JOHN MOORE HERITAGE SERVICES

LITTLEMORE PRIORY, GRENOBLE ROAD, LITTLEMORE, OXFORD (NGR SP 5455 0231): ARCHAEOLOGICAL EXCAVATION REPORT

On behalf of

The Firoka Group

AUGUST 2016

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SUMMARY

A series of Archaeological Investigations were carried out at the site of Littlemore Priory, later known as Minchery Farm, located at Littlemore in the City of Oxford (NGR SP 545 023). These took place over a number of years and culminated in the excavations and watching brief across the site in 2014 and 2015. The site was located in an area of Oxford that is now set aside for industrial and commercial development. Planning consent was given for the errection of a hotel on the site and the archaeological work was carried out as a means of mitigation.

Scant history was known about the Priory although as a small nunnery it had through the documentary evidence gained some notoriety in the alleged behaviour of its nuns. The Priory was known to have been founded by a Robert de Sandford, and is considered to have seen initial construction in the reign of King Stephen. The major phase of development is known to have occurred in the 13th century about 1245-1247. After this point there is little information available on the subject, until a number of visitations occur under the office of the Bishop of Lincoln towards the end of the 15th century and early in the 16th century. The priory was suppressed and dissolved 1524-1525.

Initially the Priory was sold to Cardinal Wolsey and his establishment of Cardinal College, later Christ Church. With Wolsey's demise the Manor of Sandford, and Littlemore Priory, which formed a part of that manor passed into ley hands.

The excavations managed to identify a general plan of the church and indicate roughly where other buildings would have been located, and to some extent it managed to indicate a probable phasing. The phasing was problematic due to the extent of robbing that had occurred across the site.

The earliest phase of the mid 12th century saw the choir and retro-choire or crossing constructed. This is evidently the case because there was evidence of a clasping buttress on the northeast corner of the choir. Only part of the feature survived, but the shape of the buttress was designed by a robber trench. This feature is associated with Norman architecture and is suggestive of the choir and crossing being constructed at this date and then being retained. There is a slight deviation in the line of the nave, and it is possible that this was only partially constructed before the Priory's revenue stream dried up. The major phase of activity took place in the 13th century (1245-1247), and this included either the completion of the nave or the rebuilding of the nave and west tower. This detail is evident in the apparent angle buttress on the northwest corner of the west tower. The angle buttress is a feature of Early English Gothic.

Other developments of the mid-13th century appear to be the addition of a structure in the normal location of the north transept. Later accounts indicate that this was the Chapter House, and alongside it a small cell was constructed. There are walls running to the south of the choir and nave that indicate structures located on the south side of the church. It is assumed that these were constructed also about this time, as very little evidence survives to date this architecturally. To the south of the choir and retro-choir there appears to be a chapel, and to the south of the nave it has to be assumed that this was the location of the cloister.

A chapel was added on the north side of the choir at a date prior to 1427, and floor tiles may indicate that this occurred about 1300 or just after.

Some 92 burials were recovered from the site, which represents one of the few collections of remains from a small English nunnery and thus for aspects of medieval gender studies and social attitudes the remains are important. The site has also produced a significant amount of glazed medieval tile that enhances our knowledge of this particular industry and trading patterns between territories to the south of the Thames and to the north.

The plan of the building and the material recovered from it are indicative of this monastery not being as poor as it is often portrayed. The monastery appears to have no extensive holdings, but it does appear to be associated with the Knights Templars, who held the Preceptory at Sandford Manor, and they were established by a knight of Abingdon Abbey. The term priory is often used as a cell of a larger abbey and it is possible that this was always a Benedictine Cell to the abbey at Abingdon. Such a tie may explain why Abingdon provided weekly food rations. The analysis of the skeletons is also indicative of the nunnery in the 13th century as not being as poor as suggested.

In the post-medieval period it is apparent that the site passed into lay hands and became Minchery Farm. The date at which some of the outbuildings were constructed is indiacted by an illustration by Hearne, which shows some of the later barns. One of these barns survived in a reworked 19th century form in a ruined form prior to the development of the site.

1 INTRODUCTION

1.1 Site Location

The site is located on the south side of Littlemore, on the southeastern outskirts of the City of Oxford (NGR SP 545 023). Historically the site was located in the parish of Sandford-on-Thames, the historic Hundred of Bullingdon and the Historic County of Oxfordshire. Today the site is located in Oxford City and the modern County of Oxford.

The Kassam Stadium and its adjacent cinema complex form the boundary of the site to the north and east. The south was bounded by Grenoble Road. On the southwest side of the site was the Priory a listed building.

Topographically the site is located on the plain of a southwest facing valley and is at about 58m to 61m Ordnance Datum.

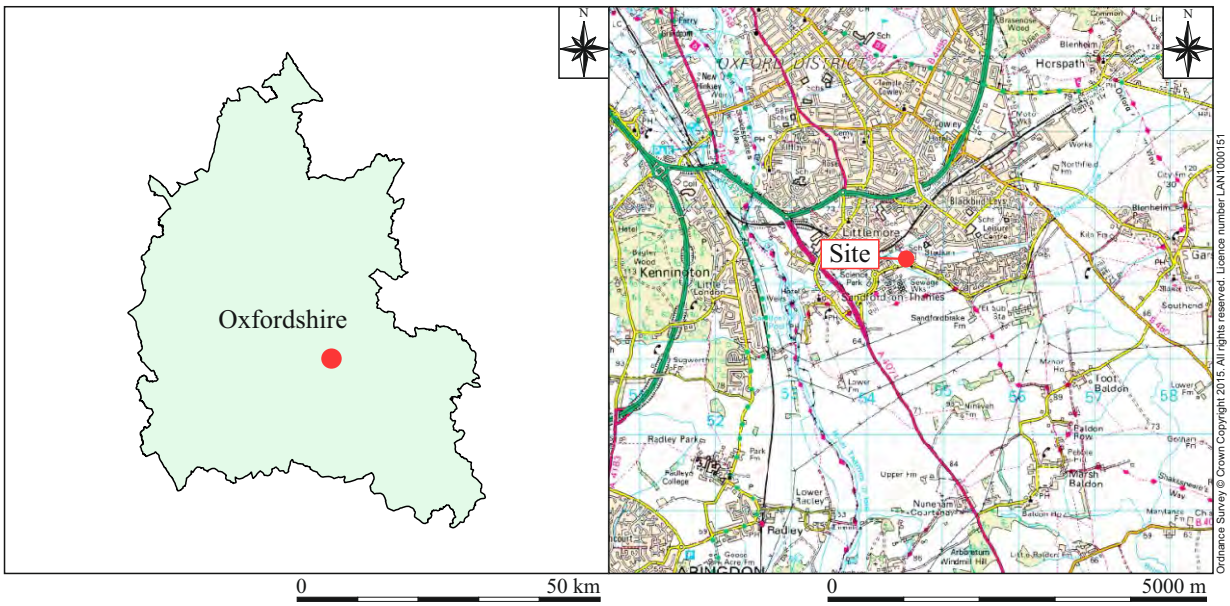
The geology of the site has been established from the British Geological Survey 1: 50,000 scale geological map, sheet 237 of the Thames (Oxford). The solid geology comprises the Beckley Sand Member part of the Corallian Group. The Beckley Sand comprises sand and calcareous sandstone. This is partially overlain by drift deposits of alluvium and peat in the location of the Northfield Brook.

1.1 Project Background

Oxford City Council has granted planning permission for the erection of three storey, 87 bed hotel, including dining room and bar, new access road and car parking for 87 cars (05/00287/FUL). Permission has been granted with the following condition (Condition 7) relating to archaeological works.

No development shall proceed until the developer has secured the implementation of a scheme of archaeological mitigation of the full engineering impact of the development, which may be achieved by redesign and/or by archaeological recording action in accordance with a written scheme of investigation, to be approved in writing in advance by the Local Planning Authority. The scheme will therefore include proposals for prior investigation of the church site to inform a sensitive foundation design, which may also inform a separate proposal for a linking block. The scheme will also include proposals for on-site interpretation of the medieval priory.

Reason: Because the development may have a damaging effect on known or suspected elements of the historic environment of the people of Oxford and their visitors, including remains of Littlemore Priory, its church, its cemetery, its conventional buildings and its farm.



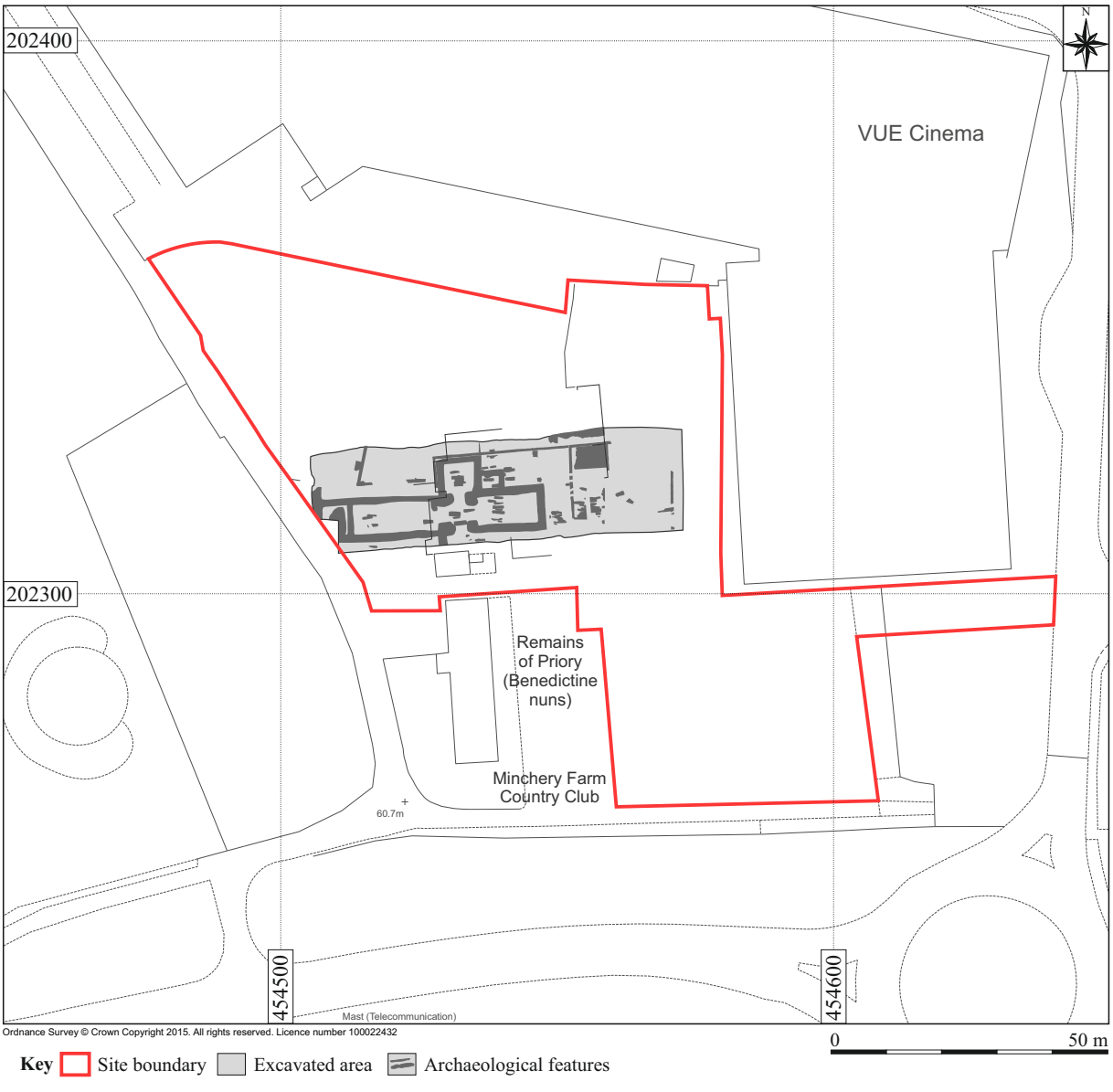


Figure 1: Site location

1.2 Archaeological and Historical Background

Pre-Priory (*by Stephen Yeates*)

A number of the early finds have come from the archaeological investigations on the Oxford Science Park. These investigations have raised certain issues about the area of the Littlemore Valley in general. The lowest deposit in the valley is the Beckley Sand Member, which at the base of the valley is covered by deposits of alluvium and peat. The next bedrock deposit is the Ampthill Clay Formation, which contains deposits of Head. To the south there are other bands of Kimmeridge Clay Formation and Portland Group limestone. These latter bedrock bands are further out from the valley base. Significant but sporadic activity has been noted on the Beckley Sand Member (Moore 2001, 169, fig 3). The earliest of these feature recognised is a possible palaeochannel identified in an evaluation at Oxford Science Park (SP 5398 0230). This lies near the Littlemore Brook. This palaeochanel included the remains of two Beaver Dams, the co-ordinates for which are listed for the palaeochannel generally.

Much of the earlier prehistoric activity across the Littlemore and Sandford-on-Thames area is sporadic in nature. Prehistoric flints were recovered from a site on Heyford Hill Lane (PRN 16030-MOX11245: SP 5320 0225). Mesolithic, Neolithic and Bronze Age flints have been found at the Oxford Science Park (EOX1578: SP 53900 02100). The Oxford Science Park also produced indications of other prehistoric activity (Moore 2001, 167-69). The earliest activity was that of a series of stake-holes on the edge of the alluvial deposits (SP 53838 021107). There was also a pit containing Beaker Pottery also on the site (SP 53796 01957).

From the Middle Iron Age human activity in the area of the Littlemore Brook becomes more prominent. A Middle Iron Age ditch has been detected on the Oxford Science Park (EOX2608: SP 5390 0212). The remains of an Iron Age pit were identified on the Oxford Science Park (PRN 16299-MOX12169: SP 5390 0210), along with Iron Age and Roman pottery. Late Iron Age and early Roman pot was recovered along with other pottery, flint and a piece of ceramic building material on Littlemore Park (EOX1954, SP 5372 0215, Williams 2006b).

Roman material has turned up from across the Littlemore area in a sporadic fashion. Some of this can clearly be seen relating to the Oxford Roman pottery industry which was a regional industry of national importance. An evaluation on Littlemore Park identified the remains of a Roman ditch and recovered 29 sherds of pottery (PRN MOX26652: SP 5369 0223, Gilbert and Hammond 2008). Other gullies and postholes may be contemporary with this feature, but were essentially undated. The remains of a Roman kiln and pottery were recovered from Littlemore Hospital (PRN 8017-MOX11237: SP 533 024). Roman finds were recovered from Heyford Hill Lane (PRN 16030-MOX11245: SP 5320 0225). Roman coins and pottery were recovered in Littlemore (PRN 1435-MOX11246: SP 5367 0254). Roman pottery has been recovered from Speedwell First School (PRN 16966-MOX12768: SP 53700 02550). A gully was located at Speedwell First School that contained an abraided Roman sherd (PRN 16967-MOX12771: SP 53650 02550). Roman kiln lining and furniture along with pottery of the 2nd century were identified in Armstrong Road (PRN 26121-MOX23492: SP 5353 0220, Williams 2007). To the west of Minchery Farm further Roman pottery was recovered in the Paddock (PRN 26248-MOX23665: SP 540 022; Williams 2006a; Jane Harrison per. com.), which is adjacent to the The Priory or Minchery Farm excavation reported here. Roman tile fragments were recovered from the Community Support Unit (EOX2580: SP 5338 0263).

Residual Roman finds were recovered from the Ashurst Clinic Site (EOX2606: SP 5331 0256).

Undated kilns were detected at the Littlemore Mental Health Centre (EOX3351: SP 5330 0234); they are probably of a Roman date.

Settlement and buildings of an early medieval date have been identified on the Oxford Science Park (PRN 16299-MOX12169: SP 5390 0210). The report accounts for 12 Sunken Features (Moore 2001, 168-76) that are aligned along the line of the valley of the Littlemore Brook. These features are often irregular in shape and some of them extremely shallow due to truncation by later ploughing and distortion by bioturbation. The features contain a mixture of Roman and early medieval (Anglo Saxon) pottery. Traditionally analysis has tended to attribute a 5th to 7th century AD date for these features. However, there are indications that nationally such structures were in use from the 1st century AD and that examples of these buildings have been excavated at Monkton in Kent dated to the 2nd century AD (Yeates 2012). This, therefore, means that if only Roman pottery is recovered from a Sunken Feature Building that it may be of an earlier date. However the majority of the Oxford Science Park buildings contained Anglo Saxon pottery. The remains of a further Sunken Featured Building (SFB) were identified in the grounds of Peers School in Littlemore on the north site of the Littlemore Brook (SP 5424 0289). The remains of a bone-pin beater was recovered along with early medieval pottery from this SFB. The interpretation of the activity in the structure was tentatively identified as being associated with textiles. Early medieval pottery has been recovered from the site of the Community Support Unit (EOX2580: SP 5338 0263). A further SFB was discovered at the Minchery Farm allotments. The finds from along Littlemore Brook have meant that this area has produced some of the more significant early medieval remains from the 5th to the 7th centuries AD in the Oxford area.

An assessment of the Early Medieval activity in the 5th to 7th centuries cannot necessarily see this area as a primary location of Anglo-Saxon settlement. Modern DNA analysis has found that only 5.5% of the population is derived from migration into Great Britain in the 4th and 5th centuries AD as stated by Oppenheimer and Sykes (Yeates 2012). This implies that 19 out of 20 people in those centuries were from lines of the population that continued to occupy the land. Such an analysis of this and other aspects of archaeology have thus meant new theoretical models are needed. Theories of long term settlement and territorial development have been proposed (Yeates 2006, 2008, 2012). The key location of earlier Roman settlement is not known precisely in the Oxford *parochia* but it is probable that a linear settlement may have existed along the Banbury Road out of north Oxford. The area around Littlemore in the Roman period was probably an area of land covered in trees; we can assume this from the analysis of the pottery industry. Kilns were primarily located where wood and clay were freely available. In the 7th to 8th century key power centres were recognised as developing, one under central Oxford, where a minster was established, and the second at Headington, which became the Lay Lord's centre with church. Although the Littlemore Brook area has produced a significant amount of early medieval pottery the designs of the buildings as Sunken Feature Buildings also have an implication for the nature of the settlement. As yet no non SFB dwellings have been recognised, for example rectangular structures that could form halls or long houses. SFBs are primarily considered in recent interpretation to be industrial buildings. This would imply that the valley was still being used as a probable peripheral area associated with industrial processes and that the labourers were probably commuting to the area from hamlets and farmsteads. In the case of the Oxford Science Park such rectangular structures, usually only recognised by a series of postholes, may have been ploughed away.

The activity at the Priory site, this report, identifies the earliest features on the site from the High medieval period, however, the general spread of earlier material in and around the site has to be noted as it helps to explain certain aspects of the site, such as a pre-High medieval soil horizon and the reason why fragmentary animal bones were recovered from the backfill of medieval graves.

Littlemore historically was associated with the parish of Saint Mary the Virgin in Oxford, and with the manor of Sandford-on-Thames. The name Sandford is first recorded in 1050 as Sandforda (Gelling 1953, i.186), and which has an etymology of sandy ford. The location of this ford could be on the Thames or on a crossing of the Littlemore Brook.

There are three entries in the Domesday Book concerning the estate at Sandford-on-Thames (Morris 1978, 9.3-5), all of which come under the holdings of the land of Saint Mary at Abingdon. The largest estate was classed as being 10 hides of which 4 hides were in lordship. Attached to this manor were 7 villagers, 4 smallholders, woodland and two fisheries. In 1086 it was held by Wenric and in 1066 Blackman the Priest. The second largest estate was of 4 hides, with three villagers and four smallholders. This estate was also held from the abbey by Wenric. The last manor was a hide of land held from the abbot by Robert and Roger. In 1066 this had been held by Siward. It is possible that one of these manors or unnamed smallholdings could be associated with Littlemore.

History of Littlemore Priory (*by Stephen Yeates*)

Historical accounts indicate that the Priory of Sandford as it was originally called was established by Robert de Sandford, and was granted by him land at Cherley (VCH 1907, 75-77). The initial indications of the charter survive in a recorded form as part of a later visitation (Hamilton Thompson 1914, 157). Here the account states that:

Littlemore Saint Mary, Saint Nicholas and Saint Edmund in a detached portion of the parish of Saint Mary the Virgin locally in Cuddeston deanery. Robert de Sandford, temp. Stephen. The site being described as a piece of pasture in the manor of Sandford (Bullingdon Hundred) known as Cherley.

It is recognised that Robert was of a legal full age in 1111 (VCH 1907, 75-77), and that this leads to the conclusion that the initial church was constructed in or before the reign of Stephen (1135-1154). The initial surviving charter refers to the church of Saint Mary, Saint Nicholas and Saint Edmund, and to land at Cherley. There is also reference to the church being established in the manor of Sandford and in the parish of Saint Mary the Virgin, a church located in Oxford. This detail would imply that the later parish of Sandford-on-Thames may have originated as part of the parish of Saint Mary, Oxford.

We should here, however, just consider certain aspects of the establishment of the church of Saint Mary, Oxford, and aspects of its history, as these may illuminate certain historical associations noted at Littlemore later on. The church of Saint Mary, Oxford, was in existence in 1086 and at that time belonged to an estate held by Aubrey, Earl of Northumbria (VCH 1979, 369-412). This estate is often associated with Iffley, but may properly be associated more with Littlemore. On the death of Aubrey (d. 1086) the advowson of the church passed to the crown, being granted in 1326 to Oriel College. The church then became the University Church and was the location where congregation met. Parts of Littlemore, including the

location of Littlemore Priory, formed the parish of Saint Mary the Virgin. The parish of Saint Mary is known to have included 16 yardlands and the rector's 1 acre of glebe in 1086. As a royal church Saint Mary's would presumably have canons or priests rather than monks.

Anthony Wood in the 17th century discussed certain further aspects of the founding of Littlemore nunnery (Clark 1891, 404), but in his accounts there were some attempts to place the foundation of the priory before the reign of Stephen, though on not very secure analysis.

The house or nunnery at or by Littlemore on Coun. Oxon, of the order of Benedict, dedicated to the Virgin Mary and Saint Nicholas. Maud, the wife of King Henry I was sometimes a nun of the order of Saint Benet. Whom I have often thought to have been foundress of this little priory.

The dedications to Saint Mary the Virgin at Littlemore may ultimately be a recognition of Littlemore's early incorporation in the parish of the Oxford church so named, as its mother church. Wood also quotes Turner and Coxe's Calendar of Charters and Rolls in the Bodleian (Clark 1891, 404).

I have a charter by me of one Roger de Thoeni written in a large legible character wher by he gives 20 acres of land to these nuns. It contains but three lines and seems to be written before Maud's time the wife of King Stephen; nay, Mr. John Theyer of Glocestershire hath told me upon perusal of it that 'twas written much about the Conquest'.

The church though dedicated originally to three saints is later associated with Saint Nicholas only (VCH 1907, 75-77). The earliest identified prioress was Maud and she is associated with this role in *c*. 1150. Any confusion in these antiquaries' minds may be made due to an attempt to associate the prioress Maud with a more famous Maud or Matilda from the 12th century.

In 1180-90 the Prioress of Littlemore is involved in an agreement over holdings in the parish of Saint Michael South in Oxford (Wigram 1894, i.no.201). Payments are to be made to the church on Michaelmas and Lady-day. Two rental agreements occur in the parish of Saint Michael Australis in the documents surviving for the Cartulary of Saint John the Baptist dated 1384 (Salter 1917, iii.202) and 1385 (Salter 1917, iii.210), however, the exact association between these documents is not known and it cannot be determined if they are associated with the same location. The church of Saint Michael by the South Gate is known to have existed from 1122 to 1535, and was part of the holdings of Saint Frideswide's Priory (VCH 1979, 369-412). It was demolished in 1525 to make way for the construction of the Christchurch Quadrangle and the parish was added to that of Saint Aldates. This may imply that the Littlemore tenement in the parish of Saint Michael South was located under the Christchurch Quadrangle and had to be acquired to enable the construction of the new college.

In the 12th century and beginning of the 13th century the Priory is alternatively known as that of Sandford or Littlemore (VCH 1907, 75-77). At some time in the 13th century the descriptions refer only to the Priory of Littlemore.

A prioress simply known by her first name Amice is mentioned in 1219 and after 1221 (VCH 1907, 75-77). It is during the tenure of Amice that the holdings of the Priory become enhanced as the church of Sandford is appropriated to the Priory by 1220 (VCH 1957, 267-

275). It is thus apparent that Littlemore was historically founded in the parish of Saint Mary the Virgin, Oxford, and that this ecclesiastical association would have incorporated land in Sandford Manor. This implies two possible historical developments for Sandford Church. The first that the Manor of Sandford was part of the parish of Saint Mary the Virgin, Oxford, and that Sandford church was founded as a chapel in that parish. Or secondly, that the Manor of Sandford had been in Saint Mary's parish and that the establishment of that church created a new arrangement in which Sandford was constructed as an independent church, but that the independence arrangement no longer survives in a documented form. This arrangement is significant because the church of Saint Mary, Oxford, and the church at Sandford were presumably churches with burial rights or cure of souls and it is presumably this association with the latter that enables the Priory to accept burials and receive dues and oblations from them. This thus implies the creation of a cemetery at the priory from this date.

In 1220-2 it is recognised that Henry III paid 40s a year for a boarderer (prebendaria) to stop at the Priory (VCH 1907, 75-77). The use of the term prebendary here is of interest in that the phrase is usually used in association with a college of priests, and the inference here is that the church has an association with a collegiate church of canons that has not previously been recognised. A number of these collegiate churches were established on sites of earlier minsters or associated with minster churches. The most likely association here is with the church of Saint Mary the Virgin in Oxford (VCH 1979, 369-412). This was a royal church from 1086 to 1326.

The complicated ecclesiastical arrangements here probably indicate that Sandford Parish was historically part of Saint Frideswides's parochia at a very early date, and that this became part of Saint Mary's parish prior to the establishment of Sandford church.

Isabel of Hendred was known to have been elected as prioress in 1221 and that it is noted that Thomas de Sandford gave his consent (Phillimore 1913, 32). During the tenure of Hugh de Wells bishopric (1209-1235) it is known that the Priory of Littlemore (Sandford) where in dispute over Puttenham Church (Phillimore 1912, 44).

A Cirographum of Littlemore was dated to 1223/4 (Salter 1934, iv.73).

The monastery of Littlemore was associated with Garsingdon in an undated charter (Salter 1934, iv.365 no.327), but possibly of *c*. 1230. The surviving details of the priories holding of land in this area are found on those of a bordering plot of land whose deeds survive as part of the *Oseney* cartulary, where Littlemore's holdings are quoted as part of the definition of the land holding.

In 1232 permission was granted by the king to send a sumpter horse twice a day into Shotover Forest (VCH 1907, 75-77). One can see this either as a means of collecting firewood, or alternatively this could concern timber for construction. If the latter one would expect this to be more evident, specifying what size timbers could be taken.

In 1239 a member of the Sandford family gifted the Priory to the Knights Templar's (VCH 1907, 75). The Templers were a movement of international importance across Europe and the Near East, and a series of land, manorial and church grants were catalogued to them in Oxfordshire from 1136 (VCH 1907, 106-107). In the year 1136 Matilda granted the Templars a manor at Cowley. Some 20 years after that grant, *c.* 1156 a grant of 7 hides was made at Merton. By 1153 the manor of Sibford Ferris and the chapel of Sibford Gower had been

acquired. In 1142 the manor of Hensington was granted. Bradwell manor, 5 hides, a church, and a further number of other gifts were granted in 1185. In *c*. 1200 further land was acquired at Littlemore and Wapsgrove, and in 1225 two manors were acquired in Horspath.

The initial grant of land at Sandford concerned a grant to the Cowley Preceptory of 4 acres in 1150 (VCH 1957, 267-75). In or before 1219 a mill (Leys 1938, nos 7-8), a fishery or piscaria (Leys 1938, no 11) and meadowland (Leys 1938, no 12) were granted to the Templars. Also at this time part of an island was granted in the Thames (Leys 1938, no 10). An earlier grant in the cartulary indicates that Jordan of Sandford had previously granted the mill at Sandford to William the miller c 1170 (Leys 1938, no 15). The largest grant that the Templars obtained was for the manor at Sandford-on-Thames from Thomas, son of Thomas de Sandford, in 1239-40 (Leys 1938, no 2). This grant appears to have bestowed upon them Blewbury Church.

In 1245 a bull issued by Pope innocent appears to indicate the Priory church is rebuilt or at least reworked. The bull states "*as the nuns were unable by their own resources to complete the rebuilding of their church, he granted during the next three years an indulgence of ten days to all who aided the work*" (VCH 1907, 75).

In 1247 there was an agreement between the rector of Saint Michael South and the prioress of Littlemore over the tithes of Stockwell (Wigram 1894, i.no.214). This implies that the priory held land at Stockwell in that parish, or at least had some type of arrangement to have access to the tithes.

In 1249 x 1255 there is a reference to Thomas, son of Walter, holding land in the parish of Saint Thomas the Martyr for which he had to pay the prioress of Littlemore 12d (Amt 2014, no.588).

The Sandford Cartulary records that in c. 1250 a payment of 10s yearly is made for sustaining and burning a lamp in the Priory (Leys 1938, 110-111).

In 1259 William Burgeis granted to Littlemore a rent of a mark secured upon his properties in All Saints and Saint Peter in the East (Salter 1929, i.456 no.504).

In 1260 Abbot William Newbury of Abingdon resigned after a visitation from the bishop of Salisbury, Giles of Bridport, as he was said to have a wife among the nuns of Littlemore Priory (Lambrick and Slade 1992, lv, 260). The account occurs in a lost chronicle, and survives with only fragmentary references. The account points to the later problems that caused the dissolution of the nunnery to be part of a long term problem. This may not necessarily account for deep seated associations at the priory but lapses for individual nuns.

In 1266-1267 there are indications that the Priory of *Litelmore* (priorisse and conventus) held land in *Catestrette* in the parish of *beate Marie*, Oxford (Salter 1914, i.438 no.438). In June 26 1304 there is a rent from the Magister Adam de Houston to the Hospital of Saint John for the tenement next to the tenement of the prioress of *Lyttelmore* (Salter 1914, i.437-438 no.437). It has thus been determined that the prioress of Littlemore held the 10th tenement in Cat Street and that the 11th belonged to the hospital. This street has always been known by this name and lies on the east side of Saint Mary the Virgin church, and lies in that parish. Due to the proximity of the property owned by the Hospital of Saint John and the use of the name Cattestret it is evident that the following references all refer to the same property. These

texts are dated to 1350 (Salter 1914, i.442 no.442), 1360 (Salter 1914, i.443 no.443), 1360 (Salter 1914, i.444 no.446) and 1370 (Salter 1914, i.444-445 no.447).

There are four or five prioresses recognised at Littlemore from the time that the priory became associated with the Templars and 1293 (VCH 1907, 75-77). There is reference to Isabel de Turribus in 1265, who died in 1266. Amabila de Saunford was mother from 1266 to 1274. Amice de Saunford was prioress from 1274 to 1277. In 1277 there is a reference to a Maud as prioress, but the name is unqualified. The following reference to the prioress is also to a Maud of Gloucester who died in 1293. One can either treat these Maud references to two or one person, and on our present knowledge either may be correct.

The *Rotuli Hundredarium* of 1279 has a further reference to land holdings of the Prioress of Littlemore in the parish of Garsington. These had been obtained from the Knights Choche and Sumers, the former giving pasture land and the latter 10 acres (VCH 1957, 134-156). Other holdings in Garsington are noted at this time, as the Priory held a virgate in what was the Manor of Miles Crispin, and also a toft and 12 acres in Louches manor.

In 1281 there is a deed associated with Ralf Cirurgiaus and a property on the west side of Cat Street, who was a tenant of the priory of Littlemore (Salter 1929, i.308). John of Christchurch before 1288 occupied the house next on the south. This land is thought to have become part of the property of Littlemore.

Emma de Waneting was elected as prioress in 1293 (VCH 1907, 75-77). A year after her election in 1294 it is noted in Bishop Sutton's Register that there was a commission to the Abbot of *Oseney* to hear confessions from the nuns at Littlemore (Hill 1958, 191-192). This call for confessions at Littlemore Priory by the Bishop of Lincoln through authorised commissioners does appear to have parallels in later times in England and Wales. During the dissolution of the monasteries Thomas Cromwell sent his Erasmin priests around the country to take confessions from the monastic houses. One of their chief concerns was sexual laxity, which ultimately led to the idea that priests could marry.

During Emma's tenure as prioress there is a further indication of activities permitted at the nunnery. In 1296 there is an arrangement for cure of souls in a number of Oxfordshire parishes (Hill 1965, 134). In the list is mentioned Littlemore Priory with its appropriated churches of Sandford and Woodperry. It would certainly seem to be the case that Littlemore Priory was a church without a parish, but that it obtained access to cure of souls through appropriation of these churches.

The names of one prioresses is known for the monastery in the early 14th century (VCH 1907, 75-77). From 1303 to 1326 Alicia (Alice) de Abendon is noted in that capacity. Alicia the prioress of *Litlemor* in 1303 leased *Paschalle* in School Street to John de Warham (Salter 1929, i.223 no.233). School Street no longer exists but is known to have been the location of the early school rooms of the University and was located under part of the Old Bodleian Library (Gelling 1953, i.43), and was located in the parish of Saint Mary. The hall was named after Thomas Paske who owned the hall in 1253 (Salter 1929, i.308).

It was in 1239 that the manor of Sandford-on-Thames passed to the Knights Templars, and because of this the Priory at Littlemore came under the control of that order. The Templars were suppressed in 1308 (VCH 1907, 106-107) and it is from this date that a number of past occupants of the preceptory at Sandford are recognised. The preceptor was called William

Sautre, who was charged in the ensuing court cases. William de Warrewyk is recognised as a priest, and Richard de Colingham a brethren, of which both were charged or were witnesses in the following court cases. Further brethren named are Robert de Waus, Michael de Baskevile, William de Chalesey and Walter de Rokele. A Ralph de Malton was noted as being 26 years in chapel at Cowley and John de Dokesworke a 'claviger' of Cowley. Robert de Sancto Justo of Beauvais Diocese who was admitted to Sandford Preceptory spoke against the establishment, and Thomas de Wakington in favour. The Templars were dissolved in 1312 (VCH 1957, 267-75), by the King of France with religious support. The land held by the Templars at this time is believed to have passed to the Knights Hospitallers, though this is only evident at a later date, and it is possibly this alteration that may have had a long term effect on the Priory.

The Cartulary of *Oseney* contains a rental for the year 1324 (Salter 1931, iii.148, iii.162). This indicates that Saint Edmund's Hall was rented by a nun from Littlemore Priory. The second rental reference has the phrase written down and the same payment of viiis is mentioned, however, the second reference is crossed through. This is interpreted as being an indication that the nun who rented this property from Oseney died, however, the agreement may simply mean the agreement ended.

The earliest known reference to the Hospitallers' association with the Sandford Preceptory is in 1325 (VCH 1957, 267-75). This association presumably means that the Templars holding of the Priory of Littlemore did pass to them. The cartulary of Sandford, which survives in some form, must have passed to the Hospitallers and they must have continued using the document as a historical reference (Leys 1938, vii).

In 1335 prioress Agatha of *Litlemor* made quitclaims to Richard Tekne a rent of 40s (Salter 1929, i.306 no.348). This rental was secured upon two tenements in Oxford. These tenements were located in the parish of Saint Peter in the East.

On the 8th April 1338 a licence was granted to Brother Pateshale to hear the confessions at the priories of Godstow, Littlemore and Studley (Bennett 2010, xxvii, nos.4684, 4712, 4788). This was part of a series of penitentiaries at this time. There was a licence given to brother Adam de Cort, a Franciscan Friar, on the 8th September 1338 to hear confessions of the nuns of Littlemore and Stodley, even in cases reserved to the bishop. There was a further licence to Ralph de Pateshal given to hear confessions at Godstow, Littlemore and Studley, even those reserved for the bishop. This was to take place one year later.

In 1339 the prioress of Littlemore is listed in an agreement respecting certain rents and arrears belonging to Saint Frideswide (Wigram 1894, i.no.366). These payments are part of the parish of Saint Peter-le-Bailey.

Two prioresses are recorded for the year 1340 (VCH 1907, 75-77). The prioress Agatha de Oxford died in 1340. She was succeeded from Maud de la Rye from 1340.

In the 14th and 15th centuries there are a number of associated grants and leases with Boster Hall. These grants are indicative of the holding of Sheld Hall by Littlemore Priory through the this time period, which we learn from a later grant is the neighbouring property and is in their possession. Boster Hall has been identified as being located at 86-87 High Street in the parish of Saint Peter in the East (Salter 1914, i.164-165). The Prioress and Convent are mentioned in a text relating to a sale of Borstalle Hall between *Sibille Doclyntone* to *William*

de Leobury in 1336 (Salter 1914, i.158 no.161). The convent and prioress were also mentioned in a grant between *Peter de Groete, civis Wygorniensis*, and the trustees in 1349 over Boster Hall (Salter 1914, i.162 no.166), and between the trustees of *Peter de Groete* and the trustees of the Hospital of Saint John in 1349 concerning the same property (Salter 1914, i.163 no.167). In 1370 there is a grant from the trustees of *Borstalle* Hall to the Hospital of Saint John in which the prioress and convent of Littlemore are mentioned again in the boundary arrangements (Salter 1914, i.163-164 no.168). The Cartulary of the Hospital of Saint John the Baptist has an account of the Prioress of Littlemore who grants to the hospital a portion of Sheld Hall that was adjacent to Borstalle Hall in December 1374 (Salter 1914, i.164-165 no.169). The prioress is noted as *Matill' Paunesfot* and the grant still contains the priory seal. The reason that the Prioress and Convent are mentioned here is that they hold the neighbouring property of Sheld Hall. The Prioress granted a lease on a property next to Boster Hall on August 15 1402 (Salter 1929, i.308 no.351), presumably Sheld Hall. The final deed that mentions the ownership of this property belongs to Magdalen Hall is dated 1448 and concerns the properties of Boster Hall, Hare Hall and Sarson Head (Salter 1914, i.248 no.252). The convent and prioress of Littlemore are named as holding one of the neighbouring properties, which is presumably Sheld Hall. A further document dated 1457 mentions a rent from Magdalen Hall (Salter 1914, i.265 no.265), but does not specifically tie it to this group of properties although one must consider this highly likely.

