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**An Archaeological Excavation at  
Ayscoughfee Hall Gardens, Spalding, Lincolnshire**

SAHG 08



Prepared for  
South Holland District Council



Russell Trimble

April 2009



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Location: Ayscoughfee Hall Gardens, Spalding  
District: South Holland  
Grid Ref.: TF 24937 22317  
HER No.: SAHG 08  
Client: South Holland District Council  
Dates of Fieldwork: 29 January – 16 May 2008

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### **Summary**

*A programme of trial-trench excavation was undertaken by NAU Archaeology in the gardens of Ayscoughfee Hall, Spalding, Lincolnshire. The work, which was commissioned by South Holland District Council, forms part of a wider programme of investigation, designed to further understanding of the historical development of the gardens and to provide information to be used in the partial restoration of selected areas. The archaeological excavation was preceded by topographical and geophysical surveys, a desk-based assessment, as well as dendrochronological sampling and analysis of selected trees.*

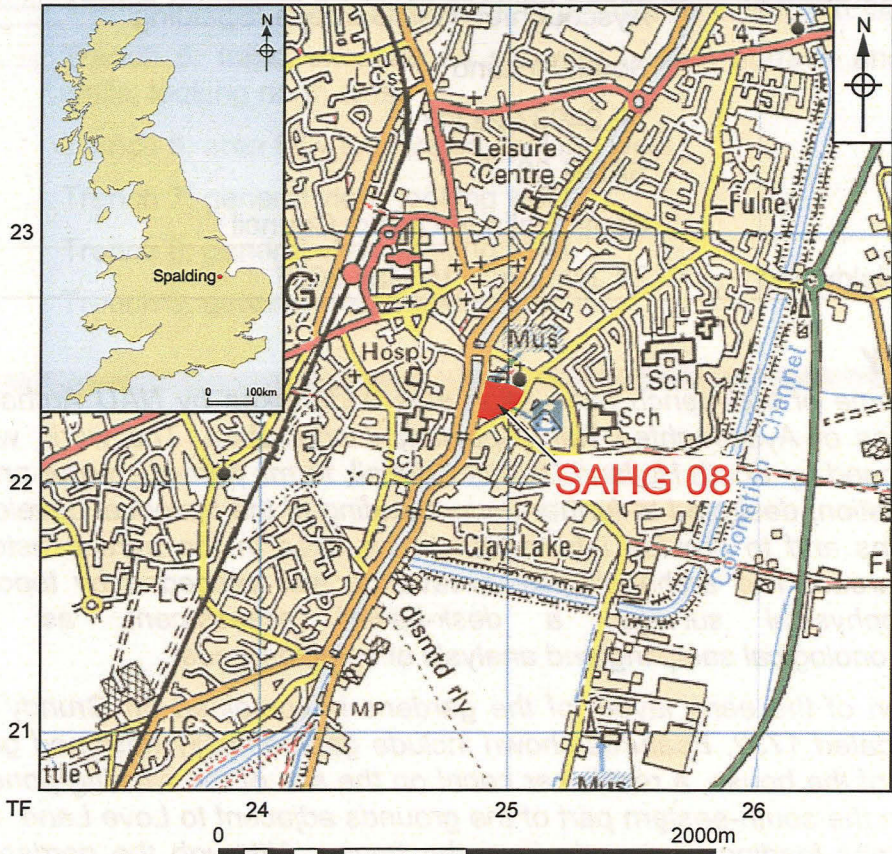
*A depiction of the early layout of the gardens is contained on Grundy's map of Spalding dated 1732. Features shown include geometrically designed gardens to the south of the house, a rectilinear canal on the site of the existing pond, kitchen gardens in the south-eastern part of the grounds adjacent to Love Lane, and three lines of trees leading eastwards from the house. Although the garden is much altered from its 18th-century form the original structure is clearly discernable in the surviving boundary walls and the main landscape divisions; the outlines of the geometric garden are preserved in the layout of Ayscoughfee Hall's yew trees.*

*Ten trenches were excavated, located at various points around the grounds. Trenches 1 and 2 were located immediately east of the hall (one to obtain environmental samples from a well which had been uncovered during prior renovations). Trenches 3 and 4 were positioned on the lawned area (formerly part of the geometric garden) to the south of the house. Trench 5 was located further to the south, within an area interpreted from Grundy's map as an ornamental wood. Trenches 6, 7 and 8 were positioned against the perimeter walls on the western side of the south garden. Trenches 9 and 10 were placed on an east-to-west bank following the line of a garden wall immediately south of the tennis courts.*

*Late Saxon and medieval deposits were revealed in Trenches 3 and 4 on the south lawn. Features included a series of pits indicative of domestic occupation in the area and a substantial wall (perhaps demarcating a property boundary) of probable late medieval date.*

*Post-medieval deposits included a pair of brick culverts in Trench 4 – one probably extending between the River Welland and the canal, the other apparently linking in from the house to the north. A smaller brick culvert, square in section and aligned east-to-west, was found in Trench 3. The most noteworthy feature located in the area east of the house, in Trench 2, was an outbuilding and associated furnace interpreted as a possible hothouse or stove. The significance of the structure lies in its possible association with the antiquarian and enthusiastic botanist Maurice Johnson II. The analysis of samples removed from the well in Trench 1 revealed a low potential for high quality palaeoenvironmental information.*





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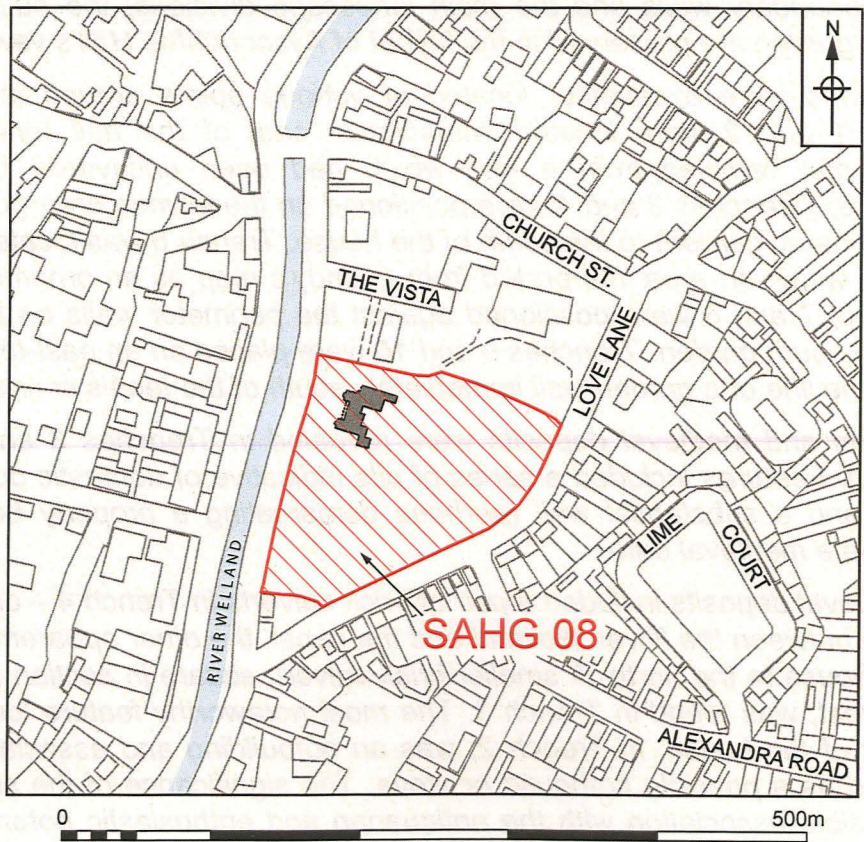


Figure 1. Site location. Scale 1:30,000 and 1:5000



## **1.0 INTRODUCTION**

A programme of trial trench excavation was undertaken by NAU Archaeology at Ayscoughfee Hall in Spalding, Lincolnshire (Fig. 1). The work was commissioned by South Holland District Council, and forms part of a wider programme of investigation designed to further understanding of the historical development of the Hall's gardens, and to provide information to allow the eventual restoration of some parts of the garden. Excavation was preceded by a topographical survey of the grounds undertaken by NAU Archaeology, a geophysical survey by Stratascan Limited (Cook 2008), and the compilation by NAU Archaeology of a desk-based assessment (Penn 2008). In conjunction with the excavation, tree-ring analysis of selected trees was undertaken by Dendrochronological Consultancy Limited (Tyers 2008).

The archaeological programme was undertaken in accordance with a Project Design prepared by NAU Archaeology (Ref: BAU1618/AH) in July 2007. Fieldwork commenced on the 29 January 2008 and was completed on 16 May 2008.

Ayscoughfee Hall is situated on the east bank of the River Welland, in grounds of c.3 hectares (Fig. 1). The site is bounded to the east by Love Lane, to the north by the parish church of St Nicholas and the former site of Gayton Manor, and to the west by Church Gate (running between Ayscoughfee Hall and the river).

The site archive is currently held by NAU Archaeology and on completion of the project will be deposited with The Collection, Lincoln, following the relevant policy on archiving standards.

## **2.0 GEOLOGY AND TOPOGRAPHY**

Spalding stands on the River Welland, at the point where it passes through the low band of silts extending around the mouth of the Wash. Before reaching the town, the river flows from the south across former freshwater peats, and then proceeds northwards across reclaimed marine silts to the Wash (Penn 2008).

The town stands at a height of approximately 7m OD.

## **3.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

A detailed consideration of documentary sources relating to the house, gardens and immediate environs is contained in a desk-based Assessment produced by NAU Archaeology as part of the current investigations (Penn 2008).

In the above document it is suggested that the block of land occupied by Ayscoughfee Hall, Gayton Manor (situated to the north, but now demolished), and the church of SS Mary and Nicholas may, at the time of the Domesday Survey (1086), have lain within the manor of Guy de Craon – one of three manors mentioned as being present in Spalding.

The church was built as a parish church by the Benedictine priory (situated to the south-west of the market place) in around 1284, as part of the planned development of the town. Recent research indicates that Ayscoughfee Hall was built c.1450, either by Richard Alwyn, or by a member of the Ayscough family.



Little is known about the early layout and extent of the grounds, but a comparatively detailed plan of the grounds and gardens is contained on a map of Spalding produced in 1732, by the local surveyor and engineer John Grundy Senior (Fig. 3). On Grundy's map the boundaries of the property are, with minor variation, congruent with the modern boundaries, while internally the grounds are structured around a pair of continuous east–west divisions – possibly reflecting pre-existing property units aligned at right angles to the River Welland.

South of the hall, Grundy's map shows the gardens laid out in geometric fashion around a north–to–south walk centred on the southern face of the house. Nearest to the house the walk is flanked to either side by grass plats, which extend to a cross walk following their southern edge. An apsidal shape in the planting immediately south of the cross walk takes the form of an exedra, reflecting possible classical influences (Anderson and Glenn 2000). South of this exedra the principal walk is flanked to either side by relatively loose planting interpreted as a probable shrubbery, before proceeding through a wooded area, thought to be a 'Wilderness' or ornamental wood comparable to those known from larger estates of the period. Hedging is shown extending around the outer edges of the plats and exedra, before following the edges of the walk, through the probable shrubbery and Wilderness. The lines of these hedges are now preserved in the alignments of ancient yew trees, for which Ayscoughfee is noted. Clipped yew (often incorporating elements of topiary) was in common use for hedging during the late 17th and early 18th century, and there is a strong possibility that at least some of the existing plants have survived from this period.

East of the house Grundy's map depicts a large enclosure (probably defined by the existing walls, together with a section of wall which was demolished to make way for the current café and amenity block) containing three lines of trees aligned east–west. The trees could have been elms, which are mentioned in correspondence between Maurice Johnson II (founder of the Spalding Gentlemen's Society and 18th-century occupant of the house) and his son Maurice Johnson III. However, the position of the trees, in a secure, walled area, situated in close proximity to the house, might be taken to indicate an orchard. Gridded orchards were a common feature in gardens of the period.

East of the geometrically designed component of the garden, the Grundy map depicts a rectilinear canal at the same approximate location of the modern pond; it is flanked to the east by probable kitchen gardens which extend to the boundary with Love Lane.

Stylistically, the gardens shown on Grundy's map may be assigned to the period around 1700 and are believed to have been laid out by Maurice Johnson II (probably in collaboration with the local architect William Sands), the son of Maurice Johnson I whose wife Jane Johnson (no relation) inherited the house in 1683. Maurice Johnson II was a noted antiquary, who also maintained a keen interest in botany and gardening (Penn 2008). Correspondence between Maurice II and his son and heir Maurice III reveals that the latter, while residing in London, acted as an agent in collecting plants for his father.

Ordnance Survey maps of 1887 and 1903 indicate that much of the detail of the early 18th-century garden had been lost by the late Victorian period. The plants in the geometric garden had been united into a single grassed area, while much of the original planting in the 'shrubbery' and 'Wilderness' areas has been cleared, in



part to make way for a series of serpentine walks. The area to the east of the house had been cleared of trees, but the rectangular canal had survived. In 1898 Ayscoughfee Hall was bought for the town in commemoration of Queen Victoria's Diamond Jubilee and shortly thereafter was opened as a public amenity. Subsequent alterations to the garden include the construction of the present bowling green, tennis courts, café, peace garden and the Lutyens war memorial (built in 1922), which lies at the southern end of the canal. Despite these changes the underlying structure of the garden is still recognisable from the boundaries, dividing walls and canal, as well as in the patterning of the surviving yew hedging.

There has been no previous archaeological work within the grounds, but evidence relating to medieval occupation, and possibly industrial activity, was located during investigations on the southern side of Church Street, immediately north of the church of SS Nicholas and Mary (Dymond and Trimble 2002; Peachey 2003). Here, the earliest deposits (presumed to be medieval) were located in an auger hole, at a depth of c.3m below existing ground level, while excavated deposits at c.1.6m below existing ground level produced early to mid-13th-century pottery, together with iron-smithing slag and a spindle whorl. A sherd of residual Early to Middle Saxon pottery was believed to be the only sherd of the period to have been found in the town. Subsequent stratigraphy on the site indicated episodes of flooding interspersed with phases of occupation, while the pottery assemblage as a whole, indicated a concentration of activity spanning the early 13th–14th centuries.

An archaeological watching brief (Di Ruffano 2002) was maintained during the construction of an extension and garage on the eastern side of Love Lane, to the south-east of the parish church. The project culminated in a largely negative result, with apparently natural silts occurring at shallow depth, beneath the present day topsoil.



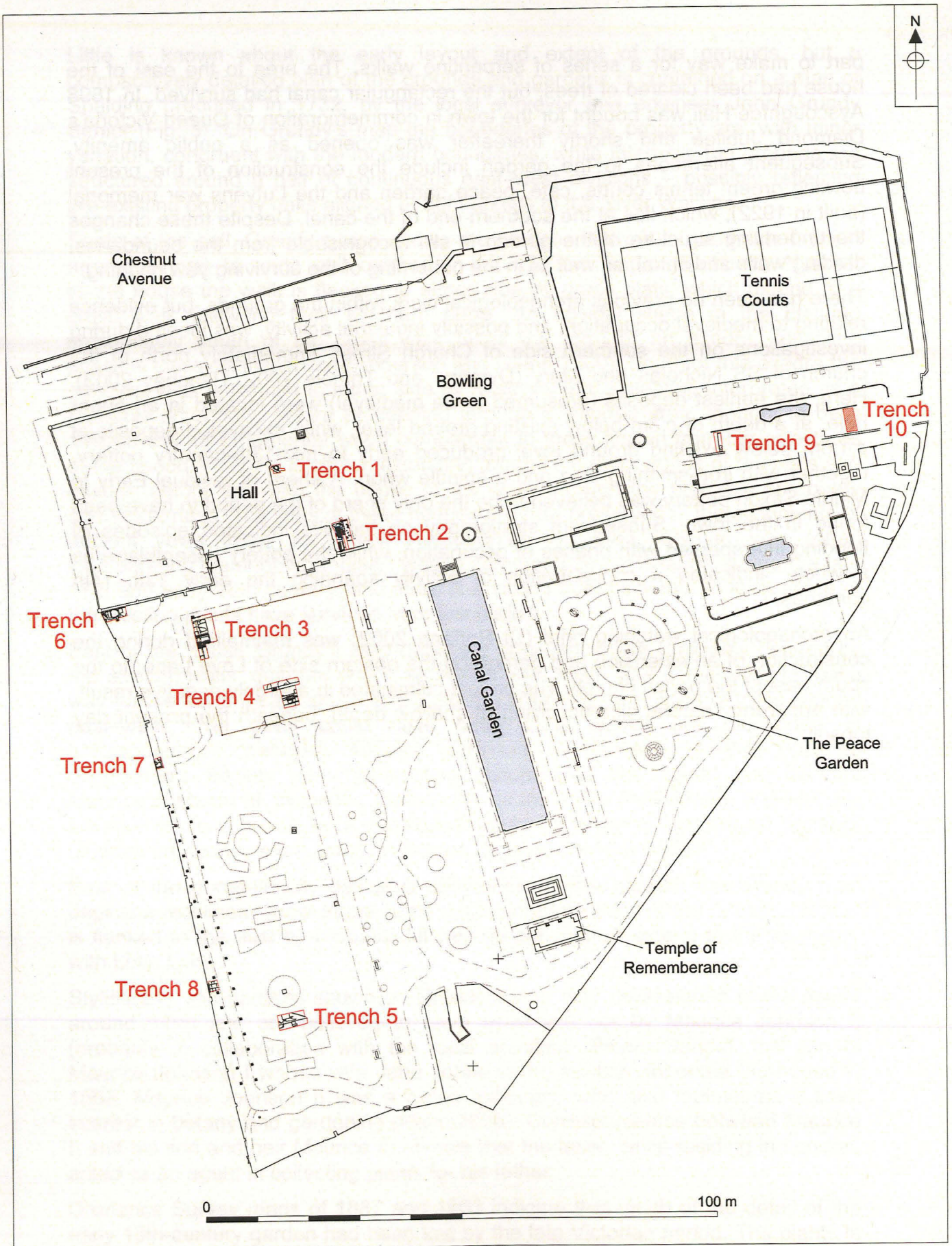


Figure 2. Trench location. Scale 1:1000



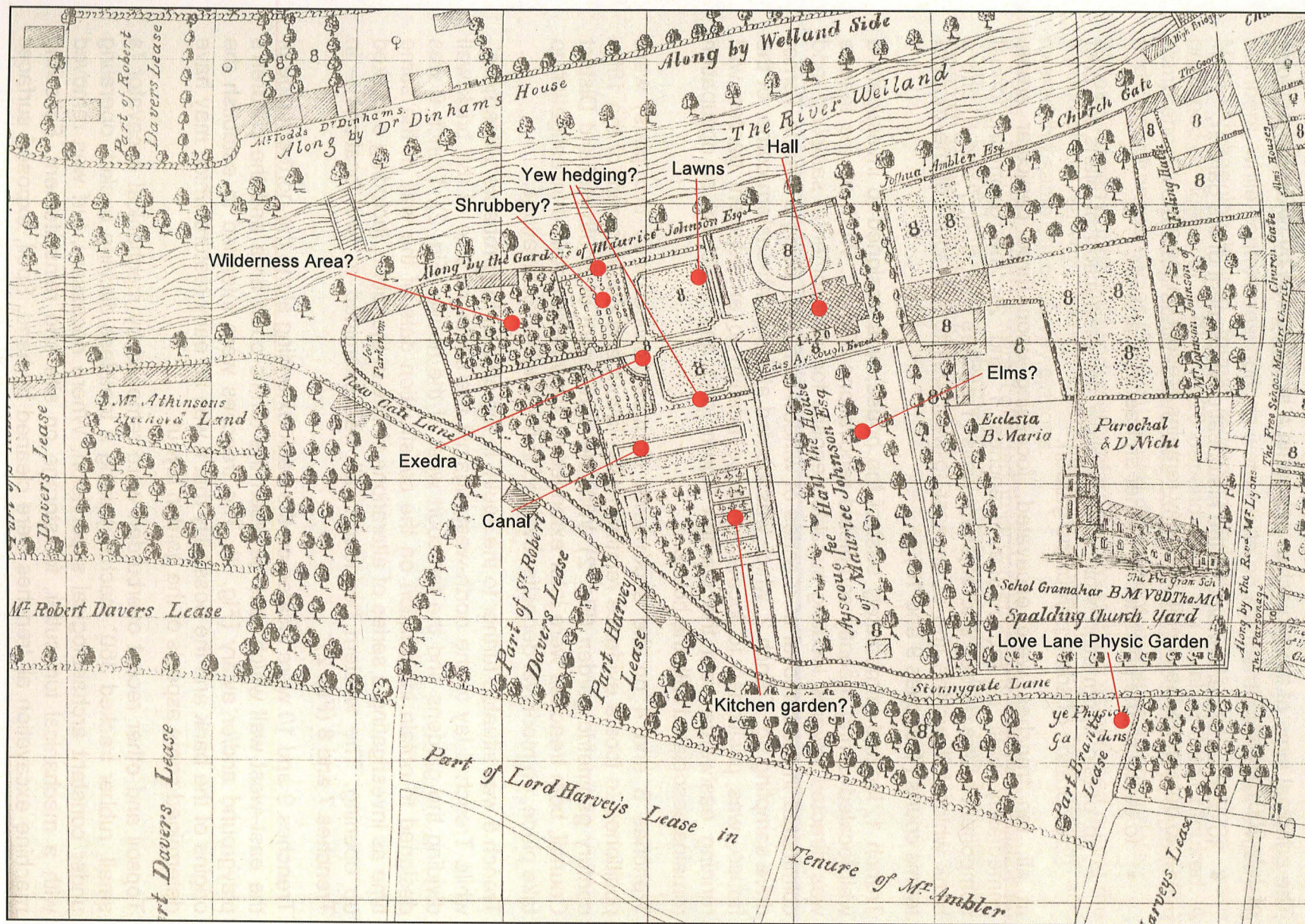


Figure 3. John Grundy's map of 1732



#### 4.0 METHODOLOGY

The principal aims of the project as set out in a specification by NAU Archaeology of July 2007 were:

- to gain an understanding of the historical development of the garden,
- to determine the condition of any remains present on the site,
- to establish the potential for further archaeological work,
- to obtain information which would allow the production of plans for pilot restoration of some part of the garden.

In all, ten trenches were excavated, focussing upon three particular areas: immediately east of the house (Trenches 1 and 2), the geometric/formal component of the garden and adjacent walls (Trenches 3, 4, 5, 6, 7 and 8) and a bank which follows the line of an east-to-west wall to the south of the modern tennis courts (Trenches 9 and 10).

Trench 1, located immediately east of the house, was designed to investigate a well located during recently completed renovations (Fig. 2). Work on the feature was directed towards locating suitable deposits for environmental sampling, and culminated in the removal of a series of window samples, using a Dando Terrier drive sampling rig. Trench 2, which was located at the south-eastern corner of the house, was positioned to locate evidence relating to an adjacent garden wall running eastwards from the Garden Room, and any structural or occupation remains associated with the house.

Trenches 3 and 4 on the south lawn (formerly divided into two plats) were positioned to locate evidence relating to the layout and development of the 18th-century geometric garden (Fig. 2). With the agreement of South Holland District Council, both trenches were later extended to allow more detailed investigation to take place, on medieval deposits revealed in the original excavations.

Trench 5 was situated further to the south, in the area of the probable 'wilderness', while Trench 6 lay to the north-west, against the southern side of the brick wall dividing the gardens and the forecourt west of the house (Fig. 2). Trench 6 was designed to obtain information on the construction date of the wall at the same time as investigating a series of alterations visible in the fabric, including a bricked up opening. The western boundary wall was examined at two locations – in Trenches 7 and 8 (Fig. 2).

Trenches 9 and 10 were located on the bank extending along the northern side of the east-west wall which runs between the tennis court area and the children's playground and/or aviary (Fig. 2). The trenches were intended to establish the origins of the bank and the possibility that it was an early feature which may have determined some aspects of the garden layout.

Topsoil and other recent overburden were removed by mechanical excavator (a small, rubber tracked 360° machine) using a toothless ditching bucket, operating under constant archaeological supervision. Where necessary, turf was removed with a mechanical turf cutter, for storage on site and reinstatement. Following machine excavation all trenches were cleaned by hand. Spoil, exposed surfaces



and features were regularly scanned with a metal-detector, and all finds were retained for inspection.

All excavated deposits, features and layers were assigned individual context numbers, while context descriptions were made on standardised forms employing NAU Archaeology's pro forma recording system. Plans and sections were produced at scales of 1:10 or 1:20 depending on the level of detail required. A comprehensive photographic record was compiled using both black and white film and colour transparencies (35mm), as well digital photographs as appropriate.

All levels taken during fieldwork were referenced to stations established during the topographical survey. Trench locations were plotted by EDM total station and related the same set of survey stations.

A series of soil samples were collected in accordance with advice provided by Tom Hill of the University of Birmingham. These included bulk soil samples and monolith samples taken in Kubiena tins.





Plate 1. Overhead view of work in progress on Trench 1.



Plate 2. Interior of the well in Trench 1.

## 5.0 RESULTS

### 5.1 Trench 1

Trench 1 was positioned over a brick-lined well, thought to be of medieval origin, which had been uncovered during earlier restoration work (Figs 2 and 4). The primary objective of the work was to assess the palaeoenvironmental potential of any sediment contained in the well, through the extraction, and subsequent analysis of a series of window samples, in the expectation that these might contain high quality palaeoenvironmental information relating to the gardens (Appendix 9).

The top of the well [010] was located at a depth of around 0.45m below existing ground level (Plate 1). Its shaft was cylindrical, with a diameter of approximately 1.3m, reducing, via a corbelled top, to an opening of c.0.9m diameter. Water was present at a depth of around 1.5m below the opening, while sediment was encountered at a depth of c.3.25m. Bricks forming the visible extent of the well were arranged in generally irregular courses, with individual bricks typically measuring 0.25 x 0.10 x 0.07m (Plate 2).

The upper extent of the well was covered by deposits of dark brownish-grey silty clay, (007) and (008), interpreted as post-construction backfill. Deposit (008) was sealed by a brick surface or floor [004], located on the northern side of the trench. The surface, which may have been external, comprised brick in typical sizes of 0.24m x 0.11m x 0.07m. It was sealed by mid-greyish-brown sandy silt (003), 0.1m thick.







Deposit (007) was cut by a modern service trench [006], 0.30m deep and aligned south-east-to-north-west. It contained a fill of silty clay (005). The mouth of the well was covered by a closely fitted stone slab (009). The slab could date from the original blocking up of the well, but might, equally, have been put in place after the more recent opening of the well. Wire mesh and a layer of stone, 0.2m thick (002), had been placed over the well after completion of the recent work. The layer of stone was sealed by dark blackish-grey silty clay (001).

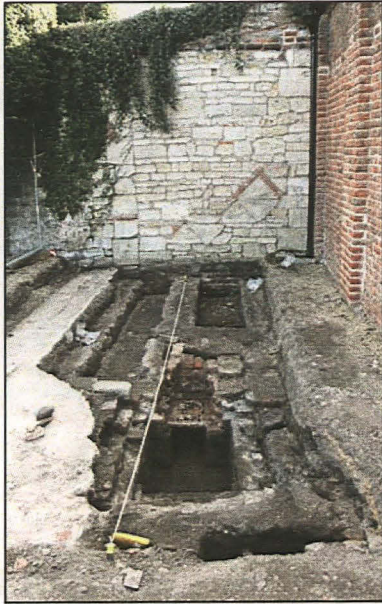


Plate 3. Trench 2: overall view including the existing garden wall and furnace 097, looking south.



Plate 4. Trench 2: looking south.



Plate 5. Stone surface 125, looking south.



Plate 6. Trench 2: overall view with concrete removed, looking south.



## 5.2 Trench 2

Trench 2 was located in the angle between an east-west garden wall and the Garden Room, at the south-east corner of the house (Figs 2 and 5).

### 5.2.1 *Uncertain date (17th century or earlier)*

The earliest deposits in the area were identified in a deeper slot excavated at the southern end of the trench. At the base of the slot lay a metalled surface [125] comprising small fragments of pitched limestone, retained to the west by larger fragments of pitched stone (Plate 5). The surface was overlain by an orange-brown loamy deposit (147), 0.10m thick, which was in turn sealed by a shallow layer of charcoal (146). The charcoal layer was succeeded by a greyish-brown layer, 0.07m thick and containing frequent crushed brick/tile (145), and then a layer of dark brownish-grey silty clay (148), 0.2m thick.

The partial remains of a tile floor [127] overlay (148) at the southern end of the slot, immediately adjacent to the garden wall. The tile surface was itself sealed by mid-grey silty clay (259). The deposit was 0.09m thick.

### 5.2.2 *Post-medieval*

Layer (259) was overlain by a surface of compacted, small stone (107) containing early 17th-century pottery. The surface was overlain by a shallow depth of mid-orange clayey sand (106), followed by a layer of fragmented coal waste (103), up to 0.15m thick.

Still within the limits of the slot, layer (103) was cut by a post-hole or small pit [104]. It was circular with a diameter of 0.4m and depth of 0.25m, containing a fill of mid-orange clay (105). Fill (105) was cut by feature [144]; interpreted as a small pit, this feature was filled with crushed mortar and pale brown silty clay (143) followed by pale orange mortar and silty clay (142). A layer of mid-brownish-grey silty clay (114) extended over (103) – possibly continuing elsewhere as (115). Pottery from (114) indicated a probable 19th-century deposition. Both (114) and (142) were sealed by mid-greyish-brown silty sand (102) c.0.08m thick.

Subsequent stratigraphy in Trench 2 included a number of structural features, the most notable being the brick foundations of an outbuilding and associated furnace, interpreted as a possible hothouse or 'stove' (Plates 3, 4 and 6).

It would appear that the furnace [097] had been built into the external face of the northern wall of the outbuilding, at a point near to its north-eastern corner (Plate 2). The feature comprised a rectangular pit, with brick sides to the north, east and west, while to the south lay the remains of a flue. An iron grate was found in its original position beneath the flue, partially covered by mid-brown silt and charcoal (098) interpreted as burnt fuel from the last firing. A deposit of charcoal and ash (099) found beneath the grate might also be regarded as waste from burning. The foundations [260] of the eastern wall of the outbuilding had been largely removed following its demolition, apart from some pitched brick and stone forming a north-eastern corner. However, a robber trench (see below) marked the line of the original structure, extending south to the line of the existing garden wall. A fragment of pitched brick foundation [261], visible in the area west of the furnace, represented the north wall of the structure. The design of the structure, with a furnace located against its external wall and a flue apparently conducting hot air into the building, would be consistent with use as a hothouse or 'stove'.



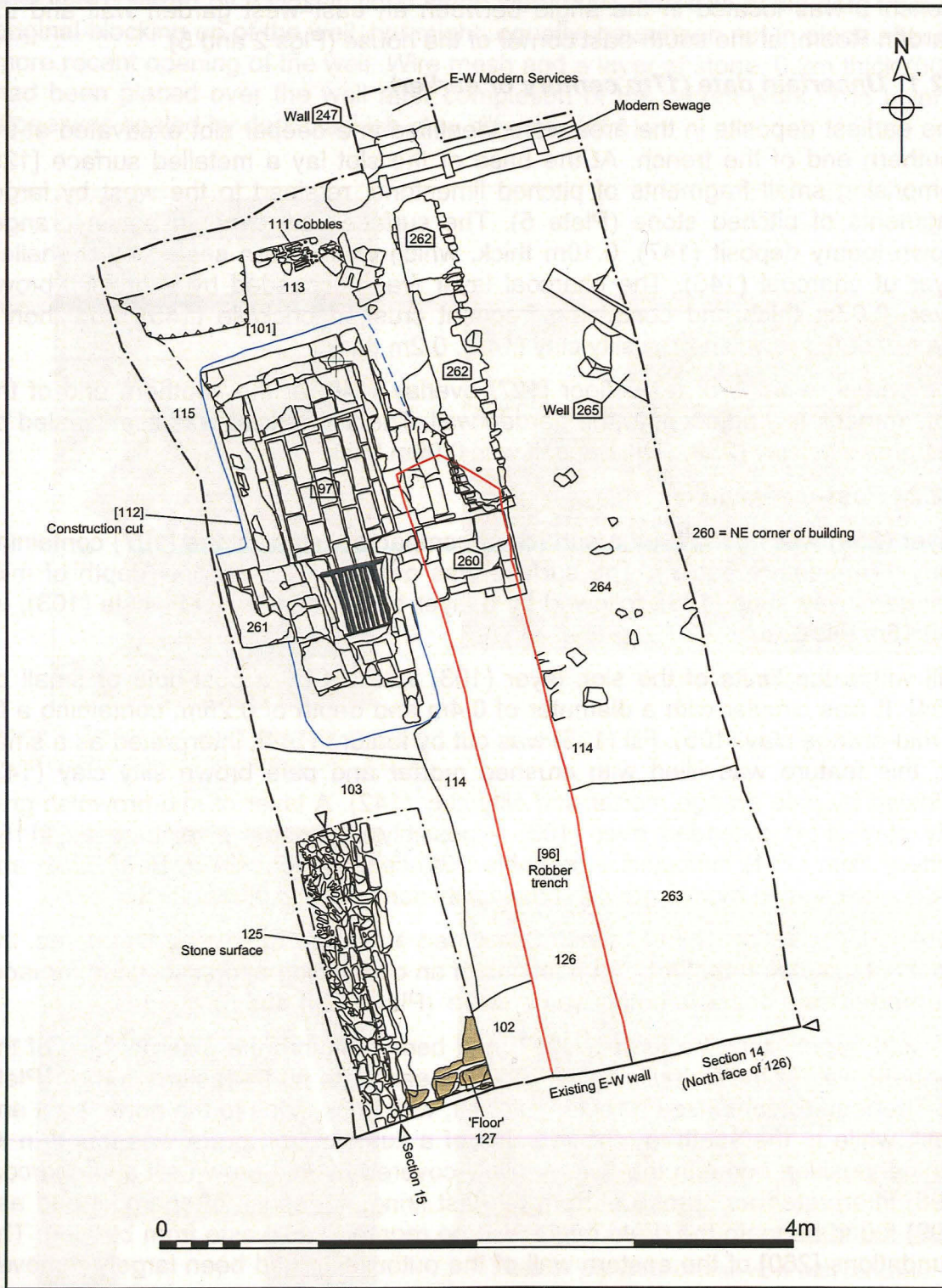


Figure 5. Plan of Trench 2. Scale 1:40







The possible hothouse was abutted to the north-east brick foundations [262] relating to a north–south wall. The foundation was c.0.35m wide, comprising a single course of brick set on edge. A surviving remnant of the superstructure was revealed in a small slot extending from the northern end of Trench 2, where it was revealed to be 0.24m wide and built from bricks set at right angles to the wall.

The extant garden wall south of Trench 2 incorporates reused stone including some architectural fragments and brick arranged in decorative patterns. This section rested upon separate brick foundations [126], which may have survived from the south wall of the possible hothouse.

A brick-lined well (265) lay on the eastern side of Trench 2, sealed beneath a modern concrete slab (see below). It had been backfilled at a comparatively recent date (as evidenced by late building debris) and had been capped with stone slabs (possibly reused architectural fragments) supported by a stone 'spar' (possibly a reused lintel). The spar was in turn supported by a low column of bricks resting upon the backfilled material. The top of the well appeared to be corbelled, and a measurement of approximately 1.6m in diameter was obtained for the lowest visible extent of the feature (possibly still within the corbelled extent).

### 5.2.3 Modern

It would appear that the possible hothouse was demolished at some point during the late 19th century. The fill (083) of the robber trench [096] marking the line of the eastern wall comprised limestone rubble, silty clay and brick/tile fragments which might indicate a stone or mostly stone superstructure. Similar debris (081) lay within the furnace pit.

