Headstone Manor, Harrow, Middlesex:

Archaeological Watching Brief and Excavation within the Moated Island, 2016-17

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Headstone Manor, Harrow

Report on the Archaeological Watching Brief and Excavations within the Moated Enclosure

By Tim Allen with Gary Evans

with contributions by Lee Broderick, Sharon Cook, John Cotter, Mike Donnelly, Julia Meen, Rebecca Nicholson, Cynthia Poole, Ian Scott and Ruth Shaffrey,

and illustrated by Ben Brown and Lucy Gane

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Summary

Between November 2016 and July 2017 Oxford Archaeology conducted a programme of archaeological works, consisting of watching briefs and limited excavations, during the repair and refurbishment of the Scheduled Monument of Headstone Manor, Harrow, Middlesex (centred NGR 514090 189710).

Within the moated enclosure a building of flint-and-chalk block walls bonded with a coarse yellow sandy lime mortar was uncovered just outside the standing Manor House on the north-west. This structure, which was aligned north-east to south-west parallel to the standing manor, was 7.6m wide and at least 16.8m long, running underneath the north-east extension believed to be of 18th-century date. The walls were built free-standing, and were progressively encased by nearly 1m of redeposited clay. A construction horizon including flint chips showed that the walls had been dressed during the dumping of the redeposited clay. This construction sequence is the same as that used for the cross-wall and hall of 14th-century date.

The building had one cross-wall and shorter walls within the south-west room dividing up the perimeter, and a pitched tile fireplace in the angle between one of these short internal walls and the south-east wall. The floor of the building appears to have been the surface of the clay used to build up the interior, and as well as reddening around the fireplace, several other areas of burning were found across the building, covered by dark charcoal-rich deposits, suggesting other fireplaces or hearths. Environmental samples from the deposits around the pitched tile hearth included charred cereals and peas, fish bones and a wide range of small mammal bones. Charcoal from two successive occupation deposits, the later one overlying the tile fireplace, were radiocarbon-dated to 1298-1410 cal AD and 1430-1475 cal AD, confirming the medieval date of this building. The burning and charcoal spreads may indicate that the south-west room was used as a kitchen, and had a period of abandonment before it was demolished.

To the south of the Manor House's hall, a series of flint walls, all bonded with a similar mortar, were uncovered during landscaping works. These walls, which were only 0.25m below ground, were built in two phases, the first probably representing the outline of the medieval domestic accommodation range south-west of the hall. In the second phase the south-east end of this block was reduced in size, and a stone-lined garderobe pit built against the new end wall. An open drain cut through the south-east corner of the earlier building, and the finds from this, together with those from the garderobe pit, suggest that this was used in the later 16th century.

Beyond the medieval accommodation range, two parallel walls may indicate a long narrow building continuing south-east. This was probably of post-medieval date, as it had only shallow flint foundations, and the superstructure is likely to have been timber-framed. Several more flint-and-chalk block walls were found in service trenches just east of the moat bridge. Possible alignments roughly at right angles to the moat, and parallel to it, can tentatively be suggested, but the remains were fragmentary. This may, however, represent the remains of a former gatehouse. The extent of redeposited clay found suggests that most of the moat platform was raised by up to 1.15m, probably with clay from the construction of the moat, but possibly also from local quarries, which may be the origins of some of the ponds shown on historic maps along the south and west sides of the Outer Court.

Acknowledgements

Oxford Archaeology (OA) would like to thank Daniel Mason of Focus Consultants for commissioning them to carry out the work on behalf of Headstone Manor Museum, and for his support throughout. We are also grateful to Grant Prescott of Buttress, under whose supervision the earlier phase of watching brief was undertaken, for his continuing support.

We are very grateful to Jo Saunders, Director of the Headstone Manor Museum and Restoration Project, for her interest and active involvement during the time that OA were on site, and latterly to Alison Torbitt, her replacement, for her assistance during the post-excavation work.

OA is also grateful to Iain Bright, Assistant Inspector of Historic England, who monitored the work, for his prompt advice and pragmatic decision-making on site on what has proved to be a much larger and more complicated programme than originally anticipated.

The assistance received from the principal contractor Lengard is also much appreciated, and in particular that of their Site Agents Martin Neaster and Imram Sakoor.

The archaeological work was managed for OA by Tim Allen, and was supervised on site by Gary Evans, and on occasion by Bob McIntosh. Survey was carried out by Ashley Strutt and Ben Brown. The excavation team comprised Robin Bashford, Christoff Heistermann, Tom Lawrence, Elizabeth Kennard, Bob McIntosh and Ashley Strutt. Gary Evans prepared a draft of the archaeological narrative, which was then revised by Tim Allen, who also wrote the discussion.

OA is also grateful to the staff of the archives department who managed the digital photographs, supervised the security copying and prepared the archive under the management of Nicky Scott, to the staff who processed the finds under the management of Leigh Allen, and to the staff who processed the environmental samples under the supervision of Sharon Cook and the management of Rebecca Nicholson.

Tim Allen would also like to thank Patricia Clarke, who provided photographs and notes of observations made in 1987 during the excavation of service trenches north-west of the Manor House. These provided additional information for the building found in this part of the site in 2017, and we are very grateful for their permission to reproduce the photographs taken of the work. Patricia also gave unstinting help with historic maps and documents, and with their interpretation, during the post-excavation.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology (hereafter OA), was commissioned by Buttress on behalf of the London Borough of Harrow to carry out archaeological monitoring of the repair and refurbishment of the Scheduled Monument at Headstone Manor, including the provision of a new Welcome Building (now the Moat Café) and improved access to the monument.

1.1.2 Headstone Manor is recognised as one of the most complex and interesting historic houses in Greater London. The archaeological value and national importance of the site is reflected in its statutory designation as a Scheduled Monument (List Entry 1005558), which includes all of the area upon which the Grade I listed medieval Manor House (the earliest surviving timber-framed building in Middlesex) and its associated water-filled moat, together with the Outer Court that contains the early 16th-century Grade II* listed Great Barn, the Grade II listed Small Barn, together with a Grade II listed 18th-century Granary brought to the site from Pinner Park Farm in 1991. The buildings themselves are not part of the Scheduled Monument, but their significance is indicated by their Listed status.

1.1.3 The present scheme of restoration follows an initial phase of renovation of the medieval section of the Manor House, which was facilitated by a substantial grant from English Heritage in 2005. The current project aims to restore the Manor House completely, and enable it to operate as a museum housing Harrow's historic and nationally important collections.

1.1.4 Two Scheduled Monument Consent (hereafter SMC) agreements were granted for work at the site, the first in December 2013 (S00074230), and the second in June 2015 (S00110337). These are separate from the Listed Building Consents for work on the standing buildings.

1.1.5 The programme of archaeological mitigation strategy to support the SMC agreements was prepared by OA in consultation with Jo Saunders, Harrow Council's Heritage and Museum Manager and Daniel Mason of Focus Consultants, detailing Historic England's requirements for work necessary to mitigate the effect of the works upon the scheduled monument.

1.1.6 OA produced an updated archaeological mitigation strategy on behalf of Harrow Council showing how it would meet these requirements (OA 2016a), and this was agreed with Iain Bright, Assistant Inspector for Historic England, prior to commencement of works.

1.2 Order and extent of archaeological work

1.2.1 The archaeological work initially consisted of an archaeological watching brief during the intrusive below-ground works associated with the development. On the moated island, these works comprised the excavation of heating duct and lighting cable trenches (Heating Duct II, Lighting Cable Trench VII) and the construction of a drainage soak-away, together with the monitoring of excavation for landscaping, and recording features exposed when internal floors were lifted.

1.2.2 A programme of additional archaeological works was undertaken by OA where the watching brief had exposed significant structural remains. On the moated island walls and robber trenches were revealed to the north of the Manor House, leading to the

clearing of an area approaching 50m^2, followed by targeted trenching to clarify the state of preservation, date and stratigraphic complexity of the remains. In the light of the results, a further three small trenches were excavated to determine whether the exposed walls continued beyond the standing buildings to the north-east.

1.2.3 Removal of topsoil and subsoil from the grassed area south of the Manor House prior to the setting out of an area of paths and raised beds revealed substantial flint walls, leading to further targeted trenching to clarify the extent, state of preservation and stratigraphic relationships between these walls, and to date them.

1.2.4 This report presents the results of the initial watching brief and the additional excavations carried out within the moated enclosure. The results of previous below-ground investigations are also considered and referenced where relevant.

1.3 Location, geology and topography

1.3.1 Headstone Manor is located at Pinner View, Harrow, Middlesex, HA2 6PX, and is centred on NGR 514090, 189710 (Fig. 1).

1.3.2 The manorial complex, which is orientated south-west to north-east, consists of two parts (Fig. 2). The Manor House sits within a square enclosure surrounded by a continuous moat, the single entrance being via a bridge that crosses the moat on the south-western side. This entrance leads into the Outer Court, along whose north-west side sits the timber-framed Great Barn, with a much smaller barn (the Small Barn) adjacent to the moat on the south-east side. The south-west side is occupied by the granary. This building is not original to the site, having been brought from Pinner Park Farm in 1991.

1.3.3 The site is surrounded by Headstone Manor Recreation Ground to the west and to the north, and the former Kodak Sports Ground on the east. To the south, the Recreation Ground's car park and Museum administration block back on to a car breakers yard and suburban housing and gardens.

1.3.4 Headstone Manor sits in an area of London Clay, but the site itself is located on Lambeth Group clay, silt and sand (BGS Viewer 2016), in a band that turns south-westwards just south of the site. These latter deposits belong to a former stream or river valley leading south towards the Thames.

1.3.5 The site lies in a shallow valley, the ground rising to the west, north and east, and sloping gently downwards to the south, where the Yeading Brook forms the south-eastern and southern boundary of the Recreation Ground. The Yeading Brook flows from east to west and is fed by a number of streams and channels which flow past the western edge of the site, including a channel that currently acts as an overflow for the moat.

1.3.6 The height of the Outer Court is *c* 52.40m above Ordnance Datum (aOD) with a marked southwards slope down to the NE corner of the Small Barn and a general N-S slope to Pinner View. The level of the moated enclosure is higher than that of the Outer Court being 53.84m aOD to the north of the Manor House. To the south of the Manor's Great Hall the ground slopes down from a height of 54.43m aOD just to the south of the Hall to 54.08m aOD at the SW corner of the moat.

1.4 Archaeological and historical background

1.4.1 The documentary history of the site has been usefully summarised Clarke (2000), and no independent documentary research has been undertaken in the preparation of this report, which therefore relies heavily on her work.

1.4.2 Headstone is first mentioned, as *Hegton*, in *c* 1300. However, the date of the estate probably extends back to *c* 1233, when an Ailwin de la Hegge and his son William, who took their surname from their abode Hegge (an early variant of the name Headstone), are mentioned as giving a tithe of hay to the Vicar of Harrow (Clarke 2000, 157). A Walter de la Hegge is mentioned in a number of documents between 1298 and 1304 including as a witness of the purchase of *Hegton* by William le Knel.

1.4.3 By 1332, Headstone appears to have been in the possession of a Roger Rameseyes, who sold it to Robert de Wodehouse, Treasurer of the Exchequer and Archdeacon of Richmond. A recent dendrochronology study on timbers from the roof of the Manor's Great Hall gave a date of *c* 1310–1315 for the felling of the timber used in this building (Howard *et al.* 2000). This may mean that the hall and the northern cross wing of the present building were already in existence when Roger Rameseyes sold it to Wodehouse in 1332.

1.4.4 In 1334, Headstone comprised a house, three carucates (hides) of land, 20 acres of meadow and five acres of woodland. In July 1344, the Archbishop of Canterbury, John Stratford, who was already the Lord of the Manor of Harrow, purchased Headstone from de Wodehouse. Headstone subsequently replaced Sudbury as the Archbishops' main Middlesex residence. From the end of the 14th century, Headstone was leased to various tenants who were obliged to allow the Archbishop and his retainers the use of the house, stables and gardens if they visited.

1.4.5 As well as the Manor House, records also mention that the site contained a dovecote and, by 1367, a chapel where Archbishop Simon Langham is recorded as having ordained five clergy men in May of that year (Clarke 2000, 161). A gatehouse, variously called the “great gate”, “the western gate” or the “old gatehouse” is mentioned from 1487 until 1533 when permission was granted to demolish it along with adjoining houses which stood at “the end of a long stable” (Ibid., 164).

1.4.6 Records show that the roof of Manor House was tiled from at least the 15th century with 90,000 tiles being bought for repairs in 1466 and a further 16,000 tiles in 1486–88 (Ibid.,163). The chapel was either demolished or repaired during extensive works carried out in 1488–89 (Martin and Martin 2001, 6).

1.4.7 A number of farm buildings are also recorded, though most presumably in the Outer Court, including a Great Stable. In 1514, however, a new stable for three to four horses was planned for the moated island.

1.4.8 The date of the construction of the moat is unclear, but records mention payments for a new bridge in 1466–67 when it appears the moat was also cleaned and refilled. The construction of the moat must pre-date this. Moats are a common feature of many well-to-do houses in the late 13th and early 14th centuries, both for defence and as necessary to the status of any great house, and it is therefore plausible that the moat was dug at the same time that the hall and cross-wing were built in the early 14th century.

1.4.9 Until the 16th century, Headstone was held by the Archbishop of Canterbury and used as an occasional residence until Thomas Cranmer was forced to exchange it with

Henry VIII on 30 December 1545. Six days later, the king sold it to Sir Edward Dudley (later Lord North) Chancellor of the Court of Augmentations.

1.4.10 Leased to various tenants, Headstone Manor descended with Harrow Manor until 1630 when its manorial rights were detached and sold with Harrow and Sudbury Manors. Headstone Farm was then bought by Simon Rewse, the then lessee, who panelled the Great Hall and built an extension to the rear. A glimpse of the nature of the Manor House at this time is seen in the will written in June 1637 by Simon Rewse. To his wife Anne he left 'halfe of the profitte of the Orchard and Garden'. The same document states that he left part of the house and 'the outhousing from the gatehouse under the pigeon house to the moat' to Anne (ibid., 166). Incidentally, this shows that there was still a gatehouse at this time, though it is unclear where this was situated. The rest of the estate was left to his four sons.

1.4.11 Simon's son, Francis Rewse, fought on the Royalist side in the Civil War, and the property was sequestered by the Middlesex Committee for compounding a parliamentary committee which seized the properties of those who had supported the king. William Williams bought the estate in 1649 when the sequestration order was discharged, and built a substantial new wing containing cellars, a pantry, and bedrooms. He sold it in 1671 to Sir William Bucknall, in whose family it remained until 1823. Another wing was built in the 1770s, and a brick façade was added to the front of the house.

1.4.12 The earliest map record for the site is John Rocque's 1754 map of London and the County of Middlesex, but it shows little detail. Four buildings are depicted, the Manor House, Great Barn and other buildings to the south-west and south-east, but the moat is not shown. It does record the presence of an avenue of trees lining the then main access route to the farm complex from Headstone Lane to the north-west corner of the Outer Court. Another map of similar date, Isaac Messeder's map of Harrow of 1759, also omits the moat and is in some respects even less detailed, but it does show the Manor House as narrower at the north-west end, an outline followed, albeit in a variety of forms, in all subsequent maps.

1.4.13 Throughout the 18th and 19th centuries Headstone Manor was extensively farmed, being one of the largest farms in the area. Maps for this period prior to the main OS series include the Enclosure map of 1817 and the Sale map of 1819, maps of 1840 and a sale map of 1845, and the Sale of particulars map of 1860 (surveyed in 1853). The 1st edition Ordnance Survey (OS) map at 1" to 1 mile was printed in 1865, and was followed by further detailed (1:2500) maps in 1878, 1896, 1913-14, 1935 and 1960.

1.4.14 The 1845 map and the 1860 Sale of particulars maps (Fig. 3) indicate a formal garden layout of what seems to have been beds surrounded by a grid of paths in the southern corner of the island (to the south of the Great Hall), with the eastern portion of the island covered with an orchard. Three buildings are shown to the north of the Manor, and records mention a brew house and outhouses for water fowl and wood (Ibid., 183). By the time of the 1896 2nd edition OS map, these structures appear to have gone and in the 20th century, maps are supplemented by a number of photographs and sketches (Ibid., 178-9, figs 10-12).

1.4.15 With the coming of the railways to Harrow, the first railway station (now Harrow and Wealdstone) was opened in 1837, the character of the area around the site gradually became more suburban. Within 17 years, following a serious agricultural depression, the large Headstone Manor Farm (sometimes called Moat Farm) was divided equally

between a Frederick Harrison and William Bush Cooper. Further portions were sold off during the 19th century and in 1874 the rest of Harrison's portion, then consisting of the Manor House and 189 acres, was conveyed to Edward Christopher York. York's executors sold some land in 1899 but the house and 148 acres were conveyed to his son, Edward in 1922. Edward York sold the house and 63 acres to Hendon District Council for recreational use in 1925, and the last farmer left the property in 1928.

1.4.16 The OS map of 1935 shows that the then District Council implemented relatively few changes during its first decade of ownership of the site. The farmyard buildings had now lost their original functions, and as each one deteriorated it was demolished, while the Manor House also fell into decay.

1.5 Previous archaeological work

1.5.1 Over the past three decades, a number of archaeological works have taken place on the Moated Island at Headstone Manor. These have usually simplified the orientation of the Manor House, which is north-west/south-east to 'north-south' with south-west/north-east becoming 'west-east'. This convention is followed in the following description of previous work on the site, but in the account of the investigations that are the subject of this report, and in the discussion, the actual orientations are used.

1.5.2 During 1985, Harrow Archaeological Surveys carried out a geophysical survey of the moated enclosure. Its primary purpose was to establish the ground plan of the demolished portion of the medieval Great Hall, and that of any other structures within the island. However, it produced limited evidence of features, the results seeming to be mostly related to the formal gardens seen in various 19th-century plans and engravings (Watkins 1985).

1.5.3 In 1987, service trenches dug north-west of the Manor House revealed buried walls, which were observed first by Patricia Clarke and subsequently by Tucker while he was excavating the site of the Small Barn. Tucker noted a hearth and several further walls, and Patricia Clarke made brief notes, but apart from photographs of one exposure taken by Patricia Clarke, there was no more formal record. The date, form and purpose of the building to which they belonged was not clear (P Clarke unpublished observations).

1.5.4 In 1996, a linear anomaly was detected during a resistivity survey conducted by GeoQuest in a grassed area to the south of the Manor House. This was taken to represent wall footings. Three sides of the probable structure were mapped, though the fourth (south-eastern) side was not surveyed, as it was too close to the moat (GeoQuest 1996. fig. 2; see also Fig. 4 below). A second area of high resistivity was found in the east corner of the island, and was interpreted as being the remains of a hard standing or cobbled yard (ibid., 5).

1.5.5 A programme of trial-trench excavations by the Central Archaeology Service to the south of the Manor House uncovered parts of an N-S linear feature in 1997 (Trenches SSD1 and SSD2, Busby 1997). This feature was interpreted as the remains of a robber cut dug when the southern bays of the Great Hall were demolished. Three short sections of flint wall were uncovered to the south, aligned north-south (Trenches SSD3 and SSD6). The two western most walls in SSD3 and western end of SSD6, were interpreted as being part of an east-west structure attached to the medieval Great Hall.

1.5.6 Two dendrochronological studies on timbers from the southern end of the Manor and from the roof of the Great Barn were carried out in 2000. The timbers from the Great

Hall and Cross wing were found to have been felled in *c* 1310-1315, whilst timbers from the adjacent 'west' or 'kitchen' wing were dated to 1554–84 (Howard *et al.* 2000).

1.5.7 During 2000, excavations by the Central Archaeology Service within the Cross Wing of the Manor House, to the north of the Great Hall, identified a series of walls built of chalk and both dressed and rough-hewn flint nodules. These appear to have been the footings for the western and north elevation of the service end of the Manor's Cross Wing and the northern wall of a service passage that extended between the Cross Wing and the Great Hall. The large fireplace below the 17th-century chimney stack on the west wing, and the remains of a small section of a flint wall below it, were uncovered to the north of the Cross Wing (Fellows 2001).

1.5.8 In 2010, the moat and its bridge was the subject of work by Heritage Network (Ashworth 2010). The deposits at the base of the moat were core sampled and the moat bridge and the brick revetment wall of the moat's western arm were investigated. The core samples did not produce any deposits or finds pre-dating the clearance of the moat, by drag line, in 1973. Work on the bridge showed that the eastern arch of the bridge dated to the mid-17th century, while the western two arches dated to the mid-19th century. No traces of an early bridge was uncovered during the works.

1.5.9 Work on the brick retaining wall on the moat's landward side revealed that the initial wall dated to the early 19th century with a series of repairs and rebuilds in the 1880–90s and 1930–40s. The report suggested that the western arm of the moat was originally wider and that the bridge was perhaps longer. This appears to be solely based on the fact that it is significantly narrower (10.7m) than the other three arms, which were 13.5m wide. It also suggested that the brick revetment on the moat's western landward side was the response to the erosion of moat's banks on the farmyard side.

2 Project Aims And Methodology

2.1 Aims

2.1.1 The general aims of the project were to:

- determine the existence or absence of any archaeological remains;
- determine the approximate date or date range of any remains by means of artefactual or other evidence;
- determine the approximate extent of the remains;
- determine the condition and state of preservation of the remains;
- determine the degree of complexity of the horizontal and/or vertical stratigraphy present;
- assess the associations and implications of any remains encountered with reference to the historic landscape;
- determine the implications of the remains encountered with reference to economy, status, utility and social activity;
- to determine the likely range, quality and quantity of the artefactual evidence present;
- determine the potential of the site to provide palaeo-environmental and/or economic evidence and the forms in which such evidence may be present.

2.1.2 The specific areas of research targeted by the Archaeological Mitigation Strategy were as follows:

- To demonstrate medieval occupation on the moated platform prior to the early 14th century. This would be potentially very significant. In particular, any firm evidence for the existence of the putative stone-built precursor to the existing Manor House (Martin and Martin 2001) would contribute to the current knowledge and understanding of the early origins and development of the monument;
- Similarly, previous archaeological excavations in the area of the Small Barn demonstrated the presence of earlier structures, potentially dating from the 13th century (Tucker 1987). Further evidence for these structures would contribute to the current knowledge and understanding of the early origins and development of the monument;
- The identification of buried medieval soil horizons. These could offer an important opportunity for palaeo-environmental sampling.
- The archaeological mitigation programme included the provision for additional investigation to clarify the character and date of buried archaeological deposits, and to look for alternative routes or options where buried archaeological remains of significance were threatened.
- The project specific aims were reviewed as the work progressed and with the agreement of Historical England's inspector new aims were added as appropriate.

2.2 Methodological standards

2.2.1 All archaeological work and the preparation of this report was conducted in accordance with the agreed mitigation strategy (OA 2016a) and in accordance with local and national planning policies (National Planning Policy Framework, Communities and Local Government 2011).

2.2.2 Fieldwork techniques followed current best practice and accepted professional standards (see OA Fieldwork Manual 1992; MoLAS Site Manual 1994), and as outlined in:

- Chartered Institute for Archaeologists – Standard and Guidance for archaeological excavation, 2014;
- Historic England – Environmental Archaeology, 2015;
- GLAAS Archaeological Guidance Papers 2014;
- Corporation of London archaeology guidance – Planning Advice Note 3, 2004.

2.2.3 Watching brief

2.2.4 All excavations were carried out by the contractor with the programme of works being dictated by the main contractors' method statement. This phase of works comprised the machine excavation of a series of continuous trenches for the installation services or the reduction of ground over a wider area for landscaping works, paths, etc.

2.2.5 All the trenches were dug 0.4–0.6m wide and were excavated down to archaeological deposits (where present) or between 0.4m and 0.7m below the present ground level.

2.2.6 A mini-digger fitted with a toothless bucket was used. Aside from the initial cutting and breaking out of tarmac and concrete of the road/paths, this work was carried out under continuous archaeological supervision.

2.2.7 Turf, topsoil, and the backfill of modern service trenches and other modern deposits were removed in spits no greater than 0.1m in depth. All revealled archaeological deposits and features were cleaned and investigated in stratigraphic order by hand.

2.2.8 All spoil and upcastings from the excavtions were scanned visually for artefacts and ecofacts.

2.2.9 All sections and surfaces were cleaned and recorded. Where the section was seen to be the same along the length of the trench a 1m-long representative section was drawn.

2.2.1 Any excavation, both by machine and by hand, was undertaken with a view to avoiding damage to any archaeological features or deposits that appeared to be worthy of preservation *in situ*.

2.2.2 Additional archaeological works west and north-west of the Manor House

2.2.3 An archaeological watching brief was carried out on the excavation of the Heating Duct II within the moated enclosure to the west and north-west of the Manor House (Fig. 4). Removal of the tarmac path yard surface and its sub-base was initially carried out by the contractor using a machine, and any layers below this were excavated by hand by the ground workers under close archaeological supervision.

2.2.4 During the initial watching brief, archaeological deposits and several probable walls built of roughly dressed flints were uncovered within the Heating Duct Trench. The tops of these walls lay *c* 0.3m below the present ground level, but the Heating Duct Trench needed to be 0.6m deep.

2.2.5 The trench was therefore widened to the south and west in an attempt to establish the limits of the structures and to see if an alternative route for the Heating Duct Trench that avoided the flint walls could be found. The uppermost, recent deposits were removed by the contractor using a machine under close archaeological supervision, but once archaeological levels were reached all features were hand-excavated by OA archaeologists.

2.2.6 The general excavations down to a depth of *c* 0.3m below ground level to the north of the Manor uncovered walls belonging to a substantial structure. A strategy for dealing with this was agreed with Harrow Council's Heritage and Museum Manager, Jo Saunders, and with Historic England's Assistant Inspector, Iain Bright.

2.2.7 The excavation area and the depth and scale of investigation was determined by a number of factors. These comprised:

- The need to maintain a safe distance from the scaffolding then in place around the standing building;
- The size of the area proposed for landscaping to the north-west of the Manor House, as it seemed likely that even relatively shallow landscaping would result in an impact upon the buried walls and other deposits;
- The possibility of providing significant new information about the Manor House that could be incorporated into the layout and educational displays for the museum;
- A desire to limit investigation to the minimum required to establish the date and character of the structure, both to preserve archaeological remains undisturbed as far as possible, and to limit costs.

2.2.8 The agreed programme of work comprised the removal of deposits to impact depth over the area to be landscaped (and in some areas just below this), in order to reveal the extent and plan of the building, and the excavation of a number of hand-dug archaeological trenches (Trenches 1–5) to characterise and date the structure, and to understand the level of preservation of buried deposits associated with it. Following the removal of the scaffolding from around the standing building, three more small trenches (A–C) were excavated adjacent to the walls to establish the further extent of the building, and in an attempt to provide stratigraphic relationships with the standing

building. In all cases the work sought to preserve the archaeological remains *in situ* as far as possible.

2.2.9 Additional works south-east of the Manor House

2.2.10 Archaeological structures were also revealed at a depth of little more than 0.2m during landscaping works to the south-east of the Manor House (Fig. 4). Once more, the initial excavation of the topsoil was carried out by the contractor using a mini-digger, with subsequent work being carried out by OA archaeologists once archaeological levels had been reached. This included the clearing and recording of the structures as well as the hand-excavation of trenches (Trenches D–J). These were excavated to establish the plan of the structure, and if possible, to date it. Only a few small trenches were excavated to any depth, as the purpose of the work sought as far as possible to preserve the archaeological remains *in situ*, and only a short time and a limited budget was available for investigation at this late stage in the restoration programme.

2.2.11 General landscaping

2.2.12 General landscaping, including the installation of new paths and removal of redundant drainage runs, was undertaken on all sides of the Manor House. This was carried out by the main contracter using a mini-digger, and only involved the removal of soils to a depth of *c* 0.2m below ground level. The only deposits observed were the topsoil and a number of modern and recent services; no archaeological features, structures or deposits were encountered.

2.3 Recording

2.3.1 All observations were undertaken against a unique Event Site Code (HEM14), and a continuous, unique numbering system was used.

2.3.2 All archaeological deposits and features were recorded using OA pro-forma recording sheets.

2.3.3 A complete drawn record, which incorporated plans and sections, was made of the deposits and features uncovered on site. These were drawn at scales of 1:20 for plans and 1:10 for sections.

2.3.4 A full photographic record was maintained. The photographic record included photographs of all archaeological features and deposits as encountered and shots to illustrate work in progress.

2.3.5 The setting out of the service trenches and landscaping areas was done by the Principal Contractor following their method statement. The setting out of the archaeological trenches was carried out by OA using a Global Positioning System (GPS). The positions of the archaeological trenches were agreed in advance with Historic England and Harrow Council's Heritage and Museum Manager.

2.3.6 The positions of the trenches and interventions were mostly surveyed in by an OA surveyor using a GPS. Where this was not possible, for example within the standing building or very close to it, trenches were located from known points, i.e. buildings using measuring tapes and offsets by triangulation.

2.3.7 All levels recorded were taken either from GPS data or from known Temporary Bench Marks (TBMs), and were recorded as metres above Ordnance Datum (m aOD).

2.3.8 Any deposits or remains of archaeological significance were hand-drawn using a temporary site grid, which was then located using GPS or tapes and offsetting. All other hand recording was undertaken using at least two datum points creating a baseline from which measurements could be taken.

2.3.9 In the excavation areas, key points relating to the buried structures (walls and hearths) were also surveyed in directly by GPS where the signal allowed.

2.3.10 For the area north-west of the Manor House, photogrammetry was used to create rectified ortho-photographs of the building during excavation. Although a hindrance in other respects, the scaffolding around the edges of the building on the north-west side was of benefit for this purpose.

2.3.11 South-east of the Manor House, a polecam was used to allow photogrammetry of the exposed walls.

2.3.12 Upon project completion all drawings were digital captured comprising of closed polygons, polylines or points and incorporated within the Ordnance Survey map of the area. This was undertaken in accordance with the requirements of GIS construction and OA Geomatics protocols.

2.3.13 All plan scans have been numbered according to their plan site number. Digital plans will be given a standard new plan number from the site plan index at the time of archiving.

2.3.14 Each CAD drawing contained an information layout, which included all the relevant details appertaining to that drawing. Information (metadata) on all other digital files were created and stored as appropriate.

2.4 Finds collection

2.4.1 All collected finds were treated in accordance with the relevant guidance and standards set out in the mitigation strategy (OA 2016a). All artefacts from excavated contexts were retained, except those from clearly modern features.

2.5 Environmental sampling

2.5.1 A strategy for sampling archaeological and environmental deposits was developed in consultation with OA's environmental manager and was set out in the mitigation strategy (OA 2016a).

3 RESULTS

3.1 Introduction

3.1.1 This section describes the results of the archaeological investigation, including the finds and environmental material. The results of the fieldwork are primarily summarised by investigation location and type (i.e. service trenches and excavation areas). Where possible related features and remains are linked

3.1.2 Within each individual trench/area, the results are presented as a single chronological narrative describing its chronological development with the earliest first and the most recent last. The features and deposits are phased where possible. These are illustrated by photographs, plans and sections. All structures, deposits and features with their extents and depths/thickness as encountered are presented within the table that forms Appendix A. The site records are available in the project archive.

3.2 Heating Duct trench II

3.2.1 This trench was generally 0.65m deep, but was deepened by supervised excavation in two places to 0.9m deep. It was machine excavated entirely into the tarmac surface of the path and courtyard (OA 2019, figs 2 and 3). From the eastern end of the moat bridge it extended briefly north-east, then kinked north-west for 4m before turning to continue north up to a point just north of the north-west corner of the Manor House, where it turned north-east again (Figs 2 and 4). The intention was to continue to a point

north of the 19th-century northern extension of the Manor House, and to enter the building from there. Only 5m of the north-eastern section of the trench was excavated, however, as work ceased when several segments of wall built of flint and chalk were uncovered *c* 0.3m below ground.

3.2.2 The excavated area was therefore widened to the south and west in an attempt to establish the limits of the walls and to see if an alternative route for the Heating Duct Trench could be found avoiding the flint walls (Fig. 4). This revealed further walls, thus it was decided to utilise one of the existing service trenches across the area to take the new heating duct, limiting the impact upon the buried remains. To the north of the Manor House, most of the walls were recorded and left *in situ*. Following agreement with Historic England, parts of an already damaged tile hearth (505/506), a north-south partition wall (502) and a short length of partition wall (503) were removed to allow the diverted Heating Duct to obtain access to the standing building.

3.2.3 The excavations of Heating Duct II began within the Outer Court to the west of the moat bridge in the autumn of 2016. The results of this work have been described and discussed within an earlier report (OA 2019) and are not included here. The Heating Duct crossed the moat bridge in a modern concrete lined service run set into the tarmac surface of the bridge deck. As a result, no archaeological remains were found on the bridge.

Western section of Heating Duct Trench II (Fig. 4)

3.2.4 Within the western section of the trench, from the end of the moat bridge to a point level with the north-west end of the cross-wing, the following structures and deposits were uncovered.

3.2.5 Immediately to the east of the moat bridge, the trench uncovered the corner of a structure built of roughly dressed flint nodules set in a coarse sandy lime mortar (walls 501 and 477) (Fig. 4 inset 1; Fig. 8 Section 75; Plate 1). These were heavily truncated by modern service trenches which, coupled with the limited size of the trench, meant that the alignment and full extent of this structure was difficult to determine. One face of wall 501 was, however, probably genuine, and this ran north-west to south-east. Although no certain faces of wall 477 survived, it was roughly at right angles, and may have been running from north-east to south-west.

3.2.6 These walls were abutted by deposits of clay 507 and 467, which were light-to-mid yellow with patches of light blue/grey and mauve with pink mottling. Neither produced any finds. A similar yellow clay with pink and/or mauve patches was seen throughout the moated site, usually in association with flint walls.

3.2.7 Above walls 501 and 477 was a thin layer of sandy clay (509) containing frequent fragments of struck flint and chalk, possibly derived from the demolition and robbing of the wall. This was sealed by a 0.3m thick layer of compact gravel metalling (508) which lay directly below the present tarmac path. There were no finds from this.

3.2.8 To the north-west of wall 501, another section of flint wall (476) extended north-west to south-east across the line of the trench at a depth of *c* 0.5m (Fig. 4; Fig. 8 Section 70; Plate 2). This wall, which was built of roughly dressed flint nodules in an orange yellow coarse sandy lime mortar, was 0.6m wide and was at least three courses high, but was not bottomed at the base of the trench. Wall 476 was abutted by a 0.25m-thick layer of blueish-grey mottled silty clay (478) that contained a sherd of South Hertfordshire Ware pottery manufactured between 1170 and 1350. To the south, there was a layer of flints visible in section at the level of the top of 478, which did not continue into the trench.

These may indicate that the wall returned just beyond the section, or may represent a construction horizon within the dumping, as both this and the layer beneath were overlain by the greyish-yellow clay 467, which at this point was 0.4m thick. To the north of the wall layer 478 was lower, and was sealed by layer 457, a stiff orange brown clay containing flecks of chalk, rare small pebbles and occasional roof tile fragments manufactured during the 17th and 18th centuries, which also abutted the wall. This layer was seen along most of this section of the Heating Duct Trench to the north where it lay below the present topsoil (471) in this part of the site. Both layers were cut by the robber trench of wall 476, which was filled with deposit 459, from which came a half-brick of late 16th- or 17th-century manufacture. The fact that the change from 467 to 457 occurred along the line of the wall strongly suggests that both layers originally abutted the wall.

3.2.9 To the north of 476 a section of an open-topped brick conduit (458) was uncovered running east-west across the trench (Fig. 5; Plate 3). This was constructed of red unfrogged bricks manufactured between the late 18th and 19th century and cut through layer 457. Conduit 458 was sealed by the present topsoil (471), through which a recent cut 484 had been excavated, apparently to rob the drain, and had been backfilled with a mixture of topsoil, charcoal and ash.

3.2.10 Heating Duct trench II was partly excavated for a further 17m, but when masonry and cobbled surfaces were encountered at a depth of less than 0.3m, further machine excavation was halted while the trench was cleaned up and recorded. As the Heating Duct trench needed to be 0.6m deep, a site meeting was convened with the Headstone Manor Museum Director and the Assistant Inspector of Ancient Monuments to discuss possible alternative routes for the trench.

3.2.11 The meeting resulted in the decision to clear much of the area in the angle between the west and north-east ranges of the Manor House, in order to understand what had been revealed and so assist in determining the best route for the service trench. Following machine stripping of tarmac and make-up under close archaeological supervision, hand-cleaning and limited hand excavation was carried out, the results of which are described below.

3.3 Excavation north-west of the Manor House

3.3.1 The general excavations to the north of the Manor House were initially carried out with a machine to remove the tarmac and sub-base of the present yard, and thereafter by hand down to a depth of *c* 0.3m below ground level. A number of hand-dug archaeological trenches (1–5) were then excavated to characterise and reveal the extent of the structure both in plan and in section (Fig. 5). Subsequent to this a 0.6m deep trench was excavated for the diverted Heating Duct using a pre existing drainage/electric trench excavated in the 1980s. This ran west to east across the area before turning north-westwards and cutting through the south-western wall of the northern extension to the Manor to enter the building beneath the glass door into the former kitchen (Fig. 5; Fig. 8 Section 77/71). Once within the building it turned north-westwards parallel to the present wall of this part of the Manor. Once the scaffolding around the standing building had been removed, three further small trenches (A-C) were also excavated.