The appointment of Sister Matilda de la Rye, nun of Littlemoor as prioress is recorded in the register of Henry Burghersh on the 6th April 1340 (Bennett 2003, 97 no.1938). This was brought about by the death of Sister Agatha de Oxon. The election of Sister Matilda was voluntarily renounced both by Sister Matilda herself and by the sub-prioress and convent in person of William de la Wik their proctor. Maud de la Rye is recognised as the prioress in 1343 also (VCH 1907, 75-77), so it is presumed that her renouncement was only temporary and that she was later reinstated.

From November 1348 to June 1349 Oxford was stalked by the Black Death (VCH 1979, 3-73). The analysis of this period has been deduced from the deposition and survival of wills amongst the Oxford elite. In this period some 57 wills survive in xford records and some six for the town from elsewhere, this contrasts with other years in which only three or four survive. The mortality rate was at its highest in 1349 as in January there are 10 wills and in April there are 16 wills, with this trailing off in June to two. The lay victims of the Black Death included two current mayors: Richard Selwood in April and Richard Cary in June. The picture is less easy to demonstrate amongst the religious establishment, but amongst the 14 incumbent parish priests in Oxford it is known that 7 were replaced between April and December 1349. Of these 7 it is known that 5 were replaced due to deaths. Of the Colleges and Religious houses it is thought that the death rate was even lower, due to better living conditions. However, it is known that the abbess of Godstow, the prioress of Littlemore, two University Chancellors, and two provosts at Oriel College died. In these cases death is not specifically stated as being by the Black Death but this is the most likely cause. That a prioress died in 1349 is surmised because in that year Asselina Bulbek is noted as being chosen as the prioress of Littlemore (VCH 1907, 75-77).

In 1374 and 1392 *Maud Paunesfot* is named as the prioress (VCH 1907, 75-77). The Cartulary of the Hospital of Saint John the Baptist has an account of the *Matill' Paunesfot* Prioress of Littlemore in Dec 1374 (Salter 1914, i.164-165 no.169). The Cartulary of *Oseney* Abbey contains a lease by Prioress *Matildem* of *Litilmora* in 1379 (Salter 1929, i.307 no.350).

The Cartulary of *Oseney* Abbey of 1379 that contains the lease by Prioress *Matildem* of *Litilmora* refers to two shops next to Horseman Lane in 1379 (Salter 1929, i.307 no.350), located in the parish of Saint Peter in the East.

The Cartulary of the Hospital of Saint John the Baptist contains a series of rentals dated to the late 14th century. The prioress of Lytelmore is mentioned along with the same phrase on two occasions. These are in 1384 (Salter 1917, iii.202) and 1385 (Salter 1917, iii.210) and in both accounts there is reference to the *aula Mariol* and *Margareta Underwalles*.

In the early part of the 15th century named prioresses include Joan in 1403 (VCH 1907, 75-77), and also Agnes *Pydyngtone* (Piddington) in named in 1409 and 1415 (Hamilton Thompson 1914, 157).

The Prioress of Littlemore granted to John Bawdewyn a lease of a shop in All Saints Parish in 1403 (Salter 1929, i.434 no.501).

In 1427-8 the will of a Thomas Mokking stated a desire to be buried at the monastery and also made a number of statements concerning the nunnery (Weaver and Bearwood 1958, 13-14; Pantin 1971, 24). These statements indicate a number of factors about the site, its organisation and peoples. Not a full statement of the will is given here, but the statements that are specifically significant to Littlemore Priory (Weaver and Bearwood 1958, 13-14).

London 1 October 1427 Thomas Moking, clerk, citizen of London, son of Thomas Mokking, fishmonger of London. To be buried in the chapel of the apostles Peter and Paul in the church of Saint Nicholas of Litilmore, alias Saunford, in the diocese of Lincoln of the order of Saint Benedict, and I give the same for my burial.
To the prioress of the house of the nuns of Litilmore 20s sterling and to every other nun of the said house 13s 4d sterling to pray for the souls of my parents, Thomas and Alice, and for my soul. To Dame Joan Dalton, nun of Godstow, 13s 4d to pray for my soul.
To keep my anniversary every year in the Priory of Litilmore 10 marks sterling, the said 10 marks to be paid in a chest with three keys, where of the sub-prioress shall have one, the sacristan and the custodian of the refectory the others. The same three persons to take their sisters to observe my anniversary faithfully. Each nun present at my funeral and at mass chanting with music to have 4d, and the same to the priest celebrating the same day.
To Dame Margaret Maynard, nun of Litilmore £24 sterling and twelve silver spoons and my two pieces of silver with covers for life, and after her death one of the said pieces sterling upon three lions, the letter T carved on the cover, to remain in the possession of the sub-prioress of Litilmore and her successors.
My great maser, at the bottom of which emprinted the passion of Saint Thomas the Martyr, to the refectory of Litilmore to remain there forever and to be in no way alienated under penalty of the Greater excommunication.
To the said Dame Margaret Maynard the mase in her keeping, with remainder after her death to the refectory of Litilmore, and one bed, price 20s, to be bought and provided for her by my executors.
To paint the images I have had made on the high altar at Litilmore 40s.
To the paving of the chapel of the apostles Peter and Paul and in the chapel of the Holy Trinity and the retro-choir and Chapter House of Litlmore and cloister there 5 marks.
For a chaplain for one year to celebrate in the priory church of Litilmore for the soul of Master Thomas Weston, Doctor of Laws, and for my life £4.

On the day of my north's mind, the nuns of Litilmore together with the priests and the poor to be given refreshment, and for this I give 4 marks. For the repair of the lavatorium in the cloister of Litilmore, together with the fistulisalias clauibus which will be founded a fonte within my chest which is in the kitchen, 20s.
To buy a breviary for the church of Saint Andrew in Saunford to pray for my soul and the souls of my parents there 40s that the qurrel between the parishioners of Samford and the prioress of Litilmore nunery be forever settled.
For oil to be bought to supply laps before Saint Lawrence and the high altar and in the choir and dormitory of Litilmore 6s 8d.
To the house of Litilmore for a set of vestments £10.
To Dame Margaret Maynard my amber beads.
My two great basins with two ewers to the house of Litilmore, Dame Margaret to have the keeping of the same for life, and after her death to remain forever in the refectory of Litilmore to wash the feet of the nuns of that house in festo ane Domini.
First Codici
To be buried in the monastery of Litilmore.
To Dame Margeret Mainard, nun, my best bed with all there to belonging.

This account provides indications that the nunnery contained the following a choir and retro-choir, a chapter house, two chapels and a cloister with associated lavatory. There are also other aspects that are apparent in the will, one is that Thomas Mokking was not married, but he leaves significant amounts of his material culture to Dame Margaret Maynard. The specific relationship between the two is not known.

The prioress named in 1445 and 1457 was Alice Wakeley or Wakelyn (Hamilton Thompson 1914, 157; Hamilton Thompson 1918, 217-218; VCH 1907, 75-77). The period of her tenure as prioress coincided with the visitation by Dr John Derby commissary of the bishop in June 1445 who noted that there were 7 nuns. The remainder of these nuns named include Agnes Pidyngtone the sub-prioress, Agnes Marcham who refused to make public profession a nun for 13 years, Alice Byllesdone, Joan Maynard whom Agnes found quarrelsome, Isabel Sydnale, and Christine Codherde. Derby described the dormitory as "*so ruinous the nuns were afraid to sleep there*" and "*that the nuns were sleeping two in a bed, with even the prioress having to share her bed*". It was Isabel Sydnale and Christine Codherde who were named as sharing the bed with the sub-prioress with Agnes Pidyngtone. This provides us with the account of there being a dormitory at the nunnery. Other references are that they were eating flesh every day and that a Cistercian monk and secular clerk regularly visited the prioress for drinks. There were lay women who boarded at the nunnery. Those named as boarderers was Agnes the serving woman of Robert Fitz Elys who paid 8d a week. The daughter of John Fitz Aleyn is also named and also Ingram Warlards daughters who paid 4d as boarderers. A Cistercian monk of Rievaulx, was a student at Oxford, who has common access to the priory. John Herars, master in arts, scholar of Oxford, kinsman of the prioress has access to the priory. Sir John Somerset, parish chaplain of Sandford boards with the prioress, has common and other access to the checker of the said Joan Maynard and there – by himself and is with the same Joan by herself in manner suspect. An injunction was introduced on secular persons, especially Oxford scholars, from visiting the convent. The nuns were to sleep in separate beds. The nuns were also not allowed to speak to secular persons, especially Johan Maynard. The nuns were charged under pain of cursing and command of fasting and the account was dated at Oseney. In 1447 there was a legacy from a clerk at Oxford to repair the nunnery.

The second account of the prioress Aliciam Wakeleyne is in 1457 when she gives a receipt to the president of Magdalen Hall for a rent of a tenement by the Hall (Salter 1914, i.265 no.265). The location of this property is not given but it is in Saint Peter in the East parish and probably refers to Sheld Hall.

The name of a further late 15th century prioress is known (VCH 1907, 75-77). Christina is mentioned in this capacity in 1462 and 1489. A deed of Corpus Christi College in Oxford dated to 1472 indicates that Minchin Court on the boundary of Stanton Saint John and Forest Hill was in the late medieval period a holding of Littlemore Priory (VCH 1957, 282-293). The Cartulary of *Oseney* Abbey contains a grant by Cristinam prioress of Littlemore to Henry Mychegood a lease of a site of a shop in 1482 (Salter 1929, i.435 no.503). Further reference to this prioress occurs in a deed associated with the foundation of Magdalen dated to 1483 (Salter 1915, ii.449 no.972). The text is a will or concerns a will where William Cambir, the executor, of Richard Vise, a parson of Falley (Fawley) in Hampshire binds himself to give certain goods to the prioress of Littlemore.

Cristyane Shrevenam priores of the houce of sente Nicholas of Lytilmore in the dioscyce of Lyncolne on that other party.
Grantithe 1 pece stondyng upon iii liones of silver gilte, the coveyng of same silver with a crowne abouth' gilte, the top enamelled blew, to de delivered ad vi sponys of silver unto her at soche tyne as the saide pece and sponys com unto the honds of the saide William; and at the day of the delivery of the said pece then the priores to delyver unto the said William or to his assynes xxxiii s iiii d to the which the partyes chanchably hath set to ther selis; yeven the yere above saide.

A Prioress of *Litilmore* is associated with a lease by Oseney Abbey of four shops and cellars in All Saints Parish to Richard Kent for a term of 81 years in August 1490 (Salter 1929, i.422 no.484).

A will of William Medyn dated 1499 stated (Weaver and Beardwood 1958, 66).

To the Nonry howse of Litlemoer 10s.

It is known from a Conveyance of Merton College dated 1549 that Saint Alban Hall was a medieval holding of Littlemore Priory (Julian Reid per. Com.).

Littlemore Priory is mentioned in rentals of the early 16th century, the rolls are dated 1507-1520, when it pays iis for the tithes of a meadow at Snelleshey to Oseney Abbey (Salter 1936, vi.243). The occupant was Richard who paid a rent.

The last prioress was Katherine Wells who is noted in this position in 1507-1518 (VCH 1907, 75-77).

A will of 1509-(10) was made by Sir John Cottesmore (Weaver and Beardwood 1958, 100).

To the prioresse and Convent of Lytelmore in the contie of Oxon £3 6s 8d to the entent that they and their successors shall especially pray for my soule unde this fourne that foloweth thatys to wete that they and their successors shall yerely in perpetuall the day of my decesse in their curche and monastery of Seynt Nicholas of Litellmore aforesaid kepe myne anniversary evyn Placebo and Dirige, and upon the morowe masse, commen orccions and

other devoute cottettes and other prayers to the same moost necessary and requisite.

The visitations that took place in the years 1517 and 1518 resulted in the eventual dissolution of the monastery in 1525 (Hamilton Thompson 1936, lxxvi-lxxviii; Hamilton Thompson 1940, 8-10; VCH 1907, 75-77). On 17th June 1517 there was a visitation by *Magistrum Edmundum Horde* (Edmund Horde) the commissary of the bishop and Richard Rostun who found six nuns at the nunnery. The nuns named are sisters *Katerina Wellys* (Katherine Wells), Juliana *Bechaump* (Beauchamp), Anne Willye, and Juliana, *Johanna* (Jane) and Elizabeth Wynter. Katherine Wells had requested the other nuns with threats to provide statements that all was well. However, Horde's complaints eventually focused on the following aspects: the buildings were in decay, the silver had been pawned off; the nuns were without victuals, habits and customary allowances. The prioress leased tenements under the common seal and pocketed the finds. There was a situation where the monastery prioress was in disrepute and intrigue with a chaplain Richard Hewes. He visited two or three times a year and was expected next on 1st August. The prioress had an illegitimate daughter with Richard Hewes, a priest from Kent. Katherine was found to have given possessions of the priory to Richard for her daughter's dowry amongst which was a silver cup valued at 5 marks. It was revealed that the daughter of the prioress had been eight years old when she died. A second nun at the monastery had a child by a man from Oxford. Julian Wynter was defamed with John Wikisley of Oxford. The prioress was called to account on these charges and then admitted to them. There was also a novice nun about this time that left the nunnery and published her accounts abroad.

The bishop *Doctorem Domini Willelmi Atwater* (William Atwater) (1514-1521) visited the Priory at Littlemore on Thursday 2nd September 1518 (Hamilton Thompson 1936, lxxvi-lxxviii; Hamilton Thompson 1938, 224; Hamilton Thompson 1940, 11-12). In this account it was found that the prioress sold wood in the Priory Wood. Anne Willye and the Wynters told tales to the Commissary and were threatened. Julian Wynter had fallen into sin with a male companion. Elizabeth Wynter was playing tom boy with lads in the cloisters. This lead to the burning of the stocks and barred the prioress out of the parlour. Julian Beauchamp confessed to the commissary about the terrorising of the convent by the prioress. The prioress was made responsible by Dr Horde.

In 1524 it was asserted by the Bishop that the Priory of Littlemore should be dissolved (Hamilton Thompson 1938, lxxvi-lxxviii; VCH 1907, 75-77). This occurred in February 1525. The priory certainly had a somewhat controversial history. Eileen Power (1922) in her book Medieval English Nunneries describes the Priory as *"in such grave disorder that it might justly be described as one of the worst nunneries of which records survived"* and this was *"largely due to an especially bad prioress, Katherine Wells"*. There were other aspects to the dissolution of the monastery that has a political overtone that may colour some of the aspects of the documentation of the late visitation. Littlemore Priory was not the only priory that was dissolved at this time, the other was Saint Frideswide's Priory, and both were put in this position for the founding of Christchurch College, or as it was called earlier Cardinal College (Clark 1892, 113). The College was not properly established at Wolsey's demise and thus at this time the properties came to the King. Thomas Wolsey has his origins in the diocese of Lincoln, although he did move on from this association. He was Dean of Lincoln 1509-1514, Bishop of Lincoln 1514-1515, Archbishop of York (1515-1530), and also held Bath and Wells, Durham and Winchester at various times at while Archbishop.

The Hospitallers were themselves dissolved in 1524 after rejecting Henry VIII claim of Royal

supremacy (VCH 1957, 267-75). Sandford Preceptory passed to Wolsey and on his death in 1530 to the king (Henry VIII). This adds to the broader political organisation that underlies the dissolution of Littlemore Priory, the Sandford Preceptory and saint Frideswide's.

Post-Priory History (*by Stephen Yeates and Paul Murray*)

Littlemore Priory when it was dissolved with the required procedures passed in 1525 to Cardinal Wolsey and his Cardinal College (Clark 1892, 113; Pantin 1971, 25). As there is an underlying political imperative driven by Cardinal Wolsey for the closure and sequestration of revenue from a number of monasteries and priories at this time, it is worth speculating that some of the charges here may be engineered to a greater or lesser extent by Wolsey and other members of the higher church establishment. Development on Cardinal College ceased in 1529 along with Wolsey's demise. The college was not properly established in 1529 and thus these properties passed to the king at this time. What is evident with this process is that pre the major Dissolution of the Monasteries from the catalogue in the Valor Ecclesiastica created 1535-1536 to 1541-1542, the formal date of most monasteries demise, a trend or fashion had been created concerning the redistribution of wealth from religious establishments to individuals of a wealthy background.

A charter associated with Saint Frideswide's Cartulary (Cardinal or Christchurch College), derived from writes of suppression by Thomas Cromwell, lists the priory of Littlemore as one of the suppressed religious houses being held by them in 1537 (Wigram 1894, i.no.96). The other monasteries listed include Frideswide, Daventry, Tickford and Canwall.

In the mid-16th century there are three charters which are associated with the acquisition of Saint Alban's Hall by Merton College (Julian Reid Merton Archivist per. com). The first of these documents is *an acknowledgement dated 3 December 1548, by Sir John Williams, knight, of the receipt of £10 from Dr Rainoldes, Warden of Merton College, and the fellows of the same, in the payment for the purchase of Allborne Hall, Oxford* (MCR 251). With the context of a later Conveyance it is probable that Sir John Williams is being identified as the person holding the former Littlemore Priory estates and possessions at that time. The site of Littlemore Priory or Minchery Farm is considered to have subsequently gone through several rapid changes of ownership until about 1549.

The second text is a *Conveyance, dated 16 June 1549, from John Pollard, esquire, Serjeant at Law, and Robert Perott, esquire, to Thomas Raynolde, S T D, Warden of the House of Scholars called 'Merton Hall', and the Scholars of the same, in consideration of the sum of £10, of a house called 'Alborn Hall' in Oxford, lately belonging to the monastery of Lytlemore, which the vendors lately had of the gift of Sir John Williams and Sir John Gresham, which the said Williams and Gresham had of the gift of George Owen, esquire, who had the premises of the grant of Henry VIII* (MCR 252). This deed implies that Henry VIII gifted the Littlemore Priory estates.

The last of the Merton documents is a *letter dated 17th June 1549, of Thomas Raynoldes, S T D, Warden of the House of Scholars of Merton called Merton Hall, and the scholars of the same, to Robert Warde, M A, and Robert Barnes, M A, appointing them attornies to receive possession of 'Alborn Hall'* (MCR 253).

In c. 1549-50 the farm came into the Powell family who held this until the 18th century (Pantin 1971, 25). They did not live there but lived at the larger complex at Sandford-on-

Thames known as the Preceptory.

After the Priory was dissolved in 1525 the name Minchery Farm was subsequently adopted (Pantin 1971, 19; Gelling 1953, i.186). The name is first noted in a will of 1592, when Edmund Powell bequeaths to his daughter Catherine the '*howse and scite of the mynchery*'. The etymology of the name is derived from Old English *mynecu* or *menschen*, a nun. The will of 1592 indicates that the house at that time was let to Herman Smith for £16 per annum. Herman Smith was a wealth yeoman who left goods worth £94 7s 4d.

The life and times of Anthony Wood provides a number of accounts of visitations to the site of the Minchery or Littlemore Priory of which the earliest is placed June 29 1661 (Clark 1891, 403-404).

Thence he went to Littlemore and near it found an antient house called Mincherie, or Minchionrea, that is 'the place of nuns', founded there of old time. But nothing of the chapel or church is there standing. From Sandford church wee went to Littlemore nunnery, called now and time out of mind Mincherey, ie. Minchionree, the place of minchions or nuns (quasi mincon-ree, mynchon signifying a nun). We saw there the ruins of many buildings of which the church is part. What of this nunnery is yeystanding is a long stack of buildings of antient free-stone building standing north to south; the north end thereof (as I judge) was the common hall; and at the end the of stood the chappell, as appears by many stone coffins and bones often dug up there. This nunnery hath been formerly well wooded, and its walks and devout recesses shaded with pleasant arbours. Many fish ponds have been there of which some yet remaine. John Powell of Sandford esq., and Catholick, hath the scite of this nunnery, as descended to him from his great grandfather as I suppose, who purchased it. Quaere whether he hath not some of <the> writings which formerly belonged to it.

Anthony Wood in July 18 1667 had access to a quantity of deeds that previously belonged to Littlemore Priory (Clark 1892, 113). He stated in these accounts that Saint Frideswide and Littlemore Priory had both been dissolved for the establishment of Christchurch.

The site was visited by Thomas Hearne in 1722 on a number of occasions, at which time the owner was a Mr Powell, and Anthony Yates was the tenant farmer (Rannie 1906 332). Hearne described the site on a number of occasions and provided a description of the site on February 23 1721/2 (Rannie 1906, 332; Pantin 1971, 26). The statement was as followed:

The forenoon I walk'd to the Minchery, minshery, or Minchionree, in the parish of Sandford, near Oxford. What remains is a long stack of building, sinding north and south. The Refectory (commonly call'd the Hall). In the north part of it is still standing, and on the north of it was the church or chapell. In the said Refectory or Hall, is a strange, old long table, now almost decay'd wch was certainly the table that the nuns us'd to dine at in common. The wife of Anthony Yates, the present farmer, told me (for Anthony was not there himself) that to be sure this table was a thousand years old, and that they now and then us'd it at Harvest Homes and Sheep Shearers. She told me many coffins and bones were found on the north side of the house, and she shew'd me one stone coffin that they discover'd (on the north west side) a few years since lying east and west, and she said there was a skull found in the west end of it. I ask'd her what they did with the skull. She said they put it into the coffin again. I commended them for it; and indeed, that pt and all the coffin is, as it were covered, and I had no mind to have the mould dug up, tho' tis strangely trampled upon by cows and horses, one part of the North End of the house being turne'd into a stable. On the West side of the house

is a distinct house, that hatha strange old chimney. She told me this was lately a Dary House. I believe it was the Old Kitchin. There is a barn at the North East End of the house, at a little distance from it, in wch she said coffins have been dug up. I was not in the barn, but I take it to have been the Chapter House and without a doubt it one joyn'd to the church; but she said this barn is of a later erection than the other building, wch, in good measure I think is so. There is a little stream runs on the west side of the house, that they call the Brook, of Minchions or Nuns, and the place may properly be stil'd Nun Brook. It hath certainly been very pleasant and was once shaded with many woods and groves, and there seem to have been fine walks. There are some shows there now. I was told that the Rhee (or, as they call it, the Brook) riseth somewhere and Old Horspath, and falleth into the Isis by Sandford. She told me that this house is call'd the Priory in Old Writings. She said that the Old House at Sandford belonged to men, and this to the women.

There is a further account of a visit to the site dated April 25th 1722 (Rannie 1906, 352) the following account was given.

Yesterday I walk'd to Littlemore Minchery (accompanied by my printer, Mr John Rance, Senior) and view'd it again. The refectory is turn'd into several little rooms. Since I was there last, the stone coffin I have before mention'd (see Feb 23 1721) is quite covered, occasion'd in such a maner, and indeed, I wish that even all the consecrated ground were kept (at least) neat. If I am not mistaken, 'twas a coffin for one of the abbesses. I view'd the barn on the N east part of the building, and found it to be all intierly of a late erection, made as I take it out of stones of some of the Old Building. There were two men threshing in the barn. I enquir'd 'f them whether any coffins and bones had been dug up where the barn stands. They said they had heard there were. I am still of the opinion that the Chapter House was there. The house I mention'd to be on the west side (in wch house is an odd chimney), I found to be all of a late building, tho' this was also (as I take it) made out of stones of some part of the nunnery.
Bothe the old house at Sandford and this Minshery, belong now to Mr Powell, who is a Roman Catholik.

The accompanying person Burghers produced the sketch of the Littlemore Priory or Minchery Farmhouse.

The key feature here are *(2) a barn, where the chapter house is suppose'd to have stood, (3) an old gate, (4) a cart-house, about which stood the tower of the church, (5) the refectory, (6, 7, 8) chimneys of the dwelling house.*

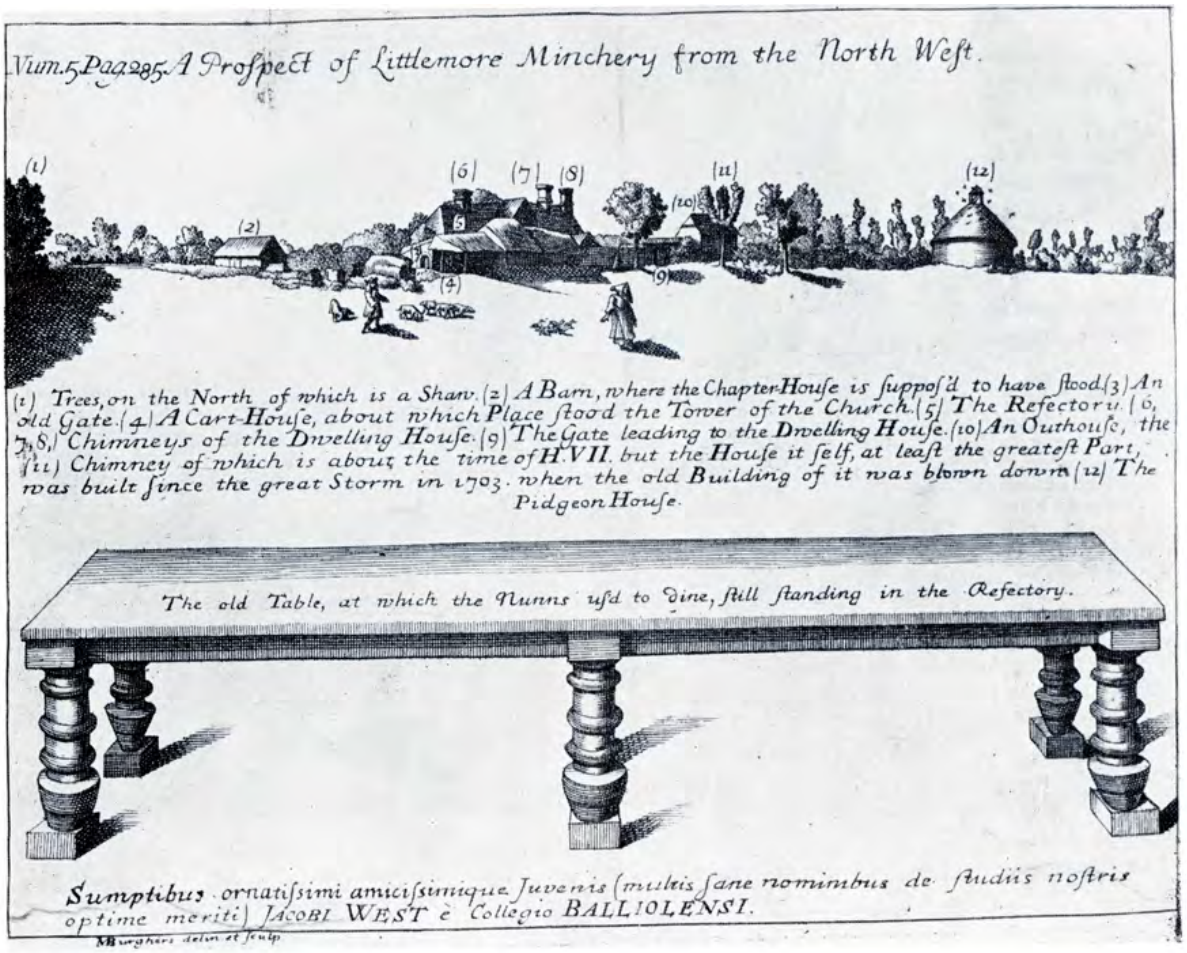


Plate 1: Hearne Illustration of the Littlemore Farm (Source: Hearne 1722)

Further statements made by Hearne make notes of areas of land owned by Mr Powell (Rannie 1906, 353), and thus land that was either attached in medieval times to the priory at Littlemore or the preceptory at Sandford.

Hawling Closes, in Garsington Parish, belong'd to Littlemore Priory. Ladnum Acre, by Littlemore belong'd to the Priory. The writer of the said book notes that the Minchery is call'd the Priory in old writings.
Swadling's tenement at Kennington belong'd to the Priory, and now to Mr Powell.

There was a further statement dated May 15 1722 (Rannie 1906, 362).

The Chimney of the house, on the west side of the building, is certainly old, I think about the time of H VII, tho' nothing else of that house be, excepting the materials wch were taken out of the old ruins.

On June 9 1722 Hearne states (Rannie 1906, 370).

John Powell, of Sandford, Esq., who told me that the provost and nunns of Littlemore us'd to demand of the Abbey of Abington a good piece of roast beef for every Sunday in the year.

On June 23 1722 (Rannie 1906, 375).

There is an old house at Littlemore that seems to Mr Kimber to have been a religious cell.

On July 21 1722 (Rannie 1906, 385).

Yesterday Mr West and I were at Sandford and call'd upon Mr Powell, who went with us to the old religious house there, and afterwards shew'd us Riding Acre, on this side of it, by the Riverside, which Riding Acre belongs to Littlemore Minchery, and so call'd from Ryth, rivus.

The building at Littlemore was obtained to provide sewage disposal for the local sewage board (Arnatt, Crickmay et al. 1996, 115). The engineers at this time exposed a number of skeletons, some in stone coffins. The skeletons were reported to be of different sexes and different ages. At the time it was assumed that these people were attached to a poor house of the priory, but this interpretation lacks an understanding of medieval burial customs and aspects of wealth resulting from having burial rights. Many tiles were recovered that were described as being of a Plantagenet date.

A number of photographs exist of the site in the dated to the later part of the 19th and early 20th century (Arnatt, Crickmay et al. 1996, 115-116). These show the range of the priory buildings one of which was dated c 1905 and 1950.

In 1963, the farm was taken over by Cliff and Linda Turner and becomes the Minchery Farm Country Club (Arnatt, Crickmay et al. 1996, 115). They converted the old cowshed into a function room and built a swimming pool. A change of tenant brought about the change of the name to the Minchery Tavern (Arnatt, Crickmay et al. 1996, 115). Later it becomes a public house called The Priory and ? (Symbol used in name). The public house closed and has remained unoccupied since 2013.

Cartography (*By Stephen Yeates and Paul Murray*)

A series of maps were identified showing Minchery Farm, the earliest of which are from the late-18th century. Jeffery's 1767 (CP/103/M/1) map shows Minchery Farm as 2 buildings (Fig. 2). Presumably the land to the south of the stream, and around the farm are fields, while to the north of the brook an area of common land is shown. Of the buildings, the north building is shown as a rectangle orientated east-west and the south building is an L-shape orientated north-south. These building ranges can be related to the known archaeology of the site with the east-west range being associated with a barn on the northeast side of the site, while the north-south orientated range must be the priory building. These buildings survived in some form to the 1960s.

Davies of Lewknor's map of 1797 (CH XX/2) shows Minchery Farm as 3 building ranges in 2 fields (Fig. 3). The north field contains 2 buildings, both shown as rectangular in shape, orientated north-south. The south field contains the third building, which is also rectangular in shape and is orientated east-west. The buildings do not necessarily appear to conform to our understanding of the site development. It is possible that the east north to south building could represent the priory and that the barn to the north is perhaps ruinous and roofless. The superstructure of the barn in this location appears to be considerably reworked even if the foundations were undoubtedly of an earlier date. The alternative to this is that Davies is mistaken or incorrect with his orientation or reproduction. Indeed the Ordnance Survey map of 1830 (Fig. 4) would indicate that there were three structures, and that the south structure on Davies's map should actually be represented by an T-shaped or L-shaped building and that

the northeast building represents the barn. It is apparent from the maps that the northwest building has its origins at some time from 1767 to 1797. The fields around the building appear to be shown as agricultural plots or perhaps orchard. In the north field the features are shown running generally north to south and in the south field east to west. Davies's map does not show any connecting roads or pathways to the farm. The surrounding field is shown as rough pasture or marsh, which extends to the north of the Littlemore Brook and also to the south.

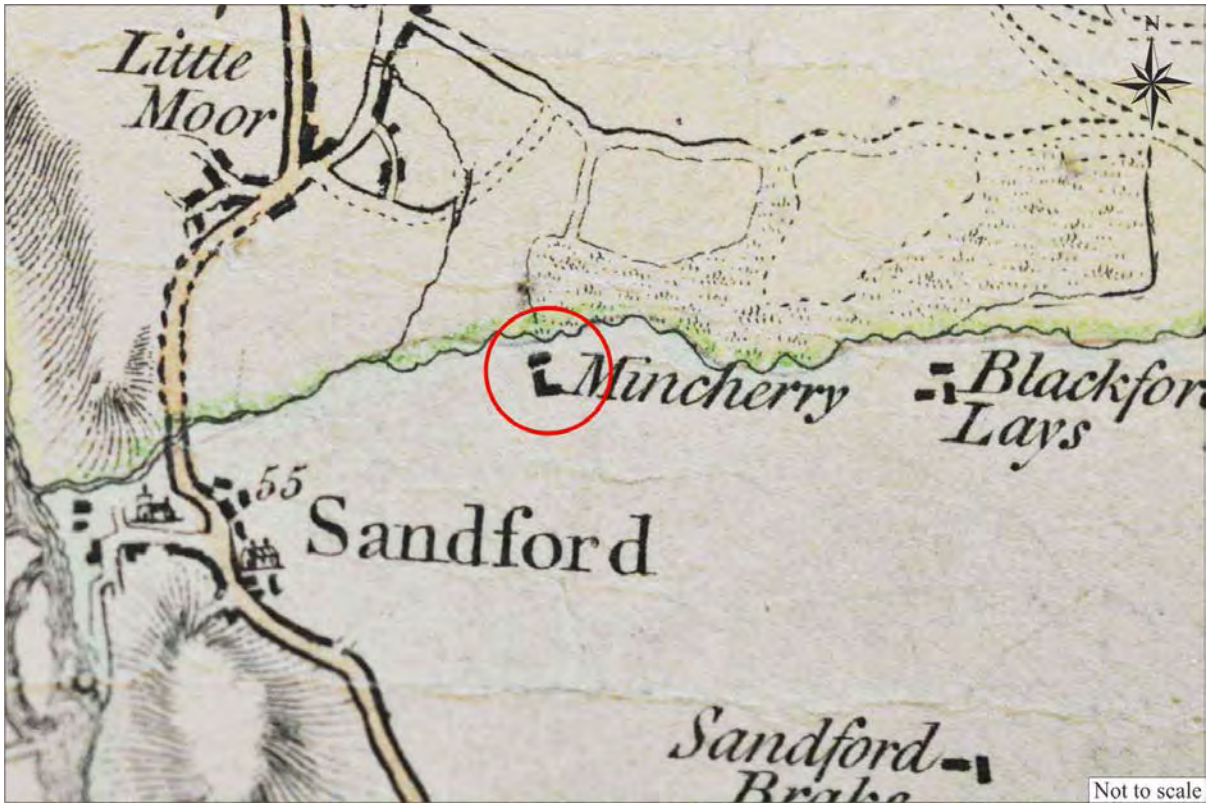


Figure 2: Jefferys's Map of 1767

A map from *c.*1830 (O-138-09-M-1 1830) shows Minchery Farm as a series of 3 buildings with a field or garden to the south in which there is a T-shaped or L-shaped building, as on the Jefferys's map (Fig. 2) and an enclosed yard to the north with two buildings, as on the Davies's map (Fig. 3). On this map it is evident that the south building is the surviving Priory building and that the two northern buildings represent barns on the site, one of which probably existed from the end of the 17th century at least. In addition to this, a road is shown connecting the Farm on the west side to the main road in Sandford. The inclusion of this road for the first time, and the drawing for Hearne (plate 1) that the main gate to the Minchery Farm was located on the west side of the Minchery Farmhouse has implications that this road was located on a trackway or road that approached the farm buildings from at least the early 18th century. An Ordnance Survey map from 1850 (CH.XXIV/4) shows the same arrangement as the map from *c.*1830.

