were instructed on the first day by the Archaeological Archives Curator, Claire Jones, in the code of good practice for the creation and maintenance of excavation archives employed by English Heritage's Archaeological Projects. Upon completion, the site archive was accessioned by the Archaeological Archives team, where it remained unaltered – all subsequent amendments and additions have been made to the digital version of the project archive. The project archive will be curated by Archaeological Archives in accordance with the appropriate standards defined by English Heritage, the Institute of Field Archaeologists, the MLA (formally the Museums & Galleries Commission), and ICON (formally the United Kingdom Institute of Conservation).

The site archive (paper, drawn, photographic and digital) was prepared in accordance with MAP 2 Guidelines (EH, 1991). It was checked and cross-referenced, with relevant indices, catalogues and matrices constructed. The primary site archive was copied on to the appropriate digital format to provide a security copy which will form the basis of any future research archive. Site records were entered into an Archaeological Projects database and the site drawings were scanned.

The colour transparencies were scanned onto CD Rom in uncompressed TIFF format at 24 colour bit, 2048 lines x 3072 pixels.

All digital data that forms part of the site archive was created and managed in accordance with Fort Cumberland Digital Archiving Strategy (Section 2: Pre-Preservation Management).

All digital data commissioned from external consultants was subject to an appropriate specification covering documentation, file formats, and data standards.

A copy of the archive will be deposited at Atcham as it is the recognised repository of archaeological material from English Heritage East Midland's sites.

The full archive should be completed and deposited with the designated repository as soon as possible and no later than six months after the completion of the final report.

The digital archive will continue to be curated by Fort Cumberland.

3.7 Outreach

The site is located at the centre of the town where there was great potential to engage fully the local community. The site is of a high profile and the castle and gardens have

many visitors and therefore the excavations proved very popular.

For the duration of the excavation there was an on-site poster display, explaining the background to the project and what we were doing. There were two open days during the course of the excavations, held on Monday 7th August and Monday 14th August, and which proved extremely popular with locals and interested groups alike.

Two volunteers from a local metal detecting group were involved throughout the fieldwork, as was a local schoolgirl who was employed as a volunteer trainee project archaeologist.

By involving local people and providing site tours and holding open days, local ownership of the site was clearly enhanced.

4 Resources

4.1 Site work

The work on site consisted of a three week excavation, between 31st July and 18th August, with 10 staff members (plus volunteers) on site all the time. Further to this, one extra day (23rd August) with 2 people was required to finish the backfilling.

4.2 Post-excavation work

The completion of the site archive – digitising of planned information, completion of the Harris matrices, cleaning of drawings, sorting of finds, processing and sorting of samples have now been completed.

A summary report of the initial findings of the excavation was compiled (Leary 2006 (2)) and was circulated to all the Project Team members on the 19th September 2006.

5 Excavation results

The following section summarises the results of each of the excavation trenches. The numbers referred to in the text are the unique context numbers that were assigned on site to each of the archaeological features and deposits encountered. A Context Index of all the contexts used is produced at the end of this report (Appendix A1). Also included in the report are the Harris matrices produced for each of the trenches (Appendix A2). These show the stratigraphic relationships between the contexts and show how the individual areas of the site developed.

A plan of each of the excavation trenches is included in the report, and these show the location of the recorded archaeological features.

5.1 Phase 1: Natural bedrock

The natural underlying bedrock on the site was recorded in Trench 2 (contexts [215]

and [230]) and Trench 3 (context [319]) and comprised dark yellowish brown sandstone, the upper part of which was weathered. The garden had clearly been constructed on a slope falling to the south and east, as can be seen in the landscape around the castle and gardens, and this was also reflected on site: close to the castle in the north of Trench 3 the natural ground was recorded at a level of 130.57m OD. This level fell to 129.57m OD in a well-preserved area under the earthwork spur in Trench 2. The natural was further truncated to a level of 129.07m OD in the sunken area in Trench 2. Natural ground was not thought to have been exposed in Trench 1, however it should be noted that context [141] – coloured sandstone (see later) – was recorded at a height of between 128.83m OD and 128.58m OD, and therefore at the level one would expect to find natural ground.

5.2 Phase 2: possible pre-garden phase

The earliest activity recorded in Trench 1 was the remnant of a layer of greyish brown sandy, silty clay, in a 0.54m sondage to the south of the trench, at the foot of the garden wall (see Phase 3). This was recorded as context [177] and was at a level of 127.82m OD (Fig. 8). Although only a very small proportion of this layer was excavated, and the full depth was not achieved (it was only excavated to a depth of 0.23m), the increasing proportion of sandstone inclusions at a lower depth suggests that it may overlie the natural ground. This layer seemed to underlie, and therefore predate, the enclosing garden wall, and therefore may tentatively be suggested to be earlier than the main phase of the visible garden. Equally, however, this may be associated with the construction of the wall, and therefore relate to Phase 3. In Trench 2 layer [226] may represent a similar horizon. This was recorded as a 0.19m thick layer of light yellowish brown silty clay directly overlying the natural [230], and was at a height of 129.77m OD, with occasional, small sandstone inclusions (Fig. 12). Along with the natural ground, this layer had been cut into when the sunken garden was created, suggesting that it was earlier than the main phase of garden activity. This layer contained a sherd of 15th or 16th century pottery. Layer [310] was recorded at the earliest level in Trench 3 and comprised a 0.26m thick layer of light olive brown sandy clay (Fig. 14). An environmental sample from context [310] produced a single *Bromus* sp. (brome grass) grain. This layer was cut by ditch [308] and overlain by bank [311], both features of the main garden phase, and therefore it probably predates the main garden phase. A sherd of 13th or 14th century pottery from this layer supports this suggestion.

These layers seem to predate the main phase of garden activity and therefore may represent the remnants of broadly similar activity; they are possibly all that remains of an earlier garden.

5.3 Phase 3: mid-16th to early 17th century. Garden preparation and layout

Trench 1

Trench 1 was an L-shaped trench, located north south across the southern bank and extending northwards across the western sunken area; it dog-legged to the east halfway along the sunken garden and abutted the central walkway. Only the two ends of the trench (to the south and west) were excavated.

Phase 3 is represented in the southern end of Trench 1, by a substantial wall, which could be seen in plan across the width of the trench (Figs. 2, 8 + 9, Plate 1); the footing was recorded in a small (0.54m wide) sondage on the south side of the wall. The wall (context [166]) was a mighty 0.95m wide with a remaining height of 1.45m (20 courses) above the footing, and comprised red bricks, measuring on average 0.225m x 0.11m x 0.06m, with a lime mortar and in English Bond coursing. This wall was erected on a footing of loose, unmortared rubble (context [167]), which appeared to have been cut into the Phase 2 layer (context [177], see above) at a level of 127.82m OD. This wall is clearly part of the southern section of the garden enclosure wall (the majority of which has been demolished to ground level, although the eastern stretch is still visible above ground) and which can be seen to incorporate the two garden pavilions in the south east and south west corners. Stubs protruding from these garden buildings provide us with an indicative height of the wall above the bank, and suggest that it thinned dramatically above terrace level.

Piled to the north of this wall were a series of deposits forming a wide, flat bank or raised terrace around the sunken garden. Similar deposits were also piled against the southern side of the wall although on a much smaller scale. Where these deposits had been piled against the wall, the pointing was noticeably unweathered; possibly suggesting that the bank was put in place soon after the wall was constructed. This suggests that the wall may also have acted as a retaining wall. A 0.7m wide and 5.35m long sondage (see the section location 10 on Fig.2) was cut to a maximum depth of 1.1m across the northern slope of the bank, and the bank deposits were examined (although, due to Health & Safety concerns, not to the full depth of the bank, ie not to natural ground level) (Fig. 10). The lowest recorded layer was [165]; a dump of dark reddish brown loamy clay, 0.35m thick, containing a small assemblage of pottery that can only be broadly dated to the 15th or 16th centuries. Overlying this was a succession of grey brown sandy loam deposits (contexts [169], [133], [170] and [143]), measuring between 0.13 and 0.7m thick, and bringing the bank in this area to a maximum height of 129.6m OD. A small assemblage of 16th century pottery was recovered from [133] and [143] (the presence of a sherd of 18th century bowl rim from context [143] suggests a degree of contamination). An environmental sample, 702, from context [133] produced a few weeds and a very poorly preserved cereal grain which could not be determined to genus (e.g. wheat, barley etc.) and appears to represent general rubbish. An oat grain was also identified in this sample, and could have come from a wild or cultivated oat species. Finally, a 0.2m thick layer of dark loam (context [129] / [137]), which contained a small assemblage of 16th century pottery, was deposited across the northern slope. This layer also contained a single clay tobacco pipe stem, which dates from somewhere between about 1610 and 1710, suggesting that this deposit may have been a later addition – perhaps to refresh the bank for one of the early 17th century royal visits.

Similar bank deposits were revealed in the sondage to the south of the wall (see the section location 8 on Fig.2). At the lowest level this comprised [154]; a 0.2m thick layer of reddish brown clayey silt (possibly the same material as [165] to the north of the wall), which overlay the wall foundation (Fig. 8). This deposit was recorded at a level of 127.92m OD and contained (probably residual) 15th century pottery. Overlying [154] were two layers: [168], a 0.1m thick layer of mid brown clayey silt; and [153], a 0.4m thick layer of

light brown clayey silt, containing residual late medieval pottery and a small quantity of animal bone. Context [139] (also [152]), which comprised mid brown grey clayey silt and contained late 16th century pottery, overlaid this layer. This brought the bank to the south of the wall to a maximum level of 128.62m OD.

A shallow sondage measuring 0.8m wide and 3m long was cut into the top of the bank (see the section location 9 on Fig.2). This recorded the top two layers of the bank, dumped against the northern side of the wall: context [174] (0.12m thick) and context [176] / [172] (0.4m thick) (Fig. 9). Both comprised dark loamy sand and [174] contained ten sherds of pottery indicating a late 15th or 16th century date.

Context [174] also contained a Nuremberg jeton (SF <461>) of the late 16th/early 17th century. The type is the very common rose/orb type, with the obverse showing three crowns alternating with three lis around a central orb, and the reverse of an imperial orb in a tressure of three arches and three angles. This type of jeton is generally associated with the guild master Hans Krauwinckel II (1586 – 1635). Context [174] also contained a small iron hinge pivot (SF <490>), either from a light shutter or from a piece of furniture. An environmental sample (709) taken from layer [174] contained large branches of charred wood and may represent the burnt remains of trees cleared as part of the establishment of the garden. The excellent preservation suggests that the material is in a primary deposit and that it is likely to represent land clearance close to the point of deposition. Further analysis of this sample may tell us what was growing in this area before the garden was established. Context [176] contained a small bone die (SF <496>).

Context [176] / [172] was overlain by layer [164], which was recorded at a level of 129.47m OD, and has been interpreted as a possible surface. Pottery mixed into the matrix of this surface suggests a 16th century date for it. Running between this surface and the garden wall was an east west linear cut (context [163]), 0.2m deep and at least 0.7m wide. This feature was filled with loose sandstone rubble [162] and may represent a drain or possibly a decorative kerb. Partially overlying this was another surface (context [161]). Recorded at a level of 129.57m OD, this surface was 0.11m thick and comprised sandstone gravel.

The presence of these surfaces on the top of the bank suggests that it was designed to be walked around. The fact that there are at least two phases suggests that this walkway was maintained over time, and the putative drain provides further indication of this maintenance. Recorded alongside the northern side of the garden wall was a deposit of mid brown loamy sand (context [130]). This was initially interpreted as a bank deposit; however subsequent post-excavation work reinterpreted this as being a fill within a cut (cut [178]). Fill [130] contained ten sherds of late 15th and 16th century pottery, as well as a small lead weight (SF <456>) and a small fragment of chain mail (SF <455>), possibly from a purse or container.

Due to time constraints, little of the central area of Trench 1 was excavated; however, 11.5m of the western end of the trench, (a section that lay within the northern part of the sunken garden and abutted the central bank) was excavated (Figs. 3 + 11). The earliest deposit recorded within this area was a layer of mixed purple and yellow

sandstone fragments (context [171]), recorded in two very small sondages (measuring 0.25m x 0.25m). Overlying this was context [141], which was formed of similar sandstone fragments, however was arranged into slightly irregular but sharp linear bands of different colours – pink, purple, yellow and orange (see Plate 2). These layers may be natural ground; they were not within any apparent cut, the colourings are naturally occurring (Appendix 8 at the end of this report) and indeed they were recorded at a level one would anticipate natural ground (between 128.83m OD and 128.58m OD – see Phase 1), however their colours and the linear arrangement of them were very different to the rest of the observed natural, and it has been tentatively suggested that context [141] could have been arranged for decorative purposes; perhaps representing an 'emblematic' garden (context [171] may represent ground raising deposits below this layer or indeed an earlier pattern). The ground in the western edge of the sunken area was built up a further 0.25m with sandstone fragments (context [131]) to form a slight terrace or step, which the coloured sandstone abutted (this slight terrace can possibly be traced on the interpretive earthwork survey). This step was overlain with a fragmentary patch of white clay (context [142] – recorded at a level of 129.29m OD), that could have served a similar decorative purpose, perhaps to 'frame' the sunken area. A similar fragment of white clay (context [138] – recorded at a level of 128.45m OD) was recorded to the south of this sunken area, at the foot of the southern bank.

Trench 2

Trench 2 was another L-shaped trench; it was located across the southern compartment of the eastern sunken garden, dog-legging to the north so as to cross the crater-shaped feature within the central earthwork. As with Trench 1 only selected areas were examined in any detail, such as the area around the earthwork spur, and the feature within the central earthwork.

The trench was located across the tip of one of the earthwork spurs that projected from the east west dividing bank, and showed that the natural ground had clearly been lowered since at least part of the spur was formed of natural sandstone (see Phase 1); this cut was recorded as context [239]. Following this, the ground was then built back up to a level of 129.38m OD with an approximately 0.2m thick layer of silty loam (context [231]), possibly in order to level the ground (layers [246] / [247] may represent the same episode and varied in height from between 129.18m OD and 129.27m OD) (Fig. 12). Cutting this levelling layer around the base of the earthwork spur was a linear feature measuring 0.5m wide (Fig. 4). The cut was recorded as context [256] and was filled with sandstone blocks (context [235]). Dark silt had accumulated within this feature (contexts [258] and [257]) (see Fig. 12), suggesting that it may have drained the run-off from the spur and therefore kept the sunken area in this part of the garden dry. This putative drain shows the earthwork spur to have been very angular. This feature was overlain by a layer of silty loam 0.1m thick (context [221]), which contained 5 sherds of 16th and 17th century pottery, and suggests that the drain was not designed to be seen (see Plate 3).

The northern arm of Trench 2 was located across the east west dividing bank. This showed that the bank was the earliest recorded feature in this area and comprised light yellowish brown sandy loam (contexts [260], [203], [204] and [205]) (Fig. 13). Cutting the bank, and therefore later than (although not necessarily by much), was a building,

interpreted as a garden pavilion, similar to the two corner buildings (Fig. 4 + 13). This building was identified in two small sondages (see Fig. 4): the northern-most revealed a circular wall (cut [243] and masonry [244]) which comprised red brick (see Plate 5); the southern sondage revealed the entrance to the building (cut [253]) which comprised red brick walls (context [241]), and a stone floor (context [242]), which was recorded at a level of 129.90m OD (see Plate 4). The ground directly underneath the entrance had been raised by two layers (contexts [251] and [252]), and these may have formed part of the same episode of ground raising as contexts [231], [246] and [247] (see above). Seven sherds of pottery were recovered from context [252], however these date to the late 17th or 18th century and are therefore considered to be either intrusive or have been erroneously labelled during the excavation (perhaps from [240]?), this is also true of a clay pipe stem from this layer, which is a quite thick and finely burnished stem that could possibly be early 17th century in date, but which is more likely to date from the middle of the century or later. A sherd of pottery from the backfill of the entrance construction cut (context [254]) provides a much more realistic 16th century date for the construction of this building. It is likely that another entrance exists to the north of the building.

Trench 3

Running east west across Trench 3 was a ditch ([308]) and associated bank ([311] / [312]), which together formed the ramparts of the castle (Fig. 14). The ditch was dug to take advantage of the natural slope of the ground, and at 6m wide gave the appearance of being quite substantial. The bank, which was 0.4m thick at its maximum point, lay to the north of the ditch and comprised light yellowish brown sandy loam and contained a (probably residual) sherd of late medieval pottery. The bank further enhanced the substantial appearance of the inner side of the ditch and together they formed a 2.2m high scarp (the level on the top of the bank was 131.43m OD, falling to 129.23m OD at the base of the ditch). There was a slight counterscarp on the outer side of the ditch, with the level rising back up to 130.05 m OD, and this can be traced on the topographic survey. The lower fill of this ditch comprised light yellowish brown loamy sand (context [306]), which contained two sherds of probably 16th century pottery. The fine grained nature of this fill suggests that it represents the natural silting of the ditch, rather than deliberate infilling (in contrast to the overlying fill – see Phase 4).

5.4 Phase 4: mid-17th century. Civil War defences

Trench 1

A large east west ditch (cut [160] and fill [155]), with a possible re-cut ([156]), was cut through the Phase 3 deposits to the south of (in other words outside) wall [166] (only seen in section) (Fig. 8). The full extent of this ditch was not recorded as it continued beyond the limit of the excavation to the south; however, it measured in excess of 2.9m long and was 0.7m deep with a flat bottom. The ditch had been backfilled with a homogenous deposit that contained pottery dating to the second half of the 17th century (see Phase 5). It is not possible to state with any confidence, but this feature could be suggested to have been dug as a defensive measure in preparation for the Civil War, and then backfilled sometime afterwards.

A second, shallower, east west ditch (cut [157]) was recorded on the top of the raised bank to the north of (inside) the garden wall (Figs. 2 + 9). The feature measured between 0.48m and 0.57m deep and 2m wide and had a flat bottom. A mixed layer of rubble and clay (context [159]) was recorded at the base of this linear feature, and was interpreted as being a layer of trample; perhaps caused by the trudging of boots in wet conditions. An almost complete heel bowl from a clay tobacco pipe was mixed into this layer and suggests a date of c1630-1660. This provides good evidence that this feature was used around the time of the Civil War; perhaps as a covered way to provide safe communication behind the defensive line formed by the garden wall. It should be noted that a lead musket ball was recovered from the topsoil (Phase 6) from this trench and may be a residual find from this period.