Description of archaeological deposits/features and structures

3.3.2 The earliest deposit seen in this part of the site was layer (487) a grey silty clay with orange brown mottles. This deposit was found at the base of Trench 1 at a depth of *c*

1.3m (52.86m aOD), where it underlay flint and chalk wall 378 (Fig. 8 Section 65; Plate 4). Wall 378 was *c* 0.6m wide (*c* 2ft) and was preserved to a height of nearly 1.1m. It was built of randomly coursed, roughly worked chalk blocks and flint nodules bonded with a coarse sandy lime mortar, and dressed in the upper courses to give a fair face (Plate 5). In Trench 1, the lower courses were almost entirely of chalk, the upper courses mainly of flint. The change corresponded with a slight narrowing of the wall, but this was not as clear a distinction as in Trench 2, less than 1m away, as flint blocks extended down to the base of the exposed wall (Plate 6). In Trench 4, more chalk was evident in the higher wall courses (Plate 7). These walls belonged to a rectangular building (452), its long axis aligned south-west to north-east, which was 7.6m wide from north-west to south-east (Plate 8) and at least 16.8m long (E-W) (Fig. 5). The outer walls of this building, which elsewhere were also 0.6m (2ft) wide, were all built of the same flint and chalk materials bonded in the same mortar. Particularly large flint blocks were used at the north-west corner, the only corner that survived to any height (Plate 9).

3.3.3 With the excavation of Trench A (Fig. 5; Plates 8 and 10), the south-western wall of this structure (numbered variously 260, 378 and 492) was revealed for its full length (7.9m). The north-western wall (numbered 715, 680 and 679) was robbed to a greater depth than the south-west wall, but a continuous length of over 7m (numbered 715) was exposed from the west-corner, and the wall was followed further to the north-east in Trenches B and C dug against the 19th-century lean-to on the 18th-century extension to the Manor House (Plates 11–13). Here, it was numbered respectively 680 and 679, showing that it was at least 16.8m long, as it continued beyond the limits of excavation to the north-east.

3.3.4 Close to the south-west corner only the inner face of the wall was exposed, as the overlying spreads of large flint cobbles and possible walls were not removed, but sufficient was done to clarify that there were no gaps in the wall (Plate 14). For most of its length, only the top of this wall was exposed (Plates 12, 13 and 20), but Trench 4 was dug to investigate its relationship with cross-wall 240 and to expose the stratigraphy against the upper part of the wall (Fig. 9 Section 64).

3.3.5 The building's south-eastern wall (numbered 510 and 693) was traced for 8.5m (10.8m including previous observation by P Clarke (Plate 15), but was not accessible further to the north-east, passing beneath the present standing building. Although substantially truncated by a later service trench, the lowest courses of the wall survived beneath this (Fig. 8 Section 99; Plate 23), so that a continuous stretch of wall was observed and planned (Fig. 5). The north-east wall of this building was not found.

3.3.6 Building 452 was sub-divided by three cross-walls of flint and mortar (Fig. 5): wall 240, wall 502 and wall 503 (also numbered 559 and 564). A 1.2m-length of wall 240 was uncovered, and the wall appeared to end at this point, although only the top was exposed here (Plates 7 and 16). Only about 1m of wall 502 was exposed (Plate 17). Wall 503, which lay partly beneath the northern extension to the standing manor was traced over a distance of 4.3m (Plates 18 and 19), but no end was found either to the north-west or south-east. The internal walls were much narrower than the outer walls (240 was 0.5m wide, 502 was 0.36m wide and 503/559/564 was 0.46m wide). Walls 240 and 502 were not keyed into the outer walls, so were clearly constructed afterwards, though they need not represent later additions. The junction between wall 503/564/559 and the north-west wall 680 was removed by a later service trench to the depth to which excavation was taken (Fig. 5; Plate 12); the presence of live drains did not allow excavation to greater depth.

3.3.7 A possible fourth wall (268) was found on the north-west side (Fig. 5), but only its top was exposed, and this was not obviously mortared (Plate 20). Its relationship to 715, the outer wall of the building, was not established, and it appeared to be aligned slightly less than 90 degrees from the outer wall. A small sondage (Trench 5) was dug to establish whether structure 268 continued south-eastwards, but appeared to indicate that it had ended only 1.2m from 439, the area beyond this at the same level being occupied by a burnt floor layer (542), and so was of similar length to 240 further south-west (Fig. 9 Section 78; Plate 30). It was interpreted on site as a later feature, though no date was established.

3.3.8 In all of the hand-dug trenches internal and external deposits were revealed in relation to the outer walls, although only in Trench 1 was the sequence of deposits followed to the base of the wall (Plate 4; Fig. 8 Section 65).

Outside building 452

3.3.9 To the south-west of wall 492 the lowest deposit exposed was in Trench 2. This consisted of grey clay with orange brown mottles (494), which was at least 0.3m deep, but was not bottomed at a depth of 1.2m. This deposit, which contained no finds, abutted wall 492 (Fig. 8 Section 74). It was sealed by an 80mm-thick deposit of orange-brown clay (491), which contained frequent fragments of chalk and struck flint and two small fragments of a roof tile possibly of 17th–18th century manufacture (491). This deposit sloped down from the wall to the south-west, and appears to represent a working surface during construction or repair of the wall (Plate 21). Layer 491 was sealed by a 0.8m-thick deposit of orange-brown clay containing flecks of chalk and fragments of roof tile believed to have been manufactured in the 17th–18th centuries (457). This deposit was seen in most of the Heating Duct Trench to the west where it lay directly below the present topsoil. All of these deposits abutted wall 492 with no traces of a construction cut for the wall being found.

3.3.10 In the Heating Duct trench, 457 was recorded as overlain by layer 467 against the south-west wall of Building 452 (see 3.2.8 for description), but elsewhere layer 457 was sealed by a layer of well-sorted greyish brown silty clay (357) containing frequent flecks of chalk and occasional flint nodules. No relationship between 467 and 357 was found. Just outside the north-west corner of the building the stratigraphy was much truncated by service trenches and other recent features, but the wall (here numbered 260) was partly overlain by layer 271, a firm brown clayey silt with occasional pebbles, and without finds (Fig. 6). This may have been equivalent to 357.

3.3.11 The north-west wall of building 452 was robbed to a greater depth than the south-west wall, but a continuous length of over 7m (numbered 715) was exposed from the west-corner, and the wall was followed further to the north-east in Trenches B and C dug against the 19th century lean-to on the 18th century extension to the Manor House. Here it was numbered respectively 680 and 679.

3.3.12 Outside wall 715, the north-west wall of the building, only the top of the redeposited clay was exposed, and this was a yellowish grey clay (243) which did not produce finds (see Plate 36). This may have been equivalent to layer 467. The surface of this layer was not level, having two distinct peaks, one just outside the wall, the other centred 1m from it, but these were only seen in section, so their extent and meaning is unclear.

3.3.13 The lowest deposit exposed outside 680 (the continuation of the north-west wall in Trench B) was sterile mottled clay 690, similar to layers 467/501 found south-west of the building, and to extensive deposit 557 inside. This abutted the wall, and did not

produce any finds. 690 was overlain by layer 682, a brownish-grey clay with frequent charcoal, equivalent to 681 in Trench C which also abutted wall 679 there, and did not produce any finds.

3.3.14 Overlying these was the robber trench of the wall, filled with 689 in Trench B and 692 in Trench C. These were loose grey and dark grey clayey silts with frequent mortar and charcoal flecks, but neither produced any finds. The robber trench of the wall further south-west was 208 filled by 247, a similar fill but with pebbles and occasional small handmade brick fragments replacing the mortar and charcoal inclusions.

3.3.15 Only small parts of the south-east wall of the building were exposed. At the south corner (Trench A) the wall was numbered 693, but had been truncated along the inner (north-west) side by a later pipe-trench to a depth of 0.95m (Fig. 5; Plate 10). The south-east side however survived to a height of nearly 0.8m within the trench, but the wall was not bottomed.

3.3.16 The stratigraphy outside the wall was only observed in parts due to truncation by recent services, but the sequence was the same as observed outside the south-west wall in Trench 2 (Fig. 8 Section 99). The lowest deposit exposed was 700, equivalent to 494, but here containing three fresh fragments of a tile believed to have been manufactured in the 16th–17th centuries. This was followed by 709, a thin layer containing fragments of chalk and flint that abutted both walls at the corner, and is equivalent to layer 491. This was overlain by a deposit of brown clay with frequent flecks of charcoal 708, and this was in turn overlain by 707, a thicker deposit (0.42m) of yellow and pink mottled clay similar to deposit 457, but without finds. An identical layer was seen north-west of the robber trench of wall 693, ie inside the building, and was numbered 694.

Relationship to the standing Manor House

3.3.17 Layer 707 was then overlain by a thin layer (probably trample), on which three courses of mortared flint foundations (711) were constructed. The upper two courses of flint foundations continued north-eastwards below the standing wall for a further 1.5m, beyond which bricks continued. At the south-west end, there was an apparent break between these and a further block of mortared flint (706), which had vertical edges and was slightly deeper than the adjacent part of 711, and was in line with the mortared flint wall exposed below the standing Manor House (Fig. 4; Plate 22). This may represent the foundations of the later 16th-century kitchen and bake-house range prior to the red brick refacing of the late 18th century, over which a new timber floor was laid (Martin and Martin 2001, 12).

3.3.18 South-west of 706, four courses of mortared brick stretchers (703), founded at the same level as flint wall 706, were seen forming the continuation of the foundations for the red brick refacing, which was numbered 705 (Plates 22 and 23). These bricks were 230mm long and 60mm thick, confirming manufacture in the later 18th or 19th centuries. The third course was stepped out from those above and below, and showed that the bricks were unfrogged (Plate 22). The first course of wall 705 above flint foundation 711 was flush with it, but above this the wall stepped in by 40mm, forming a string course (Plates 22 and 23). As wall 706 had been removed to a slightly lower height, a course of floor tiles was used to level up to the string course, and the floor tiles continued above brick foundation 703. Brick foundation 703 was constructed on the line of the brick walls above the string course, and as a result it had two string courses separated by only one course of bricks and tiles. This may indicate that the original intention was to remove the flint foundations of the former kitchen range

entirely, but that this was abandoned and they were instead left in place and the internal floor level raised.

3.3.19 Abutting 706 was a layer of friable grey clayey silt with frequent mortar flecks (710), which contained a large sherd of pottery of a type manufactured between 1650 and 1800. This was truncated by 699, the cut for a brick drain 695 that ran north-east to south-west along the edge of wall 693, and parallel to the brick range. This was floored with a single layer of tiles or bricks, and was lined with five courses of bricks, the uppermost course stepped out from the lower ones. The brick retained as a sample of this drain was of 18th-century type. The drain was infilled by layer 697, which was a loose deposit of greyish-brown clay and gravel. There were no finds. Beyond the corner of Building 452 one side of this drain was visible in section between the recent services (Plate 23). This drain was similar in construction to drain 516 found further north-east (see 3.3.43 below), but whether these were connected is unclear.

Within building 452

3.3.20 Within the building, and directly overlying natural 487, wall 378 was abutted by 456, a 0.5m-thick deposit of mottled brown clay silt. This layer sloped down from north-east to south-west, so was thicker further from the wall. It contained one scrap of pegtile weighing only 6g, tentatively ascribed to a type manufactured in the 17th–19th centuries.

3.3.21 Deposit 456/700 was overlaid by a layer of greyish brown silty clay (479), which also sloped down towards the wall, but thickened and rose again close to the wall. This layer, which did not contain finds, was seen right across the interior of the building as far as dividing wall 503 at the edge of the standing building to the north-east (Fig. 8 Section 71-77). The upper part of a similar clay deposit (493) was seen abutting wall 492 on the inside in Trench 2. This also sloped down away from the wall, and was without finds. To the north-west, 464 was uncovered at a similar height in Trench 3, and was probably equivalent. Beyond dividing wall 503 the lowest deposit was a brown sandy clay with orange mottles and occasional pebbles (562), and this was probably equivalent (Fig. 9 Sections 79 and 80-81; Plate 23). No finds came from this layer.

3.3.22 Around the edges of the interior these deposits were sealed by a thin compact layer made up of fragments of struck flint mixed with small fragments and flecks of chalk and mortar, which was found within Trenches 1, 2, 3 and A, and was numbered variously 480, 490, 451 and 463. This deposit, which was 50mm thick, but was not level, extended from the inner face of the wall for a distance of up to 1.1m all around the interior (Fig. 8 Sections 65, 74 and 99; Fig. 9 Section 64; Plate 24). This deposit was similar to layers 491/709 uncovered at lower height on the outside of the building, and probably represents a trampled working surface, the struck flint and chalk fragments being derived from dressing of the walls during building or repair. No pottery or tile was found in this layer.

3.3.23 On the north-west side in Trench 3, the ‘working surface’ was overlain by internal wall 240, which was added after the dressing implied by the thin construction layer (Fig. 9 Section 64; Plate 25). The construction layer was covered by layer 450, a yellowish-brown silty clay with frequent chalk flecks but no finds, which was 0.1m thick, and possibly represented a further make-up deposit during construction of the internal wall 240, whose base it directly abutted. Elsewhere, the ‘working surface’ was directly overlain (as was layer 450) by a layer of yellow clay with pink or mauve mottles (contexts 243/284/377/455/462/467/557/694). This extensive deposit (Plates 25 and 26), which was up to 0.4m thick, was seen across the whole of the interior of the

building, and contained occasional flecks of charcoal. Exposure 455 contained two medieval sherds of late 12th to mid-14th century date and one sherd of pottery that may also have been of similar date, though also possibly manufactured between 1480 and 1600. Layer 513, which overlay 455, was a further deposit of compact brown clay, and apart from some black mottles and occasional charcoal fragments, did not contain finds. This was probably also part of the deliberately dumped clay, though as it slightly overlapped the inner face of the wall (Fig. 8 Section 74), it may instead have been later.

3.3.24 Wall 502 and fireplace 505/506

3.3.25 Cross-wall 502 was constructed at right angles to the south-east wall of Building 452 (here numbered 510) within a vertical-sided, flat-bottomed cut (545), 0.47m wide, whose base was only 0.1m deep into layer 479. Modern services had removed the junction between these walls, and only the very edge of wall 510 was visible in section (Plate 27). A tiled hearth was constructed up against both walls (Fig.5; Fig. 8 Section 77/71; Plate 28). The hearth was built both of a stack of roof tiles laid flat (505) in a band 0.3m wide against wall 502, and an area of tiles set on edge (506) parallel to wall 502, which was 0.6m wide against wall 510, and extended north-westwards for at least 1.05m. Tiles on edge had also been placed along the face of wall 510 between it and the main body of 506, presumably to protect the face of the wall from flaking in the direct heat. Samples of tile from 506 were of a fabric considered to be of 15th–16th century date, those from 505 of a fabric usually dated to the 16th–17th-centuries.

3.3.26 Wall 502 and hearth 505 were truncated less than 1m from the junction with wall 510 by the cut for a circular ceramic drain. Just before this truncation, the upper course of surviving flint wall stopped, and was continued at the level of the top of hearth 506 by a red floor tile (Plate 29). It is difficult to interpret this, as only one tile survived south-west of the later drain. As the hearth was still continuing, this is unlikely to have been a doorway, but may have been a recess at the back of the hearth or fireplace within the wall.

3.3.27 Occupation deposits on the floor

3.3.28 A thick make-up layer (479) was recorded to the west and east of hearth 505/506. This was overlain by burnt clay deposit 527, though this may have been *in-situ* burning of the surface of 479, as this was apparently the floor of the building, into which hearth 505/506 was built (Fig. 5; Fig. 8 Section 77). A similar burnt clay deposit was seen immediately overlying the make-up 2.8m north-west of the fireplace (542) and another (561) beyond wall 503 to the north-east (Fig. 9 Section 80; Plate 30). Burnt clay 527 was overlain by successive thin deposits of dark grey, charcoal-rich silts (526 and 514) (Fig. 8 Section 77/71; Plates 31–32), the latter directly overlying the fireplace (Fig. 8 Section 77), and a similar deposit (560) overlay burnt clay 561 beyond wall 503 (Fig. 9 Sections 79-80 & 82; Plate 33). Deposit 526 was evident on both sides of the service trench crossing the building from west to east, but did not extend as far as Trenches 1, 2 or Trench A at the south-west end. These deposits contained peg tile fragments of types believed to be manufactured in the 16th–18th centuries.

3.3.29 Layers 526 and 514 were both sampled for environmental remains (samples <5> and <4>), and both contained assemblages of bird, rodent and amphibian bones; 526 also contained a couple of fish bones. A further assemblage of small mammal bones was recovered from a sample taken while cleaning hearth 506 itself (sample <6>). Layer 527 was also sampled (sample <7>), and also contained a couple of mouse bones and a fishbone. All four of these deposits also contained small quantities of charred plant remains including cereal grains, and some also contained hazelnuts and peas (samples

4-7). The charred plant remains were interpreted as floor sweepings that had subsequently been charred. Charcoal from these deposits on and over the hearth indicated that logs of a variety of species had been used as fuel, including oak, beech, hazel, ash, field maple and elm. Roundwood charcoal from layer 526 was radiocarbon dated to 1290-1410 at 95% confidence (GrM 18184; 595 ± 30 BP), and roundwood charcoal from 514 to 1430-1475 AD at 95% confidence (GrM 18110; 431 ± 19 BP).

3.3.30 Later features (Fig. 8 Section 71/77)

3.3.31 Wall 502 was overlain by layer 504 (not visible in section), which was 0.6m wide, the south-west edge following that of the wall, but extending 0.3m further north-east. This was a grey silty clay with frequent tile fragments of 16th century type, pebbles and chalk flecks, and was probably either robber trench fill or demolition.

3.3.32 Only 0.8m west of hearth 506, layers 526 and 514 were cut by 511 (Fig. 5), a near-vertical sided and flat-bottomed cut orientated SSE, which had a coarse sand fill (543) at the base with a single course of bricks sitting upon it, and above that was filled with 515, a brownish grey clayey gravel. Brick fragments from this deposit were of 16th–18th-century manufacture, and this fill also contained a fresh-looking rim sherd of a tin-glazed bowl probably manufactured between 1660 and 1725. This may represent the robbing of a former drain. Some 3m from the hearth, 514 and 526 were also cut by a shallow pit 536, which was filled with 535, a greyish brown clay and gravel with frequent tiles of 16th–17th-century type (Fig. 8 Section 77; Plate 32).

3.3.33 The western edge of 526 was cut by a concrete drain, which also cut feature 531 on its west side. Cut 531 had sloping sides and a slightly pointed base, and was cut into layer 479. It was filled to a height of 0.2m with 530, an orange-brown silty clay with frequent chalk flecks, occasional pebbles and red CBM flecks. Above this was a flint wall or kerb 246 (Fig. 8 section 77; see also Fig. 6 and 3.3.54 below).

3.3.34 Occupation deposits 526 and 514 did not apparently continue beyond cut 530. Adjacent to wall 378/492, the thick make-up layer 479/377/531 was overlain by a brown clay (numbered variously 513, 261, 357 and 540) containing fragments of charcoal and fresh roof-tile pieces of 16th–17th- and (in 357) 16th–18th-century manufacture. This appeared to represent a build-up containing fallen roof tile prior to the robbing of the walls of the building (Fig. 8 Section 77).

3.3.35 The relationship between this deposit and the occupation deposits further to the east was removed by a wide pit 546 containing deposits 533 and 532 (Fig. 8 Section 77). The lower deposit (533) was a dark grey silty clay with inclusions of ash and charcoal, chalk fragments and (at the top) frequent roof tiles lying horizontally. Although not dissimilar to the occupation deposits found east of 530 (Plate 33), it apparently also contained occasional fragments of ceramic drain pipe (not retained), and so was judged to be of 19th-century or more recent date. The upper fill of feature 546 (532) was a brownish-yellow clay containing pebbles and roof tiles, which were not retained. Feature 546 includes within it the location of feature 276 filled by 278, which was recorded in plan but not in section, and 276 was probably part of 546.

3.3.36 On the north-east of the excavation, burnt clay deposit 542, which is possibly more of the floor of the building, but of which only a small area was exposed, was not followed by an occupation deposit, but was overlain by two layers of broken tiles tentatively dated to the 17th–18th century in a matrix of brown clay (519) (Fig. 5; Fig. 9 Section 78; Plate 30). All of the tiles were horizontal. This was interpreted on site either as a surface or as a demolition deposit from removing the roof. Layer 519 was followed by a

compact orange gravel surface (262), which did not contain finds, but is much later (see 3.3.56).

3.3.37 Only 0.25m north-west of 542 was the end of flint structure 268 (Fig. 5), but no relationship was established between this and deposits 542, 519 or 262 due to truncation by later cut 500. Only the top of structure 268 was exposed, and this was at the same level as 519. No relationship between 268 and 715, the north-west wall of the building was established, as this lay beyond the area available for excavation.

Post-building deposit sequence

3.3.38 Cut 511, pit 536 and occupation deposits 514 and 526, were overlain by a compact greyish-brown gravel surface 269=537, which contained fragments of pegtile of 16th–18th-century manufacture (Fig. 6). This continued north-east of the hearth up to and over the edge of wall 503. Within the standing 18th-century north-east extension and the 19th-century lean-to wall 503/564/559 and its associated occupation deposits were overlain by levelling layer 554, a brownish-grey clay with black-and-white sand, frequent tile pieces and occasional flecks of chalk and charcoal. Tile from this deposit was of 16th–17th-century types, and there was also a sherd of pottery manufactured around 1480–1600. This deposit was capped by a compact clay and gravel metalling layer (558) that did not produce finds. This metalling was very similar to layer 537 outside the extension, and at much the same level, and is probably a continuation of the same deposit.

3.3.39 Layer 537 was cut by 517, the construction trench for a brick drain 516 (Fig. 5; Fig. 8 Section 77). This was constructed of unfrogged red bricks of 16th–17th century character bedded upon a greyish-yellow coarse sand (538). Only two courses of the drain sides survived, and the fill of the drain was layer 518, a dark grey fine sandy silt without finds (Fig. 8 Section 77; Plate 35). The sides of the drain and the fill were overlain by gravel and clay fill 539, backfill of the robbed-out drain, which was without finds. The line of the drain was not visible in plan, as this area was covered by a later deposit (512) that was not removed (Plate 36).

3.3.40 On the north-west side of the building the equivalent deposit was probably 282, greyer and sandier than 537. This directly overlay the redeposited clay floor in part, and although it abutted wall 240, rather than overlying it, this layer extended beyond Building 452 to the north-west (Fig. 6). It was overlain at its south-eastern limit by a small group of large flints numbered 280, and was cut by the robber trench of the north-west wall 715. There were no finds from this layer.

3.3.41 Deposit 537 did not extend as far as the south-west edge of the interior of Building 452, instead deposit 513 was sealed by a yellowish brown clay (356) which contained roof tiles manufactured between the 16th and 18th centuries. This was cut by the robber trench of the south-west wall 453 (Fig. 8 Section 65).

3.3.42 Within Building 452 a layer of brownish-yellow clay (261) containing small tile and charcoal fragments covered part of the north-western corner of the building. This is probably equivalent to layer 540 seen in section (Fig. 8 Section 77). A linear feature 276 aligned north-west to south-east was planned cutting 261, and was filled with a dark greyish-brown sandy clay (278) with chalk fragments (Fig. 6). This had been removed before section 77 was drawn, but was cut by feature 546. No datable finds came from either 261 or 278.

3.3.43 Just outside Building 452 redeposited clay layer 457 was sealed by a layer of greyish brown silty clay (357) containing frequent, well-sorted flecks of chalk and occasional flint nodules. There were no finds. No relationship between 467 and 357 was found.

3.3.44 To the north-west 357 was cut by a wide pit 482 and a smaller, V-profiled pit or gully 496 (Fig. 6). Pit 482 was filled with brownish grey sandy (481) and frequent tiles, which were dated as of 17th–18th-century manufacture, plus a couple of residual potsherds dated AD 1480–1600. Feature 496 was filled with greyish-brown silty clay 495 containing tile, brick and clay pipe fragments dating to the late 18th–19th centuries. This latter feature was not seen in plan, only in section in the side of Heating Duct trench II.

3.3.45 Overlying 357 on the west was a compact greyish brown gravel metalling (274), which extended southwards for at least 5m to the limits of the stripped area and beyond (Plate 36). This deposit contained a sherd of pottery manufactured between 1680 and 1750. It was probably the same as 358, a layer of very similar metalling that overlay pit 482 and feature 496, and extended another 2m west of Heating Duct trench II when the stripped area was extended, and continued further south for at least another 2m (Fig. 6). Deposit 358 contained tiles of 16th–18th-century type. This layer had a straight west edge, beyond which was a silty clay deposit, possibly more of deposit 357, below topsoil 263. Together, deposits 274=358 made up a band up to 3m wide running south-north, and probably representing a path for traffic from the bridge past the Manor House to outhouses and the orchard beyond. At the north end 358 was recorded as cut by 454, part of the robber trench of the south-west wall of Building 452.

3.3.46 The robber trench of the south-west wall (numbered 374 filled by 375 adjacent to the standing building and 454 filled by 453 further to the north-west) cut through layers 357, 358 and fill 481 on the outer side, and through layers 356 and 540 on the inside (Fig. 6; Fig. 8 Sections 65, 74 and 77). Close to the south-west corner fill 375 was a light grey clay with charcoal flecks that did not contain finds, but 453, the fill of cut 454, was a dark grey ashy fill containing fresh fragments of 18th–19th century pegtiles and a 22g-corner of a frogged brick of later 19th- or 20th-century date. Near to the north-west corner of the building, the wall was cut across by recent services, and its robber trench was believed to be cut 259, seen in the base of later pit 266. The fill was 258, a brown silty clay that included chalk and mortar, and a sherd of pottery of late 15th- or 16th-century manufacture. The extent of this layer as planned was however wider than the wall on both sides, and it may have been confused with 261 in part.

3.3.47 The robber trench of the north-west wall was numbered 208, and this was filled with yellowish-grey clayey silt and frequent flint pebbles 247, plus occasional larger flint nodules and fragments of handmade bricks, though these were not large enough to date (Fig. 6; Plate 37). Further north-east the robber fills were 689 in Trench B and 692 in Trench C. These were loose grey clayey silts with frequent mortar and charcoal flecks, but neither produced any finds.

3.3.48 The very late date of the finds from fill 453 may indicate that these are intrusive, as the surviving cut was both wide and very shallow. Alternatively, given the very different character of the fill to that of 375 and 258 either side, this may not represent the original robber trench of the wall, but instead a later excavation to level the wall stub prior to laying a new courtyard surface.

3.3.49 The robber trench was overlain by levelling layers 275 and 242. Layer 275 was a firm yellowish-grey sandy clay, and layer 242 a greyish-brown gravel in a matrix of clayey silt further north-east (Plates 36 and 38–9). This layer probably overlay layer 269,

although no relationship was recorded. Layer 242 contained residual sherds of both medieval and 16th-century pottery. Layer 275 was overlain by an extensive layer of cobbles 241, which formed a broad band 2–4m wide running south-north past the corner of the standing Manor House towards the moat bridge, and ending at 'wall' or kerb 246 on the east, and continuing as cobbled layer 273 to the north (Plates 36 and 38–40). The gap between 241 and 273 was caused by a slight dip in the cobbling, possibly simply due to the underlying fills being softer within Building 452 than where 273 overlay the remains of the north-west wall, and this hollow was filled by later, smaller metalling 265, but Plate 40 makes clear that the cobbling was continuous beneath this. The stratigraphy was disturbed further north-west by a sizeable pit 266, which was filled with a series of dumped deposits collectively numbered 267. Photographs suggest that this, which also contained frequent rounded pebbles, may have been cut into 241 and then refilled as a repair (Plates 36 and 38–9). South-east of this pit 546 may also have been dug into 241, as the upper fill 532 contained frequent rounded pebbles, and again this fill may have been intended as a repair. On site 266 and 546 were believed to be separate features, but they may in fact have been parts of one linear disturbance oriented NNW. West of pit 266 the cobbling had been cut through to insert a cable, but had been repaired with the excavated cobbles, so that the cut was hardly visible, although the cable clearly ran beneath the cobbles.

3.3.50 The west edge of cobbling 241 was fairly straight, and corresponded to the east edge of layer 274=358 (Plates 236 and 239). Only at the very north-west edge of the area did cobbling 273, or a layer very like it, extend further west (see Plates 36 and 38–9). Although 241 may have overlapped 358 slightly, it is likely that these two deposits were in use contemporarily. On the east, layer 241 was not fully exposed, but extended below crushed tile-and-brick layer 270 to within 2m of the north-west corner of the standing Manor House (Fig. 8 Section 99; see also Plates 36 and 38-9).

3.3.51 Wall or kerb 246 was constructed on the same line as wall 240 below, and was cut into layer 242, bottoming on the surface of the earlier wall in part. It continued beyond 240 south-eastwards, surviving up to three courses deep, until cut by both the concrete drain and the service trench running west-east (Fig. 8 Section 77). In section, it overlay layer 530 filling cut 531, but the V-shaped profile of cut 531, and the fact that the stones overlay 0.2m of fill 530, suggest that this was not the construction trench for the stone kerb, but an earlier feature. A thin band of loose brownish-yellow sand and gravel ran along the north-east side of 246, and if there was a construction cut for the kerb, this is much more likely to have been its fill. A few further stones were seen in the opposite side of the service trench, and possible traces of a continuation of this kerb, although only consisting of a single course of flints, may be evident in the edge of the concrete drain further south (Fig. 8 Section 65). To the north-west, this feature was removed by the initial excavation of the heating duct trench by the contractors, but several large flint nodules on the north-west side indicate that it had continued (Plate 40). The edge of cobbling 273 continued on the same line.

3.3.52 To the north-east of cobbling 273, a narrow strip of 242 was exposed (0.3m wide), and this was also visible starting to run behind cobbling 273 at the very edge of the site, perhaps indicating that this was the limit of the cobbled area. Beyond the narrow strip of layer 242, a flint platform 239 overlay it. Platform 239 consisted of a single course of larger, squared flint nodules than those in 273, up to 200mm across, and these were bonded with a coarse, orangey-yellow, sandy lime mortar. It formed a band 1.2m wide, cut away on the south-east side by the heating duct trench, and continuing north-westwards beyond the edge of the excavation (Plates 36, 38 and 40).

3.3.53 Layers 242 and 537 were overlain by a series of compact gravel surfaces (265, 262 repaired by 264), and close to the building these were overlain by surfaces of crushed brick and tile, and by a layer of ash, charcoal and tile between them (270 and 512; see Fig. 8 Section 77; Plates 36 and 38-9). Layer 270 also sealed the robbing of of drain 695 in Trench A close to the standing building (Fig. 8 section 99). On the east layer 262 was cut by a sloping-sided cut 500, which was filled with a mixture of brick rubble and ashy gravel 498. As it was not evident cutting layer 269, it presumably ended at the edge of the excavation (Fig. 9 section 78). Shallow feature 250 was cut into layer 265, and contained a loose, dark greyish-brown clayey silt with gravel numbered 249. This contained fragments of a flat roof tile of post-medieval date, and sherds of pottery described as modern, which were not retained. The location of 250 is very similar to that of pit 546, and it may be that 249 was simply the uppermost fill of this deeper pit.

3.3.54 Both 265 and 249 were overlain by a layer of grey clay with gravel (232), which contained sherds of post-medieval redware manufactured between 1750 and 1900 and fragments of stem from two clay pipes dated 1700-1825. At the north-east edge of the excavation layer 262 was overlain by 264, a patch of compact sand that included charcoal fragments and small pebbles.

3.3.55 These deposits were sealed by a layer of 20th-century demolition material (253) which covered most of the area north of the Manor House and lay directly below 254=522, the gravel sub-base of the tarmac (255) of the present yard.

3.3.56 Within the standing 18th-century extension, metalling 558 was covered by make-up for the modern concrete floor, consisting of brown silt containing lenses of mortar, frequent tiles and occasional charcoal. This was numbered 553 and 565, and the modern concrete was numbered 552.

3.3.57 At the north-west edge of the stripped area, a carved stone that had been moved and erected in the edge of the grassed area beyond the tarmac was removed in order to expand the excavation. This stone was numbered 244, and will be re-erected once work has been completed.

Soak-away

3.3.58 A cut 1.5m by 1.2m was excavated to a depth of 1.1m into the grass 5m from the eastern side of the north-eastern extension of the Manor House. A trench 0.35m wide and deep was also excavated running north-east from the Manor House to the south-western side of the soak-away (Figs 2 and 4).

3.3.59 The earliest deposit seen in this trench was a greyish-brown clay with orange and light grey mottles (714), which was found at a depth of 0.65m, and was excavated to a depth of 0.45m without reaching the bottom. This was sealed by yellow clay with lighter yellow patches (713), which was 0.25m deep. This deposit, which contained frequent flecks of charcoal, but no finds, was probably redeposited natural. Its upper surface was uneven, possibly due to cultivation of the overlying topsoil 712, which was 0.35m deep. Layer 712 contained frequent fragments of roof tile as well as modern pottery and glass bottles.

3.3.60 Layer 714 may be equivalent to layer 562 under the northern extension of the Manor House to the west, and layer 713 to layer 557. There was no evidence of any archaeological features or occupation deposits within the soak-away.

3.4 Observations within the Manor House: description of archaeological deposits/features and structures

3.4.1 Within the Cross Wing to the north of the Great Hall, the lifting of the floorboards revealed the tops of flint walls 523-4 and 541 and chalk wall 525 (Fig. 5; Plates 41 and 42). The flint walls were the same walls as those uncovered during work by the Central Archaeology Service in 2001: wall 523=CAS278, wall 524=CAS206 and wall 541=CAS 271 (Fellows 2001, fig. 10). Walls 523 and 524 were *c* 0.6m thick, whilst only the edge of wall 541 was uncovered. The earlier excavators interpreted these walls as the footings for the western and north elevation of the service end of the Manor's Cross Wing and the northern wall of a service passage which ran between the Cross Wing and the Great Hall (Ibid.). Between the walls was a firm light brown clay (550), which was not further investigated.

3.4.2 Foundation 525 consisted of a single course of roughly worked chalk blocks averaging 60mm x 50mm across, set in a cream coarse sandy mortar. This was overlain by 548, two courses of red unfrogged bricks bonded with a hard white mortar. Together these comprised the support for the joists of the present floor (547), and for a timber partition running north-west across the cross-wing between the parlour and the service room (Martin and Martin 2001, fig. 376/6A).

3.5 Lighting cable trench VI

3.5.1 This trench was excavated from the line of Heating Duct Trench II just east of the moat bridge, and ran ESE from the through a gap/gate in the garden wall (615), and then turned ENE to pass just south of the southern corner of the Manor House (Fig. 2). It was machine excavated entirely into a gravel path (Fig. 4), and was generally up to 0.45m deep. To the south of the garden wall, a previous trench for a modern drainage pipe had removed much of the archaeological sequence down to *c* 0.35m bGL.

Description of archaeological deposits/features and structures

3.5.2 At the western end of the trench the lowest deposit exposed was 603, a stiff yellow clean clay with pink mottles, equivalent to 467 (or 507) in Heating Duct trench II (Fig. 8 Section 75). This was directly overlain by layer 601, the make up for the path. Where the trench passed through an entrance in the garden wall (615), a flint-and-mortar wall (598) was observed running south-west to north-east partly alongside and partly truncated by the foundations of a red-brick mortared wall (499), which itself underlay the concreted brick rubble foundations of the present wall ends at the entrance (Plate 43). As only a very short length of wall 598 was exposed, it is difficult to be certain, but this wall appeared to be on a slightly different alignment to the brick wall, diverging towards the south-east. Wall 598 was at least 0.3m wide, and was abutted on the north-west side by a 0.2m thick deposit of yellow clay with pink mottles (603), which did not contain any finds (Plate 44). Foundation 599 was 0.5m wide, 0.1m wider than the concrete foundation that overlay it, and was constructed with unfrogged red bricks 60mm thick, and so of 18th–19th-century character, bonded with a coarse sandy white mortar. From the south side of the garden wall it was clear that the ends of the garden wall had been replaced in the 20th century, and that it was at this time that the concrete foundations were added for strengthening in front of the brick wall (Plate 43). A garden wall has stood along this line since at least 1819, when it was shown on the Sale map surveyed by W Leonard, and the date of the bricks used in the foundation are consistent with this.

3.5.3 Layer 603 was sealed by a layer of very compact greyish-brown gravel (601) which was up to 0.3m thick. This appeared to be the metalling of a former garden path (Fig. 9 Section 89; Plate 43). Close to the standing wall, the robber trench of wall 598, which was numbered 605, was filled with grey clay and pebbles (604). The north edge of this was cut, as was former path 601, by a recent drainage trench.

3.5.4 To the south of the gate, a small segment of red-brick wall (600) was found right up against the southern face of the garden wall a little to the west of the gate (Plate 43). This was associated with a compact metalled surface (602) which ran along the base of the trench to the east at a depth of 0.3m. Both of these were covered by 606, the former topsoil which lay beneath the present gravel path (597=602).