Figure 3: Davies of Lewknor's Map of 1797

Figure 4: Ordnance Survey map of *c*. 1830

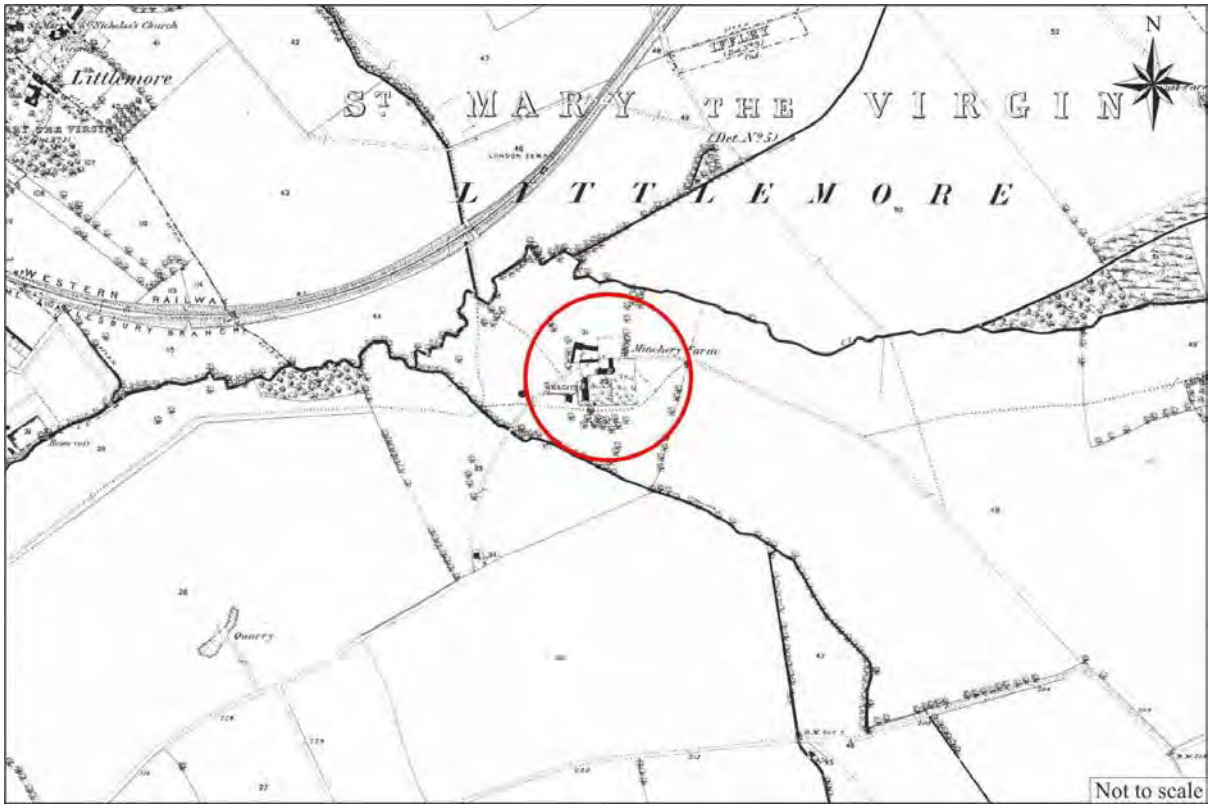


Figure 5: Ordnance Survey Map of 1876

The First Edition Ordnance Map of 1876 (Oxon 39.12) shows Minchery Farm as a series of 6 buildings; 2 of which are L-shaped. The main north to south building on the south side of the site is Minchery Farmhouse, the remains of part of the Priory dormitory. This building appears to be located in a series of walled gardens that may of originally contained orchards, a central path is marked across the gardens. To the north are the farmyards. An L-shaped building is located to the northeast of the Farmhouse, and on the northern edge of the farmyard around which it lies there is an east to west linear building. It is perhaps of interest that this group of buildings runs either parallel or perpendicular to the Farmhouse. To the north of this are other yards and paddocks about which there is an L-shaped structure that is not located at the same axis to the Farmhouse. This would imply that the southern barns are constructed on the lines of the priory complex. To the west of the Farmhouse there are two buildings, a small rectangular structure also oriented in a similar arrangement to the Farmhouse, which could be the Cart-Shed or gate. Beyond this is a circular structure that must be the Pigeon House. The road which is shown in the earlier maps is continued past the farm to the south-east.

The Second Edition Ordnance Survey map of 1899 (Oxon 39.12) shows certain aspects the same as the First Edition, which includes the Farmhouse, the L-shaped barn to the northeast, and the linear barn to the north of this. The latter of these barns has an addition on the north side. The L-shaped barn to the north of this has a continuation to the west and additional buildings to the north. There is an additional L-shaped structure on the northeast side of the farm complex. The two buildings to the west of the Farmhouse have gone. There is also an additional road going north from the farm.

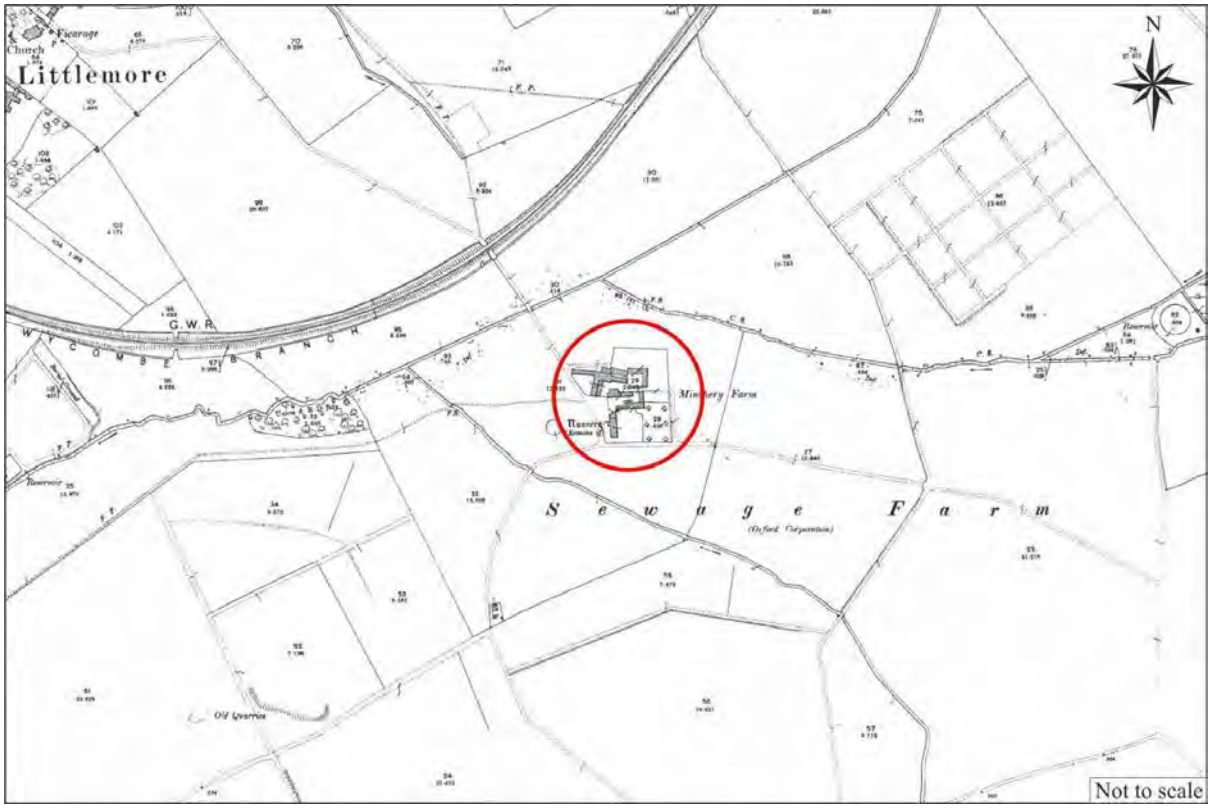


Figure 6: Ordnance Survey map of 1899

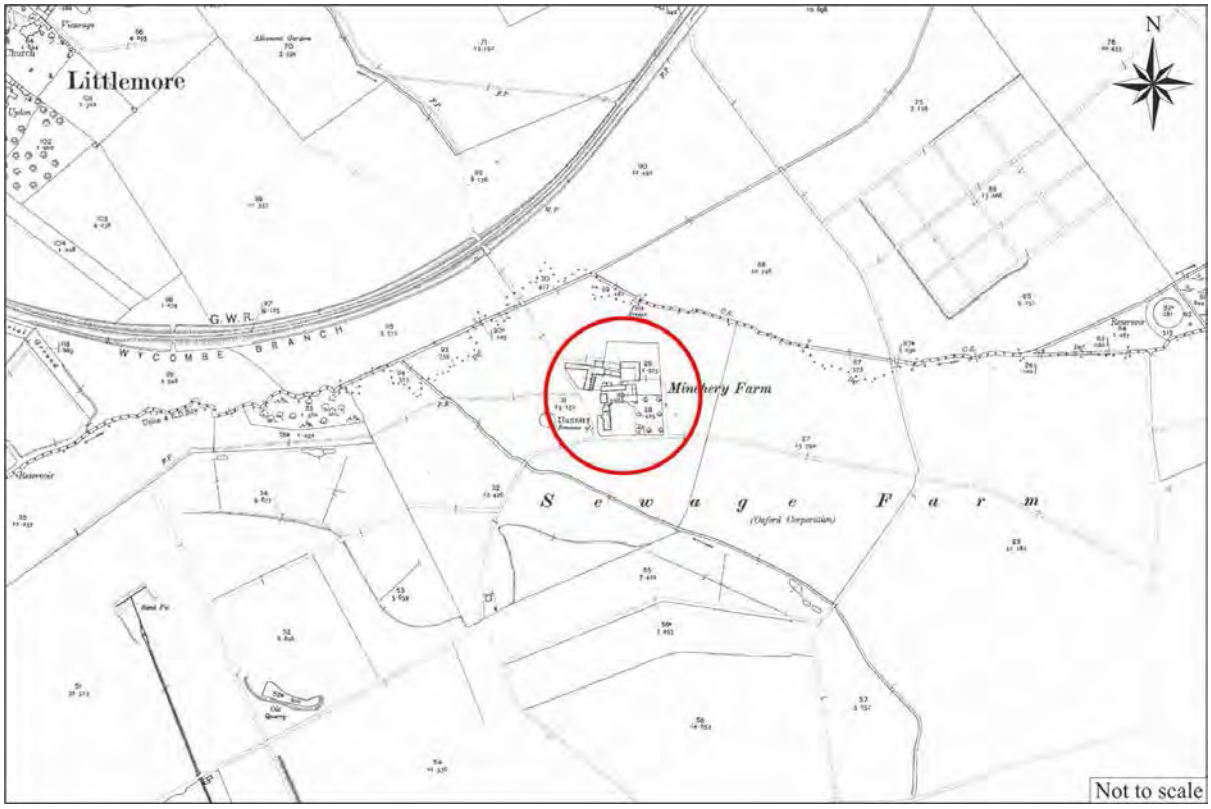


Figure 7: Third Edition Ordnance survey Map of 1913

The Third Edition Ordnance Survey Map of 1913 (Oxon 39.12) is practically the same as the Second Edition. Two buildings have been added in the Farmyard directly to the north of the Farmhouse.

Archaeological Investigation (*by Stephen Yeates and Paul Murray*)

The earliest antiquaries to take an interest in the structure and to start describe the remaining buildings and its history were those such as Anthony Wood (Clark 1891, 403-404, 113) and Thomas Hearne (Rannie 1906, 332, 352-353, 362, 370, 375, 385) who have been discussed under the post-monastic history of the site. These assessments are primarily concerned with historical analysis, with minimal interpretation and commentary on the location of certain buildings and other material aspects of the site.

It is not until the 20th century that there is a more determined attempt to describe and interpret in a more systematic way the development of the site from either an underground archaeological assessment or an above ground archaeological building analysis. Much of this focussed on the remains of the upstanding building.

There was an initial historical assessment of the Benedictine Priory at Littlemore in the second volume of the Victoria County History for Oxfordshire (VCH 1907, 75-77).

An assessment of Sandford-on-Thames parish includes a brief history of the site in the following format, which is based on historical assessments of Wood and Hearne, however, some reference is made to the archaeology in a second paragraph (VCH 1957, 267-8).

The main farms are Minchery Farm, Temple Farm, and Rock Farm. The first two deserve some mention. Minchery Farm, half a mile due east of Littlemore asylum, is on the site of Littlemore Priory and was once famed for its picturesqueness. Hearne illustrated it in 1722, showing a round pigeon loft that had been rebuilt from outhouses ruined in the great storm of 1703. It is mentioned in 1396 and gave the name 'Pigeon house closes' (1849) to the land now called 'Minchery close'. It no longer exists. The barn to the north has gone too, where Hearne believed the chapter-house to have stood. Nor is there any sign of the church, the old roofless building on the north-east of the farm-house being, in spite of local legend, only an outhouse of about 1500. Nor is there any sign of the 'old table at which the nuns used to dine' and which in Hearne's day was still used at harvest homes and sheep-shearings. Both he and Anthony Wood mention the pleasant walks, the fine trees, the groves and fishponds. Wood saw enough to declare the north end of the main building to have been the refectory. This, by 1850, was partitioned off for cottagers' rooms and now contains storerooms.

The chapel stood north again of this, and in 1661 coffins were still being dug up there and human bones have been turned up in living memory. Of the stone coffin used as a trough in 1850 there is no trace. But it was the combination of grounds and house that made Hearne declare it a place 'altogether agreeable to the Beauty of these times.' By 1880 most of the trees had been felled, the plantations had gone, the railway and the sewage farm had intruded. Today there is only one fishpond, west of the house. The building itself incorporates some early-16th-century work, especially on the east side where most of the windows are of this date, and in the course of reconstructions stones from the original structure were no doubt used. Since 1807 there has been little change in essentials, save the addition of a cooling-house on the north and the taking down of an outhouse on the south-west. But the building is neglected, the roof leaking, the fine early oak staircase in need of attention. Minchery is from the Old English **mynecenu***, 'nun', and means 'nunnery'. The stream running north of the house was once called the Rhee. Roman pottery kilns excavated here in*

1879 were of some importance, being unexpected in the otherwise rural economy of Roman Oxfordshire.

The surviving building was listed in 1963 (HEBID 246509: SP 54535 02285) and classed as a grade II* structure. This interpretation indicates that the building is thus of a national importance, which here probably relies on two aspects. The first of these is the association of the site as a Benedictine nunnery and its association with a medieval religious movement. The second factor is the significance of the architecture.

Farmhouse, now country club. C15 dormitory range of Littlemore Priory reconstructed c.1600. Limestone rubble with squared dressings; old plain-tile roof with stone and brick ridge stacks. Single range running north-south with stair tower on west. 2 storeys plus attics. 5-window entrance front (west) has central doorway with 4-centre moulded stone arch and label. To right a C20 3-light window with a C20 stone-mullioned window beyond. Between, a single light at intermediate height in line with stone stack, with ovolo-moulded surround. At first floor, mullioned windows of 2, 3 and 2 lights, only that over the door having its original ovolo-moulded stonework. Left from the door is a gabled stair tower of 2 storeys with C19 window openings under stone segmental arches. To left is a further bay with re-modelled openings and a secondary entrance. A single-bay 2-storey extension from the north gable wall is probably late C18. The east front has at first floor a row of 5 evenly spaced single lights. They are probably C15 and have trefoil and cinquefoil heads in concave-chamfered rectangular surrounds. To right is a 4-light mullioned window, also concave-chamfered. At ground floor is a doorway, opposite the main entrance, with moulded 4-centre arched head. To left is a C15 window with 2 trefoil-headed lights and beyond a single light with chamfered stone surround. To right a mutilated mullioned window of 2 chamfered lights and another C15 window of 2 trefoiled-headed lights. Bay to extreme left has C20 altered openings. South gable wall with brick stack was probably rebuilt in C18. Interior: Now much altered, but has several chamfered and stopped beams and 2-stone moulded Tudor-arched fireplaces at first floor. The early C17 dog-leg stair rising to the attics has pierced flat balusters and lantern finials and pendants. Wooden 3-centre arches with carved spandrels over the flights. The 7-bay roof has 8 heavy queen-post trusses, each with collars clasping purlins, the top collar being cambered. Views of about 1826 show mullioned windows throughout, roughly in the present arrangement, but the west front has the remains of a stone porch, and also has a Gothic-arched doorway to right of the single light former stair window.

A significant account of the site was provided by Pantin (1970, 19-26) in *Oxoniensia*. This article was a mixture of historical analysis of the monastery and later Minchery Farm. It provided an assessment of the development of the farmhouse, and also suggested a layout for the priory buildings, with much of the latter being somewhat speculative on the design of the medieval structure. Pantin's plan of the building suggested that there were three ranges of buildings located around a cloister. On the north side of the cloister he placed the nave of the church, with a tower at the west end and a small retro-choir at the east end. Beyond the retro-choir was the main choir. On the east side of the cloister it was suggested that there was a sacristy in the north, a chapter house in the middle and a parlour on the south side. On a first floor above this it was suggested that there was a dormitory. On the south side of the cloister Pantin suggested that there was a refectory with a staircase at its east end leading up to the dormitory, and at the west end of the dormitory there was a kitchen. The excavations as carried out in 2014 have shown that even though Pantin got a number of the right features, they were arranged in a slightly different manner. To be fair to Pantin he did make the comment that only excavation could confirm his speculative suggestions. One significant

point that Pantin made is that as the monastery was so small it would perhaps have adopted a plan based on a medieval manor house.

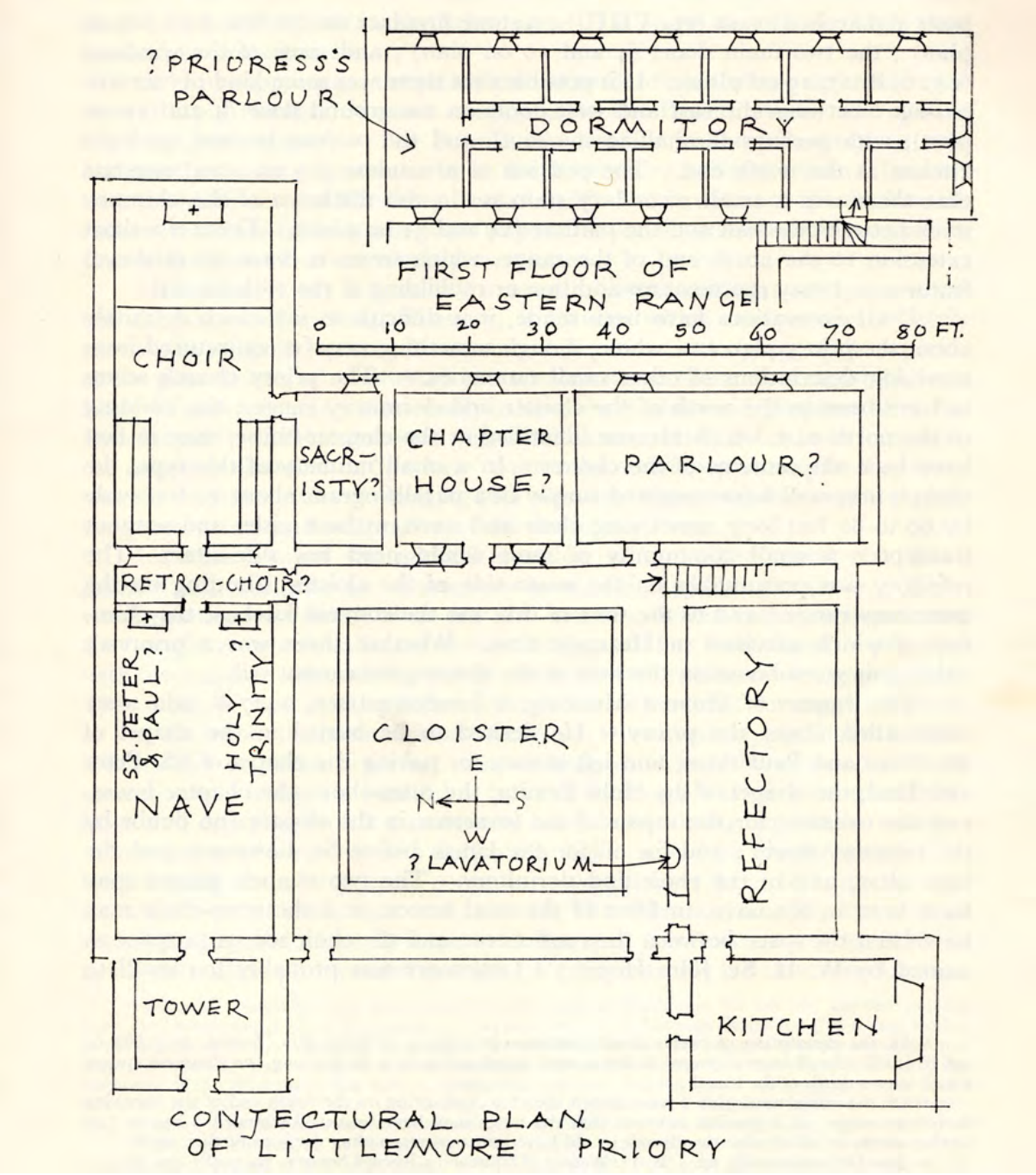


Figure 8: Pantin's interpretation of Littlemore Priory (Oxoniensia)

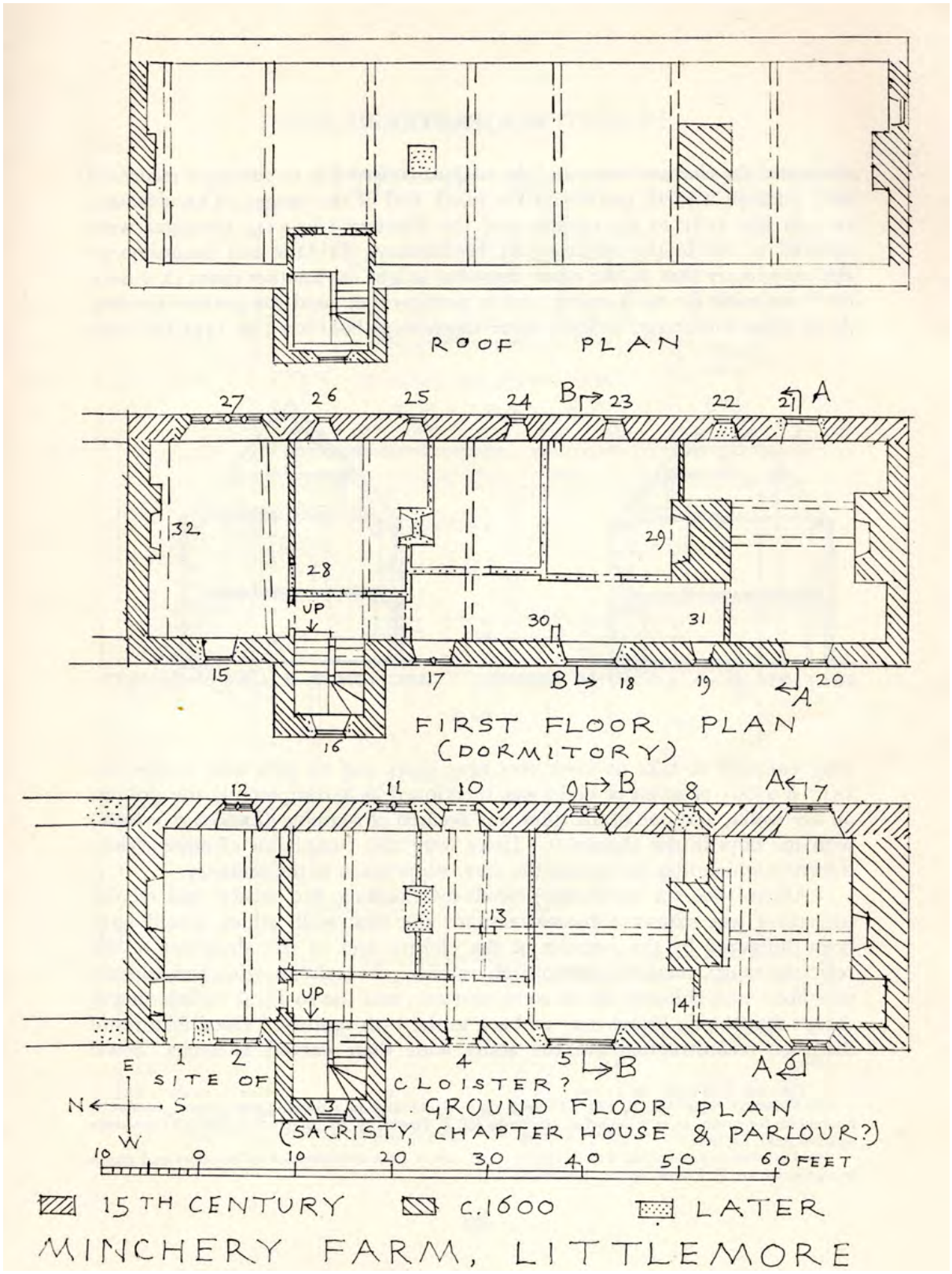


Figure 9: Pantin's phasing of the Minchery Farmhouse (Oxoniensia)

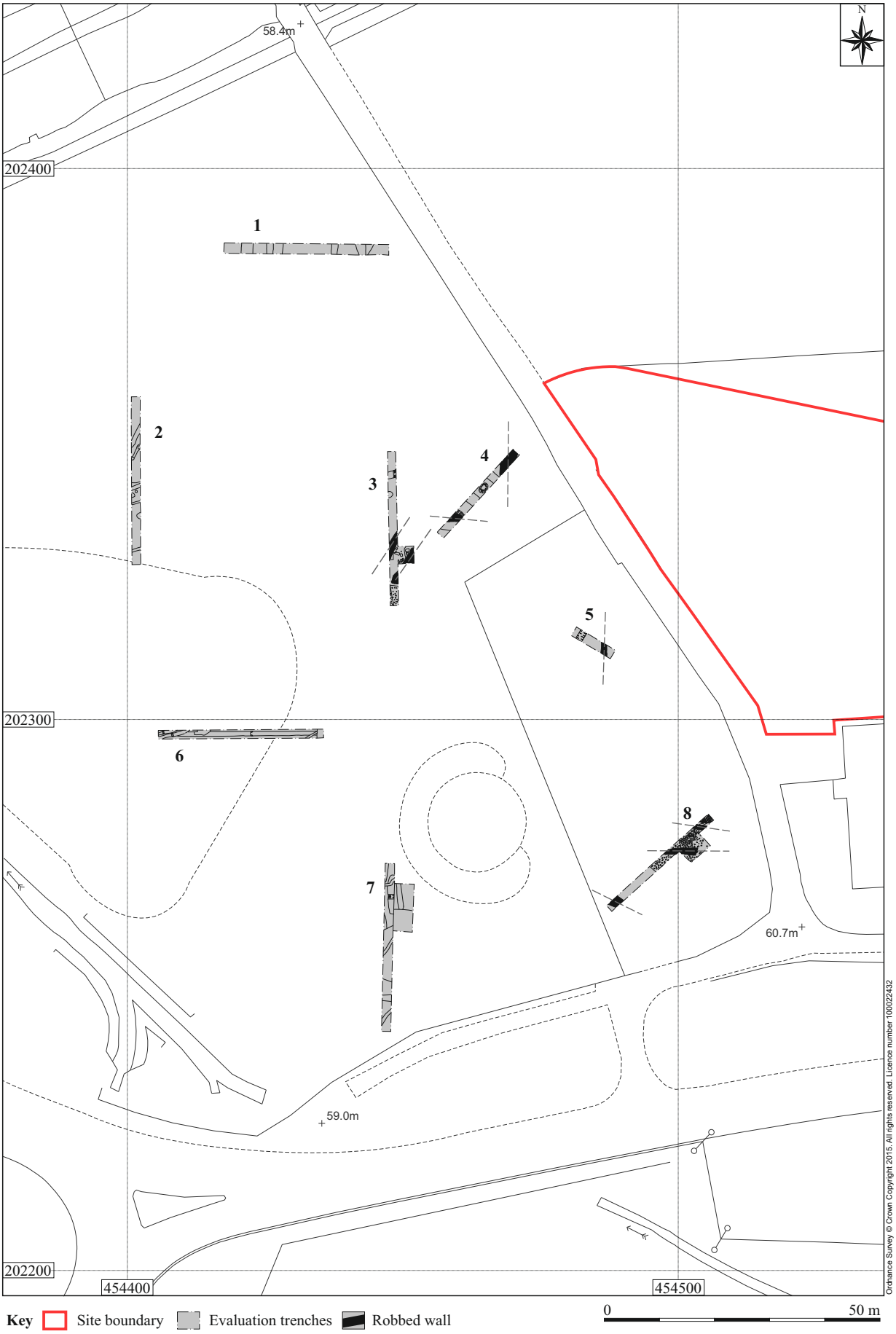


Figure 10: Evaluation trenches west of site location

Pantin (1970, 19-26) also provided a building assessment of the Farmhouse suggesting in the report that the farmhouse contained three major phases. These were marked on the plan as phase 1 the 15th century dormitory. Phase 2 was marked down as c. 1600, while phase 3 was simply marked down as later. Significantly Pantin noted that the building was important as it was extremely rare for a dormitory of a small medieval nunnery to survive in any form in England.

The last of these early building assessments is to be found in the Buildings of England Series where an account is given of Minchery Farm (Sherwood and Pevsner 1974, 689-690).

On the site of a small Benedictine nunnery founded in the C12 and dissolved in 1525. The remains consist of a rectangular building with a small gabled block projecting on the N. The earliest surviving details are late C15. They include two doorways and two windows with two arched cusped lights under square heads and five similar single lights. Dr W Pantin has shown (Oxoniensia, 1970) that this represemts the E range of the cloister garth and would have had the dormitory on the first floor and the chapter house and other rooms on the ground floor. The plan of the rest of the priory has not been excavated, but the church was probably N of the cloister. The present remains were remodelled c. 1600. Inside, a C17 staircase with flat pierced balusters and newel-posts with lantern finials.

Since the late 1990s there have been a number of archaeological investigations with the site of the Priory and adjacent land. A Desk-based Assessment was carried out on the site in 1998 (Clouston 1998).

A Historic Building Assessment was carried out by Julian Munby for Oxford Archaeology (Munby 2003) for Oxford United Football Club. The report contains a brief historical background on the site and a brief assessment of the listed building. The report is not a room by room description but does describe the individual datable features that are used in the building. In the appendices there is an account of the listed building statement, which is a historical legacy account. The general interpretation is along the line of Pantin (1970), with the phasing being unaltered but indications that stripping had occurred on the ground floor level.

An archaeological evaluation was carried out by James Taylor for Pre-Construct Archaeology in 2004 (Taylor 2004). This evaluation was carried out under PPG16 at the behest of Brian Durham (2002) the city archaeologists due to plans by Oxford Leisure to develop the site. Ten evaluation trenches were excavated across the site with the objective of establishing the presence or absence or archaeological deposits on site and if present their location, form, extent, date, character, condition, significance and quality. The report suggested that there were four phases on the site of which the first was interpreted as natural, the second Roman, the third medieval and the fourth post-medieval; all of these broad classifications and in some cases not anthropogenic. The Roman material was primarily pottery based, whereas the structural remains were considered to belong to the 12th to 15th century priory. Phase 3 also contained evidence of a graveyard in the east and agrarian remains.

In 2006 two geophysical survey occurred within the Paddock immediately to the west of the site; a magnetometery (Wilson 2004), a resistivity (Ainslie 2006) and John Moore Heritage Services an evaluation (Williams 2006a) within a paddock immediately to the west of the site. The results of the geophysical survey were inconclusive. Linear features containing

ferrous pipe were noted as modern drains, but there was also a non-ferrous drain. The survey failed to identify structural features and the results were generally inconclusive. The magnetometery survey identified areas of high and low resistance, which suggested certain linear features across the site. The JMHS evaluation opened up eight trenches across the site. Trench 1 contained the remains of a Roman plough soil. Trench 2 contained probable Roman features over which a clay layer was deposited that contained Roman pottery and into which postholes were cut. Trench 3 contained a ditch, robbed trenches and linear features associated with 13th century pottery. Trench 4 contained robber trenches and possible floor layers, and finds of 13th century medieval floor tiles. There were the remains of a limestone wall and well, and a post-medieval linear feature. Part of the trench was interpreted as an industrial area of a building. Trench 5 contained a robber trench and had finds that included medieval pottery. Trench 6 contained the remains of an east to west ditch. Trench 7 contained a layer of rubble that was probably associated with the priory buildings. Trench 8 contained what was an early ditch, along with three walls, part of an early ploughsoil and a ditch cut into the top of this relic soil horizon. The earliest features recognised in the Paddock were of a probable Roman date. The information recovered also indicated that the area contained the remains of certain buildings that were associated with the western part of the priory buildings. In some places walls survived along with floors, while in other locations the walls had been robbed. There was also evidence of post-medieval features associated with the post dissolution of the Priory site.

In 2006 (Williams 2006b) and 2007 (Williams 2007) John Moore Heritage Services carried out evaluation work on the west side of the Littlemore Brook at Littlemore Park. In 2008 John Moore Heritage Services carried out further work on the north side of the Brook in Littlemore Park (Gilbert and Hammond 2008). Here a number of trenches were opened with some Roman archaeology being identified. Trench 1 contained a Roman ditch and undated posthole that was probably contemporary, with a residual Roman sherd from another feature. Trench 2 identified a ditch on a similar alignment to that in Trench 1.

In 2012 Archaeology East Oxford (Jane Harrison's per. com.) excavated three trenches in the paddock. The excavations identified evidence of prehistoric activity in the form of an Early Bronze Age flint barbed and tanged arrowhead, as well as several scrapers, cores and blades. Waterlogged peat deposit, up to 1m thick were investigated to the north of the site, associated with Northfield Brook. The peat deposits were partly overlain by a spread of stone slabs associated with Roman pottery, tiles and animal bone. Buildings and industrial activity dating from the 12th - 16th centuries were also revealed. A substantial ditch, aligned northeast – southwest, to the east of the structures is suggested to possibly be a water channel modified for use as a moat or channel to provide water for the industrial activity. Industrial activity was represented by a partially open-sided but roofed building over a large smithing hearth. The hearth itself was built using large stone slabs and vertically laid tiles. A wall, aligned east-west (right angels to the Priory's east range) was revealed, which still had remnants of render. Finds associated with the wall include vivid green medieval painted plaster and very fine lead lined coloured glass.

2 AIMS OF THE INVESTIGATION (*by Paul Murray*)

The work was carried out in accordance to a Written Scheme of Investigation for Archaeological Recording (CgMs 2014) approved by David Radford (City Archaeologist). In accordance with the principles of PPG16 and Policy EN 43 of the Oxford Local Plan, the aim of the mitigation was to preserve any significant archaeological remains on the site, by means of recording action during the construction contract to create a permanent record, including:

- Redesign to reduce impact of construction by raising levels of buildings, roads and parking, adopting rafted or piled foundation with minimised thickenings, adopting pumped sewerage instead of gravity, exploiting existing landscaping;

- In construction phase, rapidly determine/confirm the character and extent of any remains present, and immediately to draw the attention of the main contractor and the Council's Archaeological Officer to any unforeseen deposits or remains which may merit investigation under full area excavation, or which for any other reason cannot be adequately recorded within the pre-agreed program;

- Determine or estimate the date range of any remains from artefacts or otherwise;

- Determine the significance of any palaeo-ecological deposit, including possible stomach contents of inhumations.

Specific Aims

- Confirm plan of priory church, thereby informing on site interpretation

- Investigate possible medieval origins to farm

- Exhume any human remains at risk of impact

3 STRATEGY (*by Stephen Yeates and Paul Murray*)

Introduction

A number of burials were encountered during the initial evaluation exercise. The extent of the cemetery was not revealed at that time. It was later noted that the majority of the burials appear to fall within the footprint of the proposed hotel. Therefore, it was proposed from the results of these earlier evaluations to excavate the burials in advance of construction. This was, however, only part of one component part of the recording strategy as laid out by the City Archaeologist. Four different levels of archaeological recording were employed to mitigate the impact of the development of known archaeology. These comprised building survey, full excavation, strip and record (watching brief) and a watching brief.

A building survey was carried out on partly-demolished structures, once part of Minchery Farm, which lay within the central part of the site (to the north of the listed Minchery Farm). The fieldwork for this building recording was carried out on the 7th April 2014.

The full excavation of the footprint of the proposed hotel was carried out from the 15th May to the 12th August 2014. It had been agreed in pre-excavation documentation that samples should be taken when or if appropriate. The nature of the archaeological deposits, however, meant that there was no opportunity to take useful environmental samples from the site. One of the context 761, which may be associated with a hearth or incense burning location, was to unsubstantial to produce a meaningful sample.

A watching brief was carried out in the area of the northern range and car-park. This was carried out from the 12th November to the 12th December 2014. A second watching brief was carried out in the area of car park to the east of the priory site. This was carried out from 27th October to the 20th December 2015. Engineering works in this area comprised minimal landscaping and the excavation of service trenches.

4 RESULTS (*By Stephen Yeates and Paul Murray*)

The earliest contexts represented the natural. The lower natural layer (558) was a highly compact grey white limestone. The upper natural (102) was a soft yellow brown sand part of the Beckley Sand layers.

Layer (777) a moderately compact mid-brown sand silt was considered to be a possible alluvial deposit associated with Littlemore Brook or perhaps an unrecognised medieval fishpond.

4.1 Prehistoric

The Prehistoric period is represented by six struck flint flakes and one struck chert piece, recovered from seven contexts. These included a single Mesolithic microlith along with others loosely dated to the late Neolithic and Bronze Age. All flints were residual in in the contexts they were found in.

4.2 Roman

The Roman period is represented by 55 sherds of pottery weighing *c*. 550 g along with five fragments of ceramic building material (CBM). The sherds were recovered from 42 contexts, twenty of which were medieval grave backfills, eight were post-medieval robber trench backfills, and three were from medieval pits, with the remainder from modern pits and layers of disturbance associated with the public house.

A distinct deposit (506/733/798) of moderately compact, mid brown silt sand, 0.22m thick, was observed directly overlying the natural geology (102). The layer was observed in plan at the western end of site and within section. Deposit 506 was recorded by the excavator as producing Roman pottery, although none appears to have been recovered/retained. This layer has been tentatively interpreted as a Roman plough-soil. Layer (733) was a moderately compact mid-dark brown sand silt that was 0.22m thick. This layer probably originally contained a number of the flints. Layer (798) was identified in section.

4.3 Medieval

Phase 1a: 1111-1154

Historical accounts indicate that the Priory of Sandford as it was originally called was established by Robert de Sandford, and was granted by him on pasture called Cherley (VCH 1907, 75). It is recognised that Robert was of a full age in 1111, and that this leads to the conclusion that the initial church was constructed in or before the reign of Stephen (1135-1154). The initial church was of a Norman style and probably included the choir and the crossing (Figs. 11-12). The nave may have been started, but it would not appear if additional parts of the building were started.

Cut 468/667 was a linear feature running north to south at the east end of the church that was 0.6m wide and 0.32m deep (Fig. 21 S.34, Fig. 22 S.50, S.67). The fill (469/668) was a compact mid-brown silt sand. In an early draft this was interpreted as an earlier wall line, as the burials to the east respected its location. The priory is known to have been established in the 12th century, and was rebuilt or reworked in 1245 (Pantin 1971). Norman walls in the

limestone areas were built of rubble with ashlar faces and were constructed at 1m or over width for stability. This feature is thus not wide enough to be the foundation cut of a 12th century Norman wall. It could be a foundation for an earlier timber foundation or more likely a drainage channel cut along the east side of the chancel wall.