A pit [101] – square in plan and 0.37m deep – at the northern end of Trench 2 contained 19th/20th-century pottery in its silty clay fill (100). The pit was partially sealed by the fragmentary remains of a cobbled surface (111), which may have been truncated through the construction of a concrete base (085) associated with the comparatively recent toilet block (now demolished).



Plate 7. Trench 3: original trench, fully excavated, looking south.



Plate 8. Trench 3: original trench, fully excavated, looking north.



### 5.3 Trench 3

Trench 3 was located in the north-west corner of the south lawn (Fig. 2). Originally 6m long and aligned north-to-south, the trench was extended at its northern end to allow further investigation of more deeply buried medieval deposits (Fig. 7). Stratigraphy in the trench was divided by a major east-west wall [120]. Owing to difficulty in determining the level from which the wall was cut, and consequently the level at which common stratigraphy might be encountered, no attempt has been made to correlate deposits either side of the wall apart from alluvial deposits.

#### 5.3.1 Alluvial Deposits (medieval or earlier)

Alluvial silts (164) extended throughout the base of Trench 3. A shallow depression or cut [246] located at the northern end of the trench extension and containing light to mid-greyish-brown sandy silt (245) may also be interpreted as a natural variation within the silts. The feature was not dated.

#### 5.3.2 Medieval

Eleventh-century pottery from fill (156) of cut or hollow [131] at the southern end of the original trench may indicate a comparatively early phase of activity. The excavated part of the feature, which extended beyond the limits of the trench to the east, west and south, was at the most 0.26m deep with a gradually sloping northern edge. Its fill (156) was a light- to mid-greyish-brown sandy silt, indistinguishable from an overlying layer (130), and extended northwards over alluvial deposits to the line of the wall [120]. Deposits (156) and/or (130) were overlain by a layer of greyish-brown sandy silt (129), 0.36m thick and containing pottery of probable 13th- to 14th-century date. The latter was overlain by a substantial depth (0.5m) of mid-greyish-brown sandy silt (128), excavated in spits to permit the identification of undisclosed features or deposit changes. Pottery from the spits provided evidence for gradation from 15th- to 16th-century levels.

North of wall [120] a layer of light grey sandy silt (244), 0.18m thick, extended throughout the northern part of the trench extension. It was cut to the south by the severely truncated remnant of a probable pit, [240] filled by mid-greyish-brown sandy silt (239) containing 12th- to mid-13th-century pottery. Another probable pit [226], which had truncated the northern side [240], was sub-oval, had steep sides and a flattish base. It was filled by greyish-brown silty sand (225) containing 13th- to 14th-century pottery. A secondary fill of greyish-brown sandy silt (224) contained 15th-century pottery. The deposits were separated by a lens of charcoal (227), which was restricted to the western end of [226]. A third pit [229] intersected with [226] on the latter's western side, but the undifferentiated nature of their fills prevented a determination of stratigraphic priority. Pit [229] extended beyond a baulk to the west and might therefore correlate with a cut [139] encountered at the northern end of the original trench. Cut [139] contained a sequence of greyish-brown sandy silt (138), dark grey silt with lighter mottles (109), greyish-brown sandy silt (108), and possibly a 'peaty' lens (110) on the west side of the trench, beneath (109). Fifteenth-century pottery was found in deposits (108) and (138).

A series of layers was present in the extension to Trench 3, including (238), a primarily light greyish-brown deposit measuring a maximum of 0.25m thick, which extended throughout the eastern and northern part of the area, over (244). To the north-west (238) was sealed by a layer (243) of mid-brown sandy silt with light yellowish mottling, up to 0.14m thick. The latter was in turn sealed by a mid-to-



dark greyish-brown slightly clayey sandy silt (236). Pottery in these layers indicates 15th-century deposition.

Substantial limestone foundations [120] aligned east-to-west, and possibly the fragmentary remains of the lower wall, were revealed at an approximate mid-point in the original trench. There was indication of a construction trench, which might have been lost as a result of horticultural activity. However, [120] did appear to have been constructed over 13th- to 14th-century (and probably 15th-century) deposits. It might be argued that it was constructed in the late medieval period, possibly as a boundary associated with an early phase of the Hall.

The wall was up to 1.2m wide (lower extent) and 0.48m high, extending throughout the width of the trench. At least six courses survived (stepping in slightly at higher levels) to the west, but the wall was more severely damaged by robbing to the east. It had a rubble core and was bonded with a light brown mortar. The fragmentary remains of a single course of stone at the highest surviving level may have represented the base of the actual wall above the foundation.



Plate 9. Trench 3: culvert 122, looking east.

### 5.3.3 *Post-medieval*

A layer (134) of greyish-brown sandy silt, c.0.33m thick, extended throughout the area north of wall [120], sealing medieval deposits. It contained 16th-century pottery. Layer (134) was truncated by the construction trench [123] for brick culvert [122] aligned east-to-west (Plate 9). Bricks used in the culvert were approximately uniform, with dimensions of c.0.26m x 0.13m x 0.05m. The base and top of the feature were laid flat and placed edge to edge, while the sides comprised bricks set on edge and placed end to end, giving internal dimensions of 0.16m wide x 0.13m high. The culvert was almost entirely blocked by silt (212). A yellow-brown and grey (mottled) clayey silt (140) extended around the sides of the culvert, while the remainder of the construction trench was filled by greyish-brown sandy silt with frequent light brown mottles and soft clay patches (121), dated to the 15th century. However, a significant level of residuality might be expected in a redeposited context of this type and the possibility a later date cannot, therefore, be excluded.



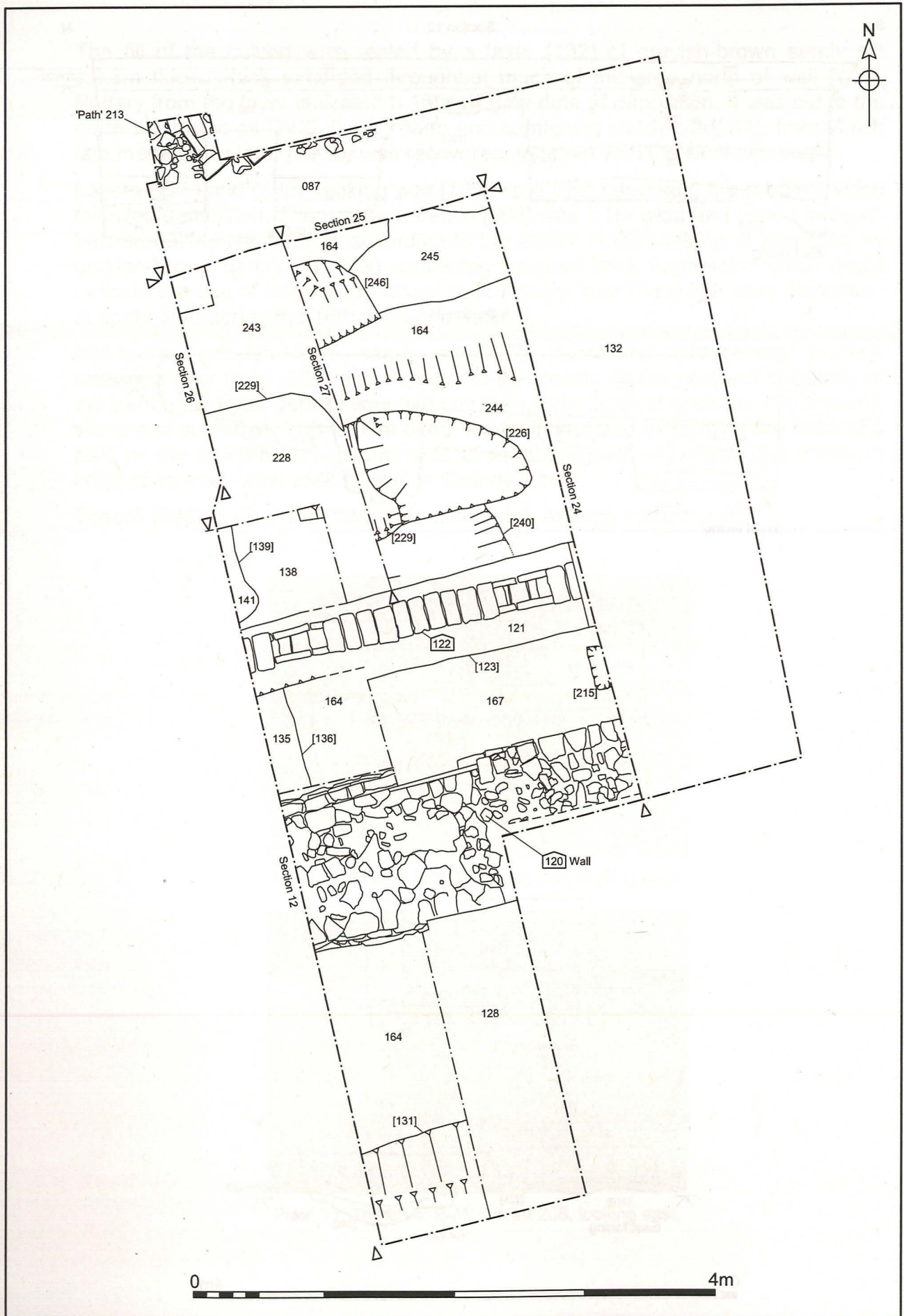


Figure 7. Plan of Trench 3. Scale 1:40



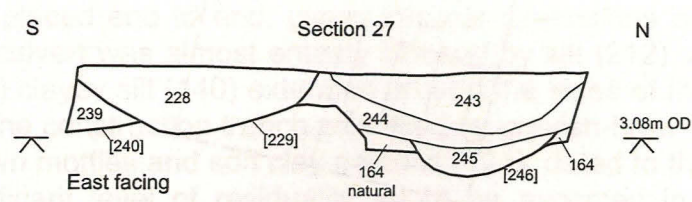
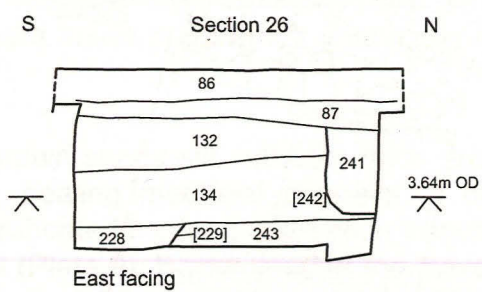
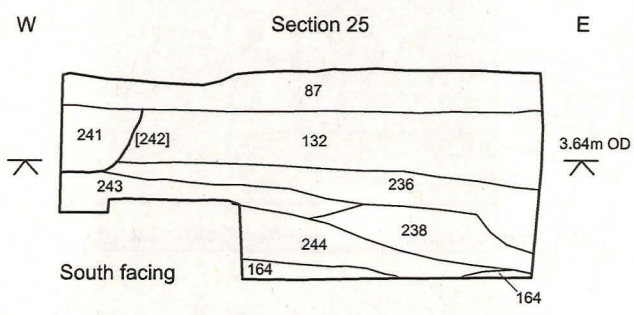
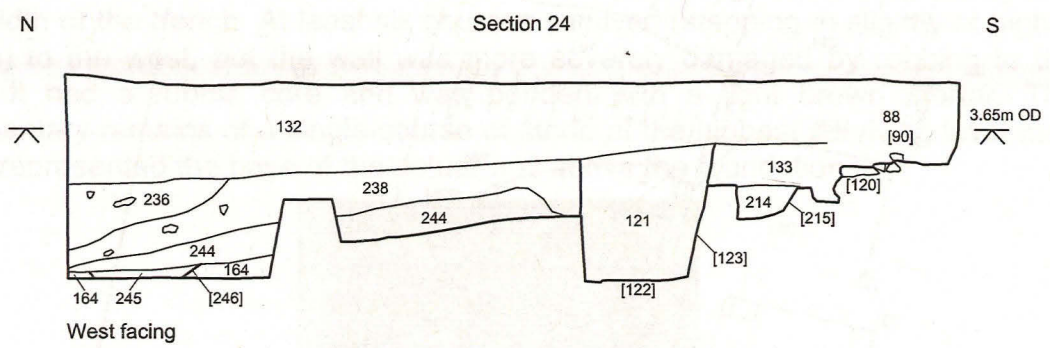
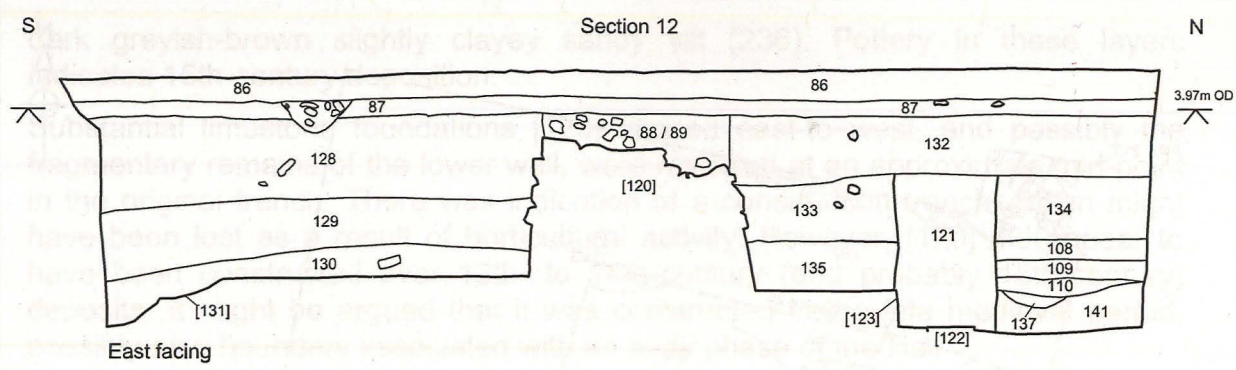


Figure 8. Trench 3, sections. Scale 1:40



The fill of the culvert was sealed by a layer (132) of greyish-brown sandy silt c.0.3m thick, which extended throughout much of the area north of wall [120]. Pottery from the layer indicated a 16th-century date of deposition. It was cut to the north-west by a pit [242], 0.45m deep and containing sandy silt (241), from which late medieval or later pottery was recovered, together with the skull of a dog.

Layers (128) and (132) flanking wall [120] were both cut during the robbing which followed demolition. The resultant trench [090] was c.1m wide and varied in depth between 0.14m and 0.50m according to the extent of the robbing. It was filled by greyish-brown sandy silt (089) containing frequent brick fragments, which might indicate the use of brick in the actual wall. Pottery from (089) indicates demolition at some time during the 16th century or later.

Mid-to-dark greyish-brown sandy silt (087), containing 16th-century pottery, extended over layer (089) and throughout the trench. At the northern extremity of the trench the latter deposit was overlain by a layer (213) of brick (mostly broken), stone and soil some 0.08–0.09m deep. It was interpreted as forming the base of a path or the much-disturbed remnants of an actual path – possibly the southern edge of an east–west walk shown on Grundy's map.

Topsoil (086) 0.12–0.16m thick extended to the existing ground level.



Plate 10. Trench 4: E–W culvert 208, looking west.



Plate 11. Trench 4: E–W culvert 208, looking east.



## 5.4 Trench 4

Trench 4, measuring 6.0m long and aligned east-to-west, lay near the southern edge of the south lawn, where it was designed to intersect with a series of anomalies indicated by the geophysical survey (Fig. 2). The trench was later extended to the south to locate a suspected east-west culvert identified on the geophysical survey plot, as well as the further extents of medieval remains located in the original trench (Figs 9–11). Deposits in the original trench were excavated in a slot excavated along the length of the trench on its southern side.

### 5.4.1 Medieval

Flood deposits identical to those encountered in Trench 3 were revealed at a depth of around 1.0m below existing ground level. They were overlain in the northern part of the original trench by a layer of mid-grey, slightly clayey sandy silt (222), c.0.18m thick, followed by greyish-brown clayey sandy silt (221). Both deposits contained pottery assemblages dated as 13th to 14th century.

To the south layer (221) was cut to the south by a feature of indeterminate shape and extent [223]. Feature [223] had been truncated on its western and southern sides (see below), but may have been linear, aligned east-to-west (extending beyond the limit of excavation to the east). Its fill (258) of light pinkish-brown silt resembled the water lain silts and may be interpreted as a flood deposit.

Feature [223] was inadvertently excavated in advance of a later cut [257] situated on the western side of the trench extension, resulting in the loss of the eastern edge of the latter feature. From the extents of deposits contained in [257] it was determined that the truncated edge was probably steep or vertical. To the south it was truncated by the construction cut [208] for a later culvert (see below), while its northern limit lay within the east-west slot excavated through deposits in the original trench. Cut [257] contained a series of deposits extending eastwards to the eastern edge of the feature and westwards to at least the line of the later north-to-south culvert in the original trench (see below). Overall, the characteristics of the feature and deposits were suggestive of layers extending to the edge of a terrace of level platform. The earliest deposit was a layer of irregularly shaped limestone and brick fragments (235), 0.05–0.1m thick, which was interpreted as a possible metallated surface. It was overlain by a depth of pale yellowish-brown sandy silt (234), 0.09–0.13m thick, which was in turn sealed by a mixture of yellowish-brown and greyish-brown sandy silt (233), up to 0.1m thick and containing frequent shellfish remains. Deposit (233) was succeeded by pale yellowish-brown silt (232), 0.12m thick, followed by greyish-brown sandy silt, 0.025m thick (231), and light to greyish-brown sandy silt (230), c.0.05m thick. Pottery recovered from the layers indicated a probable 15th-century deposition.

A probable pit [256] was identified at the southern end of the trench extension, in the north-facing side of the later culvert trench. The cut was at least 0.60m deep, with gradually sloping sides steepening towards the base, containing a primary fill of mid-grey silt (255), followed by mid- to dark grey silt (254), and light pinkish-brown sandy silt (253) – the latter possibly resulting from flooding. The feature was not dated, but may, on stratigraphic grounds, be assigned to the medieval period. A layer of yellowish-brown clay and sandy silt with light grey mottling (252), c.0.45m thick, extended over the latest fill of [256]. Layer (252) was then cut, to the north, by the construction trench [207] for a brick culvert.



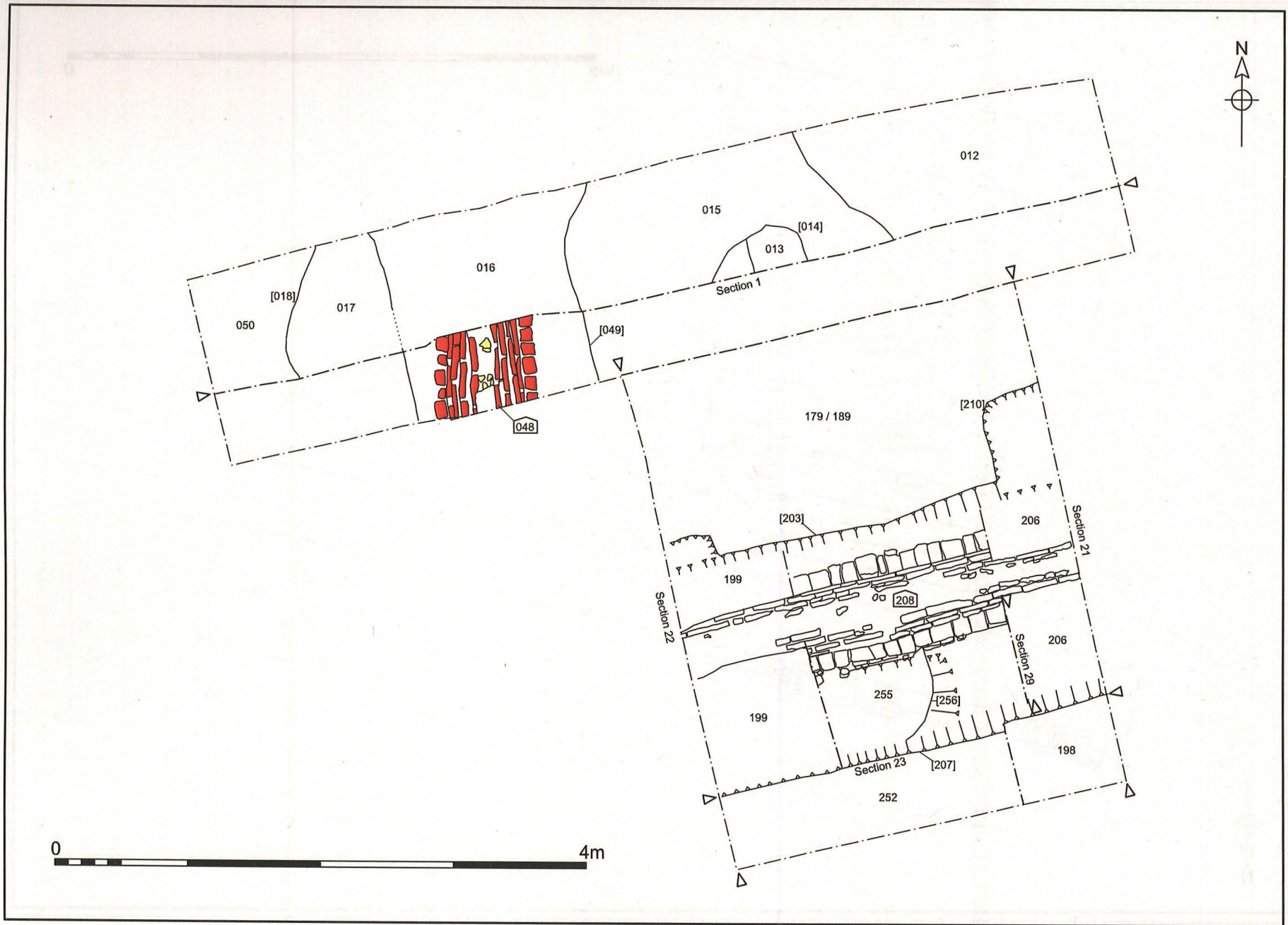


Figure 9. Plan of Trench 4, phase 1. Scale 1:40



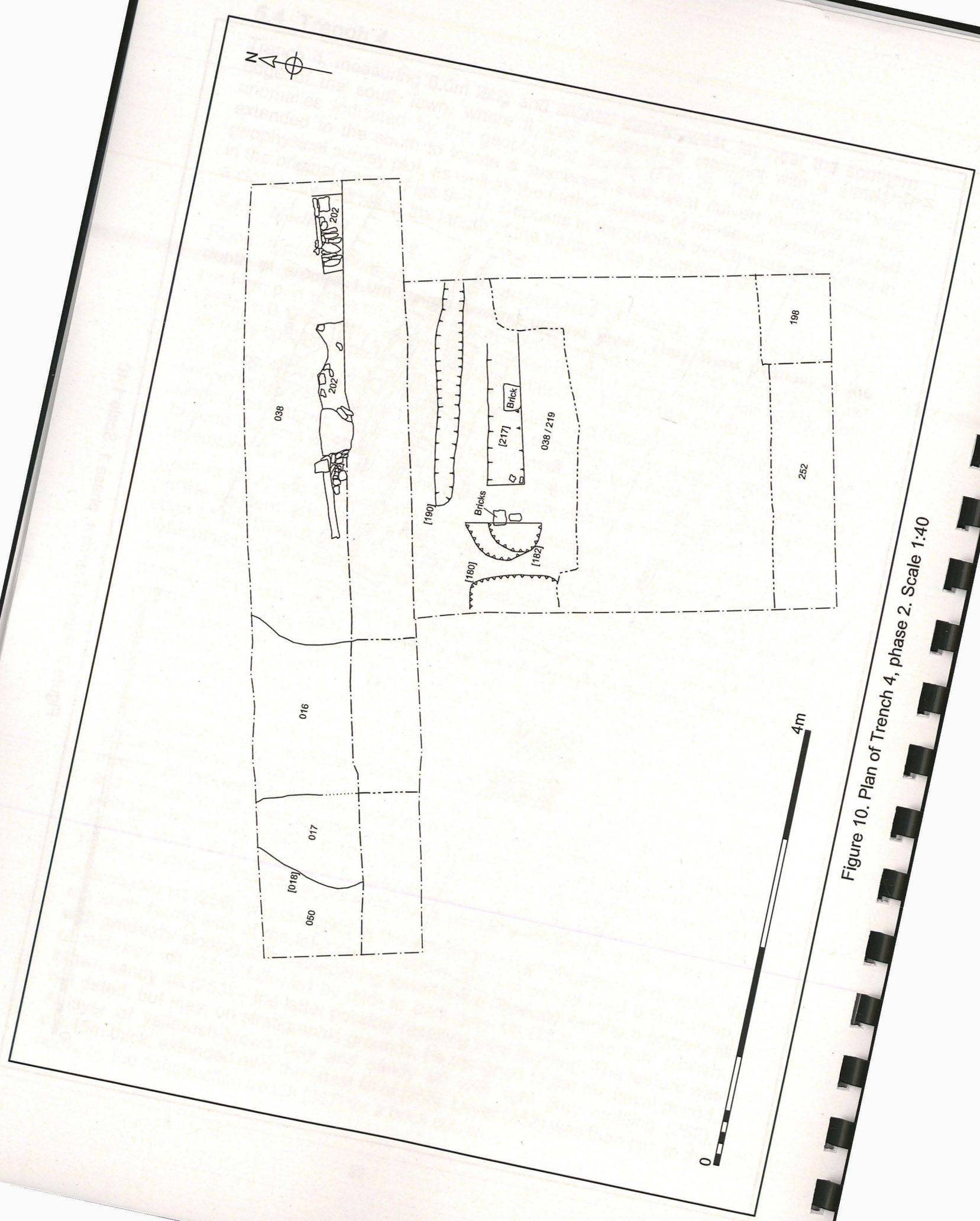


Figure 10. Plan of Trench 4, phase 2. Scale 1:40



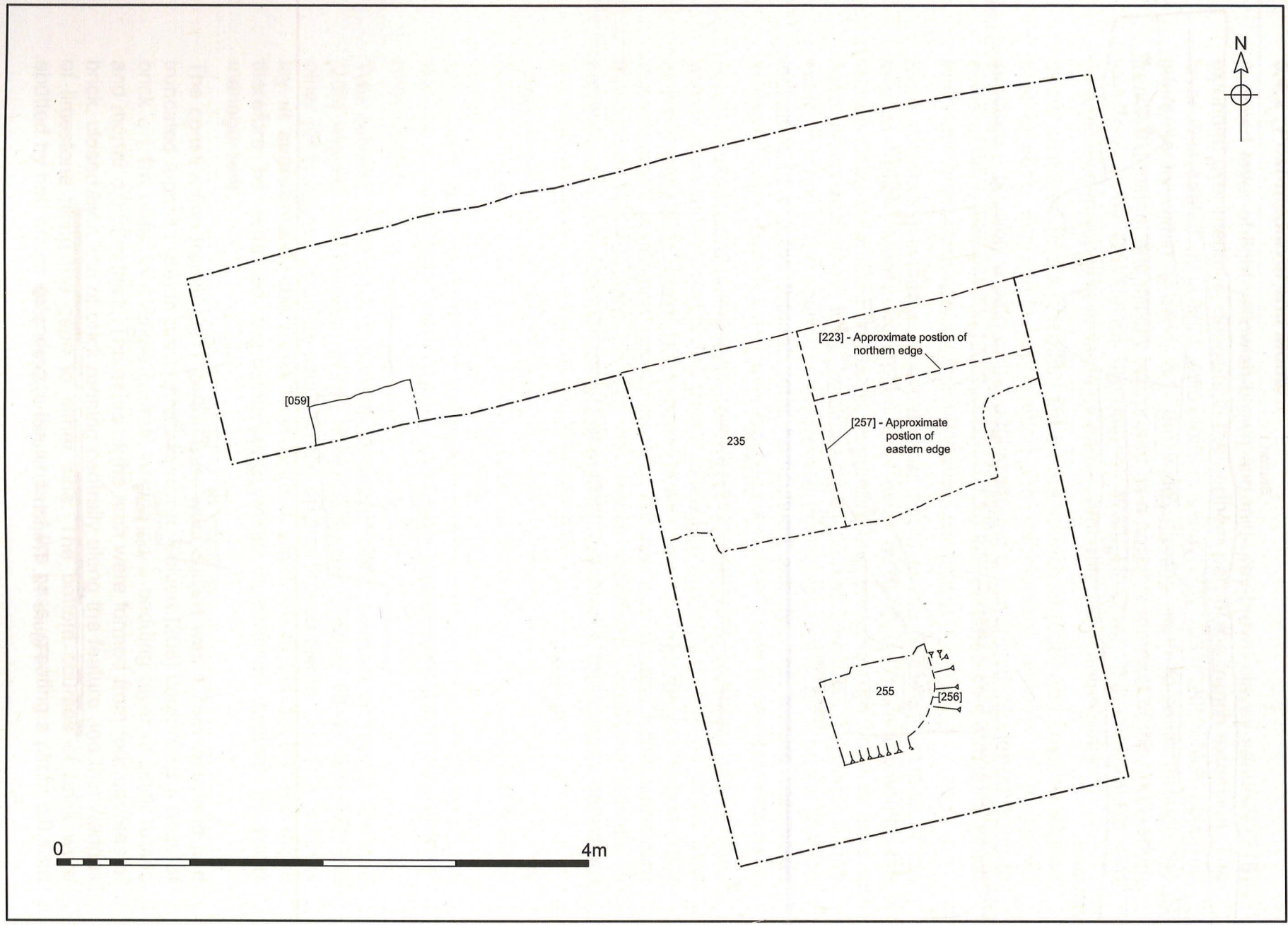


Figure 11. Plan of Trench 4, phase 3. Scale 1:40



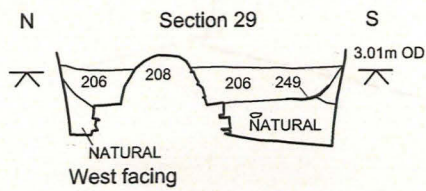
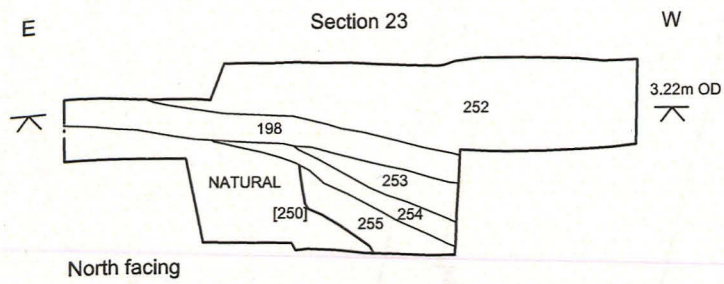
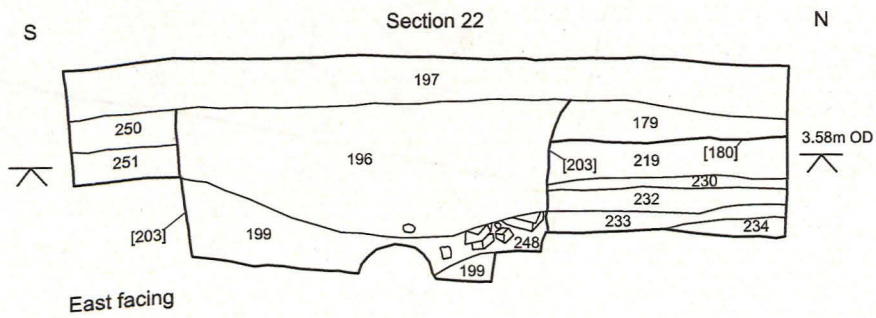
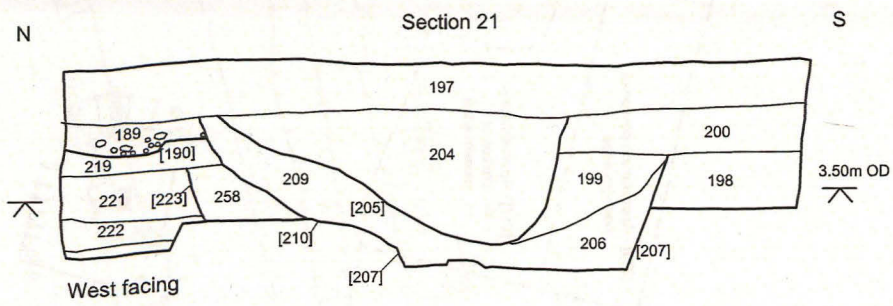
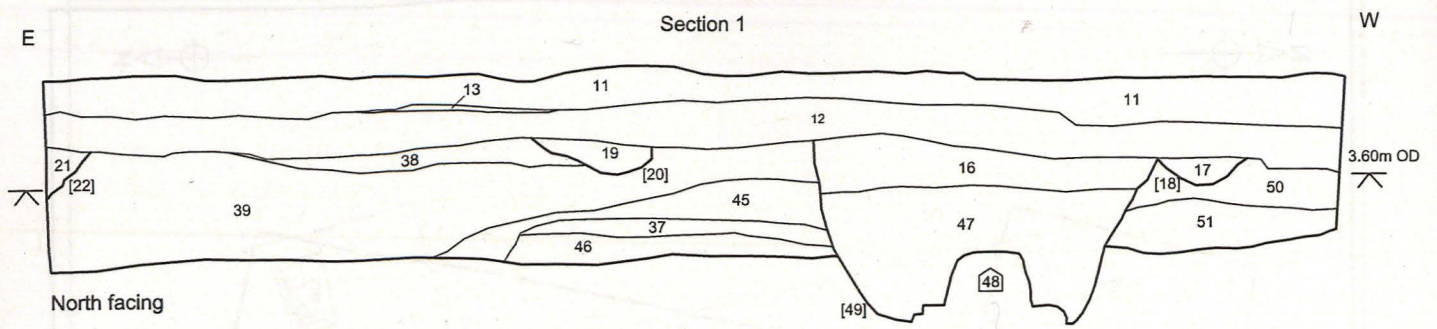


Figure 12. Trench 4, sections. Scale 1:40



#### **5.4.2 Post-medieval and Modern**

A mixed layer of light yellowish-brown and mid-grey-brown clayey sand/silt (219) extended over medieval deposits in the northern part of the trench extension. The layer was sealed by a light yellow-brown sandy clay (038/220) which occurred intermittently within a band, c.1.76m wide, running north-to-south through the trench extension, and initially interpreted as a possible remnant of the north-south walk shown by Grundy on his map of 1732. However, the stratigraphic and ceramic evidence points towards an earlier, probably 16th-century date.

Some scattered bricks (218) laid flat on the surface of (038) and possibly aligned east-to-west, may have represented the fragmentary remains of a garden structure – possibly a path or the edging around a flower bed. Mortar adhering to some of the bricks provided further support for interpretation as a structure, which may have been destroyed during subsequent gardening redesign.

More convincing evidence of a path was found in the north-eastern part of the original trench. Measuring 3.22m east-west by 0.10–0.17m north-south, the feature [202] comprised limestone fragments and bricks set on edge to form a 'kerb' along its northern edge, retaining tightly packed limestone fragments to the south. Further to the south the feature had been truncated in an irregular fashion indicative of erosion through later horticultural activity. The feature resembled surface [125] in Trench 2 and is likely to be the northern side of an east-west path.

A pair of shallow and ill-defined hollows, [217] and [190], extended east-to-west across the southern end of the trench extension, probably continuing to the east as [180] and [182]. Topsoil like deposits of silty clay – (216), (189), (179) and (181) respectively – extending throughout the hollows and a layer (252) extending throughout the southern part of the trench extension, probably indicate a horticultural origin. Although pottery from (179) indicated a 15th-century date there is a high probability that the material was residual.

Three linear cuts (all undated) aligned north-to-south in the original trench may have belonged to the same broad phase of activity as the hollows described above. Cuts [018] and [020] were both irregular in plan, with respective dimensions of 0.6m wide by 0.1m deep and 0.5m by 0.1m. Cut [022] was 0.5m wide by 0.1m deep. All were filled by mid-brown silty clays (017), (019) and (021) respectively.