3.5.5 Further east the earliest deposit seen in this trench was a greyish brown fine sandy silty clay which contained frequent flecks of white mortar and charcoal (612). This layer was seen along the whole of the trench within the garden, and was almost certainly a former garden soil. At the eastern end of the trench, layer 612 was cut by 611, 0.6m wide, which was in line with the south-western wall of the Manor House (Fig. 9 Section 91). The base of this probable robber cut was not found at 0.45m bGL. The fill of 611, deposit 610, contained much CBM, and a sample pegtile was of probable 17th–18th century manufacture. The robber trench was sealed by 618, a grey clay silt that was seen to the east and along the whole length of the trench to the west on the northern edge of the trench. This deposit contained a variety of CBM including floor tiles, bricks and roof tiles of mixed date, from 15th–17th century to 17th–19th century, and is interpreted as a garden soil. It was sealed by the present gravel path (614).

3.6 Excavation south-east of the Manor House

3.6.1 The excavations to the south of the Manor House were initially carried out with a machine which removed the turf and topsoil of the present lawn down to a depth of *c* 0.22m below ground level (bGL). Subsequent to this the area was hand-cleaned by OA archaeologists to reveal the tops of the walls and the archaeological deposit uncovered during the initial machine excavations. A number of hand-dug archaeological trenches (Trenches D–J) were then excavated to characterise and reveal the extent of the walls at key points both in plan and in section (Figs. 2 and 7; Plate 45).

Description of archaeological deposits/features and structures

3.6.2 Only two of the archaeological trenches (J and H) were excavated to any great depth. The remainder were dug to understand gaps in the revealed masonry in order to assist in providing a plan of the revealed walls, and to look for walls anticipated due to previous trenching in this area by the Central Archaeology Services (hereafter CAS). The excavations, therefore, mostly revealed only the tops of walls, although a number of robber cuts, clay deposits and a drainage ditch were also uncovered. The walls were almost all broadly similar, being constructed of an inner core built of randomly coursed, rough-hewn flint nodules with better-dressed flint used on the outside to give a fair face. All of the walls were bonded with sandy mortar.

3.6.3 The longest stretch of wall uncovered to the south of the Manor House was 617, which ran north-west to south-east on a line just outside that of the wall of the standing Manor House (Plate 46). It was revealed 2.5m from the corner of the standing building, and ran for 11m before turning returning south-west as wall 619. A series of modern services outside the south-east wall of the Manor House prevented the investigation of the relationship between wall 617 and the standing walls.

3.6.4 Wall 617 varied from 0.5–0.55m wide and was built of rough-hewn flints with dressed nodules on the outside bonded in a sandy mortar. Five metres from the end of the standing Manor, a rectangular flint plinth (638) was uncovered running parallel along the south-west side of the wall (Plate 47). The flints were larger than those in 617, but were bonded with clay rather than mortar. This structure abutted wall 617 at the south-east end, but had been cut into the face of the wall further north. It projected 0.4m (15”) from the south-west face of wall 617, and the surviving length was 1.2m (4’) long. It may, however, have extended further north, as it was truncated by a later pit or robber cut (625), beyond which a further block of masonry was just visible in the edge of the cleared area (Fig. 7). If this was also part of 638, then the feature would have extended for 3.4m along the south-west side of the wall, and may perhaps have been a stone bench.

3.6.5 Pit or robber cut 625 was 1.8m wide, and was planned but not fully excavated (Plate 48). Its top fill was a loose, yellowish-beige mix of degraded mortar and fragments of bricks and roof tiles (626). The bricks sampled were mostly of Tudor types, though a few were later; the tiles were of types manufactured in the late 17th or 18th century. In the exposed edges of the pit wall 617 was abutted by 629, a compact yellow clay with pinkish patches, similar to other deposits of redeposited clay observed within and around the Manor House.

3.6.6 At 6.2m from the corner of the standing house another mortared flint wall or buttress 627 abutted wall 617 on the north-east side. This was 0.65–0.7m wide, but was only traced for 0.3m before reaching the limits of the cleared area (Plates 45 and 47). At 9m from the corner of the standing Manor, wall 620 cut across wall 617 from south-west to north-east, roughly at right angles (Plate 49). This too was built of rough-hewn flints bonded with a sandy lime mortar, but was slightly wider than 617, closer to 0.6m wide than 0.5m wide. Wall 620 ended just 0.25–0.3m north-east of 617, but as the edge was ragged, and lay on the very edge of the cleared area, it is possible that the wall was robbed out at this point, and had originally continued further north-east. In Trench J, 2.5m south-west from the junction of the walls, wall 620 had been robbed by cut (660), but survived further down.

3.6.7 Trench J was excavated to a depth of 0.65m below topsoil on the line of wall 620, which ran south-east roughly parallel to the south-east wall of the standing hall, and at right angles to wall 617 (Fig. 7). The wall was found at a depth of 0.35–0.5m below ground (Plate 50), and was 0.55–0.6m wide. It had been robbed by a vertical-sided cut 657, which contained three successive fills: 658, 659 and 660. Deposit 658 contained tile fragments of possibly 17th-century date, while 660 contained a sherd of pottery manufactured between 1480 and 1600, a narrow Tudor brick end and tile fragments of 16th–17th-century date.

3.6.8 On either side of the wall, a deposit of light brownish-grey clay (654) with occasional charcoal flecks was observed at the base of the sequence (Fig. 9 Section 94). Occasional small fragments of CBM were seen, but none large enough for identification. This layer was cut by 655, the number given for the construction trench of wall 620, which lay right against the wall face on both sides, and was not further investigated. If genuine, the foundations below this were presumably trench-built. The construction trench was also suggested to cut the fills of the stone-lined pit built against the wall (see below), but as these fills did not continue north-west of wall 620, this is very unlikely, unless an earlier wall on the same line was removed by 620. Layer 654 was overlain by 656, a layer of mixed sand, flint nodules and gravel 0.5m thick (Plate 51). No finds were retrieved from either layer. Layer 656 was cut by the robber trench of

wall 620 to the south; no relationship had survived with the wall within the excavated part of the trench due to the later robbing.

3.6.9 The trench had been positioned to look for evidence of the north-east wall of the hall, but no trace of this wall, or of its robber trench, was evident in the north-west section (Fig. 9 Section 94). To make certain that the deposits observed north-west of wall 620 did represent the stratigraphy of the area beyond the wall, and were not within a wider construction trench, this side of the excavation was cut back and redrawn (Fig. 9 Section 96; Plate 52). The recorded sequence of deposits comprised a greyish-brown stiff clay (672) containing frequent flecks of charcoal and mortar, overlain by a softer clayey silt (671), again with frequent charcoal, but without the mortar flecks. This was overlain on the north-east by a stiff brown clay with occasional pebbles (673). No datable finds came from any of these deposits. Both 671 and 673 were overlain by an orange-brown sandy clay (670) containing frequent white flecks of mortar, occasional tile fragments and a sherd of pottery of a type manufactured between 1480 and 1600. This sequence contained more charcoal than that on the opposite side of the wall, and layers 471 and 473 formed a distinct band separating the thicker deposits above and below, but again no trace of a wall or its robber trench was seen.

3.6.10 To the south-east of the robber cut of wall 620, feature 661 running at right angles to wall 620 was cut through layer 654. Within the cut a wall constructed of rough hewn flint nodules without mortar (662) was built, but ended or was truncated by the robber trench of wall 620. Wall 662 was disturbed by tree-roots, but appeared to have a roughly dressed face on the inner (north-east) side, and be rough and irregular against the edge of the cut on the south-west, indicating that it was a lining for a pit (Plate 53). The excavated fills were 663 overlain by 664, both of which were greenish-grey to dark grey clayey silts suggestive of cess-pit fills, and it therefore seems clear that 661 was a garderobe pit. Fresh peg tile fragments of 15th–16th-century character came from 663, while 664 contained a sherd of pottery manufactured between 1480 and 1600, and a larger assemblage of ceramic building material, consisting of a mixture of Tudor bricks and peg tile fragments of 16th–17th-century date.

3.6.11 As already described, the layers on the opposite side of wall 620 were nothing like the garderobe fills, so this must either have been constructed against wall 620, or have had abutted a wall removed by it. Wall 620 itself had been robbed to the depth excavated at the junction with 662, but appears to have been abutted by a layer below the excavated fills of the garderobe (Fig. 9 Section 94), in which case the stone-lined garderobe pit was built against wall 620 while it was still standing. The full extent of 661 was not found, but it was at least 0.7m x 0.7m in size and at least 0.5m deep.

3.6.12 Returning to wall 617, the end of this wall was found in Trench D, where it returned south-westwards as wall 619 (Fig. 7). Inside wall 617 (ie on the south-west side) the wall was abutted by layer 642, a dark greyish-brown silt with occasional fragments of mortar, tile, brick, flint pebbles, shells and charcoal. There was also one struck flint. The brick fragments included Tudor bricks, and together with a quarry tile fragment, suggest a date of the 16th or 17th century for this deposit. The deposit was similar in character to layer 622 found inside wall 619 in Trench E (see 3.6.15 below). Outside the wall (on the north-east, wall 617 was abutted by a layer of yellowish-brown clay, similar to the redeposited clay 629 seen further north along 617, and to layer 632 observed outside wall 619 to the south-west.

3.6.13 The junction of walls 617/619, and layer 642, had been partly robbed out by a flat-bottomed drainage ditch (643) aligned WNW-ESE (Plate 54), which was also seen in Trench G to the south-east, where it was numbered 651 (Fig. 7; Fig. 9 Sections 92, 93

and 95). This contained grey silty fills mottled with yellowish-olive patches suggestive of cess (644 and 652) and including rare flecks of charcoal, which produced animal bones, oyster shells, tile and Tudor bricks of 16th century type. There was no evidence that this feature had been covered, so it was probably an open sewer. A narrow ditch 649 ran along the north-east side of Trench D and merged into it just before the south-east section (Fig. 7). This contained a dark grey clayey silt fill with pebbles (650) that contained a group of pottery of types manufactured from 1480–1600, some of which were worn, and a jeton manufactured in the late 16th or early 17th century. Ditch 643–651 was recut by ditch 623 filled by a greyish-brown silty clay mottled with yellow-green patches suggestive of cess (624), that contained frequent fragments of charcoal, animal bones, oyster shells, tiles and Tudor brick fragments of 16th century type, and a tightly dated group of pottery belonging to the later 16th century. It seems likely that cut 623 was a re-cut of the original ditch, and the much narrower profile in the section just south of the corner of walls 617 and 619 may indicate that the recut terminated just beyond this.

3.6.14 Overlying wall 619 just west of the corner, and also the edge of ditch 643, was a brick drain 645, which then continued down the line of silted ditch 649 (Fig. 7; Fig. 9 Sections 92 and 95; Plates 54–56). The cut for this drain was 666. The brick drain was constructed of unfrogged ash-glazed bricks of 15th–16th century type bonded with yellow sandy mortar (Plate 55). There was no surviving top, but the fill between the bricks 653 was separate from the overlying fill (667), which also overlay the brick sides and the cut above the drain, so it probably had a wooden cover originally. There were no finds from the greyish-brown silt (653), although a few animal bones including rabbit/hare bones were recovered, but fill 667 contained a sherd of pottery of late 15th–16th-century type, together with tiles and Tudor bricks of the same date range. Although no direct stratigraphic relationship between ditch recut 623 and drain 645 was observed, it is probable that the drain was later than the recut ditch. Brick drain 645 is probably equivalent to feature 200 found at the very end of CAS trench SSD 6a, which consisted of a line of bricks set end to end (Busby 1997, 10-11 and fig. 2).

3.6.15 The survival of wall 619 was variable, and for much of its length only one clear edge was established in the time available for investigation. At the junction with wall 617 (Trench D) both edges were just about visible, despite the north-west side being truncated by a later ditch, and suggested a wall 0.5m wide.

3.6.16 In Trench E, the southern side of the wall was intact and abutted by yellow clay with pink mottles (632), the same redeposited material as seen in Trench H further south-west (Plate 57). In contrast, the northern side of the wall was ragged, and had clearly been robbed or otherwise disturbed (Plate 58). Cut number 621 was given to this robbing, and the fill exposed below the topsoil to the north-west of the wall (622) contained much tile, chalk blocks and flint blocks, together with struck flints, suggesting that some of the robbed flint blocks had been tidied up before being removed. The tiles were a mixture of ridge tiles and peg tiles of late medieval or 16th century date, suggesting that the wall went out of use at this time. In this trench a squared end was evident, south-west of which 669, a much narrower rough flint wall, appeared to abut 619 and continue. Only the very top of this wall was exposed, but the flints along the south-east side may indicate a roughly dressed face, while the north-west side, like that of wall 619, was uneven, and had possibly also suffered from robbing.

3.6.17 In Trench F, a number of flint walls were revealed below topsoil, the principal elements of which were a continuation of walling on the line of 619, intersecting with a return 630 running at right angles south-eastwards, and a corner at the south-west end where wall

619 returned north-eastwards as wall 633 (Plate 59). The view along the line of these walls towards 619 further north-east shows that, while the south edge of 619 at the south-west corner was in line with that preserved in Trench E, wall 619 was considerably narrower west of the junction with 630 than east of it (Plate 60; Fig. 7). At the level to which the wall was cleared this was only 0.25m wide, as was return wall 633, which was traced for 1m and continued north-westwards beyond the edge of the excavation.

3.6.18 The narrow part of wall 619 was cut by a circular pit (640) 0.6m in diameter and 0.25m deep, filled with a compact greyish-brown gravelly clayey silt with charcoal flecks but no finds. This was not fully excavated due to lack of time, and the continuation of the wall beneath it, though probable, was not fully established. This was presumably a late post-medieval garden feature.

3.6.19 Up to three courses of flintwork were exposed along the inside of the corner formed by walls 619 and 633, but only two on the outer sides and along wall 630 (Plates 60 and 61).Much of the north edge of wall 619 here appeared to be squared off (Plate 60), but at one point the edge was disturbed, and a group of flint blocks was seen below this within deposit 665 just north of the wall, and was numbered 637. This was recorded as being keyed into 619, so may have been structural, but did not continue into the north edge of the trench. Deposit 665 was a brownish grey and green clayey silt with charcoal flecks that contained peg tiles of 16th or 17th century date and two sherds of pottery manufactured between 1480 and 1600. The finds were therefore consistent with fill 622 inside wall 619 in Trench E, which was interpreted as a fill contemporary with the robbing of the wall on the north-west side.

3.6.20 Within the wider part of wall 619, the flintwork at the north-east end was rougher than that further south-west, without clearly-defined edges on either side, and no evidence of mortar bonding (Plate 60). On site it was suggested that this might indicate a possible squared end between them, the rough flintwork being a continuation of wall 669 from Trench E. The exposed flintwork was, however, wider than 669 in Trench E, and of similar width to 619, while the supposed end lacked the definition and larger flint blocks evident in the clearly squared end in Trench E. Time did not allow for more extensive or deeper investigation of this, and all of this flintwork may instead have been part of 619.

3.6.21 Wall 630 on the south-east side of wall 619 was 0.35m wide, and was constructed of roughly dressed flint bonded with orange brown coarse sandy lime mortar. Only one course, and the possible top of a second below, were exposed. Either side of the wall was the redeposited clay 632, which appeared to abut the lower course of the wall (Plate 62). There was no sign of a straight end abutting 619, wall 630 widening close to the junction, and appearing to be keyed in to the exposed upper courses of wall 619. Wall 630 was in line with a flint wall (169?) 520mm wide discovered in Trench SSD 6 by the Central Archaeology Service in 1997 (Busby 1997).

3.6.22 Trench H was opened up to look for a continuation of wall 619, which was initially expected to continue south-westwards to meet the robber trench of the south-west wall of the hall identified by the CAS in their trenches SDD1-3 (Busby and Griffin 1997, figs 2 and 5). It was also hoped to clarify the relationship of 619 to CAS wall 80,which continued south-eastwards.

3.6.23 Below topsoil and subsoil the main deposits previously found by the CAS were identified. A north-west to south-east wall was found (648=CAS80), which was 0.5m wide and was traced for 1.8m, continuing to the south beyond the edge of excavation. This lay 1.3m south-west of the corner of walls 619 and 633. Extending north-east

along the line of the wall's right hand edge was a soil division corresponding to CAS cut 87, with a white and yellow clay (632=CAS75) to the north-east and a brown clay (646=CAS85) to the south-west. Cut CAS87 was given the number 647. Immediately north of wall 648, and at right angles to it, was a band of brown and red clay 0.4m wide (636=CAS84), which stopped against cut 647 on the north-east, but continued beyond the edge of the trench on the south-west. Cutting across 647 a little to the north of 636 was a circular posthole (635=CAS92).

3.6.24 A shallow sondage was dug just north of wall 468 to examine the relationships between 636, 646, 632 and 635, and another longer trench was excavated across deposit 632 between walls 648 and 619/633. The longer trench showed that wall 619 did not continue beyond the junction with wall 633, but that walls 619 and 633 survived to a depth of at least 0.65m (they were not bottomed). Abutting the walls was a mixed yellow and white clay with pink mottles (632), which was also not bottomed at 0.6m deep (Fig. 9 Section 97; Plate 63). This deposit was not excavated adjacent to the south-east face of wall 619, but the cleared surface of the trench shows what appears to be layer 632 extending around the corner (Plate 64). This deposit is very similar to levelling deposits found against the walls under the standing hall and cross-wing, and also abutting the walls of Building 452 north-west of the Manor House, where it was numbered variously 243/284/377/462/467/557/694. At the base of the trench, a curving iron fragment was found within 632, possibly from a horseshoe, but this could not be dated. Flint wall 648, which lay just over 1.3m from the corner of walls 619/633, overlay deposit 632, and was only two courses deep (Fig. 9 Section 97; Plate 63). The flints were bonded with a coarse white sandy lime mortar, and the edges of the wall were roughly dressed.

3.6.25 In the sondage north of wall 648, circular posthole 635=CAS92 proved to be 0.15m deep with a dark grey clay and charcoal fill (634) that contained half of a peg tile of 15th–17th-century date. Contrary to the CAS interpretation, while cut 647 was vertical, it was only 0.2m deep, and was cut through deposit 632, with a flat base extending westwards filled with deposit 646 (Plate 64). At its south end, layer 636 was only 0.1m deep, and contained fragments of a worn peg tile of 14th–16th-century manufacture. Although the relationship was not recorded, 636 presumably overlay fill 646, which did not yield any finds.

3.6.26 All of the walls and features were covered with either a garden soil (618) or a gravel path (616) (Plate 65). The gravel paths are also visible in Plates 51, 56-7, 59 and 64. The paths, which were part of a formal layout recorded on historic Sale maps of 1845 and 1860 (Fig. 3), and the OS map of 1864, and were also encountered by the Central Archaeology Service in 1995 (CAS Project 580, fig. 1), lay beneath the present topsoil (615).

4 Discussion and Conclusions

By Tim Allen

4.1 Introduction

4.1.1 Although the service trenches were generally restricted in depth, the discovery of buried walls at shallow depth led to the clearing of a fairly large area north-west of the Manor House, while the landscaping to the south-east also covered a substantial area

that revealed the tops of buried walls. These areas made possible the recovery of plans of substantial parts of buried buildings.

4.1.2 The watching brief was never intended to include major excavations of these structures, but due to the obvious significance of uncovering new building plans, and their potential to expand the areas of historic interest relating to the Manor House, both the Historic England Assistant Inspector and the Director of Headstone Manor Museum approved the excavation of a number of small trenches to clarify the character, and investigate the date of, the revealed buildings and, north-west of the Manor House, to record a significant section across much of the building exposed in the side of a service trench. As a result, it was possible to excavate to a much greater depth in one or two trenches (the deepest archaeological trench being 1.3m deep).

4.1.3 Although all of the buried structures and deposits had suffered some robbing or truncation by later features, they were mostly in a reasonable state of preservation. Despite varying levels of truncation, stratigraphic sequences of deposits and features were recovered, some deposits being evident over large areas, such as the layers of clay used to level up the ground, and others restricted to particular parts of buildings such as floors with burnt areas and hearths with rake-out spreads.

4.1.4 This allowed some understanding of the stratigraphic sequence of the building north-west of the Manor House, and, for both sets of buildings, a better understanding of their extents and of the preservation of the archaeological deposits, features and structures within the Manor's Moated Enclosure. The results are a valuable asset for our understanding of the historical development of the Manor and have the potential to be of use for the development of mitigation strategies in advance of any future development on the site.

4.2 Evidence of activity on the site before the medieval period?

4.2.1 This phase of watching brief on the Moated Island only provided two struck flints that may be of prehistoric origin. These can be added to a polished axe found on the road leading up to the Outer Court (OA 2016b), and all three can be dated to the Neolithic period. Although the axe occurred in a late levelling deposit, and could have been brought to the site from elsewhere, this may indicate a low level of activity of the later Neolithic period (3200-2800 BC) at the site. A sherd of prehistoric pottery was recovered from Tucker's (1987) excavations below the Small Barn, and identified as such in a report prepared by Lyn Blackmore for the archive at the Museum of London, but no further details are given.

4.3 The building excavated to the north-west of the Manor House

4.3.1 A rectangular building (Building 452) 7.6m wide and at least 16.8m long was uncovered *c* 0.3m beneath the present yard surface immediately north-west of the Manor House. Built with foundations largely constructed of chalk blocks, and with flint (and chalk) walls bonded with sandy mortar, this structure was sub-divided by several partition walls at right angles. The absence of any occupation deposits in the soak-away north-east of the standing Manor House may indicate that this did not lie within Building 452, in which case the building would have been no more than 20m long. Apart from a fireplace and areas of burning, however, little evidence of internal structures was evident within the building, so it remains possible that the building continued further to the north-east.

Date of construction – stratigraphic and artefactual evidence

4.3.2 The date of construction of Building 452 is provided by the two radiocarbon dates obtained from the successive occupation deposits 526 and 514 within the south-west room of the building. These provide a date between 1290 and 1410 for 526, and a date of 1430-1475 for deposit 514, clearly demonstrating that this building was in use from very early in the 15th, and probably in the 14th century. This building was therefore certainly medieval.

4.3.3 This evidence is consistent with the evidence provided by the structure itself. The walls of Building 452 appear to predate all of the deposits that were excavated in this area. Two walls survived at least 1.1m deep and the base of the south-west wall was reached at the surface of a layer of probable natural 1.4m below the current ground level. The level of the bottom of the walls was similar to that observed during excavations by the CAS in the cross-wing and Great Hall in 1998 and 2000, and the character and method of construction of the walls was the same, the foundations being mainly of chalk blocks, overlain by walls of dressed flint (Fellows 1999; 2001). Also very similar was the sequence of deposits seen abutting them, which consisted of a thick dumped-clay deposit, then a thin construction horizon containing flint chips from dressing the wall above, in turn sealed by an even thicker layer of clay to raise the floor level. The walls excavated by the CAS were interpreted as belonging to the 14th century (Martin and Martin 2001, Period A). No dating evidence was recovered from the below-ground excavations in 1998 and 2000 to support this, but the walls are those on which the timber-framing of the Hall and cross-wing stand, and these are dated by dendrochronological sampling to the first half of the 14th century (Martin and Martin 2001).

4.3.4 The artefactual evidence from the dumped make-up and construction layers within and around Building 452 was limited, and mostly consisted of roof tile. Inside the building, a 6g-scrap of roof tile was recovered from the lowest dump layer abutting the south-west wall foundation, and only three sherds of pottery from the upper dumped layer above the wall dressing layer. Outside the building on the south-west, the only finds were fragments of roof tile, two joining fragments together weighing 24g from the dressing layer, and several larger tile fragments from the upper dump layer. Outside the south-east wall, three fragments from a single tile were also recovered from the lower dump layer. While the potsherds were medieval, all of the tile was provisionally dated to the post-medieval period.

4.3.5 The tile scrap from inside the building may have been intrusive, in which case the pottery and radiocarbon dates would all be consistent with the interior of the building having been built up in the medieval period, but if the tile dating is correct, the exterior would have been exposed until the post-medieval period. The tile from the lowest dump layer on the south-east might also have been intrusive, as this area was cut through by a later brick drain and a modern service, meaning that the lowest external deposit of post-medieval date would be that of the dressing layer, but would still mean that the ground level outside the building was nearly 1m lower than the floor inside.

4.3.6 A separate report upon the western chimney stack (Bond 2001) suggested that the chalk-and-flint walls of the medieval period below the hall and cross-wing represented a plinth more than 1m high, on which the Manor House was constructed, and in theory Building 452 could have been the same, but this would have meant that there were separate buildings on plinths at some distance from one another, making this very unlikely, unless these buildings were linked by elevated walkways. If this was the case, then the infilling of the surrounding moated island must have occurred in the late

medieval period, as the later 16th-century building only 1m away was built on shallow foundations, without any evidence of walls containing the dumped clay on which it was built.

4.3.7 The tiles making up the internal fireplace, however, although this was not necessarily a primary feature, consisted of pitched tiles dated as of 15th-16th century type and horizontal tiles lining the edge against wall 502 of a fabric generally considered as of 16th -17th century manufacture. The fireplace was, however, overlain by deposit 1514, radiocarbon dated to AD 1430-1475. This layer not only overlay the pitched tiles, whose date range could just be reconciled with construction in the early-mid 15th century, but also abutted and overlay the horizontal edging tiles (Fig. 8 Section 77/71), for which the proposed dating is clearly too late.

4.3.8 Hurst (1961, 242) describes this type of hearth as 'extremely common on all types of site in the thirteenth and fourteenth centuries', in the context of his description of the examples found in the kitchen complex and Great Hall at Northolt Manor, not far from Headstone, and dated to the first half of the 14th century. The tiled hearth adjacent to the kitchen even had a band of horizontal tiles 'ten tiles thick' laid between the tiles on edge and the wall (Hurst 1961, 242). Another local example is that found at le 'Longrewe', Kings Langley Palace, Hertford (Neal 1977, 134).

4.3.9 The conclusion must be that the dating of the tile fragments is incorrect, and that these tiles date from the medieval period. Roof tile was used on high-status buildings from the end of the 12th century, and became common by the end of the 13th century, so its occurrence here would not be surprising, particularly in a kitchen, where the fire risk was highest. Tiles for repairs to the house are mentioned in documents of 1466-7 and 1486-7 (Clarke 2000, 163), showing that there were certainly tiled roofs at Headstone in the 15th century. A similar problem of distinguishing medieval from early post-medieval tile was encountered at Hampton Court, where a 14th century building below the Tudor Base Court was found to have included tiles in its walls whose fabric and manufacture was very similar to that of the overlying Tudor buildings (Cotter in Ford *et al* 2009) These examples show that manufacture of red tile of high quality was occurring in some areas west of London from the 14th century.

The function of the building

4.3.10 Building 452 consisted of at least two rooms, separated by cross-wall 503. From the limited exposures of the north-west wall a slight change in alignment may have occurred north-east of this cross-wall, but the walls were not perfectly straight, as is clear from the south-west wall, so this change in alignment may be illusory. Wall 503 was not as wide as the three certain outer walls, so it is not believed that this was originally the outer north-east wall, and that the building was subsequently extended.

4.3.11 This building is located where Martin and Martin (ibid., figs 376/2, 376/3a and 3b) suggest that the medieval kitchen stood. Internally, the south-west room contained at least two walls around 1m long dividing up the edges of the room, and in the angle of one of these was a tiled hearth or fireplace. This open plan with divided areas around it is similar to that of many medieval kitchens, though these divisions often housed fireplaces and ovens. Although only one fireplace was identified in Building 452, the floor appears to have simply been the surface of the clay dumped to level up the ground, and there were several, widely separated burnt areas as well as dark occupation layers directly overlying them, suggesting that there may well have been multiple hearths within it. At Northolt Manor close by, fires were also lit directly on the clay floor of the kitchen (Hurst 1961, 241). A quarter of the kitchen floor at Northolt was

covered by a 'tile floor', but this was simply an area of 'roofing tiles laid at random' (ibid., 241), perhaps similar to the small patch of tiles 519 found within Building 452 at Headstone.

4.3.12 The area of the interior examined at Headstone Manor was also very small, and at Northolt, where more hearths, fireplaces and ovens were identified, two of the hearths and an oven lay towards the centre of the 14th-century kitchen, with only one tiled hearth against the wall (Hurst 1961, 241). This central part of the building at Headstone was only examined by the narrow cross-section recorded in the edge of an existing service trench.

4.3.13 One other objection is the lack of stratigraphy observed at Headstone, for what is believed to have been a kitchen with a long life. At Northolt, however, much of the cooking was apparently carried out in lean-to structures on a cobbled surface outside the building, where nine hearths and an oven were found. In this area there was also a tiled hearth similar to that at Headstone. Little of the exterior of Building 452 at Headstone was examined to any depth and it is impossible to say whether a similar arrangement of external hearths under lean-tos existed at Headstone. In addition, the floor sequence of the Northolt kitchen was not very deep, and part of the floor there was not replaced in the later 14th century when a bakehouse and other rooms interpreted as for storage were added, making the kitchen into one end of a range of buildings nearly 35m long.

4.3.14 As argued above, at Headstone Manor it appears that Building 452 consisted from the start of at least two rooms divided by wall 503, unlike the secondary development into a range at Northolt. Interpretation as a bake- or brew-house for the second room is also plausible for the north-east room at Headstone, where a burnt area and a charcoal-rich occupation deposit were also seen.

4.3.15 It is possible that the largely horizontal tiles observed towards the top of the occupation deposits at Headstone were intended as rough flooring like that at Northolt, and if so these occupation deposits may each represent more than one phase of use. Single layers of ceramic roof tiles used as flooring are however the exception rather than the rule, and it is more likely that the Headstone kitchen was swept clean regularly, so that occupation deposits were not allowed to accumulate until the very end of its life. This is consistent with the thin sequence observed in Building 452, layer 526 being only a single thin deposit from the 14th (or very early 15th century), and layer 514 perhaps representing the last use of the fireplace.

4.3.16 One further factor may be relevant. In the medieval period, Headstone Manor belonged to the Archbishops of Canterbury, and visits to the manor were therefore only from time to time. If the documentary evidence is any guide to the frequency of visits, Headstone was only very rarely visited after the mid-15th century, although the sums documented on repairs to the main buildings in the later 15th century show that the house was periodically maintained (Clarke 2000, 160-63). Headstone Manor was leased from the end of the 14th century, but the tenant may not have lived in the main buildings, as this was only stipulated in the lease of 1514 (ibid., 162), and so the kitchen may not have had a particularly high level of use during its long life, unlike a monastic or college kitchen.

4.3.17 Building 452 was at least 17m long, but its full length was not established. Excavation of a soak-away some 3.5m further to the north-west did not encounter any clear occupation deposits on top of the redeposited clay, and it is therefore possible that the building had ended before this. At Northolt Manor, however, the 14th-century range

including the kitchen was nearly 35m long, with the kitchen and bakehouse at one end, and virtually no internal features in the storage rooms beyond (Hurst 1961, figs 56 and 62). It is therefore also possible that Building 452 was much longer, and continued north-eastwards, the north-east end being for storerooms.

4.3.18 The kitchen was clearly a substantial building, and may have either have had dwarf walls with a timber frame above, or have been built in masonry to roof level, unlike the 14th-century kitchen at the nearby Northolt Manor (Hurst 1961). The massive depth and character of the surviving foundations and walls do not provide conclusive evidence, as the hall and cross-wing are both timber-framed, the depth of the foundations/walls being due to the raising of the ground level within the moat. Occasional medieval kitchens built entirely in masonry are known from the late 12th century onwards, and become more numerous in the 14th century, but only become common in the late medieval period (Wood 1965, 261-276). Among these is the kitchen at Mayfield, another of the Archbishop of Canterbury's manors, where the surviving masonry is a mixture of 13th–15th-century date (ibid., fig. 52). There the kitchen was attached to the buttery, rather than being free-standing.

Duration of use and date of demolition

4.3.19 The date at which this building went out of use and was demolished is uncertain. As layer 514 appears to have been the latest occupation deposit, the last use of the fireplace appears to have been in the later 15th century, although it is possible that activity continued in other parts of the building after this.

4.3.20 The artefactual evidence relies almost entirely on the dating of roof tile. There were frequent tiles dated as of a type manufactured in the 16th–18th centuries recorded as coming from the upper part of the occupation deposits west of the fireplace, and tiles of 16th–17th century type in a small pit cutting these deposits. To the north-west of the fireplace a layer of broken roof tiles of possibly 17th–18th-century type were recovered from a layer overlying the burnt clay floor, and further 16th–17th-century roof tile in the occupation deposits over the clay floor north-east of cross-wall 503 and in the more extensive deposit sealing the occupation and the walls. A sherd of 16th-century pottery also came from this sealing layer. The dating of roof tile from this building has already been shown to be potentially too late in some cases, but for most of the tiles described above a date in the earlier part of the given range would be consistent with that of the single sherd of pottery. The dating provided by this artefactual material is not however very firm.

4.3.21 The building is crossed by two drains that cut the occupation deposits of Building 452. The robbing of the earlier drain contains pottery of the later 17th or early 18th century, providing a reasonably firm *terminus ante quem* for the demolition of the building. Most of the robber trenches of the walls did not contain finds, but on the south west the robber trench cut layers containing tiles dated as of 16th–18th-century type, and on the north-west the robber trench fill was overlain by layer 242 containing tile of 16th–17th-century type and a sherd of 16th-century pottery. Finds of late 19th- or early 20th-century date came from a robber fill on the south-west side, but these cannot belong to the original robbing of the building, as it had certainly been demolished before the north-east extension was built. This has not been subject to dendrochronological dating, but is dated on architectural grounds to the 18th century (Martin and Martin 2001, 22-23; Clarke 2000, 170 and fig. 6). Historic maps show that this range was certainly present by 1819, and the offset shape of the house on Messener's map of 1759 suggests that it was already built in the mid-18th century.

4.3.22 With regard to the relative dates of last use and demolition of Building 452, if the tiles recorded as within the occupation deposits west of the hearth were not flooring, which appears doubtful, then the tiles are very unlikely to be contemporary with the use of the building, and may instead have fallen from the roof of the building during a period of disuse prior to demolition. Another piece of evidence in support of a period of disuse is the large number of unburnt small mammal bones found in samples from the occupation deposits west of the fireplace. A small number of amphibian bones had been burnt, and presumably represent either animals retrieved from the moat while using a net to catch fish and subsequently discarded onto the fire, or toads that had crept into the kitchen for warmth, and had been killed and disposed of in the fire. The unburnt bones, however, are much less likely to have accumulated during the use of the building, and probably derive either from a period when the building was not being used, or from owl pellets dropped from the rafters once the roof had begun to collapse.

4.3.23 Two leases, one of 1514, the other of 1534, stipulated that the lessee should live in the manor house, which has been taken as evidence that the buildings of the manor, and therefore certainly the kitchen, were definitely occupied in the first half of the 16th century up until the Dissolution. This would then imply that, although fireplace 505/506 was not used beyond 1475, other parts of the same building continued in use for another 75 years or more. Another reading of this documentary evidence is, however, possible, which is that the stipulation in the leases was made because the buildings had not been used since the repairs of the 3rd quarter of the 15th century, and were not being maintained by the lessees, whose interest was in farming, not in occupying, the property. It is therefore also possible that this stipulation was not in fact met, and that no significant further use was made of Building 452 in this period.

4.3.24 One possible date for the abandonment of Building 452, and for its demolition, would be the later 16th century (1558–1585 according to the tree-ring dating), when the adjacent west range was constructed (Martin and Martin 2001). It was previously thought more likely that this range was built to link the cross-wing to the medieval kitchen, but the fact that the new range stopped 1m short of it suggests instead either that the intention was to demolish Building 452 (the old kitchen) once the new range had been built, or that Building 452 had already been demolished. Although there was a 1m gap between Building 452 and the new brick range, this would have made construction of the new building more difficult, and so Building 452 may have been demolished first (Fig. 11b).

4.3.25 One objection to this suggestion is that there is no evidence of a chimney stack in the later 16th-century brick range, the large brick fireplace and chimney being added early in the 17th century. If there was no fireplace in the original west range, then Building 452 may have remained in use until after this addition to the west range had happened, and have been demolished only in the 17th century (Fig. 11a). Alternatively, however, the 17th-century fireplace may have replaced a smaller one in the southern part of the west range, of which no above-ground trace survives.

Use of the north-west area after the demolition of Building 452 (Fig. 6)

4.3.26 The arrangements north of the Manor House following the demolition of Building 452 follow a consistent pattern. Historic maps show that a wall between the moat and the south-west corner of the house, which divided the access from the moat bridge and the area to the north from the garden to the south, was already in place by 1819. The 1817 Inclosure map shows that there were already two buildings north-west of the house against the moat, although the 1819 map shows only one. Three buildings are shown

on the 1845 and 1860 Sale maps, with a formal garden laid out south of the dividing wall. This arrangement, without the detail of the garden, is repeated on the first edition OS map of 1865. There was a gap between the north-east extension to the standing manor and a building up against the moat, allowing access to the orchard that occupied the north-east half of the Moated Island behind the house, though by 1865 this is closed off by a wall.