From the plans it is apparent that there are a number of problems with the design and layout of the church and that the full length of the church could not have been built as a single phase. These anomalies with the plan are evident with the alignment of the choir central crossing and nave, and two orientations are evident in the church as the angle of the nave alters. This is besides the additions on the north and south side of the church.

The choir was aligned roughly east-west and measured 14.1m x 7.1m externally (10.5m x 5.3m internally). The south wall was constructed by foundation cut 319 (Fig. 21 S.26), filled by limestone rubble wall 317, with evidence of some backfill (318) a compact mid-yellow brown mottled deposit. The foundations measured 0.99m in width, although the southern extent had been truncated. It can be confidently conjectured that it would have been *c*. 1.2m wide, and 0.6m deep. The foundation had been constructed in two distinct courses: the lower course was 0.3m thick and formed from large roughly hewn limestone placed vertically, perpendicular to the wall alignment. The upper course 0.3m thick was formed from limestone of similar dimensions, although placed horizontally. In general the foundations were not bonded.

The east wall was created by foundation cut 470 that was 1.5m wide and 0.48m deep and surviving wall 480 (Fig. 21 S.34, S.35). The foundation was 1.3m wide and 0.28m deep and the limestone was bonded by a compact silty sand. The north foundation cut 800, and wall had been completely robbed. The foundation cut was 0.26m deep.

On the northeast corner of the choir there is evidence of a buttress in cut 420, which contained wall 419 with backfill (418) a compact dark-grey brown silt sand. The face of the buttress was detected, which did not extend the required distance away from the wall to create a normal angle buttress. It is also apparent that the full extent of the buttress was defined by a later robber cut 296, of phase 5, which indicated that the buttress extended around the corner of the building, thus making this feature appear to be a clasping buttress. This feature appears to represent the remains of a clasping buttress, which are features of Norman architecture. The surviving buttress was roughly square, measuring 0.7m x 0.7m, and survived to a depth of 0.3m. It was constructed from unhewn sandstone laid in random courses and bonded by a light brown sandy clay.

Foundation cut 334 was 1.3m across. Masonry 333 was a limestone fragment, possibly the remains of a wall. The feature was tentatively interpreted as a buttress or part of an east west wall. If part of an earlier east to west wall it could imply an earlier stone structure, or just as likely it could be part of a foundation for an internal feature at the east end of the choir, a dais to support an altar.

Figure 11: Phases 1-4 and associated burials - east

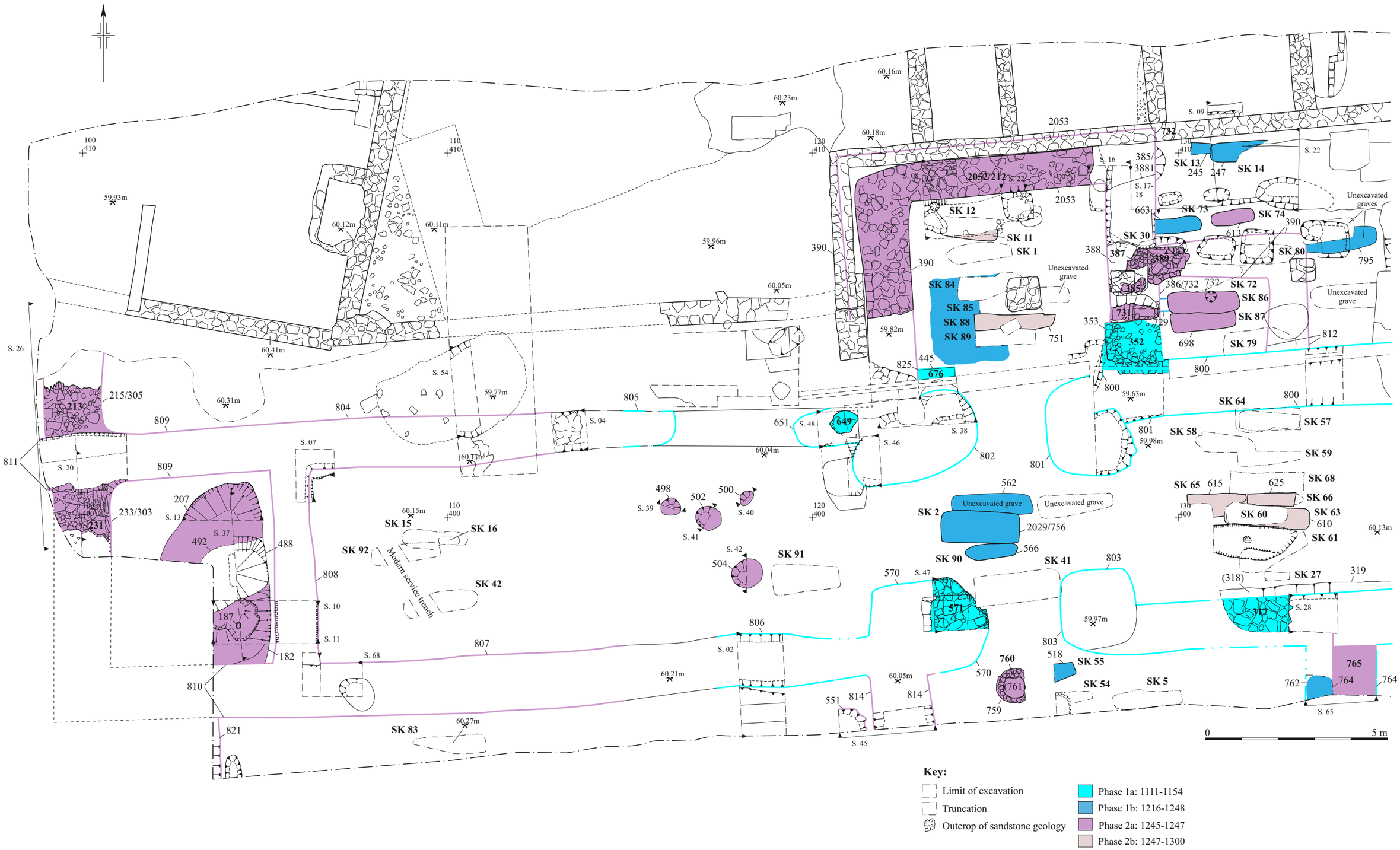


Figure 12: Phases 1-2 and associated burials - west

The Crossing was evident in the remains of four substantial foundation cuts. The north-eastern foundation cut 801 was roughly square in plan, measuring 2.4m x 2.6m and 0.7m deep. No evidence of the foundation was noted. The south-eastern foundation cut 803 was not investigated but the cut measured 2.35m x 2.05m. The south-western foundation cut 570 measured 2.35m x 3.1m with an unknown depth. At 0.52m into the backfill the top of a limestone rubble wall (571) foundation was uncovered. The north-western foundation cut 802 measured 2.5m x 3m and 0.7m deep.

There are some indication of an earlier structure with a foundation cut 825 between the northern piers of the crossing which was later robbed 445. This may mean that there was a more ephemeral wall in this location.

It is apparent from the plan that the walls of the nave initially appear to run in alignment with the choir walls, and then they deviate to a truer east to west alignment. This is indicative of the nave being started with foundation cuts 651 and 805 on the north side and 806 on the south side, but that this may not have been completed. The foundation trench 651 was a linear feature. This foundation cut contained part of a limestone wall 649 that was constructed of roughly hewn blocks.

On the north side of the north choir foundation cut there were the remains of a foundation cut 353 with *in-situ* foundations for buttress 352. This buttress 352 measured 1.4m in width, 0.48m in depth and extended 1.5m north. The buttress foundation were constructed from limestone rubble laid in random courses.

This buttress and the clasping buttress (a 12th century feature) may have been constructed as later additions to strengthen the wall or could be contemporary with the initial build. There is no way of knowing which is true from what survives. There are no indications that any of the walls identified on the south side of this church were associated with the 12th century build, but one has to suspect that there must have been some domestic structures at this time for the nuns to occupy.

Phase 1b: Burials 1216-1245

Burial rights in the medieval Christian period were a right hard won and rarely given up, this is because they were a source of income called soul scot. There is no indication of burial rights being confirmed with the initial grant, so on present evidence it is better to assume that this was not the case at that time. As Littlemore lay in the medieval parish of Sandford, initially the burial rights would have been attached to the church of Sandford. In 1220 it is known that the Priory of Littlemore appropriated Sandford Church (VCH 1907, 75-77). The church of Saint Martin at Sandford was commissioned by Gueres de Palances on the fee of Ralph de Sandford (VCH 1957, 267-275). Gueres has been identified with Wenric, who is mentioned in the Domesday Book. What is known of the church at Sandford is that it was in layhands in 1204, and that King John presented in 1216. This implies that burial activity probably commenced 1216-20, as reckoned on present evidence. There is perhaps some possibility that Sandford church originated as a chapel of Saint Mary the Virgin, Oxford. The earliest recognition that the Priory of Littlemore had cure of souls (burial rights) was in Bishop Sutton of Lincoln's Register dated 1296 when the priory is discussed with a group of churches, and this is noted with its appropriated churches of Sandford and Woodperry (Hill 1965, 134). This may mean that although appropriation of the church of Sandford would

indicate alterations to cure of souls (burial rights) this may not have officially occurred until 1296. Burials of this phase are identified on Figs. 2-3.

Located to the north of the clasping buttress of the 12th century church, and possibly truncated by it, and truncated by east the wall cut of the northeast chapel was sub-rectangular cut 712 that was considered to be the remains of a grave cut. The fill (713) was a moderately compact mid-brown sand silt. With these assumptions it is evident that the burial has to be 12th or 13th century. The grave cut may indicate that the clasping buttress was a later addition and that some burials date to the 12th century prior to appropriation of Sandford church.

The relationship of grave cut 663 to either the construction cut or robber cut of the east wall of the North Transept is inconclusive. However, it is probable that the skull if located by the robber cut would have been dumped in the backfill, if disturbed by the cut of the original construction trench 388 it would have become charnel. It is, therefore, considered that skeleton 73 located in grave cut 663 an oval shape measuring 1.27m by 0.4m predated the construction of the north transept and is early 13th century. The fill (662) was a compact mid-brown sand.

The remaining burials attributed to this phase were not dated by artefacts but they were dated through the analysis of the stratigraphy. Two of these underlay the foundation of the northeast chapel wall, which was possibly constructed about 1300. Skeleton 13 was in grave cut 245 a sub-rectangular feature 0.6m by 0.3m. The fill (244) was a compact yellow brown silt and with stone inclusion. Skeleton 14 was in grave cut 247 of a sub-rectangular shape measuring 1.16m by 0.18m, which appeared to truncate the end of grave fill (244). The fill (246) was a compact brown yellow silt sand with stone inclusions. This backfill was truncated by grave cut 245. In addition there were the remains of a probable grave cut 795 measuring 2m by 0.6m. The fill (796) was a loose mid-brown silt clay.

On the south side of the crossing or the retro-choir there is a truncated skeleton 55. The line of the burial would indicate that the grave has to extend under a feature associated with the 1245-1247 development. Skeleton 55 was in grave cut 578 a sub-rectangular 0.5m wide. The fill (579) was a soft mid-brown silt sand.

A burial in the crossing or retro-choir, skeleton 90, was in grave cut 566 of an oval shape 1.25m by 0.4m. The fill (567) was a firm mid-grey brown silt sand. The grave fill contained 13th century pottery and was possibly clipped by grave cut for skeleton 2. Sub-rectangular cut 562 measured 2m by 0.65m and was interpreted as a grave. The fill (563) was a moderately compact mottled yellow brown silt sand. This burial was truncated for the grave cut for skeleton 2, which means that an early 13th century date is most appropriate.

The cut of skeleton 71 in grave cut 659 was a sub-rectangular feature 0.35m across. The fill (658) was a compact yellow brown silt sand. This burial appears to be truncated by grave cuts for skeleton 82 and 76. This skeleton 82 lies below skeletons 75 and 76 and is thus earlier. This was located in grave cut 723 a sub-rectangular feature measuring 1.7m by 0.45m. The remains of a coffin (724) was identified. The fill (722) was a soft brown grey sand clay. Though no dating evidence was recovered the stratigraphy would imply that this was 13th century.

Sub-rectangular cut 676 probably of intercutting graves measuring 2.1m by 2.3m. The fill (677) was a moderately compact mid-grey sand silt. The area appears to be truncated by

graves with material dating them to the 14th and 15th centuries and thus the implication is that this is a group of 13th century burials.

Sub-rectangular cut 729 has been interpreted as a grave cut with the fill (730). This feature appears to be truncated by a wall cut 386 dated 1245-1247, and also later burials associated with the small cell or chapel.

An irregular cut 762, to the south of the choir, measuring 0.34m by 0.28m is interpreted as a possible grave cut. The fill (763) was a loose mid-grey brown sand silt. The feature was truncated by cut wall 764 that is placed as part of the 1245-1247 rebuild, thus indicates that this is a probable early 13th century burial.

Phase 2a: 1245-1247

In 1245 a bull issued by Pope innocent appears to indicate the Priory church is rebuilt or at least reworked. The bull states "*as the nuns were unable by their own resources to complete the rebuilding of their church, he granted during the next three years an indulgence of ten days to all who aided the work*" (VCH 1907, 75).

The rebuild appears to comprise the probable completion of the church with the construction or re-construction of the nave and west tower, and an addition of a north transept, which probably served as the Chapter House (Figs. 11-12). The west end of the choir appears to be built at a slightly different alignment and as such represent an addition or rebuild to an unfinished 12th century church. The nave walls were trench built and had been entirely robbed. The foundation cut for the north wall was 804, the south wall 807 and east wall 808. The internal dimensions were 15.2m x 5.3m. The average width of the foundations was 1.4m. The north foundations were revealed to be just 0.25m deep where they rested on a geological out-crop of limestone. In contrast the southern foundation trench was 0.35m deep with no indication of geological out-crops. A section through the southern foundation trench revealed a rectangular impression of a, presumably, limestone block. This perhaps indicates the nave foundation were trench built with no foundation courses, as seen in the choir and the west belfry foundation trenches. This is indicative of the nave being part of the post-1245 rebuild.

A small cluster of four pits (498, 500, 502, and 504) were situated towards the east end of the nave (Fig. 22 S.39-S.42). Pit 498 was an oval shape measuring 0.6m by 0.34m and 0.14m deep. The fill (499) was a compact light brown sand. Pit 500 was an oval feature measuring 0.36m by 0.32m and by 0.14m deep. The fill (501) was a compact light brown sand with stone inclusions. Pit 502 was an oval shape measuring 0.8m by 0.75m and 0.14m deep. The fill (503) was a compact light brown sand with angular stone inclusions. The fill (503) contained 13th century pottery. Pit 504 was circular measuring 0.75m by 0.72m and had an irregular profile. The fill (505) was a compact light brown sand. One of the pits produced a single sherd of 13th century Brill/Boarstall ware. As pottery was recovered from one context it is apparent that they must have originally been features, although they appear to have been disturbed by later bioturbation. These presumably represent features in the 13th century nave or they may be concerned with the rebuild of the church. Also in the area of the retro-choir or crossing was posthole 595 measuring 0.2m by 0.2m and was 0.1m deep (Fig. 22 S.49). The fill (594) was a soft mid-red brown clay sand. The cut was truncated by a charnel pit.

To the west of the church there was a rectangular extension to the nave, which must represent the remains of a western tower, for which one wall also forms the western wall of the nave.

The internal dimensions of the structure were 5.3m by 4.4m. The north wall line was evident as foundation cut 809, and the south wall foundation cut 810. The west wall foundation cut was 233/303, a linear feature associated with the west wall measuring 4.5m by 1.5m (Fig.11 S.20, Fig. 21 S.26). *In-situ* foundations (231) partially survive on the west side of the belfry measuring 1.5m wide and 0.43m deep. The foundation had been constructed in two distinct courses: the lower course was 0.3m thick and formed from large roughly hewn limestone placed vertically and perpendicular to the wall alignment whilst the upper course was 0.13m thick was formed from limestone of similar dimensions, although placed horizontally. In general the foundations were not bonded. The backfill deposit (232/304) was mid-red brown clay sand.

The line of the north wall foundation cut 809 appeared to extend beyond the west wall of the tower as cut 811. A foundation cut 215/305 on the northwest corner of the tower was identified (Fig. 20 S.20, Fig. 21 S.26). A small length of foundation 213 sat on the base deposit and extended north from the north-west corner of the tower is likely to represent a buttress, although the northern extent of foundations had been robbed. The wall was 1.5m wide, with a similar construction technique to that of wall 231. Backfill (214/306) was a firm mid-red brown clay sand. This data would indicate that on the northwest corner of the tower there was an angle buttress which were common features of Early English architecture of the late 12th to 13th century. This feature fits nicely with a construction date of 1245-47.

There was a sequence of four pits that are located in the base of the tower, some of which may be associated with the process of bell casting. However, the stratigraphy would indicate that only two of these could be associated with this phase of construction. On the southern side of the west tower was a large irregular ovoid pit 182 measuring 2m by 1.6m and 0.62m deep (Fig. 20 S.10, S.11, Fig. 22 S.37). Centrally placed in the base of the pit was a small, well defined, sub-rectangular post hole 187, measuring 0.18 x 0.12m and 0.22m deep. The fill of the posthole (188) was a firm dark grey silt sand. The fill of the pit (183) generally consisted of a moderately compact, mid brown sandy silt, with small limestone fragments. This deposit produced 29 fragments of plain roof tile and some fragmented animal bone. This was interpreted as a bell casting pit but this is not conclusive. No fragments of a bell caste mould were noted in the fill, nor were any particles of slag noted in the backfill: as perhaps would be expected when a bell is caste *in-situ*. All medieval churches needed to have at least one bell and the west end of the nave is the commonest location for a tower, be it a porch tower or bell tower (Rodwell 2012, 77-81).

On the northern side of the tower was a large irregular ovoid pit 207 measuring 2.4m by 2.2m and 0.44m deep (Fig. 20 S.13, Fig. 22 S.37). It contained three distinct fills. The lowest fill (206) was a firm, mid yellow brown clayey sand 0.08m thick. This was overlain by fill (205) a loose, mid-brown silt sand 0.2m thick with limestone fragments and broken limestone roofing slates. The upper fill (204) was firm, reddish brown sandy silt with broken limestone roofing slates, 0.12m thick.

It is probable that the north transept was added as part of the 13th century build or rebuild (1245-1247) of the church. The initial activity here is that the north part of the Crossing has to be opened up. Robber trench 445 was a square feature 0.8m by 0.6m by 0.2m. This appears from plans to be part of a structure on the north side of the crossing. The fill (444) was a compact yellow brown sand loam with stone inclusions. This has been interpreted as part of a buttress but may indicate that there was a structure across the gap on the north side of the crossing. This feature was associated with residual Roman period pottery.

The transept was built against buttresses on the north sides of the choir and (probably) the north-west crossing tower foundation. The internal dimensions of the transept were 4.7m by 5.15m. *In-situ* foundations survive in two places. Foundation cut 390 (Fig. 20 S.14) was filled by wall 208 that formed the west wall of the transept. The width of the wall was 1.1m, although it was truncated on its north and west sides by a later foundation cut. The wall's original width was more likely to be *c*. 1.35m. The average depth of 208 was 0.34m. The wall was constructed from unfinished limestone in random courses with an earth bond. The foundation cut 2053 was a linear feature forming the north wall of the transept (Fig. 20 S.8, S.19). The stone wall 2052 was made of unworked stones. This had also been numbered 212. Backfill (134) was a soft dark brown silt sand. A short section of the north transept foundation 385/731, in foundation cut 386/732, survives in the east wall, where it abuts buttress 352. Only 0.5m of the foundations survives. There was a further part of this wall surviving as foundation 387, in foundation cut 388. This measured 0.7m by 0.55 and 0.15m deep. This section of foundation was 1.35m wide and 0.36m deep. The foundations were constructed from un-finished limestone and sandstone laid in random courses and earth bonded. A single worked stone 640 was used in the construction of the foundations which was retained *in-situ* that measured 0.65m by 0.44m by 0.35m. This was formed from sandstone with two dressed faces and with a possible fixing groove in one face. The stone had been extensively damaged and it was not possible to interpret its original function. The north choir buttress 352 would have undergone some modifications prior to the construction of the north transept and it is possible that stone 640 formed part of the buttress, or was a reject from a construction phase.

To the east of the north transept there are indications of a small chapel or cell being constructed, which was probably contemporary with the construction of the north transept, and butted up to the choir wall. Internally the chapel measures 3.6m by 2.9m. The north foundation cut 390 contained the remains of wall 389 that measured 1.6m by 0.92m and was 0.44m deep. It was formed from undressed limestone laid in random courses with an earth bond, very similar in character to the north transept's foundation. It was this wall 389 that contained the evidence that the chapel or cell was contemporary. The foundation cut 812 represents the foundation cut at the east end of the cell. There was no evidence for a door, although almost certainly the chapel was accessed from the north transept.

One has to consider two possibilities for the construction of this small development between the choir and north transept. The first is that it was constructed as an anchorite cell, which could explain why there are no apparent entrances into the location from the north transept. There are no directly identifiable references to such an occurrence. The second is that this is a cell with burials placed within it. It is possible that Skeletons 87 and 86 represent two female burials that are located centrally. Skeleton 87 in grave cut 698 was a sub-rectangular cut measuring 2m by 0.6m. The fill (699) was a moderately compact mid-grey brown sand silt. Skeleton 86 was in grave cut 696 was a sub-rectangular feature measuring 2m by 0.65m. The lower fill (750) was a tenacious mid-grey sand silt deposit filled with charnel. The upper fill (697) was a moderately compact mid-brown sand silt.

There is evidence for the construction of a structure to the south of the crossing or retro-choir and the choir. Foundation cut 814 marked the location of a north to south wall. The east of these walls joined the south side of the choir in construction cut 764. In this was foundation 765 aligned north to south that was identified during the watching brief. The wall was 1.34m high and survived to a height of 0.52m. As with other walls on the site this wall had been

built in two distinct courses. The lower course (0.26m thick) was constructed from substantial flattish stones. The upper course (0.26m thick) was formed from random sized limestone blocks. The date for the construction of this southern extension is not known. Layer (549) was a mortar layer that was a pale grey white of sand silt that was 1.4m by 0.35m and 0.3m thick. This deposit was probably the remains of a mortar surface.

There was a round feature located in the building to the south of the crossing and choir. Circular cut 759 was 0.95m across and 0.18m deep (Fig. 22 S.64). The pit was lined (760) with unworked limestone that was un-coursed and bonded by sand silt. The fill (761) was a moderately compact mid-brown sand silt with lenses of charcoal. This fill contained pottery of the 13th century. The charcoal deposits could indicate that this was a hearth or location for burning incense, however, the deposit was too unsubstantial to properly sample. One other possibility is that this is just a foundation for a font.

To the south of the west tower there was evidence of an earlier wall using construction cut 821. Cut 821 and cut 814 probably marked the edge of the cloisters.

Cutting into the natural (102) was feature 551, a circular ovoid that was 0.9m by 0.7m and was 0.2m deep (Fig. 22 S.45). The fill (552) was a soft mid-grey brown silt sand. The fill (553) was a loose mid-grey brown silt sand with stone inclusions. The upper fill contained a medieval rivet.

Phase 2b: 1247-1300

The following burials are considered to be most likely associated with the post-1247 development, thus placing them in the latter part of the 13th century (Figs. 2-3).

There are indications that Skeleton 2 may also have been of a date at some time after the 1245-1247 rebuild. The grave cut 2029/756, was infilled with cist 2028 formed from 21 re-used architectural limestone blocks, eight forming a base and 14 forming the enclosing upper structure (Plate 2). A head niche had been constructed at the west end. The shoulder of the grave was 0.4m wide, tapering to 0.22m at the east end. The eight limestone blocks (WS17-24) forming the base were only dressed on the upper surface and the two connecting sides, with the undersides generally un-dressed or very roughly hewn. Only a single stone (WS19) could be dated as coming from a possible 11th or 12th century (Norman or Early English door capital). This would imply that the stone was associated with the dismantling of the early church and thus this burial probably occurred at some time after 1247. The upper structure was formed from 13 limestone blocks (WS4-16) that were generally dressed on three sides, with the remaining three side generally undressed or very roughly hewn. The backfill (758) to the cist was a firm mid-brown silt sand. The grave fill (144/755) was a compact yellow brown silt sand. The burial was an older adult of over 45 years and could be a mother superior of the Priory.

Plate 2: Skeleton 2 within stone cist.

Skeleton 65 was in grave cut 615 a rectangular cut 1.5m long by 0.6m across. The fill (614) was a firm mid-brown sand loam. This grave fill (614) contained 13th century pottery. The tile provided a date of 1175-1500.

Stratigraphic evidence would indicate that skeletons 63 and 66 are likely to be of an earlier date as they are truncated by the burial for skeleton 60, the grave fill of which had tile dated 1280 to 1330. This date would imply that these burials are likely to be dated about 1300 AD. Skeleton 66 was in grave cut 625 that was a rectangular feature 1.6m long and 0.4m wide. The fill (624) was a compact mid-brown sand. This burial contained tile dated 1200 to 1325. Skeleton 63, in grave cut 610 was of a rectangular shape measuring 2.14m by 0.6m. The fill (609) was a compact mid-brown sand loam. The tile provided a date of 1280-1330.

To the east of the North Transept was skeleton 74 located in grave cut 673, an oval feature measuring 1.17m by 0.42m. The fill (672) was a firm mid-brown sand. The grave fill (672) contained 13th century pottery.

Undated but stratigraphically early was skeleton 75 located in grave cut 679, a sub-rectangular feature. The fill (678) was a moderately compact mid-light brown silt sand.

Skeleton 56 is stratigraphically earlier than the burial for skeleton 50, which is associated with tile dated 1200-1325. The grave cut 587, associated with this skeleton, was a sub-rectangular feature measuring 1.46m by 0.76m. The skeleton had been placed in a coffin (588). The fill (586) was a compact brown yellow silt sand with grey mottling.

In the North Transept was skeleton 11 that is undated but stratigraphically has to be earlier than the burial of skeleton 12, thus implying a 13th century date. The grave cut 203 was a sub-rectangular feature measuring 1.3m by 0.2m. The fill (202) was a soft mid-brown silt sand.

Also in the North Transept was skeleton 88 in grave cut 751, a sub-rectangular cut 1.92m by 0.45m. The remains of a coffin (757) were identified. The fill (752) was a moderately compact brown grey silt sand with charcoal and stone inclusions.

Phase 3a: 1247-1427

The indulgence of 1245 indicates a time period of three years in which to secure revenue (VCH 1907, 75-77). It is thus the case that the rebuilding of the church and the North Transept would have been completed by 1247 or not long after. It can be recognised archaeologically that a northern chapel was constructed as part of a period of rebuilding, the dates of which are more debatable (Figs. 11, 13).

Descriptions of structures at the priory are not mentioned specifically until 1427-8 when the will of a Thomas Mokking stated a desire to be *"buried in the chapel of SS. Peter and Paul and left money for paving said chapel and chapel of The Holy Trinity, the retro choir, the chapter house, and the cloister; for the repair of the lavatorium in the cloister. Also oil for lamps before St. Lawrence and the high alter"* (Pantin 1971, 24). This implies that the robbing of the small cell, possibly a burial cell, occurred at sometime between 1247 and 1427-8, and that the subsequent redevelopment of the northeast chapel occurred at that time. The text implies that money was left for paving the chapels of SS Peter and Paul and also the other chapel of the Holy Trinity. One of these names has to be a reference to the northeast chapel, but which one is not knowable on the current evidence.

This phase is interpreted as a sub-phase because it is a process of destructive activity in dismantling part of the previous build of the church. The robbing occurs on the east wall of the transept or Chapter House and on the north and east wall of the cell. It is apparent that this robbing is of a medieval date because it is truncated by later burials. Wall 385, the east transept wall was truncated by a robber trench 366 which was 0.5m deep. The robber trench was filled with a deposit (365) of sandy silt with sandstone rubble. Wall 389 was truncated by robber trench 771 that was 1m wide and 0.35m deep. It was backfilled by (772) a moderately compact mid-brown sand silt with rubble inclusions. These are the only medieval walls that can be noted as being robbed within that period.

Truncating the top of fill (553) was cut 840. This contained the remains of an ephemeral masonry structure 839, which contained disturbed limestone blocks. Truncating the top of the natural was cut 846, which contained pitched limestone 845. These features are presumably associated with medieval phases of activity.

Interpreted as a dump layer (770) was a moderately compact mid-brown sand silt that was noted during the ground reduction of the access road (Fig. 22 S.63). This was below a soil horizon considered to be associated with the 17th century. It is thus of an unspecified medieval date.

Figure 13: Phases 3-4 and associated burials - west

Phase 3b: 1247-1427 (probably about 1300)

The robbing of the foundation has been listed as occurring before the building of the chapel (Figs. 11, 13). However, it is possible that this construction occurred prior to the dismantling of the chapel and that the dismantling occurred after the chapel had been built around it. The north and west wall of the transept (208) were retained with additional walls believed to have been added to the east of the transept and north of the choir. Evidence for a building is limited and somewhat tenuous. Confirmation that there was a structure in this location is inferred by the reference to the chapels of SS Peter and Paul and of the Holy Trinity. Understanding of this building is further hampered by numerous intercutting post-medieval pits. The northern foundation cut 630 (Fig. 22 S.61), contained part of a stone structure 629 located 5m north of the choir, and roughly in line with its eastern end. The remaining stone measured 0.78m x 0.88m and was 0.32m in depth. It was formed from undressed limestone pitched vertically. The eastern foundation trench 813, was robbed out. The dating of the construction of this chapel is problematic in that there is no documentary evidence. On the one hand it is possible that this was part of the 1245-1247 development, but on the other, considering the forms of the identifiable buttresses, it is less likely. Glazed roof tiles from the backfill of one of the robber trenches were dated *c*. 1200-1325, and when this is considered it is probable that the reconstruction of the chapel may have occurred around 1300 or thereafter.

On the north side of the site was linear feature 715 that was a steep sided cut that was 5m long by 0.7m across (Fig. 22 S.54-S.55). This feature appears to cut a pit that is marked on the plan but not on the section. The lowest fill (716) was a soft mid-brown silt sand with mid-grey stone inclusions. The fill (717) was a soft mid-yellow grey silt sand. The top fill (718) was a firm mid-red brown sand silt. The feature is undated but is cut by wall construction cut 190, part of a post-medieval farm building of a 17th or early 18th century date. It has to be the case that this feature belongs to the Priory and could be a drain or boundary ditch.

In the base of the tower there was an ovoid pit 488 that measured 2.4m by 2m and 0.95m deep which truncated pits 207 and 182. The lower fill (489) was a compact mid-brown yellow silt sand. The fill (490) was a soft mid-brown silt sand. The top fill (491) was a firm mid-yellow brown silt sand. The worked stone and ceramic roof tile fragments recovered was used to suggest this feature is associated with the robbing phase of the church in the 16th century. If this is the case it is difficult to envisage what could have been robbed from this location. There is also the possibility that this could be a further pit of the medieval period associated with bell construction.

Cut into the upper fill (491) was a sub-rectangular pit 492. This measured 0.8m x 0.8m and was 0.58m deep. It was filled (493) with firm, brownish grey silty sand, with frequent lenses of dark grey silt. This pit is located in the center of pit 488, which is difficult to see as coincidence. It could be suggested that this feature represents a post pipe, in which case this would make the interpretation of pit 488 as a post-hole associated with the re-working of the west tower.

Of the graves in this chapel it was apparent that four of them cut into the backfill of the robber trench for walls 389 and 385/387. The robber trench backfill (365) was cut by grave 368. The relationship of grave cut 663 to either the construction cut or robber cut is inconclusive. The robber trench backfill 772 was cut by five graves (368, 661, 690, 707, and 793). Skeleton 30 was located in grave cut 368 a sub-rectangular feature 0.26m wide. The fill (367) was a compact yellow brown with grey flecks. Skeleton 72 was in grave cut 661 an

ovoid shape measuring 1.9m by 0.7m. The fill (660) was a firm mid-grey brown silt sand. Skeleton 79 was in grave cut 690 a sub-rectangular feature 1.7m by 0.8m. The remains of a coffin (689) were identified. The fill (688) was a firm mid-red brown silt sand. The upper fill (687) was a soft mid-grey brown silt sand. The grave fill (687) contained 13th century pottery and tile date 1250-1330. Skeleton 80 was in grave cut 707, an oval shape measuring 1.5m by 0.5m. The fill (706) was a firm mid-brown sand. The probable grave cut 793 was truncated measured and 1.45m by 0.6m. The fill (794) was a loose mid-brown silt sand. It was recorded that the skull was partially visible.

A probable grave cut 674 in the North Transept was sub-rectangular in shape measuring 0.8m by 0.4m. The fill (675) was a moderately compact mid-grey brown sand silt. The exact location of the cut was not determined although it would appear to have been cut by graves for skeletons 84 and 85.

In the nave was skeleton 92, which appears to have predated skeletons 15 and 16. This would imply that it is of a 13th to 14th century date. Skeleton 92 was in the nave grave cut 533, a sub-rectangular feature measuring 1.8m by 0.54m. The fill (534) was a moderately grey brown silt sand.

Burials to the east of the church include skeleton 76 that was in grave cut 681, a sub-rectangular feature 1.65m by 0.3m. The fill (680) was a medium compaction light-mid brown sand. The context had a disturbed area of the grave fill, which contained part of a smashed skull. The burial is itself undated but stratigraphically was disturbed by the grave cuts for skeleton 77. Skeleton 77 was located in grave cut 683, a sub-rectangular feature about 1.4m by 0.2m. The fill (682) was a moderately compact light-mid brown sand. The grave for skeleton 77 was truncated by the grave cut for skeleton 78. Tile in the fill of the grave for skeleton 78 is dated 1200-1325. This implies that a 13th century date or early 14th century date is likely. Layer 692 was a moderately compact mid-dark brown sand that was located above the legs of skeletons 77 and 78. It is probably part of an accumulation layer in the cemetery.

Skeleton 6 was an undated burial but stratigraphically is likely to be 13th or 14th century in date. The grave cut 193 was a rectangular shape measuring 0.69 by 0.23. The fill (192) was a light yellow brown silt sand.

These subsequent two burials are essentially undated to the east of the church, but they lie below skeleton 28, and should thus be interpreted as probable 13th or 14th century features. Skeleton 25 was in grave cut 344, a rectangular measuring 0.97m long by 0.5m wide. The fill (343) was a loose mid-yellow brown sand. Skeleton 31 in grave cut 382, a sub-rectangular feature. The fill (381) was a soft mid-brown silt sand.

Skeleton 34 was in grave fill 404, a rectangular feature 0.39m wide. The fill (403) was a loose yellow brown silt sand. Though this burial is undated it predates a further burial that has undecorated tile, so is probably 13th to 14th century.
Outside the east end of the church was skeleton 81 in grave cut 709, a sub-rectangular feature 0.4m wide. The fill (708) was a moderately compact mid-light brown sand. The feature was truncated by the burial for skeleton 70, and thus it is appropriate to imply that this was of a 13th to 14th century date.

Context 686 represents a skull fragment noted under the grave cut 607 (not shown on plan but below skeleton 62). This is either charnel or just as likely part of an earlier grave cut that has been totally removed.

Phase 4a: 1247-1427

A number of burials were not precisely dated and subsequently have been placed in a category of later medieval in date (Figs. 11, 13). Any burial activity on the site had presumably concluded by 1525 or there about, when the Priory was dissolved. Burials from this time period, would presumably have reverted to Sandford Church.

There were a group of burials that produced tiles dated 1200 to 1325, which would imply that these are burials of the later 13th century to the early 16th centuries. It is noted that apart from the nave and tower that the floor tiles were replaced in 1427-1428, which would imply that later tiles would have replaced the earlier ones (1220-1428). There is a slight probability that some could post-date this period.

Located in the North Transept was skeleton 12 in grave cut 243, a sub-rectangular feature measuring 1.7m by 0.5m. The fill (240) was a soft mid-brown silt sand.

Located in the nave was skeleton 15 in grave cut 268, an ovoid measuring 1m by 0.55m. The skeleton was in a prone position and has subsequently been noted as a deviant. The fill (269) was a mid-red brown clay sand. This grave is undated but is truncated by grave cut 270 and is thus presumably before the late 14th century.

Outside of the east end of the church was skeleton 48 in grave cut 519 that was sub-rectangular measuring 0.35m wide. The fill (518) was a compact yellow brown silt clay. Skeleton 50 in grave cut 523 was sub-rectangular measuring 1.56m long and 0.48m wide. The fill (522) was a soft mid-brown silt sand with layer (537) a soft mid-brown silt sand over the top of the grave fill that contains disarticulate bone. Skeleton 51 was in grave cut 525 that was a sub-rectangular feature 0.45m across. The fill (524) was a soft mid-brown silt sand. Skeleton 52 was in grave cut 540, a sub-rectangular feature measuring 1.6m by 0.5m. The fill (539) was a soft mid-brown silt sand. Skeleton 53 was in grave cut 569, sub-rectangular 0.3m wide. The fill (568) was a soft mid-brown silt sand. Skeleton 59 was in grave cut 600, a rectangular measuring 1.7m by 0.46m. The remains of a coffin (601) was identified. The fill (599) was a loose light brown yellow sand. Skeleton 62 was in grave cut 607 a sub-rectangular feature measuring 1.83m by 0.34m. The remains of reused roof tiles 608 were set vertically within the grave cut. The fill (606) was a soft mid to dark brown silt sand. Skeleton 70 was in grave cut 646, a sub-rectangular feature. The fill (645) was a compact brown silt sand. Skeleton 78 was in grave cut 685 that was sub-rectangular measuring 1.58m by 0.4m. The fill (684) was a moderately compact light-mid brown sand. Skeleton 84 was in grave cut 740, a sub-rectangular feature measuring 1.82m by 0.6m. The fill (741) was a moderately compact grey brown silt sand.