Two culverts, both brick and nearly identical, were revealed in Trench 4 – one [208] aligned east-to-west, in the trench extension (Plates 10–11 and 13), the other [048] aligned north-to-south, in the original trench (Plate 12). The features lay at approximately the same level (with a slight fall to the south) and might therefore be regarded as components within a common system of water management.

The construction trench [207] for the east-west culvert was 1.75m wide and had truncated topsoil (189) in the trench extension. Culvert [208] comprised a base of brick c.1.1m wide, in a single course, resting on a bedding layer of brick rubble and mortar c.0.06m thick. The sides of the arch were formed from four courses of brick, closed by a line of brick running centrally along the feature and thin wedges of limestone filling the gaps to either side. The bottom courses of brick were abutted by half bricks extending to the limits of the base, creating a plinth c.0.13m



high. The structure was bonded by soft, mid-grey and mid-brown mortar, containing white flecks (probably crushed limestone).



Plate 12. Trench 4: N-S culvert 048, looking south.

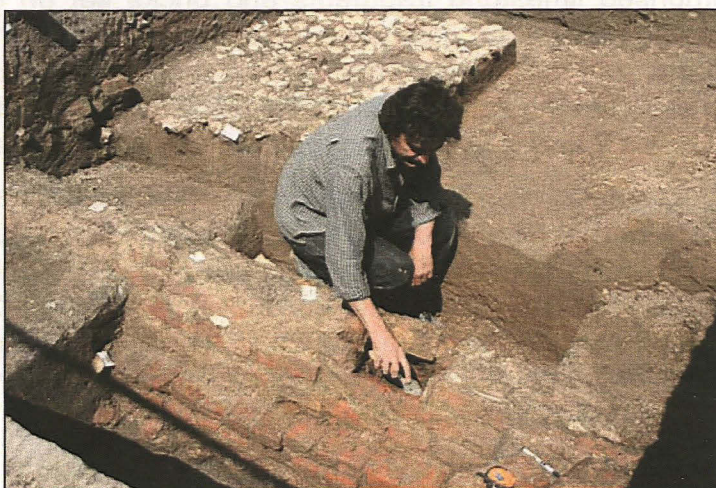


Plate 13. Trench 4: opening culvert 208, looking north-west.

A shallow spread of mortar and crushed limestone (249), which extended intermittently across the base of the construction trench, probably represented the remains of construction debris. It was overlain by light brown (slightly pinkish) silty sand (206) interpreted as redeposited alluvium. The upper levels of the cut were filled by a mixed mid-grey, light grey and light brown sandy silt (199). Two cuts – [205] and [203] – projecting from the northern edge of the main trench, appear to have partially truncated the latter's fills. While the features are not necessarily related to the culvert, it seems highly likely that they were either required as part of the original construction process (possibly indicating phased construction) or were excavated for subsequent maintenance or repair. The easternmost cut [205] was 0.72m deep, extending beyond eastern limit of excavation and was filled by brownish-grey sandy silt (204) with light brown mottling. The westernmost cut [203], which also extended beyond the limits of Trench 4, was around 0.9m deep, with steep sides. A deposit of brick rubble (248), c.0.2m thick, located at the base of the cut, might have originated as waste from work on the culvert. Overlying (248) was a sandy silt (196), identical in composition to (204).



The north–south culvert [048] was almost identical to [208] and comparable in dimensions, differing significantly only in the method of closing the arch, with limestone fragments replacing brick as the central infill. The construction [049] was 1.78m wide and 1.2m deep, containing silty clays (016) and (047) from which pottery dated as 16th century was recovered.

A layer of mid-brownish-grey silty clay (012), around 0.2m thick, extended throughout the eastern part of Trench 4. It was sealed by a shallow deposit of silt and charcoal (013) lying within a shallow cut or hollow [014]. The latter was in turn overlain by topsoil, c.0.3–0.4m thick.



Plate 14. Trench 5: work in progress opening trench, looking north-east.

## 5.5 Trench 5

Trench 5 was located on lawns in the southern part of the south garden, in the area interpreted from the Grundy map of 1732 as a possible wilderness or ornamental wood (Fig. 2). Topsoil was excavated by machine to reveal fairly uniform deposits, which were examined in a slot excavated along the southern side of the trench (Fig. 13; Plate 14).

Yellow sand (154), interpreted as a probable alluvial deposit, occurred at an average depth of c.0.50m below existing ground level (i.e. at c.3.75m OD). The deposit lay at shallow depth in comparison to 'natural' horizons on the south lawn (c.3.05m OD in Trench 3), and might indicate a relatively late phase of overbank flooding of the river.

A pale, orange-brown, clayey sand (153), 0.07m thick, extended over (154) in the western part of trench, while a localised deposit of light, yellowish-grey silty sand (155), 0.12m thick, overlay (154) to the east. Both (153) and (155) were sealed by a mid-grey deposit (152), 0.20m thick, extending throughout the slot. It was in turn sealed by mottled orange silty clay (150), which varied in thickness to a maximum of around 0.20m. Overlying (150) at the eastern end of the trench was a mid-orange-grey silty clay (151), up to 0.16m thick. Topsoil (149) c.0.2m thick extended throughout the uppermost levels of the trench.

Unstratified finds (064) from the trench included pottery ranging in date from the Late Saxon to modern periods.



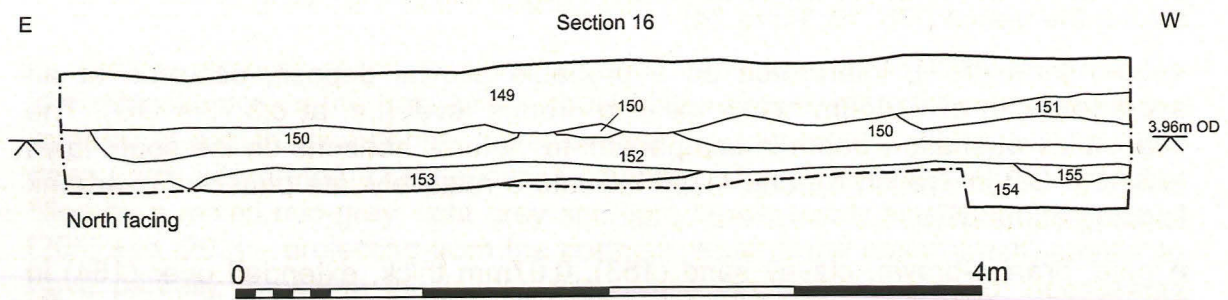
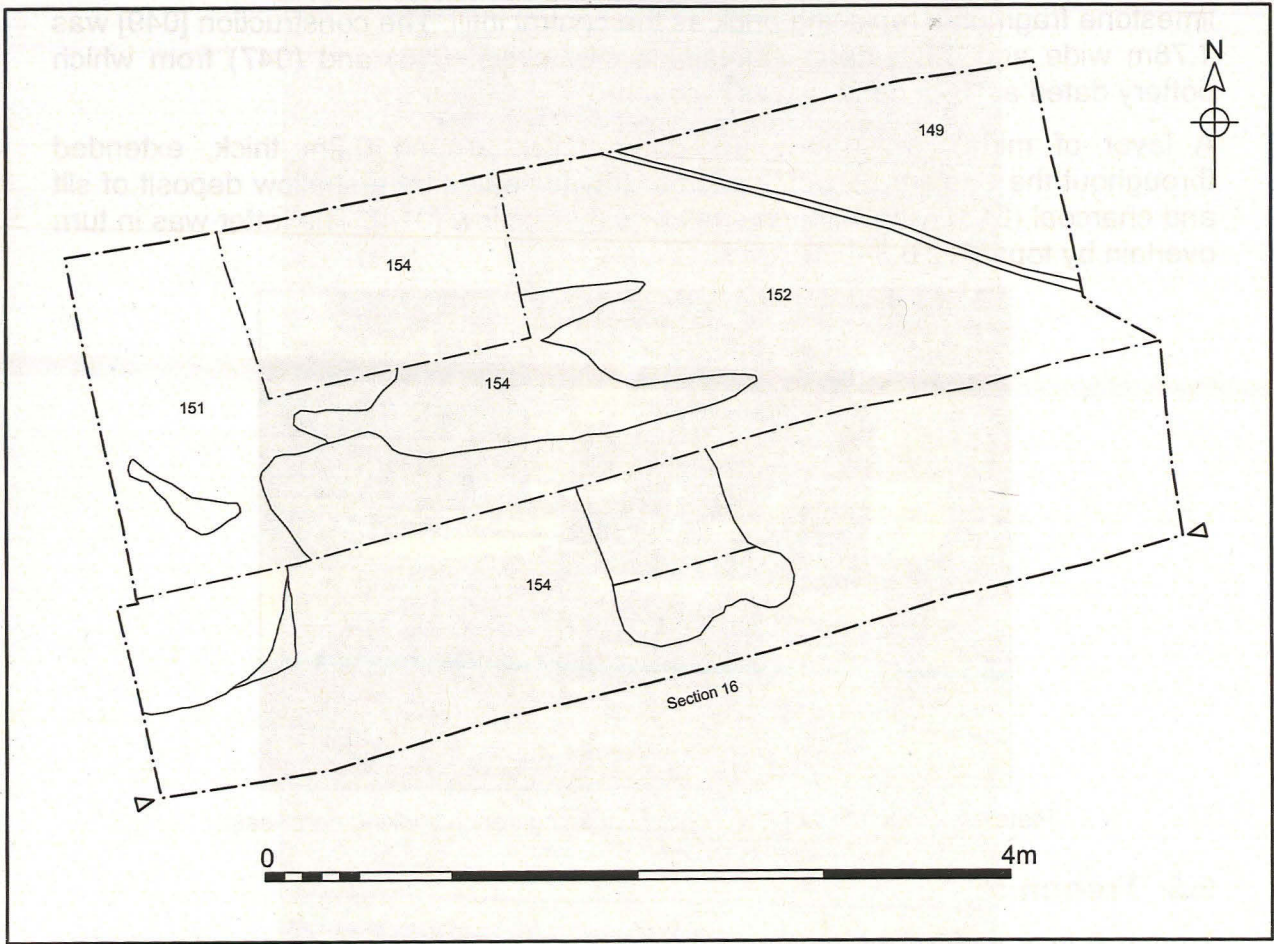


Figure 13. Plan and section of Trench 5. Scale 1:40





Plate 15. Trench 6: initial excavations showing beaten surface and existing walls, looking NW.



Plate 16. Trench 6: area fully excavated, looking west.

## 5.6 Trench 6

Trench 6 was located in the north-western corner of the south garden, on the site of a small, rectangular outbuilding depicted on the Ordnance Survey map of 1887 (Fig. 2). It was positioned to investigate the foundations of the north wall of the south garden, as well as a series of alterations visible in its fabric, including a bricked up opening.

Upon excavation, the foundations of the outbuilding were found to encompass an earlier brick-lined pit [044], partially obscured at its western extremity by a north-south wall [032], apparently erected as part of later modification. The visible extent of the pit indicated it to have been originally oval, aligned east-to-west with internal dimensions of 1.48m wide by at least 1.40m long. Although safety considerations militated against total excavation, it was established, through partial excavation on the southern side of the pit, that the feature was at least 1.35m deep. Its sides were steeply angled, being constructed from comparatively soft, eroded bricks, measuring 0.24m long and ranging in thickness between 0.05m and 0.06m. A number of part bricks (possibly including headers) were observed.



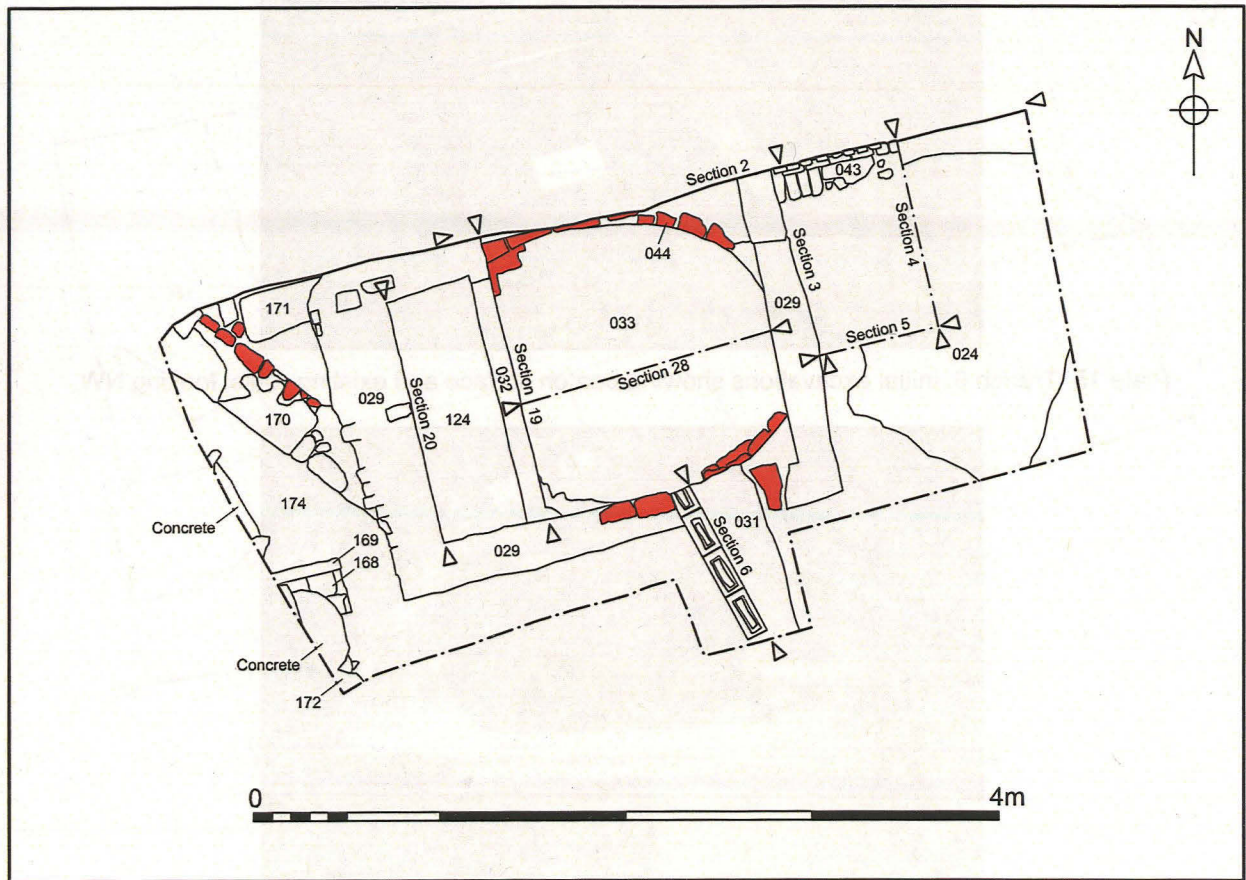


Figure 14. Plan of Trench 6. Scale 1:40



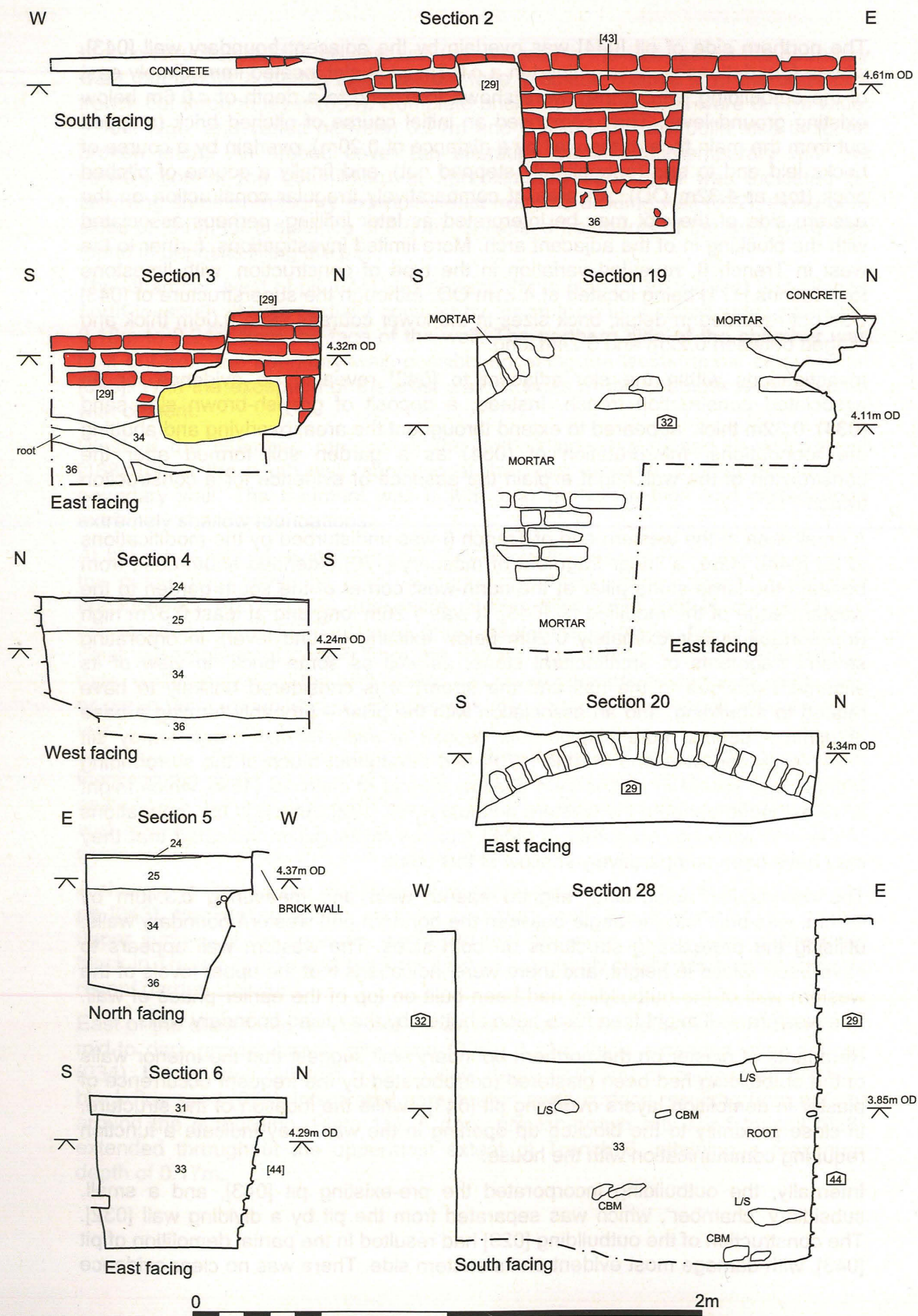


Figure 15. Trench 6, sections. Scale 1:20



The northern side of pit [044] was overlain by the adjacent boundary wall [043], whose foundations were examined in a c.0.7m wide slot located immediately east of the outbuilding, where they were shown to extend to a depth of c.0.6m below existing ground level. They comprised an initial course of pitched brick (stepped out from the main face of the wall by a distance of 0.20m), overlain by a course of bricks laid end to end (only slightly stepped out), and finally a course of pitched brick (top at 4.32m OD). An area of comparatively irregular construction on the eastern side of the slot may be interpreted as later infilling, perhaps associated with the blocking in of the adjacent arch. More limited investigations, further to the west in Trench 6, revealed variation in the type of construction, with limestone foundations [171] being located at 4.21m OD. Although the superstructure of [043] was not recorded in detail, brick sizes in the lower courses were 0.06m thick and ranged between 0.22m and 0.24m long.

Investigations within the slot adjacent to [043] revealed no evidence for an associated construction trench. Instead, a deposit of greyish-brown silty sand (034), 0.32m thick, appeared to extend throughout the area, overlying and abutting the foundations. Interpretation of (034) as a garden soil formed after the construction of the wall might explain the absence of evidence for a construction trench.

A small area at the western end of Trench 6 was undisturbed by the modifications to pit [044]. Here, a linear fragment of masonry [170] extended south-east, from beneath the large stone pillar at the north-west corner of the south garden to the western edge of the modified pit [043]. It was 1.26m long and at least 0.37m high (top surface at approximately 0.20m below existing ground level), incorporating several fragments of architectural stone, as well as some brick. In view of its alignment (oblique to the hall and the street), it is considered unlikely to have related to a building, and an association with the pillar – probably forming a base or plinth – seems more plausible. A deposit of mid-yellowish-brown sandy silt (174), extended over and around [170], and throughout much of the surrounding area. It was sealed in places by a shallow spread of charcoal (159), which might have extended beneath the western boundary wall [172]. Although the foundations of the wall were not examined in detail, cursory investigation indicated that they may have been comparatively shallow at this point.

The rectangular outbuilding, aligned east-to-west and measuring c.3.40m by 1.80m, was built into the angle between the northern and western boundary walls, utilising the pre-existing structures on both sides. The western wall appears to have been raised in height, and there were indications that the upper levels of the western wall of the outbuilding had been built on top of the earlier phase of wall. The western wall might then have been abutted by the raised boundary wall.

Remnants of plaster on the northern boundary wall suggest that the interior walls of the outbuilding had been plastered (corroborated by the frequent occurrence of plaster in demolition layers overlying pit [043]), while the location of the structure, in close proximity to the blocked up opening in the wall, may indicate a function requiring communication with the house.

Internally, the outbuilding incorporated the pre-existing pit [043], and a small, subsidiary 'chamber', which was separated from the pit by a dividing wall [032]. The construction of the outbuilding [029] had resulted in the partial demolition of pit [043], with damage most evident on its eastern side. There was no clear evidence



of a construction cut for the east wall (as explored in the slot against the boundary wall), but mortar adhering to its eastern face indicated a close fit to the edge of a trench cut through layer (034). Complete bricks in the east wall were 0.11m wide, 0.06m high, and varied between 0.21m and 0.23m long (the build also included broken brick). An arched cover (an alteration perhaps contemporary with the construction of the outbuilding) at approximately floor level was indicated by surviving stubs of masonry extending east from the dividing wall [032], along both sides of [044], for a distance of 0.80m. Collapsed fragments of the arch were also found in deposits filling the pit.

The 'chamber' west of pit [044] was rectangular in plan (1.3m x 0.7m) and aligned north-to-south. It was partially covered by an arch on its western side, extending 0.18m to 0.24m from the face of the wall. The northern side of the chamber was built out from the boundary wall, possibly encasing the westernmost extent of pit [043]. With the exception of the west wall all sides of the chamber were covered with cement.

West of the chamber, remains of the outbuilding were limited to a fragment [168/169] of the south wall, surviving at the point where it abutted the western boundary wall. The fragment was 0.30m long by 0.21m high and rested upon extremely shallow foundations.

At the lower limit of excavation (c.1.35m below the tops of the surviving walls of the outbuilding) within pit [043], a dark brown/black 'peaty' deposit (266) was encountered. Above (266), the entire pit was filled by a light to mid-yellowish-brown sandy silt (033) containing brick, fragments of bottle, tile and plaster. A small assemblage of pottery from the feature indicates an 18th- or 19th-century date, while analysis of the wall plaster has revealed some evidence of white, pink or green paint, or whitewash. Render was also found in the deposit, which was at least 1.37m deep, extending throughout the remainder of the pit and the outbuilding. The adjoining chamber was only excavated to a depth of c.0.35m, involving the partial removal of deposit (124) identical to (033). Deposit (033) was sealed by a demolition layer (030), c.0.06m thick, which contained mortar, plaster and limestone fragments. West of the overlying concrete foundations [031] the same material was recorded as context (035).

A shallow concrete base [031] extended north-to-south across the outbuilding and pit [043], terminating at the northern boundary wall. An imprint of brick on the upper surface of the concrete (similar to that observed on the base of the toilet block in Trench 2) indicated the line of a wall – probably relating to a comparatively recent garden structure.

East of the outbuilding, in the slot excavated against the boundary wall, a layer of mid-to dark greyish-brown silty sand (025), 0.11m thick, extended over deposit (034). It was itself overlain by a shallow depth (0.015m) of compacted greyish-black fine sand (024), interpreted as a beaten earth surface resulting from activity around the outbuilding (Plate 15). A dark, greyish-brown silty sand topsoil (023) extended throughout the uppermost extent of Trench 6, attaining a maximum depth of 0.17m.



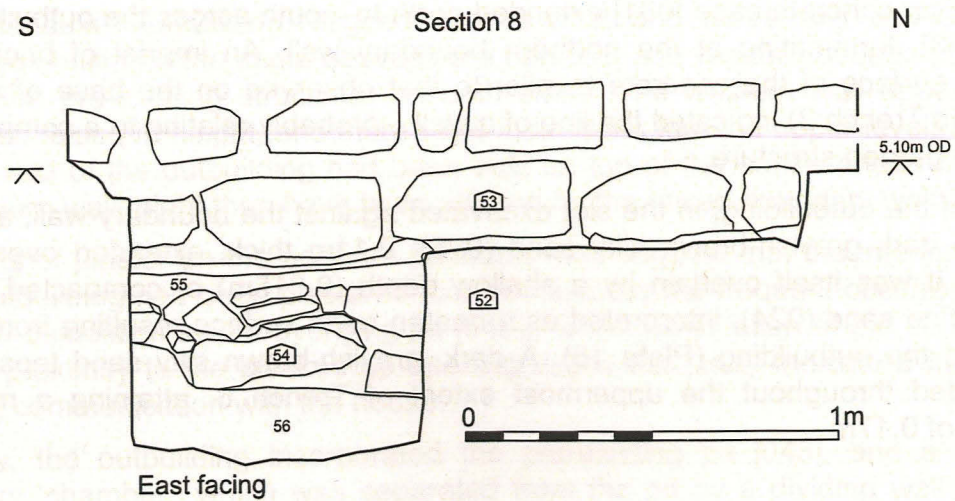
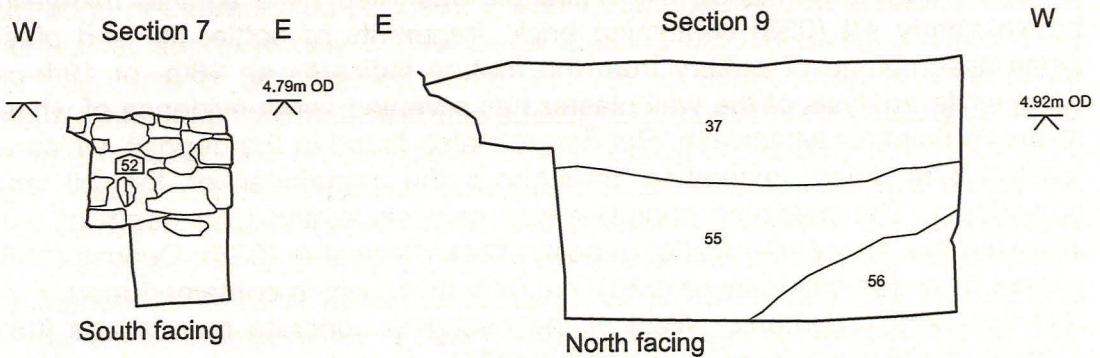
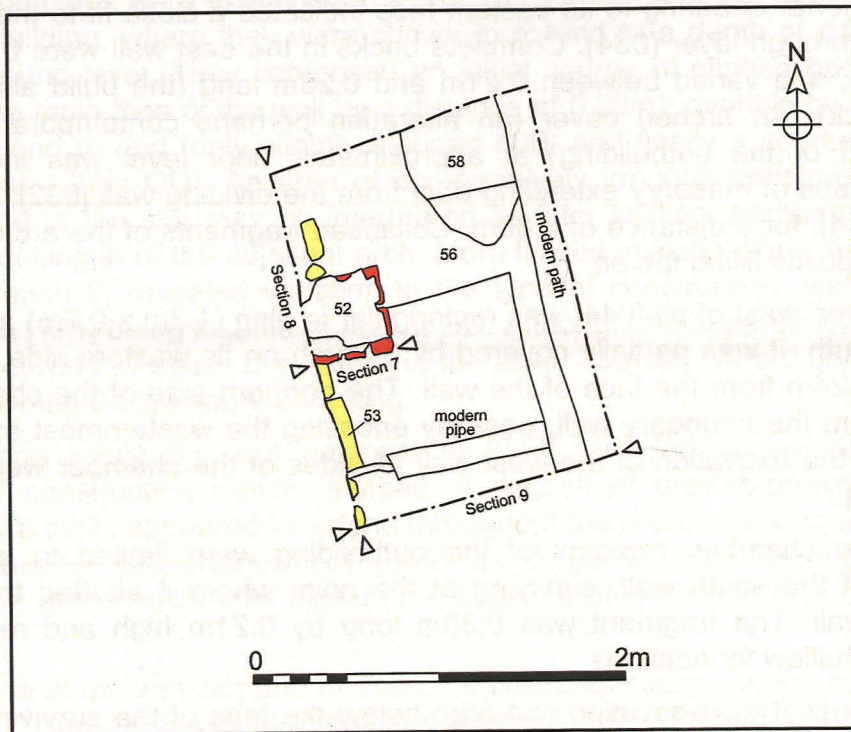


Figure 16. Plan of Trench 7, scale 1:40.  
Sections at scale 1:20





Plate 17. Trench 7: general view, looking west.

### 5.7 Trench 7

Trench 7, measuring 2m x 2m in plan, was positioned against the western boundary wall (Fig. 2).

Light brown-grey, clayey silt (056) extended throughout the lower levels of Trench 7. It was sealed by light to mid-grey clayey silt (055), 0.50m thick. Deposit (056), and possibly (055), was overlain by the foundations of the western boundary [054]. Constructed from a mix of regular (up to 0.15m x 0.15m x 0.10m) and irregular (up to 0.35m x 0.20m x 0.10m) limestone blocks (not bonded and possibly reused), the foundations were 0.40m deep.

A brick buttress [052], which apparently post-dated the foundation, had been demolished to foundation level. Measuring 0.50m square in plan and 0.30m high, the feature was bonded by light whitish-grey mortar.

The original limestone foundation [054] supported a rebuilt section of wall [053], comprising an initial build (3 courses) of large limestone blocks measuring 0.40m x 0.15m (as seen in elevation). The rebuild extends between older sections of wall to either side and appears to have replaced a brick build which had incorporated the buttress [052].

Mid-brownish-grey silty clay (058), located immediately beneath topsoil on the eastern side of the trench may be interpreted as make-up for the existing path. The existing topsoil – dark greyish-brown silty clay (057) – was 0.40m deep and produced a single fragment of modern pottery.

### 5.8 Trench 8

Trench 8, measuring 2m x 2m, was positioned to investigate the southern extent of the western boundary, at the same time as prospecting for evidence of a rectangular building depicted on John Grundy's map of 1732 (Fig. 2). Deep excavation – to a maximum depth of 1.40m below existing ground level – was carried out in a c.0.75m wide slot aligned at right angles to the boundary wall.



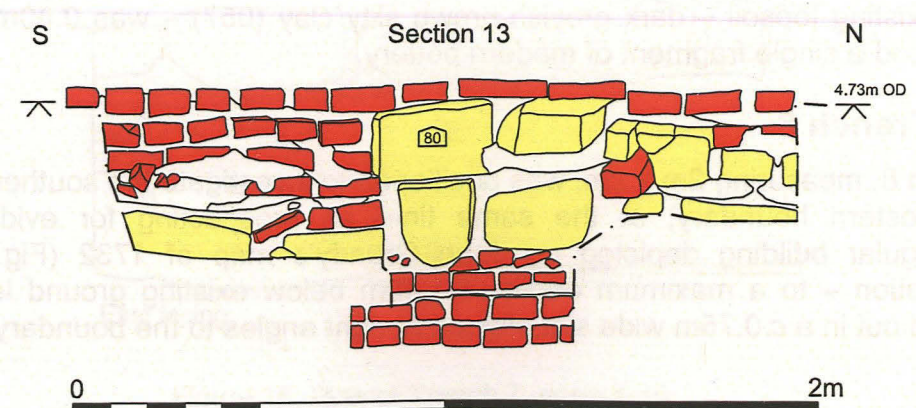
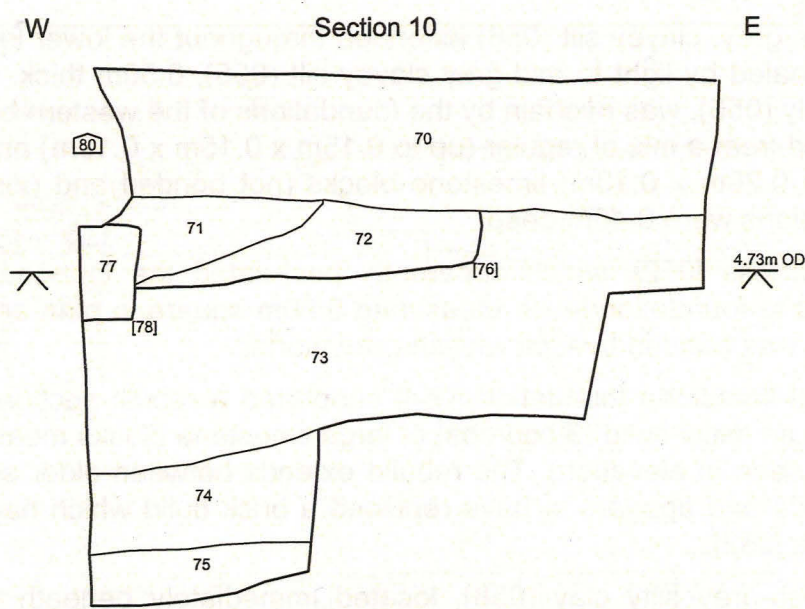
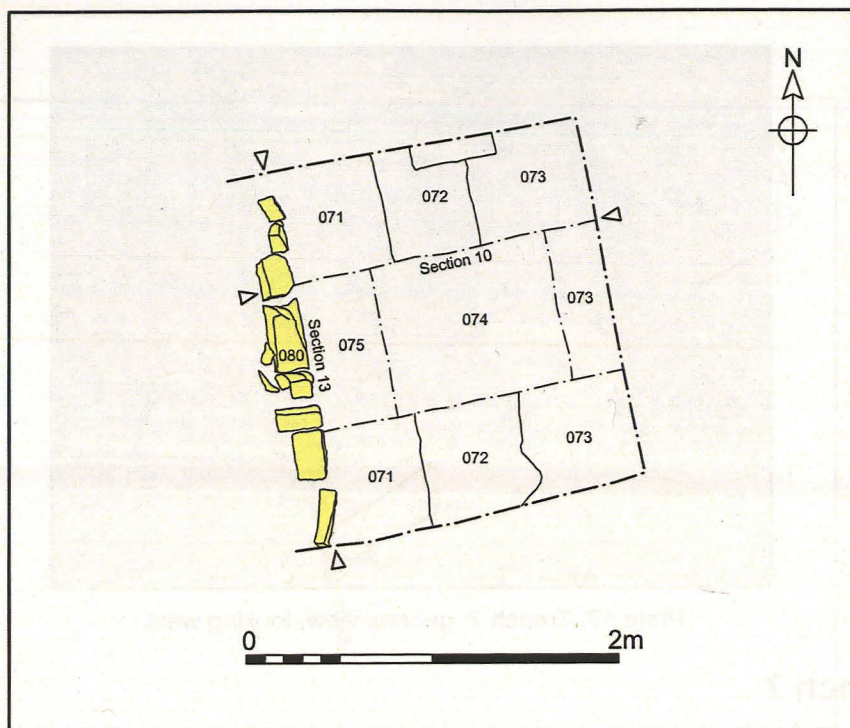


Figure 17. Plan of Trench 8, scale 1:40.  
Sections at scale 1:20





Plate 18. Trench 8: general view, looking west.

The earliest deposit encountered within the slot, at approximately 1.3m below existing ground level, was a pale greyish-brown clay (075), interpreted as possible flood deposit. It was overlain by pale brownish-orange clay (074), 0.20m thick.