4.3.27 The north-west area enclosed by the wall and the house clearly represented the courtyard, and the row of buildings along the moat the outhouses for ducks, geese, wood and brewing mentioned in 19th-century documents (Clarke 2000, 178). The successive metalled surfaces found in the excavation north-west of the Manor House reflect its use as a courtyard. By 1896, when the 2nd edition OS map was produced, all of the buildings had gone, although the yard remained, and on the 1911 Sale map dashed lines running north diagonally across may mark a track crossing from the bridge to the area immediately outside the north-east extension. This was not shown on the OS map of 1916, when the courtyard is devoid of internal structures. By the time of the 1960 OS map, a fence and a building have been constructed in the middle of the courtyard.

4.3.28 The track marked by dashed lines on the 1911 Sale map matches the line of the cobbled layer 241=273 uncovered in this excavation and indicates that this was still in use. Its absence from the 1896 and 1916 OS maps might be taken to indicate that that this cobbling was a shortlived early 20th-century addition, but its absence from the OS maps may not be significant, as the OS surveyors do not always include ground-level features such as these.

4.3.29 Platform 239 with its mortared flints appeared to be structural, possibly representing the base for a timber building, but no structures indicated on the historic maps correspond to this. The outbuildings shown along the north-west edge of the moat are too far from the house to correspond, although the 1860 Sale map did show the middle one of these set back from the moat edge. Equally, the building present in 1960 appears to have lain just outside the excavated area, and too far west to relate to 239.

4.4 Raising of the ground level within the Moated Enclosure, and the date of the Moat

4.4.1 The excavations within the Moated Enclosure have also provided further evidence that the ground level within the moated area was raised, and that this occurred not only within the medieval hall and cross-wing, but that this extended throughout the areas examined, including westwards almost as far as the moat. It is therefore very likely that the origin of the redeposited clay was the moat itself, and since the dumping was associated with the construction of the walls below the hall and cross-wing, and those of medieval Building 452, that this occurred in the first half of the 14th century, supporting the belief that the moat was dug at this time. A study of documentary evidence for the construction of moats showed that the most common period of construction was during the late 13th and early 14th centuries (Jean Le Patourel 1978, fig. 8). Material excavated from the moat was used on many medieval sites to level up the ground, or to raise the level of the interior; a local parallel is the manor of Northolt, where in the later 14th century the ground was raised between 0.15 and 0.6m (Hurst 1961, 243).

4.4.2 The area covered by the interior of the moat is just under 70m square (4,840 sq. m), and the depth of redeposited clay encountered in Building 452, and in the trenches excavated in the Cross Wing by the CAS (Fellows 2001) was around 1.1m, (although

the CAS trench may not have reached the bottom). The level of the surface of redeposited clay around Building 452 and around the building revealed south of the standing manor was fairly consistent, and if the whole of the moated island had been raised by a similar depth at one go, this would have required 5,400 cubic metres of clay. The natural ground beneath was not, however, level (the depth of overburden above natural 10m outside the north-east side of the moat was only 0.5m (Ashworth 2010, 3), so it is possible that the depth of added clay also varied, and that the total required was less, but an average depth of approaching 1m, or 4,800-5,000 cubic metres, seems reasonable.

4.4.3 According to the report of the dredging of the south-west side of the moat by Heritage Network in 2010, the moat is 2.5m deep to the present ground level on the island (Ashworth 2010, fig.4). Subtracting the depth of deposits over the redeposited clay, which varies but averages around 0.35m, and approximately 1.1m for the redeposited clay, the depth of the moat cut into natural on the south-west would have been just over 1m. If the depth of redeposited clay was less on the east, the cut into natural may have been deeper here, and as the outfall from the moat appears always to have been on the south, the moat may have been a little deeper there as well, but documents show that the moat has been cleaned out in 1466 (Clarke 2000, 163), and presumably also in the 17th century, when the existing bridge was built. Some deduction must therefore also be made for the possibility that the successive cleanings of the moat resulted in some deepening or widening subsequent to its original excavation. It is unfortunate that no data upon the cores taken around the moat in 2010 was provided in the Heritage Network report (Ashworth 2010).

4.4.4 The surface area covered by the moat (excluding the southern outfall extension) is of the order of 4,000 sq. m. At an average of just over 1m deep, this is unlikely to have provided more than 4,400 cubic m. of clay. This calculation is only approximate, due to the small number of observations of either the natural or the bottom of the moat, but may be helpful in determining future areas of research. Further clay could have been obtained locally by quarrying, and may perhaps explain one or more of the series of 'ponds' seen on later historic maps around the south-east and south-west sides of the Outer Court.

4.4.5 An alternative hypothesis, which was suggested by Bond (2001), was that only the Manor House itself was originally raised, sitting on a tall plinth enclosed by the chalk-and-flint walls on which the timber framing sits. The recent discovery that Building 452 had exactly the same type of walls, and is also of 14th century construction, makes this less likely, as it would have resulted in domestic and kitchen buildings raised above the general ground level, which would then have had to be linked by raised walkways. If this were the case, then one or more further phases of clay dumping would have been needed to raise the level of the surrounding moat platform, even more extensive than the first. The infill around the building comprising walls 617, 619 and 633 would have had to happen long before the truncation of the southern building in the later 16th century, and that between the manor and Building 452 before the construction of the 'west' wing, again in the later 16th century, indeed the construction of the latter clearly indicates that the clay dumping had long settled and compacted before the west range was added to the original Hall and Cross Wing. If this proposal is seriously entertained, then clay for either phase of embanking could have been obtained locally, again perhaps resulting in the series of 'ponds' seen on later historic maps around the south-east and south-west sides of the Outer Court.

4.4.6 While the limited scale of investigation to date, and the resulting scarcity of dating evidence, does not allow a definitive resolution of these alternatives, it seems likely that the dumping observed to date belongs to one, medieval phase, and this is the interpretation used in the following discussion.

4.5 The 'west' wing of the Manor House

4.5.1 Excavation of Trench A against the north-west corner of the standing Manor House revealed flint foundations below a brick plinth, which sat upon redeposited clay. The exposed foundations were rough and of varying depth, but included a break and a mortared block of flints with a squared end 0.45m wide at the south-west end (706), around 1m from the current brick frontage of the Manor House. This suggested two footings meeting at right angles, beyond which bricks were used for the footing, and the flint footing at the south-west end, which was in line with the flint footings of the western limit of the cross-wing further south, is believed to represent the footings of the original timber-framed `west wing' (Martin and Martin 2001, Period B3).

4.5.2 This timber-framed range was constructed (on dendrochronological evidence) in the later 16th century (Martin and Martin 2001, 12 and fig. 376.3B). Martin and Martin further suggested that the 16th century wing might well have been jettied (ibid., Fig. 376/5), and the observed wall is in the right position (relative to the later brick facing) for the dwarf wall of such a jettied structure.

4.5.3 This building was built upon the dumped clay that abutted the walls of Building 452 (see 3.3.15 above). No certain evidence of the footings has previously been recovered, but in the small excavation carried out by CAS in the cupboard west of the 17th century fireplace, the fireplace (286) was built directly upon the dumped clay (Fellows 2001, 10 and fig. 8), and a shallow flint-and-brick footing numbered 287 beneath it, which cut into the redeposited natural clay (their deposit 285), may also be part of the original footing. The alignment of the west edge of feature 287, and of flint foundation 706, is parallel to the frontage of the first-floor 16th-century building.

4.5.4 Against this interpretation, the brick-and-flint foundation was confined to the north-west end of the CAS trench (ibid., fig.7), and did not continue along the full length of the trench, leaving a gap of more than 1m between it and the cross-wing. This, together with the shallowness of the cut, was presumably also the reason why 287 was not interpreted as a cut filled with flint and brick made to support the brick chimney stack. The CAS report suggested that there had been some truncation prior to the construction of the stack (Fellows 2001, 10), and the exposed length of the flint foundation of the north-west wall of the range (Plate 21) makes clear that the foundation was of varying depth; it may simply have rested upon the redeposited clay south of its observed extent and was removed prior to construction of the chimney stack.

4.5.5 South-west of the flint foundations observed in the north-west wall, the standing brick building was supported on four courses of brick foundations. The brick encasing of the north wall is tentatively dated to the later 18th century, prior to the brick refacing in *c* 1800 (ibid., Period K) and the brick refronting of the western side only around 1800 (ibid., 23). The limited dating evidence recovered from the excavations does not conflict with this chronology.

4.6 Structures between the moat bridge and the Manor House (Fig. 10)

4.6.1 The watching Brief on the Heating Duct Trench II and Lighting Cable Trench VI revealed several segments of walls built of flint: 501/477, 476 and 598 (Fig. 4; Plates 1-2 and 44). No building is shown on this part of the island on any of the historical maps, indicating that these walls pre-dated the 19th century. The restrictive width of the trench meant that it was not possible to obtain a coherent plan from these exposures, and all that can be said is that the orientations that it was possible to obtain are consistent with a structure broadly at right angles to, and parallel to, the moat, and spanning the width of the current bridge. It seems likely that they are all of the same phase, as all of these walls were abutted by the same deposit of yellow clay with pink mottles.

4.6.2 The fact that the walls are abutted by redeposited clay similar to that found around Building 452 may indicate that they are of medieval origin. One of the layers of redeposited clay contained occasional tile fragments dated to the 17th or 18th century, but, as discussed in relation to Building 452, the tile dating may not be secure, and as this clay was directly overlain by topsoil in this part of the site, the tile may in any case be intrusive.

4.6.3 It is tempting to suggest that the walls are the remains of the gatehouse variously referred to as the “great gate”, “the western gate” or the “old gatehouse”, which are mentioned in records from 1487 until 1533 (Clarke 2000 164). Repairs to a `new house’ adjacent to the gatehouse were carried out in 1477-8 (ibid., 63). However, the records do not say where the gatehouse (or gatehouses) were, beyond the fact that the old gatehouse stood next to houses at “the end of a long stable towards the west”. If this gatehouse was on the moated island, then the most likely location for the gatehouse would have been just inside the moat at the end of the bridge (Fig. 10), and there is certainly room for further houses and a stable along the west side of the moated island either to the south or north, as these areas have not yet been excavated.

4.6.4 No structures that could be said to be part of an early bridge were uncovered during the watching brief on the Heating Duct Trench II to the east or west of the moat bridge. A series of post-medieval chalk and clay layers belonging to a ramp which sloped up to the south-western end of the bridge the deck was recorded during the watching brief in the Outer Court (OA 2017b), but no corresponding deposits were seen on the Moated Island, nor were any deposits that could belong to the moat observed.

4.7 Structures south-east of the Manor House

Correspondence of results with previous geophysical survey

4.7.1 A resistivity survey of most of the interior of the moated enclosure was carried out by Geoquest Associates in 1996 (Hale and Grove 1996, fig. 1). This revealed a rectangular anomaly some 10m south-east of the Manor House, and in line with it, the south-west and north-east sides being approximately on the lines of the south-west and north-east sides of the hall and rear range (Ibid., figs 2-5). The south-west side of this rectangular anomaly was investigated by the Central Archaeology Service (CAS) in 1997, and proved to correspond to a wall (648=CAS80 and CAS 166). The north-western side of the rectangle, although lying north-west of it, probably represents wall 619; the geophysical survey was carried out in 1996, before the days of GPS survey, and this may explain the differing lines. With the benefit of hindsight, intermittent traces of wall 617 may also have been evident in the geophysical survey greyscale plots (Hale and Grove, fig. 4).

4.7.2 However, beyond the corner of walls 617 and 619, the north-east side of the rectangular anomaly did not reveal a wall where tested in Trench G, though a drain was found in the corresponding position.

4.7.3 Overall, the results indicated that the survey had succeeded in identifying some of the most obvious buried walls, but had also provided what (on present evidence) appears to be a false positive on the north-east side, although further trenching along the line of this anomaly would be needed to be certain that a wall is not present beyond Trench G.

Dating of the revealed walls

4.7.4 The excavation uncovered a group of walls and a robber trench. Robber trench 611, which was 0.6m wide, was found just south-east of the south corner of the Manor House, and appears likely to represent the robbing of a continuation of the standing hall. A similar robber trench was also seen further south-east in the CAS trenches SDD 1 and 2 (Busby and Griffin 1997, figs 1, 3 and 4), and was shown in SDD2 to overlie a flint wall or foundation bonded with sandy yellow mortar (ibid., 8).

4.7.5 The robbed wall was believed by Busby and Griffin to continue into their trench SDD3 (ibid., fig. 5 cut 87), although they only planned the deposits below the 18th-century garden in this trench, and did not excavate their cut 87. They identified a further wall (CAS 80) continuing south-east just outside (south-west) of the line of cut 87, and another soil band at right angles to this continuing south-west, which they believed to represent a building abutting the corner of the hall (ibid., fig. 2).

4.7.6 As part of the OA trenching, most of the area of SDD3 was reopened as Trench H, and the wall continuing south-east was found (648=CAS80). Cut 87 proved to belong to a large but shallow feature north of wall 648, and the robber trench found in SDD2 clearly did not continue into this trench. Instead the corner formed by walls 633 and 619 was found 1.2m further north-east than the line of cut 87, and this proved to be at least 0.65m deep, and was abutted by a thick deposit of redeposited clay that underlay wall 648. A curving iron fragment (possibly from a horseshoe) came from the redeposited clay, but this could not be dated. The clay was cut by two features, one (635) a posthole containing half of a pegtile of 15th–17th-century manufacture, the other (647) a flat-bottomed cut containing a worn tile fragment of 14th–16th-century manufacture. These finds only indicate that these features are of post-medieval date, but do not provide reliable *termini ante quem* for the deposition of the clay.

4.7.7 A similar clay was however seen abutting the outer edge of wall 619 to the north-east, and similar clays were found abutting return wall 617. If, as seems likely, this clay was deposited as part of the same build-up as observed below the standing Manor House and abutting Building 452, then this is believed to be of medieval date, and would suggest that the structure represented by walls 633, 619 and 617 was also medieval.

4.7.8 A continuous length of over 10m of wall 617 was uncovered, with a return at the south-east end, wall 619, which was clearly of the same build. Only the tops of these walls were uncovered, and few stratigraphic relationships with adjacent deposits were investigated. Finds were, however, recovered from soils adjacent to the inner edges of walls 617 and 619, and these (642, 622 and 665) contained finds of 16th- or 17th-century date. Layer 622 abutted the robbed inner edge of wall 619, and included flint chips suggesting that it had accumulated when the wall was being robbed, providing a probable date for the demolition of this wall. Layer 665 represents either the latest fill of a garderobe, or a similar accumulation to layer 622 against further robbed walls.

4.7.9 In addition, the corner of walls 617 and 619, and layer 642 abutting 617, were cut through by a ditch, which was recut, and then replaced by a brick drain. The width of the ditch cut, and its position across the corner, make it clear that this could not have been contemporary with the building, which must therefore predate these features. Sizeable groups of pottery were recovered from both phases of the ditch dating to the latter half of the 16th century, and a late 16th- or early 17th-century jeton was also recovered from a gully draining into the ditch recut. The drain that replaced the ditch (645) was itself built of late medieval or Tudor bricks. The date at which this part of the structure went out of use is therefore likely to have been mid–late 16th century, indicating that the building was a very late medieval construction.

4.7.10 Wall 617 was cut across by wall 620 two-thirds of the way along. No direct dating evidence was recovered from wall 620 itself, but in Trench J its construction trench was believed to cut the clays either side, and the upper fills of the stone-lined garderobe pit 661 abutting its south-east side contained a sherd of late 15th–16th-century pottery and tile and brick of 16th- or 17th-century manufacture. The uppermost of the deposits found north-west of 620, layer 470, also contained a sherd of pottery of late 15th- or 16th-century manufacture, and this layer also contained some tiles and frequent mortar fragments. The character of this deposit suggests either that it relates to construction or demolition, and provides further support for the construction of wall 620 in the later 16th century. The fills of the robber trench of wall 620 contained roof tile dated as of possibly17th-century manufacture, a Tudor brick end and a sherd of pottery of late 15th- or 16th-century manufacture.

4.7.11 At face value, this might suggest final use and infilling of the garderobe in the 16th century, and robbing of the wall in the 17th century, though the finds only provide *termini post quem* for these events. Whether the garderobe pit was self-contained or emptied into a ditch or drain was not established, but the orientation of the ditch and drain crossing the corner of walls 617/619 makes it possible that these represent the outflow from this garderobe (Fig. 7).

4.7.12 Comparison of the levels of the bottom of the part-excavated garderobe with the part-excavated ditch and the drain makes it clear that the ditch was unlikely to have exited from the base of the garderobe, but it could have carried runoff from partway up, ensuring that the garderobe pit did not fill up completely. The drain, whose base was higher, may not have been for foul waste, or could simply have been intended to drain surplus liquid, ensuring that the pit could not overflow. Despite its similar alignment, it may alternatively not have been connected to the garderobe at all. If the garderobe and ditch were connected, then wall 620 and garderobe 662 were in use in the later 16th and into the 17th century, and the robbing of wall 620 might have occurred later in the 17th century, or potentially later still.

4.7.13 Wall 648 (CAS wall 80) overlay the redeposited clay. The clay was not dated by finds within it, but has been suggested to have been laid down when the interior of the moated island was raised, probably in the 14th century. This wall is therefore likely to be of 15th-century or later date, and the only investigated building within the standing Manor House with similar footings, the ‘west range’, is of later 16th-century date. A flat-bottomed shallow cut (647) began at the wall’s end, and its north-east edge continued the same line as that of wall 648. An association between this cut and wall 648 seems plausible, and the fill of the cut included a worn tile fragment of 14th–16th-century manufacture. The fill was then cut by a posthole (635) containing a half-pegtile of 15th–17th-century manufacture. As the tile in 635 was not worn, it may have been reused not long after it was made, which may indicate that the building was constructed prior to

this. These finds only provide *termini post quem* for the sequence, but taken at face value, would not contradict construction in the later 16th century. According to the historic maps, all trace of the building had disappeared by the early 19th century. No building is indicated in this position in the mid-18th century either, but these maps are not detailed enough to trust this.

Interpretation of the structural sequence

4.7.14 The robber trench following the line of the south-west side of the hall did not extend into trench H=SDD3, so the known southern limit of this trench is therefore SDD2. A four-bay hall, which was proposed from the CAS trenches (Busby and Griffin 1997, 8 and 15), can therefore be discounted.

4.7.15 If the robber trench found in SDD1 and SDD2 is the robbing of the wall of the medieval hall alone, then this would suggest a three-bay hall. Trench J was, however, excavated to look both for a continuation of wall 620, and across the projected line of the north-east wall of the hall to establish whether it continued this far. No trace of the north-east wall of the hall, or of its robber trench, was found. Unless the north-east wall of the hall was not straight, and the junction lay west of the excavated part of the trench, the evidence clearly indicates that the hall consisted of only two bays.

4.7.16 It is possible that the absence of the north-east wall of the hall in Trench J is because the deposits seen north of wall 620 were deposited after the demolition and robbing of the 2nd and 3rd bays of the hall, and that this involved the excavation of an area much wider than the wall itself. In addition, as no sign of wall or robber trench was found 0.5m further down, then the area excavated would also need to have been at least as deep as this. The date of the latest deposit found north-west of wall 620 was 16th century or a little later, but this in itself would indicate that the hall had been demolished by the end of the 16th century at the latest. While possible, this seems less likely than that the hall was of only two bays.

4.7.17 If this interpretation is accepted, then the south-west robber trench may have robbed walls of more than one phase, SDD 1 revealing the robber trench of the second bay of the hall, but the robber trench in SDD2 having removed a return of wall 620, a later 16th-century block beyond the hall. Neither possibility can be verified without further below-ground investigation.

4.7.18 Interpretation of the building or buildings represented by walls 619/633/617 is hindered by the very variable survival of wall 619. While the north-eastern part was fairly clearly defined by limited clearance, and the south-east and south-west corners identified, for much of the length of wall 619 only one edge is certain in places, and in others neither edge is clearly defined, producing a plan in the wall appears to change thickness several times (Fig. 7). Due to the limited scope of investigation that was possible in the restoration programme, these issues cannot fully be resolved in this report, but the evidence provided by the slot dug down the side of the south-west corner (walls 633 and 619) in Trenches F and H leads this author to conclude that much of the variability may have resulted from the robbing of the north-west edge of the wall, which has been clearly demonstrated in Trench E.

4.7.19 In Trench F, the evidence is more complex. The depth of wall 633, which was well-finished on the outside and abutted by a thick layer of redeposited natural, but less well-finished on the inside, is not normally the construction method used for a garderobe, which is the only type of medieval structure that might have such narrow and deep walls. It is possible that the peculiar form of medieval construction evident in

the cross-wing and in Building 452 at Headstone, in which the wall faces were dressed even though they were intended to be covered by further redeposited clay, could explain the external finishing of the walls, and fill 665, which abutted the inner side of walls 633 and 619 at the south-west corner, was described as brownish grey and green, the latter colour often associated with the fills of cesspits. It is therefore possible that this was a garderobe block incorporated into the corner of the building, and that the finds recovered from 665 represent the last use and demolition of this structure.

4.7.20 If this was a privy or garderobe, then this would appear to have been a simple pit cleared out by a 'gong fermer' from time to time (Wood 1965, 386), as redeposited clay surrounded this structure on at least two of the external sides, and the embanking of the Manor House with clay suggests that there was not sufficient fall for an opening at the base of the garderobe to have emptied via a drain or ditch into the moat more than 15m away. At some other medieval moated sites, the garderobe block was provided with chutes and arched openings at the base to empty the garderobe, and drained directly into the moat, but this was clearly not the case at Headstone Manor.

4.7.21 However this may have worked, if this were a medieval garderobe, it implies that there was domestic accommodation adjacent, presumably to the north-west and north-east, which again supports the idea that the hall was only of two bays.

4.7.22 An alternative hypothesis is that 665 was merely a variant of the deposit containing robbing material represented by 622, and was not the fill of a garderobe. In this case, walls 633 and 619 may also have been robbed on the inner side, creating a narrower wall. If so, then masonry 637, apparently keyed into 619, might represent a surviving lump of the wider wall, giving a combined width of 0.5–0.6m.

4.7.23 The north-west edge of the narrow part of 619 was squared off in the uppermost surviving courses, indicating that from wall 630 south-westwards, a narrow wall was deliberately left and presumably used. As previously indicated, wall 630 was on the line of a wall found in CAS trench SDD 6 further south-east, running parallel to wall 648, and together these walls were interpreted by the CAS as representing a building. Wall 648 was built on top of the redeposited dumped clay, so it was clearly later than walls 633 and 619, and it is possible either that it used earlier wall 630 as one side of the building, or that wall 630, of which only one–two courses were exposed, was in fact another shallow wall of similar date, keyed not into the original wall 619, but into the widening added at the junction and over the top. The north-west end of 648 is, however, in line not with the end of wall 630 but with the north edge of the narrow part of wall 619 south-west of the junction with wall 630. The shallow nature of wall 648 argues that it was a dwarf wall or footing for a timber superstructure, and part of wall 619 north-east of this may have been retained as footings for a timber frame forming the north-west end of this building. Return wall 633, which was similarly narrow at the top, could have been reused as one side of a passage leading north-west to link it to the building represented by wall 620, the other side represented by cut 647 (Fig. 11b).

A medieval high-end accommodation block? (Fig. 10)

4.7.24 Wall 633 represents the end wall of a rectangular block that is not directly in line with the hall, being offset by over half a metre from its line. As these walls were abutted by the redeposited clay believed to have been deposited upon the Moated Island to raise the ground level, these walls are likely to be either of the same date as those of the hall and cross-wing, or of earlier date. At present, there is no artefactual evidence to determine between these options, but as the consensus of opinion is that there were further elements of the building constructed by John de Ramseye or his son Roger

south-east of the hall (Martin and Martin 2001, 6), and in the absence of dating evidence to the contrary, there seems no good reason to attribute them to a yet earlier building, rather than to the early 14th-century Manor House.

4.7.25 As such, these walls might well belong to an accommodation block appended to the end of the hall. If this was high-status accommodation for the Archbishop incorporating a great chamber, then such blocks are generally 4.8m–8m internally, as at old Soar, Plaxtol, Kent or Amberley Court, Marden, Herefordshire (Wood 1965, 79-80 and figs 26 and 18). A two-bay hall at Headstone would make the solar block up to 7.5m wide internally (possibly including a garderobe block), a substantial example perhaps appropriate to the favourite Middlesex manor of the Archbishops of Canterbury (Clarke 2000, 160; Martin and Martin 2001, 6).

4.7.26 At Mayfield, another of the Archbishop's manors, the dais was at the service end of the hall, and the high-end accommodation was over the service rooms (Wood 1965, fig. 20). A combined service wing with great chamber above is quite a common arrangement in the 13th and early 14th centuries (ibid. 71-3), and, alternatively, the jettied room over the service cross-wing at Headstone Manor could have provided the private chamber and sleeping area for the Archbishop. Martin and Martin (2001, 6), however, commented that 'The quality of finish within the crosswing is inferior to that within the hall, implying that the principal accommodation was within a now lost high-end range located at the southern end of the hall. Although high-end accommodation should not automatically be assumed at this date, the lack of such accommodation would be unusual in an early-14th-century house of this size'. On balance, interpretation as high-status accommodation appears the most likely use of the building represented by walls 633/619/617.

4.7.27 This leaves open the function of the space between the north-west wall of the hall and wall 617, which lies just outside the line of the north-east side of the 'tower' added in the 17th century, ie well beyond the north-east side of the hall. Normally, such a building would only have been a single storey high, as otherwise it would have blocked light from the hall adjacent, but at Headstone there is evidence for dormer roof lights in the east wall (Martin and Martin 2001, 27-8 and figs 11-12). The building along the north-east side of the missing bay of the hall may then have been either a single storey pentice (though at very nearly 3m wide this would have been unusually substantial) or a two-storey block including chambers above.

4.7.28 In their examination of the surviving Manor House, Martin and Martin identified the end wall of a range running south-eastwards in the surviving end wall of the rear range (now the 'tower'), which they described as 17th century, belonging to Phase E (ibid., 18-19 and figs 376 3A, 3B and 6B). This was a two-storey-tall narrow block, which they interpreted as being connected to the high-end accommodation block beyond the hall. It is possible that this range reused wall 617 along its north-west side, replacing an earlier range in this position. If a two-storey block was intended from the start, this might explain the unusual, if not unique, provision of dormer windows in the hall in the early 14th century.

South-east part of the Manor House in the early post-medieval period (Fig. 11)

4.7.29 Wall 620 cut across wall 617, indicating that it was later. The presence of a probable garderobe pit against its south-east side strongly suggests that 620 belonged to a domestic building, of which it formed the south-east limit. The alignment of the open ditch containing cess may indicate that this ditch was the outflow from the cesspit, whose south-east and north-east limits were not established, in which case the

construction of wall 620 may also have occurred in the later 16th century. The demolition of the south-east end of the newly uncovered accommodation block therefore took place during or before the later 16th century, when a garderobe was constructed within it, and the ditch (followed by a brick drain) crossed its south-east corner. The most likely period for significant alteration to the property would probably have been after the Dissolution, when the property passed into private hands.

4.7.30 If the second bay of the hall continued in use as an open hall, then the width of the solar block would have been reduced to 5m. The number of rooms listed in the schedule of goods (dated 1601) of Thomas Malby, who left them to his wife Lettice on his death in 1599, is large (Clarke 2000, 164-5). Goods are listed in ten rooms: the parlour, the little parlour, the great chamber over the parlour, the little chamber over the great parlour, the chamber over the little parlour, the gallery, the chamber at the furthest end of the gallery, the middle chamber in the gallery, and the chamber in the higher end of the gallery. Clarke argues that the names of these rooms suggest that they were all located beyond the high end of the hall, indicating that by 1601 the high-end accommodation was extensive.

4.7.31 A gallery is mentioned in the inventory of 1601, and the reference to chambers above the gallery indicates that it was of at least two storeys. Galleries have their origins in the later medieval period, as utilitarian passages they often connected domestic buildings and a church or chapel. A surviving example of a single-storey example is that at Christchurch Priory, Canterbury (Coope 1986, 44). In the late 15th and 16th centuries, however, galleries developed as places for conversation, for exercise and for their views. Long galleries, some reaching 65m in length and 8m wide, became very popular in country houses of the later 16th and 17th centuries, when they are also decorated and used as places to hang portraits (ibid., 63-6). Such galleries are almost invariably at first- or second-floor level; for example, those at Hardwick Hall, Derbyshire or at Barrington Hall, North Somerset. Nothing on this scale would be expected of a relatively modest manor such as that at Headstone.

4.7.32 The owners of Headstone Manor might have aspired to a modest gallery of this type, but if this was at first-floor level, then the chambers above would indicate a building of three storeys, which is much grander than the surviving buildings, and it seems more likely that the gallery mentioned in 1601 was on the ground floor. The reference may then refer only to a passage of medieval type, although one wide enough to allow chambers above. It is therefore possible that the gallery was the ground floor of the medieval range along the north-east side of the hall, whose north-east wall was 617, with chambers above. In the medieval and early post-medieval periods, corridors were very rare, rooms being accessed from one to another (Wood 1965, 335-7), so the chambers mentioned could certainly have stretched the full 3m width of the range. The demolition of the south-east end of the accommodation would have reduced this to a maximum length of 9.5m, but even allowing for a stair, this could still have included three chambers each approaching 3m^2 above.

4.7.33 This would leave the great parlour and little parlour on the ground floor of the remaining 7m by 5m area, with three chambers above, which may have been sufficient space. It is also possible that further rooms lay beyond wall 617, which was abutted by a possible further wall 627, and where it is uncertain that wall 620 did not continue further. The date of wall 627 is however unknown, and the width between 627 and 620 was however only 2m, so this is unlikely to have been more than a passage, though it could have led to a building further north-east (Fig. 11).

4.7.34 It is alternatively possible that the second bay of the hall had a first floor inserted for use as private rooms at this time (Fig. 11a). If so, the whole first-floor area between the standing manor and wall 620 would have provided space for domestic accommodation 8.5m long and 7m wide (externally).

The long building south of the accommodation block

4.7.35 It has been suggested that walls 648 and 630, together with a part of wall 619, might have formed a timber-framed building on flint footings extending south-eastwards (Busby and Griffin 1997, 9 and fig. 2; see also 4.6.23 above). The date of construction of wall 630 was not established, so it is unclear whether it was integral with wall 619 from the start, whether it was added to 619 (together with 648), or was only built (with 648) when 619 was being demolished. In ether case, the demolition of 619 need not have involved that of wall 630, which possibly continued in use (at least as a dwarf wall). The construction of this building most likely occurred in the later 16th century.

4.7.36 Linear features interpreted as further flint walls in line with both 648 and 630 were found in trench SSD 6 by the Central Archaeology Service in 1997 (walls 166 and 169? in Trench SSD 6; Busby 1997). If these walls are linked, then this indicates a building 3m wide internally and at least 7.5m long.

4.7.37 Two linear anomalies were previously recorded by geophysical survey (Hale and Grove 1996), one of which corresponded to wall 648, and this was 16.5m long. Only a very small area of the interior of this possible building was exposed in Trenches H and F, and this was described as a possible floor (Busby and Griffin 1997, 9), although it may also have been redeposited clay. If the whole of the geophysical anomaly were to indicate walling, this would have been a very long and relatively narrow building. This might have been a passage linking the high-end accommodation to a further building in the south corner of the moated island, beyond the area covered by the geophysical survey, but if so, this was at a considerable distance from the rest of the Manor House, and the trend in the early post-medieval period was to bring buildings together.

4.7.38 It is just possible that this building is the gallery referred to in the 1601 schedule (Fig. 11b). Although the building at Headstone Manor was constructed (at least on the south-west side) on only shallow foundations, this does not rule out a two-storey building, as is shown by the 'west wing' built in the later 16th century further north. This would certainly not have been a gallery of the usual type because, as has already been said, galleries of the Elizabethan and Jacobean periods were almost always on the first or second floors. It might, however, have been a ground-floor *loggia*, supporting the chambers on timber uprights on one side. Although very modest by the standards of galleries and *loggia*, and also narrow (Coope 1986, 51), it would still have provided an area for promenading during wet weather, something we know was important (ibid., 52); Wolsey's galleries, for example, were made 'for admiring the view from windows on each side looking at the river and gardens' (ibid., 47). If this was the gallery at Headstone, then the reduction in accommodation when the south-east end of the medieval accommodation block was demolished would have been dealt with by the construction of additional chambers above this long building.

4.7.39 Against this interpretation, although this part of the site certainly later became the garden area of the moated island, in the later 16th century there was an open sewer only 8-10m to the north-east of this building. Alternative functions for a building in this location are uncertain, as only a very limited area of the interior was exposed. A stable block of these dimensions might have housed eight horses (allowing for a tack room),

but the flooring that was exposed did not include any cobbling or a drain, such as might have been expected of a stables or a carriage house.

The demolition of the accommodation block and the second bay of the hall

4.7.40 The date of the demolition of the second bay of the hall and high-end accommodation is currently believed to be mid-18th century, based upon the construction details of the brick wall built to enclose the south-east side of the house (Martin and Martin 2001, 21-2). The demolition may have taken place following a fire (ibid., 22). This date is somewhat later than the dates tentatively indicated by the finds in the top of the garderobe and in the robber trench of wall 620, both of which would suggest a 17th-century date. The below-ground dating is not clear, however, and the finds recovered were probably materials that had been in use on the building for a long period of time beforehand, but were only discarded when the building was finally demolished.