Plate 3: Intercutting graves to the east of the choir.

Outside the east end of the church there were a group of skeletons (plate 3) that are interconnected stratigraphically that include skeletons 7, 43, 44, 50, 53, and 56. The fill of two of these graves had datable tile to 1200 to 1325. This means that skeletons 7 and 44 were probably of a 14th century date. Skeleton 7 was in grave cut 195, a rectangular shape measuring 0.23m wide. The fill (194) was a loose light yellow brown silt sand. Skeleton 44 was in grave cut 465 that was a sub-rectangular feature 0.3m wide. The fill (464) was a compact brown yellow silt sand.

For various stratigraphic reasons it is believed that skeleton 43 was of a 13th to 14th century date. The grave 463 was a sub-rectangular feature 0.34m wide. The fill (462) was a compact grey yellow silt sand.

Phase 4b: 1247-1525

The following burials have pieces of tile that are dated from 1175 to 1500. This is because they are unglazed tiles and are thus un-diagnostic. It is apparent that these tiles may be associated with burials from 1220 to 1525, although it can be noted that any phasing of the building associated with the phases of 1245-1247 and of about 1300, fall within a period for which glazed tiles can be identified. Skeleton 5 was in grave cut 125, a rectangular measuring 1.8m by 0.44m. The fill (124) was a moderately compact grey yellow. Skeleton 18 was in grave cut 287 that was rectangular measuring 1.63m by 0.45m. The fill (286) was a loose mid-yellow brown sand (Fig. 21 S.23). Skeleton 42 was in grave cut 459, an ovoid shape measuring 1.9m by 0.6m. The fill (460) was a firm mid-yellow brown silt sand with clay mottling.

A dated tile is evident in the grave fill associated with skeleton 48 and one from the fill associated with skeleton 10 implies that skeleton 47 is of a 14th century date. Skeleton 47 was in grave cut 517, a sub-rectangular 0.35m wide. The fill (516) was a mid-brown silt sand.

Skeleton 45 was in grave cut 467, a rectangular feature 0.38m wide. The fill (466) was a compact brown yellow silt sand. Stratigraphically this burial has to be of this date.

Phase 4c: 1280-1427

The following graves contain tile dated 1280 to 1330, which implies that they are of a date 1280 to 1427 as the burials contain glazed tile. Skeleton 10 was in grave cut 223, a sub-rectangular feature. The fill (222) was a compact grey brown silt clay. Skeleton 60 was in grave cut 603 that was of an oval shape measuring 1.7m by 0.6m. The fill (602) was a firm mottled green grey. Skeleton 64 was in grave cut 613, a rectangular shape measuring 1.74m by 0.62. The remains of a coffin (628) were identified. The main fill (612) was a loose brown yellow sand containing coffin nails. The upper layer of the fill (611) was a loose brown yellow sand. Skeleton 68 was in grave cut 639, a rectangular shape measuring 2m by 0.68m. The remains of a coffin (638) were identified in the grave cut. The fill (637) was a compact mid-brown sand. Skeleton 85 was in grave cut 742 that was probably sub-rectangular measuring 1.75m by 0.45m. The fill (743) was a moderately compact grey brown silt sand. Skeleton 91 was in grave cut 564 a sub-rectangular 2.1m long and 0.8m wide. The fill (565) was a moderately compact mid-brown sand silt with grey silt lenses.

Skeleton 58 was in grave cut 597, a sub-rectangular measuring 1.82m by 0.56m. The fill (596) was a yellow brown silt sand. The tile from the grave fill provided a date of 1330-1380, thus implying a date 1330-1427.

Phase 4d: 1350-1525

Tile recovered from the following burials indicate that these burials are presumably of a late 14th century to early 16th century date. Skeleton 22 was from grave cut 321, an oval shape measuring 1.4m by 0.48m. The fill (320) was a hard mid-brown sand loam.

Skeleton 69 was in grave cut 644, a sub-rectangular shape measuring 0.45m across. The fill (643) was a compact light brown yellow silt sand. The fill (643) contained mid-16th century pottery and tile of a 1200-1325 date. As grave fill of skeleton 69 contained such late pottery

interpreted as mid-16th century, when burials ceased around 1525, it is appropriate to indicate that this burial is probably the latest burial on site.

In the North Transept or Chapter House were skeletons 1 and 89. Skeleton 1 in grave cut 143 that was a rectangular cut measuring 1.9m by 0.6m. The fill (142) was a loose yellow brown sand loam. Skeleton 16 (plate 4) was from grave cut 270, a sub-ovoid feature 0.8m by 0.4m. The fill (271) was a firm mid-red brow silt clay. Skeleton 89 in grave cut 753 a sub-rectangular feature measuring 1.75m by 0.55m. The fill (754) was moderately compact brown grey silt sand. Finds from the grave date this to the 13th to 16th century.

Plate 4: Female buried in a prone position in nave with neonate grave truncating her legs.

Phase 4e: undated burials 1220-1525

The following burials are all undated many of them are stratigraphically unassociated with other burials or medieval features. Undated burials in the choir include the following. Skeleton 27 was in grave cut 127, a sub-rectangular feature. The remains of a coffin (356) was identified. The fill (126) was a soft mid-dark brown silt sand. Skeleton 57 was in grave cut 591 that was rectangular measuring 1.9m by 0.6m. The residue of a coffin (598) was noted. The fill (590) was a moderately compact greyish brown silt sand. Skeleton 61 was in grave cut 605. a rectangular feature 1.78m by 0.35m. The fill (604) was a loose yellow brown sand.

In the crossing or retro-choir there was an undated burial. Skeleton 41 was in grave cut 457, a rectangular measuring 1.78m by 0.43m. Around the skeleton was (458) the remains of a wooden coffin. The fill (456) was a moderately compact yellow brown sand silt. Also in the retro-choir was sub-rectangular cut 559 that was 2m by 0.6m, which has been interpreted as a grave cut. The fill (560) was a moderate compact mid-brown silt sand.

In the south chapel there was an undated burial. Skeleton 54 was in grave cut 580 a sub-rectangular and was 0.35m across. The fill (581) was a moderately compact mid-brown silt sand.

In the Northeast Chapel there is a probable grave cut 693 that was a sub-rectangular shape measuring 1.7m by 0.6m. The fill (694) was a moderately compact mid-brown sand silt. The feature is undated which indicates that it is a burial dated 1220 to 1525. There is a possible sub-rectangular cut 281 which was 0.26m wide (Fig. 20 S.21). The remains of a human femur is evident in a section, which is indicative of this being the location of a burial. Fill (280) was a compact orange brown sand loam. This feature is treated essentially as an undated burial (1220-1525) that has been truncated by cuts 242 and 275. On the south side of the nave was skeleton 83 located in grave cut 535 that was a sub-rectangular measuring 1.6m by 0.55m. The fill (536) was a moderately compact mid-brown silt clay.

The undated burials outside the east end of the church that have no recognised associations with other medieval features include the following. Skeleton 20 in grave cut 294, a sub-rectangular that was 0.6m wide. The fill (293) was a compact yellow brown silt sand. Skeleton 21 in grave cut 316, a sub-rectangular 0.4m wide. The fill (315) was a soft mid-dark brown silt sand. Skeleton 24 in grave cut 336 that was a sub-rectangular shape measuring 0.45m across. The fill (335) was a soft mid-brown silt sand. Skeleton 26 was in grave cut 346 that was a sub-rectangular feature measuring 1.6m by 0.5m. The fill (345) was a compact yellow brown silt sand. Skeleton 29 in grave cut 362, a rectangular feature 1.09m long and 0.46m wide. The fill (361) was a moderately compact yellow grey sand clay. Skeleton 35 in grave cut 410 that was a sub-rectangular feature 0.48m wide. The fill (409) was a compact light brown yellow silt sand. Skeleton 36 in grave cut 422 that was a sub-rectangular feature 0.36m wide. The fill (421) was a compact grey yellow silt sand. Skeleton 37 in grave cut 424 was a sub-rectangular feature 0.33m across. The fill (423) was a compact grey yellow silt sand. Skeleton 40 in grave cut 452, a rectangular feature. The fill (451) was a moderately compact yellow orange sand silt. Skeleton 67 was in grave cut 618, a sub-rectangular feature 0.5m across. The fill (619) was a compact yellow brown silt sand.

Skeleton 32, at the east end of the church, was in grave cut 384 that was a rectangular shape measuring 0.36m across. The fill (383) was a compact light brown yellow silt sand. This is essentially undated and could be dated at any time from 1220 to 1525. It was, however, truncated by charnel pit 401 that was sub-rectangular that measured 1.3m by 1m. The fill (369) was a loose light brown yellow sand loam with grey lenses. The deposit contained charnel but no material to date it meaning it is probably late-medieval or post-medieval in date.

Skeleton 3 was near the surface and lay above skeleton 52 which has datable tile and thus indicates that this burial is probably of a 14th or 15th century date. Grave cut 146 was a sub-rectangular shape measuring 1.6m by 0.5m. The fill (145) was a compact yellow brown silt sand.

Skeleton 51 to the east of the church had datable tile, which would imply that the following burials above it are of a 14th or 15th century date. Skeleton 49 was in grave cut 521, a sub-rectangular measuring 0.48m wide. The fill (520) was a compact yellow brown silt sand. Skeleton 9 was in grave cut 221 that was a sub-rectangular that was 0.42m wide. The fill (220) was a compact grey brown silt sand.

Beyond the east end of the church there are other undated burials that can be considered from stratigraphy to date to the 14th or 15th century. Skeleton 28 was in grave cut 360 that was a sub-rectangular feature measuring 1.62m by 0.58m. The fill (359) was a compact yellow brown silt sand. Skeleton 23 was in grave cut 326, a sub-rectangular feature measuring 1.6m by 0.5m. The fill (325) was a compact light brown yellow silt sand. Skeleton 33 was in grave cut 400, a sub-rectangular feature 1.7m by 0.5m. The fill (399) was a soft mid-brown grey silt sand.

Further undated burials that are at the east end of the church are skeletons 38 and 39. Skeleton 38 was in grave cut 426 that was rectangular being 0.25m across. The fill (425) was a compact orange brown sand silt. This burial was truncated by the grave cut for skeleton 39. This was grave cut 443 that was a rectangular feature measuring 1.2m by 0.2m. The fill (442) was a moderately compact orange brown sand silt. Layer (349) was a hard yellow brown sand loam with limestone fragments. This deposit was noted as overlying grave cuts 360, 426 and 443. It is thus considered to be an accumulation layer as the graves were cut and the level of the cemetery increased.

There are two intercutting burials at the east end of the site, which are not dated and must have a burial date between 1220 and 1525. Skeleton 4 was in grave cut 158, a sub-rectangular shape measuring 1.2m by 0.5m. The fill (157) was a compact mid-dark brown silt sand. Skeleton 8 was in grave cut 201, a rectangular cut 0.23m wide. The fill (200) was a compact mid-brown yellow silt sand.

The remains of two burials survived partially that were located under feature 292 to the east of the church. Skeleton 17 was in grave cut 272 not clearly defined because of later disturbance (Fig. 21 S.23). The fill (273) was a loose mid-yellow brown sand clay. The feature was undated and there was a suggestion that this could be charnel under wall 292. Skeleton 19 was in grave cut 285 which was not fully defined as it was under wall 292. The fill (284) was a loose mid-yellow brown sand clay. It was also considered that this could be charnel. Skeleton 46 was in grave cut 477, a rectangular feature 0.26m wide. The fill (476) was a compact brown yellow silt sand. This feature may also have been an area of charnel under wall 292.

Probable graves that are undated on the east side of the church include the following. Sub-rectangular cut 616 measuring 1.3m by 0.5m was interpreted as a grave cut. The fill (617) was a moderately compact mid-grey brown sand silt. Cut 815 was an irregular rectangular shape outside the east end of the church. The fill (691) was a moderately compact mid-grey sand silt. This has been interpreted as a series of intercutting graves that were not excavated.

Over some of the graves that lie between later contexts 292 and 341, there is a layer (561) - a moderately compact brown yellow silt sand (not on plan). This was a layer of charnel that was either associated with the digging of the graves and the multiple intercutting of them, or was a result from later disturbance.

Outside the east end of the church and possibly cut into the top of grave fill (708) was charnel pit cut 703 that was sub-circular in shape measuring 1.5m by 1.45m and was 0.24m deep. The fill was a moderately compact brown yellow silt sand.

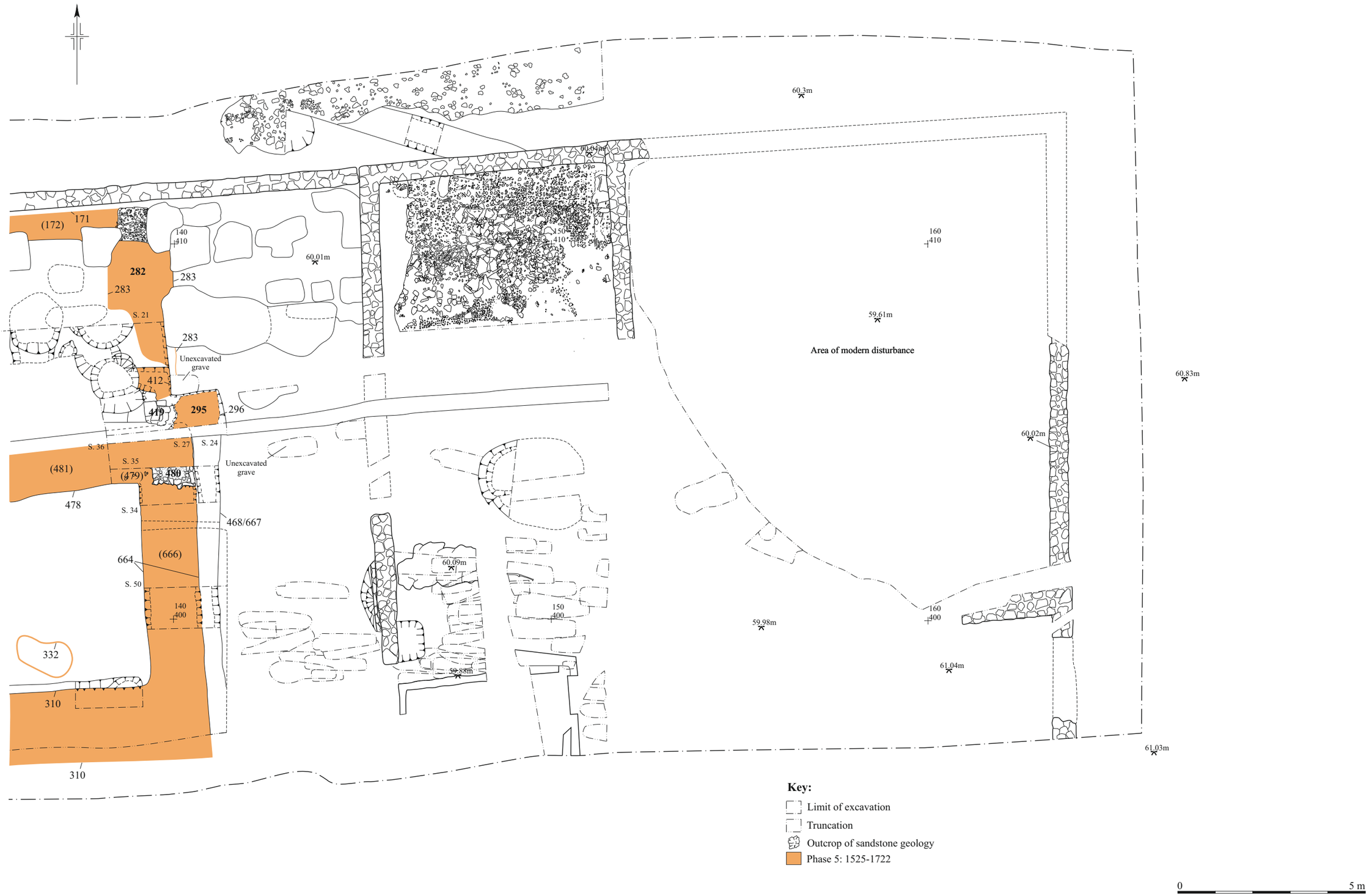


Figure 14: Phase 5 and associated burials - east

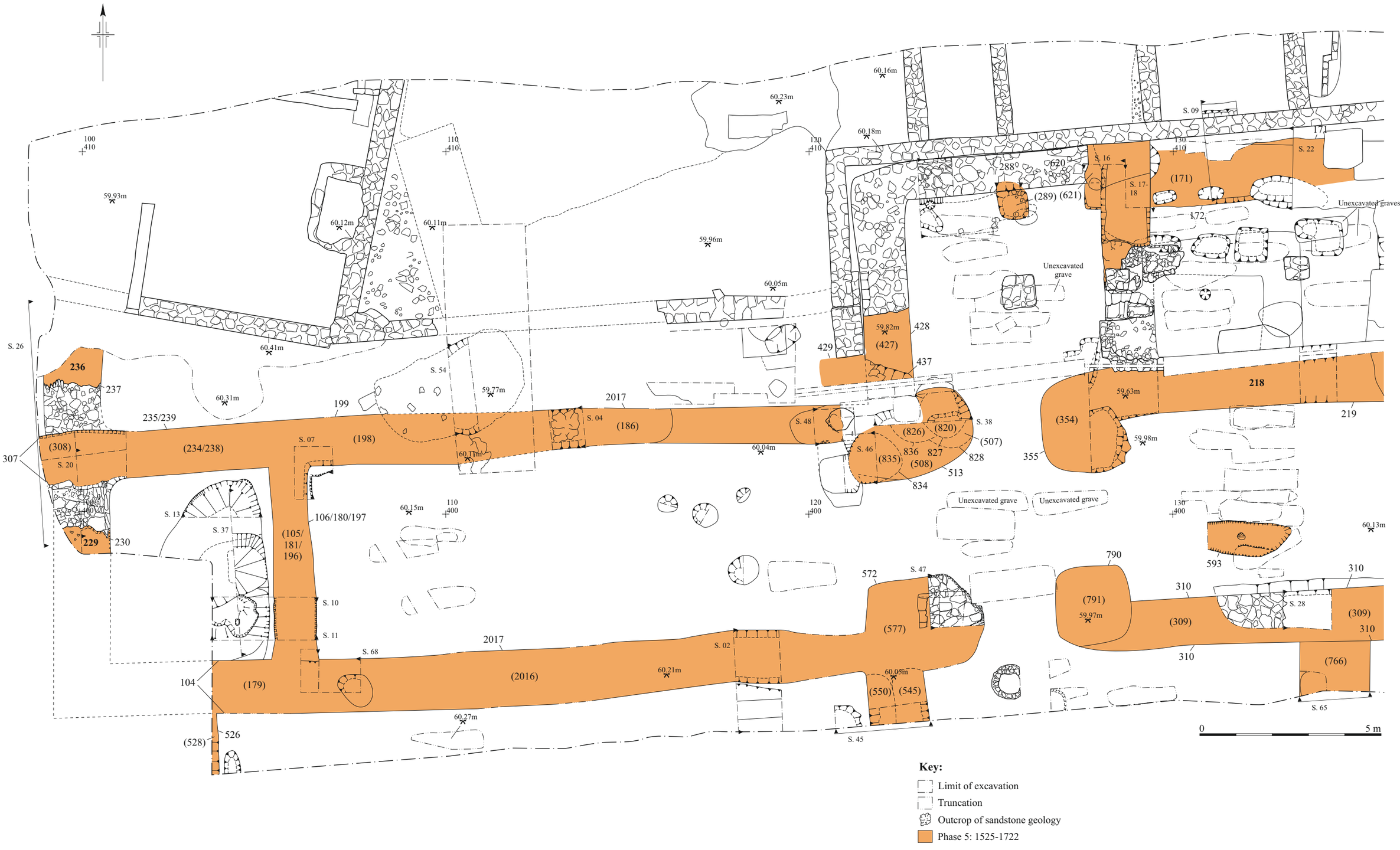


Figure 15: Phase 5 and associated burials - west

To the west of the west wall of the North Transept wall it was thought that there was a possible undated grave cut 210 that was a rectangular shape. The fill (209) was a compact mid-yellow brown silt sand.

4.4 Post-medieval

Phase 5: 1525-1661, but by almost certainly by 1722

Historically it is known that the Priory at Littlemore was suspended and dissolved in 1524-1525 (VCH 1907, 75-77; VCH 1957, 267-275). This was prior to the dissolution of most other monastery for specific reasons peculiar to Littlemore and the Hospitallers at that date held Sandford Perceptory. Three other religious establishments were included in this development, namely Saint Frideswide, Caldwell and Daventry. It is for this reason that one has to consider that religious life and burial activity cease at Littlemore Priory in 1524 or soon after and that this is followed by periods of robbing presumably from sales or recycling of stone and tile and other useful commodities. It is more difficult to ascertain when the final robbing of the church and the associated buildings occurred.

It makes sense that the process of robbing and rebuilding at Minchery Farm, as Littlemore Priory became known, went hand in hand and that robbing occurred when stones were required. The initial stripping of the site may have occurred rather rapidly as objects such as glazed floor tiles and roof tiles would be a sought after commodity. It is known that after 1525 Littlemore Priory was given to Wolsey for his new College (VCH 1957, 267-275). This probably started a process of stripping certain features from the priory such as tiles, as similarities in the design of tiles are noted at both Littlemore Priory and Christ Church.

There is a reference in the year 1661 from Anthony Wood (Clark 1891, 403-404), as noted in the introduction, which is somewhat ambiguous about the state of the robbed church at that date. Wood's statement contains the phase '*But nothing of the chapel or church is there standing*' which seems rather exact that the site of the church has been robbed by this date. The following statement occurs in the same paragraph '*we saw there the ruins of many buildings of which the church is part*'. This statement implies that certain parts of the church may still be standing. This latter statement is again contradicted by the reference in a later phrase that assumes that the church is located to the north of a range that runs south to north, as numerous coffins have been found to the north of that building. Of the phrases two indicate that the church has gone and one that parts may be left of it. The reference to the church or chapel may also not refer to the main church but a small chapel to the north of the refectory range, which may be associated with SS. Peter and Paul, the Holy Trinity or chapter house.

A statement by the antiquarian Hearne in 1722 accounts for the following. *"Here I have several times seen the ruins of many buildings of which the church or chapel (now quite destroy'd) was part. The Refectory (commonly called the Hall) in the north part of it is still standing, tho' much altered, and divided now into more than one room"* (Rannie 1906, viii.351-353). In this Hearne also implies that part of the church may still be standing, although the exact meaning is obscure. The problem with this is that if the church had been removed Wood's and Hearne's accounts may be struggling to identify what the church is and thus creating this context of ambiguity.

It is possible to assume on the above data that the church was probably wholly robbed by 1661.

There is evidence for robbing along the length of the church. In the choir all three walls were robbed to various degrees. Wall 317 had been clearly truncated by robber cut 310. The fill 309 with a friable and compact mid-brown silt sand. The east wall of the choir 480 was truncated by robber cut 664 that was 1.2m across (Fig. 22 S.50, S.67). The lower fill (665) was a moderately compact sand deposit. The upper fill (666) was a moderately dark yellow brown silt sand. The wall to the west of 480 had been completely robbed. Robber cut 478 was a linear feature cutting into 480 that measured 1.3m by 0.36m Fig. 21 S.35, S.36). The fill (479) was a compact mid-brown silt sand. The number 471 was also used for the robber backfill. Overlying this was deposit (481) a moderately compact mid grey brown sandy silt representing discarded material presumably following reclamation of more substantial stones. There was probably more than one episode of robbing of the north wall as robber cut 219 was a linear feature 1.3m wide and 0.42m deep towards the west end of the wall line (Fig. 21 S29). Lower fill (324) was a highly compact mid-brown clay sand. Fill (218) was a compact mid-grey brown clay sand. In the case of the clasping buttress foundation 419 it is apparent that the full extent of the buttress is defined by robber cut 296 (Fig. 21 S.27). The full extent of the shape provides the potential stylistic date for the buttress. Robber trench 296 was a linear feature 0.7m wide. The fill (295) was a compact mid-brown sand loam. This fill contained 15th century pottery and is presumably residual.

Internally to the choir there was evidence for robbing other features. Robber cut 332 was a linear feature that cut masonry fragment 333. The fill (331) was a compact mid-dark grey brown clay sand with stone inclusions. The deposit was 0.6m deep. In the choir was pit 593, an ovoid shape feature measuring 2.8m by 0.9m and 0.4m deep. The fill (592) was a soft mid-green grey silt sand. The feature was treated as a charnel pit but may simply be an attempt to rob the grave containing skeleton 61 or a burial that was located above it.

The Crossing or Retro-choir stood underneath a tower, which was robbed by the early 18th century. The northeast support of the crossing was truncated by robber cut 355 (Fig. 21 S.30, S.31). The fill (354) was a deposit of compact mid brown silt sand with occasional fragmented roof tile inclusions. The southeast support was truncated by robber cut 790 that measured 2.35m by 2.05m. Fill (791) was a moderately compact mid-brown silt sand. The southwest wall 571 was robbed out by robber cut 572 that was a sub-circular feature measuring 2.9m by 2.6m and 0.65m deep (Fig. 22 S.47). The lower fill 573 was a stiff pale grey yellow silt sand. The fill (574) was a firm pale brown yellow silt sand. A small re-cut 838 was made into the top of (574). The fill (575) was a firm mid-grey brown clay sand. The fill (576) was a firm pale grey brown silt sand. The fill (577) was a loose mid-brown yellow sand gravel with mortar flecks.

The northwest support of the crossing had what appears to be a whole series of truncations. The largest cut was robber cut 513, an oval shape 3.3m by 2.2m across and 0.76m deep (Fig. 22 S.38, S.46). Fill (512) was a compact mid-brown sand loam. Fill (511) was a compact grey brown sand loam. Cut into the top of the backfill was a small recut 833. This contained fill (510) a mid-brown sand. Fill (509) was a compact mid-brown sand loam that overlay (510). There was a further truncation 832 that contained context (508) that was a compact yellow brown sand loam. Truncating the top of (508) was cut 831 which had a large piece of limestone in its base. Covering this limestone block was deposit (847), and then (830). Also truncating the top of deposit (508) was cut 834. This contained fill (557), a compact mid-

brown loam, and fill (556) that was a compact grey brown sand loam. Over these was fill (835). A further recut, truncating (834), was feature 837 in the top of this contained fill (829). This was in turn was cut by 828 that was filled by fill (507) was a compact mid-brown sand. A small recut 836 was filled by deposit (826). This was in turn was truncated by cut 827 that contained fill (820) that was a compact yellow brown sand loam.

The three walls that formed the main part of the nave had also been extensively robbed. The north wall of the nave had two numbers given to its robbing. Robber trench 185 was only partially identified; it was 0.26m deep (Fig. 20 S.4, S.7). The fill (650) was a compact grey brown sand with gravel inclusions located in the east of the trench. The fill (186) was a compact sand with limestone inclusions. This number was given to the central part of the trench east of a sondage. The remains of the wall line was marked by robber trench 199, a linear feature 15m by 1m, and was 0.35m deep, which covered the western part of the wall line (Fig. 20 S.7). The backfill (198) was a firm mid-red brown silt sand. The west wall was truncated by robber trench 106/180/197, a linear feature 5m by 1.2m and 0.39m deep (Fig. 20 S.10, S.11, Fig. 22 S.68). The backfill of the wall was alternatively described as (105), a soft light grey brown sand, or (181) that was a hard mid-brown silt sand, or (196), a firm mid-red brown silt sand. The south wall was truncated by robber trench 2017 that was a linear feature (Fig. 20 S.2). The fill (2016) was a firm mid-brown yellow silt sand with large stone inclusions.

The west tower had a number of robbed out walls. The north wall was given two numbers. Robber cut 235/239 was a linear feature that was over 0.8m wide (Fig. 20 S.20). The fill (234/238) was a compact mid-brown silt sand. The west wall 231 was truncated by robber trench 230 (Fig. 20 S.20). The fill (229) was a compact mid-brown silt sand. The south wall was truncated by robber trench 104 was 1.02m wide and 0.5m deep (Fig. 20 S.6, Fig. 22 S.68). The lower fill (103) was a moderately compact mid-brown silt sand with stone inclusions. This contained residual pottery of a Roman date. The upper fill (179) was a moderately compact mid-grey brown clay sand.

On the northwest corner of the tower there was an angle buttress. The north buttress wall 213 was truncated by robber cut 237, a linear feature (Fig. 20 S.20). The fill (236) was a compact mid-brown sand with rubble inclusions. The west buttress was truncated by robber trench 307 that was a linear feature 2.4m by 0.6m wide (Fig. 21 S.26). In the base of robber trench 307 was charnel pit 299, a circular feature that measured 0.3m and 0.13m deep (Fig. 21 S.26). The fill (300) was a soft mid-grey clay sand. This contained a human skull and is probably a charnel pit. The skull was probably encountered during the process of robbing walls or constructing walls. The fill (308), of robber trench 307, was a firm mid-grey brown clay sand with limestone fragments.

There was evidence of some robbing of the north transept. Oval pit 437 measured 1.3m by 0.65m and which was 0.18m deep (Fig. 21 S.33). The fill (436) was a compact grey brown sand loam, cut by 435 and 428. Robber trench 428, a linear feature that was 1.32m wide and was believed to be a structural component on the north side of the northwest corner of the crossing or retro-choir. This feature had been incorporated in the development of the north transept. The fill (427) was a compact yellow brown sand loam. A rectangular cut 288 that was associated with wall 2052 that was 0.6m wide and 0.38m deep (Fig. 21 S.25), it was robbed on the south side forming a pit or posthole. The fill (289) was a loose mid-grey brown silt sand. Robber trench 620 was a linear feature measuring 1.75m by 0.5m and represented

the robbing of wall 2052 at its east end (Fig. 20 S.16). The fill (621) was a moderately compact mid-brown sand silt. This feature is dated 1525 to 1650.

The main event of the robbing of the east wall of the Northeast Chapel was by robber trench 283. The trench 283 measured 4.25m by 0.94m across and 0.22m deep (Fig. 20 S.21). Fill (282) was a compact mid-brown sand loam. This fill contained residual 13th century pottery. A secondary robbing of the east wall was noted by truncation 412. The fill (411) was a moderately compact mid-orange brown silt sand. The western side of the robber trench was extensively truncated by post-medieval pitting and its original width is estimated to have been closer to 1.4m.

The robbed out north wall of the Northeast Chapel was by rectilinear cut 172 measuring 13m long by 2m wide and 0.22m deep (Fig. 20 S.9). The fill (171) was a firm mid-grey brown silt sand. The finds included 16 fragments of roof tile, three of which retained elements of their glaze. Two of the roof tiles displayed a few splashes of amber glaze, the third has a wash of green glaze with a sharp straight boundary to unglazed area. The glazed tiles were date to c. 1200-1325(?), whilst the remaining 13 were dated 1175-1400. Overlying deposit (171) in places was layer (170) was a compact mid-brown grey clay sand 0.05m thick and extending over an area 3m by 2m.

The wall running south of the crossing or retro-choir was truncated by a series of cuts. Initially there was robber trench 542 that was a linear feature 0.6m deep. The lower fill (543) was a soft mid-grey orange clay sand. Truncating this was cut 841, which had a mortar substance in the fill and also deposit (842). Truncating (842) was cut 844 that contained fill (550) that was a firm mid-red brown silt sand. Deposit (550) was truncated by cut 843 that contained fill (544) a loose mid-brown grey clay sand with black silt sand lenses. The finds included small find 26. The upper fill (545) was a firm mid-red brown clay sand with stone inclusions. The last fill deposit contained clay pipe stems. Deposit (550) was also truncated by cut 848 that contained fill (554) a firm mid-yellow brown clay sand.

The east wall of this structure 765 had not been fully robbed but was associated with demolition layer (766) a compact mid-brown sand silt.

There was evidence for a robbed out wall running to the south of the robbed walls of the west tower. Robber cut 526 was a linear feature measuring 1.4m across (Fig. 22, S.43). The fill (527) was a soft mid-brown silt sand with stone inclusions. The upper fill (528) was a firm mid-yellow brown clay sand that contained mortar flecks.

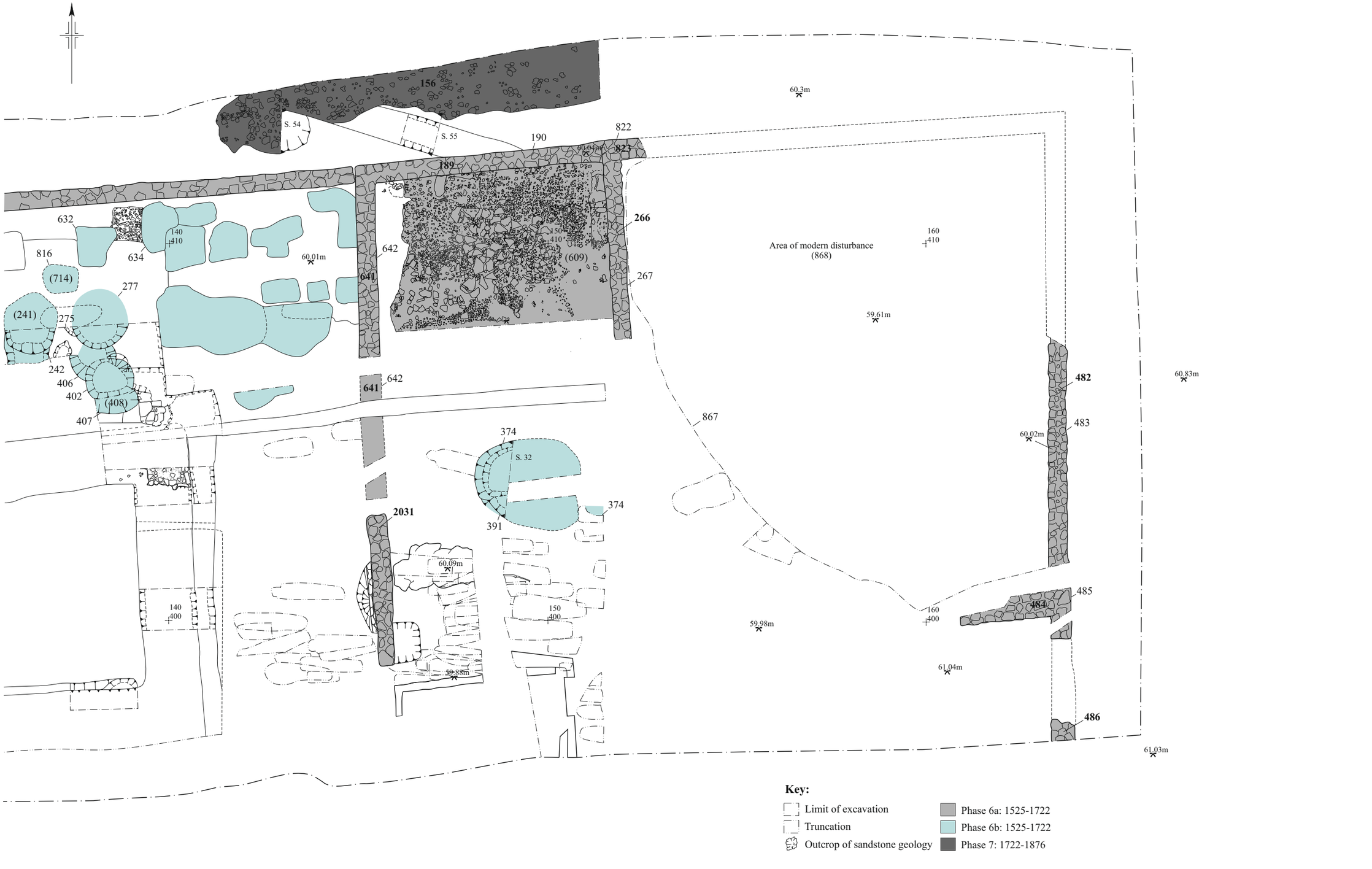


Figure 16: Phases 6-7

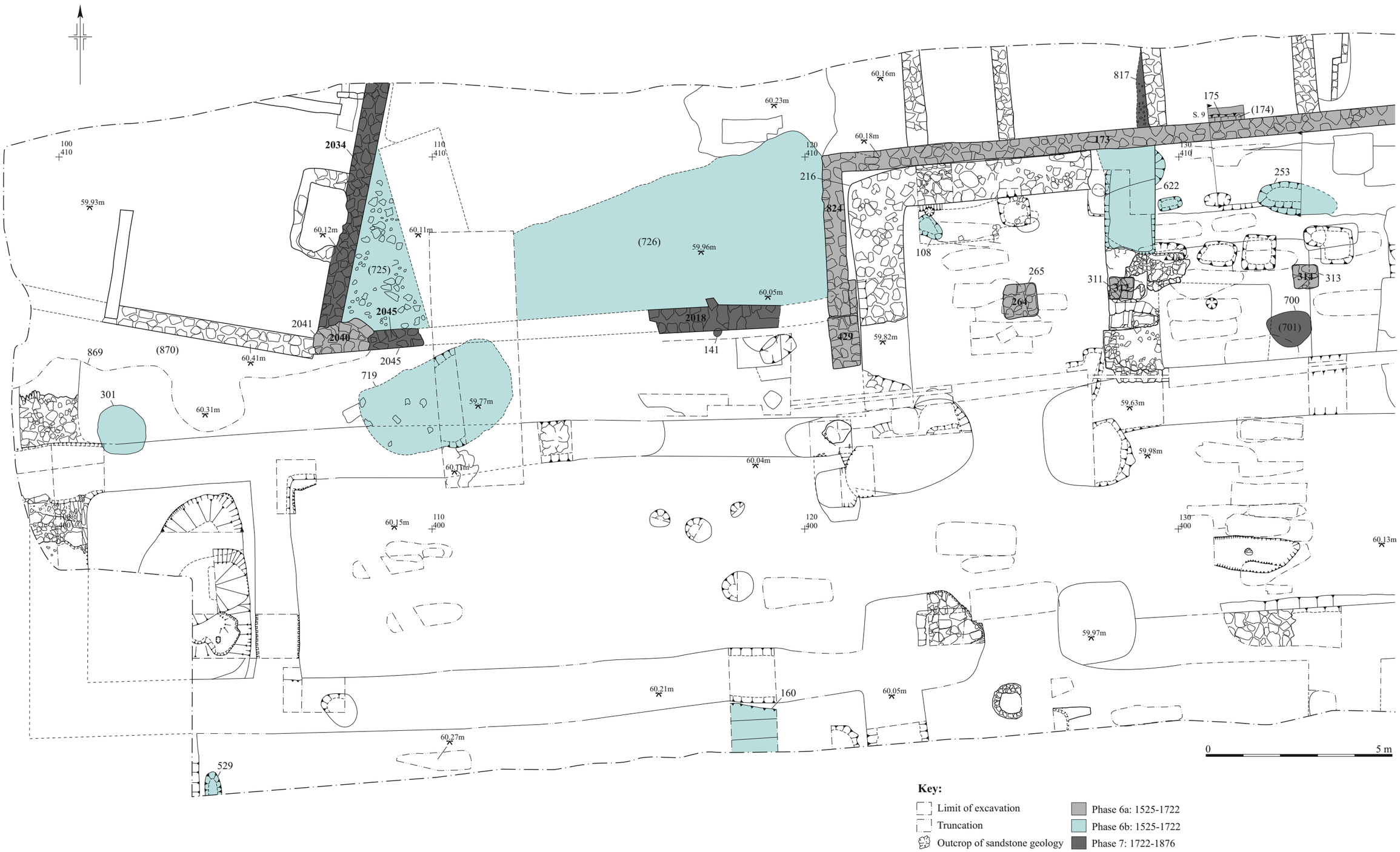


Figure 17: Phases 6-7

Phase 6a: 1525-1722

There was evidently activity on the site from 1525 to 1722; however, specifically identifying dates of building activity is more difficult. There are indications of early robbing 1525-1529 when artefacts were probably removed for recycling elsewhere, phase 5 (Fig. 14-15). It has been suggested that the surviving farmhouse was a structure of late medieval origin that was probably altered into its current form about 1600 (Pantin 1971, 19-26; Munby 2003). There is some activity on the site in 1661 (Clark 1906, 403-404; VCH 1957, 267-275).