Layer (074) was sealed by a pale orange sand (073), 0.5m thick (top surface at approximately 0.35m below existing ground), which may be interpreted as a flood deposit comparable to that encountered in Trench 5. The sand was cut by a feature [076] whose eastern edge spanned the trench in a north-south direction, and which extended to the line of the boundary wall (a distance of 0.90m), where it appears to have been truncated by the construction cut [078]. The side of the feature was steep (0.30m deep), breaking sharply to an even base, which sloped down gradually to the west. It contained a primary fill (072) of mid-brownish-grey silty clay, 0.20m thick, overlain by dark blackish-grey silty clay (071), also 0.20m thick. It seems highly likely that the feature had a horticultural origin, in which case, it is tempting to speculate that it may represent the remains of a hotbed situated within a hothouse or stove or orangery (presumably the structure depicted by Grundy). Support for such an interpretation is provided by the sharply defined shape of the feature (in contrast to the diffuse edges which might be expected in the case of the typical flower bed), which might have resulted from the removal of hard edgings upon a change of use or demolition of the structure.

The wall foundations [080] comprised an initial build in brick, at least three and possibly four (indicated by fragmentary remains) courses high, overlain by irregularly shaped limestone blocks, and then a mixed build of limestone and brick. In total, the foundation was 0.70m high, with limestone fragments (including at least one decorative architectural fragment reused from a substantial building). The limestone component was bonded by a yellowish mortar. From the available evidence it would appear that the lower courses in brick represent an earlier, separate phase of construction (possibly relating to the frontage of the rectangular building?), in which case, the mixed limestone and brick component could be a comparatively late construction, contemporary with the erection of the existing brick wall. The latter is clearly later than sections of wall further to the north, and may have originated as a replacement for the frontage lost upon demolition of the rectangular structure. The construction cut [078] for the foundations was around 0.3m deep and stood 0.15m east of the wall. It contained a fill (077) of mottled mid-grey and pale orange-brown silty clay.



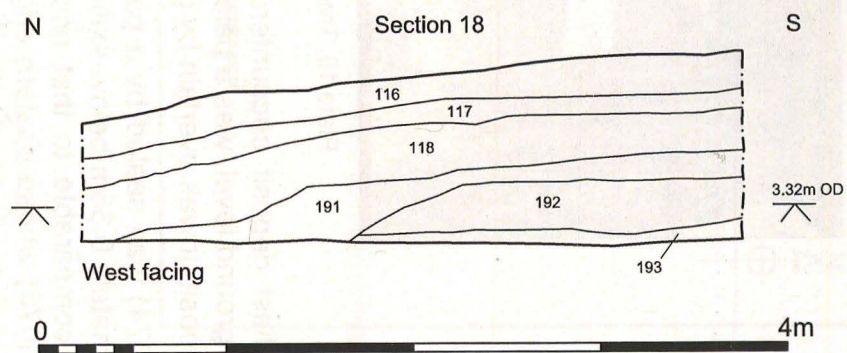
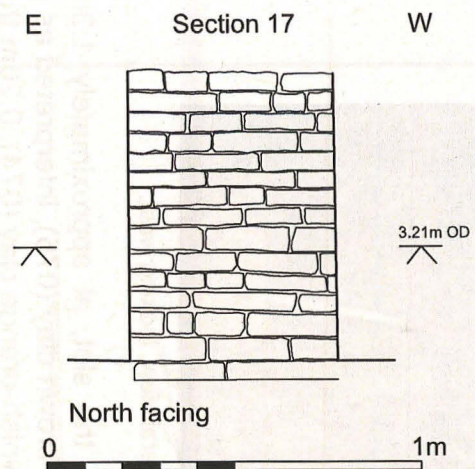
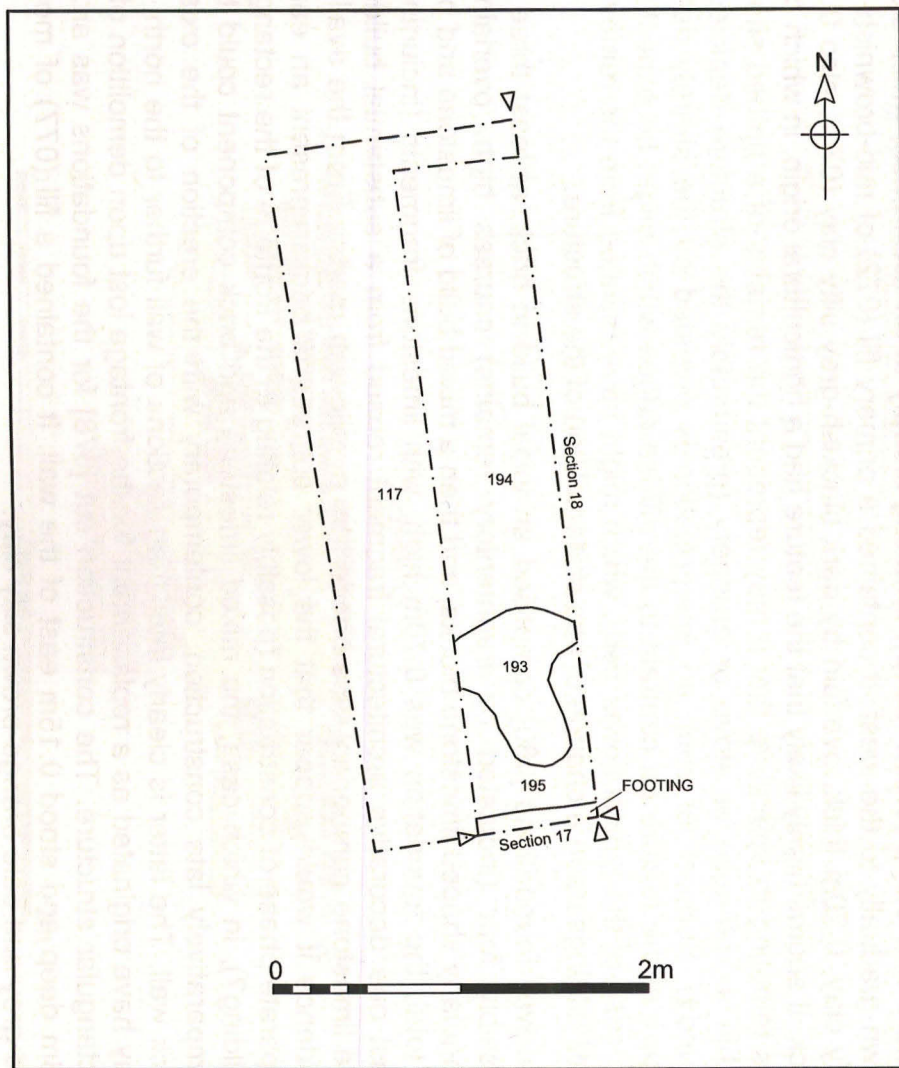


Figure 18. Plan of Trench 9. Scale 1:40  
 Section 17 at 1:20, section 18 at 1:40





Plate 19. Trench 9: general view, looking south.

## 5.9 Trench 9

Trench 9 was located to the south of the tennis courts, on a low bank running east–west along the north face of a brick wall bounding the north-east component of the garden (Fig. 2). It was conjectured that the bank may have predated the layout of the garden, and that it had therefore determined the alignment of the adjacent wall. The bank is currently planted with shrubs and trees.

Topsoil was removed by machine from a 2m wide strip across the bank. Further excavation was carried out using hand tools, within a slot, approximately 0.7m wide, running along the eastern side of the trench.

A tarmac surface was located at the base of the bank, at an elevation of around 3.15m OD. The surface was overlain by a shallow deposit of silty clay (193), interpreted as trample associated with use of the surface, and then a series of dump deposits; sandy loam (192), clayey sand (191), silty clays (118) and (117) – all sloping downwards from the south (immediately adjacent to the wall) to the north. The dump deposits were overlain by the existing topsoil (116), which was approximately 0.1m deep.

Finds from the bank indicated a comparatively recent date for its formation – probably in the early- to mid-20th century, after the property went into municipal ownership. The deposits may have originated from groundworks associated with the construction of the nearby tennis courts. The Ordnance Survey map of 1887 depicts a large building and related yard at the eastern end of the wall, in the angle formed with boundary along Love Lane. The surface in Trench 9 probably lay a short distance to the west of the yard.

## 5.10 Trench 10

Trench 10 was located to the east of Trench 9, on the same bank. Topsoil was removed by machine, within a 2m wide strip, but excavation was curtailed in the light of findings in Trench 9.



## **5.11 Discussion**

### **5.11.1 Flood Deposits**

Undisturbed flood deposits were identified in Trenches 3 and 4 at an elevation of c.3.05m OD. Although the deposits were not dated directly, the presence in Trench 3, of overlying deposits of probable 11th-century date may be taken to imply a Late Saxon or Saxo-Norman date. It is worth noting that early medieval remains found during excavations further to the north on Church Street lay beneath alluvium, at c.3m below existing ground level.

Probable flood deposits were also found in the southern part of the gardens, in Trenches 5 and 8. These deposits lay at comparatively shallow depth, at c.4.3m OD in Trench 8, and might, therefore, indicate a later episode of flooding.

### **5.11.2 Late Saxon/Saxo-Norman**

A modest assemblage of Late Saxon pottery (35 sherds), deriving primarily from the excavations on the south lawn, indicates a certain level of activity during the period, in the immediate vicinity of the grounds. Most of the sherds occurred as comparatively small fragments, suggestive of redeposition from earlier contexts. However, a shallow hollow, partially exposed at the southern end of Trench 3, may have originated in the 11th century. To date, Saxon material in Spalding has been rare. The finds, which probably represent domestic occupation, therefore make a significant addition to knowledge of the archaeology of the town.

### **5.11.3 Medieval**

Evidence of medieval activity was abundant in Trenches 3 and 4 on the south lawn, with the ceramic and stratigraphic evidence pointing to a modest level of activity during the early part of the medieval period, followed by a progressive increase in intensity in the high and late medieval periods. The stratigraphic evidence suggests a particularly marked increase in activity during the 15th century, possibly coinciding with the building of the earliest phase of the Hall. Pits and layers found in Trench 3 are likely to have been associated with occupation in the immediate vicinity, perhaps even relating to the house itself. The distribution and location of the pits may have been, at least in part, determined by the presence of a property boundary to the south, in the form of the east-west wall in Trench 3. Although the precise date of the wall was not established a late medieval date would not be inconsistent with the evidence. The feature is closely aligned with a change in course of the western boundary, where it deviates to the north-west to link with the southern end of the forecourt wall. It might, therefore, be speculated that the alteration in course lies at the junction between two formerly separate properties. The presence of a property boundary at this point would account for the existing spatial relationship of the house to the grounds, with the house located at the north-western corner of the property.

Of medieval remains in Trench 4, the most noteworthy feature was the cut found in the trench extension, bounding a series of layers extending to the west, including at least one possible surface and layers of occupation debris. It has been tentatively suggested that the cut defines the eastern limit of a lower terrace or platform.



Elsewhere in the gardens, there was only sporadic evidence of possible medieval activity, comprising the stone surface in Trench 2 and unstratified pottery from Trench 5.

The well in Trench 1 (thought to be medieval) was sampled for palaeoenvironmental information, but later analysis revealed a relatively shallow depth of sediment.

#### **5.11.4 Post-medieval**

An early phase of garden structure, unrelated to the geometric garden shown on Grundy's 1732 map may be represented by the stone surface or possible path located on the eastern side of Trench 4. Finds from around the feature suggested a possible 16th-century date or later. The fragmentary remains of a brick structure located slightly further to the south could form part of the same broad phase of activity. Both features may have been destroyed as a result of subsequent horticultural activity, represented by a series hollows and overlying soils, as well as three linear features on north-to-south alignments and originally interpreted as indicative rows of hedging.

The foregoing activity was post-dated by the installation of a system of culverts laid out in the area south of the house, in what must have been a major undertaking. Finds from deposits contained in the construction trenches indicates a 16th-century origin, but the potential for residual material in redeposited contexts is high, and a significantly later construction date may not be inconsistent with the evidence. A slight fall in level from north to south suggests that the north-south culvert probably functioned as drainage from the house, linking into the east-west culvert, which appears to have extended between the River Welland and the canal shown on Grundy's map of 1732.

An association with the canal would imply construction of the culvert system in the late 17th- or early 18th-century when rectilinear canals in the Dutch style had achieved widespread popularity as high-status garden features. This need not conflict with the finds data, since a high degree of residuality might be expected in backfill into construction trench. By the early 17th century occupation would probably have centred upon the house, which might explain a low incidence of contemporary finds in the area of the culvert trench.

Trenches on the south lawn produced little evidence relating to the development of the geometric garden, although it might be argued that the wall in Trench 3 was demolished as a prerequisite for their creation in the late 17th or early 18th centuries. The edge of a path, or make-up for a path, found at the northern end of Trench 3 could relate an east-west walk seen on Grundy's map. However, there was convincing evidence in Trench 4, of the principal north-south walk and a sandy clay layer was found on its approximate alignment probably relates to an earlier phase of activity.

In Trench 2 the possible hothouse or stove represents a potentially significant discovery, especially if it is shown to have been associated with Maurice Johnson II, given his status as the founder of the Spalding Gentlemen's Society, a famous learned society of the 18th century, and his known interest in the subject of botany. The footprint of the structure can be closely correlated with that of a rectangular structure shown on Grundy's map, aligned east-to-west and abutting another outbuilding or annexe to the west, while extending east to beyond east



wall of the later Garden Room. Grundy's map shows the south wall of the structure coinciding with the line of the east-west garden wall. The extant wall includes a comparatively late area of infill in the section which would have been occupied by the southern outhouse wall. In contrast to the main part of the wall, this infill rests upon brick foundations, which may have survived from the original building. From this it would follow that the structure predated the garden wall. The building appears on a map by Armstrong dated 1779 and may correspond with a single storey, gabled structure depicted at the south-east corner of the hall on a 1791 drawing by J.C. Nattes (commissioned by Joseph Banks) and a drawing by Hilkiah Burgess made in 1818. There was some evidence, in the form of ashy/charcoal-rich deposits, to suggest an earlier phase of furnace operation. The deposits, which had been truncated during construction of the recorded furnace and associated building, covered a metallised surface dated by associated pottery to the 17th century (within the period when hothouses beginning to feature in high-status gardens).

The outbuilding recorded in Trench 6 first appears on the Ordnance Survey map of 1887 (it is not shown on the Grundy or Armstrong maps of 1732 and 1779 respectively) and was still present on the 1903 edition. It is not shown on the Ordnance Survey map of 1932 and it may be concluded that the structure was demolished in the early 20th century as indicated by assemblage of finds recovered from overlying deposits. The most likely function of the pit and building would have been as a cess pit or latrine.

Investigations on the western boundary walls in Trenches 6, 7 and 8 revealed limestone foundations of comparatively shallow depth and indicative of earlier builds of the wall, but little in the way of associated dating material – largely due to gardening activity in the adjacent flower beds. A vertical-sided cut found in Trench 8 constitutes the only potential evidence relating to a structure shown at this point on the Grundy map of 1732. It may be speculated that the feature represents a hotbed.

Although a well (probably post-medieval) was located in Trench 2, the limited nature of investigations prevents a full consideration of dating. Material contained in the fill indicated a comparatively recent date of infill.

#### **5.11.5 Modern**

Modern features were located in Trenches 1 and 2, but were infrequent elsewhere. The bank investigated in Trenches 9 and 10 was shown to be of modern origin.

Little of interest was found in Trench 5, beneath the existing topsoil.



## 6.0 THE FINDS

### 6.1 The Pottery

By Sue Anderson

A total of 1,027 sherds weighing 16,743g from 79 contexts were recovered. Table 1 provides quantification by fabric and a full spotdate list by context is included in Appendix 3.

#### 6.1.1 Methodology

Quantification was carried out using sherd count, weight, estimated vessel equivalent (eve) and minimum number of vessels (MNV). A full quantification by fabric and context is available in the archive. All fabric codes were assigned from the author's post-Roman fabric series, which includes East Anglian and East Midlands fabrics, as well as imported wares. Lincolnshire ware identifications are based on Young and Vince (2005) and samples of Bourne wares. Imports were identified from Jennings (1981). Non-local ware identifications are based on McCarthy and Brooks (1988). A x20 microscope was used for fabric identification and characterisation. Form terminology follows MPRG (1998). Recording uses a system of letters for fabric codes together with number codes for ease of sorting in database format. The data were input directly onto an MS Access database.

#### 6.1.2 The Assemblage

Late Saxon pottery formed a small proportion of this assemblage. Stamford Ware and Lincoln-type shelly wares made up most of the group, with small quantities of St Neot's and other unidentified wares making up the remainder.

Early medieval wares were more frequent and were dominated by fine sandy, thin-walled varieties similar to those commonly found in East Anglia. Roughly a quarter of the group was made up of a variety of calcareous local fabrics, and Stamford Fabric B made up another quarter of the group.

The largest proportion of the assemblage comprised the medieval wares, of which almost half (by count) was Bourne Ware, followed by Toynton Ware making up about a third. Other wares were relatively infrequent, but they included unsourced sandy and calcareous coarsewares, some of which were probably local. Identified glazed wares included examples from Yorkshire, Lincolnshire, Nottingham, Northamptonshire, Cambridgeshire and Norfolk. No imports of this date were identified, although four glazed sherds remain unsourced.

Late medieval wares were the second largest component of the assemblage. Bourne D Ware made up over two-thirds of the group. Other relatively large groups comprised Cistercian Ware and late Toynton Ware. It is possible that more of the latter was present as it is not easily distinguishable from the medieval type. Non-local wares of this period included a single sherd of Midlands Purple, and some probable East Anglian redwares (LMTE, SGRA). The sherds identified as LMTE were highly micaceous and similar to Heddingham medieval glazed ware from Essex, although it is uncertain whether production continued at this site into the late medieval period. Imported wares of the period comprised German stoneware mugs, fragments of a Dutch redware cauldron, and a single sherd of Valencian lustreware.



Description	Fabric	Code	No	Wt/g	eve	MNV
Stamford Ware Fabric A	STAMA	2.61	11	66	0.13	11
St Neot's Ware	STNE	2.70	2	7		2
Lincoln Saxo-Norman shelly	LSNS	2.71	12	114	0.07	11
Lincoln Late Saxon sandy ware	LSLS	2.73	6	60	0.05	6
Saxo-Norman wares (general)	SXNO	2.80	4	26		4
<i>Total Late Saxon</i>			35	273	0.25	34
Early medieval ware	EMW	3.10	41	406	0.10	41
Early medieval ware gritty	EMWG	3.11	1	13		1
South Lincs Saxo-Norman oolitic	SLSNO	3.122	7	166	0.17	6
South Lincs quartz and oolite	SLQO	3.123	5	94	0.22	5
Early medieval ware shelly	EMWS	3.14	9	70	0.06	9
Early medieval sparse shelly ware	EMWSS	3.19	4	24		4
Stamford Ware Fabric B	STAMB	3.71	26	158	0.17	26
<i>Total early medieval</i>			93	931	0.72	92
Medieval coarseware	MCW	3.20	11	79	0.03	10
Medieval coarseware gritty	MCWG	3.21	1	5		1
Grimston coarseware (or similar)	GRCW	3.22	3	70	0.05	3
Medieval shelly wares (general)	MSHW	3.50	4	120		4
South Lincs early medieval oolitic	SLEMO	3.72	2	19	0.05	2
Unprovenanced glazed	UPG	4.00	4	20		4
Grimston-type ware	GRIM	4.10	6	64		6
Yorkshire glazed wares	YORK	4.43	1	6		1
Lyveden-Stanion Wares	LYST	4.60	1	5		1
Lincoln Glazed Ware 1	LSW1	4.701	5	31		5
Lincoln Glazed Ware 2	LSW2	4.702	5	27	0.08	5
Lincoln Glazed Ware 3	LSW3	4.703	1	12		1
Developed Stamford Ware	STAMC	4.71	5	40		5
Bourne Ware types A, B and C	BOUA	4.72	214	3098	1.49	208
Toynnton Ware	TOYN	4.73	149	2327	0.29	141
Nottingham Glazed Ware	NOTG	4.74	4	29		4
South Lincs quartz, oolite and iron	SLQOF	4.75	1	4		1
Ely Glazed Ware	ELYG	4.81	1	4		1
<i>Total medieval</i>			418	5960	1.99	403
Unprovenanced late medieval	NLLM	5.00	2	67	0.11	2
Cistercian type Ware	CTW	5.20	21	179	0.76	21
Midland Purple	MIDP	5.21	2	48		2
Bourne Ware Type D	BOUD	5.24	229	4049	2.28	212
Late medieval gritty ware	LMGW	5.25	3	26		3
Late Grimston-type ware	GRIL	5.30	1	2		1
Late Essex-type Wares	LMTE	5.60	8	172	0.41	7
"Cambridgeshire" Sgraffito Ware	SGRA	5.70	1	21		1
Late Lincoln Glazed Ware	LLSW	5.90	8	101	0.15	8
Late Toynnton Ware	TOYL	5.91	22	914	0.05	18
Langerwehe Stoneware	GSW2	7.12	1	15		1
Raeran/Aachen Stoneware	GSW3	7.13	2	11	0.10	2
Dutch-type Redwares	DUTR	7.21	3	135		2
Spanish tin-glazed ware	STGE	7.53	1	8		1
<i>Total late medieval</i>			304	5748	3.86	281
Iron Glazed Black Wares	IGBW	6.11	6	117	0.15	6
Glazed Red Earthenware	GRE	6.12	25	430	0.13	22
West Norfolk Bichrome	WNBC	6.14	2	14		2
Speckle-glazed Ware	SPEC	6.15	1	1		1
Staffordshire-type Manganese Glazed	STMG	6.21	3	6	0.05	2
Border Wares	BORD	6.22	5	172	0.15	5
Tin Glazed Earthenwares	TGE	6.30	9	43	0.05	6
Post-Medieval Slipwares	PMSW	6.40	2	6	0.05	2
Staffordshire type Slipware	STAF	6.41	2	14		2
Coarse blackwares (E Midlands)	CBW	6.51	33	2138	0.46	15



Description	Fabric	Code	No	Wt/g	eve	MNV
Cologne/Frechen Stoneware	GSW4	7.14	5	85		3
Westerwald Stoneware	GSW5	7.15	1	40		1
<i>Total post-medieval</i>			94	3066	1.04	67
Late post-medieval earthenwares	LPME	8.01	18	184	0.63	15
Refined white earthenwares	REFW	8.03	35	332	1.05	26
Creamwares	CRW	8.10	2	4		2
Yellow ware	YELW	8.13	1	7		1
English stoneware	ESW	8.20	5	63		3
English stoneware Nottingham-type	ESWN	8.22	2	5	0.04	2
Porcelain	PORC	8.30	8	36	0.22	3
Staffordshire white salt-glazed stonewares	SWSW	8.41	4	26		4
Late glazed red earthenware	LGRE	8.50	2	67	0.04	2
Late blackwares	LBW	8.52	1	13		1
<i>Total modern</i>			78	737	1.98	59
Unidentified	UNID	0.001	5	28	0.05	5
<b>Total</b>			<b>1027</b>	<b>16743</b>	<b>9.89</b>	<b>939</b>

Table 1. Pottery quantification by fabric.

Almost 100 sherds of post-medieval pottery were identified. Coarse blackwares and red earthenwares (IGBW, GRE, WNBC, SPEC, PMSW) dominated this group, but there were also whitewares from Staffordshire (STAF, STMG) and the Surrey-Hampshire border (BORD), and of unknown provenance (TGE). A few German stonewares were also present.

Later pottery only makes up a small proportion of the assemblage by count, but a wide variety was present, including unglazed redware plant pots and dishes, refined factory-produced whitewares, creamware, yellow industrial slipware, a variety of stonewares for both utilitarian and table use, coarse earthenwares and porcelain.

A few sherds currently remain unidentified as they could belong to several periods or sources.

### 6.1.3 Pottery by Context

This assemblage contains a wide variety of pottery types of Late Saxon to modern date, although the majority represents occupation from the 11th/12th centuries to the 15th/16th centuries.

It is clear from the variety of pottery types present in many contexts that there has been a considerable degree of disturbance during the late medieval and early post-medieval period. Consequently, much of the Late Saxon to medieval pottery was probably redeposited around this time.

Very few vessels in any period were represented by more than a single sherd. Average sherd weights rise from 7.8g in the Late Saxon group to 32.6g in the post-medieval group.

Sixteen contexts could be suggested to pre-date the 15th century on pottery evidence, although some of these contained only 1–2 sherds and dating could not be considered reliable as a result. The majority of contexts were late medieval or later, with 13 post-dating the late 18th century.



## 6.2 Ceramic Building Material

By Sue Anderson

A total of 321 fragments of CBM weighing 35,071g was collected from 55 contexts. The mortar and plaster assemblage comprised 54 pieces (3,365g) from ten contexts (Appendix 4).

### 6.2.1 Methodology

The assemblage was quantified (count and weight) by fabric and form. Fabrics were identified on the basis of macroscopic appearance and main inclusions. The width, length and thickness of bricks and floor tiles were measured, but roof tile thicknesses were only measured when another dimension was available. Forms were identified from work in Norwich (Drury 1993), based on measurements and fabrics. Other form terminology follows Brunskill's glossary (1990).

### 6.2.2 The CBM assemblage

Table 2 shows the quantification by fabric and form.

Fabric group	code	EB	FT	RT	LB	PAN	QFT	AB	B	DP	UN
estuarine clay fabrics	est	269									
fine sandy, few other inclusions	fs		1		3		1				
fine sandy with flint	fsf				1						
fine sandy, ferrous inclusions	fsfe				1	4				1	
fine sandy with grog	fsg				1						
fine sandy, grog and ferrous	fsgfe						2	5			
fine sandy micaceous	fsm			1	7					1	1
fine sandy with common voids	fsv				10						
medium sandy with flint	msf			2							
medium sandy, ferrous inclusions	msfe			1		1					
medium sandy with grog	msg			1							
white-firing with ferrous inclusions	wfe									2	
white-firing poorly mixed clays	wfx			1							
compressed shale	comp								4		
<b>Totals</b>		<b>269</b>	<b>1</b>	<b>6</b>	<b>23</b>	<b>6</b>	<b>2</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>1</b>

Table 2. CBM by fabric and form (fragment count).

Key: EB – early brick; FT – floor tile; RT – roof tile; LB – late brick; PAN – pantile; QFT – quarry floor tile; AB – air brick; B – brick; DP – drainpipe; UN - unidentified

The majority of CBM comprised 'early bricks' in fine estuarine clay fabrics containing a variety of grog, ferrous and calcareous inclusions. These bricks have been defined by Drury (1993, 163–4; 2000, 59–61) for East Anglia and the east coast generally, but the examples from this site were generally fired to a deeper red than is usual for East Anglian varieties. It is likely that the source of the clay was the sediments of the Wash, much closer to Spalding in the medieval period, and that the bricks were made locally. A few of the fragments were overfired or vitrified, some to a greenish glass-like state, which may indicate the presence of wasters and therefore a kiln in the grounds of the Hall. Kilns were often set up specifically to provide bricks for large building projects. Alternatively, there is documentary evidence for a 15th-century brick kiln at Boston supplying the construction of Tattershall Castle, some 12 miles inland (Moore 1991, 224), and



other sources show that bricks were often transported over some distance (Drury 1981).

Most fragments were small and abraded, but some complete examples had been collected as samples from structural features. Nineteen fragments could be measured in at least one dimension. Thicknesses varied between 50mm and 66mm, although the majority were between 54–56mm. Five widths ranged between 112–133mm. Only two complete bricks were recovered, from context (122), and these measured 258–263mm x 132–133mm x 54–56mm (10¼ x 5¼ x 2¼"). One had sunken margins on all sides of the struck surface, whilst the other had only one. Fragments with both straw and sand impressions on the base were present, with straw being slightly more frequent. The group has a broad date range of 13th–15th centuries, but there was some evidence of re-use with mortar present on broken edges of a few fragments. Most fragments were recovered from contexts with pottery spotdates of 15th century or later, and it seems likely that these bricks (and some of the late ones too) belong to the 15th century and the earliest phase of construction at the Hall.

Twenty-three fragments were identified as 'late brick', but it was sometimes difficult to distinguish these from early bricks owing to the fineness of the fabrics. Seven of these could be measured, with thicknesses varying from 56mm to 75mm and widths between 112–113mm. Two complete bricks were recovered from (208) and measured 247–250mm x 113mm x 56–60mm (10 x 4½ x 2½"). The bricks had deep stacking scars on the stretcher faces and one was in a poorly mixed fabric. A date in the 15th/16th century seems likely, despite the thickness. Several of these fragments may well belong to this date range, but pieces from (033) are likely to be later; these included the thickest late brick (75mm) which had a frog and is probably of late 19th-century or later date.

One small fragment of a probable medieval floor tile was recovered from (134); spots of glaze were present on the side and the fragment measured 24+mm thick. Other floor tile was of post-medieval unglazed 'quarry' type, two large fragments being recovered from (033) and (081), both in coarse, hard pink fabrics.

Roofing material was poorly represented in this assemblage. Only six fragments of plain peg tile and six pieces of pantile were recovered. Four of the peg tiles were likely to be medieval and two were post-medieval, including a white-firing example. Pantiles included a probable machine-made example in (083).

Miscellaneous fragments included pieces of extruded air brick with pierced circular holes in (033) and fragments of compressed shale brick in (033), (068) and (116), all of 19th/20th-century date. Fragments of drainpipe from (118) and (119) were generally glazed 19th/20th-century types, although one was a dry-bodied red earthenware type, probably post-medieval.

One fragment from (061) was heavily abraded and it was not possible to determine whether it represented a fragment of early/late brick or a piece of Roman tile. Another fragment from (039) was identified as ?early brick, but this was also heavily abraded and may be fired clay or Roman tile.

Overall this assemblage appears to represent construction or demolition rubble which was largely related to the earliest phase of building at the Hall site, and most of it relates to walling, rather than roofing or flooring. The bricks appear to be locally produced varieties in the so-called 'Flemish brick' style which flourished



along the east coast of England during the 13th–15th centuries, but the material here is very similar in fabric to later bricks and may represent a transitional stage, or indicate that the estuarine sources of clay continued to be used in this area into the post-medieval period.

### 6.2.3 The Mortar and Plaster

Mortar was found adhering to several bricks in the CBM assemblage and included two main types: a fine sandy type with large calcareous inclusions, and a medium sandy type with carbonised inclusions. The latter type is more commonly post-medieval in date, particularly if the inclusions are coal, although the addition of charcoal is not unknown in medieval mortars.

The mortar and plaster assemblage itself comprised both lime-based and cementitious mortars. Table 3 shows the types present.

Description	Code	Plaster	Render	Pointing	Wallcore?	Unident
lime, fine sand	fs	2				
lime, fine sand and chalk	fsc	5				
lime, medium sand and chalk	msc	4			2	2
lime, medium sand, carbon	msca			4		
lime, medium sand and flint	msf	17				
two types adhering	msf/msca	1				
cementitious	cem	10	6	1		
<b>Total</b>		<b>39</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>2</b>

Table 3. Types of mortar and plaster.

The largest component of the assemblage was wall plaster, and much of it was recovered from 18th/19th-century context (033). Several of these fragments had two to three layers of coloured paint (white/pink/green) or whitewash, and one fragment appeared to be decorated with a black curving border defining an area of grey paint. One fragment comprised plaster over a much coarser mortar with a convex surface and may represent a decorative moulding. Fragments from (030), (035) and (124) had straight black lines incised onto the surface; these appear to represent thick pencil marks. Impressions on the rear suggested that some fragments had been plastered onto timber or against window/door jambs. Fragments were generally between 14–20mm thick and several had coarser grey mortar underlying the finer white plaster surface.

Fragments of cementitious render were recovered from (030) and (033). Fragments appeared to have been used over stone or brickwork and are likely to represent a 19th-century or later external surface treatment. Fragments from (033) showed traces of whitewash.

A few fragments had been used in wall pointing and still had fragments of brick adhering to the surfaces. A fragment from (179) in 'msca' was 18mm thick. Two large abraded fragments from (089) may be from a wallcore.



## **6.3 The Small Finds**

By Julia Huddle

Excluding the window glass, 20 small finds were recovered from Trenches 3, 4, 5 and 6. The material was recovered from unstratified contexts and contexts dated from the medieval through to the modern period (Appendix 5).

### **6.3.1 Methodology**

The material has been small found in accordance with NAU Archaeology procedures with a complete catalogue of the finds produced for the archive on the Integrated Archaeological DataBase (IADB). Objects are catalogued below with stratigraphic information by way of context type and site period included alongside the catalogue entries and discussed below by trench.

### **6.3.2 Trench 3**

A total of ten iron artefacts were recovered from Trench 3. Four are unstratified, a knife blade fragment is from a medieval deposit and the remainder from deposits dated to the late medieval or early post-medieval period. They include parts of three, possibly four knives, which, apart from the two with bolsters (SF 11 and 19, dated to the post-medieval period) are too fragmentary to date. Part of a key (SF 16) is post-medieval. Part of a strap hinge (SF 10) is unstratified and may have been used on a door, gate or window shutter. The remaining objects are too fragmentary to be identified.

### **6.3.3 Trench 4**

Seven objects are from Trench 4. An iron nail is unstratified. Part of a copper-alloy vessel fragment (SF 4) is from a medieval or ?post-medieval deposit. An unidentified object fragment (SF 3) is from a post-medieval or modern deposit. The remaining four items are from post-medieval deposits and include the stem of a glass goblet (SF 25), dated to the 16th or 17th centuries, part of a small ?hinge (SF 24), a formless fragment (SF 28) and a lead pot mend (SF 26).

### **6.3.4 Trench 5**

Two iron objects were recovered in Trench 5, both unstratified. One is part of an iron knife (SF 13) with moulded bolster and cutler's mark on the blade. Knives with moulded bolsters from the Norwich Survey excavations are from 17th-century deposits (Margeson 1995, 130, fig. 96, nos 870–872). The other is a V-shaped plate fragment.

### **6.3.5 Trench 6**

Only one object is from Trench 6, from a modern deposit (SF 33). It is a small turned ivory implement with broken cylindrical iron fitting at one end; the function of this neatly turned implement is unknown.

## **6.4 The Window Glass**

By Steve Morgan

All of the 18 fragments of window glass that were small found have been catalogued (Appendix 5). Six fragments of this glass have grozed edges and 2 have muff edges. Seven fragments were painted and these were probably all



originally from the same piece. All but three of the fragments could be positively dated to the medieval period.

A possible source of the medieval window glass found on this excavation may be the church of SS Mary and Nicholas which lies to the north of the site. The glass may have been removed from the church during episodes such as the Reformation. It is also possible that late medieval period Ayscoughfee Hall itself had clear and stained glass windows, which may have borne such motifs as its owner's coat of arms, and this represents another possible source for these finds.

## **6.5 The Stone**

By Sarah Percival

Fifty-three pieces of stone were collected from 24 contexts. The assemblage includes 17 pieces of roof tile in a fine limestone, one example with an incomplete peg hole (132). The source of the limestone is unknown, but may be local, perhaps Colleyweston Slate, a sandy limestone from the lowest beds of the Lower Lincolnshire Limestone. Fourteen pieces of roofing slate were also recovered. Slate was used to replace the original thatched roof of the hall in 1772 (Glen and Taylor 1999, 10). One piece of dressed coarse shelly limestone was recovered (207). The piece has one flat and one curved surface and is heavily burnt on the curved surface only. The worked stone is perhaps from a window frame, the earliest of which originally featured stone mullions and hood moulds which were replaced during building works in 1808 (Glen and Taylor 1999, 10). Five further pieces of similar coarse shelly limestone with no surviving surfaces were also found. The limestone is from a source along the Jurassic Lincolnshire limestone ridge, perhaps Clipsham or Barnack Ragstone. The remainder of the assemblage is made up of miscellaneous stone perhaps used for consolidating pathways or in garden features.