Trench 2

No evidence for the Civil War defences was recovered from Trench 2, although a lead musket ball was recovered from the much later Phase 6 gravel path. It can be assumed that the gardens at this time were not maintained or modified, perhaps other than by the clearance of plants (see Trench 3).

Trench 3

In preparation for the Civil War it would seem that the castle ramparts were raised; changing them from having a merely aesthetic function to having a genuinely defensive one. A series of deposits were dumped behind the Phase 3 bank to raise the ground: these were layers [317], [309], [313], [305], [314] and a heavily burnt layer [304] (Fig. 14). Following this, a second bank (context [303]) was constructed over these layers, raising the scarp by almost 1m to 132.03m OD. Context [303] produced two fragments of clay tobacco pipes: an almost complete bowl dating c1630-60 and a stem of a general 17th century type. This adds weight to the suggestion that this activity is likely to be related to the Civil War. An environmental sample (701) taken from burnt layer [304] showed that there was an excellent preservation of environmental information. As well as charcoal from the burning of trees, leaves of ferns and other vegetation were also present. This context is likely to represent land clearance from close to the point of deposition, perhaps the burnt remains of vegetation from the clearance of the garden. Further analysis of this sample, therefore, has the potential to inform us about the plants that were growing in the castle garden immediately prior to the Civil War.

5.5 Phase 5: late 17th and 18th century. Garden preparation and layout

Trench 1

As mentioned above, the Phase 4 defensive ditch was likely to have been backfilled in the years following the Civil War. This was recorded as a homogenous fill of light yellowish brown sandy silt ([150] / [151]) and four sherds of mid-17th century pottery were recovered from it (Fig. 8). A similar process was recorded within the covered way on the top of the bank; this was backfilled with [158] (Fig. 9) which contained three sherds of residual pottery ranging in date from the 14th century to the 15th century.

Recorded in both the southern and northern part of the sunken area, and therefore seemingly wide spread, was a homogenous layer of sandy loam, measuring between 0.2m and 0.25m thick (recorded as contexts [144], [145] and [146] in the southern end of the garden, and [122], [136] and [147] in the north) (Figs. 10 + 11). This layer directly overlay the Phase 3 coloured sandstone; perhaps to erase an emblem that was no longer fashionable or desirable, or perhaps to raise and level the garden and to introduce a more productive garden soil. Both the pottery and clay tobacco pipe fragments from this horizon suggest that it had accumulated in the late 17th and early 18th centuries; the evidence from the clay pipes indicates that this had probably ceased by 1730. An iron hinge pivot from a shutter or window was recovered from context [147] ((SF <440>).

The top of the bank was then sealed by a soil horizon (context [101]) (Fig. 9), suggesting that it was grassed over, although a single post hole (cut [124] and fill [125]) alludes to some activity – perhaps a fence line following the demolition of the southern part of the garden wall (Fig. 5). Pottery and clay tobacco pipe fragments from context [101] suggest the soil horizon formed in the 17th and/or 18th centuries. A soil horizon, measuring c0.08m thick, was also recorded over the sunken area (contexts [107] and [132] / [135]) and also dated to the late 17th / early 18th century (Fig. 11). This brought the sunken area to a level of between 129.26m OD and 128.86m OD in the north and 128.65m OD in the south. Part of a copper alloy shoe buckle and a probable belt buckle were recovered from context [107] (SF <450> and SF <460> respectively). A series of features; possibly planting pits and beds, were cut directly into this layer (Fig. 5), however, due to the limited nature of the excavation there was no discernable pattern. To the south, six circular pits were recorded, measuring between 0.1m and 0.55m in diameter (pit [103] with fill [105], pit [104] with fill [106], pit [110] with fill [111], pit [112] with fill [113], pit [114] with fill [115], pit [120] with fill [121]), whilst to the north a linear feature measuring c1m wide was interpreted as a planting bed (cut [128] with fills [140] and [127]) (Fig. 6).

Trench 2

It is likely that the circular building recorded from Phase 3 was demolished during this phase, since the demolition debris recorded from the entranceway contained a single cohesive group of 98 fragments of pottery (which included some high quality pieces) dating to the 18th century. Two clay pipe stems were also recovered; these however may date slightly later (likely to be of late eighteenth or nineteenth century date) and could therefore be intrusive. Two rubble layers of debris were recorded from within the demolished walls of the circular building: the lowest one was [259], which remained unexcavated, and above this was [234], which contained a single sherd of 16th/17th century pottery (Fig. 13). The building does not appear on the Buck and Buck engraving of 1730, and therefore one could reasonably assume that it had been demolished by this time; artistic licence could also be the reason for its omission from the engraving.

Trench 3

At some stage the rampart ditch in Trench 3 was deliberately backfilled with context [316] – no dating evidence was recovered from this context and it has been tentatively placed within this phase, although it may have occurred at a later stage (Fig. 14).

5.6 Phase 6: 19th to 20th century. Garden maintenance

Trench 1

The garden wall was overlain by two layers of sandy loam (contexts [116], [123] and [102]), which contained sherds of late 19th and 20th century pottery, and probably represent landscaping of the bank, perhaps associated with the Ministry of Works (Figs. 8 + 9).

A wide gravel path (context [108]), which was also identified as a linear anomaly in the geophysical survey, was recorded running east west across the sunken area, but was not excavated (Fig. 5). To the north of Trench 1, a considerably smaller path (measuring 1.35m wide; context [134]) was recorded perpendicular to path [108]. Interestingly this path ran along the same orientation, and slightly overlaid, an earlier (Phase 5) planting bed [128], suggesting some degree of continuity in garden layout (Fig. 6).

Modern topsoil, (contexts [109], [117], [119], [118] and [100]), overlays all of the above features, and a lead musket ball was recovered from context [100] (SF <411>), as were two copper alloy buttons (SF <415> and <453>).

Trench 2

A 0.15m thick layer of silty loam was laid down in the sunken area of Trench 2 (contexts [224] and [227]), and this contained sherds of 19th and 20th century pottery and fragments 19th century clay pipe stems. Cutting this were four pits (contexts [207] / [209], fill [206] / [208]; [210], fill [211]; [218], fill [219]; and [232], fill [233]), measuring between 0.5m and 1.5m in diameter, and possibly representing planting pits. Bedding trenches were also recorded cutting this layer: context [228] (fill [229]) measured 0.4m wide and over 0.9m long (extending beyond the limit of excavation), whilst trenches [212], [216] and [236] (fills: [214], [213], [217], [237] and [238]), measuring 0.4m wide and c0.25m deep, all followed the visible earthwork spur, suggesting this feature was picked out with plants (Fig. 7). Amongst the small quantity of pottery and clay pipe from these features were 19th and 20th century dated pieces.

The crater formed by the backfilled pavilion was filled with [220], which contained 19th and 20th century pottery and clay pipe fragments (Fig. 13). This was landscaped over with a layer of sandy loam ([245] and [255]), and a gravel path was laid over the top (contexts [222] / [202], [248], and [223] / [201]), perhaps to allow access into the sunken area – possibly during the Ministry of Works tenure on the site (Fig. 7). Context [201] contained a lead musket ball (SF <412>). This was all overlain with modern topsoil (context [200]), which also contained two horseshoes (SF <413> and SF <414>).

Trench 3

A small trench (context [315], fill [301]), 0.8m wide and 0.15m deep, was cut into the castle rampart ditch in the sunken area; perhaps a flower bed to pick out the edge of the sunken area (Fig. 14). A layer, [302], overlay the ramparts – possibly a Ministry of Works landscaping layer. This was all overlain with modern topsoil, [300] (Fig. 14).

6 Statement of potential

The main aim of this project was to evaluate the survival, condition and extent of the archaeological deposits relating to the Wilderness garden. To this aim, the excavation was very successful, and, as outlined above, a great deal of archaeological information was retrieved that will be invaluable to the interpretation and future management proposals for the Wilderness garden.

The context record has been assessed and a Harris Matrix has been compiled showing the inter-relationships of the 160 contexts recorded (see Appendix 2). From the stratigraphic sequence outlined on the site matrix, it is clear that a series of distinct and major episodes of garden design and modification were encountered and identified in the excavation trenches.

The fieldwork and assessment has gone a long way to providing a framework for the phased sequence of the archaeological remains on the site; however this work has raised many new questions. Future targeted trenches addressing these questions would be of great benefit. This should include the western sunken area to determine with certainty whether there is an emblematic garden in this area, as well as trenches to determine the relationships between the raised walkways around the garden. There is also great potential in fully excavating the circular brick garden building, conserving it and leaving it open for the public to enjoy.

7 Archive Summary

The archive consists of the following:

160 Context records
48 A1 and A3 sheets of polyester draughting film with 51 drawings
220 Colour photographs
220 Black and white photographs
180 Digital photographs
9 Environmental samples
75 Individually numbered object records

8 Acknowledgements

Jim Leary wishes to thank all colleagues involved in the successful completion of this project, with special thanks to the archaeologists and volunteers who toiled through some of the hottest weeks of the summer and contrarily through some of the wettest, to achieve such stunning results in a very tight time schedule, particularly the site supervisor, Duncan Stirk. Special thanks to Emma Johnson, Visitor Operations Site Supervisor for Ashby de la Zouch Castle, for all her friendly help, assistance and patience. Thanks also go to John Vallender for all his hard work on the figures for the assessment report. Finally I would like to thank Glyn Coppack, EH IAM East, for his support during the course of the project.

9 Bibliography

English Heritage 1991 *Management of Archaeological Projects*. English Heritage: London

English Heritage 2002 *Environmental Archaeology*. English Heritage: Swindon

English Heritage 2004 *Geoarchaeology. Using earth sciences to understand the archaeological record.* English Heritage: Swindon

English Heritage 2006 *Recording Manual.* English Heritage: Portsmouth.

Leary, J 2006(1) *Ashby de la Zouch Castle and Gardens. Project Design.* English Heritage unpublished report

Leary, J 2006(2) *Ashby de la Zouch Castle and Gardens. Interim summary of evaluation* English Heritage unpublished report

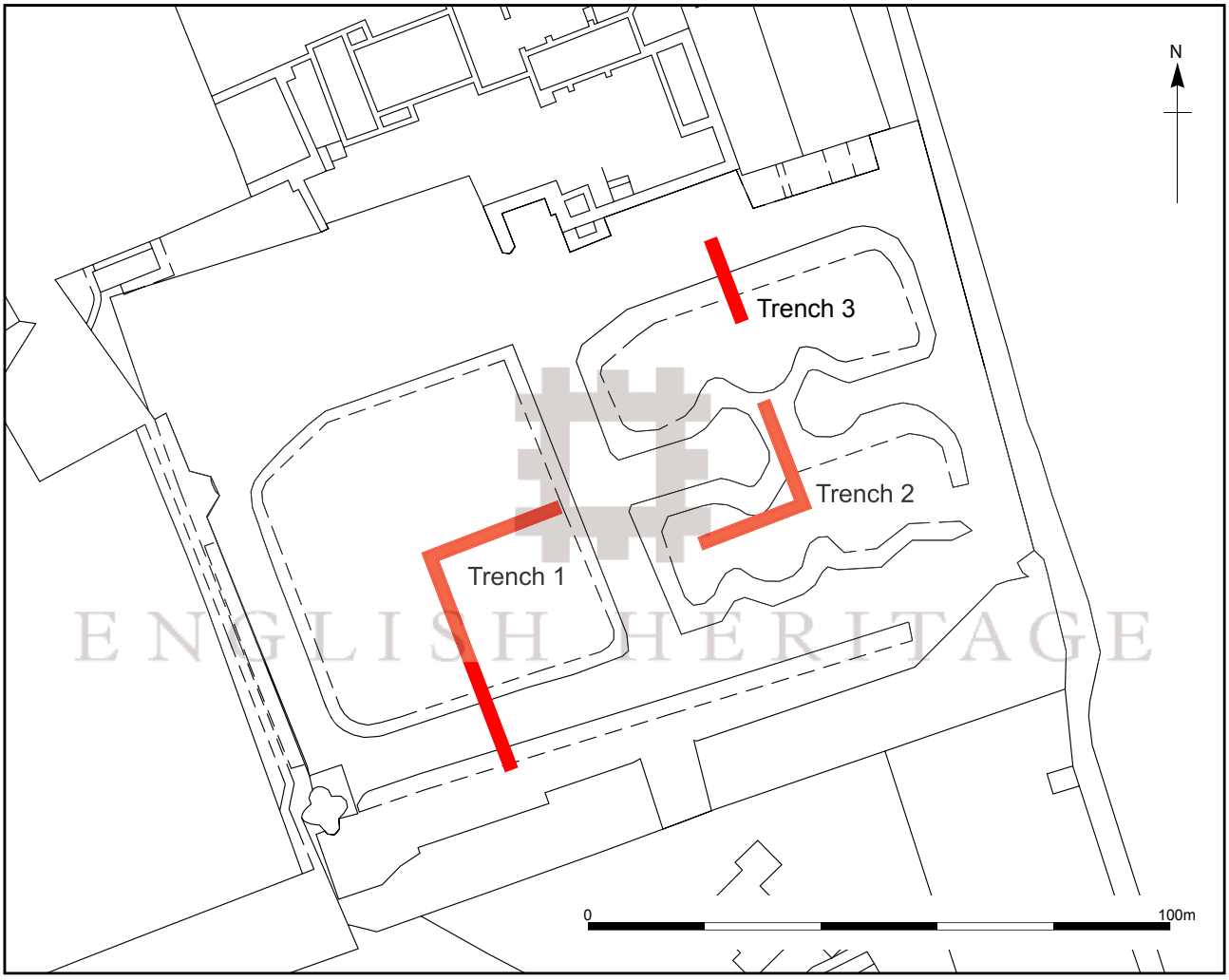


Figure 1. Trench location.