Hearne provides a drawing and an account of the buildings of 1722 (Pantin 1971), but it is difficult to totally reconcile this arrangement with what was identified on the site (Plate 1). The picture is described as 'A Prospect of Littlemore Minchery from the North West'. Of the features noted on the drawing it is possible to recognise a number of the descriptions.

(2) A Barn, where the Chapter House is supposed to have stood
(3) An old Gate
(4) A Cart-House, about which Place stood the Tower of the Church
(5) The Refectory
(9) The Gate Leading to the Dwelling House

From the archaeological evidence it is possible to suggest that the outbuildings as planned on the site, representing phase 6 (Figs. 16-17), probably developed at some time from c. 1600 to 1722. This interpretation is due to the butting arrangement of the walls. From the current arrangement it is not possible to significantly define more accurate dates in this development.

The two following foundations appear to be part of a structure, to which it could be argued the remaining foundations were butted up to. Foundation cut 487 was the north south wall of part of an L-shaped feature. This was filled by masonry wall 486 that was an irregularly coursed stone wall. Foundation cut 485 was an east to west wall that formed part of an L-shaped feature. Masonry wall 484 was a limestone structure bonded with lime mortar and appeared to have a quoin on the northeast corner. For this reason it is considered that this represents the earliest constructed feature of the new farm buildings.

The north to south foundation of wall 487 continued as foundation cut 483 that was 6m by 0.5m. This was filled by masonry wall 482 made of roughly squared limestone blocks. If we consider the illustration of 1722, this is probably not the wall of a large barn, but part of a walled enclosure that lies to the north of the initial barn constructed. The northwest corner of this foundation was marked by trench 267 that was the north south wall of an L-shaped cut. Wall 266 was made of roughly squared limestone blocks in two linear sections one measuring 5.2m by 0.45m. The north foundation cut 822, and the accompanying limestone wall 823 survived with measurements of 1.1m by 0.5m. The formation of this enclosure and its date in the sequence of construction was noted by a butt joint on the northwest corner.
It would seem to be the case that a north to south orientated barn was constructed up against wall 266, and must have been built across that wall at a higher level that no longer exists. The east to west north wall foundation, cut 190, was a linear cut for wall 189 a limestone structure 12m by 6.5m that was 0.5m across. Backfill (191) was a soft mid-grey brown silt sand. The north to south wall that formed the east wall of the barn was foundation cut 642. Masonry wall 641 was constructed of limestone stone. This feature, at the southern end was numbered foundation cut 2031, was a linear feature 4m by 0.5m. The wall 2030 was a limestone structure built of roughly squared stones and with lime mortar bonding. In the

north part of this building was surface 669 constructed of limestone and sandstone and ceramic building material. This was a 17th century surface.

Foundation cut 175 was a linear feature 0.8m wide running east to west (Fig. 20 S.8, S.9, Fig. 22 S.62). Wall 173 was of roughly squared limestone blocks. Backfill 174 was a soft light yellow grey brown silt sand. The west foundation that was orientated north to south was in cut 216. The wall 824 was a limestone structure. The backfill (217) was a soft dark brown grey silt sand. On the south end of wall 824 was construction cut 431, a linear feature (Fig. 21 S.33). This contained masonry wall 429 that was a limestone structure that measured 0.65m by 1.3m. The backfill (430) was a compact yellow brown sand with gravel inclusions. This addition appears to indicate that the walling of this barn probably had more than one phase.

The south side of this part of the barn was open, and can either be interpreted as a cattle shed or a cart shed. There were three post pads 264, 312, and 314 located along the line of the open south side of the building. Foundation cut 265 was 0.9m by 0.88m. Post pad 264 was made of roughly hewn limestone blocks that were bonded by a brown sand mortar the foundation cut 311 was 0.6m by 0.66m by 0.14m deep. The post pad 312 was of limestone and contained roughly hewn stones. Foundation cut 313 measured 0.64m by 0.6m and 0.16m deep. The post pad 314 was of limestone and random coursed with a brown sand mortar. Some residual 13th century pottery was associated with this feature. This structure is shown on Hearne's picture of 1722 and is thus considered to be the remains of a barn, which was claimed to be located in the area of the former chapter house. This would imply that the north transept was formerly used as the chapter house.

The following are considered to be for timber structures in the post-medieval barn. The cut 255 was a semi-circular feature measuring 0.6m by 0.5m. The fill (254) was a compact grey yellow silt sand. Oval cut 251 was 0.6m by 0.4m with a depth of 0.25m. The fill (250) was a moderately compact grey yellow silt sand.

A fragment of a foundation cut and wall were located to the west of the barn. There is a building marked here on the 1722 picture of the Minchery Farm complex. There is an irregular piece of wall set in foundation cut 2041 measured 1.3m by 0.95m. The wall 2040 is of limestone and may be the remains of an earlier feature of unrecognized date. The exact origin of wall 2040 was difficult to ascertain, but the drawing of 1722 indicates that there was a gatehouse in this location. The term gatehouse may indicate that the irregular wall fragment is of a medieval origin and the gate complex was associated with the nunnery complex.

Layer (555) was a firm mid-yellow brown clay sand that accumulated over the robbing and pitting deposits dated from 1525 to 1722 (not on plan).

Phase 6b: 1525-1722

Phases 5, 6a and 6b have all been placed within the date range of 1525-1722, although it has been suggested here that the information on when the church was robbed, phase 5, is ambiguous in these accounts and a narrower date of 1525-1661 could be appropriate. The division between phase 6a and phase 6b, both of which are placed chronologically from 1525-1722 is created from the nature of the archaeology. Phase 6a is created to account for the construction of the farmyard buildings on the north and northeast side of the site. Phase 6b contains a series of negative features (pits or features created by animal hooves) that probably occurred within the buildings and yards after they were created. None of the pits

associated with the barns and the yards appear to be truncated by these buildings construction trenches, thus it is assumed that there are two separate phases here, which on present knowledge cannot be more refined chronologically.

There appears to be a number of pitting events to the walls that are post-robbing and which are located in the area of the open barn. The following pits were cut into the fill of the robbed out chapel east wall. Cut 406 has an unknown shape because of later truncation. The fill (405) was a moderately compact mid-dark brown silt sand. Pit 408 was sub-oval in shape measuring 1.15m by 0.5m. The fill (407) was a comnpact mid-grey brown silt sand. There was residual 13th century pottery associated with the fill of this feature. These two features were subsequently truncated by pit 402, an oval measuring 1.48m by 0.97m and 0.57m deep. The fill (392) was a compact dark grey brown silt sand with mortar and plaster inclusions. There was residual 13th century pottery associated with the fill of this pit.

There were a series of features treated as intercutting pits; the exact relationship to each other and to fill (405) was not determined. Robber cut 275 was an oval shape 1.7m by 0.8m (Fig. 20 S.21). The fill 274 was a compact mid-brown sand loam. Pit 277 was an oval shape 1.3m across with a depth of 0.55m. The fill 276 was a compact mid-brown sand loam. Pit 278 was an oval shape 0.54m by 0.5m. The fill 279 was a compact mid-brown sand loam. These features were treated as intercutting pits, but it is also possible that in a barn they may represent areas that have been affected by cattle trample. In a farmyard, when a soft water saturated surface is trampled by cattle, a feature is created that could be defined as a pit but was never actually dug. The hooves of the cattle push disturb the ground and forces material into the ground. A further truncation of the robber trench, that was numbered 242, was a linear feature 1.2m wide (Fig. 20 S.21). The fill (241) was a compact mid-brown sand loam.

There are a series of pits truncating the robber fill of the northeast chapel walls. Cut 632 was a sub-circular feature measuring 0.5m by 0.6m. Fill (631) was a compact mid-dark brown silt sand. Cut 634 was a sub-circular feature measuring 1.1m by 0.4m. Fill (633) was a compact mid-dark brown silt sand. Cut 636 was a linear feature measuring 0.9m by 0.4m. Fill (635) was a compact mid-dark brown silt sand with stone inclusions.

Context 816 was for multiple cuts. The fill (714) was a moderately compact mid-grey brown sand silt. This is considered to be the area of multiple cutting features. This feature, as all intercutting graves would not truncate the backfill of a robber trench, is probably best described as a later pit cutting the robber trench.

Truncating context (708) was pit or posthole 711 that was a sub-circular feature measuring 0.6m by 0.4m and with a depth of 0.19m. Fill (710) was a moderately compact mid-yellow brown silt sand.

Truncating the earlier robber trench fill (772) and the later grave fill for grave cut 690, was cut 700 a pit with a 1.15m across, which contained fill (701) a moderately compact mid-grey sand silt.

In the west end of the barn was oval pit 747 that measured 0.3m by 0.2m, and which truncates grave fills. The fill (748) was a moderately compact grey-brown silt sand. Cut 746 was a trapezoid shape measuring 0.18m by 0.14m. The cut was apparent at the base of 744 and must have been truncated by that feature. The fill 749 was a loose dark brown silt. A square cut 744 measured 0.58m across and 0.3m deep. The fill (745) was a moderately

compact grey brown silt sand. Deposit (745) contained 13th century pottery which is presumably residual.

There are a series of other pits that are cut into the top of robbed out walls. Cut into the top of the robber fill (621) was pit 622/364, a roughly rounded feature measuring 2.6m by 1.75m across (Fig. 20 S.16-S.18). The fill (623) was described as a moderately compact mid-grey sand silt. The fill (363) was described as a moderately compact mid-light brown sand silt. The section contained late 17th century finds. This is possibly part of a 17th century phase of robbing or a later pit after robbing.

Cut 253 was a sub-rectangular shape measuring 1.8m by 1.7m and was 0.42m deep (Fig. 20 S.22), that was cut into the robber trench backfill (171). The fill (252) was a compact yellow brown silt sand. Rectangular cut 249 measured 1.1m by 0.7m. The feature was shaped like a grave cut but there was no burial noted in the fill and it is assumed to have cut deposit (171). The fill (248) was a compact brown yellow silt sand.

Located on the north-western corner of the barn was cut 108, a sub-circular pit with gradually sloping sides and a rounded base (Fig. 20 S.12). The fill (107) was a friable mid-dark grey brown silt sand. The nails recovered are indicative of this being a pit of a post-medieval date.

There were a number of cut features that were not excavated in the east end of the barn, which have not been numbered and many of them are of this date.

There are a number of other pit features in the yard that are presumably of this date, with some of them being located to the east of the church. There was a large double cut pit disturbing graves to the east of church. Pit 391 was oval in shape and measured 0.68m by 0.6m and was 0.3m deep. The fill has been given as (373). There was some residual 13th century pottery in the fill of this pit. Pit 374 was an oval shape measuring 1.1m by 0.8m and 1.03m deep (Fig. 21 S.32). The lower fill (373) was a firm dark brown grey sand loam with upper fill (372) a firm yellow brown sand. This pit is thought to have been for the quarrying of sand. To the southeast of pit 391 was pit 414, an oval shaped feature measuring 0.7m across. The fill (413) was a compact brown yellow silt sand. This pit truncated grave fill (410).

There were a couple of postholes that were located to the east of the church. Posthole 648 was a sub-circular feature. Fill (647) was a compact mid-brown yellow silt sand. This feature truncated 644 and 646 to the east of the church. Posthole 705 was a circular feature measuring 0.23m in diameter and being 0.11m deep (Fig. 22 S.51). The fill (704) was a moderately compact dark grey brown loam sand with tile packing.

Located to the south of the church west tower was pit 529 that was a sub-square feature measuring 0.35m by 0.35m and 0.1m deep (Fig. 22 S.44). The fill (530) was a soft mid-grey brown silt sand. On the south side of the church there was a large sub-circular pit 160 that had sharp sides and a slightly concave base (Fig. 20 S.2. The fill (159) was a compact mid-dark brown silt sand, which contained a sherd of early 17th century Border Ware. This would imply that a large pit was made here in the time that the walls of the church were robbed out.

Truncating the robber trench of the north tower wall was cut 301 that was an ovoid shape measuring 0.7m by 0.5m and 0.2m deep (Fig. 21 S.26). The fill (302) was a firm dark brown clay silt with charcoal flecks. Truncating the north robber cut of the nave was a large sub-

circular pit 719 that measured 4m by 2.6m and 0.6m deep (Fig. 22 S.56). The fill (720) was a friable mid-yellow brown silt sand. The upper fill (721) was a mid-grey brown sand silt with stone and brick inclusions, which has been interpreted as a dump of rubble.

During ground reduction on the access road layer (769) was noted as a moderately compact dark grey sand silt, which was interpreted as a 17th century soil horizon (Fig. 22 S.63).

4.5 Imperial and later

Phase 7: 1722-1876

The next detailed map to be recognized was map dated 1876 (Figs. 16-17). There is a foundation cut 2045 that measured 1.5m by 0.5m to the east of wall 2040. The wall 2044 was a fragment of stone wall in alignment with wall 2018. The foundation cut 2019 measured 3.7m long. Wall 2018 was a stone structure made of roughly squared blocks. The narrow nature of the wall would indicate that this was probably a wall that marked the initial boundary of the farmyard.

Circular feature 141, clips the south side of wall 2018, and thus it is likely to be for a feature that postdates the wall, but was constructed alongside it. The fill was (140).

Lying to the north of wall 2018 was layer (726) that represents a levelling layer under layer (725). Layer (725) was a limestone cobbled surface that measured 3.5m by 1.7m.

The map of 1876 shows a wall extending from the back of the barn running towards the northeast. No surviving wall appears to run in this direction. However, under wall 261 there appeared to be the robbed out line of an earlier wall orientated in this general direction. The wall cut was recorded as 817. Running on a similar alignment to this was foundation cut 2035, a linear feature 6.5m by 0.6m. Wall 2034 was a stone structure of roughly squared blocks. Sub-rectangular foundation 2037. Stone wall 2036 of roughly squared blocks bonded with lime mortar. The feature was a structure that butted up to the wall 2034.

At present the farm buildings are only known to have extended beyond the barns in existence in 1722 on the 1876 map. This implies that the following features are associated with development of yard surfaces. Limestone layer (156) is of cobbling likely to be an initial yard layer. Covering layer (156) was limestone layer (155) of cobbling thought to relate to a yard surface. Limestone cobbles (154) were a single layer 1m wide that was visible in section. Layer (153) was a compact dark grey sand loam.

Phase 8: 1876-1899

There are a number of features that it is possible to date between the years 1876 and 1899 as indicated by the Ordnance Survey First and Second Edition maps that were produced at a scale of 1: 2,500 (Fig. 19).

The wall in construction cut 817, was robbed by trench 818, with the backfill being 819.

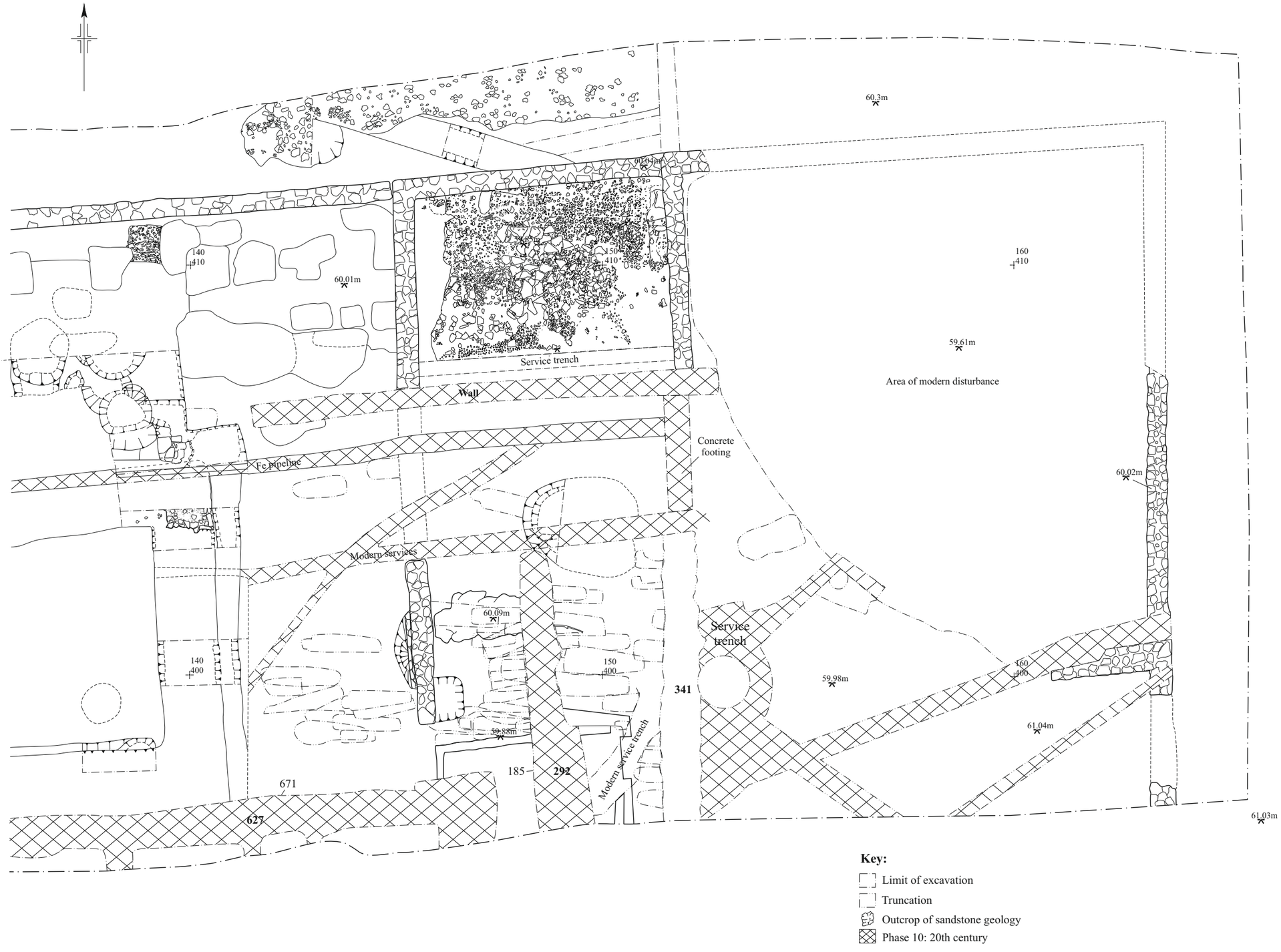


Figure 18: Phases 8-10

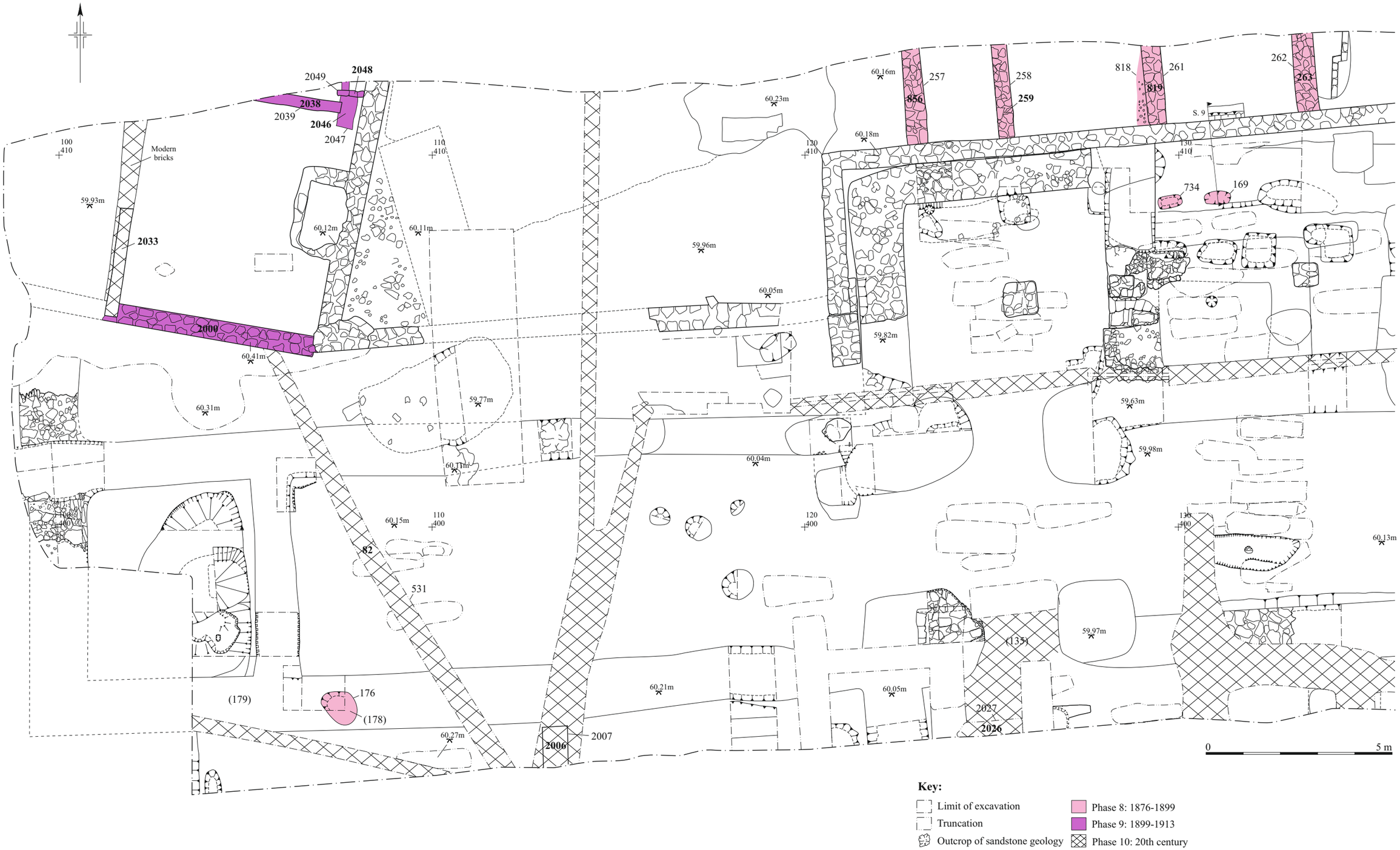


Figure 19: Phases 8-10

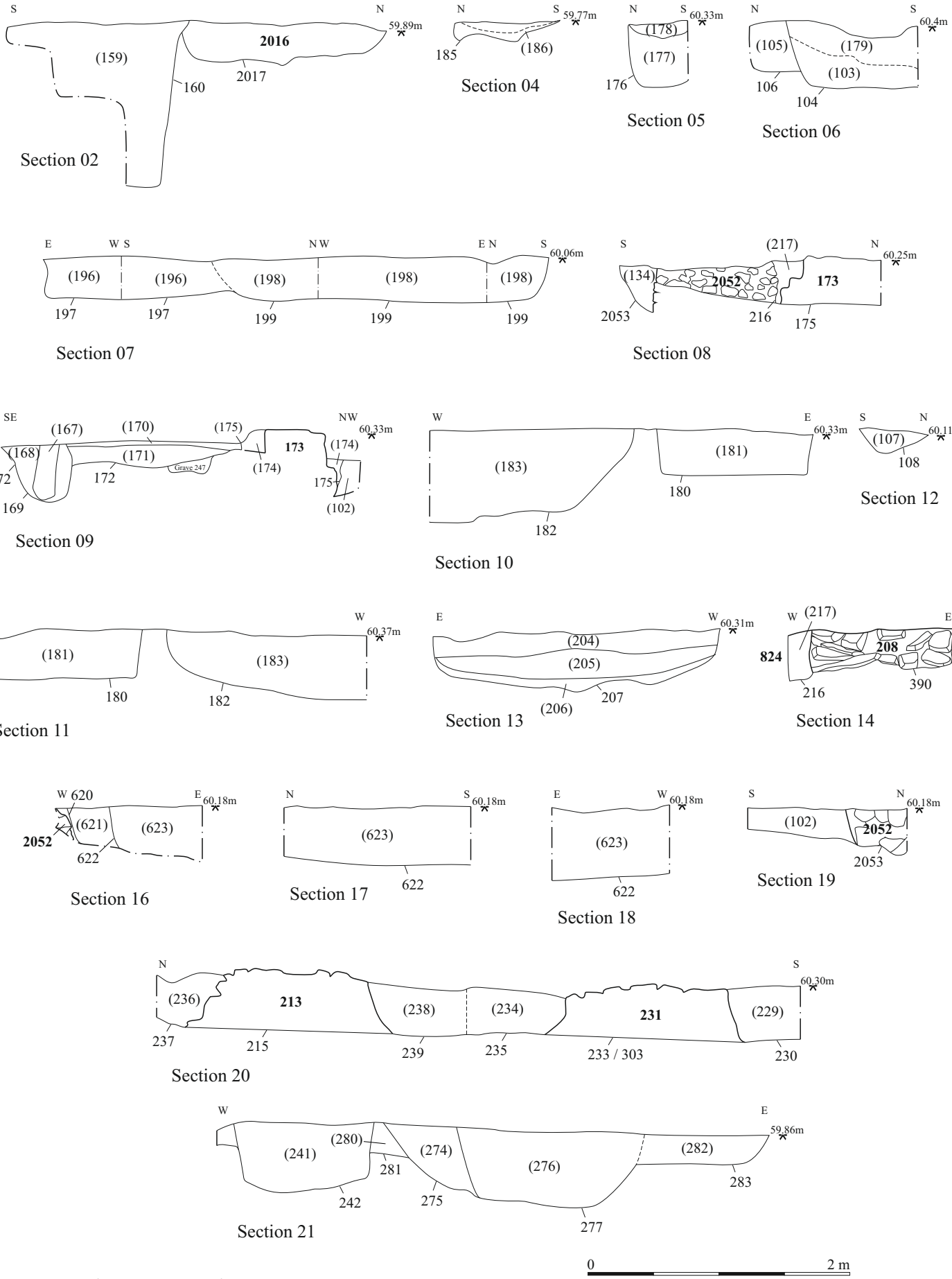
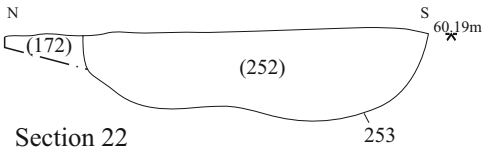
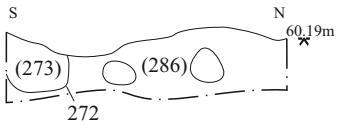


Figure 20: Sections 02-21



Section 22



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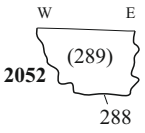

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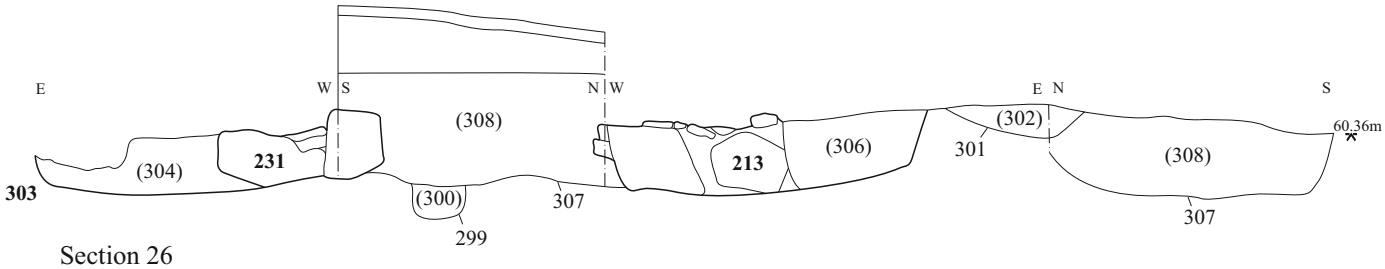

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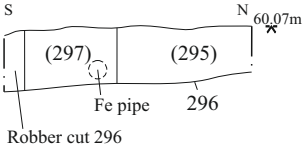

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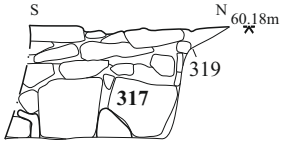

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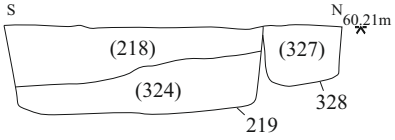

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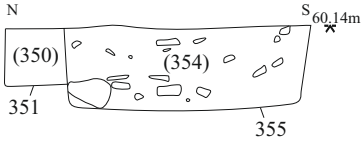
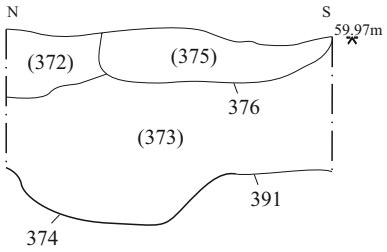


Section 30

Section 31



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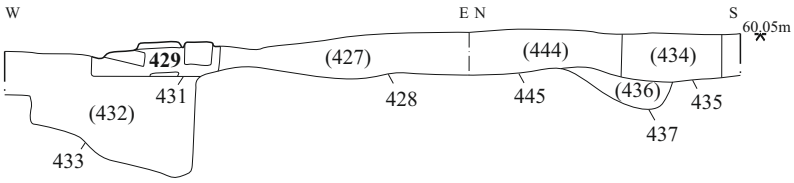
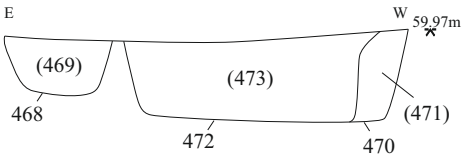


Section 33 (profile only)



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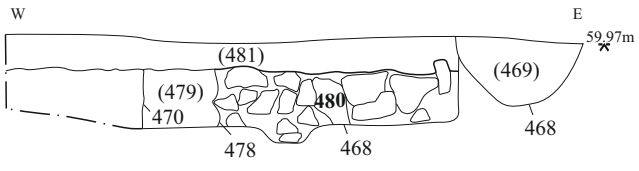

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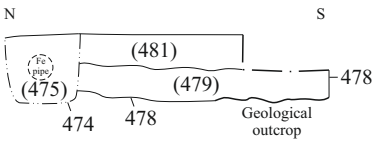
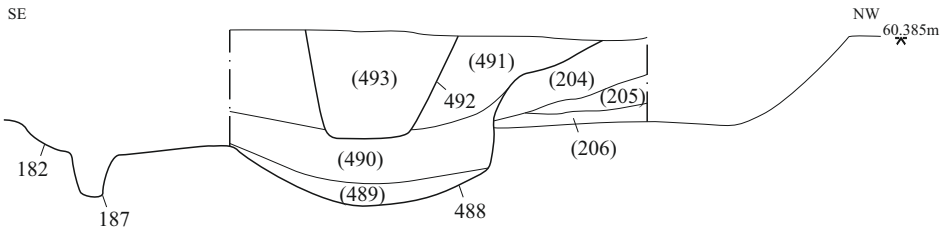


Section 36

0 2 m

Figure 21: Sections 22-36



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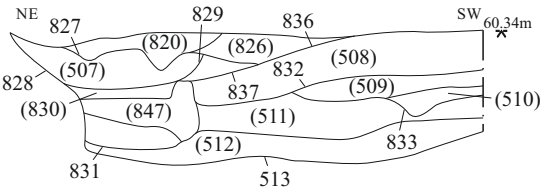

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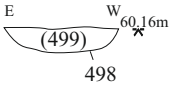

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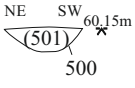

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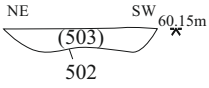

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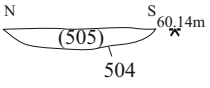

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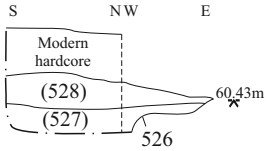

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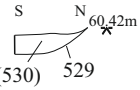

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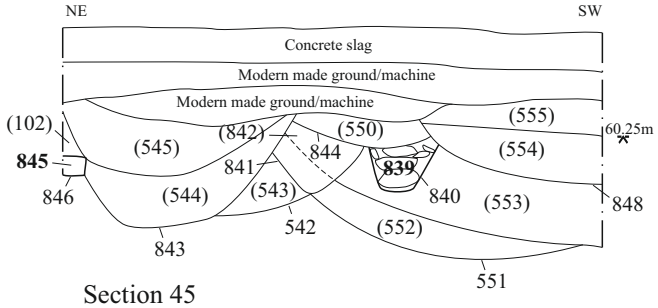

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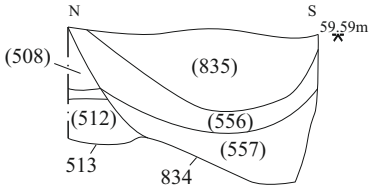

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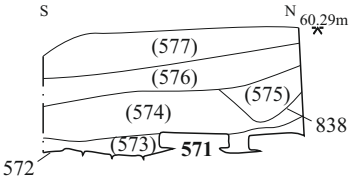

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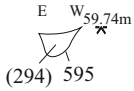

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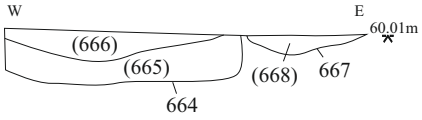

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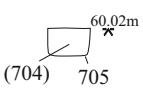

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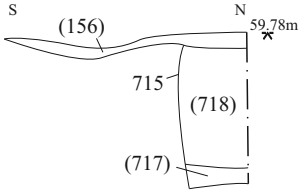

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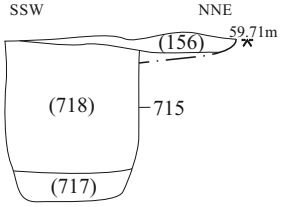

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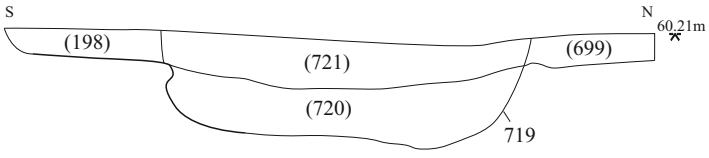

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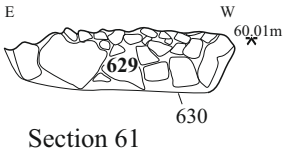

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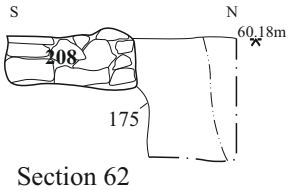

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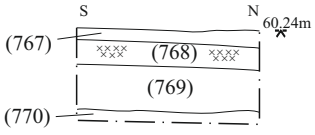

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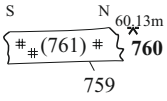
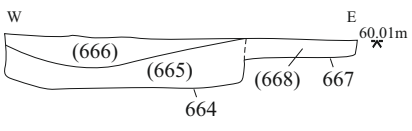
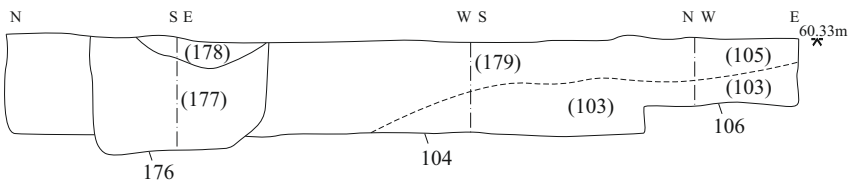


Section 64

Key
Charcoal
Mortar



Section 67



Section 68

0 2 m

Figure 22: Sections 37-68

There are a series of foundation cuts on the north side of the north wall of the post-medieval barn. A structure is marked in this area on the map of 1899 - foundation cut 257 measuring 2.5m by 0.5m wide. Wall 256 was of roughly squared limestone blocks bonded with lime mortar. Foundation cut 259 was 2.5m long by 0.4m wide. Wall 258 was constructed of roughly squared limestone blocks. Foundation trench 261 was 2.1m long and 0.5m wide. Wall 260 was made of roughly squared limestone blocks. Foundation trench 263 was 2.1m by 0.6m. Wall 262 was formed by roughly squared limestone blocks.