## **6.6 The Metalworking Debris**

By Sarah Percival

Thirty-eight pieces of putative metalworking debris weighing 2,739g were recovered from nine contexts (Appendix 7).

The bulk of the assemblage is undiagnostic ferrous working waste. The 2,270g of material recovered from (81) is burnt clinker or furnace waste, perhaps associated with a boiler or heated greenhouse. One piece, from context (236), is possibly from a smithing hearth base.

## **6.7 The Faunal Remains**

By Julie Curl

All of the bone was briefly scanned to determine range of species and elements present. A note was also made of butchering and any indications of skinning, hornworking and other modifications. When possible a record was made of ages and any other relevant information, such as pathologies. Counts and weights were noted for each context that was examined in more detail. All information was recorded on the faunal remains recording sheets. The assessment was carried out following a modified version of guidelines by English Heritage (Davis 1992).



### 6.7.1 The Assemblage

A total of 13,774g of faunal remains, consisting of 896 pieces, was recovered from 77 contexts during excavations at Ayscoughfee Hall (Appendix 8). All of the bone is in good condition, although highly fragmented from butchering. Canid gnawing was seen on several bones, suggesting meat or meat waste given to dogs. Rodent gnawing was seen on at least one bone, indicative of dumped material available for such scavenging. Only one fragment of burnt bone was seen in context (138).

At least eight positive species identifications were made during the scan and further species were noted, but not confirmed; quantification of these species and groups are in Table 4.

Species or Species Group	Number of Bones
Bird – not identified to species	28
Bird – Crane – <i>Grus grus</i>	1
Cattle – <i>Bos taurus</i>	105
Deer – Fallow – <i>Dama dama</i>	12
Dog – <i>Canis</i> sp.	39
Equid – <i>Equus</i> sp.	4
Feline – <i>Felis catus</i>	1
Fish – not identified to species	6
Mammal – not identified to species	570
Pig – <i>Sus scrofa</i>	31
Sheep/goat – <i>Ovis/Capra</i>	98
Small mammal – not identified to species	1
<i>Total</i>	<i>896</i>

Table 4. Species and groups identified in the faunal assemblage.

### 6.7.2 Observations and Discussion

Cattle, sheep/goat and pig were the most frequently observed animals in this assemblage, much of which was butchered, with a variety of cuts of meat represented. Four fills produced remains of fallow deer, only waste from meat production was seen with this species, no antler was recorded.

Butchering on the mammal bone was frequent and often heavy. Numerous cuts were seen on metapodials, phalanges and other foot bones from skinning, some of these bones were also chopped, suggesting their use for marrow. Further evidence for the use of bones for marrow came with three sections of cattle bone from (61) were between 43mm and 70mm long; two pieces had been sawn at either end of the section, one distal femur was sawn at the proximal end only. These sections of bone would be roasted and the marrow scooped out and eaten.

A range of birds were seen during the assessment. A distal humerus from a crane (*Grus grus*) noted in (199). A coracoid from ?grey heron was found in (134), this wingbone bears a knife cut that attests to the bird being utilised. Two species of bird were seen in (224), including a probable duck and a possible pheasant was noted in (241). An unidentified, short and stocky, butchered and gnawed bird femur was seen in (238) which may be attributed to ?turkey. The bird remains need further identification with comparative reference material.



One equid tibia was found in (61). Equid teeth were noted in (134) which have a high calculus build-up and are well worn, a further molar was recorded from (196). At least one small mammal bone was noted and sparse remains of large fish were seen, suggesting further variety to the diet.

Remains of a large dog were recorded from context (12) with an ulna, tibia, radius, scapula and vertebrae; the ulna had been clearly butchered with several knife cuts. Further bones from a large dog were seen in (15), (175) and (179), all of which had been butchered. This butchering of dogs suggests the hounds may have been skinned and possibly used for meat, although not necessarily for human consumption, but possible for other dogs. Further dog remains were noted in (196) and (241); canid gnawing was also seen on meat waste in (61) and (134). A young skinned cat was also seen in (230) with a tibia showing knife cuts. Cat gnawing was also seen on the bird bone in (238).

Pathologies were seen during the scan and included enamel hypoplasia on pig teeth in (236). Slight pathology was noted on a cattle proximal phalange in (92c) with some exotoses on the distal end.

### **6.7.3 Conclusions**

The bulk of the bone in this assemblage is derived from cattle, sheep/goat and pig, with a range of cuts of meat provided from these. The range of bird bones, in particular the presence of common crane, suggest a high-status diet. The bird bone in this assemblage also includes a possible heron and other wild species. Further high-status eating is also indicated with the bones of fallow deer, a meat generally only consumed by the upper classes. Possible hunting animals are indicated with the dogs present; the butchering of these dogs would suggest that they were not domestic pets.

## **7.0 THE ENVIRONMENTAL EVIDENCE**

Twelve environmental samples were collected, eight bulk and four column, plus four window samples from well [10]. These were collected in accordance with advice from Tom Hill of the University of Birmingham, and processed by Birmingham Archaeo-Environmental (BAE). The results of this sampling are included here as Appendix 9 (Hill *et al.* 2008).

It was hoped that palynological assessments of the former gardens would determine the types of plants and flowers grown during the 18th and 19th centuries. However, high levels of bioturbation had affected the upper deposits in all of the trenches and it was not possible to distinguish between the modern topsoil and that of the former garden plots. In addition, three window sample cores were extracted from a well to the east of the Hall. However, the majority of the sediments encountered are believed to be fluvial and derive from the River Welland, rendering their analysis unnecessary.

Further excavations revealed a series of possible pits dissected by medieval and post-medieval culverts. Organic remains were found to be present in these pits that were deemed suitable for palaeoenvironmental assessment.

Tree ring analyses of 6 yew trees from within the grounds indicated that a number of the trees may date back to the initial landscaping undertaken by Johnson in 1732.



## 8.0 CONCLUSIONS

The excavation succeeded in locating evidence for Late Saxon and early medieval activity (probably indicative of occupation in the immediate area) in the area of the south lawn. While the latter areas represent a comparatively small sample it is reasonable to infer that associated activity is more widespread across the area. Its discovery represents an important addition to knowledge about the development of settlement in Spalding east of the River Welland, and may to some extent confirm the theory advanced in some quarters (Penn 2008) that the site lies within the manor of Guy de Craon.

Remains found in the area of south lawn indicate an intensification of activity in the 15th century, possibly reflecting the establishment of the earliest phase of the Hall. Although little is known about the extent of the grounds at this time it has been suggested that the outlines of three separate land units aligned with the river may be discernible in the layout of the garden. The east-west wall (probably late medieval) found in Trench 3 does not align with any of these putative boundaries, but could define the boundary between earlier land units.

The post-medieval period witnessed the construction of a culvert system (probably associated with drainage from the house and the maintenance of water levels in the canal depicted by Grundy in 1732) and the erection of an outbuilding interpreted as a possible hothouse in the area immediately east of the Hall. The later may represent a significant discovery in light of a possible association with the Maurice Johnson II. Further documentary research may yield new relating to his botanical interests.

A small outbuilding found in the north-western corner of the south garden is probably a latrine, possibly provided for visitors to the garden. While documentary evidence indicates a late 18th- or 19th-century construction, the probable cess-pit (not shown on Grundy's map) would appear to predate the building and, it seems, the adjacent wall.

The western boundary walls were investigated at two locations, each revealing prior phases of wall construction. However, dating of these earlier phases was problematic owing to the disturbance of deposits in adjacent flower beds.

There was a reduction in post-medieval activity visible in the trenches, probably reflecting changes in land-use from occupation to pleasure garden.

The discovery of well-preserved medieval remains in the grounds of Ayscoughfee Hall represents a significant addition to knowledge of the archaeology of Spalding and offers the potential to further understand the development of the early Hall.



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## Appendix 1a: Context Summary

Context	Category	Description	Period
001	Deposit	Topsoil – Trench 1	Modern
002	Deposit	Hardcore	Modern
003	Deposit	Make-up layer	Post-medieval
004	Structural	Brick floor	Post-medieval
005	Deposit	Fill of service trench [6]	Modern
006	Cut	Service trench	Modern
007	Deposit	Make-up layer	Post-medieval
008	Deposit	Make-up layer	Post-medieval
009	Structural	Well capping	?Medieval
010	Structural	Well	?Medieval
011	Deposit	Topsoil – Trench 4	Modern
012	Deposit	Subsoil – Trench 4	Modern
013	Deposit	Fill of pit [14]	Modern
014	Cut	Pit	Modern
015	Deposit	Flood deposits	Medieval
016	Deposit	Fill of construction cut [49]	Post-medieval
017	Deposit	Fill of hedge line [18]	Undated
018	Cut	Cut of hedge line	Undated
019	Deposit	Fill of hedge line [20]	Undated
020	Cut	Cut of hedge line	Undated
021	Deposit	Fill of hedge line [22]	Undated
022	Cut	Cut of hedge line	Undated
023	Deposit	Topsoil – trench 6	Undated
024	Deposit	Surface	Post-medieval
025	Deposit	Layer	Post-medieval
026	VOID	VOID	VOID
027	Deposit	Fill of construction cut [29]	Post-medieval
028	Cut	Construction trench	Post-medieval
029	Structural	Brick outhouse	Post-medieval
030	Deposit	Demolition layer	Post-medieval
031	Deposit	Foundation layer	Post-medieval
032	Structural	Internal wall of outhouse (29)	Post-medieval
033	Deposit	Fill of ?well [44]	Post-medieval
034	Deposit	Soil horizon	Post-medieval
035	Deposit	Demolition layer	Post-medieval
036	Deposit	Layer	Post-medieval
037	Deposit	Flood deposits	Medieval
038	Deposit	Path make up	Post-medieval
039	Deposit	Layer	Medieval
040	VOID	VOID	VOID
041	VOID	VOID	VOID
042	VOID	VOID	VOID
043	Structural	Boundary wall	Post-medieval
044	Structural	?Well	Post-medieval



Context	Category	Description	Period
045	Deposit	Flood deposits	Medieval
046	Deposit	Flood deposits	Medieval
047	Deposit	Fill of trench [49]	Post-medieval
048	Structural	Culvert	Post-medieval
049	Cut	Construction cut for culvert (48)	Post-medieval
050	Deposit	Flood deposits	Medieval
051	Deposit	Flood deposits	Medieval
052	Structural	Wall buttress	Undated
053	Structural	Garden wall	Undated
054	Structural	Garden wall foundations	Undated
055	Deposit	Subsoil	Undated
056	Deposit	Flood deposits	Undated
057	Deposit	Topsoil	Modern
058	Deposit	Make up layer for path	Modern
059	Cut	Pit cut	Undated
060	Deposit	U/S FINDS TR.1	Undated
061	Deposit	U/S FINDS TR.2	11th–19th century
062	Deposit	U/S FINDS TR.3	15th–20th century
063	Deposit	U/S FINDS TR.4	17th–18th century
064	Deposit	U/S FINDS TR.5	10th–20th century
065	Deposit	U/S FINDS TR.6	Undated
066	Deposit	U/S FINDS TR.7	Undated
067	Deposit	U/S FINDS TR.8	16th–20th century
068	Deposit	U/S FINDS TR.9	18th–20th century
069	Deposit	U/S FINDS TR.10	Undated
070	Deposit	Topsoil Tr.8	Modern
071	Deposit	Fill of trench [76]	Post-medieval
072	Deposit	Fill of trench [76]	Post-medieval
073	Deposit	Make-up layer	Medieval
074	Deposit	Flood deposits	Medieval
075	Deposit	Flood deposit.	Medieval
076	Cut	Trench ?construction cut	Post-medieval
077	Deposit	Fill of construction cut [78]	Post-medieval
078	Cut	Construction cut	Post-medieval
079	Structural	Garden wall	Post-medieval
080	Structural	Wall foundation	Post-medieval
081	Deposit	Fill of robber trench [96]	Modern
082	VOID	VOID	VOID
083	Deposit	Fill of robber trench [96]	Modern
084	VOID	VOID	VOID
085	Structural	Concrete footings	Modern
086	Deposit	Topsoil – Trench 3	Modern
087	Deposit	Layer	Post-medieval
088	Deposit	Upper fill of robber trench [90]	Post-medieval
089	Deposit	Fill of robber trench [90]	Post-medieval
090	Cut	Robber trench	Post-medieval



Context	Category	Description	Period
091	Deposit	U/S FINDS TR.3	12th-17th century
092	Deposit	FINDS FROM (128)	Medieval
093	Deposit	FINDS FROM (132)	Post-medieval
094	Deposit	FINDS FROM 'HIGH' AREA TR.3	Undated
095	Deposit	FINDS FROM (132)	Post-medieval
096	Cut	Robber trench	Modern
097	Structural	Furnace	Post-medieval
098	Deposit	Fill over grate (furnace)	Post-medieval
099	Deposit	Fill under grate (furnace)	Post-medieval
100	Deposit	Fill of pit [101]	Modern
101	Cut	Pit	Modern
102	Deposit	Make-up layer	Post-medieval
103	Deposit	Coal debris	Post-medieval
104	Cut	Post-hole	Post-medieval
105	Deposit	Fill of post-hole [104]	Post-medieval
106	Deposit	Floor make-up layer	Post-medieval
107	Deposit	Path surface	Post-medieval
108	Deposit	Fill of pit [139]	Medieval
109	Deposit	Fill of pit [139]	Medieval
110	Deposit	?Fill of pit [139]	Medieval
111	Deposit	Cobbled surface	Modern
112	Cut	Construction cut for boiler	Post-medieval
113	Deposit	Floor surface	Post-medieval
114	Deposit	Make-up layer	Undated
115	Deposit	Make-up layer	Post-medieval
116	Deposit	Topsoil - trench 9	Modern
117	Deposit	Backfill layer	Post-medieval
118	Deposit	Backfill layer	Post-medieval
119	Deposit	U/S FINDS TR.9	16th-20th century
120	Structural	Wall foundations	Medieval
121	Deposit	Fill of culvert trench [123]	Post-medieval
122	Structural	Culvert	Post-medieval
123	Cut	Construction cut for culvert	Post-medieval
124	Deposit	Fill of ?pit [29]	Post-medieval
125	Structural	Stone surface	Post-medieval
126	Structural	Wall foundations	Post-medieval
127	Structural	?Floor surface	Post-medieval
128	Deposit	Layer	Medieval
129	Deposit	Layer	Medieval
130	Deposit	Layer	Medieval
131	Cut	Cut?	Medieval
132	Deposit	Layer	Post-medieval
133	Deposit	Layer	Post-medieval
134	Deposit	Layer	Post-medieval
135	Deposit	Fill of cut [136]	Post-medieval
136	Cut	Indeterminate cut	Post-medieval



Context	Category	Description	Period
137	Deposit	Fill of pit [139]	Medieval
138	Deposit	Fill of pit [139]	Medieval
139	Cut	Pit?	Medieval
140	Deposit	Fill of construction cut [123]	Post-medieval
141	Deposit	Layer/Fill?	Medieval
142	Deposit	Fill of pit [144]	Post-medieval
143	Deposit	Fill of pit [144]	Post-medieval
144	Cut	?Pit	Post-medieval
145	Deposit	Layer	Post-medieval
146	Deposit	Layer	Post-medieval
147	Deposit	Layer	Post-medieval
148	Deposit	Layer	Post-medieval
149	Deposit	Topsoil – Trench 5	Undated
150	Deposit	Layer	Undated
151	Deposit	Layer	Undated
152	Deposit	Layer	Undated
153	Deposit	Layer	Undated
154	Deposit	Layer	Undated
155	Deposit	Layer	Undated
156	Deposit	Fill of cut [131]	Medieval
157	Deposit	Duplicate of (124)	Post-medieval
158	Deposit	Duplicate of (168)/(169)	Post-medieval
159	Deposit	Layer	Post-medieval
160	Deposit	Duplicate of (174)	Post-medieval
161	Deposit	Duplicate of (170)	Post-medieval
162	Cut	Construction cut	Medieval
163	Deposit	Finds from multiple contexts	10th–17th century
164	Deposit	Natural in Trench 3	Medieval
165	Deposit	Finds from multiple contexts	10th–15th century
166	Deposit	Layer/Fill?	Medieval
167	Deposit	Layer	Undated
168	Structural	Wall	Post-medieval
169	Deposit	Fill of construction cut for wall (168)	Post-medieval
170	Structural	Wall	Post-medieval
171	Structural	Wall	Post-medieval
172	Structural	Wall	Post-medieval
173	Deposit	Layer	Post-medieval
174	Deposit	Layer	Post-medieval
175	Deposit	U/S FINDS TR. 4a	Medieval/Post-medieval
176	Deposit	U/S FINDS TR. 3a	13th–18th century
177	VOID	VOID	VOID
178	VOID	VOID	VOID
179	Deposit	Fill of pit [180]	Post-medieval
180	Cut	Pit	Post-medieval
181	Deposit	Fill of pit [182]	Post-medieval
182	Cut	Pit	Post-medieval



Context	Category	Description	Period
183	Deposit	Fill of pit [184]	Post-medieval
184	Cut	Pit	Post-medieval
185	Deposit	Fill of pit [186]	Post-medieval
186	Cut	Pit	Post-medieval
187	Deposit	Fill of pit [188]	Post-medieval
188	Cut	Pit	Post-medieval
189	Deposit	Fill of gully/hollow [190]	Post-medieval
190	Cut	Gully/hollow	Post-medieval
191	Deposit	Backfill	Post-medieval
192	Deposit	Backfill	Post-medieval
193	Deposit	Modern trample	Modern
194	Deposit	Tarmac path	Modern
195	Deposit	Layer	Undated
196	Deposit	Fill of pit [203]	Post-medieval
197	Deposit	Topsoil – Trench 4a	Post-medieval
198	Deposit	Layer	Post-medieval
199	Deposit	Fill of culvert [207]	Post-medieval
200	Deposit	Layer	Post-medieval
201	VOID	VOID	VOID
202	Structural	Surface	Post-medieval
203	Cut	Pit?	Post-medieval
204	Deposit	Fill of [205]	Post-medieval
205	Cut	Pit?	Post-medieval
206	Deposit	Fill of [207]	Post-medieval
207	Cut	Construction trench	Post-medieval
208	Structural	Culvert	Post-medieval
209	Deposit	Fill of [210]	Post-medieval
210	Cut	Construction trench	Post-medieval
211	Deposit	U/S FINDS TR. 4a	Undated
212	Deposit	Fill of culvert [122]	Post-medieval
213	Structural	Surface?	Post-medieval
214	Deposit	Fill of post-hole [215]	Post-medieval
215	Cut	Post-hole	Post-medieval
216	Deposit	Fill of gully [217]	Post-medieval
217	Cut	Gully/Hollow?	Post-medieval
218	Structural	Structure?	Post-medieval
219	Deposit	Layer	Post-medieval
220	Deposit	Flood deposit	Post-medieval
221	Deposit	Layer?	Medieval
222	Deposit	Layer	Medieval
223	Cut	Linear cut	Medieval
224	Deposit	Fill of pit [226]	Medieval
225	Deposit	Fill of pit [226]	Medieval
226	Cut	Pit	Medieval
227	Deposit	Fill of pit [226]	Medieval
228	Deposit	Fill of pit [229]	Medieval



Context	Category	Description	Period
229	Cut	Pit	Medieval
230	Deposit	Layer	Medieval
231	Deposit	Layer	Medieval
232	Deposit	Layer	Medieval
233	Deposit	Layer	Medieval
234	Deposit	Layer?	Medieval
235	Deposit	Layer?	Medieval
236	Deposit	Layer / Fill?	Medieval
237	VOID	VOID	VOID
238	Deposit	Layer?	Medieval
239	Deposit	Fill of cut [240]	Medieval
240	Cut	Pit?	Medieval
241	Deposit	Fill of pit [242]	Medieval
242	Cut	Pit	Medieval
243	Deposit	Layer	Undated
244	Deposit	Layer	Undated
245	Deposit	Fill of cut [246]	Undated
246	Cut	?Natural feature	Undated
247	Structural	Wall	Post-medieval
248	Deposit	Fill of [203]	Post-medieval
249	Deposit	Layer / Fill	Post-medieval
250	Deposit	Layer?	Undated
251	Deposit	Layer?	Undated
252	Deposit	Layer	Medieval
253	Deposit	Fill of pit [256]	Medieval
254	Deposit	Fill of pit [256]	Medieval
255	Deposit	Fill of pit [256]	Medieval
256	Cut	Pit?	Medieval
257	Cut	Cut containing stone layers	Medieval
258	Deposit	Fill of [223]	Medieval
259	Deposit	Layer	Post-medieval
260	Structural	Wall	Post-medieval
261	Deposit	Wall	Post-medieval
262	Structural	Wall	Post-medieval
263	Deposit	Layer?	Post-medieval
264	Deposit	Layer?	Post-medieval
265	Structural	Well	Post-medieval
266	Deposit	Fill of pit [44]	Post-medieval
267	Deposit	Silting within brick culvert (208)	Post-medieval



**Appendix 1b: OASIS feature summary table**

Period	Feature type	Quantity
Unknown	Pit	1
	Layer	17
	Hedge line	3
	Wall buttress	1
	Wall	1
	Flood deposits	1
	?Natural feature	1
Medieval (1066 to 1539AD)	Layer	19
	Flood deposits	7
	Wall	1
	?Cut	1
	Pit	7
	Construction cut	1
	Linear cut	1
Post-medieval (1540 to 1900AD)	Well	1
	Floor surface	7
	Culvert	3
	Indeterminate cut	1
	Pit	7
	Gully	2
	Structure	1
	Flood deposit	1
	Construction cut	8
	Wall	14
	Layer	36
	Robber trench	1
	Furnace	1
	Post-hole	2
Modern (1900 to 2050 AD)	Path surface	1
	Well	2
	Pit	2
	Service trench	1
	Robber trench	1
	Layers	10
	Cobbled surface	1



## Appendix 2a: Finds by Context

Context	Material	Quantity	Weight (g)	Period
11	Ceramic Building Material	21	1134	Medieval
11	Pottery	3	24	Medieval
11	Clay Pipe	3	13	Post-medieval
11	Pottery	13	149	Post-medieval
11	Animal Bone	–	496	Undiagnostic
11	Shell	–	12	Undiagnostic
12	Ceramic Building Material	6	347	Medieval
12	Pottery	11	111	Medieval
12	Clay Pipe	6	35	Post-medieval
12	Pottery	32	635	Post-medieval
12	Animal Bone	–	839	Undiagnostic
12	Shell	–	106	Undiagnostic
12	Stone	1	53	Undiagnostic
13	Ceramic Building Material	1	168	Medieval
13	Ceramic Building Material	1	34	Post-medieval
13	Clay Pipe	5	50	Post-medieval
13	Pottery	1	112	Post-medieval
13	Animal Bone	–	63	Undiagnostic
15	Ceramic Building Material	2	57	Medieval
15	Pottery	1	6	Medieval
15	Clay Pipe	1	5	Post-medieval
15	Pottery	10	225	Post-medieval
15	Animal Bone	–	304	Undiagnostic
15	Shell	–	2	Undiagnostic
16	Pottery	1	10	Medieval
16	Animal Bone	–	53	Undiagnostic
17	Ceramic Building Material	1	1540	Medieval
17	Clay Pipe	1	7	Post-medieval
17	Pottery	2	65	Post-medieval
17	Shell	–	56	Undiagnostic
25	Ceramic Building Material	9	349	Medieval
25	Ceramic Building Material	1	200	Post-medieval
25	Mortar	2	23	Undiagnostic
27	Clay Pipe	3	2	Post-medieval
30	Ceramic Building Material	1	58	Medieval
30	Clay Pipe	1	4	Post-medieval
30	Plaster	11	196	Undiagnostic
33	Ceramic Building Material	3	201	Medieval
33	Pottery	2	42	Medieval
33	Ceramic Building Material	17	2995	Post-medieval
33	Clay Pipe	13	41	Post-medieval
33	Pottery	7	61	Post-medieval
33	Animal Bone	–	69	Undiagnostic
33	Mortar	3	92	Undiagnostic



Context	Material	Quantity	Weight (g)	Period
33	Plaster	21	1427	Undiagnostic
33	Stone	9	842	Undiagnostic
34	Ceramic Building Material	4	382	Medieval
34	Ceramic Building Material	3	65	Post-medieval
34	Clay Pipe	2	6	Post-medieval
35	Ceramic Building Material	3	186	Medieval
35	Ceramic Building Material	1	8	Post-medieval
35	Plaster	6	683	Undiagnostic
36	Ceramic Building Material	2	49	Medieval
36	Pottery	1	33	Post-medieval
36	Animal Bone	—	20	Undiagnostic
36	Metalworking Debris	1	46	Undiagnostic
37	Ceramic Building Material	2	133	Medieval
37	Pottery	1	11	Medieval
37	Pottery	1	20	Post-medieval
37	Animal Bone	—	2	Undiagnostic
37	Shell	—	393	Undiagnostic
39	Ceramic Building Material	4	83	Medieval
39	Pottery	4	120	Medieval
39	Animal Bone	—	156	Undiagnostic
40	Pottery	1	5	Late Saxon
40	Pottery	2	111	Medieval
40	Pottery	2	35	Post-medieval
40	Animal Bone	—	91	Undiagnostic
41	Ceramic Building Material	1	23	Medieval
41	Pottery	3	46	Medieval
41	Animal Bone	—	41	Undiagnostic
41	Shell	—	12	Undiagnostic
47	Pottery	3	161	Post-medieval
47	Animal Bone	—	10	Undiagnostic
47	Shell	—	15	Undiagnostic
57	Ceramic Building Material	1	26	Post-medieval
57	Pottery	1	18	Post-medieval
57	Plaster	1	9	Undiagnostic
61	Ceramic Building Material	2	83	Medieval
61	Pottery	6	94	Medieval
61	Clay Pipe	14	48	Post-medieval
61	Pottery	19	254	Post-medieval
61	Animal Bone	—	2377	Undiagnostic
61	Shell	—	19	Undiagnostic
61	Stone	6	546	Undiagnostic
62	Clay Pipe	2	15	Post-medieval
62	Pottery	9	138	Post-medieval
62	Animal Bone	—	99	Undiagnostic
63	Pottery	2	49	Post-medieval
64	Ceramic Building Material	3	55	Medieval



Context	Material	Quantity	Weight (g)	Period
64	Pottery	6	93	Medieval
64	Ceramic Building Material	2	88	Post-medieval
64	Clay Pipe	8	31	Post-medieval
64	Pottery	41	416	Post-medieval
64	Animal Bone	–	561	Undiagnostic
64	Metalworking Debris	1	2	Undiagnostic
64	Shell	–	21	Undiagnostic
64	Stone	2	60	Undiagnostic
65	Animal Bone	–	6	Undiagnostic
66	Animal Bone	–	46	Undiagnostic
67	Clay Pipe	1	2	Post-medieval
67	Pottery	2	34	Post-medieval
68	Ceramic Building Material	1	12	Post-medieval
68	Pottery	3	15	Post-medieval
68	Animal Bone	–	4	Undiagnostic
69	Animal Bone	–	27	Undiagnostic
75	Pottery	2	119	Medieval
81	Ceramic Building Material	1	560	Post-medieval
81	Metalworking Debris	29	2270	Undiagnostic
83	Ceramic Building Material	6	1238	Post-medieval
86	Pottery	3	26	Medieval
86	Clay Pipe	7	54	Post-medieval
86	Pottery	19	1292	Post-medieval
86	Animal Bone	–	227	Undiagnostic
86	Shell	–	106	Undiagnostic
86	Stone	1	48	Undiagnostic
87	Ceramic Building Material	2	88	Medieval
87	Pottery	4	41	Medieval
87	Clay Pipe	3	11	Post-medieval
87	Pottery	5	131	Post-medieval
87	Animal Bone	–	98	Undiagnostic
88	Pottery	1	4	Medieval
88	Pottery	1	3	Post-medieval
89	Ceramic Building Material	62	4023	Medieval
89	Mortar	2	179	Undiagnostic
91	Ceramic Building Material	1	6	Medieval
91	Pottery	2	36	Medieval
91	Pottery	11	176	Post-medieval
91	Animal Bone	–	250	Undiagnostic
92a	Ceramic Building Material	13	949	Medieval
92a	Pottery	7	88	Medieval
92a	Ceramic Building Material	1	36	Post-medieval
92a	Pottery	8	100	Post-medieval
92a	Animal Bone	–	47	Undiagnostic
92a	Shell	–	2	Undiagnostic
92b	Ceramic Building Material	16	957	Medieval



Context	Material	Quantity	Weight (g)	Period
92b	Pottery	2	12	Medieval
92b	Pottery	8	115	Post-medieval
92b	Animal Bone	–	59	Undiagnostic
92b	Shell	–	6	Undiagnostic
92c	Ceramic Building Material	5	345	Medieval
92c	Pottery	7	78	Medieval
92c	Animal Bone	–	87	Undiagnostic
92d	Ceramic Building Material	1	13	Medieval
92d	Pottery	7	87	Medieval
92d	Pottery	1	6	Post-medieval
92d	Animal Bone	–	19	Undiagnostic
92d	Shell	–	12	Undiagnostic
93a	Ceramic Building Material	8	234	Medieval
93a	Pottery	4	29	Medieval
93a	Pottery	2	25	Post-medieval
93a	Animal Bone	–	11	Undiagnostic
93b	Ceramic Building Material	8	138	Medieval
93b	Pottery	12	140	Medieval
93b	Pottery	2	10	Post-medieval
93b	Animal Bone	–	196	Undiagnostic
93b	Shell	–	82	Undiagnostic
93c	Ceramic Building Material	9	287	Medieval
93c	Pottery	15	176	Medieval
93c	Pottery	10	333	Post-medieval
93c	Animal Bone	–	330	Undiagnostic
93c	Shell	–	30	Undiagnostic
93d	Ceramic Building Material	4	77	Medieval
93d	Pottery	8	102	Medieval
93d	Pottery	2	50	Post-medieval
93d	Animal Bone	–	170	Undiagnostic
93d	Metalworking Debris	1	64	Undiagnostic
93d	Shell	–	57	Undiagnostic
93e	Ceramic Building Material	10	674	Medieval
93e	Pottery	20	177	Medieval
93e	Pottery	4	110	Post-medieval
93e	Animal Bone	–	184	Undiagnostic
93e	Shell	–	12	Undiagnostic
95	Pottery	5	37	Medieval
95	Pottery	2	4	Post-medieval
95	Animal Bone	–	83	Undiagnostic
95	Shell	–	4	Undiagnostic
100	Clay Pipe	2	12	Post-medieval
100	Pottery	1	20	Post-medieval
100	Animal Bone	–	7	Undiagnostic
100	Stone	2	16	Undiagnostic
103	Clay Pipe	15	75	Post-medieval



Context	Material	Quantity	Weight (g)	Period
103	Plaster	2	149	Undiagnostic
107	Clay Pipe	18	77	Post-medieval
107	Pottery	6	110	Post-medieval
107	Animal Bone	–	22	Undiagnostic
108	Pottery	6	89	Medieval
108	Pottery	2	86	Post-medieval
108	Animal Bone	–	36	Undiagnostic
109	Animal Bone	–	3	Undiagnostic
110	Pottery	1	7	Medieval
110	Animal Bone	–	2	Undiagnostic
114	Ceramic Building Material	1	93	Medieval
114	Clay Pipe	3	6	Post-medieval
114	Pottery	8	171	Post-medieval
114	Animal Bone	–	195	Undiagnostic
114	Shell	–	43	Undiagnostic
116	Ceramic Building Material	3	167	Medieval
116	Ceramic Building Material	1	23	Post-medieval
116	Clay Pipe	1	2	Post-medieval
116	Pottery	6	25	Post-medieval
116	Animal Bone	–	21	Undiagnostic
117	Ceramic Building Material	10	804	Medieval
117	Clay Pipe	1	1	Post-medieval
117	Pottery	11	58	Post-medieval
117	Animal Bone	–	2	Undiagnostic
117	Mortar	1	64	Undiagnostic
117	Shell	–	11	Undiagnostic
117	Stone	5	99	Undiagnostic
118	Ceramic Building Material	2	37	Medieval
118	Pottery	3	33	Medieval
118	Ceramic Building Material	2	427	Post-medieval
118	Clay Pipe	2	4	Post-medieval
118	Pottery	12	101	Post-medieval
118	Animal Bone	–	270	Undiagnostic
118	Metalworking Debris	1	9	Undiagnostic
118	Shell	–	63	Undiagnostic
118	Stone	1	12	Undiagnostic
119	Ceramic Building Material	2	326	Post-medieval
119	Pottery	13	107	Post-medieval
119	Animal Bone	–	59	Undiagnostic
119	Shell	–	21	Undiagnostic
119	Stone	1	99	Undiagnostic
121	Pottery	21	336	Medieval
121	Pottery	7	276	Post-medieval
121	Animal Bone	–	224	Undiagnostic
122	Ceramic Building Material	2	5979	Medieval
124	Pottery	1	13	Medieval



Context	Material	Quantity	Weight (g)	Period
124	Clay Pipe	1	1	Post-medieval
124	Animal Bone	–	11	Undiagnostic
124	Plaster	3	531	Undiagnostic
124	Stone	3	78	Undiagnostic
129	Pottery	15	132	Medieval
129	Animal Bone	–	101	Undiagnostic
129	Shell	–	1	Undiagnostic
130	Pottery	2	7	Medieval
130	Animal Bone	–	87	Undiagnostic
130	Stone	1	56	Undiagnostic
132	Ceramic Building Material	8	935	Medieval
132	Pottery	73	1012	Medieval
132	Pottery	1	5	Post-medieval
132	Animal Bone	–	900	Undiagnostic
132	Metalworking Debris	2	20	Undiagnostic
132	Shell	–	55	Undiagnostic
132	Stone	1	60	Undiagnostic
134	Ceramic Building Material	3	34	Medieval
134	Pottery	79	1210	Medieval
134	Animal Bone	–	739	Undiagnostic
134	Metalworking Debris	1	44	Undiagnostic
134	Shell	–	4	Undiagnostic
134	Stone	3	114	Undiagnostic
138	Ceramic Building Material	2	19	Medieval
138	Pottery	4	88	Medieval
138	Animal Bone	–	25	Undiagnostic
138	Shell	–	1	Undiagnostic
156	Pottery	3	15	Medieval
156	Animal Bone	–	59	Undiagnostic
163	Ceramic Building Material	3	139	Medieval
163	Pottery	18	177	Medieval
163	Animal Bone	–	49	Undiagnostic
163	Stone	1	149	Undiagnostic
165	Ceramic Building Material	1	22	Medieval
165	Pottery	3	17	Medieval
165	Animal Bone	–	40	Undiagnostic
166	Pottery	20	168	Medieval
166	Animal Bone	–	174	Undiagnostic
175	Ceramic Building Material	1	25	Medieval
175	Pottery	8	88	Medieval
175	Clay Pipe	5	19	Post-medieval
175	Pottery	9	101	Post-medieval
175	Animal Bone	–	215	Undiagnostic
176	Pottery	2	46	Medieval
176	Pottery	7	640	Post-medieval
176	Animal Bone	–	343	Undiagnostic