Appendix A. Archaeological Context Inventory

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
207	Construction Cut	0.3	05	-	N-S aligned linear with steep sides and uneven base. Filled by 246		
208	Robbing Cut	0.2	0.6	-	NW-SE linear with steep sides and an uneven base. Filled by 247		
232	Layer	0.1			Compact grey clay and gravel, occ. animal bone	Clay tobacco pipe, pottery	18th-19th century
239	Wall or kerb	0.22	0.62	-	NW-SE layer of flints with larger, squared flints forming straight SW edge. Continues into NW edge of site.		
240	Wall	>0.5	0.5	1.2	NW-SE aligned knapped flint and roughly hewn chalk blocks, orange brown fine sandy lime mortar. Roughly coursed. The flint of upper courses was dressed to give a fair face – internal wall		
241	Surface	>0.50mm	-	5.84	Compact flint cobbles in gravel clay – Cobbled surface		
242	Layer	0.15	4.3	2.68	Moderately compact, greyish brown gravel rich clayey silt, moderate charcoal, mortar flecks	Pottery	1480-1600
243	Layer	> 0.1	-	-	Soft yellowish grey clay		
244	Mile Post	0.9	0.35	0.69	Engraved stone upright- not *in situ*		
246	Wall	0.3	0.48	0.16	Loose rough flint nodules occ. fragments of Reigate sandstone		
247	Fill of 208	0.2	0.6	-	Loose grey clayey silt with frequent large pebbles-Robbing		
249	Fill of 250	0.15	1.63	0.6	Loose dark grey brown clayey silt with pebbles and occ red tile fragments.	CBM	16th-19th century
250	Cut	0.15	1.63	0.6	Rectangular with a semi-flat base and variable sides. Filled by 249		16th-19th century
251	Fill of 252	0.25	-	-	Loose, dark grey clayey silt, occ. well rounded pebbles.		
252	Ditch	0.25	-	-	N-S aligned, only western side observed. Filled by 251		
253	Layer	0.22	-	-	Compact mixed yellow, white, red and blackish clay, fragments chalk/plaster, glass and charcoal flecks		
254	Sub base	0.03	-	-	Compact orange sandy gravel	Pottery	1850-

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
							1900
255	Layer	0.08	-	-	Tarmac		Modern
257	Layer	>50mm	-	-	Compact red crushed brick and roof tile	Pottery, CBM	1850-1900
258	Fill of 259	0.2	0.5	-	Brown silty clay flecks of white.	Pottery, CBM	17th-19th century
259	Robber cut	0.2	0.5	-	Linear vertical sided flat base Filled by 258		
260	Wall	1.1	0.86	0.78	E-W aligned knapped flint and roughly hewn chalk blocks, orange brown fine sandy lime mortar – Outer wall of building 452		
261	Layer	0.1	2.4	3.1	Firm, brownish yellow clay, charcoal flecks		
262	Layer	0.1	-	-	Compact orange sandy rounded gravel		
263	Topsoil	0.2	-	-	Friable, grey with black flecks sandy silt, occ. pebbles.	Pottery, Molded plaster	1850-1900
264	Layer	0.05	1	1	Compact yellowish grey sand clay, charcoal and small pebbles		
265	Layer	0.1	0.94	1.56	Very compact yellowish orange sandy gravel		
266	Pit	0.15	0.9	1.18	Oblong shaped with an N-S alignment, concave base with moderately steep sides. Filled by 267		
267	Fill of 266	0.15	1.2	0.65	Firm, brownish grey silt, frequent pebbles, rare flecks charcoal and CBM	Pottery, CBM	1800-1900
268	Structure	0.3	0.4		Flint cobbles roughly worked		
269	Surface	>0.1	3.36	6.48	Very compact gravel well rounded pebbles		
270	Layer	>50mm	1.04	2.16	Crushed red brick and tile		
271	Layer		0.7	1.2	Firm brown clayey silt, occ. pebbles		
272	Layer	-	0.72	0.73	Firm dark grey silt with pebbles		
273	Layer	0.05	0.2	1	Firm dark brown silt, frequent pebbles		
274	Layer	-	1.8	5.7	Firm brownish grey silt, frequent pebbles and occ. large CBM fragments	Pottery	1680-1750
275	Layer	0.1	5	2.4	Firm yellowish grey sandy clay with chalk and CBM flecks		
276	Pit:	-	0.5	0.4	Square in plan, excavated. Filled by		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
					278		
277	Cut	-	0.3	1.05	Linear NNW-SSE, truncated at north end. Filled by 279		
278	Fill of 276	-	0.4	0.5	Firm, dark greyish brown, sandy clay, occ. fragments chalk		
279	Fill of 277	-	0.3	1.05	Firm light brown clayey silt, common CBM fragments, rare pebbles, mortar and charcoal flecks.	CBM	
280	Structure or surface	-	0.4	0.27	1 course of flint nodules, on average 0.18m x 0.15m each		
281	Layer	-	0.36	1.7	Loose, bright brownish yellow sand, frequent pebbles		
282	Layer	-	4.4	2.8	Compact, grey silty sand, frequent pebbles.		
283	Layer	-	1.5	0.98	Firm, dark brownish grey sandy clay gravel, occ. flecks of chalk		
284	Layer	-	-	-	Compact yellow clay		
285	Layer	-	1.22	0.90	As 283? (no details)		
356	Layer	0.1			Compact well sorted grey brown silty clay, frequent flecks of white chalk occ. large flint nodules. Post-demolition spread?		
357	Layer	0.1			Yellowish brown clay, frequent flecks chalk and mortar	CBM	16th-18th century
358	Surface				Compact gray brown gravel sub rounded -sub angular pebbles, occ. flint nodules	Pottery, CBM	16th-18th century
374	Robber cut	0.2	0.35		NW-SE cut vertical sides flat base		
375	Fill of 374	0.2	0.35		Firm mid to light grey silty clay, charcoal flecks		
376	Layer				Firm dark yellow silty clay, frequent flecks chalk, occ. flint		
377	Layer	0.3			Soft brownish yellow with patches of pink clay, occ. flecks of charcoal, chalk, sub rounded pebbles		
378	Wall	1.1	0.6-0.7		N-S aligned knapped flint and roughly hewn chalk blocks, orange brown fine sandy lime mortar. Roughly coursed. The flint of upper courses was dressed to give a fair face-Outer wall of building 452		
450	Layer	0.1			Friable yellowish brown silty clay, chalk flecks		
451	Surface	50mm			Firm greyish brown silty clay, very		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
					frequent chalk, occ. mortar and flint-Working surface/Construction debris		
452	Structure	1.1	7.6	>16.8	Rectangular building built of flint and chalk walls- 260, 378, 492, 510, 715, 679, 680 and 693		
453	Fill of 454				Loose dark grey ashy clay, frequent flecks charcoal, fragments roof tile, occ. sub rounded pebbles	CBM	19th-20th century
454	Robber trench				N-S aligned linear cut flat base sides 45°		
455	Layer	0.1			Moderately compact yellow with mauve pink mottles clay-sloped down west-east	Pottery	1480-1600
456	Layer	0.4			Compact brown with orange brown mottles clay	CBM scrap	17th-19th century?
457	Layer	0.8			Stiff orange brown clay, moderate flecks chalk very rare small sub angular-well rounded pebbles	CBM (four pegtiles)	17th-18th century
458	Drain		0.46		SW-NE aligned brick built drain. Flat roof, unfrogged red bricks no bonding	CBM	L18th-19th century
459	Fill				Moderately compact yellowish brown silty clay, frequent CBM, occ. sub rounded pebbles, charcoal flecks	CBM	16th-17th century
462	Layer	0.25			Firm yellow with red and light yellow mottles clay, occ. pebbles		
463	Builders Waste	60mm			Friable greyish brown silty clay, frequent fragments of struck flint	Struck flint	
464	Layer	>0.1			Dark-mid blueish grey with red mottles clay silt		
467	Layer	0.4			Stiff greyish yellow with patches of bright pink clay, occ. CBM		
468	Fill of 470	0.7	0.6		Loose brown charcoal rich silty clay, occ. sub rounded pebbles		
470	Construction Trench	0.7	0.6		NW-SE aligned linear cut vertical sides flat base		
471	Topsoil	0.2			Friable grey brown silty clay		
472	Fill of 470	0.2			Soft dark brownish grey ashy silty clay, occ. sub angular pebbles		
476	Wall	0.6			Rough worked flint nodules, orange yellow coarse sandy mortar		
477	Wall		0.6		E-W aligned rough flint nodules orange yellow coarse sandy lime mortar		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
478	Layer	>0.3			Blueish grey with orange brown mottles silty clay	Pottery	1170-1350
479	Layer				Moderately compact greyish brown silty clay		
480	Construction waste				Friable orange brown gritty clay, frequent chalk fragments and struck flint		
481	Fill of 482				Friable brownish grey sandy clay, frequent roof tile	Pottery, CBM	17th-18th century
482	Pit				Oval concave base 45° sides	Pottery, CBM	17th-18th century
483	Fill of 484				Friable black ashy charcoal rich clayey silt		
484	Robber trench				N-S linear cut flat base vertical sides		
487	Layer	>0.1			Friable grey with orange brown mottles silty clay, rare small sub rounded pebbles		
490	Construction waste				Friable orange brown with frequent white flecks clay, frequent rolled chalk fragments and struck flint		
491	Construction waste	60mm			Friable orange brown, frequent white clay with frequent rolled chalk and struck flint -sloped down from NE - SW	CBM	17th-18th century
492	Wall	0.7			NW-SE aligned knapped flint and roughly hewn chalk blocks, orange brown fine sandy lime mortar. Roughly coursed. The flint of upper courses was dressed to give a fair face-Outer wall of building 452		
493	Layer	>0.1			Moderately compact brown with orange mottles clay-sloped down west-east		
494	Layer	0.3			Moderately compact grey with orange brown mottles silty clay		
495	Fill of 496				Moderately compact greyish brown silty clay, frequent flecks charcoal, fragments roof tile, occ. red brick, floor tile, animal bone, clay tobacco pipes	CBM, clay pipe, animal bones	L18th-19th century
496	Pit				Only seen in section. shallow cut concave base, 45° sides		
498	Fill of 500				Loose brown ashy gravel and rubble-rich clay, sub rounded -well rounded pebbles		
500	Pit or ditch				Seen in section SE-NW aligned		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
					sides 45° base not found		
501	Wall				NW-SE aligned rough worked flint nodules orange brown coarse sandy lime mortar		
502	Wall	0.36			N-S aligned rough worked flint nodules in soft light yellowish white lime mortar. occ. red brick and roof tile-internal wall	CBM	16th century
503	Wall	0.46			N-S aligned rough worked flint clay rich mortar- internal wall		
504	Layer				Moderately compact grey with white and red flecks silty clay, frequent fragments roof tile, sub rounded pebbles	CBM	16th century
505	Hearth				8 courses of roof tiles lain on bed	CBM	16th-17th century
506	Hearth	0.7			Roof tiles lain on edge	CBM	15th-16th century
507	Layer				Soft light yellow with mauve red and light blue grey clay		
508	Surface				Compact orange brown clay and gravel, well rounded sub rounded pebbles -Metalling		
509	Builders Waste				Compact greyish brown coarse sandy clay, frequent small fragments of chalk and struck flint		
510	Wall				E-W aligned dressed flint yellowish white coarse sandy lime mortar-Outer wall of building 452		
511	Robber cut for drain?				N-S aligned linear cut vertical sides flat base. Filled by 543 and 515.		
512	Layer				Very compact red and black crushed red brick and roof tile fragments mixed with ashy charcoal		
513	Layer	0.25			Compact brown clay, occ. charcoal flecks		
514	Occupation layer				Loose dark grey clayey silt, frequent white chalk and black charcoal flecks	CBM	C14 date AD 1430-1475
515	layer				Loose brownish-grey, gravel-rich clay, sub-rounded to rounded pebbles, occ. red brick fragments, charcoal, chalk and mortar	Pottery, CBM	1660-1725
516	Drain/conduit				NE-SW brick drain flat roofed unfrogged red brick soft white sandy lime mortar. Filled by 539.	CBM	16th-17th century

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
517	Construction trench				NE-SW linear cut vertical sides, flat base. Filled by 538.		
518	Fill of 517				Soft dark grey silt, occ. sub rounded pebbles		
519	Layer	0.05	1.00	0.62m+	Compact red crushed roof tile mixed with brown clay	CBM	17th-18th century
520	Robber trench				NW-SE linear cut base not found sides 45 °		
521	Fill of 520				Loose brown silty clay, frequent sub rounded pebbles, occ. flint nodules		
522	Surface				Very compact grey occ. thin lens of orange brown gravel rich clay, sub rounded -well rounded pebbles- Metalling		
523	Wall	0.6			N-S aligned dressed flint yellowish white fine sandy lime mortar		
524	Wall	0.58			E-W aligned dressed flint, yellowish white sandy lime mortar		
525	Wall				N-S aligned chalk and mortar roughly hewn chalk blocks yellowish white soft mortar		
526	Occupation layer				Loose dark grey charcoal rich clay, frequent fragments and flecks of white chalk, occ. small sub angular pebbles	CBM	C14 date AD 1290-1410
527	Burnt floor				Compact reddish grey burnt clay, frequent charcoal flecks		
528	Fill of service trench				Loose grey brown clay, frequent flint nodules, well rounded -sub rounded pebbles, charcoal		
529	Service trench	0.6			N-S aligned linear cut vertical sides, base not seen		
530	Fill of 531	0.6			Friable orange brown with red and white flecks silty clay, occ. sub angular pebbles, frequent flecks chalk		
531	Construction trench	0.7			Linear cut 45° sides, concave base		
532	Fill of 546				Soft brownish yellow clay, frequent sub rounded -well rounded pebbles, occ. red tile		
533	Fill of 546				Loose dark grey ashy silty clay, occ. fragments of modern ceramic drain pipe, roof tiles chalk, charcoal		
534	Construction cut	0.73			Steeped cut flat base vertical sides		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
535	Fill of 536				Moderately compact greyish brown clay and gravel, sub rounded -well rounded pebbles, rare charcoal flecks, frequent roof tile	CBM	16th-17th century
536	Pit				Shallow cut concave base, gradually sloping sides		
537	Surface				Compact grey brown gravel and clay, well-rounded -sub rounded pebbles, rare cobbles	CBM	16th-18th century
538	Fill of 517				Soft light greyish yellow coarse sand		
539	Fill of 516				Com pat grey brown gravel and clay sub angular-sub rounded pebbles		
540	Occupation layer				Moderately compact brown clay, frequent flecks charcoal, chalk, fragments roof tile	CBM	16th-17th century
541	Wall	-	-	-	E-W aligned, knapped flints & yellowish-white mortar		
542	Burnt surface				Compact red burnt clay with brown patches, occ. flecks charcoal		
543	Fill of 511				Loose greyish yellow coarse sand, rare sub-angular pebbles		
544	Wall	0.25			Rough-hewn flints		
545	Construction cut	0.25	0.36		N-S aligned vertical ides flat base		
546	Cut	0.2	1.6		Concave base, gently sloping sides		
547	Floor joists				12 Wooden floor joists aligned N-S on tile plinths		
548	Wall supporting joists				N-S, red unfrogged bricks and roof tiles lain horizontally, hard white mortar – within Manor House		
549	Wall				N-S red brick wall within Manor House		
550	Floor?				Compact light brown clay		
551	Wall				E-W aligned, bricks and mortar, within Manor House		
552	Surface				Concrete		Modern
553	Layer/Sub base				Compact light -mid brown silt with lens of white and red mortar, frequent roof tile, white plaster, occ. charcoal -Demolition or building waste		
554	Leveling				Moderately compact brownish grey clay with flecks of black and white	Pottery, CBM	1480-1600

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
					fine sand, occ chalk, frequent roof tile, flecks of charcoal		
555	Wall				N-S aligned, made of red bricks and hard white cement mortar		Modern
556	Wall				E-W aligned, made of red bricks and hard concrete - footings		Modern
557	Layer				Stiff yellow and light pinkish mauve clay, rare charcoal flecks		
558	Surface				Very compact greyish orange gravel and clay, sub-rounded and well-rounded pebbles- Metalling		
559	Wall				N-S aligned, roughly knapped flints, clay and mortar – internal wall		
560	Layer				Loose black charcoal-rich silty clay, occ. small fragments roof tile	CBM	16th-17th century
561	Burnt surface				Stiff red burnt clay		
562	Surface				Friable brown sandy clay with orange mottles, occ. rounded pebbles		
563	Layer				Stiff greyish yellow clay		
564	Wall				N-S aligned rough knapped flint clay and mortar- Internal wall		
565	Leveling				Compact reddish grey crushed red bricks		
596	Topsoil	0.1			Friable, dark greyish brown fine sandy clayey silt, occ. well-rounded pebbles, frequent coal, charcoal		
597	Surface				Very compact orange yellow coarse sandy gravel, pebbles sub-rounded to sub-angular - path	CBM	17th-19th century
598	Wall				E-W aligned, rough-hewn flints in a loose coarse sandy orangey brown lime mortar		
599	Wall				E-W aligned, made of red unfrogged bricks lain on bed and bonded with soft white sandy mortar		
600	Wall				N-S aligned, made of red unfrogged brick & soft white coarse sandy mortar		
601	Surface				Very compact greyish brown gravel and clay with well-rounded and sub-rounded pebbles, roof tile fragments -metalling		
602	Surface	>0.50m			Compact greyish brown clay and		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
		m			well-rounded and sub-rounded pebbles - metalling		
603	Leveling	>0.24			Stiff yellow clay with pink mottles		
604	Fill of 605				Loose grey clay and pebbles well-rounded and sub-rounded, occ. small chalk fragments		
605	Robbing Cut	0.32	0.3		E-W aligned, only N side seen. Concave side, base flat		
606	Former topsoil	>0.2			Greenish grey clayey silt with flecks of black fine sand, frequents flecks charcoal, occ. flecks red CBM, chalk		
607	Garden soil	> 0.05m			Greenish brown fine sandy clayey silt		
608	Robbing cut	0.8	0.3		N-S aligned, concave sides and flat base		
609	Fill of 608	0.8	0.3		Loose dark grey clay silt, occ. well-rounded pebbles, flecks of charcoal, mortar, coal		
610	Fill of 611	>0.2	0.6		Loose light grey clayey silt with frequent flecks of cream coarse sand, frequent large fragments of cream lime mortar, occ. flint nodules	CBM	17th-18th century?
611	Robber cut	>0.2	0.6		N-S aligned, sides slightly concave, base not found		
612	Garden soil	0.1			Greyish brown silty clay with frequent flecks white fine sand, frequent charcoal, occ large fragments of white lime mortar		
613	Wall	Foundations ->0.6	0.5		E-W aligned red brick stepped foundations with roof tile spacers – garden wall		
614	Surface	0.15	0.1		Compact yellowish brown coarse sandy clay and gravel, sub-rounded and well-rounded pebbles. Path		
615	Garden soil	0.2	0.2		Loose dark grey clayey silt, frequent charcoal, mortar flecks		
616	Surface	0.15	0.15		Very compact grey and yellowish orange clay and gravel-Paths	CBM	16th-17th century?
617	Wall	>0.2	0.5		N-S aligned, roughly knapped flints and mortar		
618	Garden soil	0.23	0.2		Compact grey sub-rounded -well rounded pebbles	CBM, Pottery	1860-1900
619	Wall	>0.15	0.55		E-W aligned, roughly dressed flints and mortar		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
620	Wall	>0.21	0.6		E-W aligned, roughly dressed flints and mortar		
621	Robber cut	>0.1			E-W aligned cut to north of wall 619. Base not found		
622	Fill of 621	>0.1			Firm greenish brown silty clay, frequent flecks and fragments chalk and flint nodules	CBM, struck flint	15th-16th century?
623	Ditch	0.15	0.62	>1.6	Flat base, concave sides		
624	Fill of 623	0.15	0.62	>1.6	Firm greyish brown silty clay with light yellowish green mottles, frequent oyster shell, occ. charcoal	CBM, pottery	1550 1600
625	Robber cut	>0.3	0.8	1.8	Irregular in plan, sides vertical, base not reached		
626	Fill of 625	>0.3	0.8	1.8	Loose yellowish-beige mix of degraded mortar, bricks and roof tiles-Rubble	CBM	L17th-18th century?
627	Wall	>0.1	0.7		E-W aligned, roughly dressed flints and white mortar		
628	Construction cut	>0.2	0.7		N-S aligned linear, base not found		
629	Layer	0.2			Compact yellow and pink clay		
630	Wall	>0.2		0.35	N-S aligned, flints and mortar		
631	Layer	>0.1			Greyish green, frequent flecks chalk		
632	Leveling /sub base	0.1			Stiff yellow and pink clay, flecks charcoal	Horse shoe?	
633	Wall	>0.15	0.25	> 1	N-S aligned wall of rough flints and mortar		
634	Fill of 635	0.15	0.2	0.2	Loose dark grey clayey silt, frequent flecks charcoal	CBM	15th-17th century?
635	Post Hole	0,15	0.2		Circular cut with vertical sides & flat base		
636	Layer	0.1	0.4	>1.1	Compact brown and red clay	CBM	14th-16th century?
637	Wall	>0.15	0.45	>0.45	N-S aligned rough flint and mortar wall – internal wall		
638	Buttress/ plinth	>0.2	1.2	1.2	Rough-hewn flint nodules, no bonding		
639	Fill of 640	0.25	0.6	0.6	compact greyish brown gravel- rich clayey silt, frequent rough- hewn flint nodules, charcoal flecks		
640	pit/post hole	0.25	0.6	0.6	circular cut, flat base		
641	Fill of 621	>0.50m			Compact greyish brown silty clay,	CBM,	1550-

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
		m			frequent flecks white, occ. charcoal	pottery	1600
642	Layer	0.17			Moderately firm dark greyish brown clayey silt with olive brown mottles, rare rounded pebbles, oyster shell, charcoal, mortar & struck flint	CBM	16th-17th century?
643	Robber cut	0.2	0.8	>1.05	NW-SE aligned, flat base and steep sides		
644	Fill of 643	0.2	0.8	>1.05	Moderately firm olive-grey clayey silt with yellowish olive mottles, rare charcoal, small rounded pebbles, bone	CBM	15th-16th century?
645	Conduit/drain	60mm	0.4		Open drain, walls one brick wide. One course of red unfrogged bricks lain on bed, floor is one course of roof tiles, thick light yellow sandy mortar		15th-16th century?
646	Fill of 647	0.2			Friable brown clay		
647	Construction cut	0.2			N-S aligned vertical sides flat base		
648	Wall	0.2	0.5		N-S aligned flints, two rough-hewn courses, white coarse sandy lime mortar		
649	Ditch	0.2	1.05		Linear, concave sides and base		
650	Fill of 649	0.2	1.05		Moderate to firm dark grey clayey silt, moderate pebbles oyster shell charcoal, animal bone fragments	Jeton, CBM, pottery, struck flint	L16th or E17th century
651	Ditch	>80mm	0.8		SE-NW aligned, not excavated		
652	Fill of 651	>80mm			Olive & grey mottled silt, rare pebbles		
653	Fill of 645	80mm	0.8		Moderately firm greyish brown clay silt, traces of fine sand, occ. pebbles, rare charcoal, mortar, animal bones	CBM	15th-16th century?
654	Layer	>0.3			Tenacious mid-light brownish grey clay, occ. CBM, charcoal flecks		
655	Construction cut ?	>1.1	0.6		Linear aligned E-W, vertical sides		
656	Layer	0.25	0.9		Mixed sand, flint nodules, CBM & gravel-demolition layer		
657	Robbing cut for wall 620	0.5	0.7		E-W aligned linear with irregular base		
658	Fill of 657	0.25	0.7		Mixed redeposited sandy mortar with flint nodules	CBM	17th century?
659	Fill of 657	0.15	0.7		Mixed brick and tile rubble with		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
					occasional flint blocks in a matrix of dark grey silty clay		
660	Fill of 657	0.1	0.7		Orange brown silty clay, occ. Charcoal, gravel	CBM, pottery	16th-17th century
661	Construction cut	1	0.7	0.7	Vertical sides and flat base		
662	Wall of pit	1	0.3		Rough-hewn nodules, regular on inner face, irregular on outer face, no bonding material, pit lining		
663	Fill of 662	1	0.7	0.7	Mid-dark grey/ greenish grey clay silt - cess-pit fill?	CBM	15th-16th century?
664	Fill of 662	0,16	0.7	0.7	Mid-dark grey & greenish grey clay silt, frequent CBM - cess-pit fill?	CBM, pottery	16th-17th century
665	Layer	>0.1			Brownish grey & green clay silt, occ. charcoal	CBM, pottery	16th-17th century
666	Construction cut	80mm	0.8		Construction cut for drain 645. Vertical sides, flat base		
667	Fill of 666	80mm	0.8		Firm brown clayey silt with pebbles & mortar	CBM, pottery	L15th-16th century
668	Layer	>0.1			Moderately compact dark greyish brown silty clay, occ. charcoal flecks		
669	Wall	>0.1	0.25		E-W aligned, small rough chalk blocks and rough-hewn flints – blocking of former doorway		
670	Layer	0.25			Friable orange brown sandy silty clay, frequent flecks white mortar, occ. CBM	Pottery	1480-1600
671	Layer	0.1			Friable brown charcoal-rich silt		
672	Layer	0.2			Stiff greyish brown charcoal- rich clay, frequent flecks charcoal and white mortar		
673	Layer	0.15			Stiff brown clay, occ. sub- rounded pebbles		
674	Robbing	>0.2	0.3		E-W linear, vertical sides & flat base		
675	Fill of 674	>0.2	0.3		Loose dark grey silty clay, frequent charcoal	CBM, pottery	L15th-16th century
677	Pit	0.3	0.4	0.8	Pit or post hole		
678	Sub base	0.2			Clinker ash and CBM		
679	Wall	>0.2	0.6		E-W aligned roughly dressed flint and mortar -Outer wall of building 452l		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
680	Wall	>0.2	0.6		E-W aligned roughly dressed flint orange yellow mortar-Outer wall of building 452		
681	Layer	0.1			Moderately compact brownish grey clay, frequent flecks charcoal		
682	Layer	>0.1			Moderately compact brownish grey clay, frequent charcoal		
683	Layer	> 0.1			Stiff brown clay, flecks charcoal	CBM	16th-17th century?
684	Wall repair	0.2	0.3	0.34	Rough-hewn flint and white mortar set into top of wall 679		
685	Topsoil	0.2			Loose dark grey clayey silt	Porcelain doll	1900-1930
686	Surface				Blue grey rectangular engineering bricks “Jubilee”		
687	Layer	0.1			Stiff brown clay with grey mottles, frequent flecks charcoal		
688	Fill of robber trench?	0.2			Moderately compact dark grey silty clay, frequent flecks charcoal, rare large nodules flint. Robber fill of wall 680?		
689	Layer	>0.2			Loose dark grey silty clay, frequent whitish yellow mortar, charcoal		
690	Layer	0.2			Yellow clay with pink mottles, occ. charcoal flecks		
691	Fill	0.2			Loose grey clay, frequent charcoal		
692	Fill	0.25			Friable brownish grey silty clay, frequent flecks white mortar & charcoal, occ. well-rounded pebbles		
693	Wall	>0.8	0.6		E-W aligned flint & chalk mortared wall-Outer wall of building 452		
694	Leveling				Stiff yellow clay with pink mottles, rare charcoal flecks		
695	Drain	0.5			E-W aligned walls, single brick wide. 4 courses of red unfrogged bricks laid on bed no bonding	CBM	18th century?
696	Fill of drain 695	0.1	0.25		Soft dark grey clay silt, occ. charcoal grit		
697	Fill of 699	0.7	0.7		Loose greyish brown clay and gravel		
698	Construction cut	0.3	0.4		E-W aligned linear, vertical sides & flat base		
699	Robbing cut	0.4	0.7		E-W aligned cut, vertical N side, sloping S side, base flat		

Context	Type	Depth (m)	Width (m)	Length (m)	Comments	Finds	Date
700	Layer	>0.1			Friable grey silty clay with dark orange brown mottles, rare fragments roof tile, very rare sub-rounded pebbles	CBM	16th-17th century?
703	Wall				Four courses of red unfrogged bricks, all stretchers		
705	Wall		0.6		E-W aligned red unfrogged bricks bonded with white sandy mortar, two courses of floor tiles at base.		
706	Wall	0.3	0.46		N-S aligned flint nodules in cream lime mortar -beneath present wall of Manor		
707	Leveling/sub base	0.4			Stiff yellow clay with pink mottles, occ. charcoal flecks		
708	Layer	0.2			Compact brown clay, frequent flecks charcoal		
709	Layer	20mm			Compact orangey-yellow coarse sandy mortar, struck flint and chalk-builders waste		
710	Layer				Loose grey silty clay, frequent flecks mortar	Pottery	1650-1800
711	Wall	0.4			E-W aligned, made of flint nodules, soft white sandy lime mortar -beneath extant brick wall of Manor		
712	Topsoil				Brownish grey fine sandy clayey silt, rare well-rounded pebbles, occ. flecks charcoal	CBM	
713	Layer	0.3			Greyish yellow clay with light yellow patches, frequent flecks charcoal		
714	Natural Geology	>0.45			Greyish brown clay with orange and light gray mottles		
715	Wall	>0.5	0.6	>7.4	Flint and chalk wall with roughly dressed edges, bonded with orange coarse sandy lime mortar		

Appendix B. Bibliography and References

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Appendix C. Assessment Of Finds

C.1 The post-Roman pottery

by John Cotter

Introduction and methodology

C.1.1 The investigations at Headstone Manor produced a total of 134 sherds of post-Roman pottery weighing 3.351kg. Only 21 sherds weighing 394g in 13 contexts came from the Outer Court, the Moated Island producing a total of 113 sherds of post-Roman pottery weighing 2.957kg from 28 contexts. The Estimated Number of Vessels (ENV) was 93.

C.1.2 All the pottery was examined, spot-dated and fully catalogued during the present assessment stage (see Excel spreadsheet in archive). This was catalogued using the fabric and form codes of the Museum of London (MoLA 2015). For reasons of economy and easier presentation some of the more ephemeral/interpretative data fields have been omitted from the catalogue here although all those essential for the assessment and potential publication of the assemblage have been retained. For each context, and fabric, the total pottery sherd count and weight were recorded. Vessel form, if identifiable, was also recorded together with ENV (minimum vessel count). Vessel part, decorative details, condition and traces of use are recorded in the comments field.

C.1.3 A range of medieval and post-medieval pottery is present although post-medieval pottery (after c 1480) is much commoner. A detailed breakdown of the fabrics from both parts of the site is presented in Table 1 below.

Table 1: Breakdown of pottery fabrics from all areas in alphabetic order (by code).

Fabric	Common name	E Date	L Date	Period	Sherds	Weight	ENV
BBAS	Black basalt stoneware	1770	1900	PM	1	5	1
BLUE	Blue stoneware	1800	1900	PM	1	6	1
BONE	Bone china	1794	1900	PM	1	9	1
BORDY	Surrey-Hampshire border whiteware with clear (yellow) glaze	1550	1700	PM	1	4	1
CBW	Coarse Surrey-Hampshire border ware	1270	1500	M	3	44	3
CHPO	Chinese porcelain	1580	1900	PM	1	2	1
CONP	Continental porcelain	1710	1900	PM	1	23	1
CSTN	Cistercian ware	1480	1600	PM	2	24	1
ENGS	English stoneware	1700	1900	PM	4	1043	4
ENGS	English stoneware with Bristol glaze	1830	1900	PM	3	180	3

Fabric	Common name	E Date	L Date	Period	Sherds	Weight	ENV
BRST							
ERBOR	Early Surrey-Hampshire border redware	1480	1550	PM	2	15	3
METS	Metropolitan slipware	1630	1700	PM	1	21	1
PMR	Post-medieval redware	1580	1900	PM	10	215	9
PMRE	London area early post-medieval redware	1480	1600	PM	54	927	34
RAER	Raeren stoneware	1480	1550	PM	1	98	1
RBOR	Surrey-Hants border redware	1550	1900	PM	3	79	2
REFW	Refined whiteware	1805	1900	PM	4	21	3
REFW PNTD	Refined whiteware with underglaze painted decoration	1805	1900	PM	1	6	1
ROCK	Rockingham ware with mottled brown glaze	1800	1900	PM	2	101	2
SHER	South Hertfordshire greyware	1170	1350	M	9	93	6
SIEG	Siegburg stoneware	1300	1630	M-PM	1	18	1
SUND	Sunderland-type coarseware	1800	1900	PM	3	35	1
TGW	English tin-glazed ware	1570	1846	PM	3	45	2
TPW	Transfer-printed refined whiteware	1830	1900	PM	22	337	10
TOTAL					**134**	**3351**	**93**

C.1.4 The few sherds from the Outer Court are reported upon separately. A breakdown of the pottery from the Moated Island is shown in Table 2 below. The following report deals with the pottery from the Moated Island, but for the purposes of comparison finishes with a comment on the Outer Court assemblage.

Table 2: The Moated Island. Breakdown of pottery fabrics in alphabetic order (by code)

Fabric	Common name	E Date	L Date	Period	Sherds	Weight	ENV
BLUE	Blue stoneware	1800	1900	PM	1	6	1
BORDY	Surrey-Hampshire border whiteware	1550	1700	PM	1	4	1

Fabric	Common name	E Date	L Date	Period	Sherds	Weight	ENV
	with clear (yellow) glaze						
CBW	Coarse Surrey-Hampshire border ware	1270	1500	M	3	44	3
CONP	Continental porcelain	1710	1900	PM	1	23	1
CSTN	Cistercian ware	1480	1600	PM	2	24	1
ENGS	English stoneware	1700	1900	PM	3	1033	3
ENGS BRST	English stoneware with Bristol glaze	1830	1900	PM	1	16	1
ERBOR	Early Surrey-Hampshire border redware	1480	1550	PM	2	15	3
METS	Metropolitan slipware	1630	1700	PM	1	21	1
PMR	Post-medieval redware	1580	1900	PM	8	150	7
PMRE	London area early post-medieval redware	1480	1600	PM	53	913	33
RAER	Raeren stoneware	1480	1550	PM	1	98	1
RBOR	Surrey-Hants border redware	1550	1900	PM	2	66	1
REFW	Refined whiteware	1805	1900	PM	3	17	2
REFW PNTD	Refined whiteware with underglaze painted decoration	1805	1900	PM	1	6	1
ROCK	Rockingham ware with mottled brown glaze	1800	1900	PM	2	101	2
SHER	South Hertfordshire greyware	1170	1350	M	7	77	4
SIEG	Siegburg stoneware	1300	1630	M-PM	1	18	1
SUND	Sunderland-type coarseware	1800	1900	PM	3	35	1
TGW	English tin-glazed ware	1570	1846	PM	3	45	2
TPW	Transfer-printed refined whiteware	1830	1900	PM	14	245	6
TOTAL					**113**	**2957**	**76**

Overview

C.1.5 The assemblage comprises medieval and post-medieval pottery fabrics and vessel forms common to the London area and beyond. The condition is variable but generally fairly fragmentary, with the earliest material generally being the most fragmentary while the latest material occurs as much larger, fresher, sherds. This includes one or two complete vessels of 19th- or 20th-century date. Ordinary domestic pottery is represented.

C.1.6 The earliest material comprises seven sherds (4 ENV) of South Hertfordshire greyware (Fabric code SHER) which has a date range of c 1170-1350, although a 13th–14th century date seems more likely for the material here. The very fragmentary vessels forms present in this ware include jugs and cooking pots. Much, but not all, of this appears to be residual in later contexts. In relation to Headstone Manor, the nearest known sources of this ware are in north-west Middlesex, at Pinner and Uxbridge. The only other medieval fabric present is Coarse Surrey-Hampshire Border ware (CBW, c 1270-1500), present as three sherds from three separate bowls with an internal green glaze. This fabric is commonest in the London area after c 1350. Two of the sherds occur in early post-medieval contexts (c 1480-1600) and may be residual, or late examples of this fabric type. A typical flanged bowl rim in this fabric is definitely residual in a late 17th–18th century context [515].

C.1.7 Early post-medieval redware (PMRE, c 1480-1600) is by far the commonest fabric from the site (53 sherds, 34 ENV). Groups of between 7-12 fairly large fresh sherds occur in Contexts [624], [641] and [650]. Several production centres for this fabric tradition are known from sites along the Thames in London including Lambeth, Woolwich and Greenwich and also upriver at Kingston-on-Thames (Surrey). Other production centres probably existed in the London area but have yet to be discovered. While some vessels from Headstone Manor have the typical oxidised medium-coarse sandy fabric found in central London, a few have a coarser fabric which may perhaps come from a more local source. The PMRE assemblage includes common utilitarian forms such as wide bowls, medium and large jugs, jars/cooking pots, and the rim from a very small pipkin (saucepan) sooted and worn from use [665]. Some fresh rims and fairly large fragments of sagging base survive in this fabric, but no complete profiles; some, however, might be worth illustrating to accompany the publication report. Unlike sites closer to London, no PMRE vessels here have white slip decoration of any kind, or green or yellow glazes; some vessels have a clear (brown) glaze, or small patches of glaze, but otherwise the PMRE assemblage here is very plain and not decorated in any way. On its own, plain PMRE is not closely datable. The presence of a few sherds of regional imports (CSTN, BORDY) in [624] and [641], however dates these two contexts to c 1550-1600, although they might be mid-16th century rather than later. The regional import from [624] is of some interest: this is in black-glazed Cistercian ware (CSTN) and from the rim and globular body of a small jug copying the form of German Cologne/Frechen stoneware drinking jugs of c 1550-1625. The yellow-glazed Border ware (BORDY) sherd from [641], although very small, is probably from a handled cup or drinking jug and might be an early example of this ware (c 1550-1700). A few sherds of German stoneware are probably contemporary with the early post-medieval redware (PMRE). These include a jug sherd in Siegburg stoneware (SIEG) from [650] and a frilled mug base in Raeren stoneware (RAER, c 1480-1550), the latter residual in its context [618]. Siegburg stoneware is much less common than Raeren stoneware on English sites; it is also much less common from inland sites, as here. Apart perhaps from this, there is nothing that hints of luxury in the assemblage from Headstone Manor.

It is clear, however, that most of the pottery from the site was deposited during the late 15th and 16th centuries.

C.1.8 After the 16th century the volume of pottery used and deposited here seems to tail-off quite sharply until the 19th century. A few vessels (8 sherds) in post-medieval redware (PMR) seem to date mainly to the 18th and 19th centuries and include terracotta flowerpots. A tin-glazed ware (TGW) bowl with blue painted decoration dates stylistically to c 1660-1725 [515]. The latest material, mainly transfer-printed whitewares (TPW), is fairly unremarkable, and the sherds are found in similar numbers both on the Moated Island and in the Outer Court. Context [685], however, produced parts of a cylindrical medicine jar, and its discoid lid, with an inscription for Boots the Chemist's "LENITIVE ELECTUARY". This dates to around 1900-1930 and is probably the latest pottery item from the site. The same context produced a broken doll's head in Continental porcelain (CONP) with painted facial details.

Recommendations for further work

C.1.9 The material has already been catalogued. If it is decided to publish the discoveries from the Moated Island, it is recommended that the summary report above should be revised, and fuller bibliographic references inserted where appropriate. It is also recommended that five items of pottery (mainly medieval and 16th century) should be selected for illustration to accompany the publication report.

C.1.10 Shortlist of items recommended for illustration:

Context [515] Coarse Border ware (CBW). Wide bowl (diam 360mm) with classic hammerhead rim.

Context [624]. PMRE Jar/cooking pot rim (diam 210mm).

Context [665]. PMRE Rim from very small pipkin (diam 65mm).

Context [624]. Cistercian ware (CSTN) jug copying German stoneware drinking jugs, c 1550-1625, (diam 60mm).

Context [650]. Siegburg stoneware (SIEG) jug body sherd (reconstruction drawing showing original form). 15-16C.

C.2 Ceramic building material

by John Cotter

Introduction and methodology

C.2.1 The Moated Island produced a total of 374 pieces of ceramic building material (CBM) weighing 55.116kg from 51 contexts. The assemblage mainly comprises fragments of post-medieval flat roof tile (peg tile) and brick with smaller quantities of floor tile and miscellaneous CBM including ridge tile.

C.2.2 All the CBM was catalogued in some detail in Excel and using the fabric codes of the Museum of London, and a duplicate reference collection of the commonest fabrics (housed at Oxford Archaeology). The catalogue has a column for each broad functional type or category of CBM (eg roof tile, brick, floor tile and 'other' or miscellaneous types). For each context and fabric, the functional types were recorded by sherd (or fragment) count and weight, each functional type being treated as a separate record. Complete bricks or tiles were treated as separate records, but some groups of broken CBM in the same fabric (eg broken roof tiles) were dealt with in the same record. A comments field

provides additional details including measurable dimensions of all complete items and many broken items of interest (eg all floor tile thicknesses). A brief description of fabric colour, condition and anything else of interest was also noted for most items. An approximate spot-date was assigned to the latest material in each context. Given the conservatism of CBM production techniques and fabrics over time, however, plus the broken condition of much of the assemblage, spot-dates assigned to individual contexts are usually quite broad, and even these should be treated with a degree of caution. Besides this there is also the likelihood of re-use and particularly of redeposition. Pottery spot-dates (where present) usually provide a more accurate estimate of context date.