Posthole 169 was a square cut 0.5m by 0.5m and 0.45m deep (Fig. 20 S.9). Fill (168) was a soft mid-grey clay sand with charcoal flecks interpreted as packing. Fill (167) was a soft dark grey brown silt sand containing decaying wood. The feature contained 19th century pottery that was not retained. The feature cut surface (170) and robber trench 172. Posthole 734 was sub-rectangular in shape measuring 0.65m by 0.35m. The fill (735) was probably a mid-brown sand silt. This feature was considered to be on the same alignment as 169.

Cut into the top of the robbed foundation was posthole 176 which was 0.64m by 0.47m and 0.48m deep (Fig. 20 S.5, Fig. 22 S.68). The fill (177) was a mid-brown silt clay. The upper fill (178) was a loose dark grey ash sand. Deposit (178) contained 19th century pottery.

Phase 9: 1899-1913

There appears to be a re-organisation of the walls in the northwest corner of the excavated area. These alterations can be recognised from the Second Edition Ordnance Survey map that was produced in 1899 and the Third Edition Ordnance Survey map that was dated 1913 (Fig. 19). Foundation cut 2001 was a linear feature for stone wall 2000 orientated east to west that measured 8.7m by 0.5m. The wall contained pottery of a 19th century date. Other walls associated with the rebuilds at this time are linear foundation cut 2039 that was 2.5m by 0.25m wide containing recent brick wall 2038, foundation cut 2047 for recent brick wall 2046, and foundation cut 2049 for masonry structure 2048.

Phase 10: Later 20th century (partially planned)

There were a number of postholes that were considered to be of a 20th century date (Figs. 18-19). Posthole 290 had a diameter of 0.5m and 0.3m deep. The fill (291) was a loose mid-grey deposit, which contained 20th century material. Posthole 338 was an oval 0.48m by 0.42m and was 0.28m deep, fill (337) was a loose grey brown sand loam. Posthole 358 was a sub-circular feature 0.24m by 0.25m by 0.1m deep. Its fill (357) was a loose mid-brown sand loam. Posthole 378 was a square feature 0.38m by 0.37m and was 0.32m deep with fill 377, a compact mid-grey brown silt sand. Posthole 380 was a sub-square feature measuring 0.4m by 0.44m, and was 0.4m deep. Its fill (379) was a compact dark grey sand silt with frequent charcoal inclusions. Posthole 438 was a round feature 0.5m in diameter. The fill (439) was a loose mid-grey sand silt. Posthole 449 was round with a 0.36m diameter and depth 0.18m. The fill (450) was a loose mid-grey sand silt. Posthole 653 measured 0.5m by 0.4m and was 0.2m deep. The fill (652) was a compact dark-grey sand loam with stone inclusions.

A number of the pits identified on the site were considered to be of a 20th century date. Pit 330 was a sub-circular feature measuring 0.93m by 0.86m by 0.36m deep. Fill (329) was a compact mid-grey clay sand containing brick and Portland cement mortar. Pit 340 was an oval feature 1.16m across and 0.22m deep. Fill (339) was a compact yellow brown silt sand with stone inclusions. Cut by a concrete foundation pit 497 was a sub-circular shape

measuring 1.4m by 0.55m. The fill (496) was a soft mid-grey brown silt sand with occasional stones. Pit 515 was an oval shape measuring 0.7m by 0.6m. The fill (514) was a compact grey brown sand loam. Pit 584 was a sub-rectangular shape. The fill (585) was a loose dark grey ash and silt sand. Pit 655 was a rectangular feature measuring 0.86m by 0.3m and 0.16m deep. Fill (654) was a compact dark grey sand loam.

The following pit was considered to be a modern episode of wall robbing. Pit 433 was an oval shape measuring 0.86m by 0.6m. Fill (432) was a compact dark brown grey sand silt. Irregular sub-circular feature 371 that measured 1.5m by 0.9m. Fill (370) was a compact dark black brown silt with stone inclusions. This was interpreted as modern disturbance.

Foundation cut 447 that was 0.7m wide. Masonry wall 446 was limestone structure that was rectangular in shape butting up to wall 2031. The backfill (448) was a soft dark grey brown silt sand. The fill (448) contained 20th century pottery.

Foundation cut 454 was an L-shaped feature that contained a brick wall 453.

Foundation cut 2033 ran parallel to wall 2034, and was filled by brick wall 2032.

There were a number of walls noted with concrete foundations, and also a number of concrete floors laid over the top of earlier surfaces. The following contexts were associated with the insertion of cut 184. Deposit 455 was a friable brown grey silt sand with stone inclusions. This is an area of disturbance. Deposit 461 was a firm dark grey brown silt sand with greenish patches, which covered an area 0.8m by 0.7m. Cut 546 was an irregular sub-rounded feature 0.4m by 0.3m. Fill (538) was a soft dark grey brown silt sand. Interpreted as modern disturbance associated with concrete floor 292. Cut 184 was a sub-rectangular cut 6.7m by 0.7m. This was filled by concrete footing 292.

Layer (135), overlay context (761), represented a layer that was truncated by foundation cuts for modern wall foundations. The deposit contained 20th century pottery. This is probably the same as layer (589), was adjacent to cut 600, and was a loose light brown yellow sand that contained bone, glass and ceramics. Foundation cut 2027 truncated layer (135), was filled by concrete footing 2026.

Other recognised 20th century footings included the cut 627 containing concrete footing 626, foundation cut 671 containing concrete footing 670, foundation cut 342 that was a sub-rectangular feature over 7.4m by 0.9m that contained concrete footing 341, foundation cut 774 that contained concrete foundation 773, and construction cut 582 that contained concrete foundation 583.

A series of cobbled surfaces on the north side of the site was later covered by layer (152) a compact yellow bedding sand. Over this was layer (151), a compact brick and tile layer. These were the bedding for concrete layer (150) above (151). Concrete layer (147) was a later surface that was laid over an earlier flagstone floor. Layer (149) was a layer of limestone, possibly flagstones set on the concrete. Sealing this was layer (148) was a compact dark grey sand presumably a destruction layer.

Truncating grave context 659 was a linear feature 657 that contained fill (656), a compact dark yellow brown silt sand with angular stones.

A series of service cuts were noted across the site, which were 20th century truncations. Service trench 298 was a linear feature 0.5m wide, same as 328, 351, 417, 435, and 738. The fill (297) was a compact dark brown sand loam that contained an iron pipe, similar or the same as (327), (350), (416), (434), and (739). The fill (434) contained residual 19th century pottery. Also associated with this pipe trench was robber cut 348 that was a sub-rectangular feature 1.52m across that robbed the north transept wall. Fill (347) was a compact mid-brown silt sand with flecks of mortar.

Service trench 166 was a linear feature 5.8m long and 0.35m wide and 0.4m deep. The fill (165) was a loose mid-grey brown clay sand that contained the disarticulate remains of two individuals. Service trench 376 was a linear feature 1.18m wide. Deposit 375 (its fill) was a firm grey brown sand loam. Cut by 374 and 391. Linear cut 474 was a further service trench with backfill 475. Service trench 495 was 0.35m wide with the backfill (494) that was a soft dark grey brown silt sand. Linear cut 531 was also identified as a service trench with fill (532) that was a compact mid-yellow brown sand silt.

Foundation cut 2007 truncated a service trench fill, and was filled by wall 2006.

Four pits on an alignment 393, 395, 397 and 440 were considered to be 20th or 19th century in date and probably represented tree planting. Rectangular cut 393 measuring 0.72m by 0.6m and with a depth of 0.22m. The fill (394) was a compact to loose mid-grey brown sand silt with stone inclusions. Sub-rectangular cut 395 was 0.56m by 0.72m and 0.2m deep. The fill was a moderately compact mid-grey brown sand silt with stone inclusions. Rectangular cut 397. The fill (398) was a compact mid-grey brown silt sand. There was 13th century pottery associated with the fill of this feature. Rectangular cut 440 measuring 0.9m by 0.92m by 0.26m deep. The fill (441) was a moderately compact mid-brown silt sand. The fill (441) contained 13th century pottery. There was a further cut that was associated with tree planting, a sub-rectangular cut 162 with vertical sides and a flat base; thought to be a cut for tree planting. The fill (161) was a highly compact brown orange sand.

During the process of ground reduction it was noted that cut 778 was 0.6m wide and 1m deep, truncated deposit (777). The fill (779) was a moderately compact sand silt. This was then sealed by layer (776) moderately compact dark grey clinker and rubble. This was interpreted as a possible large post setting of a modern origin.

There were two layers that could be identified as occurring across the site. Layer (101) was a firm mid-dark brown silt sand described as an overburden resulting from demolition. This contained residual pottery of a 15th century date. Layer (100) was a soft mid-dark brown silt topsoil. This contained residual pottery of a 19th century date.

Lying over the top of other features was compact gravel and rubble (768) that was 0.12m thick. This was the bedding for context 767 that was tarmac 0.8m thick.

Phase 11: 20th to 21st century archaeological activity (no plan)

Deposit (727) was a context that overlay wall 2000. Wall 2000 was an early 20th century feature, so this deposit is later 20th century or may be associated with the stripping of the site. Deposit (415) was a compact brown yellow silt sand. This is a layer of modern disturbance associated with robber cut 104 the major destruction phase of the south wall of the west tower.

Layer (110) was a soft mid-brown silt sand that was noted at the base of a machined excavation trench. This contained pottery of a 13th century date. This could be backfill in the trench or an earlier soil horizon.

The sondage of an archaeological excavation 472 was noted. The trench backfill 473 was the backfill of the archaeological excavation. Rectangular cut 695 is considered to be a machine cut of an unknown purpose that could be geotechnical or archaeological in origin.

There are areas of disturbance, which are either late 20th century or 21st century in date. This may be associated with the stripping for the excavation. Cut 867 lies on the northeast side of the site. The disturbed context is deposit (868). There is a further area of disturbance on the northwest side of the site associated with cut 869. The disturbed context is (870).

4.6 Minchery Farm Buildings (*by Stephen Yeates*)

To the north of the Priory, an old public house, were the remains of former outbuildings of Minchery Farm (plan Fig. 23). The structure survived in a fragmentary form with upstanding walls at either end of two long rectangular concrete slab floors orientated east to west. The south range contained gable ends, while the northern range appears to be more of a piecemeal construction. To the south of this structure and adjacent to the old Priory public house there were further brick buildings.

At the east end there were the partial remains of a rubble limestone gable wall orientated north to south with dressed brick corners and window surrounds (Fig. 24 E5). The window that survived in the east wall had a segmental arch. At the north end of the wall were the remains of a later wall that abutted being made of breezeblock and brick, and also a small stump of an east to west orientated wall (Fig. 24 E6) with the remains of red brick dressing at its end.

Plate 5: Surviving east gable end (Wall 266)

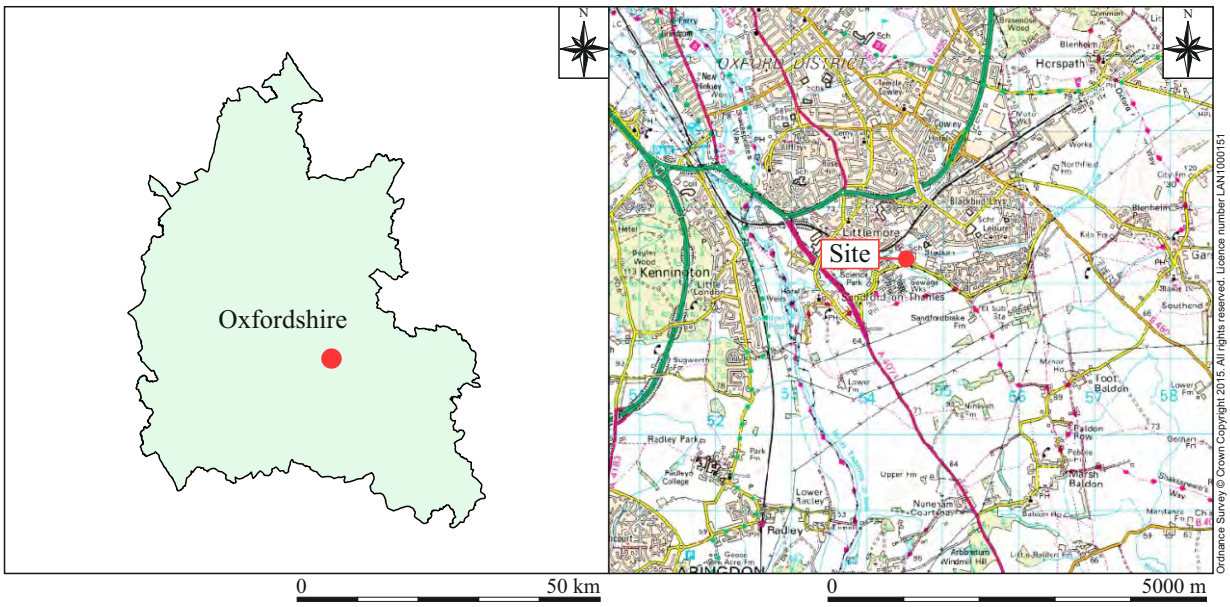
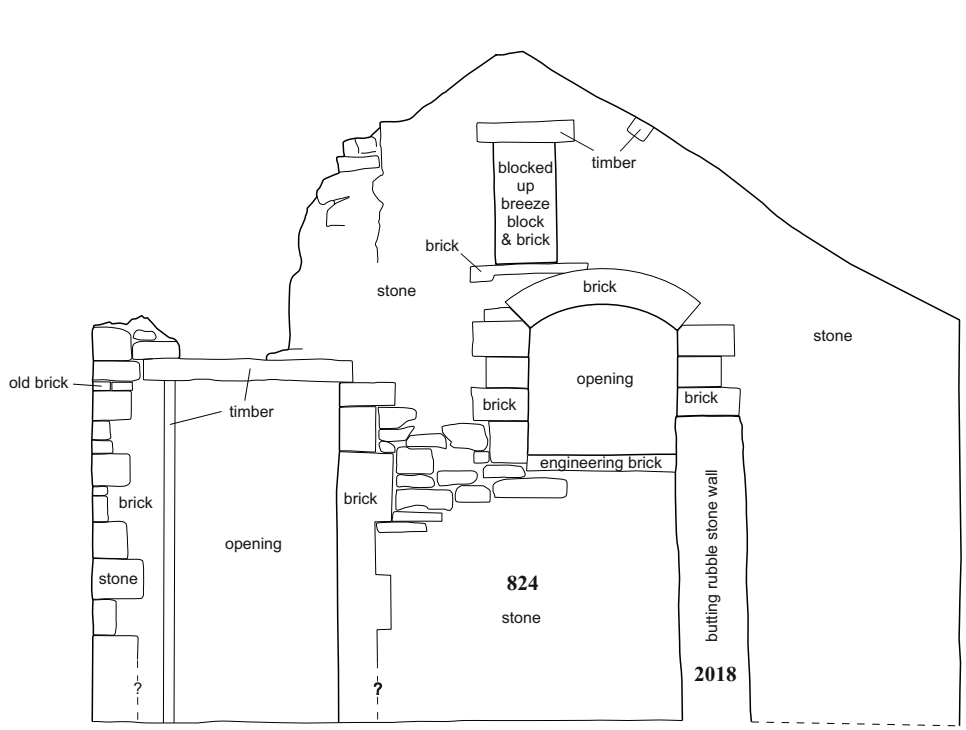
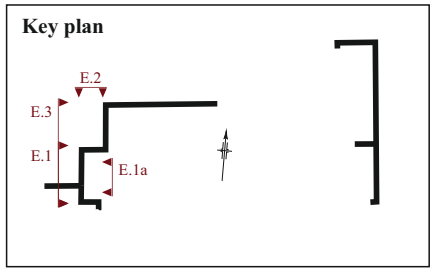
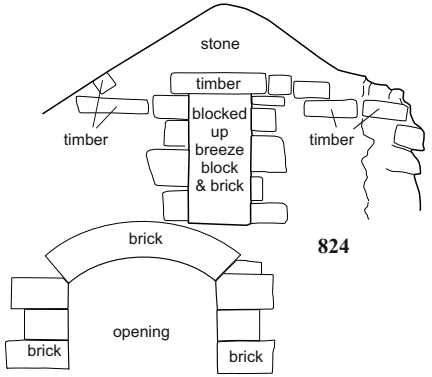


Figure 23: Site location

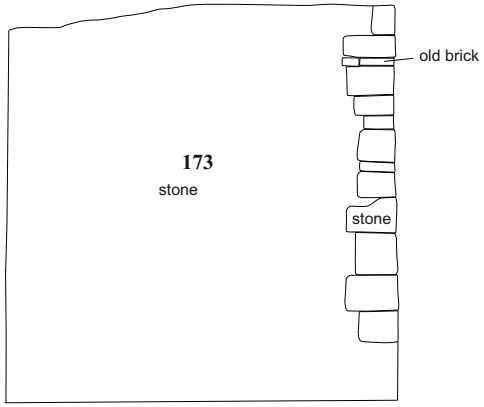


Elevation 1

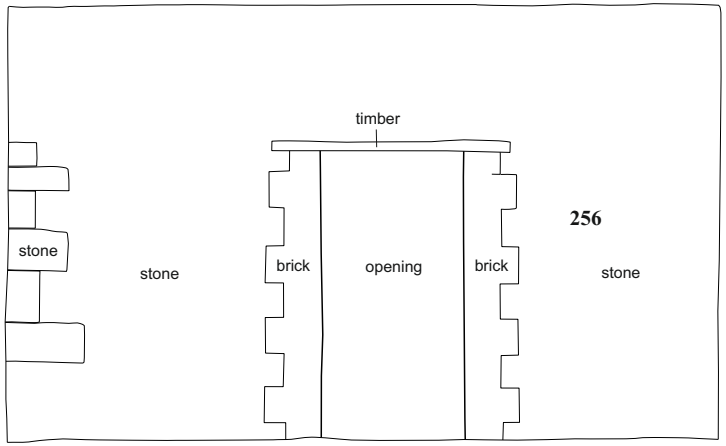




Elevation 1a



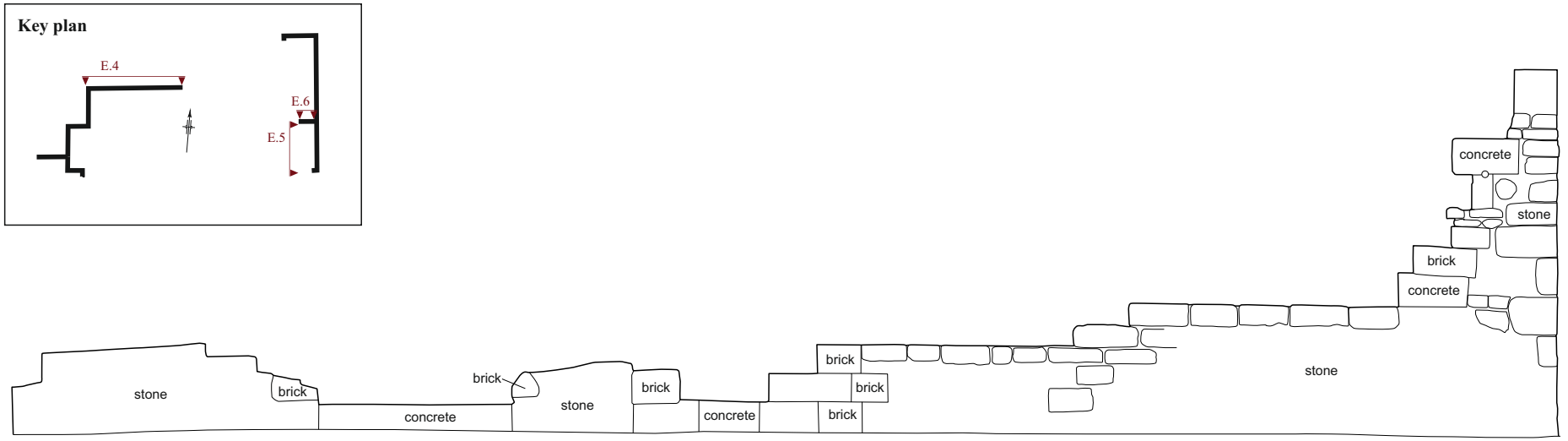
Elevation 2



Elevation 3

0 2.5 m

Figure 24: Elevations



Elevation 4

Elevation 5

Elevation 6

Figure 25: Elevations

Plate 6: Surviving west gable end (Wall 824)

At the west end of the concrete slab floors there were further wall remains of different periods. The main feature here was the limestone rubble gable end wall that was orientated north to south, which contained a square-headed doorway on the north side (Fig. 23 E1-E1a). Adjacent to this on the south side was a segmental arch headed window. These features had red brick dressing with blue brick dressing for the window sill, and on the corners there were squared limestone blocks. In the gable there are the remains of a rectangular window or loft entrance with a square head and timber lintel. On the south side there were the remains of a brick wall surviving to two or three courses above ground level. On the north side the return wall of the gable end wall was of stone rubble and ended in an area of brick dressing (Fig. 23 E2). On the outside of the gable wall there was a rubble limestone wall that butted up to the gable wall and represented one of the boundary walls of the farmyard (wall 2018). At the east end of the east to west wall there was a further north to south wall that was the west end wall of a northern range of the building (Fig. 23 E3). This wall was made of squared limestone blocks and had brick capping. Centrally located there was a square-headed door with a brick segmental arch above that was presumably inserted as a decorative feature as there was little wall above for it to be load bearing. The return wall on the north side of this end wall was also a limestone rubble wall with the remains of brick dressed features (Fig. 24 E4).

Between the two east to west orientated ranges and the old Priory public house there were the remains of a further building that survived only in a ruinous state. On the north side there was an east to west orientated structure that was long and narrow and had a gable located at its west end. The gable was of brick and contained the remains of a segmental brick arch, which had modern brick infill. On the south side of this there was a broader but shorter structure orientated north to south and was also made of brick. This part of the building also contained a roof with large timber perlins and a slate roof. The structure was too unsafe to enter but contained internal divisions and operated as the toilet facilities of the nightclub. On the west external wall there were decorative features in the form of three segmental arches formed by contrasting bricks. To the east of this there were the remains of a brick structure with a flat roof.

Plate 7: Surviving west end of north extension (Wall 256)

Plate 8: Building between east to west orientated building and Priory public house

The two limestone gable ends and part of the rubble north wall of the longest range were evidently part of a building that has existed in some form since the 17th century, as noted in the excavations and the Hearne illustration of 1722. Their current form, however, has undergone reworking and they contained 19th century components, for example the engineering bricks. This building is apparent in plan form on the First Edition Ordnance Survey map of 1876 (Oxon 39.12). This map also shows a boundary wall connected to the west end, which also iss a feature of a probable 18th to 19th century date. The next development saw the addition of a structure on the north side at the west end that is evident on the Second Edition Ordnance Survey map of 1899 (Oxon 39.12). It is thus evident that this structure was added in the late 19th century. The Third Edition Ordnance Survey map dated 1913 (Oxon 39.12) shows the same arrangement of structures. It is thus the case that any other buildings standing prior to demolition were of a probable mid-20th century date.

5 HUMAN SKELETAL REMAINS *(by Sharon Clough)*

Introduction

The cemetery of Littlemore Priory, a Benedictine Nunnery, was excavated in 2014 and 92 individuals were recovered. Varying levels of truncation across the site affected the completeness of the burials. The intercutting or direct re-cutting of graves occasionally resulted in the re-internment of the previous occupant in a disarticulated state within the backfill of the later grave. There were 75 adults, three adolescents and 13 children identified from the remains. The majority of the adults were in the older age category (over 45 years). Of the adults (and one adolescent) 35 were female and 28 were male. There appeared to be no bias in the age- at- death of either sex. Stature was typical for the medieval period, as were the meric and cnemic indices. The lambdoid ossicle was the most common non-metric trait, though the incidence of non-metrics traits was generally low.

Dental disease rates were within the normal range for the medieval period, although dental caries were slightly less prevalent than in other nunneries, but higher than the national average. Enamel hypoplasia was notably lower than other medieval sites and nunneries. Pathological conditions affecting bone ranged from healed blunt force trauma to congenital defects. Of note, was the low level of metabolic disease, which corresponded with the low level of dental enamel hypoplasia observed. As expected with a large number of older adults, degenerative joint disease was the most commonly observed pathology.

Methodology

All skeletal material was examined and recorded in accordance with national guidelines (Hillson 1996a; Brickley and McKinley 2004; Mays et al. 2004).

Biological Age Assessment

Aging is a highly variable process whose causative factors and biological mechanics are not fully understood (Cox 2000). In addition, ‘biological age’ does not always equate to ‘chronological age’ or ‘social age’ (Lewis 2007) of which adulthood is primarily a culturally defined concept (Cox 2000, Lewis 2007). With this in mind, a multi-method approach was taken (Table 1) to provide a range of estimates. Then each indicator was weighted on reliability. Where only one less reliable method was available, the individual was determined to be only Adult or Subadult. For analytical purposes, the ages were split into categories (see Table 2). These categories reflect physical thresholds and the limitations of the techniques, and in no way represent cultural stages. Falys and lack of standardisation of age categories used by osteologists may hinder inter-population comparisons (Lewis 2011). With this in mind, the age estimate range of each skeleton is detailed in the skeleton catalogue to facilitate further research.

Table 1: Macroscopic techniques used

Foetal - <38 weeks gestation
eonate – 38 weeks – 1 month
Infant - 1 month – 3 year
Child 4 year – 7 years
Older child 8-12
Adolescent 13-17
Young adult – 18-24
Prime adult – 25-34
Mature adult – 35-44
Older adult – 45+
Adult – over 20 years
Subadult – under 20 years

Table 2: Age categories

Pubic symphysis – Brooks and Suchey 1990
Auricular surface – Lovejoy et al 1985b
- for older adults only ; Buckberry and Chamberlain 2002
Dental attrition – Miles 1963
Ectocranial suture closure – Meindl and Lovejoy 1985
Sternal Rib ends – I_can & Loth 1986
Epiphyseal fusion – McKern and Stewart 1957 and Webb and Suchey 1985
Dental eruption – Moorees, Fanning and Hunt 1963, Alqhani 2012
Long bone length (subadults) – Maresh 1970

Sex Estimation

The biological sex of all adult skeletons was based on examination of standard characteristics of the skull and pelvis (Ferembach et al. 1980; Schwartz 1995) with greater emphasis on features of the latter as they are known to be more reliable (Cox and Mays 2000). Measurements of the femoral and humeral heads were employed as secondary indicators (Giles 1970). Adult skeletons were recorded as male, female, probable male (male?) probable female (female?) or indeterminate, depending on the degree of sexual dimorphism of features. No attempt was made to sex subadults (defined as individuals less than 20 years of age) for whom there are no accepted methods available (Cox 2000). The exception were adolescent skeletons whose innominate bones had fused, and where preservation was adequate.

In the analysis below, the probable males and probable females were pooled with the more firmly assigned males and females.

Skeletal condition and completeness

The completeness of each skeleton was classified as a percentage of the whole and divided in to four groups, 0-25% 25-50% 50-75% and 75+%. The condition of the bone surface of each skeleton was recorded in detail with reference to different anatomical areas (skull, arms, hands, legs and feet) after McKinley (2004, 16) and given an overall summary score.

Metrics

Where possible, adult stature was estimated by taking the maximum length of the femur with preference for the left (where the right was used, it is noted in the catalogue) and applying the

appropriate regression formula devised by Trotter (1970). Due to the fragmentary nature of the assemblage, other major long bone lengths were used in stature estimation, although these are less accurate, and have a greater standard deviation (Trotter 1970). Stature could not be calculated for adults of unknown sex. However, all possible males and possible females were included in the measured sample.
Measurements of other long bones and skulls were taken (where appropriate) and used in the calculation of indices to explore variation in the physical attributes of the population.

Non-metric

Frequently recorded non-metrical cranial and post-cranial traits were scored as being present or absent (Berry and Berry 1967; Schwartz 1995; Hillson 1996).

Dental

Dentition was recorded using the Palmer notation. Caries were graded into small (<1mm) medium (2-4 mm) and large (>4 mm) Abscesses were recorded with reference to Tayles and Dias (1997). Periodontal disease and dental enamel hypoplasia were graded using Ogden (2008). Calculus was graded per tooth (flecks, slight, medium, heavy) after Brothwell (1981) and recorded as sub- and supra- gingival.

Pathology

Skeletal pathology and/or bony abnormality was described and differential diagnoses explored with reference to standard texts (Ortner and Putschar 1981; Resnick 1995; Aufderheide and Rodriguez-Martin 1998). Where it was considered appropriate the extent and range of pathology was explored by calculating crude prevalence rates (the number of individuals with a condition out of the total number of individuals observed) and true prevalence rates (the number of elements or teeth with a particular condition out of the number of elements or teeth observed).

Musculo-skeletal stress markers were scored using grade 0-3 (after Hawkey and Merbs 1995) where 0 is absent and 3 was strongly expressed. The insertion sites scored were the u olecranon of the ulna, the superior iliac crest and ischial tuberosity of the pelvis, the linea aspera and gluteus maximus of the femur, the anterior aspect of the patella, the Gastrocnemius insertion in the calcaneus, the tuberosity and soleal crest of the tibia, the rhomboid fossa of the clavicle, and the bicipital groove and intertubercular groove of the humerus.

5.1 Results

Skeletal preservation and completeness

All the individuals were assessed for bone surface preservation (which affects observations of pathology) and completeness (how much of the possible whole skeleton had been recovered). The completeness of the individual was affected by the levels of later truncation across the site. This included the intercutting of graves, later buildings erected on the site, modern services and building works. Where graves were entirely undisturbed the completeness of the skeleton was very high and bone preservation was good. A single grave was excavated where only the outline of the coffin could be determined and the iron nails were still *in-situ*. Despite sampling the soil there was no bone recovered from this grave (SK 27). The total number of individual skeletons available for examination was therefore 91.

Figure 26: Number of individuals by percentage of the skeleton available for examination

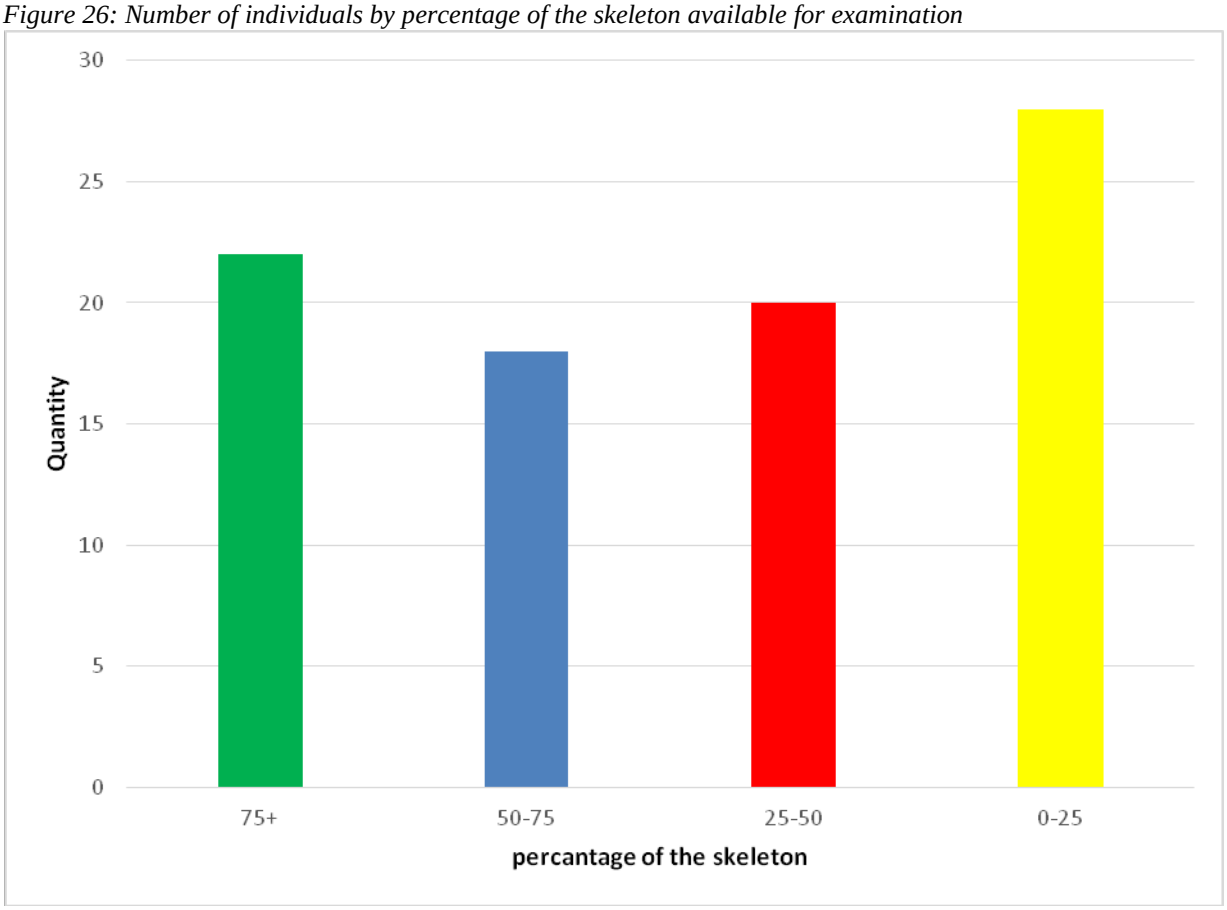


Figure 26 demonstrates that there was a fairly even spread across the categories for completeness. As previously stated, this was predominantly due to later truncation. This has affected the number of bones available for observation of pathology and for taking measurements.

Figure 27: Number of individuals by bone surface condition (after McKinley 2008)

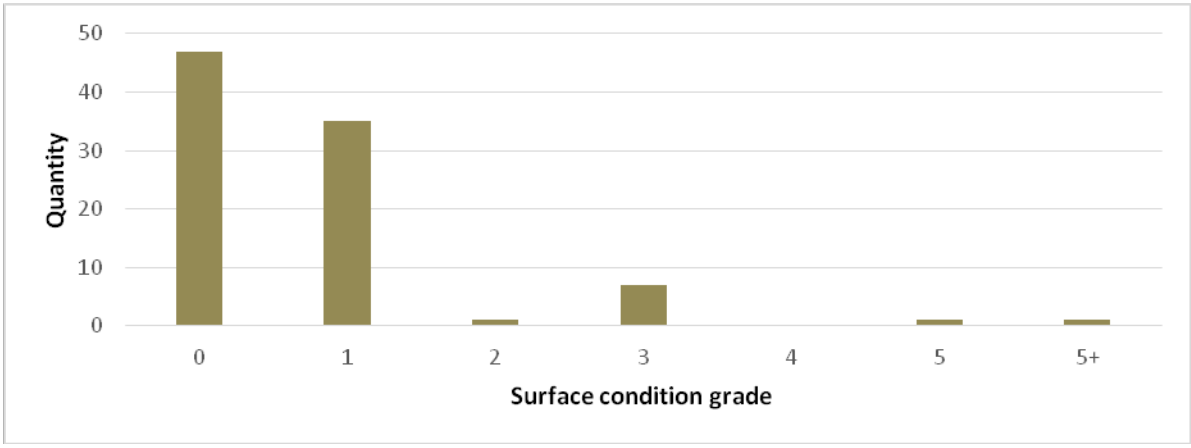
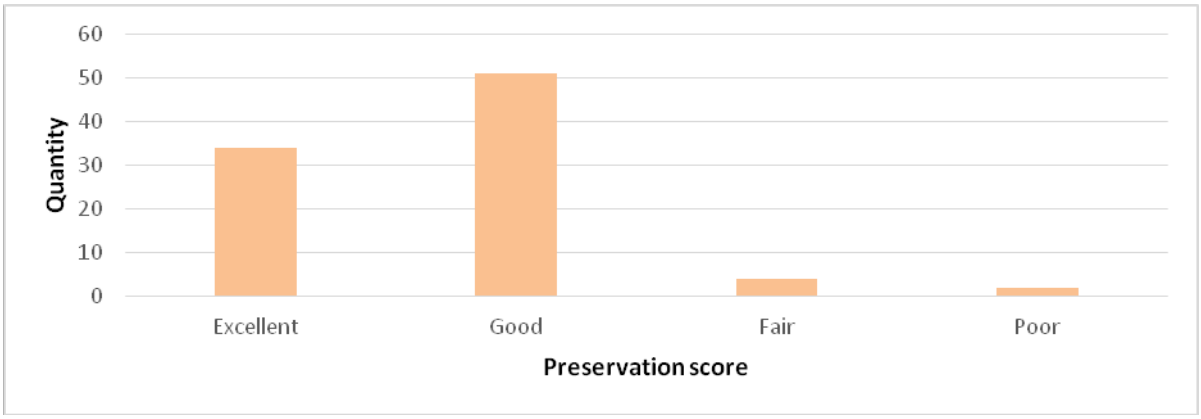


Figure 27 clearly shows that despite the variable level of completeness, the bone preservation was very good. Over half of the individuals were grade 0 for the bone surface condition and nearly all the remainder grade 1. Modification of the bone surface from taphonomic processes was very low. This has allowed complete observation for all aspects of analysis.

An overall score for each individual was given taking into account the bone surface condition and level of fragmentation. It was a subjective measure based on personal observation. Figure 28 clearly shows that the majority of individuals were good and excellent for preservation. Fragmentation varied and has not been quantified (it is very subjective) there were not many crania that were complete enough for metrical assessment (see section below) and this also affected the long bone measurements.