Context	Material	Quantity	Weight (g)	Period
179	Ceramic Building Material	1	63	Medieval
179	Pottery	8	85	Medieval
179	Animal Bone	–	78	Undiagnostic
179	Mortar	1	34	Undiagnostic
179	Shell	–	9	Undiagnostic
181	Animal Bone	–	6	Undiagnostic
183	Pottery	2	14	Medieval
183	Animal Bone	–	30	Undiagnostic
183	Shell	–	3	Undiagnostic
183	Stone	1	11	Undiagnostic
196	Ceramic Building Material	12	428	Medieval
196	Pottery	29	447	Medieval
196	Clay Pipe	2	9	Post-medieval
196	Pottery	6	89	Post-medieval
196	Animal Bone	–	597	Undiagnostic
196	Shell	–	84	Undiagnostic
196	Stone	4	187	Undiagnostic
199	Ceramic Building Material	9	409	Medieval
199	Pottery	19	229	Medieval
199	Animal Bone	–	272	Undiagnostic
199	Shell	–	128	Undiagnostic
199	Stone	1	45	Undiagnostic
200	Ceramic Building Material	2	135	Medieval
200	Pottery	25	354	Medieval
200	Clay Pipe	1	6	Post-medieval
200	Pottery	1	10	Post-medieval
200	Animal Bone	–	198	Undiagnostic
200	Shell	–	34	Undiagnostic
200	Stone	1	104	Undiagnostic
204	Pottery	1	28	Late Saxon
204	Ceramic Building Material	1	35	Medieval
204	Pottery	12	90	Medieval
204	Animal Bone	–	87	Undiagnostic
204	Shell	–	44	Undiagnostic
207	Ceramic Building Material	3	161	Medieval
207	Pottery	17	385	Medieval
207	Ceramic Building Material	2	279	Post-medieval
207	Animal Bone	–	314	Undiagnostic
207	Shell	–	72	Undiagnostic
207	Stone	3	246	Undiagnostic
208	Ceramic Building Material	2	4806	Medieval
210	Pottery	2	164	Medieval
210	Stone	1	47	Undiagnostic
214	Pottery	1	9	Medieval
214	Animal Bone	–	4	Undiagnostic
220	Animal Bone	–	23	Undiagnostic



Context	Material	Quantity	Weight (g)	Period
221	Pottery	4	46	Medieval
221	Animal Bone	–	82	Undiagnostic
221	Metalworking Debris	1	94	Undiagnostic
222	Pottery	5	43	Medieval
222	Animal Bone	–	18	Undiagnostic
224	Ceramic Building Material	2	335	Medieval
224	Pottery	48	744	Medieval
224	Animal Bone	–	512	Undiagnostic
224	Stone	1	90	Undiagnostic
225	Pottery	8	161	Medieval
225	Animal Bone	–	29	Undiagnostic
230	Pottery	2	63	Medieval
230	Animal Bone	–	66	Undiagnostic
232	Pottery	1	33	Medieval
232	Animal Bone	–	30	Undiagnostic
233	Ceramic Building Material	3	541	Medieval
233	Pottery	1	29	Medieval
233	Animal Bone	–	175	Undiagnostic
233	Shell	–	360	Undiagnostic
234	Pottery	1	6	Medieval
234	Animal Bone	–	29	Undiagnostic
234	Shell	–	53	Undiagnostic
236	Ceramic Building Material	3	949	Medieval
236	Pottery	25	353	Medieval
236	Animal Bone	–	234	Undiagnostic
236	Metalworking Debris	1	190	Undiagnostic
236	Stone	1	72	Undiagnostic
238	Pottery	72	1214	Medieval
238	Animal Bone	–	443	Undiagnostic
238	Stone	2	242	Undiagnostic
239	Pottery	10	74	Medieval
241	Pottery	2	48	Medieval
241	Animal Bone	–	222	Undiagnostic
241	Stone	1	22	Undiagnostic
243	Pottery	20	286	Medieval
243	Animal Bone	–	176	Undiagnostic



## Appendix 2b: NHER Finds Summary Table

Period	Material	Quantity
Unknown	Animal Bone	-
	Metalworking Debris	38
	Mortar	9
	Plaster	44
	Shell	-
	Stone	53
Late Saxon (851 to 1065AD)	Pottery	2
Medieval (1066 to 1539AD)	Pottery	712
	Ceramic Building Material	278
Post-medieval (1540 to 1900AD)	Pottery	314
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### Appendix 3: Pottery

Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
011	LSNS	1	0.006	10th–E.11th c.	
011	EMWS	1	0.005	11th–12th c.	
011	BOUA	1	0.010	12th–14th c.	
011	BOUD	6	0.086	15th–E.17th c.	
011	TOYL	2	0.021	M.15th–M.16th c.	
011	CTW	1	0.011	16th c.	
011	BORD	1	0.015	16th–18th c.	
011	GRE	3	0.020	16th–18th c.	16th–17th c.
012	STAMA	1	0.003	M.10th–L.11th c.	
012	EMW	1	0.010	11th–12th c.	
012	SLQOF	1	0.004	11th–15th c.	
012	BOUA	4	0.078	12th–14th c.	
012	STAMC	2	0.007	E.12th–M.13th c.	
012	TOYN	2	0.009	M.13th–M.15th c.	
012	BOUD	22	0.409	15th–E.17th c.	
012	CTW	2	0.015	16th c.	
012	MIDP	1	0.006	L.14th–16th c.	
012	NLLM	1	0.059	15th–16th c.	
012	TOYL	3	0.062	M.15th–M.16th c.	
012	GSW4	2	0.045	16th–17th c.	
012	GRE	1	0.039	16th–18th c.	16th c.?
013	BORD	1	0.112	16th–18th c.	16th–17th c.?
015	TOYN	1	0.006	M.13th–M.15th c.	
015	BOUD	6	0.100	15th–E.17th c.	
015	CTW	3	0.017	16th c.	
015	GRE	1	0.108	16th–18th c.	16th c.
016	BOUA	1	0.009	12th–14th c.	Medieval+
017	GRE	2	0.065	16th–18th c.	16th–18th c.
033	BOUA	2	0.042	12th–14th c.	
033	LGRE	1	0.028	18th–19th c.	
033	PORC	6	0.033	18th–20th c.	18th–19th c.
036	BOUD	1	0.034	15th–E.17th c.	Late Med+
037	BOUA	1	0.011	12th–14th c.	
037	BOUD	1	0.020	15th–E.17th c.	Late Med+
039	BOUA	3	0.099	12th–14th c.	
039	SGRA	1	0.021	14th–16th c.	Late Med+
040	LSLS	1	0.005	Late Saxon	
040	TOYN	2	0.111	M.13th–M.15th c.	
040	CTW	1	0.020	16th c.	
040	GSW4	1	0.015	16th–17th c.	16th c.
041	BOUA	1	0.017	12th–14th c.	
041	TOYN	2	0.029	M.13th–M.15th c.	13th–14th c.
047	BOUD	2	0.158	15th–E.17th c.	
047	CTW	1	0.003	16th c.	16th c.



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
057	LPME	1	0.018	18th–20th c.	Modern
061	BOUA	4	0.075	12th–14th c.	
061	EMWS	1	0.010	11th–12th c.	
061	TOYN	1	0.009	M.13th–M.15th c.	
061	GRE	2	0.023	16th–18th c.	
061	IGBW	2	0.034	16th–18th c.	
061	LBW	1	0.013	18th–E.20th c.	
061	LGRE	1	0.039	18th–19th c.	
061	LPME	3	0.019	18th–20th c.	
061	REFW	9	0.116	L.18th–20th c.	
061	ESW	1	0.010	17th–19th c.	19th c.
062	BOUD	1	0.008	15th–E.17th c.	
062	CBW	1	0.056	17th c.?	
062	GRE	1	0.010	16th–18th c.	
062	IGBW	1	0.022	16th–18th c.	
062	WNBC	1	0.002	17th c.	
062	CRW	1	0.003	1730–1760	
062	SWSW	1	0.007	18th c.	
062	REFW	2	0.030	L.18th–20th c.	L.18th c.
063	CBW	1	0.042	17th c.?	
063	STAF	1	0.007	L.17th–18th c.	17th/18th c.
064	STAMA	1	0.014	M.10th–L.11th c.	
064	EMWSS	1	0.005	11th–12th c.	
064	TOYN	3	0.025	M.13th–M.15th c.	
064	LMTE	1	0.049	15th–16th c.	
064	BOUD	5	0.088	15th–E.17th c.	
064	CTW	4	0.036	16th c.	
064	UNID	1	0.009	Late med/Post-med	
064	CBW	5	0.060	17th c.?	
064	ESWN	2	0.005	L.17th–L.18th c.	
064	GRE	8	0.082	16th–18th c.	
064	IGBW	2	0.056	16th–18th c.	
064	WNBC	1	0.012	17th c.	
064	LPME	3	0.029	18th–20th c.	
064	PMSW	2	0.006	17th–19th c.	
064	TGE	3	0.006	16th–18th c.	
064	STAF	1	0.007	L.17th–18th c.	
064	STMG	2	0.003	L.17th–18th c.	
064	SPEC	1	0.001	L.17th–18th c.	
064	SWSW	1	0.016	18th c.	18th c.
067	GRE	1	0.027	16th–18th c.	
067	LPME	1	0.007	18th–20th c.	18th/19th c.
068	LPME	2	0.012	18th–20th c.	
068	REFW	1	0.003	L.18th–20th c.	19th/20th c.
075	EMW	1	0.011	11th–12th c.	
075	BOUA	1	0.108	12th–14th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
086	BOUA	2	0.022	12th-14th c.	
086	TOYN	1	0.004	M.13th-M.15th c.	
086	BOUD	1	0.027	15th-E.17th c.	
086	BORD	2	0.040	16th-18th c.	
086	CBW	15	1.220	17th c.?	
086	IGBW	1	0.005	16th-18th c.	17th c.
087	STAMA	1	0.003	M.10th-L.11th c.	
087	BOUA	1	0.007	12th-14th c.	
087	LYST	1	0.005	13th-14th c.	
087	TOYN	1	0.026	M.13th-M.15th c.	
087	BOUD	4	0.128	15th-E.17th c.	
087	CTW	1	0.003	16th c.	16th c.
088	STAMC	1	0.004	E.12th-M.13th c.	
088	CTW	1	0.003	16th c.	16th c.
091	BOUA	2	0.036	12th-14th c.	
091	BOUD	4	0.025	15th-E.17th c.	
091	TOYN	4	0.037	M.13th-M.15th c.	
091	GSW3	1	0.005	L.14th-E.16th c.	
091	TOYL	1	0.060	M.15th-M.16th c.	
091	DUTR	1	0.049	15th-17th c.	E-M.16th c.
092a	SLSNO	1	0.015	11th-12th c.	
092a	EMW	1	0.011	11th-12th c.	
092a	GRCW	1	0.016	11th-M.13th c.	
092a	BOUA	2	0.013	12th-14th c.	
092a	TOYN	1	0.029	M.13th-M.15th c.	
092a	UPG	1	0.004	L.12th-14th c.	
092a	BOUD	5	0.074	15th-E.17th c.	
092a	CTW	1	0.003	16th c.	
092a	LMTE	2	0.023	15th-16th c.	16th c.
092b	BOUA	2	0.012	12th-14th c.	
092b	BOUD	8	0.115	15th-E.17th c.	15th-16th c.
092c	STAMA	1	0.002	M.10th-L.11th c.	
092c	EMW	1	0.009	11th-12th c.	
092c	STAMB	1	0.001	M.11th-M.13th c.	
092c	BOUA	1	0.010	12th-14th c.	
092c	TOYN	3	0.056	M.13th-M.15th c.	M.13th c.?
092d	EMW	1	0.005	11th-12th c.	
092d	GRCW	1	0.007	11th-M.13th c.	
092d	BOUD	1	0.006	15th-E.17th c.	
092d	TOYN	4	0.074	M.13th-M.15th c.	
092d	UNID	1	0.001	15th c.	15th c.
093a	STAMB	1	0.001	M.11th-M.13th c.	
093a	BOUA	3	0.028	12th-14th c.	
093a	BOUD	1	0.007	15th-E.17th c.	
093a	CTW	1	0.018	16th c.	16th c.
093b	EMW	3	0.021	11th-12th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
093b	BOUA	6	0.093	12th–14th c.	
093b	TOYN	3	0.026	M.13th–M.15th c.	
093b	BOUD	2	0.010	15th–E.17th c.	15th c.
093c	EMW	4	0.049	11th–12th c.	
093c	STAMB	1	0.005	M.11th–M.13th c.	
093c	BOUA	10	0.122	12th–14th c.	
093c	BOUD	10	0.333	15th–E.17th c.	15th c.
093d	SXNO	1	0.003	850–1150	
093d	MCW	1	0.005	L.12th–14th c.	
093d	BOUA	2	0.049	12th–14th c.	
093d	TOYN	1	0.003	M.13th–M.15th c.	
093d	BOUD	2	0.050	15th–E.17th c.	
093d	GRIL	1	0.002	14th–15th c.?	
093d	TOYL	2	0.040	M.15th–M.16th c.	15th c.
093e	STNE	1	0.002	850–1150	
093e	STAMB	1	0.004	M.11th–M.13th c.	
093e	MCW	1	0.003	L.12th–14th c.	
093e	LSW1	2	0.012	12th c.	
093e	BOUA	8	0.110	12th–14th c.	
093e	LSW2	1	0.009	13th–14th c.	
093e	TOYN	5	0.034	M.13th–M.15th c.	
093e	BOUD	4	0.110	15th–E.17th c.	
093e	LMTE	1	0.003	15th–16th c.	15th c.
095	BOUA	2	0.024	12th–14th c.	
095	TOYN	3	0.013	M.13th–M.15th c.	
095	BOUD	2	0.004	15th–E.17th c.	15th c.
100	REFW	1	0.020	L.18th–20th c.	19th/20th c.
107	BOUD	3	0.072	15th–E.17th c.	
107	GSW4	2	0.025	16th–17th c.	
107	CBW	1	0.013	17th c.?	E.17th c.
108	BOUA	2	0.067	12th–14th c.	
108	NOTG	1	0.006	13th–E.14th c.	
108	LSW2	1	0.004	13th–14th c.	
108	TOYN	1	0.008	M.13th–M.15th c.	
108	DUTR	2	0.086	15th–17th c.	
108	LMGW	1	0.004	L.14th–15th c.?	15th c.?
110	TOYL	1	0.007	M.15th–M.16th c.	Late Med+
114	GSW5	1	0.040	E.17th–19th c.	
114	ESW	3	0.044	17th–19th c.	
114	LPME	2	0.071	18th–20th c.	
114	REFW	2	0.016	L.18th–20th c.	19th c.
116	TGE	1	0.002	16th–18th c.	
116	CRW	1	0.001	1730–1760	
116	LPME	3	0.014	18th–20th c.	
116	REFW	1	0.008	L.18th–20th c.	L.18th/19th c.
117	BOUD	1	0.012	15th–E.17th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
117	CBW	1	0.010	17th c.?	
117	ESW	1	0.009	17th-19th c.	
117	PORC	1	0.001	18th-20th c.	
117	SWSW	1	0.002	18th c.	
117	REFW	6	0.024	L.18th-20th c.	L.18th/19th c.
118	MSHW	1	0.008	12th-13th c.	
118	BOUA	1	0.012	12th-14th c.	
118	LMGW	1	0.013	L.14th-15th c.?	
118	BOUD	1	0.007	15th-E.17th c.	
118	CBW	1	0.044	17th c.?	
118	GRE	1	0.009	16th-18th c.	
118	TGE	1	0.004	16th-18th c.	
118	PORC	1	0.002	18th-20th c.	
118	STMG	1	0.003	L.17th-18th c.	
118	SWSW	1	0.001	18th c.	
118	REFW	5	0.031	L.18th-20th c.	L.18th c.+
119	TGE	1	0.002	16th-18th c.	
119	LPME	3	0.014	18th-20th c.	
119	REFW	8	0.084	L.18th-20th c.	
119	YELW	1	0.007	L.18th-19th c.	L.18th/19th c.
121	STAMA	1	0.012	M.10th-L.11th c.	
121	MCW	1	0.016	L.12th-14th c.	
121	MSHW	1	0.024	12th-13th c.	
121	LSW1	1	0.013	12th c.	
121	BOUA	8	0.100	12th-14th c.	
121	GRIM	1	0.020	L.12th-14th c.	
121	TOYN	4	0.052	M.13th-M.15th c.	
121	LSW3	1	0.012	14th-15th c.	
121	BOUD	7	0.276	15th-E.17th c.	
121	LMTE	2	0.027	15th-16th c.	
121	TOYL	1	0.060	M.15th-M.16th c.	15th c.
124	MCW	1	0.013	L.12th-14th c.	Med+
129	BOUA	6	0.047	12th-14th c.	
129	MCW	1	0.002	L.12th-14th c.	
129	TOYN	8	0.083	M.13th-M.15th c.	M.13th-14th c.
130	STAMA	1	0.003	M.10th-L.11th c.	
130	BOUA	1	0.004	12th-14th c.	Med+
132	LSNS	1	0.005	10th-E.11th c.	
132	EMW	7	0.034	11th-12th c.	
132	STAMB	2	0.008	M.11th-M.13th c.	
132	GRCW	1	0.047	11th-M.13th c.	
132	MCW	2	0.016	L.12th-14th c.	
132	BOUA	16	0.229	12th-14th c.	
132	TOYN	8	0.144	M.13th-M.15th c.	
132	NOTG	2	0.007	13th-E.14th c.	
132	GRIM	1	0.011	L.12th-14th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
132	LLSW	1	0.002	15th c.	
132	LMGW	1	0.009	L.14th-15th c.?	
132	BOUD	30	0.480	15th-E.17th c.	
132	CTW	1	0.020	16th c.	
132	GRE	1	0.005	16th-18th c.	16th c.
134	LSNS	1	0.011	10th-E.11th c.	
134	EMW	6	0.062	11th-12th c.	
134	EMWS	1	0.005	11th-12th c.	
134	EMWSS	1	0.006	11th-12th c.	
134	STAMB	1	0.004	M.11th-M.13th c.	
134	MCW	2	0.010	L.12th-14th c.	
134	MCWG	1	0.005	L.11th-13th c?	
134	MSHW	1	0.072	12th-13th c.	
134	BOUA	12	0.248	12th-14th c.	
134	GRIM	1	0.005	L.12th-14th c.	
134	TOYN	26	0.456	M.13th-M.15th c.	
134	YORK	1	0.006	Medieval	
134	NOTG	1	0.016	13th-E.14th c.	
134	LLSW	1	0.044	15th c.	
134	BOUD	17	0.175	15th-E.17th c.	
134	CTW	1	0.003	16th c.	
134	TOYL	3	0.077	M.15th-M.16th c.	
134	UNID	2	0.005	16th c.	16th c.
138	BOUA	3	0.027	12th-14th c.	
138	TOYL	1	0.061	M.15th-M.16th c.	M.15th c.+
156	SLSNO	1	0.004	11th-12th c.	
156	STAMB	1	0.006	M.11th-M.13th c.	
156	STNE	1	0.005	850-1150	11th c.
163	LSNS	2	0.019	10th-E.11th c.	
163	STAMA	1	0.009	M.10th-L.11th c.	
163	EMWS	1	0.005	11th-12th c.	
163	STAMB	2	0.003	M.11th-M.13th c.	
163	MCW	1	0.010	L.12th-14th c.	
163	GRIM	1	0.001	L.12th-14th c.	
163	BOUA	4	0.039	12th-14th c.	
163	TOYN	5	0.087	M.13th-M.15th c.	
163	BOUD	1	0.004	15th-E.17th c.	15th c.?
165	LSNS	1	0.007	10th-E.11th c.	
165	EMW	1	0.004	11th-12th c.	
165	EMWS	1	0.006	11th-12th c.	11th c.
166	STAMA	1	0.005	M.10th-L.11th c.	
166	EMW	4	0.017	11th-12th c.	
166	EMWS	1	0.008	11th-12th c.	
166	STAMB	3	0.026	M.11th-M.13th c.	
166	BOUA	4	0.065	12th-14th c.	
166	GRIM	1	0.017	L.12th-14th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
166	LSW2	2	0.007	13th-14th c.	
166	TOYN	3	0.021	M.13th-M.15th c.	
166	LLSW	1	0.002	15th c.	E.15th c.
175	EMWSS	1	0.006	11th-12th c.	
175	STAMB	2	0.009	M.11th-M.13th c.	
175	BOUA	2	0.014	12th-14th c.	
175	TOYN	3	0.059	M.13th-M.15th c.	
175	BOUD	7	0.071	15th-E.17th c.	
175	CBW	1	0.021	17th c.?	
175	GRE	1	0.009	16th-18th c.	17th c.?
176	TOYN	1	0.004	M.13th-M.15th c.	
176	MIDP	1	0.042	L.14th-16th c.	
176	BORD	1	0.005	16th-18th c.	
176	CBW	6	0.635	17th c.?	17th c.?
179	TOYN	2	0.039	M.13th-M.15th c.	
179	BOUD	6	0.046	15th-E.17th c.	15th c.
183	BOUA	2	0.014	12th-14th c.	Med+
196	EMWG	1	0.013	11th-12th c.	
196	BOUA	3	0.030	11th-12th c.?	
196	BOUA	6	0.064	12th-14th c.	
196	TOYN	1	0.040	M.13th-M.15th c.	
196	BOUD	15	0.254	15th-E.17th c.	
196	CTW	1	0.023	16th c.	
196	GSW3	1	0.006	L.14th-E.16th c.	
196	LMTE	1	0.017	15th-16th c.	
196	GRE	2	0.023	16th-18th c.	
196	TGE	3	0.029	16th-18th c.	
196	CBW	1	0.037	17th c.?	17th c.?
199	STAMA	1	0.002	M.10th-L.11th c.	
199	BOUA	1	0.006	12th-14th c.	
199	GRIM	1	0.010	L.12th-14th c.	
199	TOYN	1	0.017	M.13th-M.15th c.	
199	UPG	1	0.008	L.12th-14th c.	
199	BOUD	11	0.095	15th-E.17th c.	
199	TOYL	2	0.090	M.15th-M.16th c.	
199	CTW	1	0.001	16th c.	16th c.
200	STAMB	1	0.003	M.11th-M.13th c.	
200	MSHW	1	0.016	12th-13th c.	
200	STAMC	1	0.026	E.12th-M.13th c.	
200	BOUA	6	0.086	12th-14th c.	
200	TOYN	6	0.107	M.13th-M.15th c.	
200	BOUD	9	0.116	15th-E.17th c.	
200	GRE	1	0.010	16th-18th c.	16th c.?
204	LSLS	1	0.028	Late Saxon	
204	EMW	1	0.005	11th-12th c.	
204	BOUA	1	0.007	12th-14th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
204	TOYN	1	0.013	M.13th–M.15th c.	
204	BOUD	7	0.041	15th–E.17th c.	
204	LLSW	1	0.021	15th c.	
204	CTW	1	0.003	16th c.	16th c.
207	EMW	1	0.008	11th–12th c.	
207	EMWS	1	0.009	11th–12th c.	
207	BOUA	6	0.101	12th–14th c.	
207	TOYN	3	0.101	M.13th–M.15th c.	
207	BOUD	5	0.113	15th–E.17th c.	
207	LMTE	1	0.053	15th–16th c.	15th c.
210	BOUA	1	0.026	12th–14th c.	
210	BOUD	1	0.138	15th–E.17th c.	Late Med+
214	BOUD	1	0.009	15th–E.17th c.	Late Med+
221	BOUA	2	0.018	12th–14th c.	
221	TOYN	2	0.028	M.13th–M.15th c.	M.13th-14th c.
222	EMW	3	0.032	11th–12th c.	
222	BOUA	1	0.007	12th–14th c.	
222	TOYN	1	0.004	M.13th–M.15th c.	M.13th-14th c.
224	LSNS	2	0.042	10th–E.11th c.	
224	EMW	2	0.098	11th–12th c.	
224	EMWSS	1	0.007	11th–12th c.	
224	BOUA	1	0.049	11th–12th c.?	
224	STAMC	1	0.003	E.12th–M.13th c.	
224	BOUA	16	0.217	12th–14th c.	
224	TOYN	15	0.162	M.13th–M.15th c.	
224	GSW2	1	0.015	L.14th–15th c.	
224	BOUD	6	0.063	15th–E.17th c.	
224	TOYL	3	0.088	M.15th–M.16th c.	15th c.
225	STAMA	1	0.004	M.10th–L.11th c.	
225	EMWS	1	0.001	11th–12th c.	
225	BOUA	2	0.010	12th–14th c.	
225	TOYN	4	0.146	M.13th–M.15th c.	M.13th-14th c.
230	BOUD	1	0.055	15th–E.17th c.	
230	STGE	1	0.008	15th c.+	15th c.
232	BOUA	1	0.033	12th–14th c.	Med+
233	BOUD	1	0.029	15th–E.17th c.	Late Med+
234	LLSW	1	0.006	15th c.	15th c.+
236	STAMA	1	0.009	M.10th–L.11th c.	
236	LSLS	1	0.012	Late Saxon	
236	STAMB	2	0.003	M.11th–M.13th c.	
236	SLEMO	1	0.009	12th–E.13th c.	
236	BOUA	9	0.115	12th–14th c.	
236	TOYN	4	0.060	M.13th–M.15th c.	
236	BOUD	7	0.145	15th–E.17th c.	15th c.
238	LSLS	2	0.009	Late Saxon	
238	LSNS	3	0.021	10th–E.11th c.	



Context	Fabric	No	Wt/kg	Fabric date range	Context spotdate
238	SLSNO	1	0.018	11th-12th c.	
238	EMW	3	0.013	11th-12th c.	
238	SLEMO	1	0.010	12th-E.13th c.	
238	SLQO	5	0.094	11th-13th c.	
238	STAMB	6	0.069	M.11th-M.13th c.	
238	LSW1	1	0.003	12th c.	
238	BOUA	29	0.414	12th-14th c.	
238	LSW2	1	0.007	13th-14th c.	
238	TOYN	8	0.154	M.13th-M.15th c.	
238	ELYG	1	0.004	Med-Late Med	
238	UPG	2	0.008	L.12th-14th c.	
238	BOUD	2	0.008	15th-E.17th c.	
238	LLSW	3	0.026	15th c.	
238	NLLM	1	0.008	15th-16th c.	
238	TOYL	3	0.348	M.15th-M.16th c.	15th c.
239	LSLS	1	0.006	Late Saxon	
239	LSNS	1	0.003	10th-E.11th c.	
239	EMW	1	0.017	11th-12th c.	
239	SLSNO	2	0.017	11th-12th c.	
239	STAMB	2	0.016	M.11th-M.13th c.	
239	BOUA	3	0.015	12th-14th c.	12th-M.13th c.
241	BOUD	2	0.048	15th-E.17th c.	Late Med+
243	SXNO	3	0.023	850-1150	
243	SLSNO	2	0.112	11th-12th c.	
243	EMWS	1	0.021	11th-12th c.	
243	BOUA	6	0.059	12th-14th c.	
243	LSW1	1	0.003	12th c.	
243	MCW	1	0.004	L.12th-14th c.	
243	TOYN	5	0.051	M.13th-M.15th c.	
243	UNID	1	0.013		M.13th-14th c.



#### Appendix 4: Ceramic Building Material

Ctxt	Fabric	Form	No	Wt/g	Abr	L	W	T	Mortar	Comments	Date
011	est	EB	21	1132					Grey fsc on breaks of some	Fine pink-orange fabric containing grog and voids	13-15
012	est	EB	6	345					Grey fsc on surface of some	1 small frag vit surfaces	13-15
013	est	EB	1	168				50	Grey fsc on surface and breaks	Strawed base	13-15
013	fs	LB	1	34						Reduced core	Late med/ Post-med
015	est	EB	2	57							13-15
017	est	EB	1	1540			125	56		Well made, dense, vit (glassy) surfaces, strawed base	13-15
025	fsv	LB	1	200				57	White msca	Fine, dense	Late med/ Post-med
025	est	EB	9	349						Some poss later	13-15
030	est	EB	1	58							13-15
033	fsv	LB	1	261				67			Post-med
033	fsgfe	AB	2	332				70		Extruded	L.19+
033	comp	B	2	78							L.19+
033	msfe	PAN?	1	41						Poss RT	Post-med
033	fsm	LB	2	82	+					Poss EB	?Post-med
033	fsfe	PAN	1	73						Surface lost	Post-med
033	fsgfe	AB	2	125						Extruded	L.19+
033	fsgfe	AB	1	294				70		Extruded	L.19+
033	fsgfe	QFT	1	475				38			Post-med
033	fs	LB	2	102						Reduced cores	Post-med
033	fsg	LB	1	993			113	75	Grey msca	Shallow sunken frog	Post-med



Ctxt	Fabric	Form	No	Wt/g	Abr	L	W	T	Mortar	Comments	Date
033	est	EB	3	201	+						13-15
033	fsv	LB	1	139	+				Grey msca on breaks	Poss est	?Post-med
034	fsv	LB	3	65					White msca on 1		Late med/ Post-med
034	est	EB	1	158				52		Sanded, vit surfaces	13-15
034	est	EB	3	224					Grey msca	2 strawed	13-15
035	fsv	LB	1	8							Late med/ Post-med
035	est	EB	3	186	+				1 grey fsc		13-15
036	est	EB	2	49	+						13-15
037	est	EB	2	133	+					1 strawed	13-15
039	est	EB	2	46	+						13-15
039	est?	EB?	2	37	++					Reduced surfaces, poss FC or RBT	13-15?
041	est	EB	1	23						Strawed	13-15
057	fsfe	PAN	1	26							Post-med
061	est	EB	1	28	+						13-15
061	fsm	UN	1	55	++					Eb/lb/rbt?	?
064	est	EB	1	12							13-15
064	fsv	LB	2	43							?Late med
064	fsfe	PAN	2	88						Surfaces lost	Post-med
068	comp	B	1	12							L.19+
081	fsgfe	QFT	1	560				43			Post-med
083	fsm	LB	3	64						Poss EB, pinkish surface	?Post-med
083	fsfe	LB	1	270				61	Grey msca	Overfired, brown	15-16?
083	fsm	RT	1	569			173	19		Flaky surface, sooted	Post-med
083	fs	PAN	1	335						Machine made	L.19+



Ctxt	Fabric	Form	No	Wt/g	Abr	L	W	T	Mortar	Comments	Date
087	est	EB	2	88						Strawed	13-15
089	est	EB	1	182				51	Thick white msc		13-15
089	est	EB	1	199				60		Sanded?	13-15
089	est	EB	59	3430	+					Some fine micaceous, some with grog	13-15
089	est	EB	1	212	+			51		Sanded?	13-15
091	est	EB	1	6	+						13-15
092a	est	EB	1	267	++			55			13-15
092a	fsv	LB	1	36	+					Slight frog?	Post-med
092a	est	EB	1	170				55		Strawed	13-15
092a	est	EB	11	512	+						13-15
092b	est	EB	1	442				55		Strawed	13-15
092b	est	EB	15	515	+					Some strawed	13-15
092c	est	EB	5	345							13-15
092d	est	EB	1	13	+						13-15
093a	est	EB	8	234	+						13-15
093b	est	EB	8	138	+						13-15
093c	est	EB	9	287							13-15
093d	est	EB	4	77	+					1 hard, overfired	13-15
093e	est	EB	10	674	+					2 overfired, vit surfaces	13-15
110	est	EB	1	3						Vit surface	13-15
114	est	EB	1	93				56			13-15
116	est	EB	1	32	+						13-15
116	est	EB	2	135	+						13-15
116	comp	B	1	23							L.19+
117	est	EB	1	411	++			66+			13-15



Ctxt	Fabric	Form	No	Wt/g	Abr	L	W	T	Mortar	Comments	Date
117	est	EB	9	393	+					Some soft, some hard	13-15
118	est	EB	2	37							13-15
118	fsfe	DP	1	163						Dbg	19-20
118	wfe	DP	1	264						Lbg	19-20
119	wfe	DP	1	104						Lbg	19-20
119	fsm	DP	1	222					Thin white all over		Post-med
122	est	EB	1	2971		258	132	56		Strawed, sunken margins all round	13-15
122	est	EB	1	3008		263	133	54		Strawed, 1 sunken margin	13-15
132	est	EB	1	289				59		Hard, strawed	13-15
132	est	EB	6	604						2 overfired	13-15
132	msf	RT	1	42							Medieval
134	est	EB	2	26							13-15
134	fs	FT	1	8				24+		Spots glaze on side	Medieval
138	est	EB	2	19	+						13-15
163	est	EB	3	139							13-15
165	est	EB	1	22						Vit (glassy) surface	13-15
175	est	EB	1	25	+				Grey msc		13-15
179	est	EB	1	63							13-15
196	est	EB	11	342	+						13-15
196	msg	RT	1	86						Reduced core	Medieval
199	est	EB	8	338					Thin on most frags		13-15
199	est	EB	1	71				55			13-15
200	est	EB	1	80					Thin grey on 1		13-15
200	msfe	RT	1	55					Thin on surface	Soft ferrous inclusions, reduced core, convex, poss valley tile	Medieval



Ctxt	Fabric	Form	No	Wt/g	Abr	L	W	T	Mortar	Comments	Date
204	est	EB	1	35							13-15
207	est	EB	3	161						1 sooted and vit, 1 overfired	13-15
207	fsm	LB?	1	260	+			60		Poorly mixed, soft, poss EB	Post-med
207	wfx	RT	1	19							Post-med
208	fsm	LB?	1	2379	+	250	112	56		Poorly mixed, poss EB, stacking scar on side	15-16?
208	fsf	LB?	1	2427	+	247	112	60	Thin buff ms		15-16?
224	est	EB	1	271				55		Hard, vit (glassy) surfaces	13-15
224	msf	RT	1	64							Medieval
233	est	EB	3	541	++		112	55		=1 brick, fine, soft buff	13-15
236	est	EB	1	78						Strawed, base sooted	13-15
236	est	EB	1	574			119	54		Sanded?	13-15
236	est	EB	1	297				65		Strawed, surfaces reduced, sooted	13-15



## Appendix 5: Small Finds

SF	Ctxt	Ctxt type	Period	Area	Material	Object Name	Object Description	Object Date
1	12	Layer	PM or Modern	4	Glass	Window Glass	A sub-rectangular fragment of opaque window glass. There is one grozed edge. 70mm x 35mm x 4mm.	?Medieval
2	12	Layer	PM or Modern	4	Glass	Window Glass	A sub-triangular fragment of clear or possibly yellow window glass. There is one grozed edge. 43mm x 38mm x 2.5mm.	Medieval
3	12	Layer	PM or Modern	4	Iron	Artefact	Unidentified bar fragment with one thickly pointed end, opposite end with remains of tang?	Undiagnostic
4	15	Layers	Med or ?PM	4	Copper Alloy	Vessel	Vessel wall fragment with sooted exterior.	Medieval +
5	15	Layers	Med or ?PM	4	Glass	Window Glass	One sub-rectangular fragment of clear or yellow window glass with a matt wash and painted with six thin lines and two possibly sub-circular motifs. 30mm x 25mm x 2mm.	Medieval
6	33	Fill of ?cess pit	Modern	6	Ivory, Iron	Implement	Turned ivory-handled implement with iron attachment at one end.	Post-medieval
7	40	Layer	LMT	4	Glass	Window Glass	A sub-rectangular fragment of opaque window glass. There is one grozed edge and one flat edge. 24mm x 18mm x 2mm.	Medieval
8	61	U/S finds	-	2	Glass	Window Glass	A sub-trapeziform fragment of clear window glass. There is one grozed edge. 36mm x 22mm x 1mm.	Medieval or post-medieval
9	62	U/S finds	-	3	Iron	Artefact	U-shaped object with curled ends and broken stub at centre. ?Decorative ironwork.	Post-medieval
10	62	U/S finds	-	3	Iron	Strap-hinge	U-shaped strap-hinge fragment with copper alloy nail in situ	Undiagnostic
11	62	U/S finds	-	3	Iron	Knife	With bolster, blade and tang broken.	Post-medieval
12	64	U/S finds	-	5	Iron	Artefact	Plate fragment expanding at one broken end and end	Undiagnostic