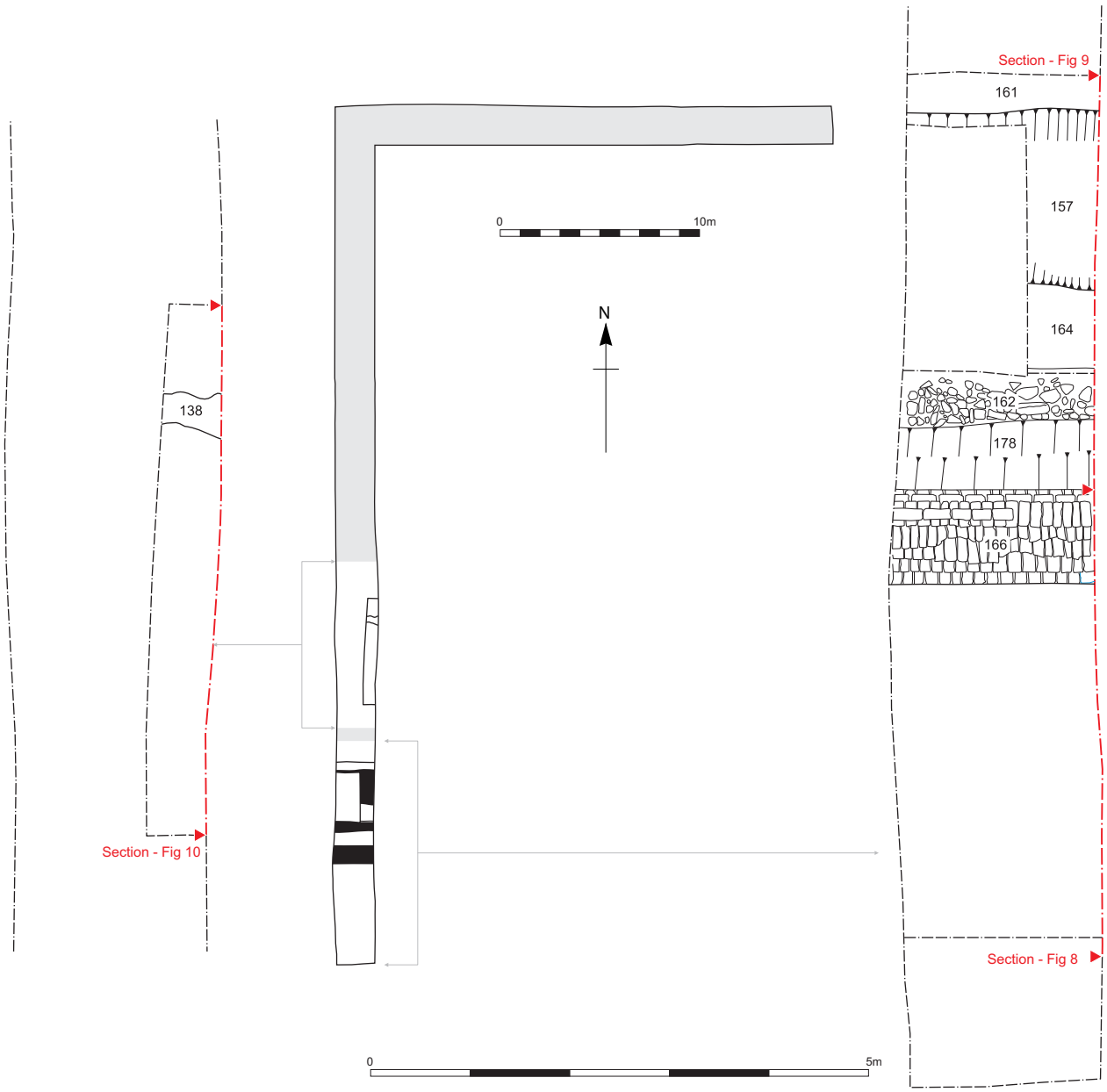


Figure 2 Trench 1 (southern end) - Phases 3 & 4

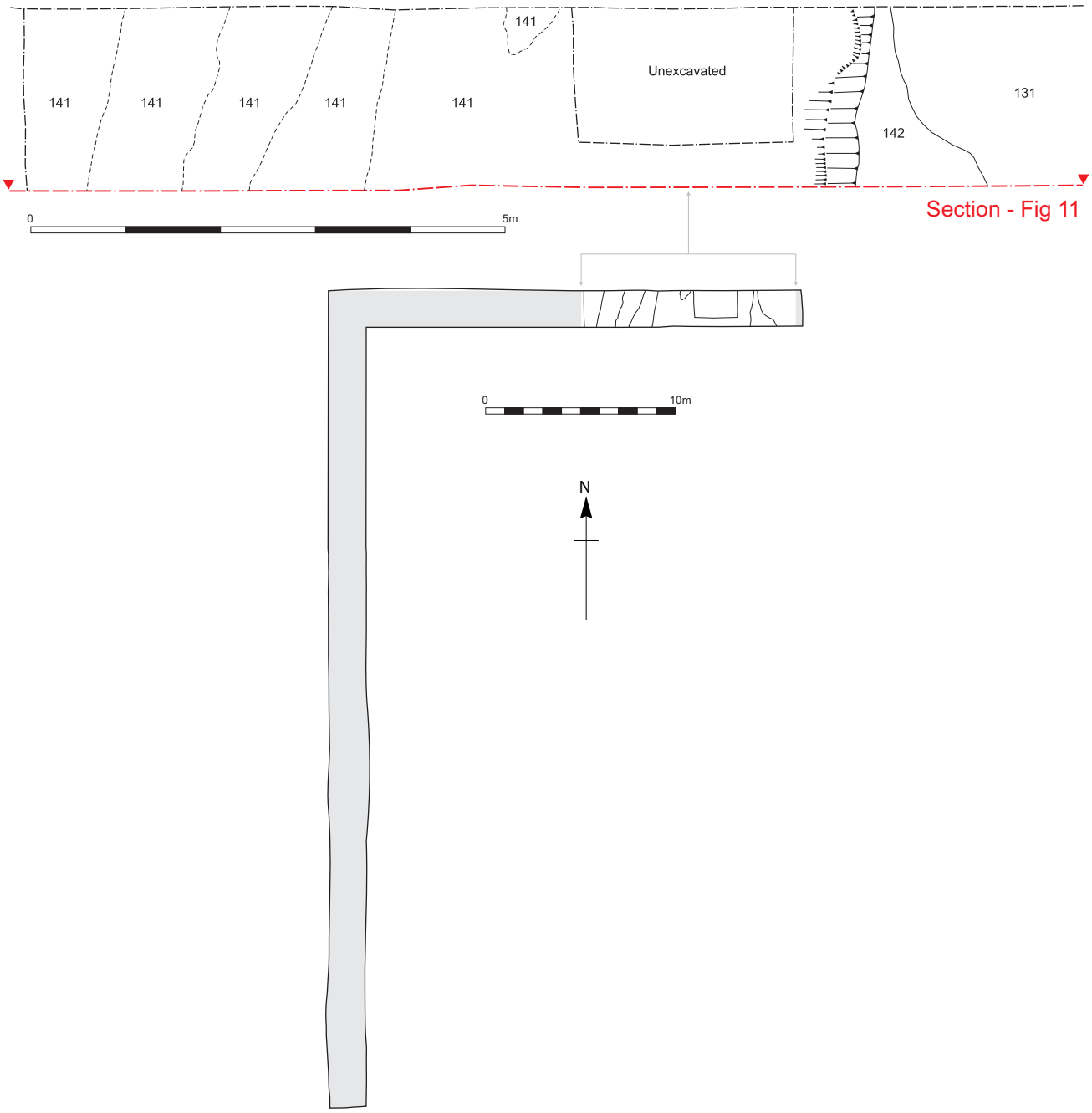


Figure 3 Trench 1 (northern end) - Phase 3

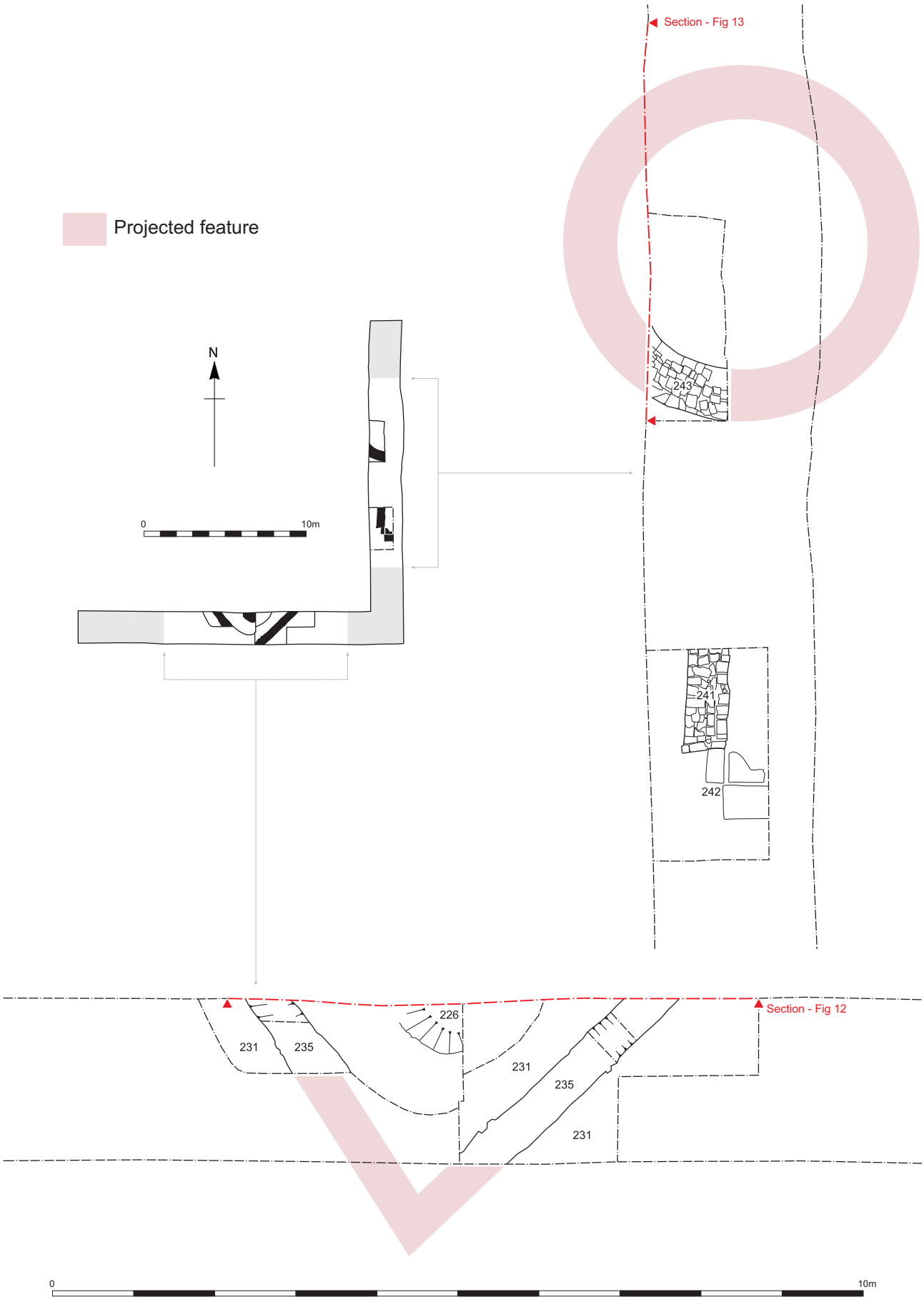


Figure 4 Trench 2 - Phase 3

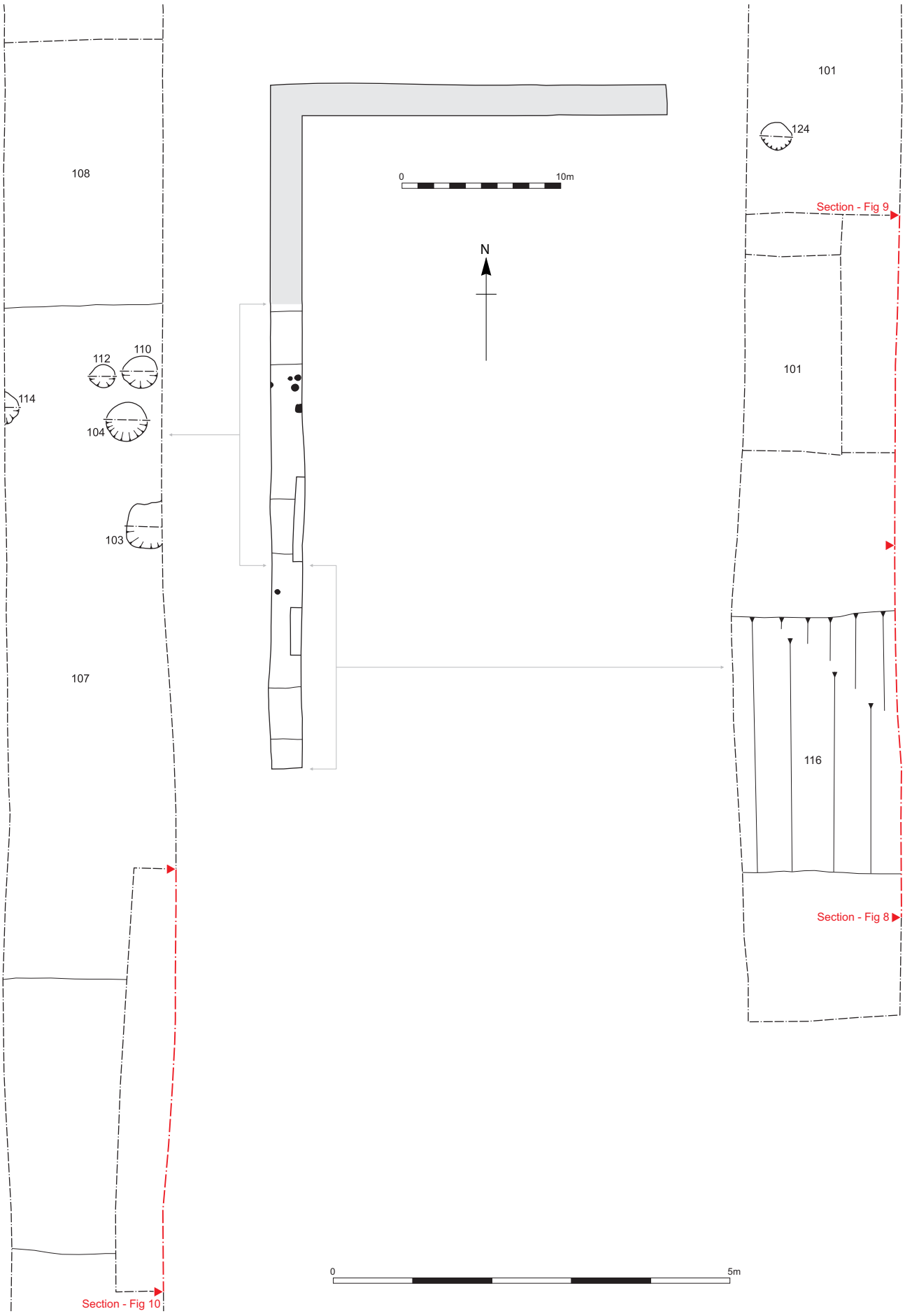


Figure 5 Trench 1 (southern end) - Phases 5 & 6

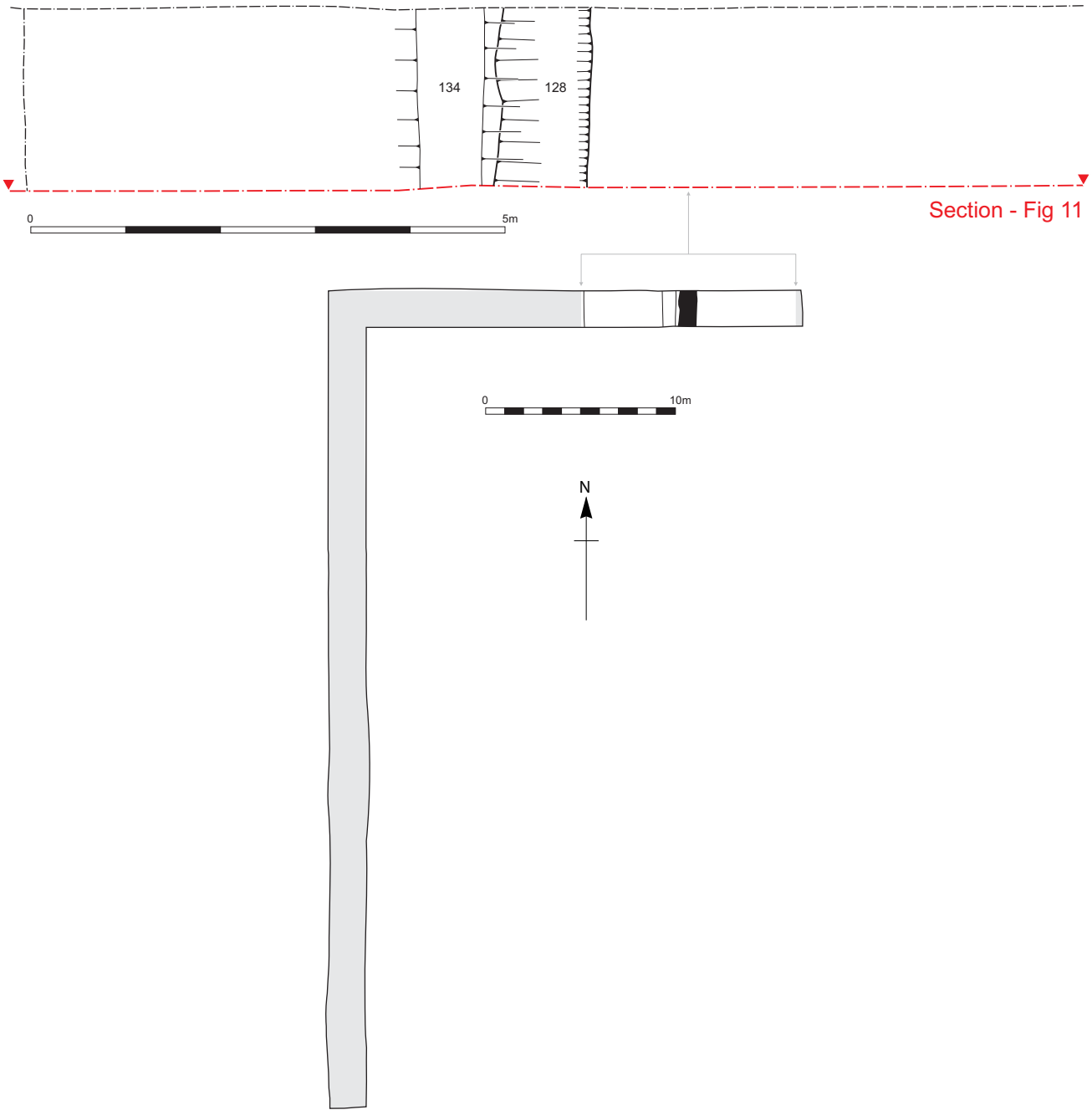
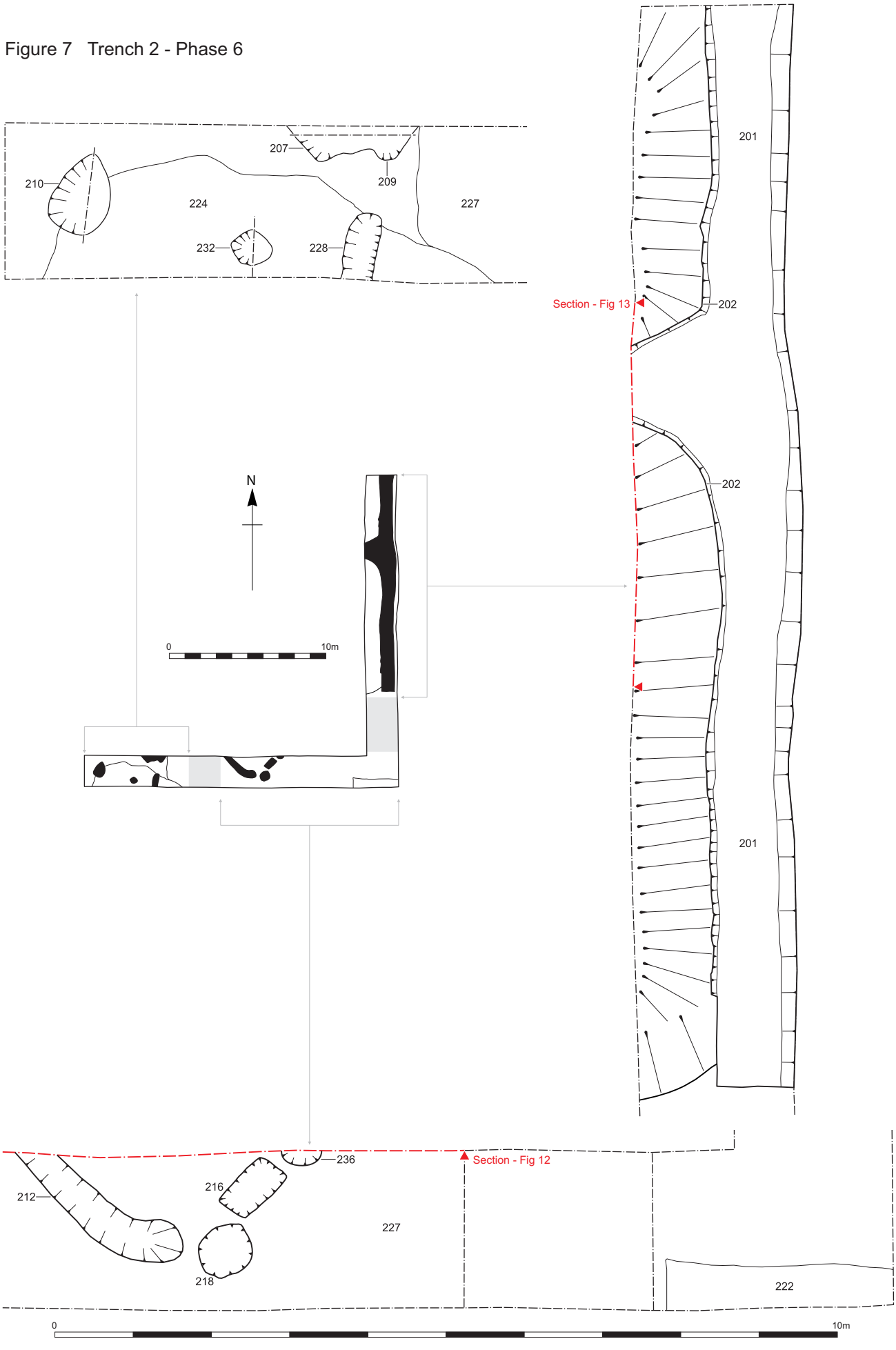