C.2.3 The final column (headed 'Discard?') recommends if an item or group of items should be discarded ('D?'). This should only happen after the final (publication) report stage and once all stratigraphic considerations have been taken into account. Full catalogue details remain in the project archive and are summarised in the assessment report here.

Date and nature of the assemblage

C.2.4 The CBM assemblage is generally in a fragmentary condition but consists of a mixture of some complete pieces (eg bricks), a fair number of fairly large/fresh pieces (most categories) and many smaller/abraded pieces. Most of the assemblage is undoubtedly post-medieval (after c 1480), particularly the brick assemblage. Some pieces of flat roof tile and ridge tile however have a rougher earlier look and may well be of medieval date (and in some cases probably residual). Only brick from context 636 has been assigned a spot-date spanning the 14th–16th centuries. Many more have been assigned spot-dates in the 15th–16th century or 16th-century range, but the majority of spot-dated contexts are somewhere between the 17th and 19th centuries. Rare pieces may be as late as the late 19th or 20th century. No Roman material was noted. A breakdown of CBM types is provided in Table 3 below.

Table 3: Types and quantities of ceramic building material from the excavation

CBM Type	No. Frags	Weight (g)
Flat roof tile	307	26,315
Floor tile	9	1,246
Brick	48	26,289
Other (Miscellaneous)	10	1,266
Total	**374**	**55,116**

Flat roof tile: 307 pieces

C.2.5 These are recognizable either as peg tile, or probably parts of peg tile. They are of typical rectangular shape with a pair of circular nail holes at the upper end. They occur in a limited number of fabrics mostly oxidised orange-red or orange-brown. The differences between individual roof tile fabrics at this site are not very marked and

sometimes subjective; they may represent a range of closely related fabrics from fairly local sources showing only very subtle differences in firing colour, texture and manufacturing technique over time. The commonest is Fabric 2276 (F2276). This comprises 54% by fragment count of the roof tile assemblage. F2276 has a fairly smooth brightly oxidised (orange-red) fabric which is generally very hard-fired. This appears to be the standard post-medieval roof tile fabric of the local area, as it is for most of Greater London. Its associations on this site (with pottery etc) suggest F2276 may have been produced from as early as the late 15th or the 16th century, but seems to be commoner in the 17th and 18th centuries, and may have continued in production into the 19th century.

C.2.6 While a broad date range of c 1480-1900 is normally assigned to this fabric, however, subsequent radiocarbon dates on two contexts associated with the peg tile hearth [505/506] suggest the fabric was almost certainly in production by the early 15th century and perhaps even as early as the 14th century. A calibrated radiocarbon date of 1430-1475 (at 95% confidence) was obtained from the ashy layer [514] directly overlying the tiled hearth, and so the original spot-dates based on these tiles now appear to be too late (ie. 16th-17th century(?) for tiles from [505] in F2276, and 15th-16th century(?) for tiles from [506] in F2586). The revised earlier dating for the tiled hearth (and underlying contexts) seems to confirm that late medieval and early post-medieval peg tiles cannot easily be distinguished in this part of London (at least on the basis of fabric alone) and only provide a very general idea of the true dating of contexts in which they occur.

C.2.7 It may also be that the fabrics of the tiles from the hearth have been altered by the heat of the hearth itself and thus appear harder-fired and more 'post- medieval looking' than true medieval tiles? A larger sample of more complete and unaltered tiles might have allowed more subtle differences in fabric and manufacturing details to be observed, but the emphasis on preservation *in situ* at this scheduled site did not allow this. In some areas of south-east England smooth reddish 'post-medieval looking' tile fabrics already seem to be present in the medieval period. This situation was observed, for instance, from the 2008 excavations at Hampton Court Palace (Base Court), Surrey, where 16th-century tile-built structures overlay a 14th-century structure – both incorporating numerous complete peg tiles. In this case only the large sample size and completeness of the tiles, supported by OSL dating of some of the tiles, allowed a subtle chronological distinction to be made – and even then not in every case (Site code: HCP62; Cotter 2009).

C.2.8 The F2276 peg tile assemblage is mostly quite fragmentary with no complete examples or complete lengths preserved (nor in the remaining fabrics). Two tiles, however, preserve complete widths. A tile from [505] has a width of 180mm and standard circular nailholes; this probably dates to the 16th–17th century. Most tiles in this fabric have fine sanding on the underside; a few with a grittier sanding may be of late medieval or early post-medieval date. F2276 peg tiles are fairly well made but occasionally dented or slightly warped. A few have patches of accidental greyish ash glaze on the edges.

C.2.9 The second commonest peg tile fabric is F2816 (c 1200-1800). Its date range here is similar to F2276 above. This fabric appears to be a browner sandier version of F2276 and may be commoner in early post-medieval contexts than F2276. Five complete tile widths are present in the F2816 assemblage: these are in the 154-162mm range and three of these are in the 157-158mm range. These come from contexts [634] and [650] on the Moated Island (others also come from context 216 in the Outer Court).

C.2.10 Another fairly common peg tile fabric is F2586 (c 1180-1800). This is a fairly smooth brown to orange-brown fabric typically with a grey core. Another feature of tiles in this

fabric is that some are unusually thin (8-10mm thick), although most are of normal thickness (c 13-14mm thick). Four complete widths are present (175-185mm wide) - all fairly wide compared to the tiles above. F2586 tiles seem to occur in the earliest contexts on the site including some spot-dated to the 14th–16th century, although they also occur in later contexts. A F2586 tile fragment from [504] has a faint animal paw impression on the upper surface.

C.2.11 The remaining three fabrics are present as one or two examples each (F2272 and F2587). The lack of true lead glazes (typical of medieval roof tiles) on any of the peg tiles here suggests that roof tiles of the 13th–14th century are absent from this site, or else that local tiles of this date were rarely glazed.

Floor tile: 9 pieces

C.2.12 The floor tile assemblage is very fragmentary, mostly comprising edge or corner fragments. No complete tiles are present. The majority are worn from lifetime usage as well as abraded by redeposition. Most occur residually in late post-medieval contexts. Most of the tiles are thick and plain and fall into the broad category of 'quarry tiles'. These are probably all post-medieval (after c 1480), the majority of may be of early post-medieval date, rather than later, but redeposited nonetheless.

C.2.13 Most floor tiles occur in a light orange-brown sandy fabric (F3246) with abundant streaks and swirls of cream clay and coarse lumps or pellets of the same and also some red clay pellets. Some contain angular flint up to 5mm across. The upper surfaces are usually very worn from use (worn-off, in fact) so it is not possible to say whether this surface was once covered with glaze or white slip, as is common on quarry tiles of late medieval/early post-medieval date. One example, however, has a few small specks of brown glaze surviving on one edge surface. The edges or sides are knife-trimmed and vertical. The less-worn pieces have thicknesses on the 30-35mm range, which is typical for quarry tiles. The best (descriptive) fabric match is with Fabric 3246 which is described as a medieval Penn tile fabric (from Bucks), but it is also very similar to Fabrics 2318 and 3075 which are described as imports from the Low Countries. The latter may be fairly common in the city of London but it seems unlikely that true Flemish floor tiles would have been transported, in quantity, as far inland as the Harrow/Headstone area. The resemblance to Penn tiles is slightly more convincing but the tiles here are not the classic decorated medieval Penn tiles (c 1330-1380) known from many sites in southern England. Very similar streaky early post-medieval brick and tile fabrics occur in Oxford, and these are very unlikely to be from Penn or Flanders, but were probably made from similar mixed clay beds to those used earlier on by the Penn tilemakers. A source to the west or north-west of Middlesex might be suggested for this group.

C.2.14 Two quarry tile fragments (possibly from the same tile?) occur in a fine silty-sandy orange-brown fabric, also with rare coarse flint (F1811). These are up to 39mm thick and appear to have a thin white slip under a decayed clear glaze allover the upper surface. Fabric 1811 (best match) is also said to be a Penn fabric. The 'floor tile' assemblage here also includes four pieces from two ordinary red bricks (F3033) which appear to have been used as paving bricks.

Brick: 48 pieces

C.2.15 Brick forms the bulkiest element of the CBM assemblage here (57% by weight). This includes nine complete bricks and many other large brick-end pieces, as well as much brick rubble. The vast majority consists of fairly crude, handmade, unfrogged, red brick

mainly dating from the 17th to the early 19th century. A small number of 'Tudor' bricks are probably of 15th–16th century date. All but one or two bricks occur in just two brick fabrics which are present in roughly equal amounts: F3033 is a common soft orange-red brick fabric found throughout the Greater London area (broadly datable c 1450-1700, also known as 'local Tudor red'); F3032 has a harder, typically purplish-brown, fabric and is typical of London buildings dating after the Great Fire of 1666 (broadly datable c 1666-1900). Both fabrics contain some flint inclusions, sometimes present here as large flint pebbles. At Headstone Manor, there is no reason to suspect that the softer F3033 brick fabric did not continue into the 19th century. In both cases, a local or fairly local source seems highly likely.

C.2.16 Probably the earliest examples here are a small group of unusually narrow 'Tudor' bricks of probable 15th–16th century date, as typified by four bricks from [644]. These are in a fabric related to F3032, but with a much finer and better-sorted texture (similar to the quarry tile fabric F1811). They are handmade, but fairly neatly. The surviving brick ends in this fabric, from [644], are typically 90-95mm wide (compared to c 100-120mm for most later bricks), and only 45-50mm thick. Some examples have a fairly extensive covering of greyish ash glaze, particularly on the header-end (also in [667]). One example of this type, from [675], occurs in orange F3033 rather than purplish-brown F3032.

C.2.17 Most other bricks from the site are of fairly standard handmade post-medieval type: roughly similar in length and width but showing gradual increase in thickness, and neatness, over time, in line with national trends. A group of fairly late bricks (in F3032), probably date to the 18th and early 19th century (eg [453]). These are large in size (up to 80mm thick), very crudely made and have usually warped or bloated in the kiln suggesting they are 'seconds' (ie overfired/near-wasters, but still useable for rough walling). They probably come from a local production site. One or two bricks in F3033 may have been used as paving bricks as the upper surfaces are very worn-down (see 'floor tile' above). In addition, one of these ([495]) appears to have been reduced in width by filing or sawing, possibly for use as a threshold or step. A single brick corner in F3032 is from a 19th-20th century frogged brick [453], the only frogged brick from the site.

Miscellaneous or 'other' CBM: 10 pieces

C.2.18 This breaks down into two main types: ridge tile and 'unidentified'. Ridge tile comprises nearly all of this category (16 pieces, 1861g) but includes some small fragments of curved tile that could possibly be pan-tile rather than ridge tile, but are too small to tell. The ridge tile assemblage, which is very fragmentary, occurs in the same red or orange-brown (unglazed) fabrics as the flat roof tile assemblage here (mainly F2276 and F2816). The two largest fragments, from the curved apex of the same tile, are, however, in a brown sandy fabric (F2272) which possibly dates to the 14th–16th century, and occurs in a context spot-dated to the 15th–16th century [622]. The other pieces are almost certainly post-medieval. The 'unidentified' object (in an unidentifiable fabric) is possibly from the corner of a brick/tile waster covered in ash glaze [618].

Summary and recommendations

C.2.19 The CBM assemblage is fairly typical of many rural assemblages from southern England, although the fabrics conform with those used in the Greater London area. These fairly undiagnostic or general fabrics, however, were not confined to the London

area. The assemblage is mostly post-medieval, but with a few pieces likely to be of medieval date.

C.2.20 There is nothing in the assemblage here that hints in any way of luxury or even of a fairly well-to-do settlement; it looks like the sort of CBM assemblage that might come from any fairly old group of farm buildings where some of the buildings or structures, at least, were brick-built and some had tiled roofs.

C.2.21 The source of the small group of (residual) post-medieval quarry tiles with fabrics similar to medieval Penn floor tiles (from Bucks), and more tenuously to imported Flemish quarry tiles, remains speculative, but as they are all plain and residual there is probably little to gain in researching these in any detail. The brick assemblage has a small but interesting group of early post-medieval bricks that are unusually narrow and neatly made. Likewise, there is a small group of overfired 18th–19th century bricks that appear to be 'seconds' possibly from a local kiln. Future research into the source and date of these two groups might be worthwhile. Ian Betts of the Museum of London, the foremost specialist on CBM from the London area, should be consulted in these cases.

C.2.22 Should publication of the discoveries be decided upon, a summary report of the CBM would be sufficient, in view of the fairly unremarkable nature, and fairly poor condition, of the material here. This would largely consist of the summary above, with additional details and observations. A small selection of the most significant and best-preserved examples of CBM should be illustrated (by photograph) to accompany the report.

C.3 Fired clay

by John Cotter

C.3.1 A single piece weighing 7g was recovered from context [267]. This is a small shapeless lump of fairly hard light brown fired clay. The fabric is very fine with some coarse lumpy reddish clay pellets. It is undatable.

C.4 Clay tobacco pipes

by John Cotter

C.4.1 The works on the island produced only three pieces of clay pipe stem weighing 11g, from two contexts. These are spot-dated and fully described below. In view of the small quantity no separate catalogue has been constructed. None of the pieces is considered worthy of more detailed description beyond the summary here.

C.4.2 Context [232]. Date: 18th to early 19th century; Two pieces (6g). Stems from two separate pipes. Max length 37mm. Stem bore diameters c 2mm. Both fairly worn.

C.4.3 Context [495]. Date: Late 18th to early 19th century; One piece (5g). Stem fragment 46mm long. Stem bore diameter 1.9mm. Fairly fresh.

C.5 The flint

by Mike Donnelly

Introduction

C.5.1 Excavations at Headstone Manor, Greater London yielded a small assemblage of 32 struck flints and a single natural fragment (Table 4). The assemblage consisted almost entirely of waste flakes from the working of flint nodules for construction purposes during the medieval and post-medieval periods. Many of these flakes displayed very

hard-hammer/metal hammer bulbar zones and were highly irregular in form. However, in some instances the flakes recovered were actually very regular and neatly worked and could have easily passed as genuine waste flakes from prehistoric industries. Two flakes found as isolated finds may indicate a very limited prehistoric presence here. Neither resembles the quite haphazard medieval waste flakes and one had a faceted platform and possible area of retouch that had mostly snapped away.

Table 4: the flint assemblage from Headstone Manor

CATEGORY TYPE	
Flake	29
Blade/let	0
Blade index	0%
Irregular waste	3
Total	32
No. burnt (%)	0/32(0%)
No. broken (%)	9/29 (31.03%)
No. retouched (%)	0/29 (0%)

Methodology

C.5.2 The artefacts were catalogued according to OA South's standard system of broad artefact/debitage type (Anderson-Whymark 2013; Bradley 1999), general condition noted and dating was attempted where possible. The assemblage was catalogued directly onto an Open Office spreadsheet. During the assessment additional information on condition (rolled, abraded, fresh and degree of cortication), and state of the artefact (burnt, broken, or visibly utilised) was also recorded. Technological attribute analysis was initially undertaken and included the recording of butt and termination type (Inizan et al. 1999), flake type (Harding 1990), hammer mode (Onhuma and Bergman 1982), and the presence of platform edge abrasion.

Raw material and condition

C.5.3 The assemblage was in very good condition with no heavily damaged pieces (Table 5). The flints looked to have been struck from very fresh nodules as would be expected with construction waste. Perhaps surprisingly, the flints displayed some variability in cortex indicating that more than one source was used for building material. Some display very thin chalk cortex while at least one displayed the almost weathered, thin, pale blue-grey cortex often found in some seams of North Downs flint.

Table 5: Flint by condition and cortication

Condition	Total	%	Cortication	Total	%
Fresh	27	84.38%	None	3	9.38%
Light	5	5.62%	Light	29	90.62%

	32			32	

The assemblage

C.5.4 The assemblage was largely recovered from three contexts: building construction spread 463 contained 12 flakes and three pieces of irregular waste, post-medieval pit fill 482 contained 10 flakes and robber cut fill 622 contained four flakes. All three assemblages shared the same characteristics. Three more flakes were recovered, one each from ditch fills 624 and 650 and from layer 642. The last two flakes are the two probable prehistoric pieces from the assemblage, and it was notable that they were recovered as stray finds rather than as part of a larger group of building waste.

C.5.5 The assemblage did not contain any blade forms, and many of the 29 flakes were of a character that was unequivocally not part of any systematic reduction sequence. Most displayed cortex (71.88%, 23/32) and many had very heavy/metal hammer bulbs (42.86%, 9/21). The lack of inner pieces shows that the knapping was related to the shaping of nodules rather than the production of suitable blanks while the very hard bulbs probably indicates some form of metal hammer. Within these groups of obvious Medieval waste there were usually a limited number of very good flakes that did display characteristics similar to those of prehistoric industries. Several from context 482 had systematic flaking patterns on their dorsal surface and others from 463 and 622 could have been intrusive prehistoric flakes. One fine flake from 622 had traces of mortar on both its dorsal and ventral surfaces indicating that it was very likely a flake either used to fill a gap between nodules.

C.5.6 In contrast to these large assemblages two flakes found as isolated finds probably represent intrusive prehistoric material. One small regular side trimming flake from context 642 displayed a weathered chalk cortex that is unusual in this assemblage, but one that is usually very common in prehistoric industries. The flake recovered from ditch fill 650 is almost certainly Neolithic in date and displays a faceted platform. It has snapped diagonally along its lower left and distal margins, and there is some indication that the missing piece may have been retouched. as both surviving spurs show limited areas of steep retouch/spontaneous damage. Regardless of whether or not it is retouched, the flat profile, lack of cortex and faceted platform all strongly indicate a genuine prehistoric flake. Faceted platforms occur at several points during prehistory but are a feature of the late Neolithic revival of the Levallois technique where regular flat flakes were sought after as tool blanks for forms such as knives and arrowheads. It is very likely that this piece represents a late Neolithic tool blank and adds to the very limited evidence of Neolithic activity from this site.

Discussion

C.5.7 The flint assemblage from Headstone Manor is of limited interest. It shows a very limited presence here in prehistory, probably associated with earlier discoveries of a Neolithic polished axe and stray finds of pottery sherd(s). Perhaps, of more importance is the quality of some of the Medieval waste flakes. These pieces could easily be mistaken for prehistoric flakes if they were found in a different context. Given the very common practise of quite extensive construction with flint nodules in the Medieval (and post-medieval) periods, similar flakes may have been misidentified as prehistoric. This was a pattern common in Scotland and Ireland until recent times where archaeologists began to recognise genuine struck pieces as medieval (Foster 2014). Therefore, it is

important to realise the quality of such flakes when investigating sites of later periods, and to interpret the assemblage accordingly.

C.6 Stone

By Ruth Shaffrey

C.6.1 A total of six pieces of stone, three of which came from the Moated Island, were retained as samples for identification of sources of materials used at the site. Due to the relatively late date of the contexts from which they came, no scientific analysis of the samples was undertaken.

C.6.2 The three samples (all from context 265, a compact layer abutting the walls north of the Manor House) are pieces of burnt micaceous sandstone weighing 238g. This seems likely to be from the Bagshot formation, small exposures of which occur approximately 2km south of the site. The stone may have been intended for use in flooring or roofing, although these fragments are not obviously worked.

C.6.3 The chalk and the flint nodules used for many of the walls were not sampled, as they were presumed to have come from the chalk quarry at Waxwell, only 2.6km (1.6 miles) from the site, which was worked from the medieval period until some point during the 17th–18th centuries, and thereafter further north towards Pinner Wood until 1870 (Kirkman 1992, 61). The lords of the manor or Harrow owned the mining rights to these quarries, and were also the owners of Headstone Manor until the 17th century (Thompson 1995).

C.7 Plaster

John Cotter

C.7.1 A single piece of fine white plaster weighing 21g was recovered from context [263]. This is long rectangular moulded fragment, broken at both ends, surviving to a length of 70mm and with a width of 25mm and a maximum thickness or depth of 12mm. It appears to have been poured or pushed into a void of this shape – probably as a filler. In cross-section it is roughly T-shaped with squared-off arms and with a tapered ‘shaft’ or ridge running along the underside of the piece. The underside is smooth and bears the impression of two parallel lengths of curved wood (or stone?), possibly wooden mouldings from a frame-like feature, or parallel wooden battens? The upper or outer face of the fragment is roughly flat and very roughly smoothed-off. A post medieval date is suggested.

C.8 Mortar

Cynthia Poole

C.8.1 Mortar samples were taken from 18 structures and a single mortar fragment was collected during excavation from context 626. The samples have been examined with the aid of a x10 hand lens and recorded on an Excel spreadsheet to provide a basic description of the main constituents of the samples.

C.8.2 All the samples from structures 240, 260, 423, 476, 477, 492 and most of the material from 502 and 503 was not mortar, but apparently soil, which may have replaced mortar that had been leached out. These consisted of loose orange brown clay sediment with

cream calcareous flecks, quartz sand, flint grit, gravel and pebbles, and white calcareous grits some of which clearly derived from shelly limestone. The coarse components in these is similar to those found in mortar type M3, suggesting the original mortar was of this type or possibly a mixture of clay and mortar. The use of clay or subsoil as bedding is not unknown in some old buildings.

C.8.3 Mortar type M3 accounted for most of the samples. It was divided into a light brown or buff (M3a) and a darker orange brown (M3b) variety, but it is possible this is not significant and may reflect the degree to which the samples had dried out, though there is also some slight difference in sand grade. Only small fragments of mortar were found in 501 and 502, the rest of the samples being loose sediment.

Description of mortar types

C.8.4 M1: cream or buff lime mortar, containing frequent well-sorted fine-medium quartz sand, <0.2mm, clear or opaque white and occasional irregular white lime grits 1-6mm. Contexts: 525, 626

C.8.5 M2: cream/white/buff hard lime mortar containing frequent well-sorted subrounded medium-coarse quartz sand 0.5-1mm, common small grits of white lime/chalk 1-2mm and a moderate density of flint and gravel up to 17mm, plus a bone fragment 20mm. Context: 503

C.8.6 M3a: cream, light brown or buff lime mortar, containing a high density of medium brown, pink and clear quartz sand mostly 0.5-1mm, sometimes finer <0.5mm and occasionally up to 2mm, white lime/plaster/chalk grits from 1-2mm up to 12mm and coarser inclusions of flint grit, gravel and pebbles ranging up to 19mm in size. One lime fragment 29mm with two rough flat surfaces coloured red may be a fragment of painted plaster. Contexts: 501, 502, 524, 617, 627, 648

C.8.7 M3b: orange brown lime mortar, containing a high density of fairly well sorted medium – coarse quartz sand 0.5-2mm, brown, clear and occasionally pink/red; sparse - common scatter of white lime/chalk fragments ranging from 0.5-4mm up to 14mm and flint grit, gravel and pebbles up to 26mm. One sample contained a flint galet 51mm. Contexts: 510, 544, 619, 620.

C.8.8 P: fragment of fine white plaster (14g) with no inclusions, possibly gypsum rather than lime. Context 525.

C.9 Metal objects from the Moated Island

By Ian R. Scott

C.9.1 There are 12 metal objects (14 fragments), mostly iron.

C.9.2 There are two tokens. The earlier is a Nuremberg ‘Rose & Orb’ jeton (Cat. No. 46) from context 650. This is a little worn and legends are not readily legible, but may have been illiterate. The jeton dates to the late 16th or early 17th century. The second token is an interesting piece and comes from context 261. It is a gaming token dating from the reign of Queen Victoria (Cat. No. 35). The reverse legend reads ‘To Hanover’ over an image of a mounted horseman over a dragon with the date 1837 beneath. The image is presumed to represent the Duke of Cumberland who succeeded to the throne of Hanover in 1837; Victoria was not permitted to succeed to the Hanoverian throne because she was a woman. The date on the token is not, however, necessarily the date it was made. There are examples of similar ‘To Hanover’ tokens with the young head of

Victoria, but with the date 1867 under the mounted figure, and others with 1837 under the mounted figure and a later date on the obverse.

C.9.3 Catalogue:

Context 261 (35) 1837 'TO HANOVER' gaming token. Obverse: head of the young Victoria with the legend 'VICTORIA REGINA'; Reverse: Horseman, probably representing the Duke of Cumberland. Legend 'TO HANOVER'. The Duke of Cumberland succeeded to the throne of Hanover in 1837. Cu alloy. D: 21mm.

Context 514 (40) Nail fragments (x 3), encrusted

Context 618 (41) Nail with flat circular head, incomplete. Fe. Not measured

Context 622 (42) Nail with flat head, tapered stem of rectangular section. Fe. L: 63mm.

(43) Nail with flat head, tapered stem of square section. Fe. L: 67mm.

(44) Nail, no head tapered stem. Fe. L: 40mm.

Context 632 (45) Curved fragment, heavily encrusted. Could be a very poorly preserved horseshoe fragment, but far from certain. Fe. L: 106mm

Context 650 (46) 'Rose and Orb' jeton. Nuremberg. Worn. Cu alloy. D: 22mm. Late 16th- or early 17th-century. Sf 4

(47) Cut nails, both incomplete (x 2). Fe. Not measured.

Context 658 (48) Nail with slightly domed head, incomplete. Fe. Not measured.

Context 667 (49) Nail with small T-head, incomplete. Fe. L extant: 78mm.

C.10 Glass from the Moated Island

By Ian R Scott

C.10.1 The glass recovered from the Moated Island consists of a few small sherds of vessel glass that cannot be closely dated, but were recovered from Victorian contexts.

C.10.2 Catalogue:

Context 257 (4) Vessel. Small body sherd, opaque weathering. Undiagnostic to form.

Context 263 (5) Vessel. Small thick-walled body sherd in cobalt blue. Undiagnostic to form.

(6) Vessel. Sherd possibly from the base a vessel in very pale green glass. Undiagnostic to form.

APPENDIX D. ENVIRONMENTAL REMAINS

D.1 Animal bones

by Lee Broderick

Introduction

4.7.41 A total of 409 animal bone specimens were recovered by hand from the site, all of which were recorded in full (Table 6). This includes 341 specimens which were recovered through environmental samples (Table 7). The assemblage was dated on a context basis, through ceramic seriation, to the Post-Medieval period.

Methods

4.7.42 Recovery of material on site was principally through hand-collection. Environmental samples were also taken and these were sieved at 10mm, 4mm, 2mm and 0.5mm fractions. All the material was recorded in full, using a diagnostic zone system (Cohen and Serjeantson, 1996 for birds; Serjeantson, 1996 for mammals) together with the Oxford Archaeology reference collection and standard identification guides.

4.7.43 Measurements were taken following von Den Driesch (1976). Taxonomy follows Wilson and Reeder (2005) for mammals and Gill and Donsker (2019) for birds. The word 'caprine' is used when referring to an animal that may be a sheep or a goat.

Results

4.7.44 The condition of the hand-collected specimens recovered from the site was generally moderate (Behrensmeyer, 1978 stage 3, with outliers in stages 2 and 4). The hand-collected material included all of the principal domesticates: domestic cattle (Bos taurus taurus) being the most common, followed by caprine (sheep [Ovis aries] and/or goat [Capra hircus]), pig (Sus scrofa domesticus), in descending order of frequency, as well as single specimens of domestic fowl (Gallus gallus) and rabbit (Oryctolagus cuniculus) (Table 1). Among the caprine specimens, it was possible to identify one, a right horncore, as being definitely sheep.

4.7.45 With a single exception (a domestic cattle humerus) all the long bone epiphyses in the assemblage were fused and no teeth were recovered, giving very limited possibilities for ageing. A domestic cattle 2nd phalanx from context 650 has lipping on the proximal surfaces, suggesting that the animal had been used for traction and that it was probably from an older individual (Bartosiewicz *et al.,* 1997; Fabiš, 2005). A caprine radius from context 624 has a lesion on the proximal end consistent with osteochondrosis, a benign condition that would not have been obvious to people at the time (Sewell, 2010).

4.7.46 Three specimens have been gnawed by canids, suggesting that dogs (Canis lupus familiaris) were present on the site at the time. Limited butcher evidence was also observed – cutmarks were present on large mammal ribs from contexts 618 and 624 and on a medium mammal rib from context 650. A domestic cattle atlas from 650 had been chopped through laterally, while a radius from 495 had been chopped through obliquely at the distal end and a humerus from 624 had been sawn axially through the distal end.

4.7.47 Environmental samples contributed a diverse range of micro-mammals, small birds and amphibians, as well as a single herring bone (Table 2). The samples came from four contexts within the building found north-west of the Manor House: a few bones came

from patches of burning on the floor (527), and a larger number from the overlying occupation deposit (526), while the largest sample came from a charcoal spread (514) from a tile hearth (506), from which small mammal bones were also recovered during cleaning. Given the diversity and the presence of so many burrowing small mammals it might normally be supposed that much of it is intrusive, although the herring (Clupaea harengus) bone most probably represents human food waste. Against this are a single burned indeterminate fragment from context 506, the hearth, and several from the charcoal spread (514). This includes one mouse metacarpal, seven other micro mammal specimens and ten frog/toad specimens.

Discussion

4.7.48 The assemblage of mammal (rather than small mammal) bones is small, and it would be easy to read too much into an assemblage such as this but, for the most part, it is consistent with table or kitchen waste, with head and foot bones being largely absent (a single domestic cattle phalanx and three metapodials being the exceptions). Butchery evidence is more equivocal. A chop mark to the domestic cattle atlas was probably associated with removing the head (but could end up attached to the neck and destined for the stew pot), while the chop through a domestic cattle humerus is consistent with disarticulating the carcase through rough (rapid) butchery, and the sawn humerus is more opaque in its purpose. Although butchery with a saw became more common in the Post-Medieval period, sawing through the distal end of a humerus axially makes little sense in this context and may, perhaps, be better thought of as preparation for some craft activity. The humerus has very thick cortical bone but its shape means that it is not one of the most commonly used bones for craft activities, where the straighter metapodials are the preferred raw material.

4.7.49 The wild mammals and birds, although possibly intrusive, represent well a hedgerow and waterside environment close to human habitation, with two highly commensal species (house mouse (Mus musculus) and house sparrow (Passer domesticus). The charcoal spread (514) and the occupation layer (526) where not sealed by 514, lay directly below a layer of roofing tiles indicating either partial collapse or demolition of the building. Given this background, it is possible that the fauna could be early colonists of a derelict site, or the prey thereof – the micro mammals, in particular, could have been the prey of a raptor. Barn owls, in particular, are known to take up residence in abandoned buildings (O'Connor, 2004) and prey on voles, mice and shrews. In considering this interpretation, however, it is worth noting that there are no traces of digestion on the micromammal bones – indeed, several of them are in very good condition (Behrensmeyer, 1978, stages 1-3) and there is no patterning to the remains (axial, limb and cranial elements are all present), although neither are there complete skeletons.

4.7.50 Most curious are the burned amphibian bones. Coming from a hearth, it might be supposed that they have been burned deliberately, but the far greater number of unburned frog and toad bones from the same layer suggests that this cannot have been thorough. Like with the micro-mammals, there is no clear patterning to the body part distribution, with hind and fore limb, cranial and axial bones all being present from at least six individuals (five frogs and one toad). Given that these bones are present, it may be fairly supposed that they have not been cooked for human consumption.

Recommendations for retention

4.7.51 The assemblage is not considered a priority for retention.

Table 6: Total NISP (Number of Identified SPecimens) and NSP (Number of SPecimens) from the hand collected material.

Taxa	15-16C	16C	16-17C	17-19C	C18-19	1750-1900	1800-1900	1850-1900	Late 18-19C	
cattle	5	2		1						2
caprine	1	3			1	2				
sheep		1								
pig				2						
rabbit	1									
medium mammal	5	1	1	2						
large mammal	14	8	7			2	2	1		
Total Mammal	26	15	8	5	1	4	2	1		2
domestic fowl	1									
Total Bird	1	0	0	0	0	0	0	0		0
Total NISP	27	15	8	5	1	4	2	1		2
Total NSP	27	15	8	8	1	4	2	1		2

Table 7: Total NISP (Number of Identified SPecimens) and NSP (Number of SPecimens) from the environmental samples.

Taxa	15-16C?	16-18C?
small rodent	1	11
Mouse		3
house mouse	1	7
house mouse?		3
bank vole		8
bank vole?		10
pygmy shrew		3
micro mammal	3	72
small mammal		2
medium mammal		1
large mammal		
Total Mammal	5	120
Bird		9
blackbird/starling		1
tit?		3
house sparrow		4
Total Bird	0	9
Amphibian	4	94
frog/toad	6	45
common frog		16

Taxa	15-16C?	16-18C?
common toad		1
Total Amphibian	10	156
Herring		1
Total Fish	0	2
Total NISP	15	285
Total NSP	20	321

D.2 Fish bones

by Rebecca Nicholson

D.2.1 A small number of fish bones was recovered from the residues of sieved soil samples, all in fair-good condition. Sample <5> from context (526) produced a small plaice (*Pleuronectes platessa*) left premaxilla, from a fish of approximately 20 cm total length, and a small cyprinid (*Cyprinidae*) precaudal vertebra from a fish of about 15-20cm. Sample <7> from context (527) contained a herring (*Clupea harengus*) caudal vertebra.

D.2.2 While these fish bones demonstrate that both marine and freshwater fish were eaten, they provide little other useful information. Sample <5> came from an occupation layer within Building 452 north-west of the Manor House, and sample <7> from the clay surface with patches of burning that underlay it, and that is interpreted as a floor surface. None of these bones are burnt, suggesting that these bones derived either from kitchen preparation or from table waste. The small size of the fish probably indicates that they would have been of relatively little commercial value.

D.3 Charred Plant Remains

by Sharon Cook

D.3.1 Four samples from Headstone Manor were processed for the recovery of charred plant remains (CPR) and artefacts.

D.3.2 The samples were processed in their entirety by water flotation using a modified Siraf style machine. The flots were collected on a 250µm mesh and the heavy residues sieved to 500µm; both were dried in a heated room, after which the residues were sorted by eye for artefacts. The dried flots were scanned using a binocular microscope at approximately x 10 magnification.

D.3.3 Due to the small size of the flots, 100% of each was scanned for this assessment. Plant nomenclature follows Stace (2010). The results are shown in Table 8 below:

Table 8: Breakdown of charred plant remains from samples 4-7

Sample No		**4**	**5**	**6**	**7**
Context No		**514**	**526**	**506**	**527**
Volume (L)		6	7	13	6
Flot Volume (ml)		15	75	12	50
Cereal Grain					
cf Triticum	cf wheat	5*			1
Avena/Bromus	oat/brome		1		
cf Avena/Bromus	cf oat/brome	1*			

Cerealia	indet cereal	13*	6*	1*	
Chaff					
Triticum aestivum	rachis	1*			
Legumes, fruits & nuts					
Vicia/Lathyrus sp.	vetch/vetchling/tare <2mm	2			
cf. Pisum sativum	cf pea >4mm				1*
Corylus Avellana	hazelnut shell	5*			3*
Wild Species					
Galium aparine	cleavers		1		
cf Galium	cleavers				1*
Other					
indet	bud	1			
Indet	seed/fruit	2*			1*
*fragments					

D.3.4 Sample <4> contains mainly charcoal, which is small in size with occasional larger fragments (c10). A small amount of clinker type material is present together with occasional anthracite fragments and fish scale fragments. The majority of charred plant materials are fragmentary and cannot be fully identified as a result.

D.3.5 Sample <5> contains mainly charcoal, which (while slightly encrusted) is larger and more robust than that observed within samples <4> and <6>. At least 50 fragments are of a sufficient size to be considered for wood species identification. Cereal grains are extremely fragmented although the Galium seed is in good condition. A small quantity of clinker type material is present together with occasional fish scale fragments.

D.3.6 Sample <6> contains a large percentage of uncharred material including what appears to be sawdust. The charcoal is largely small and only one or two fragments appear large enough to consider for wood species identification. Uncharred bramble and alder seeds are present together with clinker, anthracite and ceramic building material (CBM) fragments, and occasional fish scale fragments. The cereal grain is only a small fragment.

D.3.7 Sample <7> contains charcoal similar in size and preservation to that observed within sample <5>, with at least 50 fragments suitable in size to be considered for wood species identification. The single cereal grain present is intact but distorted. All other charred material is fragmented with only half of the Galium seed present and less than one quarter of the potential pea which has been identified based on size and curvature of the surviving portion. As with the other flots, fragments of clinker type material and fish scales are present, and there are also fine fragments of mussel shell and CBM.

D.3.8 The poor condition of the majority of grain and seeds would seem to indicate that these are a result of secondary deposition, possibly originating as floor sweepings. The uncharred material within sample <6> looks like clearance of modern overgrowth before excavation.

Recommendations

D.3.9 Due to the fragmentary nature of the remains, no further work is appropriate for the seeds and grain within these samples.

D.4 Charcoal

by Julia Meen

D.4.1 Four bulk samples were recovered on or around a seventeenth century hearth at Headstone Manor. The charcoal recovered from each of these samples during water flotation was examined to establish the form of wood (small kindling, large logs etc) and the range of wood taxa utilised for fuel. Twenty charcoal fragments were selected from each and species identification was undertaken on the basis of anatomical characteristics observed on the transverse, radial and tangential planes of each piece, using a Brunel Metallurgical SP-400BD microscope at up to x400 magnification and with reference to Schweingruber (1990).