SF	Ctxt	Ctxt type	Period	Area	Material	Object Name	Object Description	Object Date
13	64	U/S finds		5	Iron	knife	With broken blade and tang, moulded bolster, cutler's mark on blade.	Post-medieval
14	86	Top soil	Modern	3	Glass	Window Glass	One sub-trapeziform fragment of clear window glass. 65mm x 27mm x 2mm. One irregular fragment of opaque window glass. There is one muff edge. 47mm x 12mm x 3mm.	Medieval.
15	87	soil	PM	3	Glass	Window Glass	A sub-rectangular fragment of clear window glass. There is one muff edge and one grozed edge.	Medieval or post-medieval
16	91	MD finds	-	3	Iron	Key	With oval bow, broken solid stem.	Post-medieval
17	93	Layer	LMT	3	Glass	Window Glass	A sub-rectangular fragment of opaque window glass. 70mm x 28mm x 2.5mm.	?Medieval
18	93	Layer	LMT	3	Iron	Bar	Tapering slightly at one end.	Undiagnostic
19	95	Layer	LMT	3	Iron	Knife	With plain bolster and broken blade and tang. One iron rivet in situ.	Post-medieval
20	132	Layer	LMT	3	Iron	Bar	Curved ?bar fragment.	Undiagnostic
21	132	Layer	LMT	3	Iron	Artefact	Rod with expanded rounded end and broken at opposite end.	Undiagnostic
22	134	Layer	LMT	3	Iron	Artefact	?Knife blade tip.	Undiagnostic
23	175	U/S finds	-	4	Iron	Nail	With long shank and T-shaped head	Undiagnostic
24	196	Pit fill	PM	4	Iron	Artefact	Arrow-shaped strap with curved end. Small hinge, ?with nailed U-shaped eye. This item would need to be re-X-rayed for positive identification	Unidentified
25	200	Layer	PM	4	Glass	Goblet	Comprising round-knop stem, foot and bowl missing. Colour: Colourless glass: Metal: mixed alkali and soda. 16th and 17th centuries. Frequency: quite common.	16th and 17th centuries
26	200	Layer	PM	4	Lead	Pot Mend	These are typically found on both Roman and medieval sites.	?Medieval



SF	Ctxt	Ctxt type	Period	Area	Material	Object Name	Object Description	Object Date
27	207	Fill ?culvert	PM	4	Glass	Window Glass	Three small fragments of opaque window glass. One fragment has one grozed edge.	Medieval or post-medieval
28	207	Fill ?culvert	PM	4	Iron	Formless fragment		Undiagnostic
29	236	Layer	Med	3	Iron	Knife	Blade fragment. No detail showing on X-ray.	Undiagnostic



## Appendix 6: The Stone

Ctxt	Qty	Wt(g)	Description
12	1	53	X 1 fine limestone roof tile fragment
33	10	973	X2 slate fragment 26g X3 granite boulders 'road stone' 500g X2 mudstone 186g X1 shelly limestone 185g X1 fine micaceous sandstone 39g X1 misc limestone 37g
61	5	411	X2 fine micaceous sandstone 258g X1 chalk 21g X1 quartzite 60g X1 roof slate fragment 72g
64	2	60	X2 fine limestone roof tile fragment (one burnt)
86	1	48	X1 limestone roof tile fragment (burnt)
100	2	16	X2 roof slate fragments
117	5	99	X5 slate fragments one with possible double nail holes
118	1	12	X1 roof slate fragment
119	1	99	X1 roof slate fragment
124	3	78	X 2 roof slate fragments 21g X1 limestone roof tile fragment 57g
130	1	56	X1 fine limestone
132	1	60	X1 fine limestone roof tile with peg hole incomplete
134	3	114	X2 fine limestone roof tiles X1 misc 12g
163	1	149	X1 coarse shelly limestone slightly burnt
183	1	11	X1 fine limestone roof tile burnt
196	4	187	X2 coarse shelly limestone (99g) X2 fine limestone (one burnt)
199	1	45	X1 fine limestone roof tile
200	1	104	X1 fine limestone roof tile
207	3	246	X1 coarse shelly limestone 122g two worked surfaces one flat one curved. Curved surface burnt X1 coarse shelly limestone 80g X1 fine limestone roof tile 44g
210	1	47	X1 fine limestone roof tile
224	1	90	X1 fine limestone roof tile (burnt)
236	1	72	X1 fine limestone (burnt)
238	2	242	X2 fine limestone roof tile (burnt)
241	1	22	X1 fine limestone roof tile
Total	53	3294	



**Appendix 7: Metalworking Debris**

Context	Quantity	Weight (g)
36	1	46
64	1	2
81	29	2270
93	1	64
118	1	9
132	2	20
134	1	44
221	1	94
236	1	190
<b>Total</b>	<b>38</b>	<b>2739</b>



### Appendix 8: Faunal Remains

Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
11	17	0.496	Cattle	2	Adult	Butchered	Secondary	Humerus
11			Sheep/Goat	6		Butchered	Range	Possible deer included?
11			Pig	1	Juv	Butchered	Primary	Talus, cut
11			Mammal	8		Butchered		
12	50	0.839	Cattle	5	Adult	Butchered	Secondary	Humeri, vertebrae
12			Sheep/Goat	4	Adult	Butchered	Range	Mandible with m3 in low wear, radius, tibia, pelvis
12			Dog	7	Adult	Butchered	Uncertain	Ulna, radius, tibia, scapula, vertebrae +
12			Mammal	34		Butchered		Fragmentary
13	2	0.063	Mammal	2		Butchered		
15	17	0.304	Cattle	2	Adult	Chopped/cut	Primary	Radius, talus
15			Sheep/Goat	1	Adult	Chopped/cut	Secondary	Radius
15			Dog	4	Adult	Knife cuts	Uncertain	Very large ulna, metapodial, vertebrae
15			Mammal	10				
16	3	0.053	Mammal	3				
33	4	0.069	Mammal	4				
36	2	0.02	Mammal	2				
37	3	0.02	Bird	2	Adult	?Butchered		
37			Mammal	1				
39	7	0.156	Mammal	6		Butchered		Large mammal fragments
39			Bird	1	Juv	?Butchered	Primary	Tibiotarsus
40	4	0.091	Cattle	1	Juv	Chopped	Primary	Metapodial
40			Sheep/Goat	1	Adult	Chopped	Secondary	Radius
40			Mammal	2				
41	1	0.041	Cattle	1	Adult	Chopped	Primary	Metatarsal



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
47	1	0.01	Mammal	1				
62	7	0.099	Cattle	2	Adult		Primary	Molars
62			Sheep/Goat	1	Adult	Butchered	Secondary	Tibia
62			Pig	2	Juv	Butchered		Metapodial (robust) and phalange
62			Mammal	2				
64	33	0.397	Cattle	6	Juv	Butchered	Secondary	Chopped metapodial, scapula, femur head
64			Sheep/Goat	2	Adult	Butchered		Radius, molar
64			Deer – fallow	5	Adult	Butchered	Secondary	Cut mandible (tongue +), femur, humerus, metatarsal
64			Bird	1	Juv			
64			Mammal	19		Butchered		Fragmentary
65	1	0.006	Mammal	1	Juv	Butchered		
66	1	0.046	Mammal	1		Butchered		Large mammal pelvis fragment
67	80	2.377	Cattle	13	Adult	Sawn +	Range	Sawn sections for marrow, humerus, skinned calcaneus +
67			Sheep/Goat	3	Adult	Butchered	Range	Upper jaw frag, tibia, pelvis
67			Pig	5	Subad	Butchered	Primary	Skull/jaw frags and teeth (inc erupted m3), calcaneus
67			Equid	1	Adult	?Butchered	?Primary	Tibia, horse
67			Deer – fallow	5	Adult	Butchered	Secondary	Radii, humerus,
67			Bird	1	Adult	Butchered	Primary	Humerus, large goose
67			Mammal	52		Butchered	Range	Inc sawn ribs, vertebrae
68	1	0.004	Mammal	1		Cut/chopped	Secondary	Rib
69	3	0.027	Sheep/Goat	1	Adult		Primary	Metacarpal
69			Mammal	2				
86	16	0.227	Cattle	1	Adult	Cut/chopped	Secondary	Pelvis
86			Sheep/Goat	3	Adult	Butchered	Secondary	2 humeri, vertebrae
86			Mammal	12				
87	9	0.098	Sheep/Goat	1	Juv			Tibia, proximal, unfused



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
87			Mammal	8				
91	8	0.25	Cattle	1	Adult	Chopped	Secondary	Humerus
91			Sheep/Goat	4	Adult	Chopped/cut	Secondary	2 humeri, radius
91			Mammal	3		Butchered		
95	9	0.083	Sheep/Goat	2	Juv	Butchered	Secondary	Vertebrae – saggital chop, tibia
95			Pig	1	Adult			Tusk
95			Mammal	6				
100	1	0.007	Mammal	1				
107	2	0.022	Sheep/Goat	1	Adult	Chopped	Secondary	Humerus
107			Mammal	1				
108	4	0.036	Cattle	1	Juv		Primary	Upper jaw frag, little wear on teeth
108			Sheep/Goat	1	Adult	Cut	Primary	Proximal phalange
108			Mammal	2				
109	1	0.003	Mammal	1				
110	1	0.002	Sheep/Goat	1	Adult	Butchered	Secondary	Pelvis
114	9	0.195	Cattle	2	Juv	Chopped	Secondary	Vertebrae fragments
114			Sheep/Goat	1	Adult	Chopped	Primary	Tibia
114			Pig	5	Juv	Butchered	Range	Tibia, pelvis, phalange, metapodial, femur
114			Fish	1				Large vertebrae
114			Mammal	4				
116	3	0.021	Mammal	3				
117	1	0.002	Mammal	1				Tooth fragment, ?Cattle
118	12	0.27	Cattle	3	Adult	Butchered	Primary	Mandible condyle, carpals
118			Sheep/Goat	1	Adult	Butchered	Secondary	Radius
118			Pig	3	Adult	Chopped	Secondary	Humerus, molar, tooth
118			Small Mammal	1	Adult	Butchered	Secondary	Tibia, ?rabbit, check id



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
118			Mammal	4				
119	3	0.059	Cattle	1	Adult	Chopped	Secondary	Femur
119			Sheep/Goat	1	Adult	Butchered	Secondary	Radius
119			Bird	1	Adult	Butchered	Secondary	Humerus
121	15	0.224	Cattle	2	Juv	Butchered	Secondary	Femur, condyle
121			Sheep/Goat	1	Adult	Butchered	Primary	Metacarpal
121			Pig	2	Adult	Butchered	Primary	Radius, talus with gnawing
121			Mammal	10		Butchered		Canid gnawing
124	1	0.011	Mammal	1		Chopped	Secondary	Rib
129	8	0.101	Cattle	2	Adult	Butchered	Primary	Horn fragment, distal phalange
129			Sheep/Goat	3	Adult	Butchered	Primary	Radius, metacarpal, molar
129			Mammal	3				
130	3	0.087	Cattle	2	Juv	Butchered	Secondary	Femur, tooth
130			Mammal	1				
132	60	0.9	Cattle	10	Juv	Butchered	Range	Pelvis, phalanges, metapodials
132			Sheep/Goat	2	Adult	Butchered		Metacarpal, molar
132			Pig	4	Juv	Butchered	Range	Metapodial, radius, jaw fragments
132			Deer – fallow	1	Adult	Butchered		Metacarpal
132			Bird	1				Shaft fragment only
132			Mammal	42		Butchered		
134	85	0.739	Cattle	5	Adult	Butchered	Primary	Talus, distal phalanges, tooth
134			Sheep/Goat	12	Range	Butchered	Range	Mandible with dp4, humeri, cut talus, radius, teeth, metapodial
134			Pig	2	Juv	Chopped	Secondary	Scapula, humerus with canid gnawing
134			Equid	2	Adult			Molars, high calculus, well worn
134			Bird	1	Adult	Cut	Primary	Heron coracoid
134			Mammal	63		Butchered		



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
138	3	0.025	Mammal	3		Butchered		One burnt fragment
156	2	0.059	Mammal	1		Butchered		Axis vertebrae - ?Deer
156			Fish	1				
163	7	0.049	Mammal	7		Butchered		
165	2	0.04	Mammal	2		Butchered		
166	16	0.174	Cattle	3	Adult	Butchered	Primary	Horncore fragment, metatarsal, intermediate phalange
166			Deer – fallow	1	Adult	Butchered		Radius
166			Mammal	12		Butchered		
175	11	0.215	Cattle	1	Adult	Butchered	Secondary	Tibia
175			Dog	2	Adult	Butchered		Cut metapodial, vertebrae
175			Bird	1	Juv			
175			Mammal	7				
176	8	0.343	Cattle	4	Juv	Butchered	Secondary	Humeri, femur
176			Sheep/Goat	1		Butchered	Secondary	Tibia
176			Mammal	3				
179	13	0.078	Dog	2	Adult	Cuts		Metapodial, large dog, skinned
179			Mammal	11				
181	2	0.006	Mammal	2				
183	6	0.03	Cattle	1	Adult			Intermediate phalange
183			Bird	1	Adult	Butchered	Primary	Probably domestic fowl
183			Mammal	4				
196	40	0.597	Cattle	2	Adult	Butchered	Secondary	Humeri
196			Sheep/Goat	4	Adult	Butchered	Secondary	Radius, pelvis, scapula
196			Pig	1	Juv	Butchered	Primary	Calcaneus
196			Dog	4	Adult			Mandible, humerus, vertebrae; large dog
196			Equid	1	Adult			Molar



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
196			Bird	4	Adult	?Butchered		
196			Mammal	24		Butchered		
199	27	0.272	Cattle	3	Adult	Butchered	Range	
199			Sheep/Goat	5	Adult	Butchered	Secondary	
199			Mammal	18				
199			Bird – Crane	1	Adult		Primary	Distal humerus
200	12	0.198	Cattle	2	Juv	Butchered	Secondary	Femur, metapodial
200			Sheep/Goat	3	Adult	Butchered	Secondary	Tibia, teeth
200			Bird	1		?Butchered	Primary	
200			Mammal	6				
204	9	0.087	Cattle	1		Butchered	Secondary	Scapula frag
204			Sheep/Goat	1	Adult	Butchered	Uncertain	Metacarpal, possibly deer
204			Mammal	7		Butchered	Uncertain	
214	2	0.004	Bird	1		Butchered	Secondary	
214			Mammal	1		Butchered	Uncertain	Fragment
220	2	0.023	Cattle	1	Adult	None	Primary	Phalange
220			Mammal	1				
221	5	0.082	Cattle	1	Juv	Chopped	Primary	Metapodial
221			Mammal	4				
222	3	0.018	Mammal	3			Uncertain	
224	34	0.512	Cattle	3	Range	Cuts	Primary	Phalanges, carpal
224			Sheep/Goat	4	Adult	Cuts	Primary	Jaw, foot bones
224			Bird	2	Adult	?Butchered	Primary	
224			Mammal	25		Butchered	Range	
225	4	0.029	Mammal	4		Butchered		
230	4	0.066	Cattle	1	Adult	Chopped	Secondary	Radius



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
230			Feline	1	Juv	Cuts	Primary	Tibia
230			Bird	1	Adult	None	Primary	
230			Mammal	1		Butchered	Uncertain	
232	4	0.03	Mammal	4		Butchered	Secondary	
233	8	0.175	Cattle	1	Adult	Butchered	Primary	Metatarsal
233			Fish	2	Adult	?Butchered	Secondary	Large species
233			Mammal	5		Butchered	Secondary	
234	2	0.029	Cattle	1	Adult	None	Primary	Phalange
234			Fish	1				
236	18	0.234	Cattle	1	Adult	Knife cuts	Primary	Proximal metacarpal, heavily cut
236			Sheep/Goat	5	Adult	Chopped/cut	Range	Metatarsal, phalange, teeth
236			Pig	1	Adult	Butchered	Uncertain	Mandible, heavily cut, enamel hypoplasia
236			Mammal	11				
238	34	0.443	Cattle	4	Adult	Butchered	Primary	Metapodial, foot bones
238			Sheep/Goat	9	Adult	Butchered	Range	
238			Bird	2		Butchered	Primary	Femur, TMT, ?Turkey or other stocky bird
238			Fish	1				
238			Mammal	18		Butchered		
241	23	0.222	Sheep/Goat	1	Adult	Chopped	Secondary	Humerus
241			Pig	1	Juv		Uncertain	Third molar, not worn
241			Dog	20	Adult			
241			Bird	1	Adult	Cut	Secondary	Femur, ?pheasant
243	17	0.176	Sheep/Goat	1	Adult	Cut	Secondary	Pelvis
243			Mammal	16		Butchered	Range	
92a	9	0.047	Cattle	2	Adult			Teeth
92a			Sheep/Goat	3	Adult	Butchered	Range	Metatarsal shaft, pelvis, mandible



Ctxt	Ctxt Qty	Wt (kg)	Species	Spp. Qty	Age	Butchering	Type	Comments
92a			Bird	1	Adult	?Butchered	Primary	Tibiotarsus
92a			Mammal	3				
92b	5	0.059	Cattle	1	Adult	Chopped	Secondary	Distal tibia
92b			Mammal	4				
92c	6	0.087	Cattle	1	Adult	Cut	Primary	Proximal phalange, pathology
92c			Sheep/Goat	1	Adult			Tooth
92c			Mammal	4				
92d	5	0.019	Pig	2	Juv		Primary	Distal phalange, tooth
92d			Bird	1		Butchered	Primary	Radius
92d			Mammal	2				
93a	3	0.011	Pig	1	Adult		Primary	Proximal phalange
93a			Mammal	2				
93b	18	0.196	Sheep/Goat	4	Adult	Butchered	Primary	Tibias, molar
93b			Bird	1	Adult	Cut	Primary	Tibiotarsus
93b			Mammal	13				
93c	11	0.33	Cattle	3	Adult	Butchered	Range	Radius, tibia, carpal
93c			Bird	1				Humerus fragment
93c			Mammal	7		Butchered		
93d	15	0.17	Cattle	3	Adult	Butchered	Range	Talus, pelvis, radius, heavy butchering
93d			Sheep/Goat	1	Adult	Chopped	Secondary	Radius
93d			Bird	1	Adult	?Butchered	Secondary	Femur
93d			Mammal	10				
93e	14	0.184	Cattle	3	Adult	Butchered	Primary	Radius, mandible, intermediate phalange
93e			Sheep/Goat	2	Adult	Butchered	Secondary	Radius, humerus
93e			Bird	1	Adult		Primary	Radius
93e			Mammal	8				



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**Ayscoughfee Hall Gardens,  
Spalding: a palaeoenvironmental  
evaluation of deposits encountered  
during archaeological excavations**

**Dr T. Hill, Dr B. Gearey MIFA and Dr I. Tyers**

**NAU-1751-08**



# Ayscoughfee Hall Gardens, Spalding: a palaeoenvironmental evaluation of deposits encountered during archaeological excavations

By

Dr Tom Hill, Dr Ben Gearey MIFA and Dr Ian Tyers

July 2008

## Summary

*A phase of archaeological investigations was undertaken within the grounds of Ayscoughfee Halls, Spalding. Birmingham Archaeo-Environmental was subcontracted to evaluate the site for its palaeoenvironmental potential. It was hoped that palynological assessments of the former gardens could determine the types of plants and flowers grown during the 18<sup>th</sup> and 19<sup>th</sup> centuries. However, as high levels of bioturbation had affected the upper deposits present in all the archaeological trenches, it was not possible to distinguish between the modern topsoil and that of the former garden plots. Further excavations revealed a series of possible pits dissected by medieval and post medieval culverts. Organic remains were found to be present in these pits that are deemed suitable for palaeoenvironmental assessment. It is recommended that pollen and charred/waterlogged plant macrofossil assessments are undertaken on these features. Tree ring analyses of 6 yew trees from within the grounds indicated that a number of the trees may date back to the initial landscaping undertaken by Johnson in 1732. In addition, three window sample cores were extracted from the well located to the east of the Hall. The majority of the sediments encountered were however believed to be fluvial in nature and would have derived from the River Welland. As a consequence, no further work is deemed necessary on the well deposits.*

**KEYWORDS:** Ayscoughfee Halls, Spalding, Lincolnshire, River Welland

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## Ayscoughfee Hall Gardens, Spalding: a palaeoenvironmental evaluation of deposits encountered during archaeological excavations

### 1. INTRODUCTION

A desk-based assessment of Ayscoughfee Hall, Spalding, Lincolnshire (TF 2490 2236), was undertaken by NAU Archaeology on behalf of South Holland District Council (Penn, 2008). The work revealed that a number of garden plots were established within the grounds by the 1730s with historical records providing some insight into the types of plants grown. In addition, the desk based assessment identified a medieval well, which was subsequently uncovered during ground investigations.

Birmingham Archaeo-Environmental (BA-E) was subcontracted to undertake a palaeoenvironmental evaluation of the Ayscoughfee Hall gardens. The primary objective of this was to assess whether relict soils (palaeosols) were preserved within the gardens that date to the 18<sup>th</sup> and 19<sup>th</sup> centuries. If such buried soils were encountered within the trench excavations, it was hoped that pollen assessments would establish the type of plants being grown in the gardens. An assessment of the medieval well deposits was also required to establish if any deposits of palaeoenvironmental potential were preserved. Window sampling was to be undertaken within the well to evaluate the well sediments for palaeoenvironmental potential. In addition, an assessment of age of the *Taxus baccata* (yew) trees present within the grounds was required using dendrochronology.

This report provides a summary of the works undertaken to date at Ayscoughfee Halls, and includes recommendations for further work based on the palaeoenvironmental potential of the site.

### 2. METHODS

#### 2.1 Site Visit

An initial visit to Ayscoughfee Halls was undertaken on the 19<sup>th</sup> February 2008 to coincide with start of the archaeological excavations taking place. A total of 10 trial trenches were excavated by NAU, the locations of which are provided in Figure 1. The deposits within each trench were visually assessed in an attempt to identify palaeosols that might predate the existing gardens. If suitable deposits were encountered, appropriate sampling was required to assess their palaeoenvironmental potential.

Additional site visits were undertaken over the period of archaeological excavation. Where deposits considered to be of palaeoenvironmental potential were encountered, appropriate sampling was undertaken. Monolith tins and bulk samples were taken and returned to the laboratory at Birmingham Archaeo-Environmental, University of Birmingham, for further assessment.

#### 2.2 Window Sampling of the Well

A well was encountered within Trench 1. Once abandoned, such water sources may become infilled with organic material. Due to the deep nature of the well feature, combined with the



presence of standing water within the well, a windowless sampling terrier rig was hired by NAU to take cores from the cores. Although the location of the well restricted access conditions, combined with its relatively narrow width (c. 1.50 m), a total of three cores were successfully sampled in close proximity to one another: WS1, WS2 and WS3.

### 2.3 Dendrochronology

A site visit was also undertaken by Dr Ian Tyers in February 2008 to assess the suitability of the yew trees for dendrochronological consideration. The full dendrochronological report can be found in Appendix I for reference. A summary of the methodology is provided below.

A total of six trees were selected for sampling from within the grounds of the gardens. Care was taken to avoid sampling trees showing signs of disease or deemed too small for analysis. The sampling location on the chosen trees also avoided former branches and areas where bark patterns suggested unusual growth. A single sample was taken from each tree using a 30-40cm standard forest increment corer (5mm diameter). Samples were then air dried and assessed for their dendrochronological potential.

## 3. PRELIMINARY RESULTS OF FIELDWORK

### 3.1 Garden Evaluation

During the initial site visit, no evidence for buried soil horizons was encountered within the trenches. Trenches 5, 7, 8, 9, and 10 had been fully excavated by this point (Figure 1), and although considerable spatial stratigraphic variation was evident, the uppermost sediments within the trenches were typified by light brown

fine sands and silts with occasional gravels. There was also some iron staining as well as occasional organic mottling within the deposits. The sands and silts were commonly found to overlie grey-brown silts and clays which were interpreted as natural floodplain deposits of the River Welland (Figure 2).

In general, the light brown sands and silts found to overlie the natural deposits were highly homogenous and showed little variation in sedimentary content. There was therefore no evidence to suggest that palaeosols from the historic gardens dating back to the 18<sup>th</sup> century had been preserved. In some trenches, the unit was less than 0.20 m thick before natural deposits were encountered (Trench 9: Figure 3).

A subsequent visit to the site was made upon completion of Trenches 2, 3 and 4 (Figure 1). Very similar deposits were encountered within these trenches, with grey-brown sands and silts. However, a concentration of archaeological finds and associated deposits of palaeoenvironmental potential were encountered. A summary of context descriptions and environmental samples taken is provided in Table 1.

In Trench 2, a possible post-medieval furnace and associated brick-lined pit was identified. Deposits were present above and below the furnace grate, and were deemed suitable for evaluation. It was proposed that the charcoal remains may provide an insight into the function of the furnace. Samples were subsequently taken from the fill from above the grate (Context 98, sample 1) and from the 'waste' beneath the grate (Context 99, sample 2). Both samples were relatively similar in nature, and were dominated by fragments of brick



and charcoal. There were also occasional fragments of metal, glass, small bone and some organic remains.

Trench 3 was found to contain an east-west trending culvert capped with horizontally layered bricks (Culvert 122). The feature was suggested to date to the 18<sup>th</sup> century or earlier. Proximal to the culvert, in the east-facing trench face, a thin organic-rich silt horizon with possible charcoal fragments was located within the grey-brown sands and silts (Figure 4). It is unclear how other deposits (Contexts 108, 109, 110, 137) relate to a pit fill or natural processes of sediment accumulation. A small *c.* 0.50m deep pit feature [226] within the trench immediately east of the organic horizon was found to be relatively rich in organic remains. Samples were subsequently taken from the culvert fill (samples 3, 4 and 6), the trench face (samples 5 and 7) and associated pit (sample 9) for consideration for palaeoenvironmental assessment.

Excavations in Trench 4 revealed further deposits possibly suitable for palaeoenvironmental assessments. The trench was dominated by two major brick-lined culverts believed to post-date the culvert in Trench 3. The culverts trended *c.* east-west and north-south and although not exposed within the trench the culverts are believed to intersect with one another. At the southern end of the trench, a possible pit feature was identified which was dissected by, and hence predates, the culverts (pit [256]; Figures 5 and 6). Pottery within the pit fill suggest that the feature dates to the medieval period. Monolith and bulk samples were taken from the pit fill, whilst a sample from the culvert fill was also taken (samples 10, 11 and 12 respectively).

### 3.2 Window Sample Borehole Evaluation

Trench 1 revealed a well capped by a large sheet of stone. Initial inspections suggested that the base of the well was located at *c.* 4.0 m depth. Using a windowless sampling terrier rig, coring commenced from *c.* 4.0 m and continued until natural deposits were encountered. The three window sample boreholes were extracted, terminating at a depth of between *c.* 7.0 - 8.0 m. The stratigraphy of each borehole is provided in Appendix II, whilst photographs of the boreholes are provided in Figures 7-9.

A full 4.0 m sequence was sampled from WS1 (Figure 7). In WS2, sampling failed between 7.0 - 8.0 m depth (Figure 8), whilst in WS3, sampling also failed between 4.0 - 5.0 m depth (Figure 9). Consequently, only 3.0 m length sequences were obtained for WS2 and WS3. All three boreholes were however found to contain very similar stratigraphy. Each borehole was typified by light grey-brown to orange-brown fine sands with varying silt content. The upper *c.* 0.30 m of WS1 and WS2 contained some organic material, but this was very well humified and sand remained the dominant component.

### 3.3 Dendrochronology

The full dendrochronological report is provided in Appendix I and only a summary is provided here. The coring and subsequent tree-ring analysis revealed that many of the yew trees within the grounds of Ayscoughfee Halls have experienced repeated periods of diminished and disturbed growth, which is interpreted as a result of pruning regimes. The tree-ring analysis has identified with trees with minimum ages varying between 160 and 240 years. Although interpretational difficulties exist which



are likely to be a consequence of extensive pruning, estimated ring numbers have identified at least 4 yew trees (Trees 1, 2, 4 and 5) are *c.* 270-280 years old (age estimates at breast height; see Appendix I). In contrast, Trees 3 and 6 appear to be younger, dating to the late 18<sup>th</sup> century and mid-19<sup>th</sup> century respectively.

## 4. CONCLUSIONS

### 4.1 Garden Evaluation

The majority of the sediments encountered within the trenches around the grounds of Ayscoughfee Hall were found to be relatively shallow and homogenous in nature. This suggests deposits relating to the 18<sup>th</sup> and 19<sup>th</sup> century garden plots are poorly preserved. Due to the relatively shallow sediments identified in Trenches 5, 9 and 10, the influence of modern bioturbation would have substantially reworked any soils that had developed during the garden's history. This, in turn, would have reworked and destroyed any pollen deposited from plants growing *in situ*. As a consequence, there is no potential for establishing past planting regimes relating to the garden plots through palynology.

However, the pit features identified in Trenches 3 and 4 were found to contain deposits of greater palaeoenvironmental potential. Although silt rich, the relative abundance of organic remains within the pits warrants further investigation. Although archaeological evidence is somewhat sparse, initial interpretations suggest that these pits may be medieval in age. If this is the case, whilst the original aims of the palaeoenvironmental assessment at Ayscoughfee Halls focussed on the form and function of the 18<sup>th</sup> century

gardens, analysis of the possible medieval deposits may provide an insight into the landscape conditions that prevailed prior to the establishment of the Hall and associated surroundings.

### 4.2 Window Sample Borehole Evaluation

The deposits encountered within the medieval well were found to be dominated by fine sands with little variation in stratigraphy. A thin organic-rich sand unit was however encountered in the upper *c.* 0.30m of the sedimentary sequence. It is concluded therefore that the majority of the sediments encountered within the boreholes were naturally-derived. The relatively fine and well sorted nature of the sands suggests that the deposits would have developed through fluvial processes, and may relate to a relict channel or floodplain of the River Welland. The well would have been cut into these natural deposits due to the high permeability of the sands. Taking into account the low gradient and surface elevation of the site, the local water table would have been the source for the well's water supply. The overall absence of organic deposits or man-made waste within the well raises a number of hypotheses regarding the well's use. It may be that the well was in use for a very short period of time, which would have prevented the accumulation of deposits within the well. Alternatively, the well may have been enclosed, covered or even regularly cleaned, to ensure it provided suitable water for the Hall, which also would explain the lack of debris overlying the natural sands. The latter may be regarded as the more likely explanation.



### 4.3 Dendrochronology

The results of the tree-ring analysis have shown that of the 6 trees sampled, 4 are suggested to have an age of between 270 and 280 years (with a margin of error  $\pm 20-30$  yrs). Although there are interpretational difficulties, some inferences can be made. These age estimates would indicate the presence of trees that may have been part of the Johnson planting scheme of c. AD1732. In addition, the two remaining yew trees, although dated to the later 18<sup>th</sup> century and early 19<sup>th</sup> century, could also be as old as the others but may have experienced extensive pruning. Alternatively, they may have been planted at a later date to replace dead or poorly growing trees. These interpretations are based on limited information relating to the planting schemes used and it is also unclear whether transplanted trees were ever used.

The tree ring analysis also revealed exhibited improved growth over the recent period dating back to AD1955. Several of the sampled trees are growing faster now than they have for most of the previous 200-250 years. The increased recent growth suggests the sampled trees are in quite robust health and this could be interpreted as a reflection of a change in management regime within the grounds of Ayscoughfee Halls.

## 5. RECOMMENDATIONS FOR FURTHER ANALYSIS

The ongoing palaeoenvironmental investigation at Ayscoughfee Halls has revealed contrasting results to date. Whilst it was hoped that buried soil horizons that could provide information regarding the historical garden plots, such features were

absent. Deposits of palaeoenvironmental potential relating to the 18<sup>th</sup> century onwards seem to be somewhat restricted. As a consequence, palynological investigations are not recommended.

Excavations within Trenches 3, 4 and 6 revealed deeper stratigraphic sequences, some of which may predate the construction of Ayscoughfee Hall. The deposits sampled as part of the palaeoenvironmental assessment may provide information relating to human activity and landscape conditions during the medieval period. A suite of palaeoenvironmental assessments are thus recommended on selected samples. A summary of these recommendations is provided in Table 1:

- Pollen assessments on the organic-rich deposit encountered in pit [139] (context 110; Trench 3) and [256] (context 254; Trench 4). Samples should be taken from the top, middle and bottom of each organic-rich horizon (6 samples in total).
- Waterlogged plant macrofossil assessments should also be undertaken on a number of bulk samples from Trenches 3 and 4. Such assessments will evaluate whether identifiable plant remains are preserved, and determine the potential for palaeoenvironmental reconstruction. Assessments should therefore be undertaken on the following features:
  - Bulk samples from contexts 110 and 254 taken from pits [139] and [256] respectively. In addition, pit [226] fill (227) from Trench 3 should be assessed. Assessments should also be undertaken on the bulk



samples extracted from the brick culverts encountered within Trenches 3 and 4 (6 samples in total).

- Radiocarbon dating of key stratigraphic units should also be considered. If the archaeological evidence does not produce a secure chronology from pits [139], [256] and [226], bulk samples of the organic-rich fills should be submitted for AMS radiocarbon dating.
- The monolith tin extracted from culvert 122 should be considered for soil micromorphology analyses. A thin section and bulk would be extracted from the monolith, from which more detailed information regarding the nature of sediment accumulation may be derived.

In order to establish the use of the furnace encountered in Trench 2, it is proposed that the material sampled from above and below the furnace grate is assessed for charred remains, with specific attention to the charcoal fragments (2 samples in total). This may provide an insight into what was being burnt within the furnace.

The well boreholes are composed almost entirely of natural river sands. Although there is a small organic-rich sand horizon at the top of WS1 and WS2 which may provide some material suitable for palaeoenvironmental assessment, the high level of humification of organic remains suggests identifiable plant material may not have survived. Consequently, no further palaeoenvironmental assessments are recommended on the well deposits.

The dendrochronological assessment undertaken as part of the initial survey

has revealed interesting results relating to the development of the yew trees within the grounds of Ayscoughfee Halls. A number of the trees have been confidently associated with the initial planting of yews within the gardens by Johnson in AD1730. However, due to the apparent propensity of yews to halt ring development when stressed, the species on the whole has poor potential for dendrochronological studies. No further tree-ring assessments are therefore recommended.

## 6. ARCHIVE

All monolith and bulk samples from Trenches 2, 3 and 4 discussed within this report will be stored at the Birmingham Archaeo-Environmental laboratory at the University of Birmingham, Edgbaston, Birmingham. All window sample boreholes extracted from the well will also be stored until the archaeological excavation is complete, after which consultation with NAU will take place regarding long-term storage (if deemed necessary). Tree-ring cores are presently retained by Ian Tyers.