Figure 6 Trench 1 (northern end) - Phases 5 & 6

Figure 7 Trench 2 - Phase 6



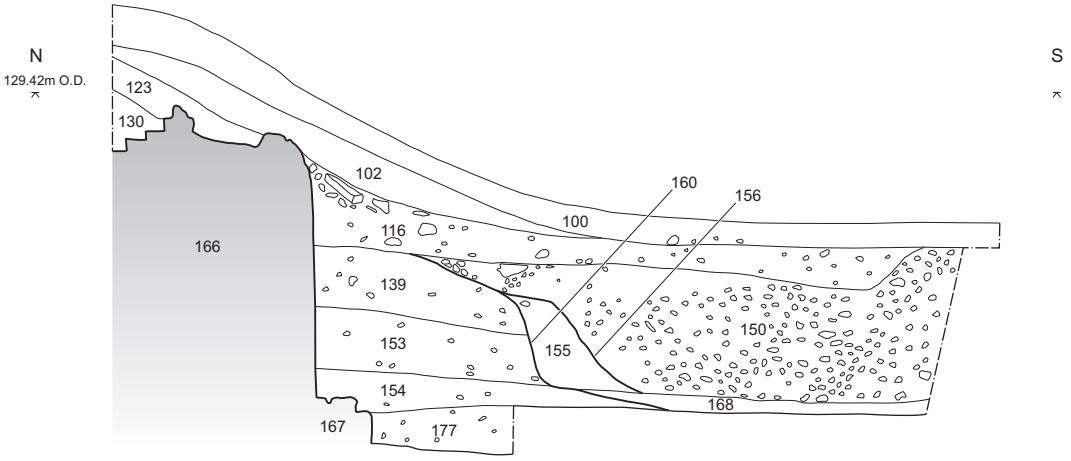


Figure 8 Section from Trench 1 (southern end) - sondage 1

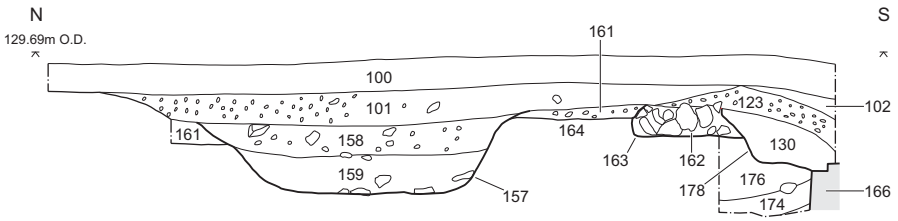


Figure 9 Section from Trench 1 (southern end) - sondage 2

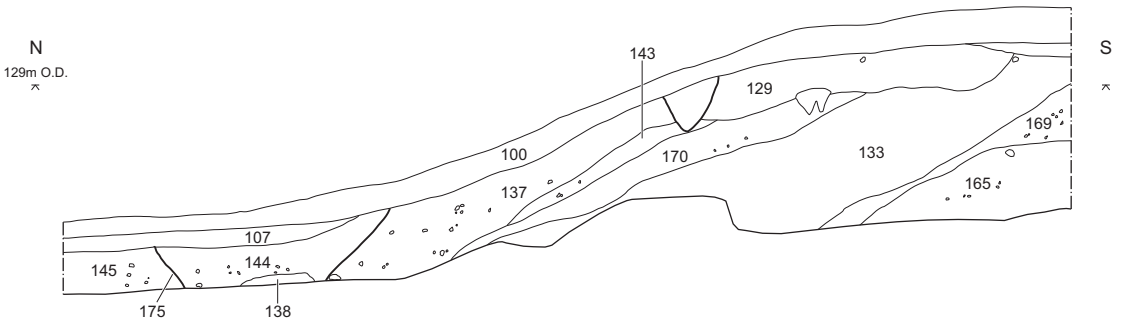


Figure 10 Section from Trench 1 (southern end) - sondage 3

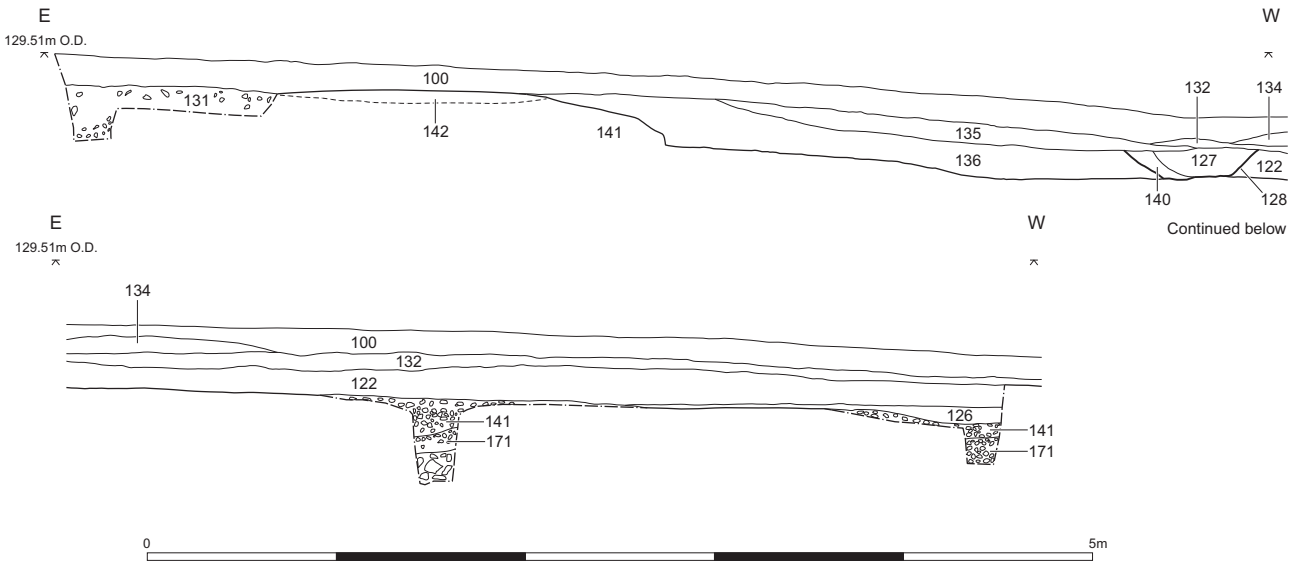


Figure 11 Section from Trench 1 (northern end)

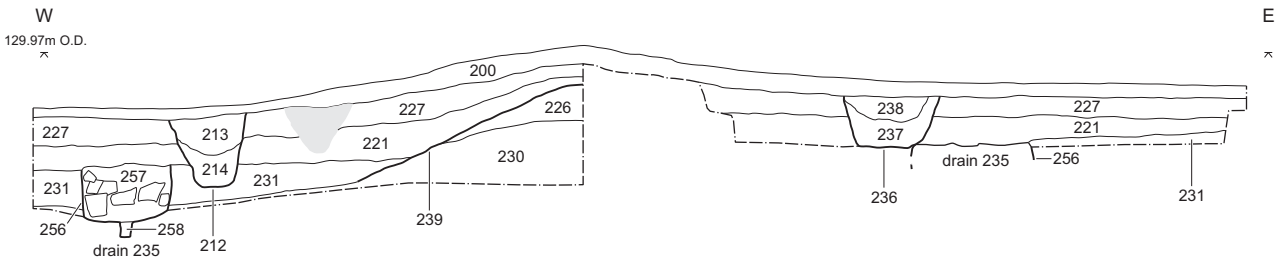


Figure 12 Section from Trench 2 (southern end)

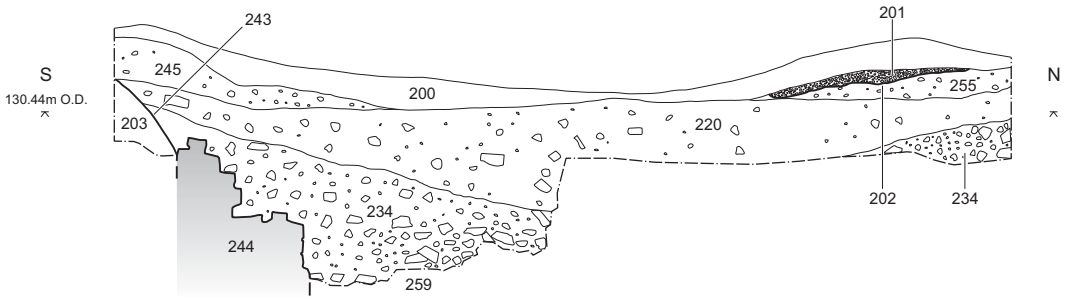


Figure 13 Section from Trench 2 (northern end)

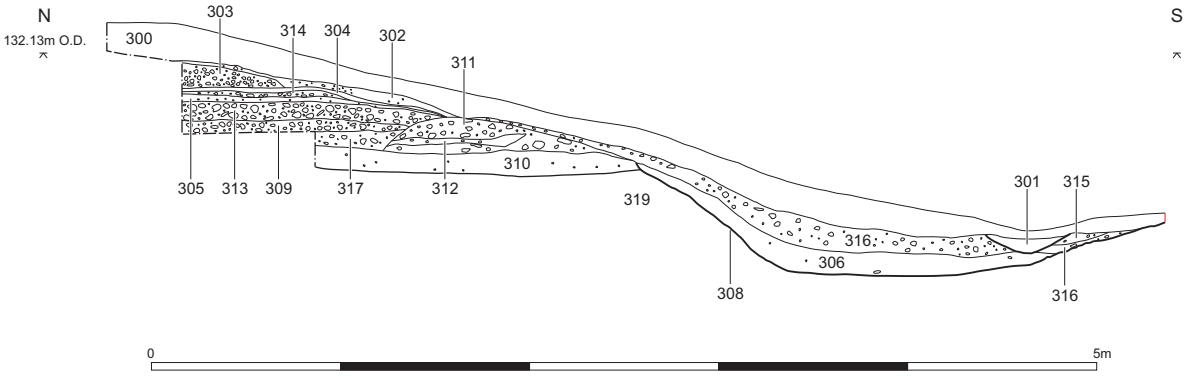


Figure 14 Section from Trench 3

Plate 1 View of the Phase 3 wall in Trench 1 (southern end), looking north (2m and 1m scales)

Plate 2 View of the Phase 3 coloured sandstone fragments in Trench 1 (northern end), looking north (2 x 2m scales)

Plate 3 View of the Phase 3 drain in Trench 2, looking north (2m scale)

Plate 4 View of the Phase 3 building porch in Trench 2, looking north (2m, 1m and 0.5m scales)

Plate 5 View of the Phase 3 garden building in Trench 2, looking south (2m, 1m and 0.5m scales)

APPENDIX A1: Context Index

Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
		Trench 1							
100	Layer	Topsoil	6	100,200,300, 109,119	Depth: 0.25	11(s),35/ 6(s),42(s),43(p),45(s),50(s)	509,510,614,615	400-4,406-9,412,415-6,434,451-4	*
101	Layer	Base/remnant of topsoil	5	107, 132	Depth: 0.17	10(p),11(s),28(p),39(p),45(s),50(s)	501	*	*
102	Layer	Deposit against/overlying southside of bank - over Tudor wall. Prob MoW landscaping	6	*	Depth: 0.2	1(p), 42(s), 50(s)	*	405	*
103	Cut	Natural feature - prob root disturbance. Filled with [105]	5	*	0.55x0.44x0.07	4(s), 51(p)	509,510,614,615	*	*
104	Cut	Post hole. Filled with [106]	5	*	Diam. 0.5x0.29	2(s), 51(p),43(p)	509,510,614,615	*	*
105	Fill	Fill of [103]	5	*	Depth: 0.07	4(s), 51(p)	509,510,614,615	*	*
106	Fill	Fill of [104]	5	*	Depth: 0.29	2(s), 51(p)	509,510,614,615	*	*
107	Layer	Poss buried soil horizon	5	101, 132	Depth: 0.07	13(p),43(p),45(s),51(p)	*	450,460	*
108	Layer	Gravel path	6	*	Depth: 0.04	43(p)	*	*	*
109	Fill	Originally identified as fill of [117], later as topsoil slumped into underlying ditch [157]	6	100,119	*	*	513	*	*
110	Cut	Post hole. Filled with [111]	5	*	Diam: 0.38, depth: 0.06	5(s), 43(p)	509,510,614,615	*	*
111	Fill	Fill of [110]	5	*	Depth: 0.06	5(s), 43(p)	509,510,614,615	*	*
112	Cut	Natural feature - prob root disturbance. Filled with [113]	5	*	Diam: 0.31, depth: 0.03	3(s), 43(p)	509,510,614,615	*	*
113	Fill	Fill of [112]	5	*	Depth: 0.03	3(s), 43(p)	509,510,614,615	*	*
114	Cut	Natural feature - prob root disturbance. Filled with [115]	5	*	0.39x0.18x0.065	6(s), 43(p),51(p)	509,510,614,615	*	*
115	Fill	Fill of [114]	5	*	Depth: 0.065	6(s), 43(p),51(p)	509,510,614,615	*	*
116	Layer	Levelling layer - against southside of Tudor wall - post-demolition.	6	123	Depth: 0.45	7(p),42(s)	508	430-3	*

Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
117	Cut	Originally identified as linear feature, later interpreted as slumping into [157]	6	*	*	*	513	*	*
118	Cut	Originally identified as linear feature, later interpreted as slumping into [157]	6	*	*	9(p),11(s)	511	*	*
119	Fill	Originally identified as fill of [118], later as topsoil slumped into underlying ditch [157]	6	100,109	*	11(s)	511	*	*
120	Cut	Poss stake hole. Filled with [121]	5	*	Diam. 0.13, depth: 0.04	8(s), 51(p)	509.510,614,615	*	*
121	Fill	Fill of [120]	5	*	Depth: 0.04	8(s), 51(p)	509.510,614,615	*	*
122	Layer	Levelling layer-poss contamination with later material - see [147]	5	136,144-7	Depth: 0.20	36(s)	*	458	*
123	Layer	Layer on northside of bank - bank landscaping?	6	116	Depth: 0.12	12(p),42(s),50(s)	*	*	*
124	Cut	Poss post hole. Filled with [125]	5	*	Diam. 0.36, depth: 0.27	10(p),14(s)	514	*	*
125	Fill	Fill of [124]	5	*	depth: 0.27	10(p),14(s)	514	*	*
126	Layer	Coloured sandstone layer - top of garden design?	3	*	Depth: 0.2	36(s)	*	*	*
127	Fill	Top fill of [128]	5	*	Depth: 0.18	36(s)	*	435-6	*
128	Cut	North-south linear - poss planting bed. Filled with [140]+[127]	5	*	1.9x0.7x0.18	15(p),17(p),36(s)	*	*	*
129	Layer	Dark loamy deposit of bank material	3	137	Depth: 0.26	10(p),13(p),45(s)	564	420	703
130	Fill	Fill of robber trench [178]. Finds prob disturbed from [176]	3	*	Depth: 0.3	42(s),50(s)	*	429,455,456	*
131	Layer	Sandstone ground-raising deposit	3	*	Depth: 0.35	17(p),18(p),36(s)	*	*	*

Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
132	Layer	Thin layer of poss buried topsoil under a clinker path - removed with modern topsoil	5	101, 107	Depth: 0.08	36(s)	*	*	*
133	Layer	Thick layer of bank-forming material	3	*	Depth: 0.7	45(s)	564,565	498	702
134	Layer	Clinker path	6	*	1.9x1.35x0.1	16(p),36(s)	*	*	*
135	Layer	Poss buried topsoil	5	*	Depth: 0.08	36(s)	*	427	*
136	Layer	Levelling layer	5	122, 144-7	Depth: 0.5	17(p),18(p)36(s)	*	428,447	*
137	Layer	Deposit of bank material	3	129	Depth: 0.8	13(p),45(s)	565	446,497	*
138	Layer	Thin band of white clay	3	*	0.6x0.38x0.07	13(p),45(s)	565	*	*
139	Layer	Bank material against south side of Tudor wall - poss contamination with later material, cf [152]	3	152	Depth: 0.32	42(s)	*	457	*
140	Fill	Primary fill of [128]	5	*	Depth: 0.18	36(s)	*	443-5	*
141	Layer	Coloured sandstone layer - garden design?	3	*	8.4x1.9x0.2	18(p),35(p),36(s)	529, 553-4, 646, 669, 671	*	707
142	Layer	White clay - garden design?	3	*	2x1.9xunknown	17(p),18(p),36(s)	529, 535, 553-4, 646, 651	*	*
143	Layer	Thin deposit of bank material	3	*	Depth: 0.13	45(s)	565	*	*
144	Layer	Thought to be fill of cut [175] - later interpreted as part of levelling layer [145]	5	122, 136,145-7	Depth: 0.35	45(s)	565	*	*
145	Layer	Levelling layer	5	122, 136,144,146-7	Depth: 0.23	13(p),45(s)	565	*	*
146		Finds number - finds from [144]+[145]	5	122, 136,144-5,147	*	*	*	439	*
147		Finds number - securely stratified finds from [122]	5	122, 136,144-6	*	*	*	440	*
148		**VOID**		**VOID**		**VOID**		**VOID**	
149		**VOID**		**VOID**		**VOID**		**VOID**	
150	Fill	Fill of ditch [156]	5	151	Depth: 0.8	42(s)	*	*	*

Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
151	Fill	Fill of ditch [156]	5	150	Depth: 0.2	*	*	*	*
152		Finds number - same as [139] but without the contamination	3	139	*	*	*	*	*
153	Layer	Bank material against base of south side of Tudor wall	3	*	Depth: 0.4	42(s)	*	449	*
154	Layer	Bank material against foundation of south side of Tudor wall	3	*	Depth: 0.2	42(s)	*	*	*
155	Fill	Fill of ditch [160]	4	*	Depth: 0.53	42(s)	*	*	705
156	Cut	Ditch cut - filled with [150] and [151]	4	*	2.6x2.12x0.7	42(s)	*	*	*
157	Cut	Ditch cut on top of bank - poss civil war covered walkway. Filled with [158]+[159]	4	*	>2x1.75x0.55	39(p),40(p),50(s)	555	*	*
158	Fill	Top fill of ditch [157]	5	*	Depth: 0.33	50(s)	555	459	*
159	Fill	Bottom fill of ditch [157]	4	*	Depth: 0.22	50(s)	555	*	*
160	Cut	Ditch cut. Filled with [155]	4	*	0.26x2.15x0.53	42(s)	*	*	*
161	Layer	Sandstone/gravel surface on top of bank	3	*	Depth: 0.11	39(p),50(s)	556	*	*
162	Fill	Rubble fill of drain [163]	3	*	Depth: 0.28	28(p),39(p),40(p),50(s)	556,559	*	*
163	Cut	Construction cut of drain. Filled with [162]	3	*	>2x0.77x0.07	39(p),40(p),50(s)	566	*	*
164	Layer	Sandstone/gravel surface on top of bank - pre-dating [161]	3	*	Depth: 0.25	40(p), 50(s)	558	*	*
165	Layer	Earliest bank construction material excavated	3	*	Depth: 0.35	45(s)	564,565	*	*
166	Msnry	Large Tudor garden wall	3	*	>2x0.95x1.45	28(p),42(s),50(s)	566,567	*	*
167	Msnry	Foundation of Tudor wall [166]	3	*	>2x?x0.17	42(s)	567	*	*
168	Layer	Poss levelling layer under ditch [160] or part of its fill	3	*	Depth: 0.1	42(s)	*	*	*
169	Layer	Bank construction material	3	*	Depth: 0.3	45(s)	564	*	*
170	Layer	Bank construction material	3	*	Depth: 0.32	45(s)	565	*	*
171	Layer	Sandstone levelling layer	3	*	Depth: unknown	36(s)	*	*	*
172	Layer	Bank construction material	3	176	Depth: unknown	*	*	*	*

Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
173		**VOID**		**VOID**		**VOID**		**VOID**	
174	Layer	Bank material dumped against northern side of Tudor wall	3	*	Depth: 0.15	50(s)	*	461,490-1,495	709
175	Cut	Poss cut - but unlikely	*	*	1.15x0.65x0.35	45(s)	565	*	*
176	Layer	Bank material dumped against northern side of Tudor wall	3	172	Depth: 0.4	28(p),50(s)	*	494,496	708
177	Layer	Layer at base of foundations of Tudor wall and poss underlying them	2	*	Depth: 0.23	42(s)	*	*	*
178	Cut	Robber trench for Tudor wall [166]. Filled with [130]	3	*	0.7x2x0.3	28(p),39(p)50(s)	*	*	*
		Trench 2							
200	Layer	Topsoil	6	*	Depth: 0.2	20(p),22(p),23(s),25-27(s),33(p),38(s)	504-507,607-610	410,413-4,417-9,422-6	*
201	Layer	Gravel path - filling [202] - prob Ministry of Works	6	223	Depth: 0.08	19(p),37(p),38(s),41(p),44(s),46(p),47-8(s)	504-507,607-610	411,463	*
202	Cut	Cut for gravel path [201]	6	222	5x1x0.08	19(p),37(p),38(s),41(p),44(s),46(p),47-8(s)	*	*	*
203	Layer	Bank material forming central causeway	3	204,205	Depth: 0.35	38(s),41(p),46(p),47(s)	539,540,541,659,660	*	*
204	Layer	Bank material forming central causeway	3	203,205	Depth: unknown	41(p)	*	*	*
205	Layer	Bank material forming central causeway	3	203,204	Depth: unknown	41(p)	*	*	*
206	Fill	Fill of pit [207]	6	208	Depth: 0.16	20(p),24(s),33(p)	*	437-8	*
207	Cut	Pit cut - filled with [206]	6	209	1.47x0.5x0.16	20(p),24(s),31(s),33(p)	*	*	*
208	Fill	Fill of pit [209]	6	206	Depth: 0.16	20(p),24(s),33(p)	*	*	*
209	Cut	Pit cut - filled with [208]	6	207	1.47x0.5x0.16	20(p),24(s),31(s),33(p)	*	*	*
210	Cut	Pit cut - filled with [211]	6	*	1.08x0.8x0.18	20(p),25(s),33(p)	515,516	*	*
211	Fill	Fill of pit [210]	6	*	Depth: 0.12	20(p),25(s),33(p)	515,516	*	*
212	Cut	Linear cut following earthwork - poss bedding trench. Filled with [213] and [214]	6	*	2.4x0.4x0.35	20(p),23(s)	530-532,648-650	*	*

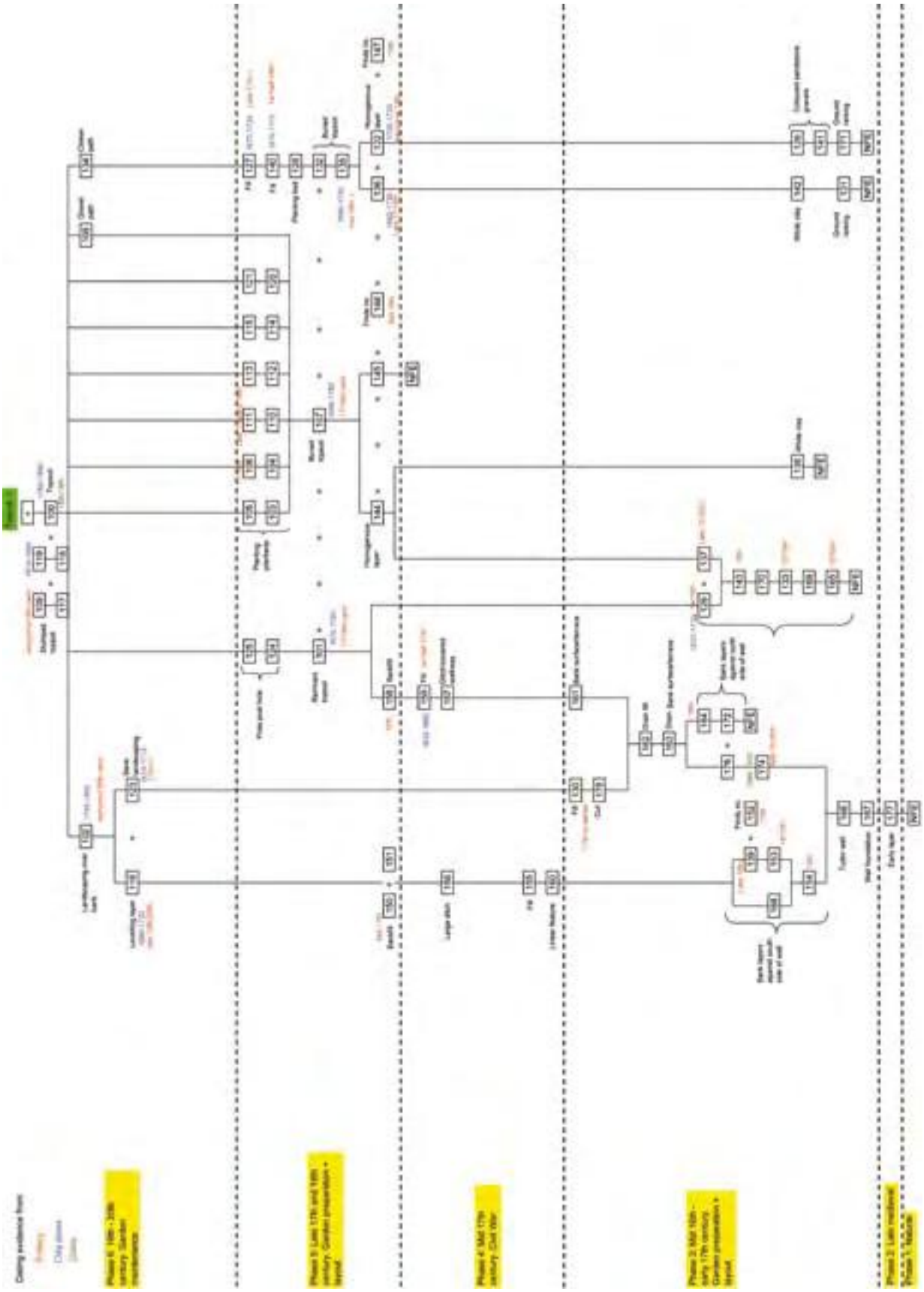
Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
213	Fill	Top fill of [212]	6	*	Depth: 0.2	23(s)	530-532,648-650	*	*
214	Fill	Lower fill of [212]	6	*	Depth: 0.15	23(s)	530-532,648-650	*	*
215	N	Natural sandstone bedrock	1	230	Depth: unknown	31(s)	551	*	*
216	Cut	Rectangular cut following earthwork - poss bedding trench. Filled with [217]	6	*	0.7x0.4x0.28	20(p)	521	*	*
217	Fill	Fill of [216]	6	*	Depth: 0.28	*	521	*	*
218	Cut	Pit cut - poss planting pit. Highly disturbed by animal burrowing. Filled with [219]	6	*	Diam. 0.7, depth: 0.22	20(p)	521,522	*	*
219	Fill	Fill of [218]	6	*	Depth: 0.22	*	521	*	*
220	Layer	Modern rubble layer	6	*	Depth: 0.55	38(s),41(p)	540,541,660	421	*
221	Layer	Layer of imported garden make-up material	3	*	Depth: 0.15	23(s)	530-532,648-650	499	*
222	Cut	Cut for gravel path	6	202	2.8x0.6xunknown	19(p),20(p),33(p),37(p)	*	*	*
223	Fill	Gravel path - filling [222] - prob Ministry of Works	6	201	Depth: unknown	19(p),20(p),33(p),37(p)	*	*	*
224	Layer	Layer of ground raising material or subsoil	6	227	Depth: 0.3	20(p),26-7(s),31(s),32-3(p)	551,552	*	*
225		**VOID**		**VOID**		**VOID**		**VOID**	
226	Layer	Soil horizon	2	*	Depth: 0.19	21(p),23(s)	530-532,648-650	*	*
227	Layer	Subsoil layer	6	224	Depth: 0.15	19(p),20(p),22(p),23(s),32-3(p),37(p),46(p)	*	*	*
228	Cut	Linear cut - poss bedding trench. Filled with [229]	6	*	0.9x0.4x0.21	20(p),26(s),33(p)	534	*	*
229	Fill	Fill of [228]	6	*	Depth: 0.21	26(s)	534	*	*
230	NI	Natural, eroded sandstone	1	215	Depth: unknown	21-2(p),23(s)	530-532,648-650	*	*
231	Layer	Initial layer of imported garden make-up material	3	*	Depth: 0.2	21-2(p),23(s),33(p)	*	*	*
232	Cut	Pit cut. Filled with [233]	6	*	Diam. 0.5, depth: 0.18	20(p), 27(s),33(p)	533	*	*
233	Fill	Fill of pit [232]	6	*	Depth: 0.18	20(p), 27(s),33(p)	533	*	*
234	Layer	Upper demolition/backfill of garden pavilion	5	*	Depth: 0.65	38(s),41(p)	539-541,659,660	*	*

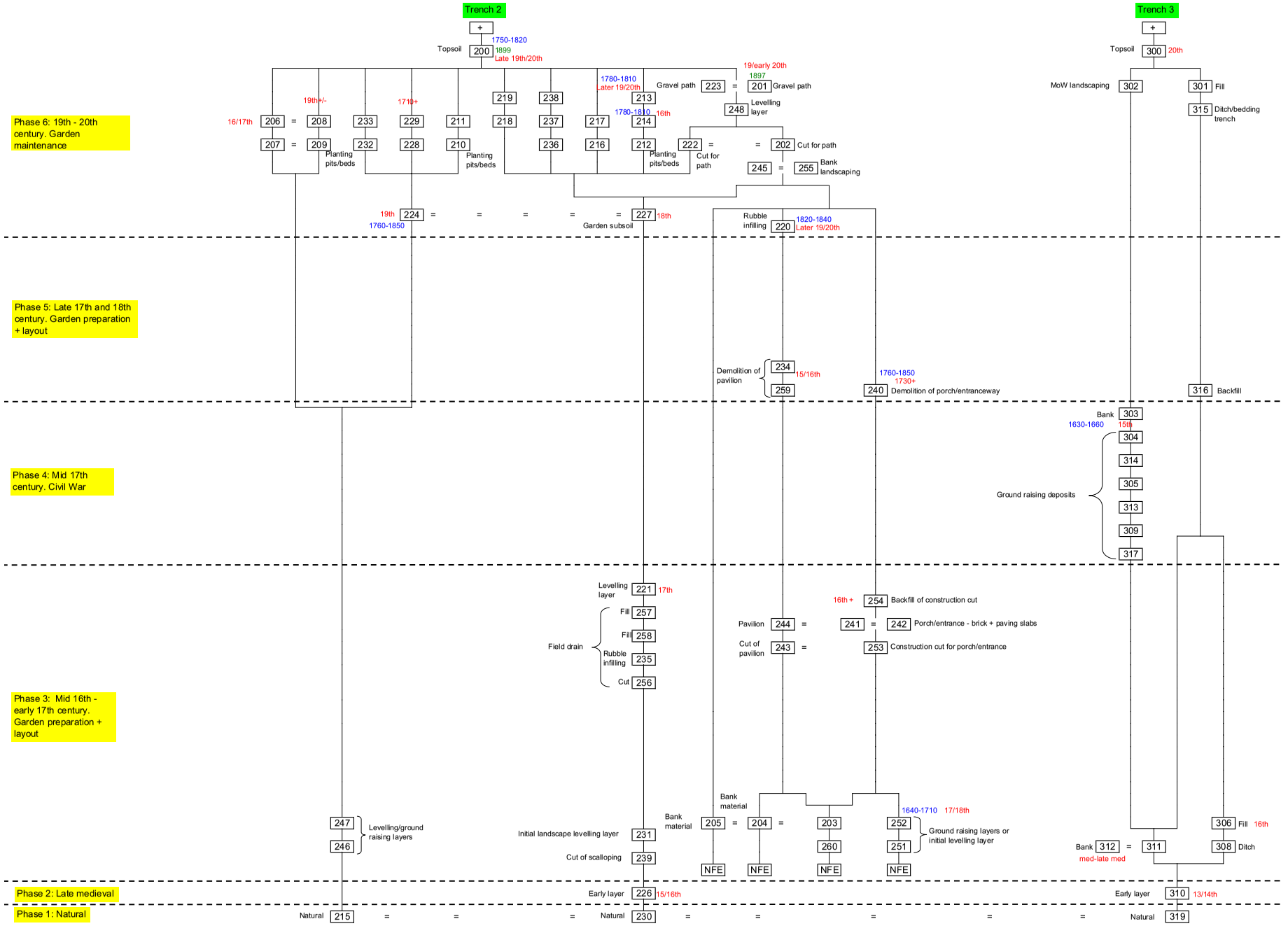
Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
235	Fill	Rubble fill of field drain - formed of roughly hewn sandstone blocks and brick frags in cut [256]	3	*	3x0.45x0.3	22(p),23(s),33(p)	536-538,654-656	*	*
236	Cut	Linear cut - poss bedding trench. Filled with [237] and [238]	6	*	0.2x0.5x0.26	20(p),23(s)	538	*	*
237	Fill	Lower fill of [236]	6	*	Depth: 0.15	23(s)	538	*	*
238	Fill	Upper fill of [236]	6	*	Depth: 0.11	23(s)	538	*	*
239	Cut	Cut shaping and forming the original scalloped, landscaped bank	3	*	1x0.6x1	21(p),23(s)	*	*	*
240	Layer	Demolition/backfill layer over threshold of garden pavilion	5	*	Depth: 0.65	46(p),47(s),48(s)	*	*	*
241	Msnry	Brick porch/entrance wall of pavilion - in cut [253]	3	242, 244	1.3x0.55x0.45	46(p),47(s)	542,543,563	*	*
242	Masonry	Stone threshold in entrance of garden pavilion - formed of horizontal paving slabs in cut [253]	3	241, 244	2x1x0.22	44(s),46(p)	*	*	*
243	Cut	Cut for garden pavilion [244]	3	253	2.25x0.9x1.22	38(s),41(p)	539-541,659,660	*	*
244	Msnry	Brick-built garden pavilion - in cut [244]	3	241-2	0.9x0.6x0.75	38(s),41(p)	539-541,659,660	*	*
245	Layer	Bank material overlying demolished garden pavilion	6	255	Depth: 0.69	19(p),37(p),38(s),46(p),47(s)	539-541,659,660	*	*
246	Layer	Layer of imported garden make-up material	3	247	Depth: 0.4	31(s)	551,552	*	*
247	Layer	Layer of imported garden make-up material	3	246	Depth: 0.4	20(p),31(s),32-3(p)	551,552	*	*
248	Layer	Levelling layer for MoW gravel path [201]	6	*	Depth: 0.2	44(s),47(s),48(s)	543	*	*
249		**VOID**		**VOID**		**VOID**		**VOID**	