D.4.2 The charcoal in the four samples contained a relatively wide range of wood taxa (Table 9; Fig 1), including oak (*Quercus*), beech (*Fagus sylvatica*), hazel (*Corylus avellana*), ash (*Fraxinus excelsior*), field maple (*Acer campestre*) and elm (*Ulmus*). Charcoal of willow/poplar (*Salix/Populus*), which cannot be separated using anatomical characteristics, and Pomoideae type, a group of closely related taxa which, again, cannot be separated but which includes hawthorn, apple, rowan and whitebeam, was also present. No roundwood or charred twigs were observed, suggesting more mature logs were being burnt in the hearth.

Table 9: Wood charcoal from Headstone Manor

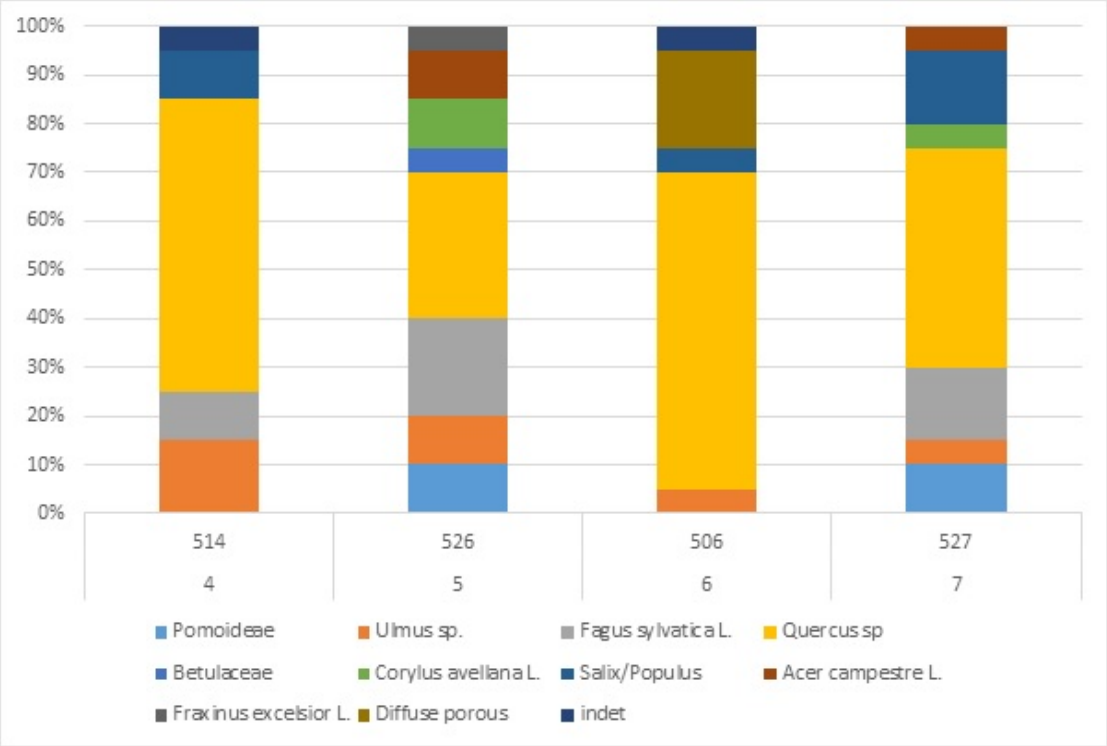
Sample Number		**4**	**5**	**6**	**7**
Context		**514**	**526**	**506**	**527**
Species	***Common Name***				
Pomoideae	hawthorn/rowan/whitebeam		2		2
Ulmus sp.	elm	3	2	1	1
Fagus sylvatica L.	beech	1	4		3
cf *Fagus sylvatica*	cf beech	1			
Quercus sp	oak	11	5	11 (h)	9 (h)
cf *Quercus*	cf oak	1	1	2	
Betulaceae	birch family		1		
Corylus avellana L.	hazel		2		1
Salix/Populus	willow/poplar	2			3
cf *Salix/Populus*	cf willow/poplar			1	
Acer campestre L.	field maple		2		1
Fraxinus excelsior L.	ash		1		
Diffuse porous				4	
indet		1		1	
TOTAL		**20**	**20**	**20**	**20**

(h) - heartwood

D.4.3 Only a small quantity of charcoal was present in samples 4 and 6, and the fragments were generally of small size. Both of these samples have a high proportion of oak (*Quercus*), yet analysing only small fragments of charcoal can potentially skew the species composition of a sample. Oak is more easily identifiable in fragmentary material compared to most other taxa native to Britain, as it has distinguishing characteristics visible on the transverse section at low magnification, reducing the need for further sectioning which may not be possible on small fragments. Therefore, although samples

4 and 6 appear to be more dominated by oak than samples 5 and 7, it is likely that this is influenced by the small fragment size, and the presence of certain taxa, particularly the more unusual elm (*Ulmus*), in all four samples does suggest that they derive from the same deposit.

Fig. D1: Comparison of wood charcoal composition in each of the analysed samples



D.5 Radiocarbon dating

By Rebecca Nicholson

D.5.1 Two samples were submitted for AMS radiocarbon determination to The Centre for Isotope Research (CIO) at the University of Groningen. The samples were measured using the recently installed facility MICADAS accelerator mass spectrometer (AMS) which provides higher precision than older machines. The samples comprised a single fragment of charred hazel (Corylus avellana) nutshell weighing 26mg from HEM14 sample 4, layer 514, and two small indeterminate charred twig fragments with pith, 1 or 2 rings and bark weighing 10mg from HEM14 sample 5, layer 526. The selection of material represents the shortest lived wood that could be identified in the sample flots.

D.5.2 The samples were prepared using standard techniques (acid-base-acid wash ABA for the larger sample, acid wash A for the smaller one to preserve enough material for dating) and the results are provided in Table 10. The reported uncertainties in the measurement results include variations in the analysis of carbon isotopes as observed between subsamples of the same sample material (of homogeneous isotope composition and same size). These are variations in the chemical pre-treatment, combustion and isotope measurement. The resulting dates are conventional radiocarbon ages (Stuiver and Polach 1977), quoted in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986). The measured δ13Cvalues used in the calculation of the result are within the typical range for seeds and wood from terrestrial plants (Bowman 1990, 23). The calibrated dates (Figures D2 and D3 below) have been calculated using the datasets published by Reimer et al (2013) and the computer program OxCal v4.3.2 (Bronk Ramsey 1995; 1998; 2001; 2009; 2017). The calibrated date ranges cited are quoted in the form recommended by Mook (1986), with the end points rounded outward to five years where the error is <25 years and 10 years where the error is >25 years. The date range has been calculated according to the maximum intercept method (Stuiver and Reimer 1986).

Table 10 Radiocarbon samples and determinations

Sample	Dated Material	GrM No.	F14C	± 1σ	14C Age (year BP)	± 1σ	%C	Δ13C (‰ ; IRMS)	± 1σ
HEM 14 <4> (514)	Charcoal (ABA)	18110	0.9477	0.0022	431	19	63.9	-24.67	0.15
HEM 14 <5> (526)	Charcoal (A)	18184	0.9283	0.0032	595	30	61.7	-23.56	0.16

Results and Interpretation

D.5.3 Samples 5 (526) and 4 (514) came from successive layers of grey charcoal-rich silt, which overlay burnt clay deposit 527; layer 514 also directly overlay fireplace 505/506. The radiocarbon date from sample 4 therefore provides a *terminus ante quem* (TAQ) for the construction and use of the fireplace of cal. AD 1430-1475, in addition to a probable date of last use of the fireplace, while the radiocarbon date from sample 5 indicates

earlier medieval occupation, as there is no overlap between the two determinations at 95.4% probability.

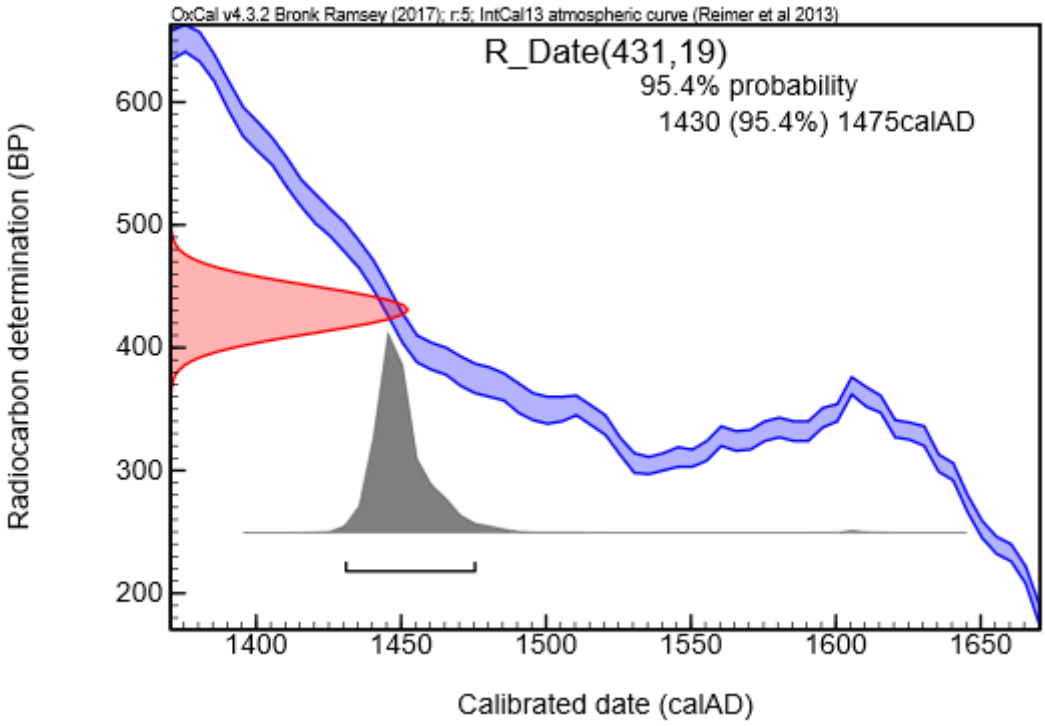
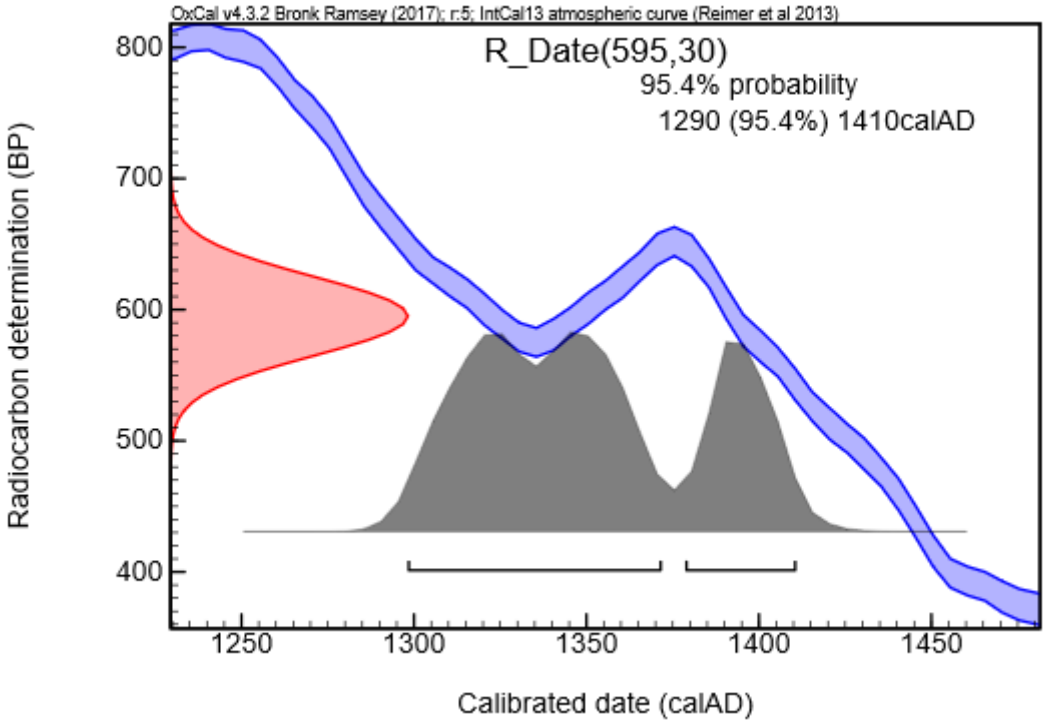


Figure D2. Radiocarbon curve and intercept for Sample 4

Figure D3. Radiocarbon curve and intercept for Sample 5



Appendix E. Summary of Site Details

Site name:	Headstone Manor, Harrow (Moated Enclosure)
Site code	HEM 14
Grid reference:	Centred at NGR 514090 189710
Date and duration of project:	November 2016 to July 2017
Area of site:	
Summary of results:	To the north of the standing Manor House, a building aligned south-west to north-east, and built of flint and chalk block walls was uncovered 0.3m below the modern surface of the yard. This structure, which was 7.6m wide and at least 16.8m long, was sub-divided by one cross wall and by several short walls projecting from the edge into the interior. A stacked-tile hearth was discovered in the angle between one of these short walls and the south-east outer wall, with occupation deposits spreading across the interior. Other burnt patches and occupation deposits suggest further hearths. Radiocarbon dates from two successive occupation layers gave dates of 1290-1410 cal AD and 1430-1475 cal AD, showing that this building is medieval in origin. To the south-east of the standing building a series of flint built walls were uncovered during landscaping works. The evidence suggests that the hall was only originally of tw bays. The revealed walls are likely to be of medieval origin, and may represent the high-end accommodation range beyond the hall. This range was shortened in the later 16th century, and a garderobe added to the new south-east outer wall. A ditch carrying cess and later a drain crossed the demolished corner of the earlier building. Further evidence for the long narrow building found by the CAS in 1997 was also uncovered, and probably represents an early post-medieval building of uncertain function.
Location of archive:	The archive is currently held at Oxford Archaeology (South), and will be deposited with the Headstone Manor Museum at the conclusion of the project.

Figure 1: Site location

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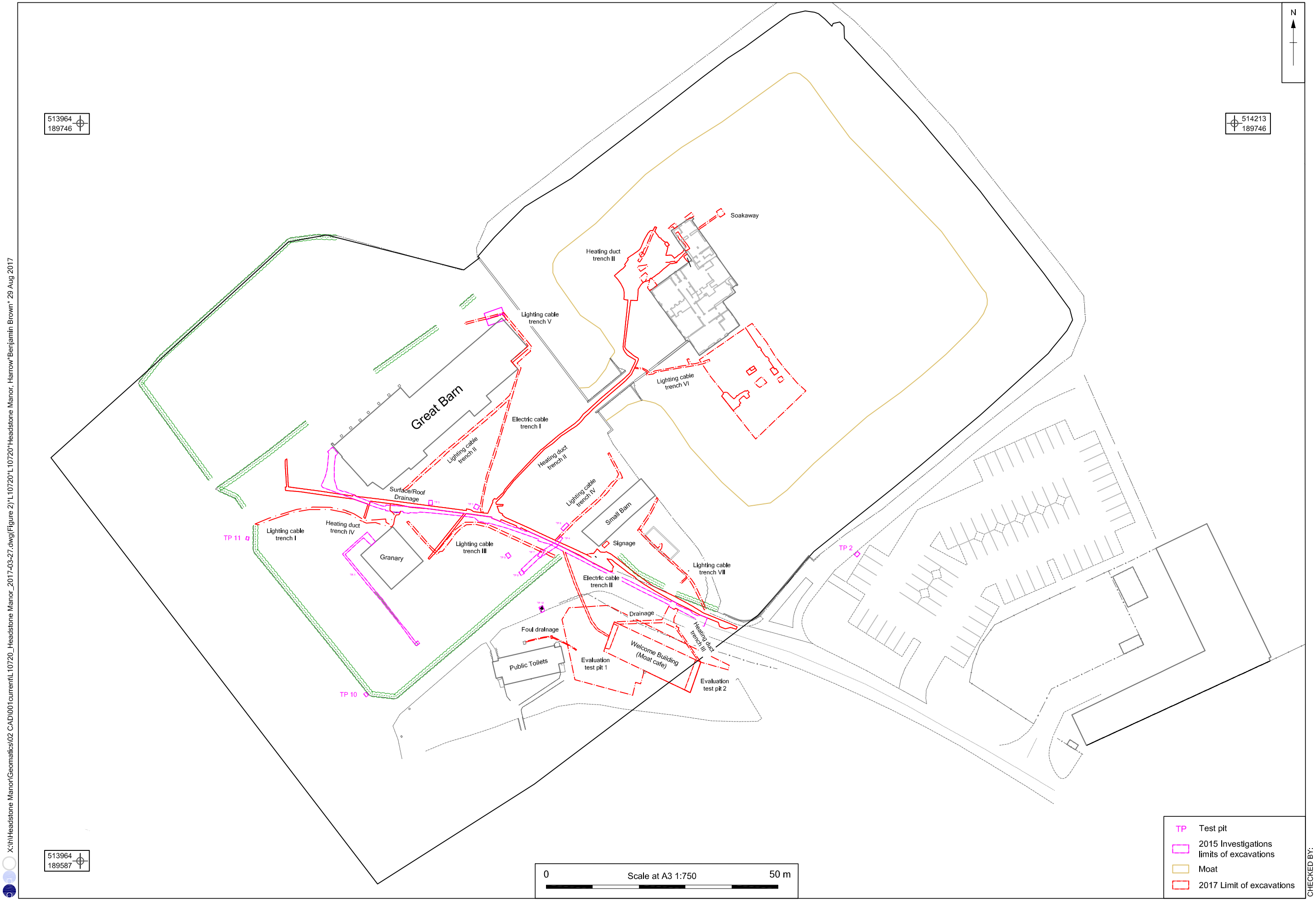


Figure 2: Trench location plan

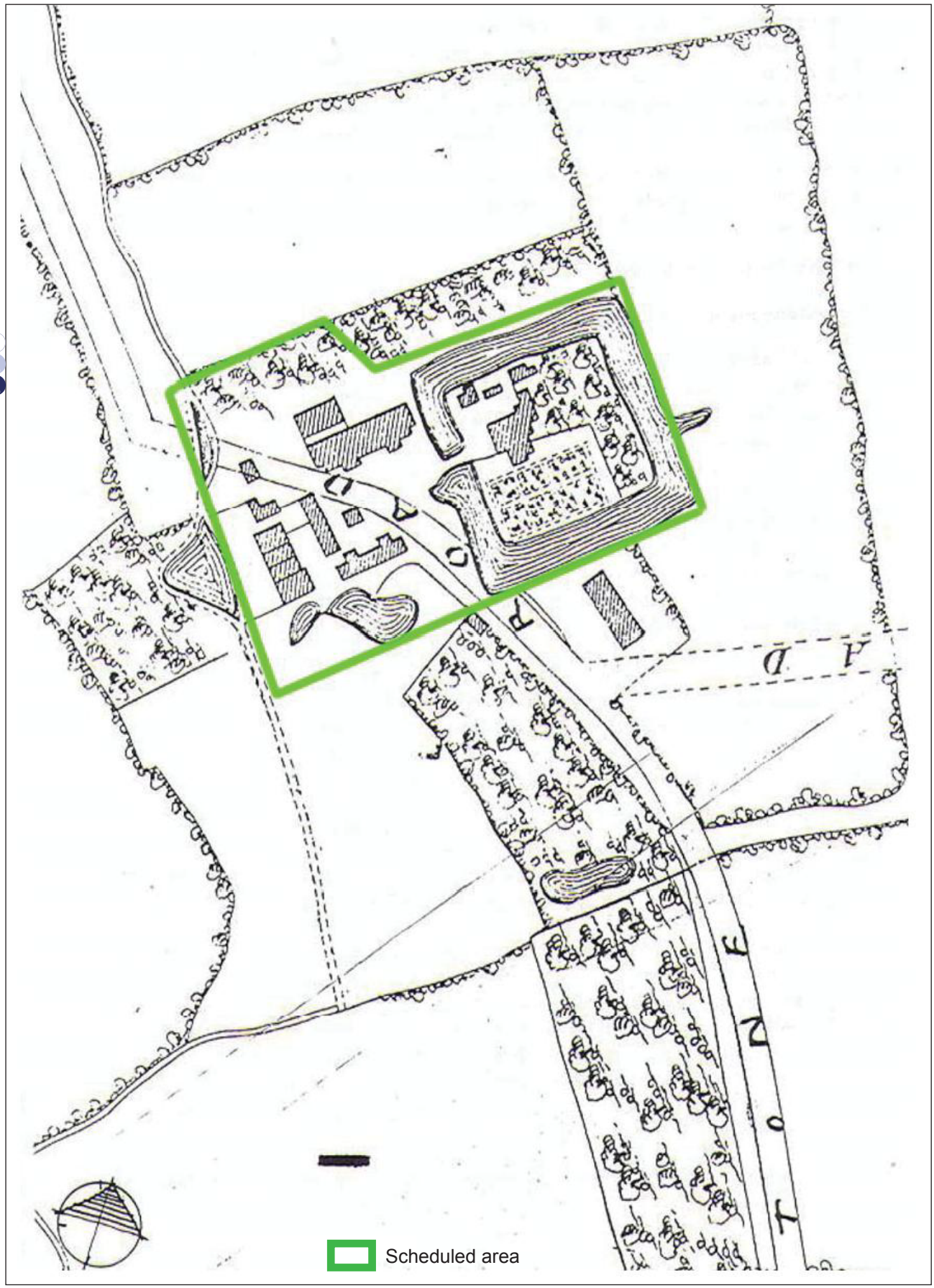


Figure 3: Plan of the 1860 Sale of Particulars map, copyright Harrow Local History Collection D2a Item 38, with scheduled area overlain

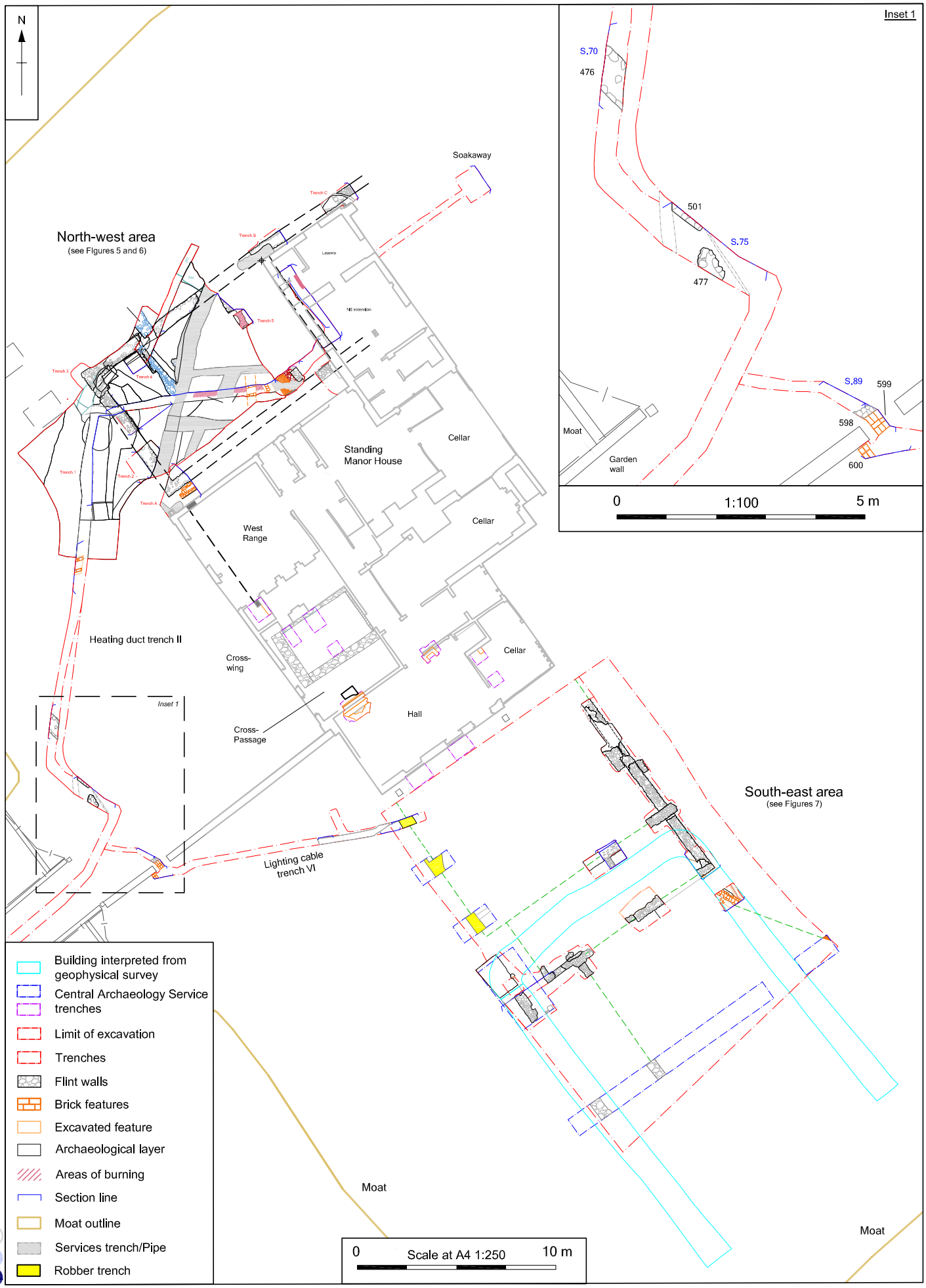


Figure 4: Plan of trenches and cleared areas on the Moated Island, with details of structures and features uncovered to the west of Manor House

X:\h\Headstone Manor\010 Geomatics\02 CAD\001current\L10720_Headstone Manor_2019-05-10_Master_(Updated).dwg(Figure 5 (Moated Island) (2019))*L10720*L10720*Headstone Manor, Harrow*conan.parsons* 27 Aug 2019

N

Moat

Soakaway

681
679
Trench C
690
680
Trench B
Lean-to
19th century
S.82
559
561
S.80
564
562
NE extension -
18th Century
503
S.79
S.71
479
S.77
502
506
505
510
511
516
527
479
456
479
480
479
260
457
260
Trench 1
S.65
378
493
492
S.74
494
457
Trench 2
694
S.99
693
695
709
700
707
706
Trench A
268
S.78
542
519
519
Trench 5
715
284
240
451
464
S.64
Trench 4
Trench 3
Building 452
Planting boxes
1987 Observation
Cellar
Manor House
Cellar
West Range -
Later 16th
century
Cellar
457
Drain 458
457
Heating duct trench II
Lighting cable trench VI

Central Archaeology Service trenches
Limit of excavation
Trenches
Flint walls
Brick features
Excavated feature
Archaeological layer
Areas of burning
Section line
Moat outline
Services trench/Pipe
Robber trench
Areas not cleared of later deposits

CHECKED BY: DRAFT

Survey Data supplied by :
Oxford Archaeology

0 5 m
Scale at A3 1:100

Figure 5: Plan of Building 452 and associated structures and features north-west of the Manor House

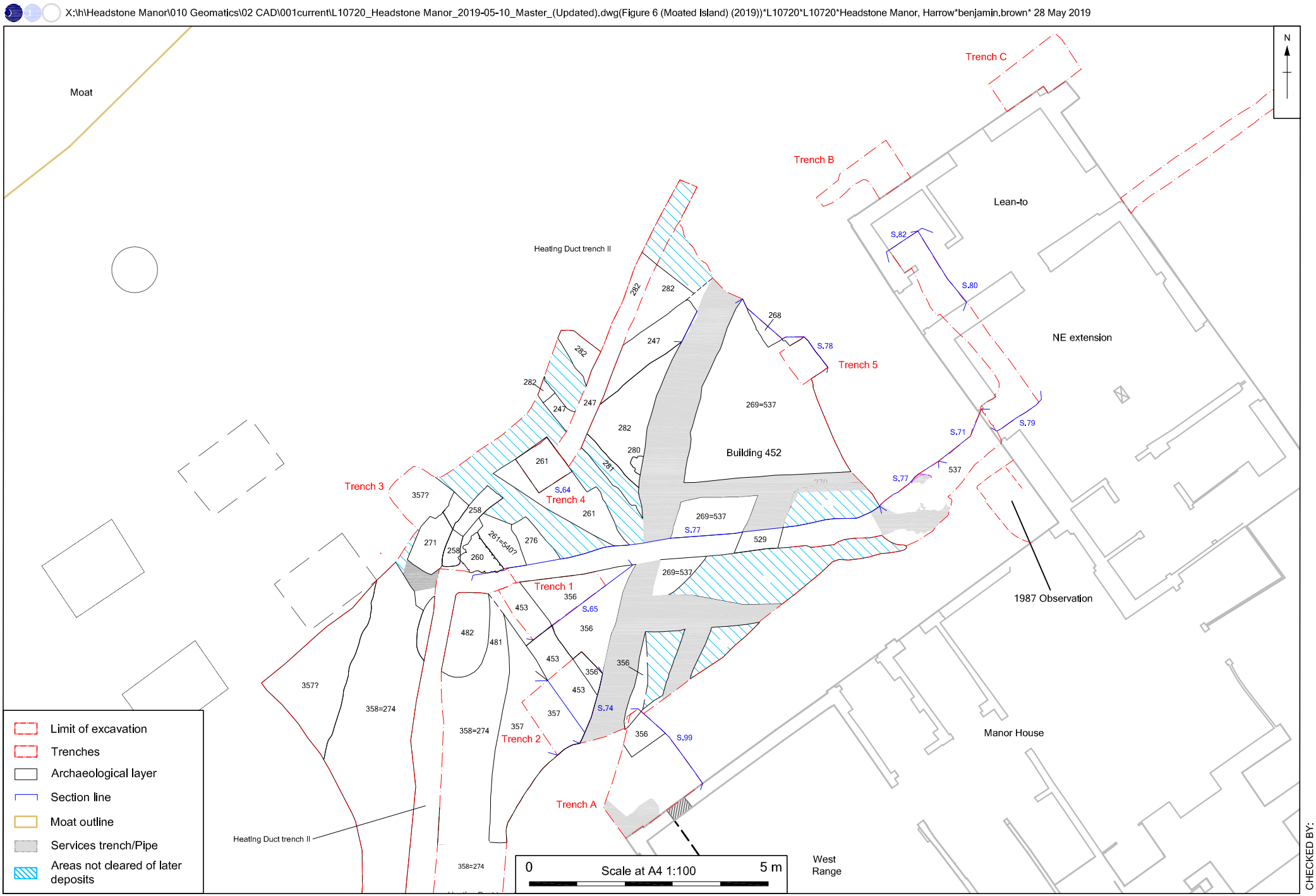
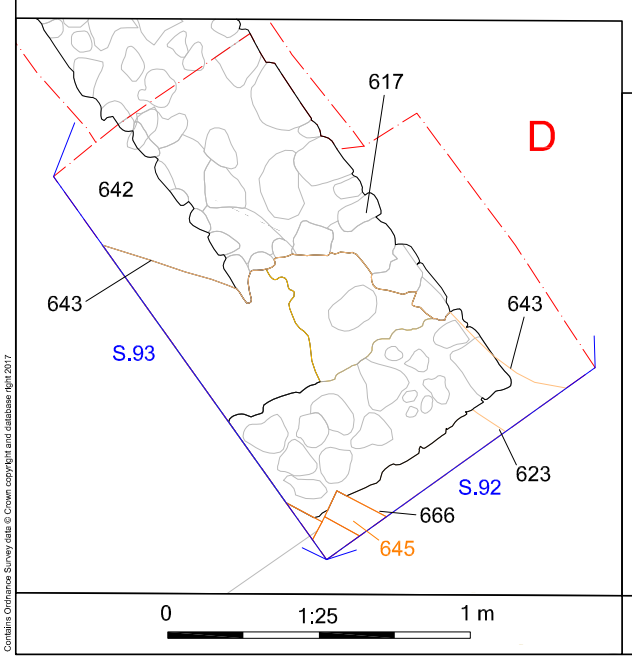
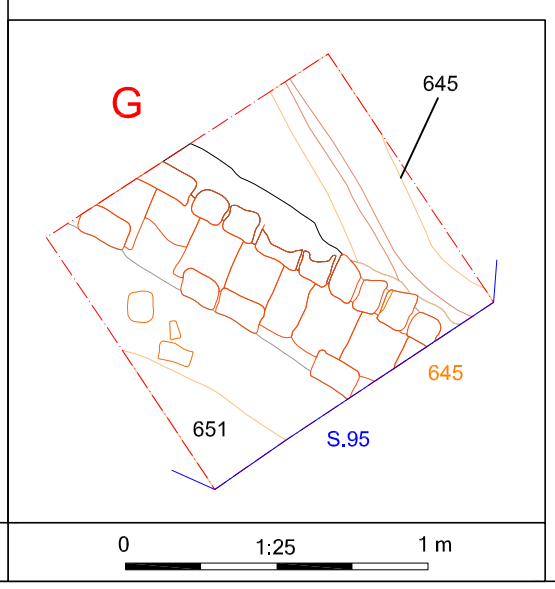


Figure 6: Plan of later spreads found north-west of the Manor House

N

541
525
524
254
251
SSD 4
224
SSD 6
Cellar
SSD 7
226
229
230
232
231
SSD 3
Hall
SSD 9a
SSD 9b
611
S.91
SSD 1
SSD 2
617
638?
625
627
638
620
S.96
J
S.94
660
662
664
D
642
643
S.93
S.92
623
645
G
649
651
S.95
E
622
669
619
632
646 (=CAS 87)
647
635
665
637
669?
633
632
630
640
F
634
H
648
632
S.97
SSD 6
SSD 6A
CAS 200
CAS 169
CAS 167





Building interpreted from geophysical survey
Central Archaeology Service trenches
Limit of excavation
Trenches
Flint walls
Brick features
Excavated feature
Archaeological layer
Areas of burning
Section line
Moat outline
Robber trench

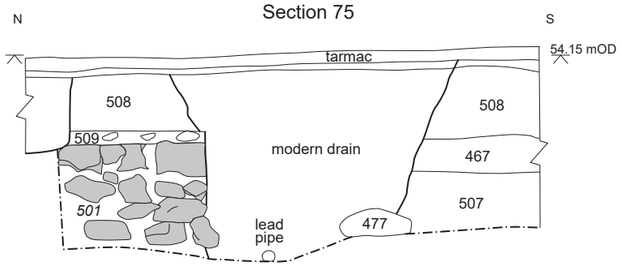
CHECKED BY:

Survey Data supplied by :
Oxford Archaeology

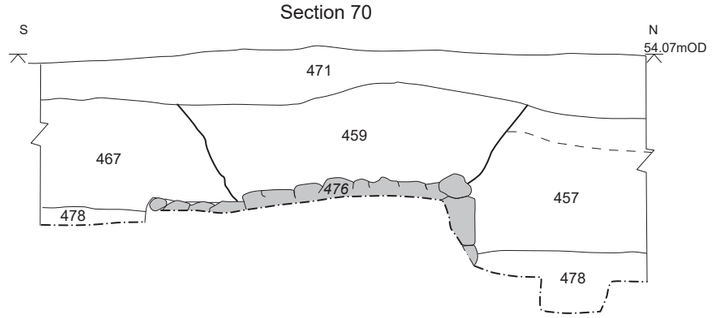
0 5 m
Scale at A3 1:100

Figure 7: Plan of discoveries south-east of the Manor House incorporating the results of earlier investigations