## ACKNOWLEDGEMENTS

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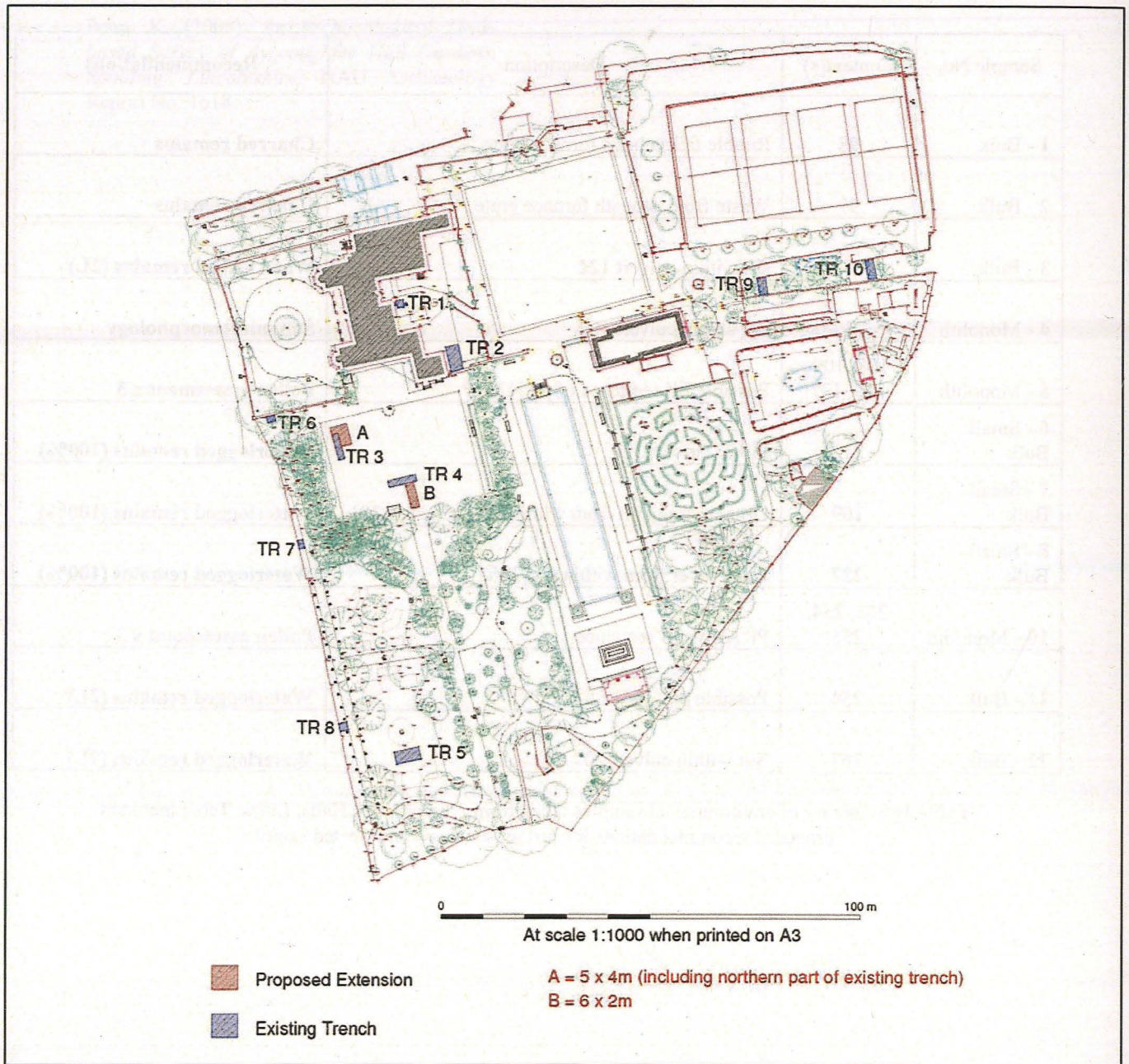
- Penn, K. (2008). *An Archaeological Desk-based Survey of Ayscoughfee Hall Gardens, Spalding, Lincolnshire*. NAU Archaeology Report No. 1618.



Sample No.	Context(s)	Description	Recommendations
1 - Bulk	98	Rubble from above furnace grate	<b>Charred remains</b>
2 - Bulk	99	Waste from beneath furnace grate	<b>Charred remains</b>
3 - Bulk	212	silt within culvert 122	<b>Waterlogged remains (2L)</b>
4 - Monolith	212	silt within culvert 122	<b>Soil micromorphology</b>
5 - Monolith	108, 109, 110, 137	Possible fill sequence of pit [139]	<b>Pollen assessment x 3</b>
6 - Small Bulk	212	Fill of culvert 122	<b>Waterlogged remains (100%)</b>
7 - Small Bulk	109	Organic-rich unit from within possible pit [139]	<b>Waterlogged remains (100%)</b>
8 - Small Bulk	227	Peaty layer from within pit [226]	<b>Waterlogged remains (100%)</b>
10 - Monolith	253, 254, 255	Pit [256] fill sequence	<b>Pollen assessment x 3</b>
11 - Bulk	254	Possible pit [256] fill	<b>Waterlogged remains (2L)</b>
12 - Bulk	267	Silt within culvert 207	<b>Waterlogged remains (2L)</b>

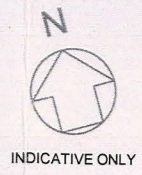
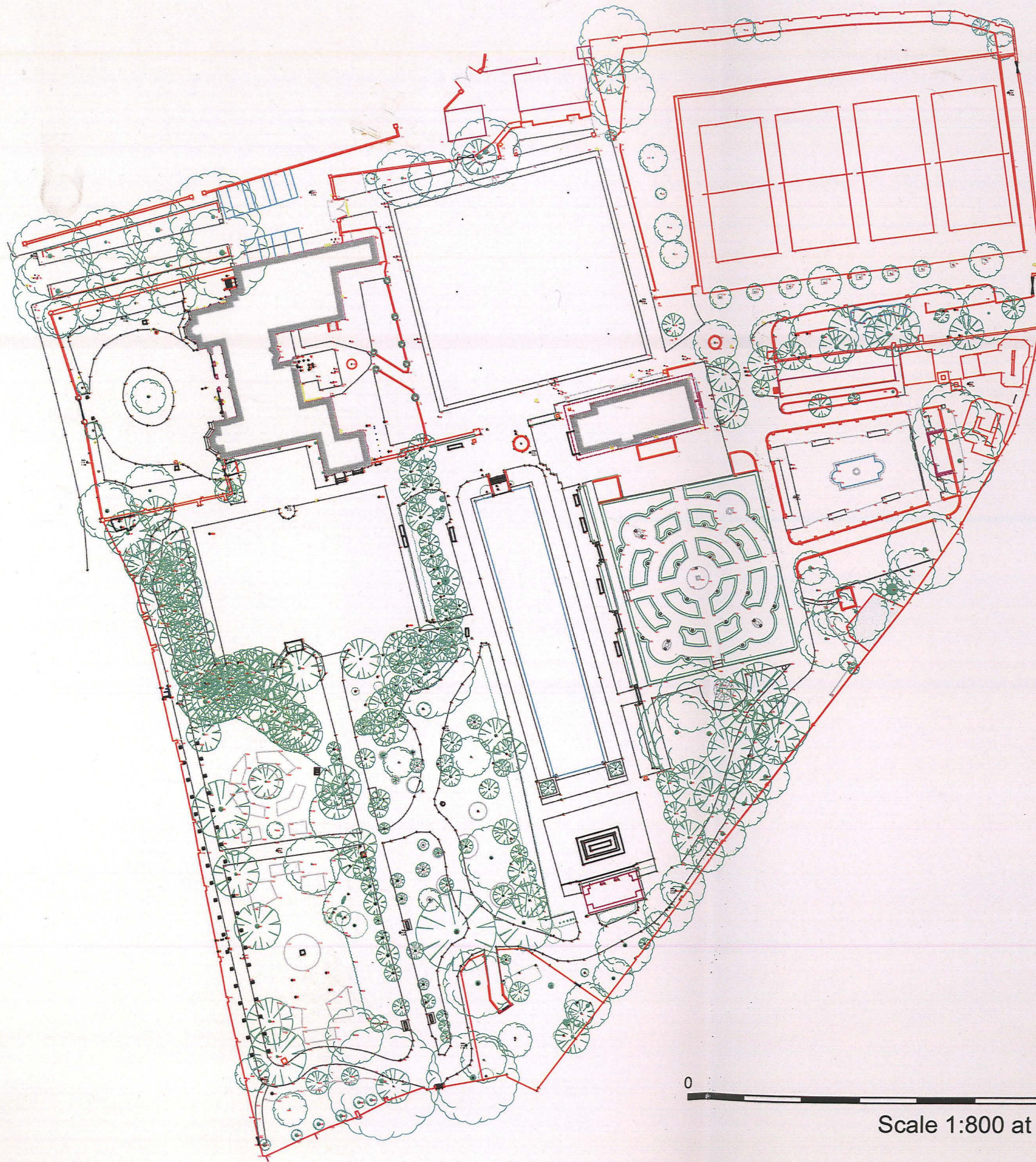
**Table 1:** Summary of environmental samples taken from Ayscoughfee Halls, Lincs. Table included proposed recommendations for further sanalysis on selected samples





**Figure 1:** location of archaeological trenches excavated within the grounds of Ayscoughfee Halls during the palaeoenvironmental evaluation. The plan was adapted from the original site plan provided by NAU Archaeology.





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**Abbreviations**

BH	Borehole	LP	Lamp Post
BO	Bollard	LV	Low Voltage
BT	British Telecom	MH	Manhole
CCTV	Close Circuit Television	OH	Overhead
CL	Cover Level	RE	Rodding Eye
CP	Cable Pit	RWP	Rain Water Pipe
EL	Electricity	SC	Stop Cook
EP	Electricity Pole	SL	Spot Level
ER	Earth Rod	RS	Road Sign
FB	Flower Bed	SV	Stop Valve
FH	Fire Hydrant	SW	Surface Water
FL	Floor Level	STN	Station
FLT	Flood Light	SU	Species Unknown
FP	Footpath	SVP	Soil Vent Pipe
G	Gully	TP	Telegraph Pole
GP	Gate Post	UTL	Unable to Lift
HV	High Voltage	WC	Water Closet
HR	Hand Rail	WL	Water Level
IC	Inspection Cover	WM	Water Meter
IL	Invert Level	WTS	White Topped Stake

**Fence Types**

b/w	Barbed Wire	st	Steel Railing
c/b	Close Boarded	panel	Panel
cl	Chain Link	pr	Post & Rail
cp	Chestnut Paling	pw	Post & Wire
g/s	Galvanised security	sm	Steel Mesh

**Line Styles**

OH Lines	Telephone	---
	Electricity	---
Drainage	Surface Water	---
	Foul	---

**Trees**

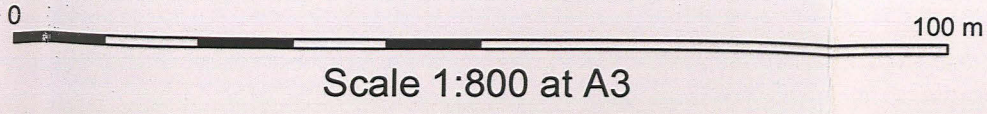
All trees are drawn to scale on the plan.

Example:

Species:	Oak
Girth:	0.900
Spread:	16m

**Notes:**

All levels based on OSBM located on adjacent Church, value 4.10m



REV	DATE	DESCRIPTION
NPS PROPERTY CONSULTANTS LTD		
<input type="checkbox"/> NPS THORNTON ST. ANDREWS. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS HORNCHURCH. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS AYLESHAM. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS ST. THOMAS. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS SOUTHAMPTON. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS CHELSEA. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS SOUTHAMPTON. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210 <input type="checkbox"/> NPS SOUTHAMPTON. NORT. OTH. TEL: 01463-795208 FAX: 01463-795210		
<b>NPS</b> Property Consultants Limited		
PROJECT: SPALDING - Ayrcoyghill Hall & Gardens		CLIENT: South Holland District Council
SUBJECT: Topographical Survey		DATABASE: DATE: Jan 2008 SCALE: 1:800 @ A3
PROJECT NO: VES951	DRAWING NO: VES951	REV: BSS, A.J.H. & S.F.H.



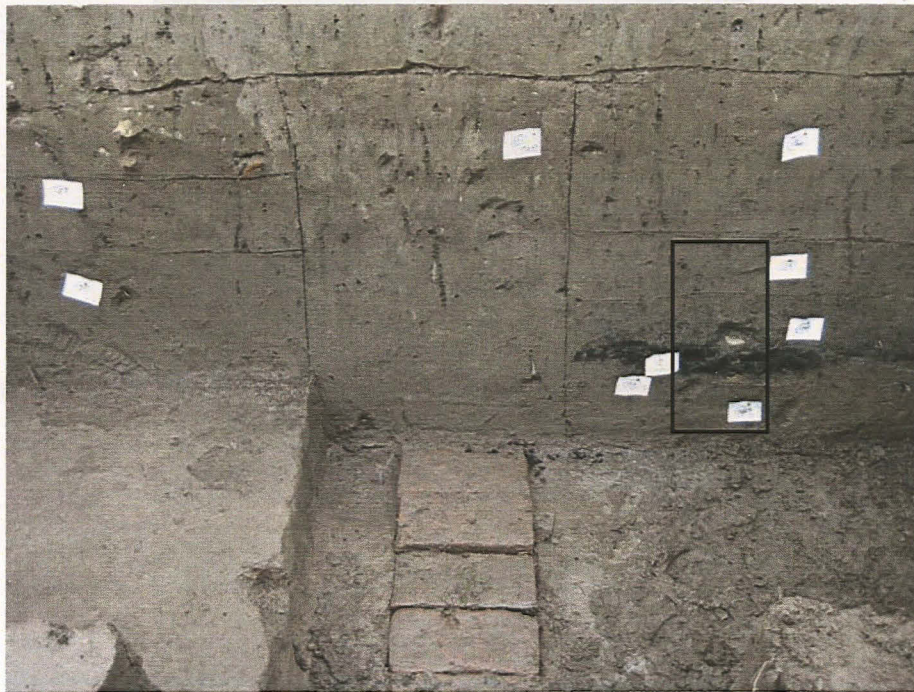


**Figure 2:** Photograph of Trench 7, showing thin topsoil underlain by light grey silts and clays believed to be floodplain deposits of the River Welland.



**Figure 3:** Photograph of Trench 9, identifying the shallow topsoil encountered overlying the natural deposits. The potential for palaeosol preservation was shown to be low.





**Figure 4:** Photograph of the east-facing trench section of Trench 3, locating the brick culvert and thin organic-rich horizon present within the grey-brown sands and silts. A monolith tin was taken of the organic unit (approximate location shown), whilst bulk samples were also taken from the trench face and from within the culvert fill.



**Figure 5:** Photograph of Trench 4, identifying the two brick-lined culverts and possible pit feature cut by the construction of the culverts (see Figure 6).





**Figure 6:** Possible pit feature located in Trench 4. Organic-rich silts encountered towards the base of the pit fill. Monolith and bulk sampling subsequently undertaken for palaeoenvironmental consideration.



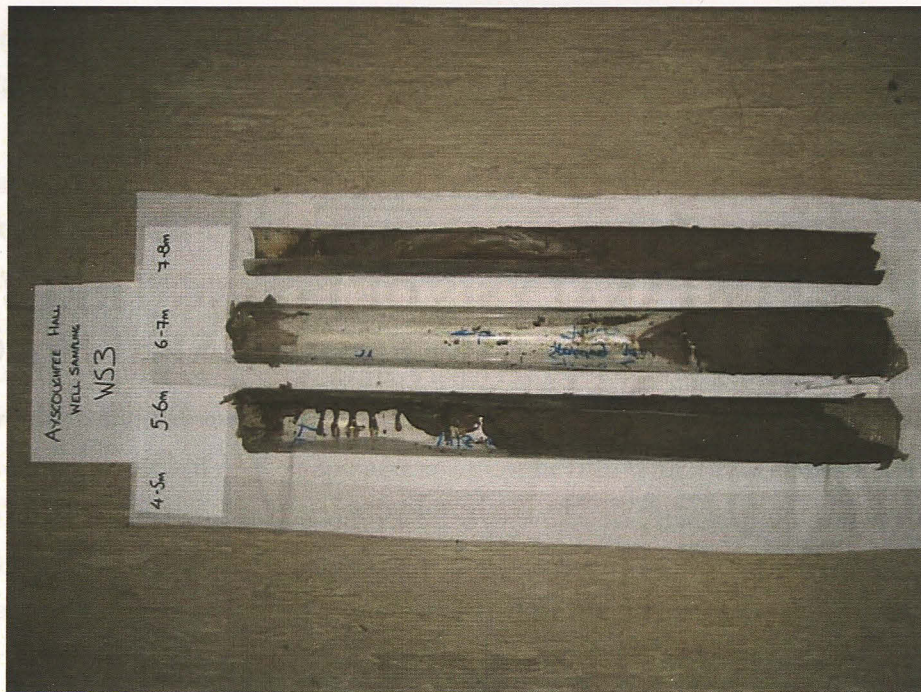


**Figure 7:** Photograph of WS1 extracted from the well in Trench 1.



**Figure 8:** Photograph of WS2 extracted from the well in Trench 1.





**Figure 9:** Photograph of WS2 extracted from the well in Trench 1.



**APPENDIX I**

**TREE-RING ANALYSIS OF LIVING TREES:  
YEWS AT AYSCOUGHFEE HALL, SPALDING,  
LINCOLNSHIRE**

By Dr Ian Tyers



## **Tree-ring analysis of living trees: Yews at Ayscoughfee Hall, Spalding, Lincolnshire**

### **Summary**

This report discusses investigations into the age structure of a group of yew trees (*Taxus baccata*) forming a series of hedge lines in Ayscoughfee Hall Gardens in Spalding (NGR TF 249 223, see Figure 1). Ayscoughfee Hall Gardens were originally laid out for Maurice Johnson *c.* 1730. Visual inspection showed the yew trees to be a mixture of straight stemmed, single trees, and multiple stemmed trees. There is a significant diversity of size, shape and apparent health, with a few standing dead, several with dead stems, and several with crown dieback. Throughout repeated former pruning had resulted in dead branches, holes, and distorted stems. The individual yews appeared to be a mixture of male and female specimens, and none appeared to be any of the named varieties used in many later planting schemes.

A total of 6 yew trees were sampled in order to estimate their ages. The estimated ages indicate at least 4 yew trees around 270 years old are present in the hedges. Assuming they were planted as fairly small stems, and were not transplanted as larger trees these estimates support the interpretation of the yew hedge in Ayscoughfee Hall Gardens as a feature derived from the period of Maurice Johnson.

### **Tree-ring dating**

Counting tree-rings provides a method of ageing trees but does not provide a method for dating trees.

Dendrochronology attempts to provide absolute dates for the rings present in individual ancient timbers of unknown date. This is achieved by measuring very precisely the widths of each successive ring within a sample and comparing the pattern of narrow and wide rings with reference chronologies built up by previous work.

Standing trees provide the anchor for dendrochronological reference chronologies and a great deal of work was undertaken during the 1970's and 1980's creating a replicated spread of data from oaks within the British Isles (e.g. Pilcher & Baillie 1980). Modern data has been used worldwide for anchoring reference chronologies, for developing suitable methodologies to apply to sub-fossil, archaeological, standing building and art-historical assemblages, for examining climate change (e.g. Briffa *et al* 1986), and for ecological impact studies. This study provided an opportunity to



examine yews that have been repeatedly pruned in order to investigate their potential as tree-ring data anchors.

### Methodology

The yews were initially examined accompanied by Russell Trimble, from Norfolk Archaeology Unit, and Tom Hill & Ben Gearey from Birmingham University. This examination allowed us to discuss the scope and potential of the analysis being proposed. The coring was undertaken on 19<sup>th</sup> February 2008. A range of sizes of tree and varied locations within the yew hedge lines were selected (Figure 1). Trees showing any sign of disease were not selected, and the very smallest trees were also not selected. The sampling locations attempted to avoid former branches, areas where the bark pattern suggested there was twisted or unusual growth, and areas of active epi-cormic growth. A single sample was extracted from each selected tree using either a 30cm or 40cm standard foresters increment corer (a 5mm diameter Mattson type). The core was taken at 'breast height' (depending on the slope of the ground and the surface roots this would be approximately 1m up the trunk of the tree). The circumference of the stem at that height was recorded, and the location of the tree marked on a garden plan. The core was labelled and temporarily mounted in paper tubing. Six trees were selected for sampling (Table 1, Figure 1). The sampled trees were labelled Trees 1-6 inclusive.

The cores were air dried for a few weeks in their tubes and then extracted and mounted, in the original horizontal plane of the parent tree, on lengths of softwood batten. The ring sequences in the cores were revealed by sanding a clean surface along their entire lengths using increasingly fine sanding discs from 120 grit down to 400 grit. After preparation standard dendrochronological methods (see e.g. English Heritage 1998) were applied to the samples. The complete sequence of identifiable growth rings in each core was measured to an accuracy of 0.01mm using a micro-computer based travelling stage. The cores included numerous sequences of very disturbed patterns of growth. Remarkably one sample (#3) included several discontinuous rings. Such anatomical features are extremely uncommon in 'standard' trees and this feature probably indicates that this tree, at least, has responded to its historical pruning disturbance by growing in a variety of aberrant or unusual ways. Every core was complete to the bark-edge and thus the last ring is of known date (that is the 2007 growing season). It had originally been intended to attempt to identify if it was possible to treat the sample assemblage as if it were a group of archaeological samples of unknown date and relationship. The known presence of missing or



discontinuous rings, and the suspected presence of many more such events in the areas of disturbed growth meant that this was no longer a feasible approach.

A modified methodology therefore treated each measured ring sequence as representing the minimum number of rings present in the samples, with the assumption that there were likely to be missing rings within certain parts of each sequence. If areas of synchronicity could be identified between individual sample sequences these were likely to represent true annual growth sequences, whilst areas of unsynchronised growth were likely to represent either areas of missing rings, or periods where external disturbing factors were likely to have affected individual trees differently. To aid this process ring sequences were plotted onto semi-log graph paper to enable visual comparisons to be made between them.

A number of interpretational issues need to be commented on before discussing the results. The relationship between total tree age (or cambial age) and the age obtained by counting rings in cores is complex.

Firstly, ring counts only identify the true tree age where a species of tree rarely or never misses out growing seasons. Oak and other large hardwood trees are well behaved in this respect, but some of the smaller hardwoods like willow, alder, and hawthorn have proven unreliable. Softwoods such as pine, and yews are normally well behaved, however the cores from Ayscoughfee indicate that pruned yews may be intrinsically unsuitable for dendrochronological studies.

Next, the true tree age can only be precisely identified by obtaining a core or section of the tree at ground level. This is only achievable when timber is being felled and the stumps can be sampled and counted. Sampling above ground level will inevitably miss however many years it took the tree to grow to the sampling height. A metre or so in height (what foresters call 'breast height', abbreviated *bh* below) is the only really practical height to sample a tree with standard increment corers. Under normal circumstances it might be expected that yew trees take a few years or a few decades to reach this height, depending on size at transplantation, and the pruning regime implemented.

Finally, trees are never truly cylindrical. The central rings are as a result rarely in the geometric centre, by selecting for coring only the roundest and straightest trees makes it more likely that the sampled trees are reasonably symmetrical. Since coring direction is judged by eye, whilst standing close to the tree, and usually standing on



ground that has been disturbed by tree roots, the corer will very rarely pass through the pith of the tree. There are a number of methods by which the likely numbers of rings missed from the middles of the trees can be calculated. These methods provide estimates for the total tree age at the sampled height. Since these calculations assume symmetrical stems and consistent growth rates, neither of which are necessarily reasonable assumptions, these calculations may provide either over- or under-estimates of the true ages of the trees.

In Table 1 below the estimation of tree age at coring height is based on the following calculations:

2 of the samples (#3, & #6), whilst not including the pith, did have rings exhibiting marked curvature at the inner end of the core, for these the length of the radius missing was determined by use of simple geometry, the growth rate of the innermost decade of the core was calculated from the measured sequence and the number of missing rings estimated by calculating missing radius divided by the inner decades average growth rate (Table 1). These are estimates, but given the short missing sections there was no significant potential for error here.

The remaining 4 samples were taken through to a void or other problems within the stem that were invisible from the outside. The cores extracted were incomplete, and there was no useful curvature on them with which to identify the approximate distance to pith. The tree-age at sampling height was determined in these cases by calculating the radius of the tree, from its girth, allowing for the non-circular nature of the bark surfaces, multiplying the inner growth rate by the missing radius and adding this to the measured number of rings (Table 1). These are estimates, and given the disturbed nature of the tree-ring sequences there was probably a significant potential for error here. Note the actual ring counts obtained do provide an absolute minimum age for the material.

### **Results & Discussion**

The numbers of measured rings, growth rates, sizes and estimated ages of the sampled Ayscoughfee Hall Gardens yew trees are provided in Table 1.

The coring has revealed that many of the Ayscoughfee Hall Gardens yew trees have suffered repeated periods of diminished and disturbed growth, likely to have been caused by pruning regimes. The direct tree-ring analysis of the cores has with certainty identified trees with minimum ages varying between 160 and 240 years of



age. Estimates of the total tree ages from incomplete and nearly complete cores have been made. There are a variety of interpretational difficulties with material that has been extensively pruned, and which hence exhibits a variety of aberrant growth characteristics. However calculations of estimated ring numbers have identified the likely presence of at least 4 yew trees that are candidates for being original to the Johnson planting scheme of *c.* 1732. Two others both in the main avenue appear to be later, one from the later 18<sup>th</sup> century (#3) and another from the mid-19<sup>th</sup> century (#6). In both cases the root stocks may be as old as the others but they may have been pruned very low, alternatively they may have replaced dead or poorly growing trees, or be naturally grown seedlings. Since it is not known if the original or later planting schemes used transplanted yew trees of any significant size and age, it is worth noting that if they did this would invalidate these interpretations.

It is notable that the majority of the cored trees have exhibited much improved growth over the recent period stretching back to *c.* 1955. At present several of the sampled trees are growing faster now than they have for most of their previous 200-250 years of growth. The analysis of the cores also reveals that this section of the tree-ring sequences are more synchronised than previously. Whether this change is co-incident with a known change in management regime in the gardens or the retirement or employment of a specific gardener would be of some interest. The increased recent growth suggests the sampled trees are in quite robust health. The sampling selectivity means this statement is not necessarily indicative of the general wellbeing of the Ayscoughfee Hall Gardens yew trees. A younger tree identified in the hedge line (#6) appears to have been relatively undisturbed throughout its life when compared with the other sampled trees.

The lack of synchronicity within the tree-ring sequences suggests that these yews exhibit missing or aberrant rings. This prevents their use with standard dendrochronological techniques, whether this is typical of all yews, or only hedgerow managed yews is not known. Yews apparent propensity for missing rings when stressed suggests it has poor potential for dendrochronological studies.

### **Acknowledgements**

The analysis was commissioned by Birmingham University, on behalf of Norfolk Archaeology Unit, NPS Group, itself working for South Holland District Council using Leader+ project funds. My thanks to Russell Trimble, from Norfolk



Archaeology Unit, the various staff, volunteers, press and visitors, who help make the sampling easier and Tom Hill & Ben Gearey from Birmingham University.

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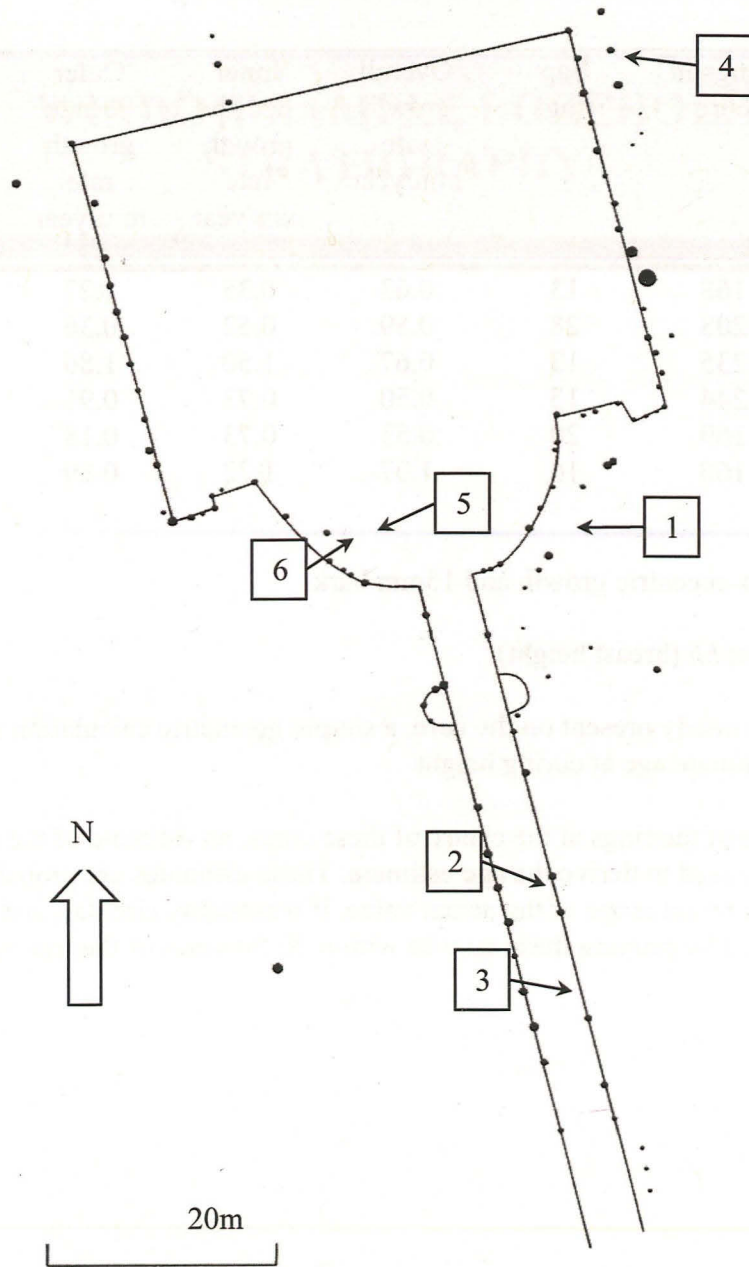
Briffa, K R, Wigley, T M L, Jones, P D, Pilcher, J R & Hughes, M K, 1986 *The reconstruction of past circulation patterns over Europe using tree-ring data, final report to the Commission of European Communities, contract no CL.111.UK(H), unpubl rep, -*

English Heritage, 1998 *Dendrochronology: guidelines on producing and interpreting dendrochronological dates*, English Heritage

Pilcher, J R & Baillie, M G L, 1980 Eight Modern Oak Chronologies from England and Scotland, *Tree Ring Bulletin*, **40**, 45-58



**Figure 1.** Plan of Ayscoughfee Hall Gardens showing the approximate location of the sampled yew trees, based on a plan of all the hedge line trees kindly supplied by Russell Trimble from NAU, Archaeology, NPS Group.





**Table 1.** List of yew samples from Ayscoughfee Hall gardens, Spalding

The right hand column indicates the actual or estimated ages of the sampled trees at the coring height. Planted yews take an unknown number of years to grow to the coring height.

Tree	Rings in core	Sap rings	Overall growth rate mm/year	Inner decade growth rate mm/year	Outer decade growth rate mm/year	Estimated Radius at <i>bh</i> (mm) <sup>1</sup>	Age Estimate at <i>bh</i>
1	168	13	0.63	0.35	1.27	185	~270
2	208	28	0.59	0.52	0.36	190	~280
3	235	13	0.67	1.50	1.86	210	=245
4	244	15	0.50	0.73	0.91	170	~270
5	169	20	0.53	0.73	0.18	160	~270
6	160	16	1.07	1.72	0.89	195	=165

<sup>1</sup> Assuming non-eccentric growth and 15mm bark.

#### Age Estimates at *bh* (breast height)

= ; the centre is nearly present on the core, a simple geometric calculation was necessary to estimate age at coring height

~ ; no curvature of the rings at the centre of these cores, an estimate of the number of missing rings is used to derive the age estimate. These estimates are probably reliable only to within a broad range of the actual value, if reasonably circular, and not too heavily disturbed by pruning these may be within 20-30 years of the true value.



**APPENDIX I**

**WINDOW SAMPLE BOREHOLE  
STRATIGRAPHY**

The table is a large grid with approximately 10 columns and 20 rows. The columns are intended for recording data such as depth, soil type, and sample numbers. The rows are intended for recording data for different borehole samples. The grid is currently blank.



Troels-Smith (1955) classification scheme of sediments used for borehole assessment, a summary of which is provided below:

Degree of Darkness		Degree of Stratification		Degree of Elasticity		Degree of Dryness	
nig.4	black	strf.4	well stratified	elas.4	very elastic	sicc.4	very dry
nig.3		strf.3		elas.3		sicc.3	
nig.2		strf.2		elas.2		sicc.2	
nig.1		strf.1		elas.1		sicc.1	
nig.0	white	strf.0	no stratification	elas.0	no elasticity	sicc.0	water

Sharpness of Upper Boundary	
lim.4	< 0.5mm
lim.3	< 1.0 & > 0.5mm
lim.2	< 2.0 & > 1.0mm
lim.1	< 10.0 & > 2.0mm
lim.0	> 10.0mm

	Sh	<i>Substantia humosa</i>	Humous substance, homogeneous microscopic structure
I Turfa	Tb	<i>T. bryophytica</i>	Mosses +/- humous substance
	Tl	<i>T. lignosa</i>	Stumps, roots, intertwined rootlets, of ligneous plants
	Th	<i>T. herbacea</i>	Roots, intertwined rootlets, rhizomes of herbaceous plants
II Detritus	DI	<i>D. lignosus</i>	Fragments of ligneous plants >2mm
	Dh	<i>D. herbosus</i>	Fragments of herbaceous plants >2mm
	Dg	<i>D. granosus</i>	Fragments of ligneous and herbaceous plants <2mm >0.1mm
III Limus	Lf	<i>L. ferrugineus</i>	Rust, non-hardened. Particles <0.1mm
IV Argilla	As	<i>A. steatodes</i>	Particles of clay
	Ag	<i>A. granosa</i>	Particles of silt
V Grana	Ga	<i>G. arenosa</i>	Mineral particles 0.6 to 0.2mm
	Gs	<i>G. saburralia</i>	Mineral particles 2.0 to 0.6mm
	Gg(min)	<i>G. glareosa minora</i>	Mineral particles 6.0 to 2.0mm
	Gg(maj)	<i>G. glareosa majora</i>	Mineral particles 20.0 to 6.0mm
	Ptm	<i>Particulae testae molloscorum</i>	Fragments of calcareous shells



The influence for sediment compaction experienced during window sampling has been accounted for within the visual stratigraphic assessment, which will explain any potential differences between the stratigraphic record described below and the core photographs (Figures 7-9). The well surface was measured at c. 4.00m below ground level (bgl). Consequently, all borehole records commence at 4.00m.

**WS1**

4.00-4.30m	Da	St	El	Dr	UB
	2	0	0	2	-
	Ga3, Ag1, Sh+, Ggmin+, Ggmaj+				
	Light grey-brown silty sand with occasional gravel and organic mottling				
4.30-5.80m	Da	St	El	Dr	UB
	2	0	0	2	0
	Ga2, Ag2, As+, Lf+, Ggmin+				
	Light grey-brown silty sand with some iron mottling evident				
5.80-6.70m	Da	St	El	Dr	UB
	2	0	0	1	1
	Ga3, Ag1, Lf+, As+				
	Light brown silty sand				
6.70-8.00m	Da	St	El	Dr	UB
	2+	0	0	1	1
	Ga4, Ag+, As+, Lf+				
	Orange-brown sand				

**WS2**

4.00-4.35m	Da	St	El	Dr	UB
	2+	0	0	2	-
	Ga3, Ag1, Sh+, Ggmin+, Ggmaj+				
	Medium grey-brown silty sand with occasional organic mottling				
4.35-5.60m	Da	St	El	Dr	UB
	2	0	0	2	1
	Ga2, Ag2, As+, Ggmin+, Sh+				
	Light grey-brown silty sand				
5.60-7.00m	Da	St	El	Dr	UB
	2	0	0	2	1
	Ga3, Ag1, As+, Lf+				
	Grey-brown to orange-brown silty sand				

**WS3**

4.00-5.00m	Unsuccessful sample extraction				
5.00-6.60m	Da	St	El	Dr	UB
	2	0	0	2	0
	Ga3, Ag1, Sh+, As+				
	Grey-brown silty sand with occasional organic mottling				



6.60-7.20m Da St El Dr UB

2 0 0 2 1

Ga4, Ag+, Sh+

Grey-brown sand

6.60-8.00m Da St El Dr UB

2+ 0 0 1 1

Ga4, Ag+, Lf+

Orange-brown sand