Context	Type	Description	Phase	Same as	Dimensions in m (LxWxD)	Drawing no.	Photo no.	Small Find nos.	Sample no.
250		**VOID**		**VOID**		**VOID**		**VOID**	
251	Layer	Layer of redeposited natural under garden pavilion porch - only seen in a sondage	3	*	Depth: >0.3	44(s),49(p)	563	*	*
252	Layer	Layer of imported material overlying [251] - only seen in a sondage	3	*	Depth: 0.49	44(s),46(p),49(p)	563	*	*
253	Cut	Construction cut for garden pavilion entrance - porch and threshold.	3	243	2.4x1.1xunknown	44(s), 46(p),47(s)	542,543,563	*	*
254	Fill	Backfill of construction cut [253]	3	*	Depth: unknown	44(s), 46(p)	542,543,563	*	*
255	Layer	Bank material	6	245	Depth: 0.13	19(p),37(p),38(s)	539-541,659,660	*	*
256	Cut	Cut for field drain - backfilled with rubble [235], with later accumulated fill [257] + [258]	3	*	2.8x0.5x0.4	23(s)	675,676	*	*
257	Fill	Fill of field drain [235] (cut [256])	3	*	Depth: 0.3	23(s)	675,676	*	*
258	Fill	Fill of field drain [235] (cut [256])	3	*	Depth: 0.1	23(s)	675,676	*	706
259	Layer	Lower demolition/backfill of garden pavilion	5	*	Depth: unknown	38(s),41(p)	*	*	*
260	Layer	Unexcavated layer below bank material [203]	3	*	Depth: unknown	*	*	*	*
		Trench 3							
300	Layer	Topsoil	6	*	Depth: 0.38	29(s),30(s),34(p)	544-550	448	*
301	Fill	Fill of mod ditch [315] - poss slumped topsoil	6	*	Depth: 0.2	30(s)	544-550	*	*
302	Layer	Accumulation of material over bank. Prob MoW landscaping	6	*	Depth: 0.12	29(s),34(p)	544-550	*	*
303	Layer	Poss Civil War bank material	4	*	Depth: 0.28	29(s)	544-550	441-2,476	*
304	Layer	Burnt layer	4	*	Depth: 0.08	29(s)	544-550	492-3	701
305	Layer	Ground raising deposit	4	*	Depth: 0.1	29(s)	544-550	*	*
306	Fill	Lower fill of ditch [308]	3	*	Depth: 0.24	29(s),30(s)	544-550	*	*

307		**VOID**		**VOID**		**VOID**		**VOID**	
308	Cut	Cut of large ditch. Filled with [306] + [316]. Cut into natural bedrock	3	*	5.21x>0.5x0.93	29(s),30(s),34(p)	544-550	*	*
309	Layer	Ground raising deposit - poss construction horizon	4	*	Depth: 0.18	29(s)	544-550	*	*
310	Layer	Sandy clay layer - earliest deposit in trench - cut into by ditch [308].	2	*	Depth: 0.26	29(s)	544-550	475	704
311	Layer	Bank material - poss associated with ditch [308]	3	312	Depth: 0.22	29(s)	544-550	*	*
312	Layer	Lense within [311] - bank material - poss associated with ditch [308]	3	311	Depth: 0.1	29(s)	544-550	*	*
313	Layer	Ground raising deposit - poss construction horizon	4	*	Depth: 0.2	29(s),34(p)	544-550	*	*
314	Layer	Ground raising deposit	4	*	Depth: 0.08	29(s)	544-550	*	*
315	Cut	Shallow ditch cut or bedding trench. Filled with [301]	5	*	>1x1.26x0.2	30(s)	544-550	*	*
316	Fill	Upper fill of ditch [308]	5	*	Depth: 0.3	29(s),30(s),34(p)	544-550	*	*
317	Layer	Ground raising deposit	4	*	Depth: 0.2	29(s),34(p)	544-550	*	*
318		Finds number - unstratified finds	*	*	*	*	*	*	*
319	N	Natural sandstone bedrock	1	*	Depth: unknown	29(s),30(s),34(p)	544-550	*	*

APPENDIX A2: Matrix





APPENDIX A3: Pottery Spot Dating and Assessment Report

Sarah Jennings

14 May 2007

Comment

It should be noted that the evidence for dating and phasing that can be provided by the pottery should be treated with caution. The groups are very small, with only 2 exceptions to this, and the sherd to vessel ratio (SVR) is virtually always 1:1. The sherd size is on the whole small and, although there is little evident abrasion, the sherd size combined with the very low SVR would suggest a great deal of disturbance and resorting prior to final deposition on the site.

Method of recording

All the pottery was visually examined, context by context, and divided into broad fabric types or groups. The different fabric groups were entered onto the pottery recording proforma using brief description or fabric names (sometimes using abbreviations, see below) together with a sherd count for that fabric, an indication of vessel numbers when possible, and a sub-count of feature sherds. Forms were also recorded when evident. Any cross-joining sherds were noted, but these were very few in number.

Assessment

It is very unlikely that the pottery originated from use on the site and is therefore likely to be residual to at least some degree. It can give an indication of possible earliest deposition date, but little else. Generally the spot dating concurs with the provisional phasing and the clay tobacco pipe spot dates.

The whole assemblage has virtually no potential for further analysis.

There was a single cohesive group from Trench 2 context 240 which contained some high quality pieces, and a much higher than the standard SVR for the site.

Many of the later fabric are of well-known types with well-established and generally recognised names; mostly theses are local or regional types. There were extremely few imports and these were all of the well-known German stonewares, mainly Frechen-types. Some of the initial fabric identifications and minor dating adjustments have been refined during the assessment stage after consultation with Stephanie Ratkai. A more detailed level of recording at the assessment stage was deemed to be unnecessary as there was no value at all in using EVEs as a method of quantification.

Two sherds are interesting in their own right and would be worth drawing. One Midlands purple fragment might be the top knob of a ceramic alembic. There is no other associated pottery and due to the limited size of the piece this identification has to remain tentative. The other fragment is a decorated Cistercian ware lid.

These two items would be worth drawing for the general record and an internal report.

Time estimate for completion

2 days – rationalise archive and deposit; select and supervise drawing of two sherds.

Abbreviations used in the recording of the pottery

TGE	Tin-glazed earthenware
TPW	Transfer Printed Ware
PMR	Post Medieval Red ware
VGF	Victorian Garden Furniture
CIST	Cistercian ware
CEP	Chinese export porcelain
Mid Purp	Midlands Purple
Bl Gl	Black glaze

Phase	Context	Sherd count	Date range	Spot date	Revised spot date	comment	Clay pipes: latest dates
5	101	1	16th – 18th century	17th/18th cent	Some pottery 14th/15th		1610-1720
6	102	>20	17th – 20th	1st half/mid 20th			1750-1800
6	109	2	15th – 19th	1st half/mid 18th	Bl gl ware 17th		
5	107	1	16th – 18th	17th/18th			1680-1780
5	111	3	17th – early 19th	1st half 18th	Late 17th/early 18th		
6	116	18	17th– 20th	Late 19th/20th	Early flower pot – 17th	SANKEY VGF	1680-1730
5	122	33	15th – 18th	early to mid-18th			1705-1730
6	123	1	16th – 18th	17th +/-	17th		1610-1710
5	127	5	17th - 18th	Early 18th +	Late 17th		1670-1730
5	135	14	15th – 19th	Mid-18th, ? plus			1680-1730
5	136	5	16th – 18th	1st half 18th	L17th/18th		1660-1730
5	140	4	15th – 18th	1st half 18th			1610-1710
5	146	5	15th – 17th	1st half 17th ?	Mid 16th, =?	Cross join to 137	
5	147	1	18th	18th			
5	150	4	16th – 17th	2nd half 17th	Mid-17th group date		
5	158	3	14th – 16th	16th (?)	15th ?		
4	159	1	17th	1st half 17th		Frechen	1630-1660
3	130	4	15th – 18th	17th or earlier			
3	129	5	15th – 17th	15th – 16th	14th/15th	Sample 703	
3	133	21	13th – 16th	16th	15th: 15th/16th	Sample 702 = 12 mostly scraps	
3	137	7	14th – 17th	16th (prob)	1 sherd 17th most of rest late 15th/16th	Cross join to 146	
3	139	1	15th – 17th	16th +/-	Not later than 17th, ? 2nd half 16th		
3	143	4	13th – 17th	16th; ? plus	18th C bowl rim		
3	152	1	15th – 17th	16th/17th	17th, poss early 18th		
3	153	2	Med – late med	15th/16th	14th/15th?		
3	154	3	13th – 15th	14th +/-	15th		
3	164	2	L 15th – 17th	16th	16th		
3	165	4	14th – 17th	15th/16th	Later 15th/16th + residual shelly 13th C		
3	174	10	14th – 17th	Late 15th/16th		Sample 709 = 8	
6	200	17	16th – 20th	Late 19th/20th			1750-1820
6	201	3	Late 18th – 20th	19th/early 20th			
6	213	11	16th – 20th	Later 19th/20th		Clay pipes fit to 214	1780-1810
6	206	3	15th – 17th	16th/17th			
6	208	7	14th – 20th	19th +/-	Early flower pot		
6	214	2	14th – 16th	16th		Clay pipes fit to 213	1780 – 1810
6	220	55	16th – 20th	Later 19th/20th			1820-1840
6	224	3	17th – 20th	19th			1760-1850
6	227	6	16th – 17th	17th +/-	18th cent	Uncertain/iffy	
6	229	5	14th – 18th	1710 +			
5	234	1	14th – 17th	16th/17th ?	15th/16th		
3	240	98	18th	1730 +		Clean group	1760-1850
3	221	5	15th – 17th	16th/? 17th	17th; GRE not later than 16th		
3	252	7	17th – 18th	17th	Later 17th/18th		1640-1710
3	254	1	15th – 17th	16th/17th	16th +		
2	226	1	13th – 16th`	14th/15th	15th/16th		
	318		Mixed	Mixed/20th	13th/14th + 17th C plus	Finds context only	
6	300	>15	18th – 20th	20th			
4	303	1	Med – 16th	Later med; ? plus	15th cent		1630-1660
3	306	2	15th – 18th	16th; ? plus	16th		
3	312	1	Medieval	Med – late med (?)			
2	310	16	13th - 16th	13th/14th; ? plus	13th/14th	Sample 704 = 8	

Table 1: Date ranges and spot dates for the pottery from contexts in Trenches 1, 2 and 3 with amended dates were appropriate. The relevant 'latest clay tobacco pipe' date has also been given when available.

APPENDIX A4: Small Finds Assessment Report

Sarah Jennings

30th May 2007

A total retrieval policy for the individually records items (small finds) was in operation at Ashby Castle Gardens excavations. This covered material that requires individual recording and items that were three dimensionally recorded during the excavations.

The combined AML and small find number block for the individually recorded items was 200620400 – 200620499 and a total of 75 numbers was allocated within this block. In most cases items were individually recorded but in a number of instances a single number was allocated to more than one fragment, usually nails or unidentified iron lumps. A total of 79 items was retrieved; all the metal work has been x-radiographed and the individual finds appropriately packaged.

27 numbers were allocated to items three-dimensionally recorded on site;

7 numbers were allocated to items retrieved during sample processing;

41 numbers were allocated to hand-retrieved items recorded during the excavations.

material	count
Alloy	1
Bone	1
Ceramic	1
Copper alloy	14
Haematite	1
Iron	51
Lead	4
Silver alloy	1
Stone	1

Table 1, small find numbers allocated by material.

Object	Material	Count
Die	Bone	1
Vessel, ?alembic	Ceramic	1
Terminal	Copper alloy	1
Button	Copper alloy	2
Hinge	Copper alloy	1
Buckle	Copper alloy	2
Coin	Copper alloy	3
Jeton	Copper alloy	1
Chain mail	Copper alloy	1
Wire	Copper alloy	2
sheet	Copper alloy	4
Pin	Copper alloy	1
Tool or rubber	Haematite	1
Nails or nail shafts	Iron	22

Bar	Iron	2
Lump	Iron	3
Object	Iron	1
Strip	Iron	4
Horseshoe	Iron	2
Bolt	Iron	1
Washer	Iron	1
Link or hook	Iron	1
Heel protector	Iron	1
Tack	Iron	2
Hinge pivot	Iron	2
Key wards	Iron	1
Unknown	Iron	10
Musket ball	Lead	2
Weight	Lead	1
Lump	Lead	1
Coin	Silver alloy	1
Whetstone	Stone	1

Table 2 objects by material and count

The objects recovered during the excavations in Ashby Castle Gardens date from the 20th century back to 14th/15th century. The four coins and one jeton are covered in a separate assessment report, and the piece from the top of a pottery vessel is covered in the pottery assessment.

Assessment

Many of the individually recorded objects are fairly or very modern, such as the alloy bullet, screws and bolts and the heel protector, and came from topsoil or the very upper levels. The two horseshoes SF 200620413 and 200620414 both came from the topsoil (Phase 6, context [200]) in Trench 2 and are also of a fairly modern type.

The main structural items are those found on every site such as nails and strips, none of these is very substantial or large in size; the small hinge pivot SF 200620490 (context [174]) is probably from a light shutter or even possibly from a piece of furniture, while the more substantial one SF 200620440 (context [147]) could be from a heavier shutter or window.

The objects of personal wear include buttons (SF 200620415, SF 200620453) (contexts [100] and [100] respectively); part of a shoe buckle SF 200620450 (context [107]) and a probable belt buckle SF 200620460 (context [107]). These are all fairly late in date and are likely to have been redeposited. The function of the small fragment of chain mail from context [130] in Trench 1 (SF 200620455) is unclear. It is very unlikely to have been defensive as none of the links is riveted and the size and weight of the links is more suggestive of a purse or container. The only objects that might possibly have been associated with the Civil War are two musket balls SF 200620411 and SF 200620412 but both are from the final phase (Phase 6 – context [100]: topsoil in Trench 1; and context [201]: gravel path in Trench 2).

As an assemblage this can do little to inform the archaeology and only a few objects

are worth further study, such as the chain mail, small die (SF 200620496 – from context [176]) recovered during sample processing, and a probable lead weight (SF 200620 456 – from context [130]) amongst others.

Tasks

Final check of identifications
Update the digital archive record
Draw four items
Prepare small report on significant finds

APPENDIX A5: Clay Pipe Assessment

David Higgins

9 March 2007

Introduction

This report deals with the clay tobacco pipes recovered from excavations at Ashby de la Zouch Castle gardens that were carried out by English Heritage during July and August 2006. The project code used for this work was 4990. The pipes were studied and this report written during February and March 2007.

Methodology

The pipe fragments have been individually examined and the details of each context group logged onto an Excel worksheet. The layout of the worksheet has been based on the draft clay tobacco pipe recording system that has been developed at the University of Liverpool (Higgins & Davey, 1994). Bowl forms have principally been dated with reference to the London typology established by Atkinson & Oswald (1969) and the Broseley Typology established by Higgins (1987a), although the dating from both has been modified according to the form and attributes of the individual fragments.

An assessment of the likely date of the stem fragments has been provided. Dates that are only derived from stems should, however, be used with caution since they are much more general and less reliable than the dates that can be determined from bowl fragments. All of the pipes were recorded and dated before context information and other site data was examined. This methodology avoids any pre-conceptions being formed as to the possible date or nature of the various pipe groups while they are being identified and catalogued. The pipe context summary that has been prepared has been provided for the site archive as an Excel worksheet. This provides a summary of the overall numbers and date range for the pipes recovered from each context, together with the most likely deposition date, based on just the pipe evidence.

The clay tobacco pipes

The excavations produced 91 fragments of pipe, comprising 19 bowls, 71 stems and 1 mouthpiece fragment, from a total of 22 different contexts in the excavated trenches. The pipes were not evenly distributed between the trenches with 60 pieces coming from Trench 1, 29 pieces from Trench 2 and just 2 pieces from Trench 3. The pipes fragments provide useful dating evidence for the contexts and phases within which they occur. The stratigraphic groups that produced pipes of note are described and discussed by trench below, followed by a general section dealing with the pipes themselves.

The pipes as archaeological evidence

Trench 1: This trench produced 60 fragments of pipe. The Phase 6 deposits (nineteenth/ twentieth century garden maintenance) produced 40% of all the pipe fragments

recovered from this trench (24 pieces) and, as might be expected, these were of mixed seventeenth to nineteenth century date. The presence of so many earlier pipe fragments, however, suggests that many of the former deposits or features on the site have been disturbed and mixed by later gardening activity.

The bulk of the Trench 1 pipes, 34 pieces (57%), came from Phase 5 deposits – the eighteenth century garden preparation and layout. The pipes from this phase are interesting in that although a few earlier residual pieces were clearly present, there was nothing that was certainly later than about 1730. There were nine contexts that produced small groups of pipes, and these included two, [135] and [122] that contained stamped marks of c1680-1730 in date (Figs 3 & 4). The latest datable pieces in almost all of these groups would fit comfortably within this date range and the largest group, [122], certainly appeared to have accumulated during the late seventeenth or early eighteenth century. This might indicate that the Phase 6 garden activity is primarily of this date with much less activity from about 1730 onwards.

There was a single fragment from the Phase 4 activity (Civil War preparation) but this was an almost complete heel bowl from the bottom fill of a ditch or covered walkway. The pipe bowl (Fig 2) dates from c1630-60, which provides good supporting evidence for this being a Civil War period deposit. The only other Trench 1 fragment is a single stem from [129] in Phase 1 (sixteenth century garden preparation). This dates from somewhere between about 1610 and 1710 but it is not as early as the sixteenth century.

Trench 2: This trench produced a total of 29 fragments of pipe. The majority of the pipe finds, 26 fragments, were recovered from Phase 6 deposits (eighteenth century garden), with all of the groups containing material of late eighteenth or early nineteenth century date. Contexts [214] and [224] both contain stems of this date while the largest group, [220], contained a substantially complete pipe of c1820-40 that appears to have been freshly crushed in a rubble backfilling. This provides a likely date for this event. The same is true of [240], the demolition of a porch/entranceway in Phase 5, which contained two stems that are likely to be of late eighteenth or nineteenth century date.

The only other pipe from this trench came from [252], one of the Phase 3 (sixteenth century garden preparation) layers. This is quite a thick and finely burnished stem that could possibly be early seventeenth century in date, but which is more likely to date from the middle of the century or later. However, it is certainly seventeenth rather than sixteenth century in date and, as with the stratigraphically earliest stem in Trench 1, suggests that some of these early deposits need to be pushed a little later in date.

Trench 3: This Trench only produced two fragments of pipes, both of which came from the same context, [303]. This is a possible Civil War bank in Phase 4 and both of the pipe fragments are consistent with this. One piece is an almost complete bowl of c1630-60 and the stem is of a general seventeenth century type.

The Pipes Themselves

Civil War Pipes: Although this is just a small group of pipes, they still provide some useful evidence for the pipes that were being produced and used in this part of Leicestershire.