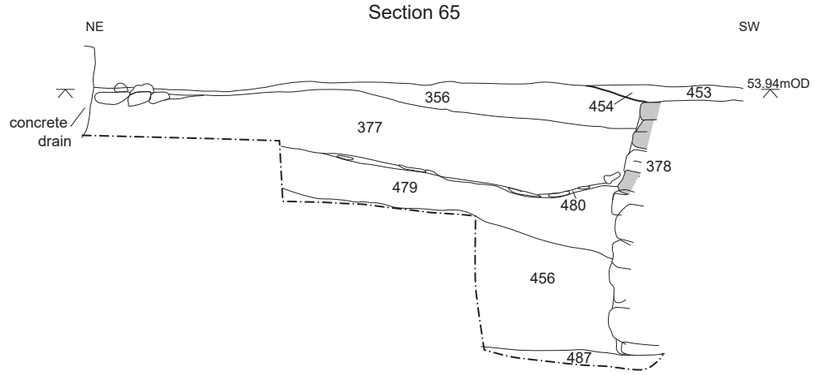
Section 75



Section 70



Section 65



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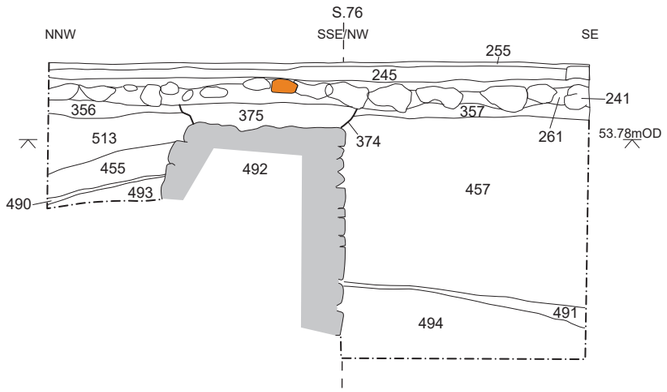
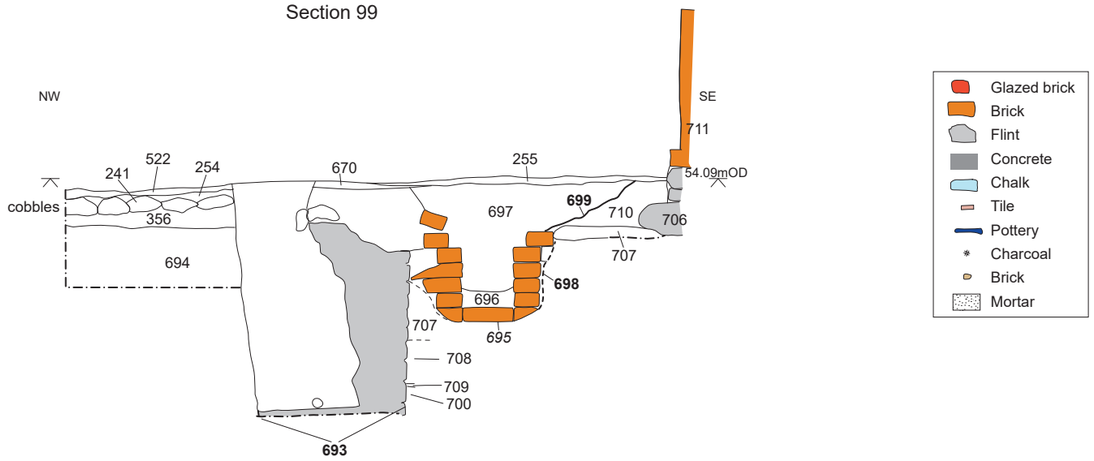
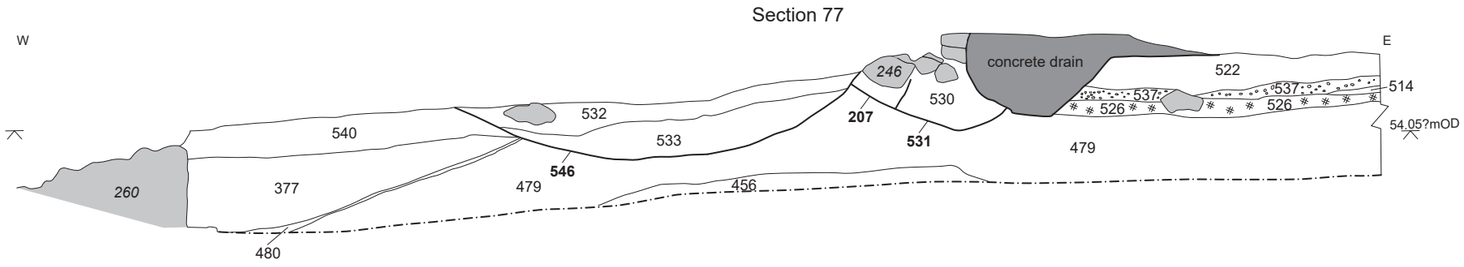


Section 99



Section 77



Section 77

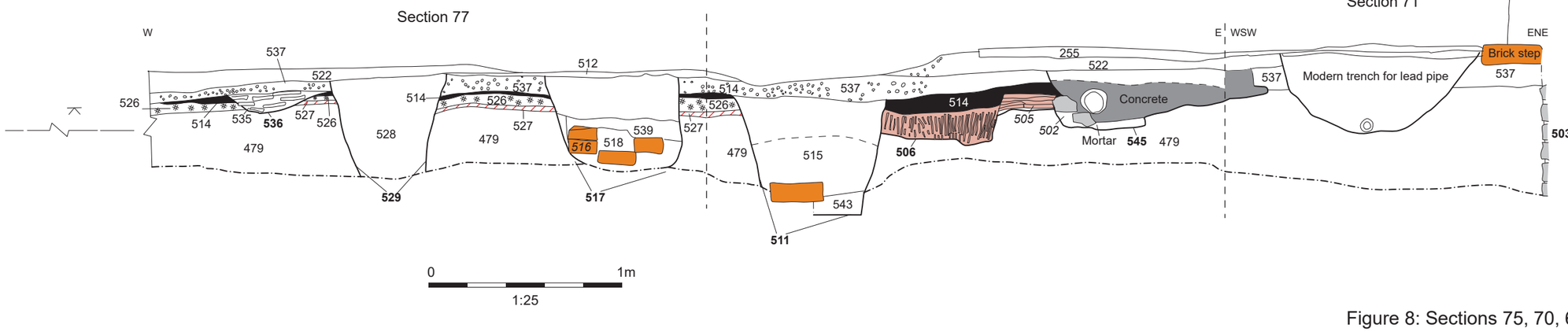
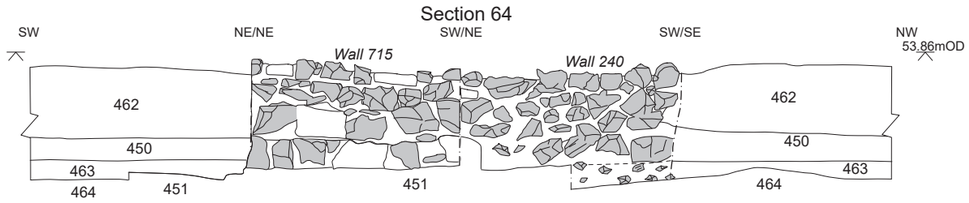
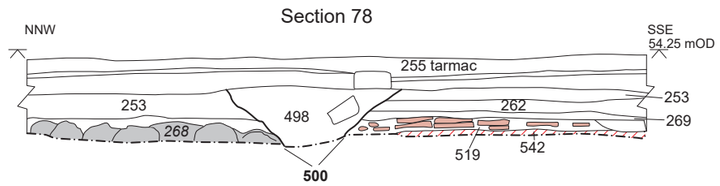
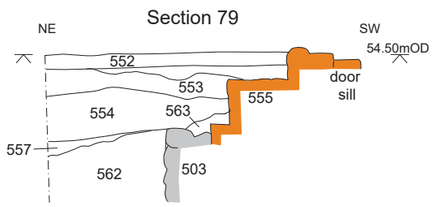
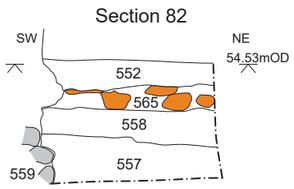


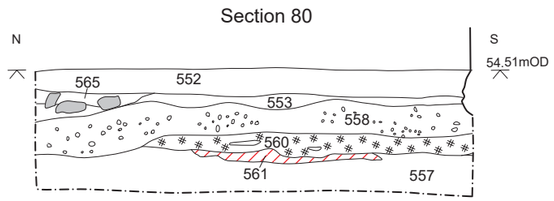
Figure 8: Sections 75, 70, 65, 74, 99, 77 and 71

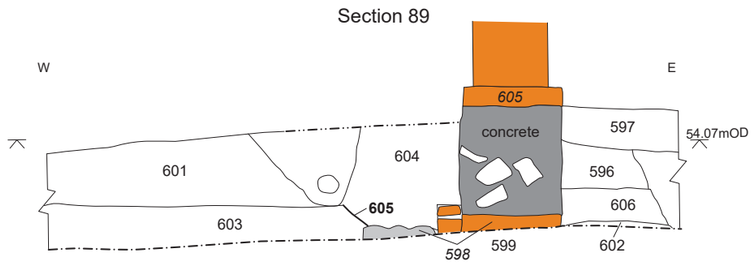


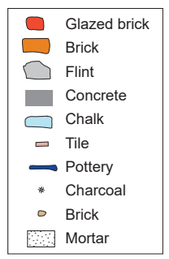


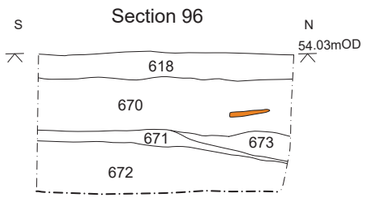


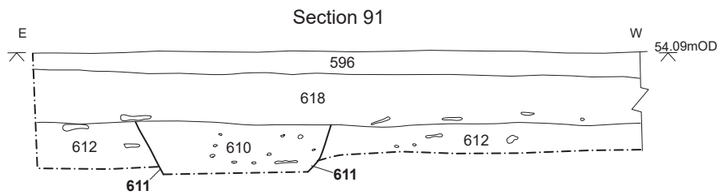


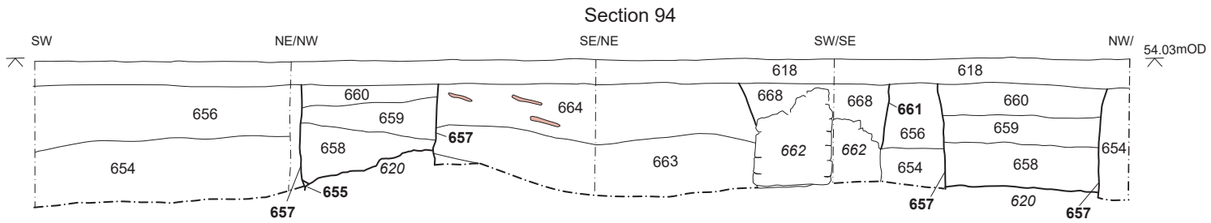


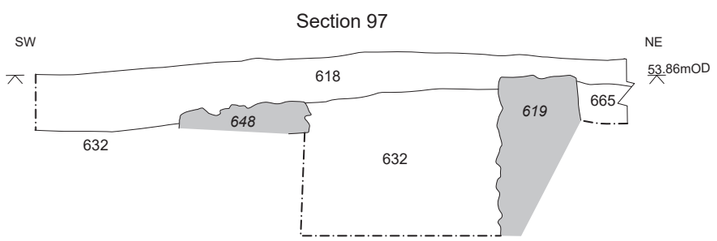


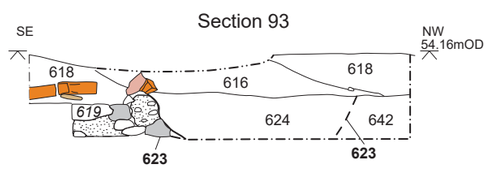


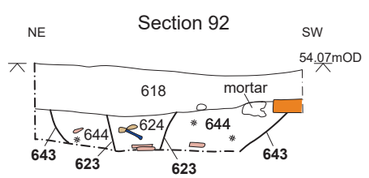












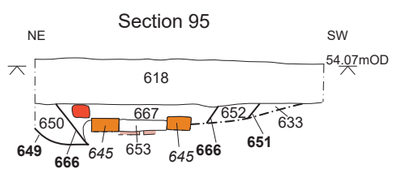


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Figure 9: Sections 64, 78, 79, 82, 80, 89, 91, 96, 94, 97, 93, 92 and 95

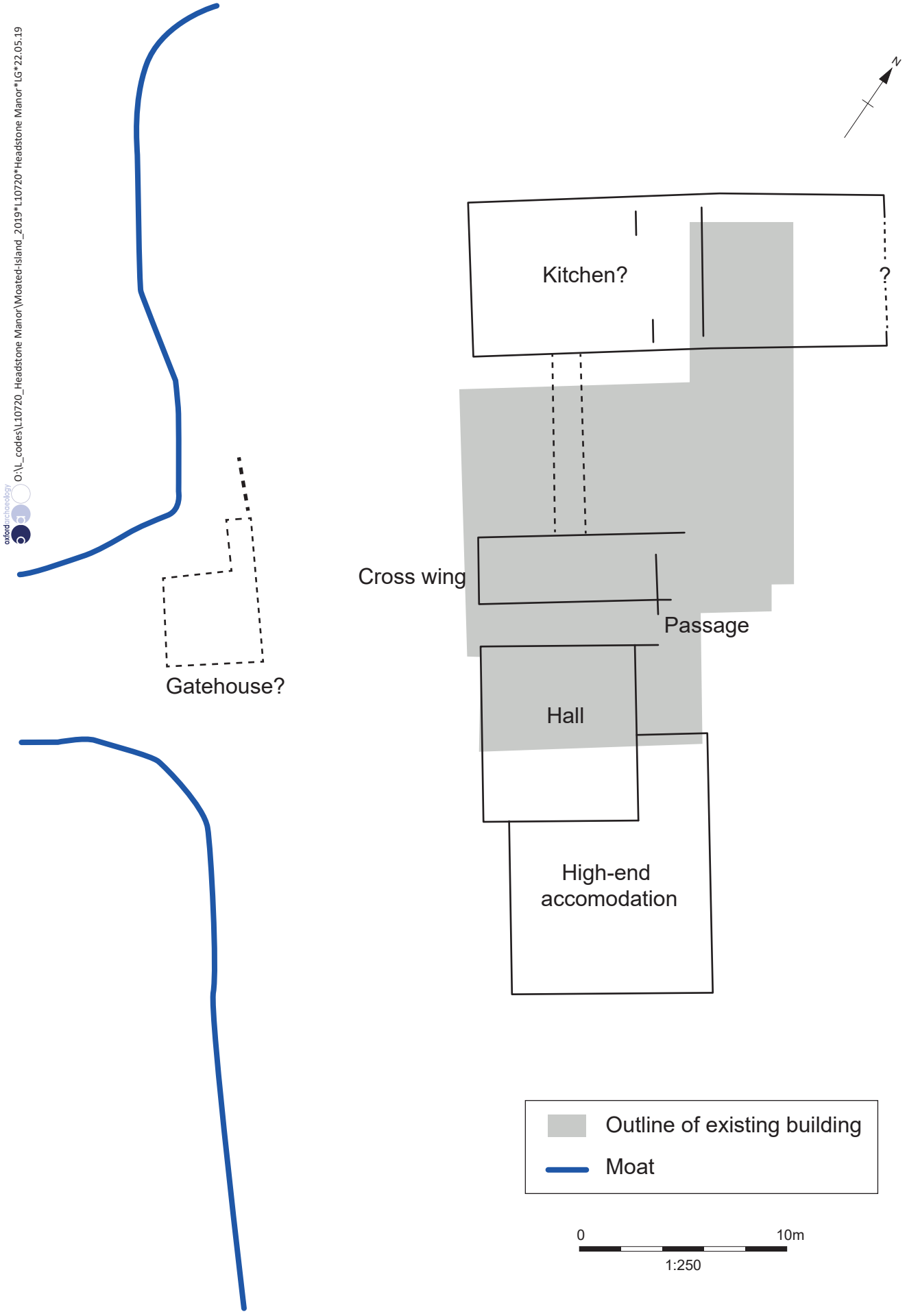

Figure 10: Interpretation of the layout of the medieval manor house in the light of the new discoveries

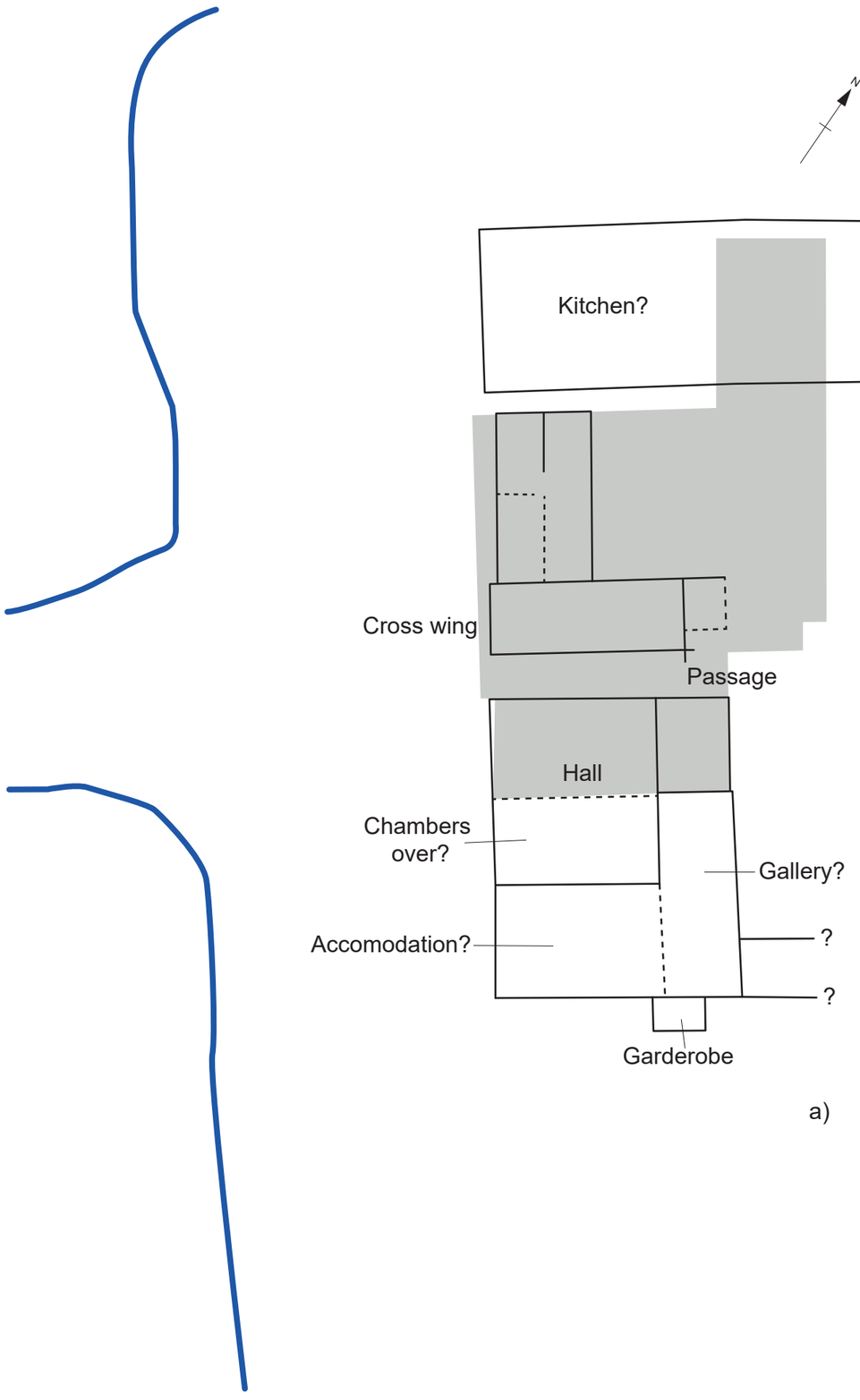

Figure 11: Interpretations of the layout of the early post-medieval manor house in the light of new discoveries

Plate 1: Flint walls 501 and 477, looking NNW

Plate 2: Flint wall 476 looking west

Plate 3: Brick conduit 458 section 69, looking south-west

Plate 4: Clay layer 487 below south-west wall 378, looking south-west

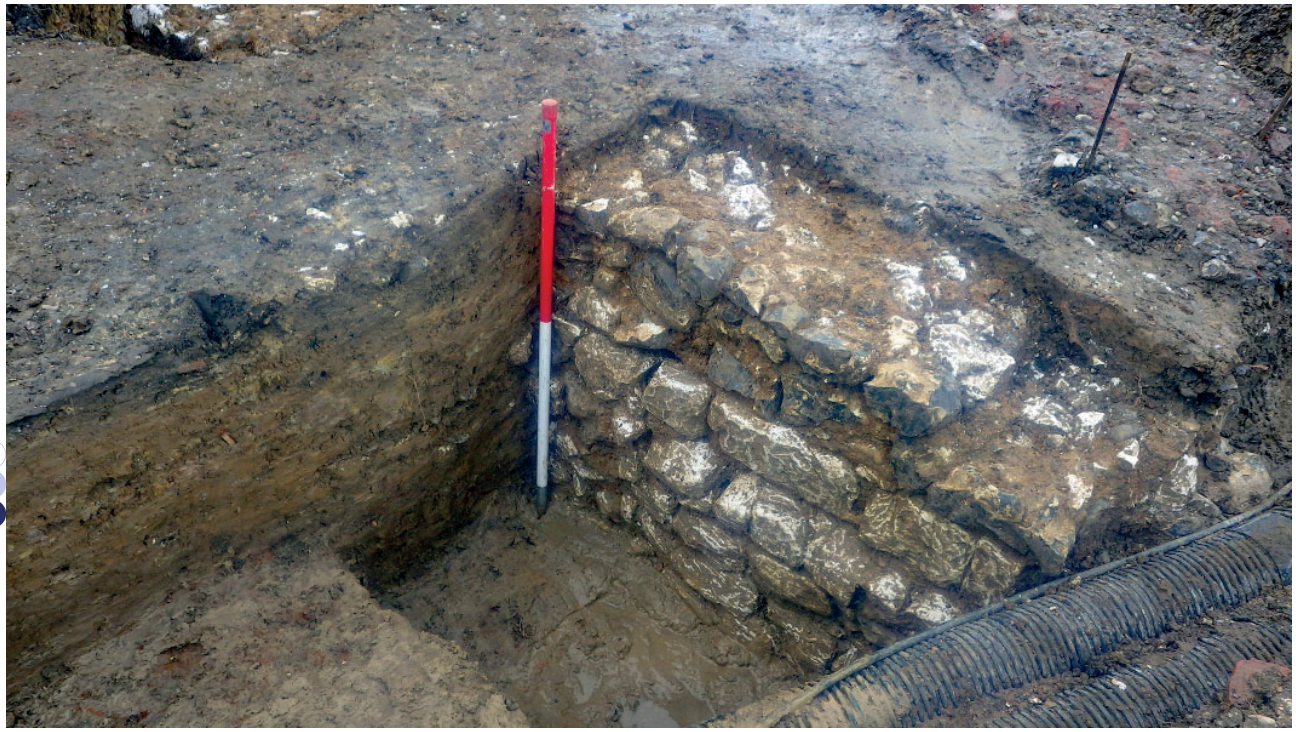

Plate 5: Wall 378 with sequence of internal deposits, looking south

Plate 6: Wall 492 showing chalk and flint mix, looking north-east

Plate 7: North-west wall 715 showing chalk and flint (wall 240 to right), looking WNW

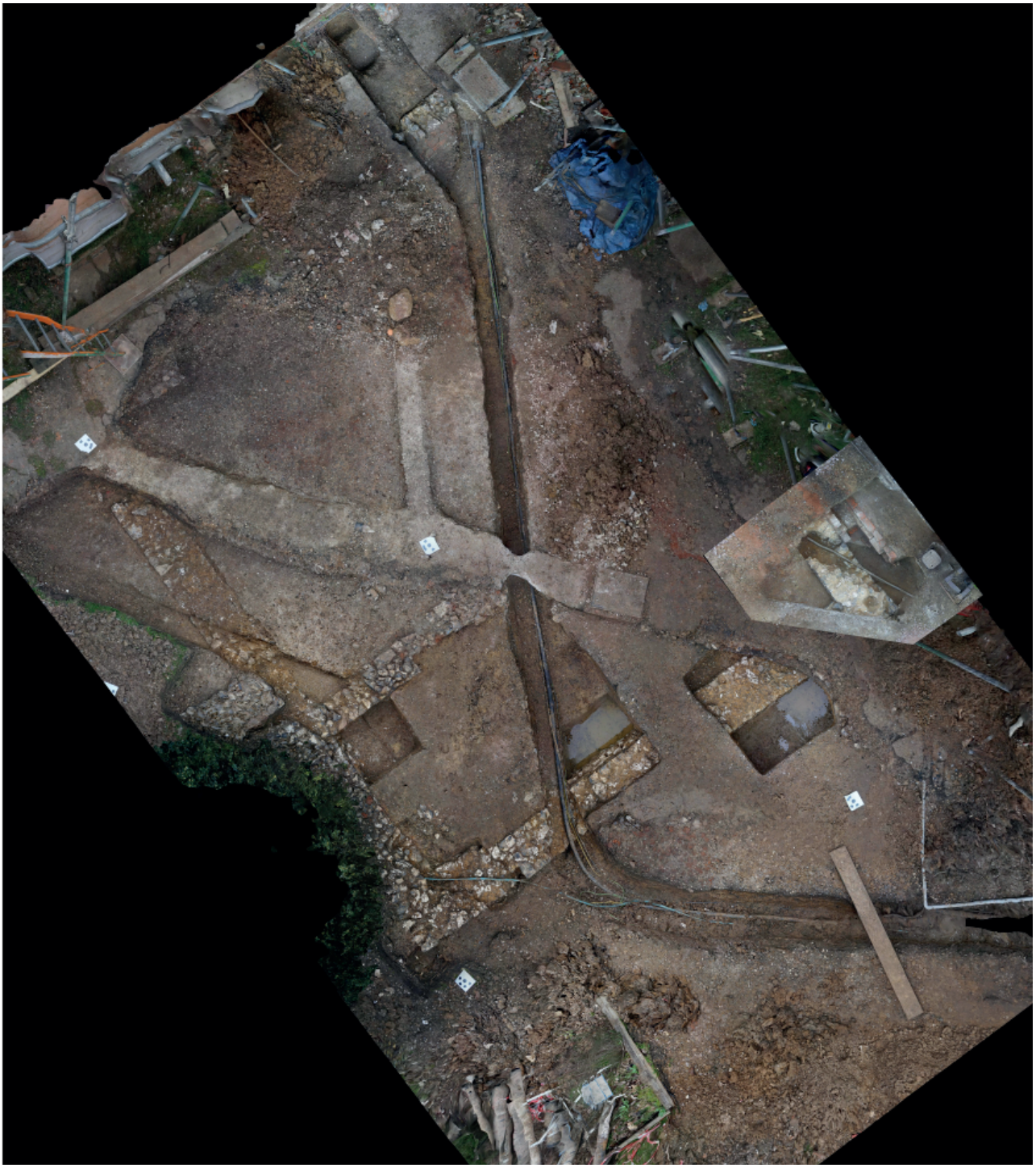

Plate 8: Overall view of building north-west of Manor

Plate 9: South-west corner of Building 452 showing very large flint blocks, looking east

Plate 10: South-east corner of Building 452 showing wall 693, drain 695 and flint foundations below brick range, looking east

Plate 11: Northern extension to manor house with trenches C and B, looking south-west

Plate 12: Trench B - Wall 680 running just outside northern extension, looking south-east

Plate 13: Trench C - Wall 679 continuing beyond northern extension, looking east

Plate 14: Walls 260 and 715 at south-west corner, overlain by flint cobbles, looking north-east

Plate 15: South-east wall 510 exposed just outside northern extension in 1979, looking north-west (photo courtesy of Pat A Clarke)

Plate 16: Short wall 240 abutting wall 715, and overlain by wall 246, looking north-east

Plate 17: Wall 502 with wall 503 below 18th century extension to Manor, looking north-east

Plate 18: Wall 503 within 18th century extension, looking south

Plate 19: Wall 559 inside northern extension of Manor, looking south-east

Plate 20: Wall 268 and wall 715, from above looking south-west

Plate 21: Wall 492 in Trench 2 with chalk and flint `dressing' layer 491, looking north-west

Plate 22: South-east corner of Building 452 showing stratigraphy below standing brick range, looking south-east

Plate 23: Brick drain 695 in section beyond corner of wall 693, looking south-west

Plate 24: Trench 4 showing construction layer 351 against wall 715 and layers 350 and 462 over, looking south-west

Plate 25: Trench 4 showing construction layer 351 and wall 240, looking north-east

Plate 26: Trench 1 showing internal deposits abutting wall 378, looking south-east

Plate 27: Wall 510 with wall 502 and hearth 505/506 in the angle, looking south-east

Plate 28: Hearth 505/506 abutting walls 502 and 510, looking south-east

Plate 29: Wall 502 and hearth 505/506 showing floor tile at end of wall, looking north-east to wall 503

Plate 30: Wall 268, burnt deposit 542 and tiles 519, looking north

Plate 31: Occupation deposits in section cut by drain 516, looking east to hearth 506/505

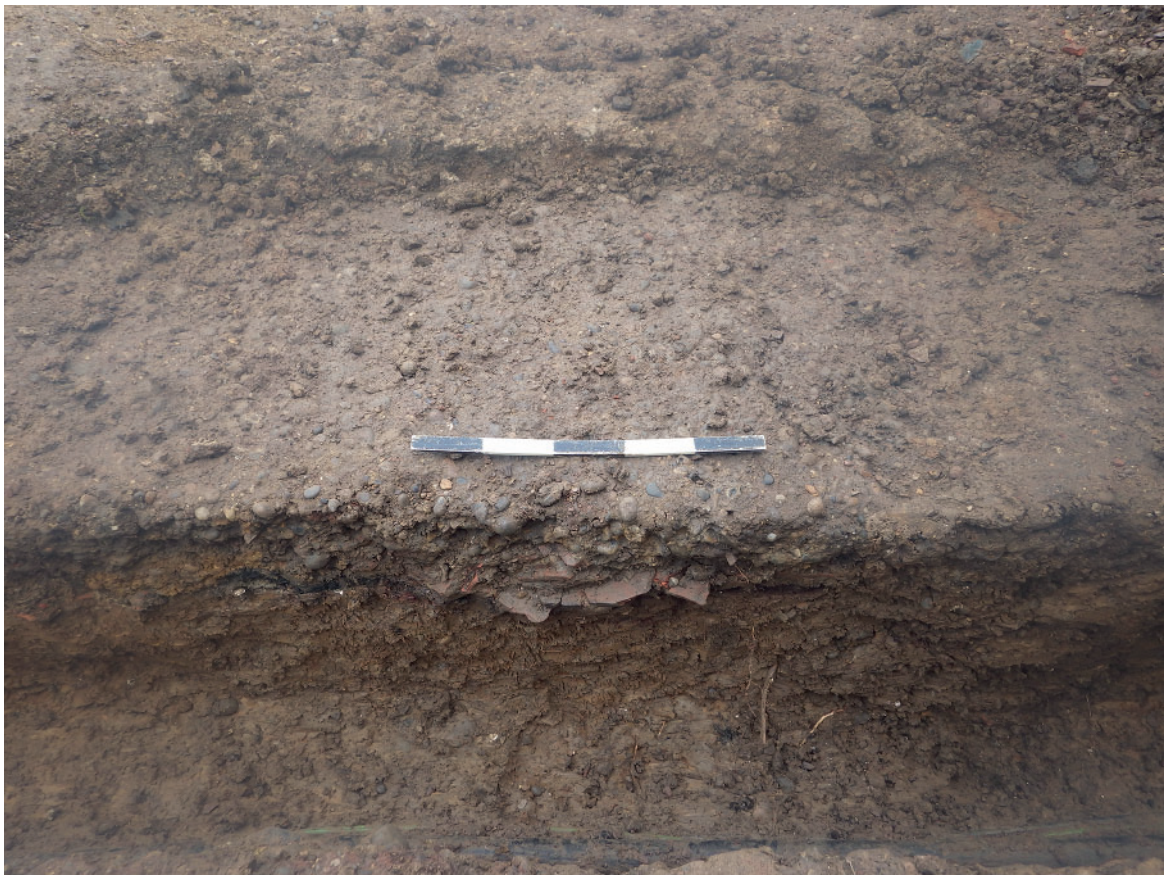

Plate 32: Occupation deposits on floor either side of pit 374, looking north

Plate 33: Wall 559 and occupation layer 560 inside northern extension of Manor, looking south-west

Plate 34: Section 77 west end showing deposits 377 and 540, pit 546 with dark fill 533 and wall 246, looking north

Plate 35: Drain 516 cutting occupation deposits and gravel 537, looking north

Plate 36: Ortho-photo of post-building spreads and service trenches north-west of manor house, from above

Plate 37: Base of robber trench 208 of north-west wall 715 after removal of 242 and fill 247, with redeposited clay 423 outside, looking north

Plate 38: Detail of cobbling 241 ending at kerb 246 from above, with layer 274, looking north-west

Plate 39: Cobbling 241 = 273, kerb 246, layer 242 and platform 239, looking north-west

Plate 40: Detail of cobbling 241 = 273, showing continuation beneath later metalled deposit 265, with kerb 246 and 242 and 239 adjacent, looking WNW

Plate 41: South-west cross-wing wall of Manor (523) below floor joists, looking north-west

Plate 42: Former south-east cross-wing wall of Manor (524) below floor joists, looking NNE

Plate 43: Entrance through garden wall 615 showing rebuilt ends supported by concrete threshold over brick foundation 599, with brick wall 600 at right angles, looking north-west

Plate 44: Flint wall 598 truncated by brick foundations 599 of wall 615, looking north-east

Plate 45: Ortho-photo of area south-east of manor, showing revealed walls and trenches

Plate 46: Wall 617 looking north-west to the south-east corner of the standing manor house

Plate 47: Wall 617, flint plinth 638 and wall or buttress 627, looking SSE

Plate 48: Wall 617, wall 627, plinth 638 and pit 625, looking north-west towards manor house

Plate 49: Wall 620 cutting across wall 617, looking SSW

Plate 50: Trench J - Wall 620 below robber trench with garderobe wall 662, looking south-west

Plate 51: Trench J - Garderobe 662 south-east of wall 620, looking east

Plate 52: Trench J – Layers 670-673 in north-west face, looking north-west across wall 620

Plate 53: Trench J - Detail of garderobe wall 662 and fills 663-4, looking south-east

Plate 54: Trench D – Corner of walls 617 and 619 cut away by ditch 643, with bricks of drain 645 over, looking south-west

Plate 55: Trench G south-east face, showing drain 645 and ditches 649 and 651, looking south-east

Plate 56: Drain 645 and wall 617 showing ditch cut through wall, looking north-west

Plate 57: Trench E – Squared end and south side of 619, with later gravel path, looking north

Plate 58: Walls 619 and 669 showing ragged north-east face of 619, looking south-east

Plate 59: Trenches H and F, showing sondage against wall 633, with walls 619, 630 and 669 behind, looking north-east

Plate 60: Trench F – walls 619 (and 669), 630 and 633, looking south-west

Plate 61: Trench F – Wall 619 showing masonry 637 within layer 665 and wall 630 behind, looking south-east

Plate 62: Trench F – Junction of walls 619 and 630, looking north-west

Plate 63: Trench H – Slot through layer 632 abutting wall 619/633 and overlain by wall 648, looking north-west

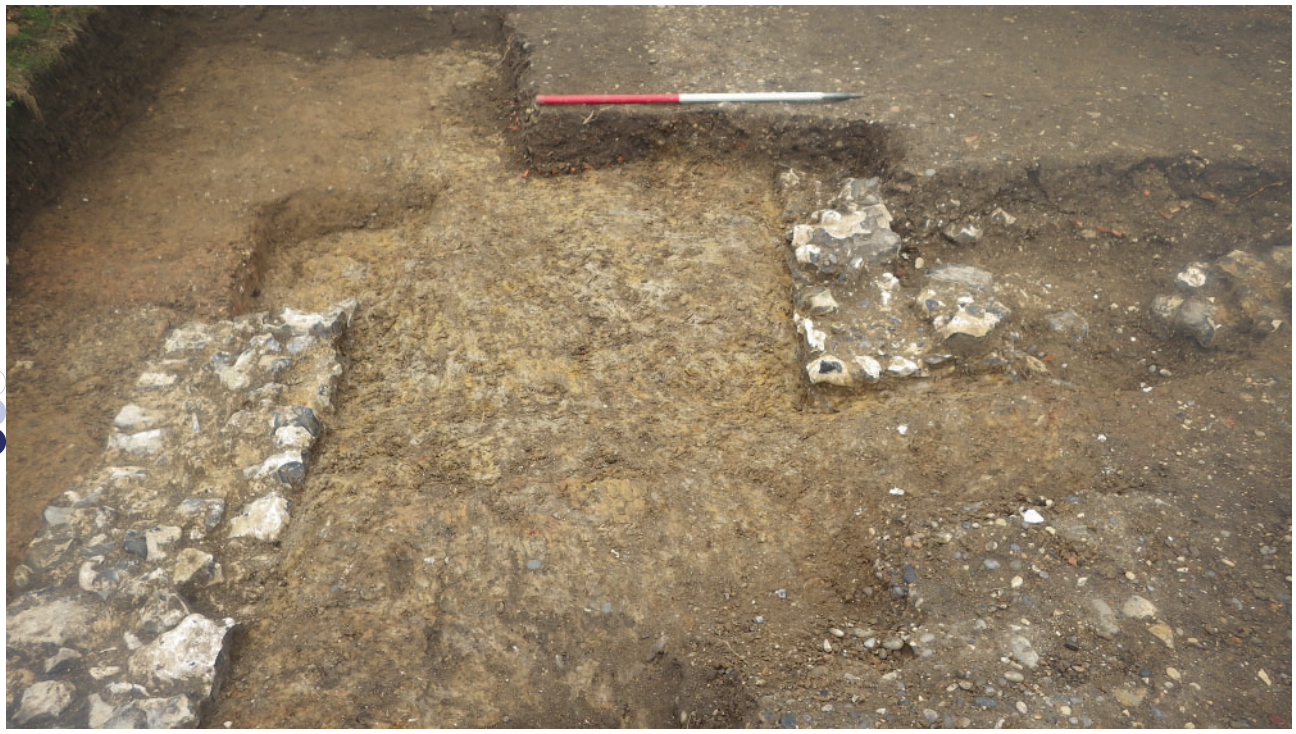

Plate 64: Trench H – wall 648, cut 647 and fill 646, feature 635, walls 633/619 and pit 640, looking north-west

Plate 65: Area south-east of manor house showing gravel paths below topsoil, looking SSW