The two early bowl forms of c1630-60 (Figs 1-2) may well derive from Civil War activity on the site and are directly comparable with the much larger Civil War assemblage from nearby Tutbury Castle in Staffordshire. Unmarked heel forms dominate the Tutbury assemblage and there are very few spur forms. Although too small to be truly representative, the Ashby Castle examples are interesting in that they are also both unmarked heel forms. This is because in Leicestershire in general, and especially Leicester itself, spur forms went on to dominate the later seventeenth century pipe assemblages (Higgins 1985). These examples from the north-west of Leicestershire suggest that either the spur forms only took hold after the Civil War or that this part of the county favoured heel types – and perhaps a bit of both.

Broseley Style Pipes: There is then very little evidence for the form of the pipes until around 1680-1730 when a distinctive style of pipe with a large, tailed heel is found (Figs 3-4). As well as the two illustrated examples, there are fragments of another two or three from [100], making this the most common bowl form represented on the site. This is interesting because this particular form is characteristic of the Broseley area pipemaking industry of Shropshire (Higgins 1987a). Shropshire pipes were regularly traded across the Midlands and some local manufacturers copied the style. The two marks reflect this well, with the Thomas Hughes example (Fig 3) being an actual Broseley area product while the Jane Mats example (Fig 4) was produced in northern Warwickshire. What is interesting is that this style of pipe was never particularly common in Leicestershire and the known examples tend to cluster towards the western side of the county. The presence of four or five examples amongst this small assemblage suggests that the form was relatively common in this part of the county, which is not the case in Leicester itself.

Decorated Stems: Once again, there is something of a gap until the later eighteenth century, which is represented by some decorated stem fragments from the site. Four pieces of very slender stem, joining as two pairs and probably all from the same pipe, were recovered from contexts [213] and [214]. One of the pairs has two roll-stamped borders on it (Fig 5) and the other pair has another identical border on it. Either there were at least three borders on this pipe or (and perhaps less likely) there are the remains of two identical pipes in this context. Decorative stem borders were popular during the eighteenth century, especially in the Midlands and northern England where distinctive regional styles of decoration appeared. The Ashby example belongs to the Midlands group and is of a very distinctive pattern. This particular pattern is characterised by cross-hatched ovals, a band of diagonal hatching to one side of the ovals only and asymmetric edging motifs based on a horse-shoe like motif, one band of which is filled with dots while the other contains a motif resembling an oak-leaf. Although some slight variations in detail and the combinations of motif occur, this basic arrangement clearly became one of the most popular of the Midlands styles and it was produced by a number of different makers, several of whom placed their mark between the borders. This type of border is very rarely recovered with its bowl form and so the dating of this style has to rely on the identification of these maker's marks.

Walker and Wells (1979) illustrate at least five different makers' marks associated with this type of border, to which can be added several examples marked either James Pawson or S. Wilkinson of Cambridge (National Clay Tobacco Pipe Archive, University

of Liverpool), two examples marked John Ward (Higgins 1999, Fig 98.12-13), an example marked Thomas Woodward (Higgins 1985, Fig 2.26) and two others with the either the name Thomas Wild incorporated within the design in place of the ovals (White 2004, Fig 8.19.7). There are also a number of stems from the North East with the initials IS incorporated within the design. At least three different IS stem borders have been recorded at various sites in or near Scarborough, Whitby and Hartlepool and these types also include some of the elements found in the particular type of stem border under discussion, although the match is not so close. These different marks are listed below, together with any known dates drawn from the above sources and Oswald (1975).

Mark	Origin	Known Dates / Comments
RICH / PAIN / DARBY	Derby	Took an apprentice in 1762; married 1765.
JAS.PAW- / SON, Cam- / bridge.	Cambridge	At least two slightly different dies known. Not yet traced in documentary sources.
PAUL / ROBIN / SON	Brampton / Bolsover / Chesterfield	Paul Robinson (I) recorded from at least 1723 until his death in 1756. Paul Robinson (II) recorded from at least 1756 until his death in 1791. The family are variously recorded at Brampton, Bolsover and Chesterfield, all in Derbyshire.
SALIS / BURY / DERBY	Derby	A George Salisbury is recorded working from at least 1759-93 and there is also a John Salisbury, married in 1786.
IS	NE England	Unidentified maker, probably working in NE Yorkshire or Teeside area.
IOHN / WARD / DARBY	Derby	Not yet traced in documentary sources.
THO / WILD	Rotherham	Working in 1777.
C.WILK / INSON / Camb	Cambridge	Not yet traced in documentary sources. Could possibly be a mis-reading of the S Wilkinson mark (below).
S. WILK / INSON, / Cambg.	Cambridge	The 'S' in the surname appears in the old fashioned form, like an 'f'. Oswald (1975, 162) records him working in 1765. His probate dates from 1787, presumably the year of his death.
THO / WOOD / WARD	Derby	A maker called 'Woodward' recorded at Cockpit Hill, Derby, c1756.
IOHN / WYER	Nottingham	Recorded working in 1768 and earlier style pipes also known.

As a result of collating this evidence, two points are clear. The first is that the known dates for these makers all cluster in the second half of the eighteenth century. Although some of the manufacturers could have been producing this style during the 1750s, the main focus is clearly from the 1760s to the 1780s and there is no reason why the latest examples could not date from the 1790s. A date right at the end of the eighteenth century would certainly fit with the narrow stems as represented at Ashby. It is suggested that this particular style could have been produced from c1750-1800 but that a date of c1760-90 seems most likely for the majority of the examples.

The second point to note is that, apart from the unexplained cluster at Cambridge, this particular style of border was clearly made in a fairly tightly defined area running up the boundary of Derbyshire and Nottinghamshire and into Yorkshire. The Yorkshire examples, however, tend to use the various decorative elements in a less regular way and/or to include the maker's name within the mark as well. The majority of the borders produced with the most typical arrangement seem to have been produced in Derby itself, where about a third of the known manufacturers of it were based, and it may be that this particular pattern of border originated there. Other manufacturers will doubtless come to light, and it may be that other centres will also be added, for example Leicester and Sheffield, where this style of border is also commonly found. It is quite possible that some manufacturers did not use a name stamp as well and it will only be

through the detailed identification of individual die types that the true distribution of each production centre will be determined. At present, it is clear that the market area of this style extended from Cambridge in the south-west to Buckinghamshire in the south (Oswald 1975, Plate IV.7) and from Cheshire in the west (Higgins 1987b, 12) to Yorkshire in the north. The Ashby example sits firmly within this distribution area and only about 12 miles south of Derby, where it may well have been made. The particular die used to impress the Ashby example appears to be that same as that used on an example from Tatton Village in Cheshire (Higgins 1987b, 12) and it may well be the same as an example from a site in Leicester as well (Higgins 1985, Fig 2.27).

Nineteenth Century Pipes: Once again, the evidence from such a small assemblage is rather scanty, but one almost complete bowl profile was recovered from a demolition deposit (Fig 6). This is a plain bowl with fairly thick, chunky walls and a slightly oval plan to the bowl. The side of the bowl away from the smoker, in particular, has quite a sharply pointed seam. This style of bowl is typical of local production during the early nineteenth century, which included a range of plain and mould decorated styles (for example, see the kiln group in Higgins 1999). Sufficient of the stem survives in this example to suggest that it was gently curved, which would be typical for the period.

Discussion

There have been relatively few excavations in Leicestershire that have produced good early or mid-seventeenth century pipe groups. The two early bowls from these excavations provide a useful pointer for the styles that were being used in this part of the country during the Civil War, as well as providing dating evidence for the contexts in which they occur. The presence of four or five bowls of c1680-1730 with tailed heels shows that this style was certainly popular in the north-west of the county, and this helps define the eastern limit for the marketing of this particular style from Shropshire. The Midlands style decorated stems add to the growing evidence for the production and marketing of this type of pipe, which were competing directly with the elaborately decorated pipes from Chester at this period.

In terms of the archaeology of the site itself, the pipe evidence suggests that at least some of the early garden features date from the early seventeenth rather than the late sixteenth century and that phases of activity during the Civil War and again during the period c1680-1730 can be discerned. Later eighteenth and nineteenth century pipes attest to continued interest in the garden area during these periods, including the demolition deposits [220] and [240] associated with the pavilion, which probably date from c1820-40.

The pipes from the topsoil contexts, for example [100], contain predominantly pipe fragments of seventeenth or early eighteenth century date, suggesting that this was a period of particular activity in the gardens, even if much of it has subsequently been disturbed. There was comparatively little pipe deposition taking place after the mid-eighteenth century but the significance, if any, of this from so small a group will have to be weighed up against all the other available evidence.

References

Atkinson, D R, & Oswald, A, 1969, 'London clay tobacco pipes', Journal of the British Archaeological Association, XXXII, 171 227.

Higgins D A, 1985, 'Leicester Clay Tobacco Pipes' in P J Davey (ed.) The Archaeology of the Clay Tobacco Pipe, IX, British Archaeological Reports, Oxford, British Series 146, 291-307.

Higgins, D A, 1987a, The interpretation and regional study of clay tobacco pipes: a case study of the Broseley district, PhD submitted to the University of Liverpool, September 1987, 628pp.

Higgins, D A, 1987b, Some Clay Pipes from Cheshire and Merseyside, North West Archaeological Trust Report No 3, Liverpool.

Higgins, D A, 1999, 'The Clay Tobacco Pipes' in A. Connor and R. Buckley, Roman and Medieval Occupation in Causeway Lane, Leicester, Leicester Archaeology Monographs No 5, 215-228.

Higgins, D A, & Davey, P J, 1994, Draft guidelines for using the clay tobacco pipe record sheets, unpublished draft, (copy deposited for the site archive).

Melton, N D, 1997, Clay Tobacco Pipes and Pipemaking in Northern Warwickshire, unpublished M.Phil. thesis presented to the University of Liverpool, 392pp.

Walker, I C, and Wells, P K, 1979, 'Regional Varieties of Clay Tobacco Pipe Markings in Eastern England' in P J Davey (ed.), The Archaeology of the Clay Tobacco Pipe, I, British Archaeological Reports, Oxford, British Series 63, 3-66.

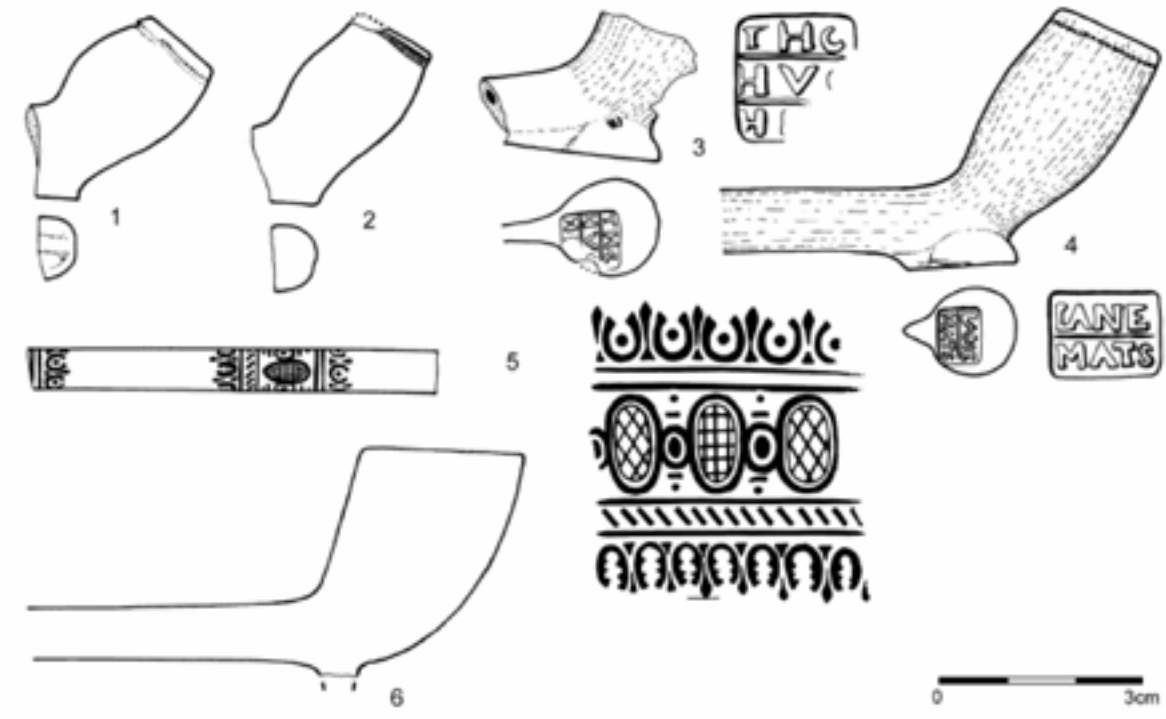
White, S D, 2004, The Dynamics of Regionalisation and Trade: Yorkshire Clay Tobacco Pipes c1600-1800, in P Davey & D A Higgins (eds.), The Archaeology of the Clay Tobacco Pipe XVIII, British Archaeological Reports, Oxford, British Series No 374.

Table 1: Clay pipes

Dec, etc	Fig	Comments
		Rather a scrappy, mixed group. Two of the bowl fragments are from mid-C17th pipes of c1640-1660, one of which retails part of an unmarked heel. There is also a plain body fragment from a bowl that is most likely to date from the early C18th and at least two (probably three) fragments from Broseley style bowls with tailed heels, which were most popular from c1680-1730. Some of the late C17th to early C18th fragments are burnished, but the group is too small, abraded and mixed to allow meaningful quantification. Almost all of the material is of C17th or early C18th date with just one later looking stem that was probably produced somewhere between 1760 and 1880, most likely towards the earlier part of this period.
		Single piece of seventeenth or early eighteenth century stem made of a local fabric with gritty inclusions. The surface has a poor burnish and this piece is most likely to have been produced c1650-1720.
		One piece of very battered and abraded C17th stem (residual in this context) and a hard fired and rather oval stem that most likely dates from c1750-1800 (stem bore 5/64").
		Fairly thick stem with a good circular cross-section and a stem bore of just under 6/64". Most likely dates from c1680-1780.
		Stem fragment made of a fine but 'local' fabric with a good circular cross-section and a stem bore of 6/64". Most likely dates from c1680-1730.
		Stem fragment with a large stem bore (9/64").
	4	Although this context contains one or two pieces that could be of earlier C17th date, the majority of the fragments are consistent with a late C17th or early C18th deposit. There is one substantially complete bowl (but with the heel or spur missing) that probably dates from c1660-90 but the best dating is provided by a complete bowl with a tailed heel bearing a IANE/MATS stamp. Jane Mats is only likely to have marked pipes in her own right following the death of her husband in 1705 and this style of pipe is unlikely to be later than c1730. The bowl is fully milled and with a good burnish and joins a 60mm long stem (old break) with a bore of 6/64". The large and fresh nature of this piece suggests it was recently deposited when the context was sealed. The pipes form a consistent group and suggest that this deposit represents early eighteenth century activity on the site.
		Small fragment of C17th type (stem bore 8/64").
		Five stem fragments of C17th or early C18th types, with the latest most likely c1670-1730. Two soft and very abraded pieces join (old break), and they clearly came from a pipe with a waney stem. Two of the other pieces are neatly finished and burnished.
		One piece of C17th style stem with a bore of just over 8/64".
	3	This context produced one fragment of poorly burnished stem made of a local (coalmeasure) fabric with a stem bore of 6/64". This piece dates from the mid-C17th to early C18th. The best dating, however, is provided by two joining fragments (freshly broken) from a Shropshire style bowl with a tailed heel. This bowl has an average burnish, a stem bore of 7/64" and a slightly damaged heel stamp that would have read THO/HVG/HES originally. Thomas Hughes was a pipemaker at Broseley in Shropshire, who died in 1735. This style of pipe was most popular from c1680-1730.
		A group of stem fragments, three of which are made of relatively coarse fabrics and two of which are burnished, all of which would be consistent with a later C17th or early C18th date.
		One piece of C17th style stem with a bore of 8/64".
	2	A Civil War style heel bowl with a fully milled and bottered rim and a stem bore of 7/64". The pipe is made of quite a fine fabric with a granular fracture and very fine mica particles in it. The surface is not burnished and there is no maker's mark.
		Quite a thick, straight, cylindrical stem with a bore of 5/64". Probably second half of C18th or early C19th.

Midlands style stem border (x1)		A thin stem with a small bore (4/64") decorated with a distinctive Midlands style incuse stem border. This piece cross joins with a small plain stem fragment from context 214 (old break) and all four pieces from these two contexts almost certainly come from the same pipe.
Midlands style stem border (x2)	5	Three thin stem fragments with small bores (4/64"), two of which join (old break) and are decorated with two impressions of a distinctive Midlands style incuse stem border. The small plain piece cross joins with another decorated fragment from context 213 (old break) and all four pieces from these two contexts almost certainly come from the same pipe.
	6	There is one burnished stem of c1640-1710 that is clearly residual in this context, since all of the other pieces are of typical late C18th to mid-C19th types. This group is notable for the fact that all of the bowl fragments and four of the stems join (all old breaks) to make an almost complete bowl with 117mm of surviving stem. Furthermore, one of the other stem fragments may well be from the same pipe. The recovery of so many joining fragments suggests that this pipe was freshly discarded into this context, where it became crushed and broken. The bowl form is most likely to date from c1820-40, which provides a good indication of the date of this deposit.
		Four neat cylindrical stem fragments, two of which join (old break). These are hard to date precisely but the neat cylindrical form is more characteristic of late C18th pipe stems than early C19th ones.
		Two stem fragments, most likely of later C18th or early C19th date.
		Quite a thick but finely burnished fragment with a stem bore of 8/64".
	1	One stem fragment of C17th type plus an almost complete heel bowl dating from c1630-60, which provides a likely date for the group. The bowl is made of a very soft and slightly pinkish fabric with small inclusions in it. The surface has become so abraded that its impossible to tell whether it was burnished or milled originally. The stem bore is 7/64".

Illustrations



The pipes are illustrated at life size with the stamp details shown at 2:1.

Captions

1/ Heel bowl of c1630-60 style but which may well date from Civil War activity on the site. The bowl is made of a very soft and slightly pink fabric with small inclusions in it. This has become so abraded that it is impossible to tell whether it was burnished originally. There is a faint depression all around the rim, suggesting that it was fully milled, but, once again, the pipe is too abraded for any detail to survive. Stem bore 7/64". From [303], a possible Civil War bank.

2/ A heel bowl of c1630-60, most likely dating from Civil War activity on the site, with a fully milled and bottered rim and a stem bore of 7/64". The pipe is made of quite a fine fabric with a granular fracture and very fine mica particles in it. The surface is not burnished and there is no maker's mark. From [159], the bottom of a ditch fill.

3/ Two joining fragments (freshly broken) from a Shropshire style bowl with a tailed heel. This bowl has an average burnish, a stem bore of 7/64" and a slightly damaged heel stamp that would have read THO/HVG/HES originally. Thomas Hughes was a pipemaker at Broseley in Shropshire, who died in 1735. Unusually for a Shropshire pipe of this period, the pipe is made from quite a fine fabric without any obvious inclusions. This style of pipe was most popular from c1680-1730. From layer [135], a possible buried soil.

4/ A complete bowl with a tailed heel bearing a IANE/MATS stamp. Jane Mats was the wife of John Mats, who probably came originally from Benthall (adjoining Broseley) in Shropshire, where he owned property. Both worked as pipemakers at Stoneydelph and Freasley, near Polesworth in northern Warwickshire (Melton 1997, 251-2), which is only a few miles from Ashby de la Zouch. Jane is only likely to have marked pipes in her own right following the death of her husband in 1705 and this style of pipe is unlikely to be later than c1730. The bowl is fully milled and with a good burnish and joins a 60mm long stem (old break) with a bore of 6/64". From [122], a levelling layer. The large and fresh nature of this piece suggests it was recently discarded when the context was deposited.

5/ Two joining stem fragments (old break) with small bores (4/64") from [214]. These thin stem fragments are decorated with two impressions of a distinctive Midlands style incuse stem border. A small stem fragment from the same context cross joins with another identically decorated fragment from [213]. All four pieces from these two contexts almost certainly come from the same pipe of c1760-90, which would appear to have had a number of these decorative stamps along the stem.

6/ Eight bowl and four stem fragments from [220], a demolition deposit, all join to make up this almost complete bowl with 117mm of surviving stem. Furthermore, one of the other stem fragments from the same context may well be from the same pipe. The recovery of so many joining fragments (all old breaks) suggests that this pipe was freshly discarded into this context, where it became crushed and broken. The bowl form is most likely to date from c1820-40, which provides good dating evidence for this event.

APPENDIX A6: COIN ASSESSMENT

Kim Stabler
30/1/07

A total of five coins were recovered from the Ashby de la Zouch excavations. They represent an unremarkable assemblage, with no items of note.

The coins recovered are as follows:

SF No	Context	Date	Identification	Comment
410	200	1899	Six pence	
452	100	18th/19th	Illegible	
454	100	18th/19th	Illegible	?George III half penny
461	174	1586 - 1635	Nuremberg jeton, rose/orb type of Hans Krauwinckel II	Would clean if required
463	201	1897	penny	

The only coin of potential stratigraphic use is SF 461 which is a Nuremberg jeton of the late 16th/early 17th century. The type is the very common rose/orb type, with the obverse showing three crowns alternating with three lis around a central orb, and the reverse of an imperial orb in a tressure of three arches and three angles. This type of jeton is generally associated with the guild master Hans Krauwinckel II (1586 – 1635). Cleaning of the jeton may reveal the obverse and reverse legends, but this will not assist in refining the date. These tokens are exceptionally common, and can provide only a *terminus post quem* for the context.

No further work is recommended on the assemblage beyond basic conservation.

APPENDIX A7: Assessment of Plant Remains

Gill Campbell

April 2007

Eight samples were available for assessment: five from Trench 1, one from Trench 2 and two from Trench 3.The samples were processed using meshes of 500 microns for the residues and 250 microns for the flot.

Methods

Each flot was assessed as to its contents by scanning part or all of the flot under a binocular-dissecting microscope at magnifications up to x 50. The preservation and the nature of any charred plant material present was recorded. Notes were made on the amount of charcoal, cereal grain, other seeds, and cereal chaff present in each flot using the following four point scale: 1= present, 2=frequent, 3=common, 4=abundant. Preliminary identifications were also made and possible interpretations of the larger assemblages put forward. The results are presented in Table 1. Nomenclature follows Stace (1997).

Results

Most of the samples contained some coal and varying amounts of charcoal. Sample <702> from context [133] produced a few weeds and a very poorly preserved cereal grain which could not be determined to genus (e.g. wheat, barley etc.) and appears to present general rubbish. The oat grain identified in this sample could have come from a wild or cultivated oat species. Another sample from context [310] dated to the 13th/14th century produced a single Bromus sp. (brome grass) grain. Neither of these samples merits further work.

Two samples were unusual in that they contained very little coal but large numbers of well preserved charcoal fragments. Both would appear to derive from land clearance.

Sample <701>, from burnt layer [304], dated to 1630-60, and interpreted as part of a series of deposits representing refurbishment of the castle defences during the Civil War may well be the burnt remains result form clearance of the garden. A well as charcoal from the burning of trees, leaves of ferns and other vegetation were present. This sample therefore appears to have the potential to inform us about the plants that were growing in the castle garden prior to its destruction.

Similarly sample <709> from layer [174] north of the Tudor wall which contained large branches of charred wood and dated from 1586-1635 seems likely to represent the burnt remains of trees cleared as part of the establishment of the garden and has the potential to tell us what was growing in this area before the garden was established.

Recommendations

Samples <701> and <709> deserve full analysis. While it is possible that both samples could represent burning of woodland, the excellent preservation suggests that the material is in a primary deposit and that it is likely to represent land clearance close to the point of deposition. Sample <701>, has the potential to provide information on what was growing in the garden prior to its destruction during the Civil War, while sample <709> will provide an indication of the vegetation growing in the vicinity of the castle prior to the establishment of the garden.

Analysis and reporting will take the order of one month. Some identifications are likely to prove difficult as vegetative material (leaves etc.) are present and these are less diagnostic than seeds.

References

Stace, C 1997 New Flora of the British Isles 2nd edn. Cambridge: Cambridge University Press

Sample	Context	Context type	Phase/ date	Volume of flot	Charcoal >2mm	Grain	Chaff	Weeds	Other	notes
701	304	Burnt layer	4 -mid 17th	2625ml	4	0	0	1	yes	One of three bags was assessed. A well preserved charcoal assemblage, principally oak charcoal but with a variety of other taxa present. Buds and leaves are preserved along with fern pinules and other leaf fragments. A*Viola* subgenusViola (violet) seed was noted. Some charred insects. This assemblage appears to relate to clearance of land.
702	133	Bank deposit	3 -16th	400	4	1	0	1		Quite a few modern roots in contrast to previous sample which was very clean. Charcoal includes some ash as well as other taxa and quite a bit of coal. *Fallopia convolvulus*(black bindweed), sp.(oat), *Vicial Lathyrus* sp. (vetch/tare) and small grass seeds present. Occasional spheroidal hammerscale. Assemblage is probably mixed rubbish.
703	129	Bank deposit	3 -1610-1710	750	2	0	0	0		2 bags, only one of which was assessed. Large numbers of modern roots. Abundant coal. Small amount of oak, hazel type and Pomoideae type
704	310	Layer	2-13th-14th	50	2	0	0	1		Rather poorly preserved charcoal with lots of silt adhering to the fragments. A single *Bromus* sp. (brome grass) grain was recorded
705	155	Ditch fill	3-mid16th/ 17th	850		0	0	0		Coal was very abundant and is the principal component of the assemblage. Charcoal around 60% oak. Elm may also be present
706	258	Field drain	3-16th/ 17th	50	0	0	0	0		Fragments of iron pan and decayed vegetable material. Only very tiny charcoal fragments were present
708	176	Bank deposit	3-16th/ 17th	600	3					Occasional bone fragments including fish bone and scales. Rather bashed about charcoal and a lot of coal
709	174	Bank deposit	3-1586-1635	1050	4	0	0	0		Very large fragments of charcoal including some whole branches. Includes a variety of taxa including probable ash, oak and birch and hazel type. This looks like land clearance or a destruction layer

Table 1: Assessment of flots from Ashby-de-la- Zouch excavations 2006

APPENDIX A8: Heating Experiments on Sample <141>

M.G. Canti

Four different stone types were included in sample <141>, comprising 'orange', 'pink', 'purple' and 'yellow' sandstones. Three separate fragments of each were chosen to test their colour changes at different temperatures and thus determine if the original colours could be due to burning.

The fragments were heated to 400 for 1 hour, significantly reddening all of them to a hue that was unrelated to the colours of the unheated fragments. A lower temperature and shorter time was then tested (300 for ½ hour) producing very slight reddening in the 'pink', 'purple' and 'yellow' sandstones, but still producing significant reddening of the 'orange' sandstone (Figure 1).

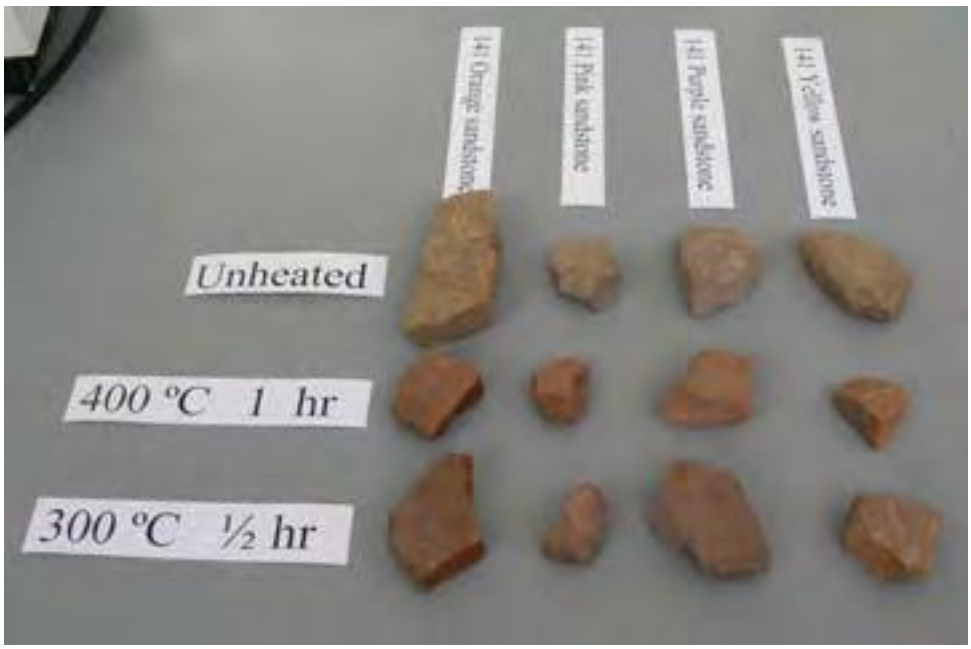


Figure 1. The four samples heated to two different temperatures.

It is clear from these tests that, whatever the temperature, the colour changes produced in the two yellower sample sandstones ('orange' and 'yellow') will not correspond with the two redder samples ('purple' and 'pink').

The colourings are not, therefore, thermally related. They are probably produced by iron mineral differences inherited from the original geological environment of deposition, or from subsequent burial effects.

APPENDIX A9: Assessement of Animal Bones

Fay Worley

19th March 2007

A small assemblage of animal bone was recovered from excavations in the gardens of Ashby Castle. The animal bone was hand collected (a total of 51 fragments) and recovered from sieved residues. The assemblage was recovered from Phase 2 (13th to 14th century), Phase 3 (mid-16th to early 17th century), Phase 4 (mid-17th century), Phase 5 (late 17th to early 18th century) and Phase 6 (19th to 20th century) contexts. The Phase 6 assemblage included 13 fragments (76% of total fragments from this phase) recovered from topsoil in Trenches 1, 2 and 3. The assemblage also included six fragments from an invalid context ([148]), leaving only 32 fragments of hand collected animal bone from stratified archaeological contexts. The provenance of the assemblage is primarily banking material, with some bones from demolition debris and ground raising activity in phases 4 and 5. The size of the assemblage, together with the nature of its archaeological context means that it is of little significance and cannot add much to the interpretation of the site.

Methods

The assemblage was assessed in context groups by the author at Fort Cumberland. The presence of individual taxa was quantified using a "Number of Identified Specimens" (NISP) method. The number of ageable mandibles and epiphyses and the number of measurable bones were also counted. The condition of the bone was graded on a six point scale where grade 1 indicated very good condition and grade 5 indicated very poor condition. Grade 6 indicated a context containing mixed condition bone fragments. The presence of butchery marks, pathological lesions and burnt bones was noted. The assessment data is tabulated below in Table 2.

Results

The animal bone assemblage includes cattle, sheep or goat, pig, fish, crow, rabbit, anuran, small bird and possibly red deer skeletal elements. The majority of the identifiable bone fragments are from domestic mammals or fish. The assemblage also includes evidence for butchery on bones from phases 6 and 4 (19th-20th century and mid-17th century). The butchery evidence indicates the use of saws to portion the carcass in both periods. The presence of refitting unfused epiphyses in topsoil [100], modern rubble layer [220] and 17th century robber trench fill [130] suggests that any mixing or movement of material in these contexts has been minimal.

The condition of the hand collected stratified bone fragments are presented grouped by phase in Table 1. The bone fragments are generally well persevered but range from very good to very poor condition.

Table 1: Condition and quantification (NISP) of the hand collected assemblage.

Condition	Phase 3	Phase 4	Phase 5	Phase 6	Total Assemblage
1				**1**	**1**
2	**3**	**17**	**1**	**1**	**22**
3		**1**	**1**	**1**	**3**
4					**0**
5	**1**		**2**	**1**	**4**
6	**2**				**2**
Total	**6**	**18**	**4**	**4**	**32**

The Assemblage from Sample Residues

Animal bones were recovered from six sample residues, five from Phase 3 and one from Phase 2.

Phase 2 sample <704> contained five 2-4 mm indeterminate fragments of calcined bone. Phase 3 samples <702>, <703> and <705> also each only contained a few indeterminate calcined fragments. Sample <708> contained fish bones, an anuran bone, large mammal bones and a large number (*c.* 100) of indeterminate bone fragments. Sample <709> included a broad range of taxa (fish, small bird, sheep or goat, rabbit, large and medium sized mammal). Some bone fragments from this sample residue were charred and calcined.

Recommendations

No further work is required on this assemblage.

Table 2: Animal Bone Assessment Data. "Ageable" refers to number of epiphyses.

SSD	Context	Phase	Sample	Fraction	Number of Identified Specimens (NISP)														Comments
					Preservation	Cattle	Sheep/goat	Pig	Red Deer?	Bird	Fish	Other	Large	Medium	Unidentified	Ageable	Mandibles	Measurable	
1	100	6	-	-	6	1	-	-	-	-	-	-	9	1	-	2	-	-	1 large mammal calcined. Saw butchery of long bone. Refitting unfused present
1	105	5	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	Calcined
1	116	6	-	-	1	-	1	-	-	-	-	-	-	-	-	1	-	-	Some pathological bone growth
1	129	3	703	>4mm	2	-	-	-	-	-	-	-	-	-	4	-	-	-	Calcined
1	129	3	703	2-4mm	2	-	-	-	-	-	-	-	-	-	2	-	-	-	Calcined
1	130	3	-	-	2	8	-	-	-	1	-	-	7	-	-	2	-	-	*Corvus corax*. Chop on large mammal vertebra. Sawn radius and femur. Refitting unfused epiphysis present
1	133	3	-	-	6	-	-	-	-	-	-	-	2	-	-	-	-	-	1 calcined
1	133	3	702	>4mm	2	-	-	-	-	-	-	-	-	-	2	-	-	-	Calcined
1	133	3	702	2-4mm	2	-	-	-	-	-	-	-	-	-	1	-	-	-	Calcined
1	148	-	-	-	2	-	2	-	2	-	-	-	2	-	-	2	-	1	Fine knife butchery on sheep bone. Also chop marks. Maxillary teeth probably red deer. 1 measurable sheep or goat bone.
1	152	3	-	-	2	-	-	-	-	-	-	-	-	1	-	-	-	-	-
1	153	3	-	-	2	-	1	-	-	-	-	-	-	-	-	1	-	-	-
1	155	4	705	>4mm	2	-	-	-	-	-	-	-	-	-	1	-	-	-	Calcined
1	158	5	-	-	5	2	-	-	-	-	-	-	-	-	-	-	-	-	-
1	164	3	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	Calcined
1	165	3	-	-	5	-	-	-	-	-	-	-	1	-	-	-	-	-	Falling apart
1	174	3	709	>4mm	2	-	2	-	-	5	12	3	7	6	*c.*150	2	-	-	Includes some calcined/ charred fragments. Includes 3 rabbit bones, and a small wild bird. Indeterminate are tiny fragments. 3 bird and 5 fish bones are identifiable
1	174	3	709	2-4mm	2	-	-	-	-	-	-	-	-	-	-	-	-	-	Includes very small bird and fish bones
1	176	3	708	>4mm	2	-	-	-	-	-	4	-	6	-	*c.*50	-	-	-	Includes fairly large fish bone s.2 fish bones identifiable
1	176	3	708	2-4mm	2	-	-	-	-	-	-	1	-	-	*c.*50	-	-	-	1 anuran bone
2	200	6	-	-	5	-	-	-	-	-	-	-	1	-	-	-	-	-	
2	213	6	-	-	2	-	-	1	-	-	-	-	-	-	-	1	-	-	Probably pig unfused pelvis
2	214	6	-	-	5	-	-	-	-	-	-	-	-	1	-	-	-	-	
2	220	6	-	-	3	-	-	-	-	-	-	-	1	-	-	1	-	-	Chopped not sawn butchery. 4 fragments from same element with refitting unfused epiphysis
2	234	5	-	-	2	-	-	-	-	-	-	-	1	-	-	-	-	-	
2	240	5	-	-	3	-	-	-	-	-	-	-	1	-	-	-	-	-	
3	300	6	-	-	5	-	-	-	-	-	-	-	-	-	1	-	-	-	
3	305	4	-	-	3	-	1	-	-	-	-	-	-	-	-	-	-	-	Maxillary sheep/goat molar
3	310	2	704	2-4mm	3	-	-	-	-	-	-	-	-	-	5	-	-	-	Calcined tiny fragments



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