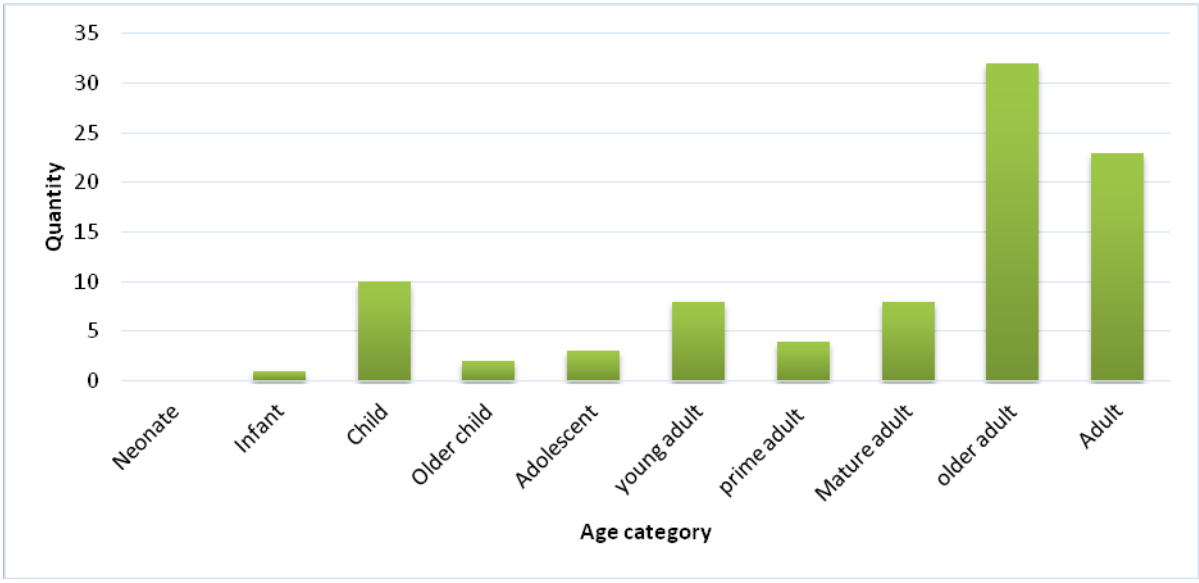
Figure 28: Overall score for the individual of preservation



Demographic composition

Of the total 92 individuals available for age and sex estimation, it was possible to assign an age category to 68 individuals. The adult age category was assigned to 23 individuals (Fig. 29). These remains had no skeletal areas available for examination which could be used to estimate age beyond the complete fusion of the long bones. There were no neonate remains identified. The youngest individual was estimated to be over six months (SK 16) and had been inserted where the lower legs of SK 15 should have been (they had been removed for the insertion of the later grave). In total, there were 75 adults, three adolescents and 13 children.

Figure 29: Number of individuals per age category (see table 2 for category explanation)



The greatest number of individuals fell into the older adult category (45 years). The lack of greater precision in determining age over 45 years reflects the limitations of current aging methodologies, which become increasingly inaccurate above this threshold. It is quite probable that within this category are those who lived into advanced years (80-90 years) but at present it is not possible to confidently identify these individuals.

The low numbers of individuals within each archaeological phase and excavation area precluded meaningful spatial and temporal osteological comparisons. For example, the tower comprises three individuals and the nave five. The results therefore would be statistically meaningless.

The assemblage as a whole reflects those who chose to be buried at the Nunnery. The skeletal population of a nunnery church and cemetery may represent any combination of individuals who were nuns, lay-sisters, servants, patrons, children attending a nunnery school, and their relatives (Gilchrist 1994, 58).

A typical medieval parish cemetery would expect to have a large number of neonates and infants, possibly up to between one-quarter and one-half of individuals, with peaks for adults possibly in the prime adult category (Gilchrist and Sloane 2005, 204). This is in contrast to monastic cemeteries where children up to 10 years are sometimes entirely absent and most show a particularly low number of infants and younger children. The older adults are represented variably in parish cemeteries, from approximately 10% to 43% and the same has been observed at monastic cemeteries. Nunneries are of particular interest as women would be expected to have greater longevity, as they have potentially avoided the dangers of childbirth. This is not necessarily borne out as the nunneries of Clementhorpe and Elstow showed a peak 30-39 and 20-29 years respectively (Keeping 2000). Although the males also peaked in these age groups suggesting environment may have been a factor. Women over 50 years at these cemeteries were 34% (Elstow) and 26% (Clementhorpe). At Littlemore nunnery women over 45 years were 60% of the aged female burials. This is different to the other two nunneries and is a value expected in a nunnery population. Littlemore was similar to monastic cemeteries in the low numbers of children and infants. There was a peak in the

child category (4-7 years) of 10 individuals. This may reflect children who were educated in the priory, although two of these children had the same pathological condition, congenital hip dysplasia, which they had since birth and would have significantly affected their ability to walk (see section on pathology). It is possible to suggest that there may have been a nursing element to the religious life at Littlemore. This is further discussed with regards pathologies of the adults.

Monastic cemeteries vary in degree of bias towards male adult burial and it is to be expected at a nunnery this would be the opposite. Littlemore nunnery does have more female than male burials (Figures 30-31). This is a 1:1.25 male to female ratio of the sexed adults. The other nunneries, Clementhorpe and Elstow, had 1: 2.1 female and 1: 2.7 female respectively (Keeping 2000). Littlemore nunnery is slightly more evenly distributed than these other nunneries, but still displays the expected bias towards female burial.

Figure 30: Number of Adult Individuals divided by sex.

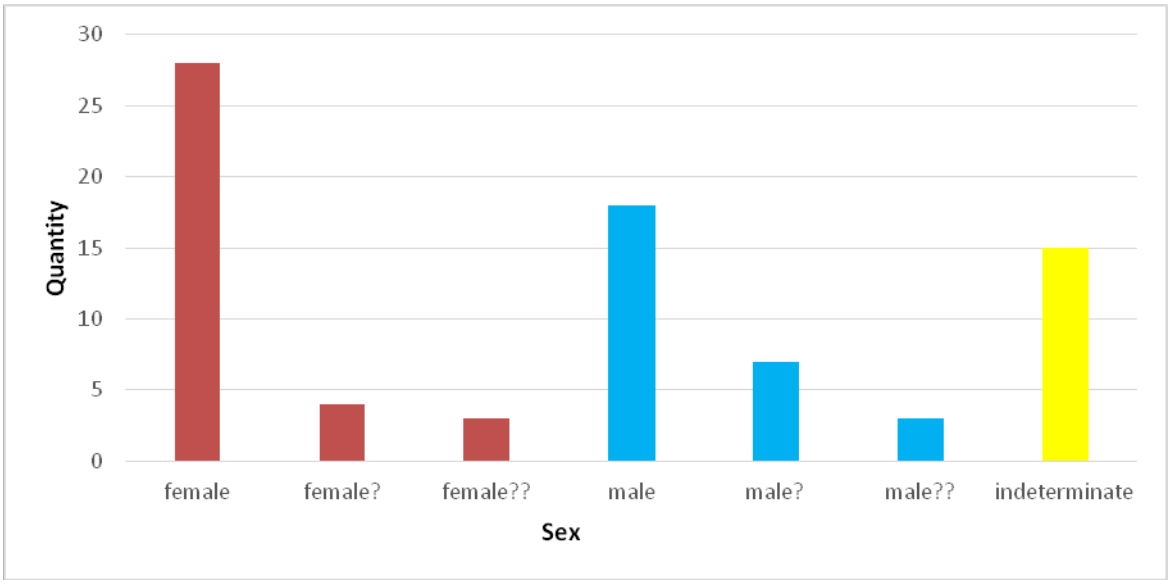


Figure 31: Pooled sex estimation of the adults

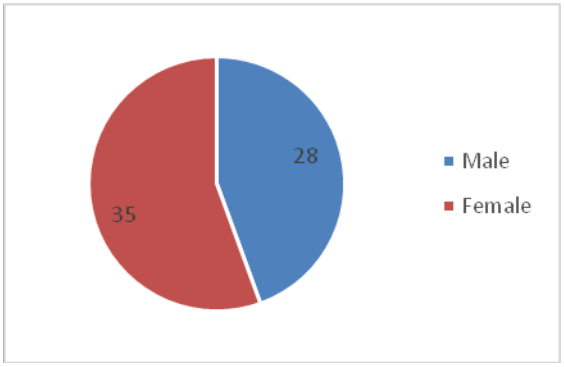


Figure 32: Combined age and sex data for adult individuals

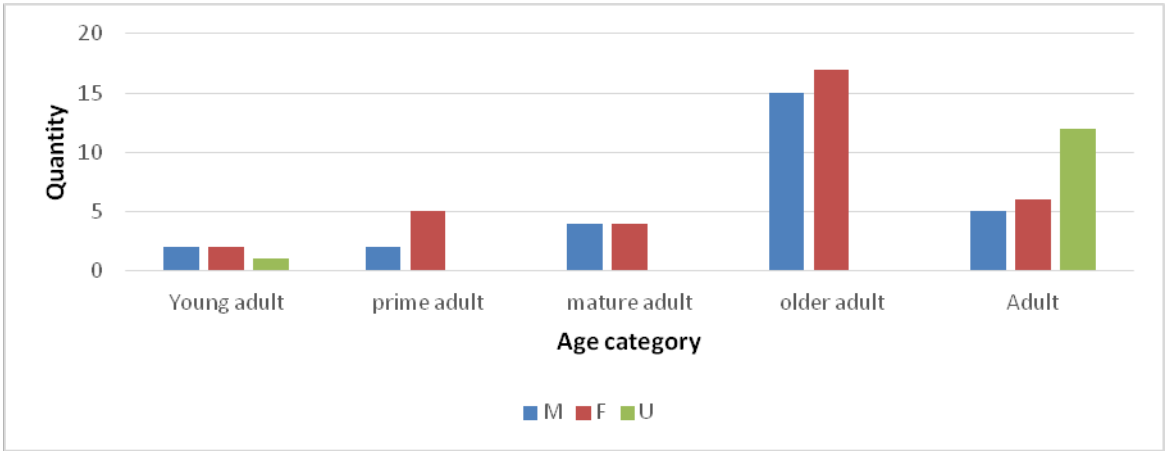


Figure 32 clearly displays the fairly even distribution of male to female across the age ranges. There appears to be slightly more females in the prime adult and older adult age groups, but these are quantities and there are more female than male burials. The percentages for each group are as follows:

Female	**Male**
7.1%	8.7%
17.9%	8.7%
14.3%	17.4%
60.7%	65.2%

The number of aged and sexed adults is low, for example only two individuals in the young adult age category, this is to be borne in mind when comparing Figures 23 and 21 above. The Littlemore nunnery assemblage indicates no marked difference in the age- at- death of males and females, unlike the apparent peak in death in the young or mature adult categories in females observed elsewhere (Keeping 2000). This has implications for the study of medieval women's health, as it does imply that the nunnery environment may have afforded some protection from the perils of child birth in these age groups.

5.2 Physical Appearance of the Population

Stature

Due to the fragmentary nature of the remains (see condition and completeness section above) it was possible to gain a stature estimate from only 30 individuals using the femur. Alternative long bone lengths used to estimate stature in a further 12 individuals these are detailed in the catalogue. Table 3 details the stature range and mean of the males and females from this site, and compares them with data from other medieval nunneries and the stature mean of late-medieval sites combined. The Littlemore assemblage is within the range of other sites from the period. The females appear to be 2 cm shorter than those at Elstow Abbey and 3 cm than the general population mean. The males have the shortest mean of all the

comparable sites, but there were only 11 individuals available. The male range is the same as Elstow Abbey.

Table 3: Femoral stature estimate (lefts used predominantly, rights used as noted in catalogue)

Littlemore Nunnery	Range (cm)	Mean (cm)
Male (11)	159.4 – 181.6	169.07
Female (19)	149.9 – 162.78	156.05
Elstow Abbey (Keeping 2000)		
Male (16)	159-180	172.6
Female (43)	150-171	158.8
Clemethorpe Priory (Keeping 2000)		
Male (18)	165-181	172.9
Female (34)	141-169	156.4
Late Medieval period c1050-c1550 (Roberts and Cox 2000)		
Male (8494)	167-174 (mean)	171
Female (7929)	154-165 (mean)	159

Stature is generally considered an indication of dietary status. It is predetermined by genetics, but without adequate nutrition in childhood the maximum potential will not be achieved. The results from Littlemore suggest that this population was not in receipt of a better diet than contemporary populations elsewhere, as the means and ranges are broadly comparable.

Meric index

It was possible to calculate the meric index of 39 individuals. The meric index is used to measure the degree of anterior-posterior (front to back) flattening of the femur and they fall into one of three ranges: platymeric (X-84.9 – broad or flattened); eurymeric (moderate- 85.0-99.9) and stenomeric (rounded- 100.0-X). Bones that fall into the stenomeric range are usually associated with pathology (Bass 1987, 214).

Table 4: Meric index for the Littlemore assemblage (male and female combined)

Platymeric	X-84.9	25 individuals
Eurymeric	85-99.9	14 individuals
Stenomeric	100-X	0

Various authors have claimed that platymeria is more common in females than in males and that there is a tendency for it to be more pronounced in the left femur than the right (Brothwell 1981, 89). The mean for the site was 81.31, this is similar to the other two nunnery sites (Elstow and Clementhorpe) where the means were 80.5 (female) 82 (male) and 78 (male and female).

Cnemic index

It was possible to calculate the cnemic index of 34 individuals. The cnemic index is used to measure the degree to which the proximal part of the tibia is flattened in an anteroposterior direction. Bones fall into one of four ranges: hyperplatycnemic (extremely flat -X-54.9); platycnemic (very flat -55.0-62.9); mesocnemic (moderately flat- 63.0-69.9) and eurycnemic (broad and wide- 70.0-X).

The aetiology of a flat platycnemic index relates to functional, rather than genetic causes (Lovejoy, Burnstein, and Heiple 1976). Precisely what activities contribute to tibial shape is

unknown. There is very little range of flattening in this population, which suggests similar functions or activities amongst the individuals.

Table 5: Littlemore assemblage platycnemic index male and female combined

Hyperplatycnemic	X-54.9	0
Platycnemic	55-62.9	0
Mesocnemic	63-69.9	4 individuals
Eurycnemic	70-X	30 individuals

Table 5 shows the range of flattening from amongst the assemblage. The mean was 77 (male and female combined) which is higher than comparable sites (Elstow 72.2 (f) and 73 (m) Clementhorpe 73 (f) and 69.6 (m) (Keeping 2000). This suggests activity at Littlemore may have been slightly different to the other nunneries, resulting in a broader tibia. Squatting facets can be causally linked since retroversion of the knee (squatting) may lead to medio-lateral flattening of the tibia (Cameron 1934, Walker 1986) Eight individuals had squatting facets (see below) none of these were mesocnemic (range 71-81) or more flattened.

Cranial Indices

Cranial indices are compiled by measuring the length and breadth of the complete crania. The high level of cranial fragmentation prevented measurement of some of the crania. There were 11 crania available for analysis: six female and five male.

The cranial shape is influenced by genetics, diet, nutrition and climate (Mays 2000, 278). The results (Table 6) show that there was a range of skull shapes from Littlemore, dolicranic (narrow headed) mesocranic (medium or average) and brachycranic (broad or round headed), these appear to be even across the males and females. If the results had been confined to one category, it may have indicated a particular group of people and closer investigation would have been necessary. The range of head shapes is to be expected amongst a population from this time.

Table 6: Cranial indices of the assemblage (N= 11)

		Male	Female
<75	dolicranic	1	1
75-79.9	mesocranic	2	2
80-84.9	brachycranic	2	3
>84.9	hypercranic	0	0

Non-metrical Traits

Cranial traits have been noted for their tendency to run in families (Pinter-Bellows 1993, 65) the metopic suture in particular. In this assemblage, there were three cases of metopism (SK 53, 64, and 91). The most common trait was the lambdoid ossicle (76% of observable crania had at least one). The other traits had very low incidences (1 or 2) and are detailed in Table 7. Post-cranial traits are detailed in Table 8. These are not considered to be genetically influenced to the same extent as cranial traits. They are considered to have a more activity based origin.

Table 7: Cranial non-metrical traits

	Number present			Number observable			Percentage		
Trait	Unsided	Left	Right	Unsided	Left	Right	Unsided	Left	Right
Metopic suture	3			20			15		
Lambdoid ossicle	1	29 ossicles, 13 craniums	20 ossicles, 13 craniums		17	17		76	76
Apical ossicle	1			15			6.6		
Sagittal ossicle	2			17			11.7		
Infraorbital foramen		1	1		15	15		6.6	6.6
Mastoid foramen		1	1		14	14		7.1	7.1
Epiteric		2	2		13	13		15.3	15.3
Coronal ossicle		0	1		16	16		0	6.25
Asterion ossicle			1			12			8.3

Table 8: Post-cranial non-metrical traits

	Number present		Number observable		Percentage	
	Left	Right	Left	Right	Left	Right
Atlas facet double	4	3	17	17	23.5	17.6
Cervical transverse bipartite foramen	3	2	18	16	16.6	12.5
Femur third trochanter	4	2	27	25	14.8	8
Femoral plaque	1	0	27	25	3.7	0
Femoral exotoses	4	2	26	22	15.3	9.1
Humeral septal aperture	1	1	30	28	3.3	3.5
Tibia squatting facet	8	8	28	28	28.5	28.5
Calcaneal double facet	11	12	26	27	42.3	44.4

The most observed trait was the double facet of the calcaneus. This trait has been considered to be genetically determined (Bunning and Barnett 1965) and the double facet was significantly more frequent in Europeans than the single form. As discussed above, there were eight individuals displaying the tibial squatting facet, which is thought to be activity-related.

Dentition

A total of 516 teeth from 38 adults (which includes the dentition of the adolescent individuals as these were all permanent dentition) individuals survived from the assemblage (16 males, 20 females and one undetermined, and one adolescent). Due to the low numbers these have not been divided into male and female. There were eight sub adult dentitions available for observation with total of 109 deciduous teeth.

Table 9: Dentition results and pathology

	Total adults & Children
Number of teeth	606 (497 adult only)
Number of sockets	683 (576 adult only)
Lost antemortem	163
Caries	49 (45 adult only)
Calculus (number of teeth affected)	295 (286 adult only)
Enamel hypoplasia (number of teeth affected)	48
Periodontal disease (number of sockets affected)	184
Abscess	25

Dental caries rate per individual averaged just over one per person. The rate per tooth of caries was 9.8%. The highest number of caries for one individual was 8. The overall prevalence rate per individual in the late medieval period (Roberts and Cox 2000) was 53%. The rate per tooth position was 5.6%. There was, however, enormous variation ranging from 7% to 74% from the larger sites. The rates at the other nunnery sites were Elstow 10.5% and Clementhorpe 11.8% (Keeping 2000). These rates suggest that dental caries was lower in the Littlemore assemblage than at other nunneries, but slightly higher than the national average.

The peri-apical abscess rates were 55% per adult or 3.66% per tooth position. The prevalence per adult of the national samples ranges from less than 1% to 50%, and per tooth position again less than 1% to 4%. The mean rate was 3%. There are no abscess rates reported for the other nunnery sites. Compared to the national sites, it would suggest that the abscess rate at Littlemore was average for the period.

Periodontal disease and calculus are inter-related and thus discussed together. The number of individuals with calculus was 29 adults out of the 38 adults 76.31%. This was 57.54% of teeth available for observation. Periodontal disease was observed in 31.94% of sockets and affected 17 adults. Of these seven dentitions were graded as severe (grade 4 in Ogden 2008) in which the alveolar margin was ragged and porous with >5mm depth between the tooth and alveolus.

The comparative assemblages of Elstow and Clementhorpe had 24.7% and 31.7% dental calculus rates per adult, respectively. Periodontal disease rates were 34.2% and 28%. The mean for the period per individual for periodontal disease was 37% (range 6%- 100%) and calculus 54% (range 38-71%) (Roberts and Cox 2000). Littlemore therefore had a high calculus rate per individual but average periodontal disease. A high calculus rate is more likely to reflect lack of effective oral hygiene than a diet high in protein (Roberts and Cox 2003). The huge variation seen in this period may reflect variables such as individual oral hygiene, diet, local fluoride levels, and varying recording protocols amongst osteologists. Calculus was observed on a single side of the dentition of SK 72. This individual had heavy calculus deposit all over the teeth in the right mandible and, to a slightly lesser extent, the maxilla. The right side also had a peri-apical abscess and caries. There was heavy wear on the left mandible. One-sided deposits of calculus suggest single-sided masticatory activity. This may be caused by the abscess and caries which caused severe pain, or paralysis in the facial muscles.

Antemortem tooth loss, or teeth lost before death (usually through caries) numbered 163 in the Littlemore assemblage. This comprised 28.29% of the sockets available for study, and

63.15% of adults. The national rate (Roberts and Cox 2000) was 36% of individuals, an average of 19% of teeth per position. Antemortem tooth loss was not recorded in the other two nunnery sites. Littlemore has higher than average rates of tooth loss, which corresponds with the slightly higher than national average rates for caries. This may be related to the high quantity of older age individuals in the assemblage.

Only 11 individuals (28%) had dental enamel hypoplasia, which affected 48 teeth (11.94%). The national average was 35% of individuals, with prevalence rates between 20 and 40%. Enamel defects are acquired between the ages of 18 months and 4.5 years, and represent periods of severe illness where growth is arrested and then resumed. The percentage of individuals affected at Elstow and Clementhorpe were 21.9% and 24.4%. This demonstrates that the mean rates of enamel hypoplasia at Littlemore were lower than in other nunneries.

The subadults totalled eight individuals with teeth present to examine. Of these one individual (SK 74) had four caries and two peri-apical abscesses. Calculus was present on four dentitions.

The Littlemore nunnery assemblage has shown that on average all the adults would have known toothache at some stage in their lives with just over one caries per adult dentition. 63% of the adults had experienced antemortem tooth loss, which is usually as a result of carious lesions. Just over half the adults had a peri-apical abscess, which would have provided severe pain and the risk of infection. The high rates of calculus and periodontal disease would have contributed to high caries rates and antemortem tooth loss.

Childhood metabolic stress was low as indicated by the low rate of enamel hypoplasia, suggesting the population was buffered from periods of acute disease and or malnutrition. The subadults, except for one, had only calculus as a dental health problem. SK 74 was a 4-8 year old child with good bone preservation and presence. This individual had four caries and two abscess, but had no other health problems indicated from the bone. To acquire this many caries and abscesses in a child would require a diet high in refined carbohydrates or sugars and perhaps a low mineralised enamel. The medieval diet could provide sugar in the form of honey and fruit juice and carbohydrates were readily available to all levels of society. The health implications of caries and abscesses in a child are many and has been shown to reduce growth. Caries have been shown to be more common in children who are malnourished and underweight and are at an elevated the risk of death (DeWitte and Bekvalac 2010).

Dental non-metrics

The non-metrics observed mostly relate to crowding of the dentition which was observed in 8 dentitions (SK 18, 41, 45, 49, 56, 84, 86, 88). There was an additional cusp on the left upper M2 of SK 41. There was shovelling on the upper 1st incisors of SK 91. There were several instances where the third molar was likely to be congenitally absent, but this was not confirmed by radiography. There was also a single instance of complete absence or agenesis of the upper right second incisor SK 84.

5.3 Pathology

Healed Fracture

A fracture is defined as a complete or partial break in the continuity of bone (Roberts 1991, 226) Fractures may result from underlying pathology, repeated stress or acute injury (Roberts and Manchester 2005, 88-91). The majority of fractures that are observed in archaeological human bone are healed. Certain types of fracture are indicative of inter-personal violence, others are the result of accidents (Crawford Adams 1983; Galloway 1999). Furthermore, the alignment of a fracture and evidence for secondary pathology (among other changes) may indicate quality of diet and treatment (Grauer and Roberts 1996).

There were 12 individuals observed with healed fractures, of which one (SK 18, two left and six right rib fractures) had more than one fracture. These affected seven males (25%) and five (14.28%) females, Except for rib fractures and the lumbar vertebrae there was only one example of each fracture type (Table 10).

Table 10: True Prevalence Rate of fractures observed

Bone	Male – number of fractures	Female – number of fractures	Total
Right fibula	1		1/39 (2.56%)
Cervical vertebrae		1	1/163 (0.61%)
Left rib	5		5/331 (1.51%)
Right rib	6		6/330 (1.81%)
Lumbar vertebrae	1	1	2/181 (1.1%)
Left Ulna		1	1/49 (2.0%)
Right clavicle	1		1/40 (2.5%)
Left radius		1	1/42 (2.4%)
Left navicular		1	N/A
Left pubic bone	1		N/A

Trauma as reported for Elstow and Clementhorpe was 17% Female, 20% Male and 8.1% Female, 13.3% Male respectively (Keeping 2000). This is broadly comparable to the rates observed at Littlemore.

Fractures of note were the Colle's fracture and Parry's fracture (SK 34, 78). Colle's fractures are commonly seen from falls onto hard surfaces with outstretched arms and Parry's as the name suggests are often found when the arms have been raised up in self-defence, but also seen in accidents.

The right clavicle fracture seen on SK 68 had healed with an overlap of bone, which reduced the length of the bone, which would have affected the mobility of the arm.

Rib fractures are a very common site for a fracture and are easily acquired, even from severe coughing (WebMD 2012). A less common fracture was of the left pubic bone, SK 92, which was likely to be result of direct trauma to the hip area. SK 49 had a 5th lumbar crush fracture which may be the causally linked to the sacral fusion which had occurred to the pelvis. The right 5th lumbar fracture of SK 23 was also uncommon, the superior facet was fractured straight across. SK 23 also had spondylolysis of the 5th lumbar vertebrae this and the fracture suggest very heavy loading and twisting affecting the lower back.

SK 86 had an avulsion fracture which had occurred on the left navicular tuberosity. Tarsals are a rare area for fractures, but this fracture is a common one when they occur in the ankle and is often associated with ligamentous injuries and results from twisting forces on the mid foot. It is commonly seen in modern populations amongst athletes (Ameres 2014).

Pseudo - Osteochondritis dessicans or cortical defect

A cortical defect on SK 91 (female 21-30) was located on the left 1st proximal phalanx and centrally on the concave surface. This is likely to be a symptom of circulation failure leading to restricted blood supply and eventual bone necrosis. It is not true osteochondritis dessicans as it is on a concave and not convex surface. It is probably caused by repetitive low-grade chronic trauma or microtrauma.

Ossified haematoma

Tendons and muscle attachments to the bones may occasionally ossify as a result of trauma, for example where a haematoma has been generated in the proximity of the injured periosteum (Aufderheide and Rodriguez-Martin 1998, 26). The resulting mass of woven bone is known as myositis ossificans traumatica. It may occur without obvious skeletal injury and after only minor muscle trauma. This was observed on SK 18 (male over 50 years) left femur posterior lower shaft. It protruded 14.5mm and was 71 mm in length. To note, this individual also had multiple rib fractures, osteoarthritis of the spine and joint osteoarthritis.

Spondylolysis

This is a stress fracture through the pars interarticularis and is confined almost exclusively to the lumbar region, most commonly L5. It is the consequence of stresses imposed on the lower spine and there may be familial tendencies. There is considerable variation in the prevalence in different populations, but on average about 5% will be found with the condition. It tends to be more common in males than females. Clinically those with the condition are unlikely to be affected by anything more than back ache (Waldron 2009).

SK 23 (female, 25-55) the fifth lumbar vertebrae had a detached spinous process, but this was absent from the remains. To note the 5th lumbar superior right facet had a fracture across the centre. The 1st sacral left wing had an additional articulation on the superior surface, perhaps a result of a need for stabilisation of the joints. Post mortem damage prevented the entire extent of the trauma and subsequent bone remodelling to be examined.

SK 35 (male?, 45+) had the L5 present, but the detached spinous process was absent. There were rounded nodules where the spinous process should have been attached.

Perimortem Blunt force Trauma

The medieval period saw a considerable amount of warfare, there were also many other opportunities to inflict violence. Roberts and Cox (2000) describe inter-personal violence as being ‘endemic’ in this period. As such it is not so surprising to find an example of blunt force trauma on an individual in the assemblage from Littlemore. SK 53 was a male over 45 years and comprised the clavicles, cervical vertebrae, upper ribs and skull only, the post-cranial skeleton having been truncated away. This individual’s mandibular teeth were available for observation and 3 teeth with carious lesions and calculus was present, as well as

mild periodontal disease. Due to the lack of post-cranial elements age relied on dental attrition and suture closure, both of which are known for their lack of reliability. The cranium and mandible displayed male characteristics and the frontal bone retained the metopic suture and there were ossicles present in the lambdoid suture. The cranium was complete enough to measure the length and breadth and the cephalic index was 80.55 -brachicephalic. The left frontal bone presented with an oval area (65 x 31 mm) with an arc to the superior end as an opening into the endocranium. Amongst the fragments of skull bone was recovered an oval-edged half-moon shaped fragment, likely to have come from the open area on the left side. The edge of the opening was sharp on the ectocranial side and bevelled on the endocranial. Radiating fractures are found going towards the metopic suture, coronal suture and another one extending to the temporal suture from the coronal. A small area of depressed bone was still in place (28 x 24 mm) with a fracture running across it. There was no sign of healing along the edges of the trauma as they were still sharp.

It is suggested that the hole in the frontal bone represents a perimortem (at the time of death) blunt force trauma, which resulted in a comminuted depressed fracture of the frontal cranial bone. The broken pieces of bone and the edges of the wound were of uniform colouration and though sharp displayed the correct reaction of fresh bone to direct force, where the endocranial surface had a bevelled broken edge and the depressed area had lost internal surface. The linear radiating fractures confirm a perimortem timing, as it is only possible to develop these when the bone is still fresh (Lovell 1997). There were no concentric radiating fractures, which are typical of low velocity impact.

Other trauma

Of probable traumatic origin is the fusion of the left ilium to the sacrum on SK 14 (male 45+). There was a smooth mass of additional bone on the anterior iliac blade. Although the bone had been broken post mortem it is likely to have been fused to the sacrum. There was no right side to examine. This individual additionally had a healed fracture to a left rib shaft, which had a spur (small extension on bone) extending from the area. There was also osteoarthritis on the cervical vertebrae facets.

An alternative diagnosis for the origin of the fusion is joint disease. Fusion of the sacroiliac joint is a symptom of ankylosing spondylitis, psoratic arthritis, reactive arthritis and enteropathic arthritis (Waldron 2009). However, there are no other indicators for these conditions available for observation on the skeleton.

5.3.1 Infection

Non-specific

Non-specific infections include periostitis, osteitis and osteomyelitis. Periostitis refers to a new layer of bone that is laid down under an inflamed periosteum (the fibrous sheath that covers bone in life) It is identified on the surface of dry bone as porous, layered, new bone. When the cortical bone (bone just below the surface) becomes inflamed, the condition is referred to as osteitis.

Periostitis and osteitis may arise not only as a consequence of non-specific infection, but also from other conditions of a metabolic, neoplastic or traumatic nature (Resnick and Niwayama 1995). Diagnosing osteitis in dry bone involves demonstrating the involvement of the cortical

bone and thus radiology is required for this. For the present analysis routine radiography was not undertaken and therefore lesions were classified as periostitis, unless a sinus was identified, in which case osteomyelitis was diagnosed.

The lower legs are the most common site for non-specific infection as the bone is close to the skin and the limbs prone to knocks and falls. Poor circulation can also result in low grade infection and the lower legs are prone to this.

Periostitis was observed on the tibiae (left and right) of skeletons 13, 33, 36, 77 and 84. The fibula was involved SK 13, 77 and 84. The true prevalence rate for the left tibia was 12.19% (5/41) and the right 12.5% (5/40). Infection rates were reported for Elstow Abbey and Clementhorpe (Keeping 2000). Combined male and female was 25% (27/106) and 11.8% (15/127) respectively. With such a low quantity observed at Littlemore it is not possible to comment on the male/female difference in rates, nor concerning age.

Osteomyelitis was observed on two individuals; SK 11 and 50 (older adult female and young adult female). SK 11 the left fibula was involved and SK 50 it was the left tibia and fibula and the right ulna. Osteomyelitis is a term used to describe any form of infection of bone and bone marrow which results in the inflammatory destruction of bone (Waldron 2009). This is displayed in bone by an increase in size, and/or drainage channels called cloaca are formed. Through these sinuses the pus drains out. There is often also periosteal new bone growth on the shaft. Untreated osteomyelitis may persist for years with ensuing complications. Death occurs when the infection spreads to other organs, particularly the brain or meninges. When seen in a skeletal population it suggests they have survived for several years with the condition. The multiple bone involvement of SK 50 indicates that the infection had either spread via the bloodstream or there were multiple points of entry. As this was a young adult, it may be the infection developed as a child. Organisms tend to settle out at the growing ends of the bones in children. Both the individuals with the condition would have been incapacitated to an extent and needed care. The infection results in a high temperature, bone pain and swelling in the affected area.

Sinusitis

Sinusitis is an infection of the maxillary sinus which is characterised by new bone laid down in a ‘web-like’ manner within the sinus cavity. Causal factors can include; smoke, environmental pollution, dust allergies and upper respiratory tract infections (Aufderheide and Rodriguez-Martin 1998; Roberts and Manchester 2005, 175-6). Congenital predisposition can also play a role, as can pregnancy, malnutrition and a wide variety of infections. The condition is classed as chronic (when seen on bone) if it lasts more than three months. Symptoms can include facial pain, fever and generalised malady.

A single instance of sinusitis was observed in the sinus cavity of SK 84 (20-27 years male). The web-like new bone growth was observed.

Leprosy

There was single case of possible Leprosy identified on SK 35. This individual was a 45+ years probably male. The diagnosis is tentative as there was insufficient completeness of the skeleton to examine all the areas. Parts of the skull, right arm, ribs and lower vertebrae survived. There were no hands or feet. There was heavy attrition on the teeth which remained

and osteophytes on long bone joints. It was the left maxilla (much broken post mortem) which presented with a much reduced height of the alveolar, porosity of the palate which was also very thin. The posterior nasal spine was present but the left nasal margin was very rounded and smooth bone. There was a much reduced distance between the alveolar and the nasal spine. The left nasal aperture adjacent to the inferior orbit bone appeared resorbed and irregular with a fine and velvet-like surface. The central incisors though absent, the alveolar were present, but much reduced in depth (inconclusive as to whether the incisors could have continued in place in the shallow alveolar, or would have been lost). These features may be interpreted as the rhino-maxillary syndrome which is pathognomic of lepromatous leprosy. However, without the remainder of the skeleton and a more complete facial area to examine, the diagnosis is tentative.

5.3.2 Metabolic Disease

Cribra Orbitalia

Cribra Orbitalia are the lesions seen in the orbit roof, it is not a disease in itself. It has been purported to be a symptom of iron deficiency anaemia, but there is increasing research that this may be only one possible cause (Walker et al. 2009). It is therefore regarded as a general indicator of metabolic disease and very often seen in conjunction with other indicators.

There were only two individuals observed with slight or low grade cribra orbitalia, SK 15 (19-25 year female) and 89 (60+ female). There were 23 and 27 (Left and right) orbits available for observation. Which gives a prevalence rate of 8.6% for the left and 3.7% for the right. With such a low occurrence of cribra orbitalia in the population it may suggest that the diet and living conditions were adequate in childhood and adulthood to not result in a deficiency of iron or other minerals.

Cribra Femora

This lesion, most commonly seen on subadults, is located on the anterior of the femoral neck just inferior to the head. It is very similar to cribra orbitalia in appearance. It is suggested that cribra femora is due to a deficiency of magnesium (Miquel-Feuchet et al. 1999) which is needed for cartilage growth (ibid.) This lesion may be a result of malnutrition, and there may be a link to cribra orbitalia, which can be indicative of B12 deficiency (Walker et al 2009).

The lesions were seen on SK 50 (15-24 female) 77 (60+ female) 84 (20-27 male). SK 50 as already discussed was suffering from chronic infection (osteomyletis) and therefore it would not be unusual as a result have deficiency in vital minerals. SK 77 also had infection, periostitis on the left and right tibia and fibula, however this was at the healed stage. SK 84 also had periostitis (left tibia and fibula) and sinusitis.

Vitamin D deficiency (Rickets)

Rickets is a childhood disease caused principally by a lack of vitamin D but it may also be due to lack of calcium and there are, in addition, three hereditary forms. Lack of vitamin D, severe enough to cause rickets, prevents osteoid being mineralized and the bone formed is soft and may bend if the disease occurs during the time the child is weight bearing (Waldron 2009). Rickets predisposes towards the development of pneumonia, which may have been a cause of death in children who present with rickets. Possible residual rickets was observed on

SK 91, 21-30 years female. The femora were bowed anterior-posterior and the tibiae were very slightly bowed medio-lateral. Rickets occurring as a small child, from which there was subsequent recovery, persists into adulthood as permanently deformed long bones.

Congenital/ Developmental

Congenital defects were 5.7% and 3.1% at Elstow and Clementhorpe. Similarly low levels of defects are seen at Littlemore. Many congenital conditions are evident skeletally, but are generally asymptomatic these are presented below. They comprise anomalies in the development of the spine and rib cage.

Vertebral developmental anomalies

Developmental anomalies were observed on five adult female skeletons. SK 1 had sacralisation of the 5th lumbar vertebrae. SK 12 Lumbar vertebrae 1 and 2 had the transverse process absent. SK 60 the arch of cervical vertebrae 1 (atlas) was unfused. SK 86 had a reduced pedicle on the right 5th lumbar vertebrae. SK 89 also had an unfused 1st cervical vertebrae arch and C2 and 3 were fused together by the left inferior facets. This fusion of two vertebrae can be congenital, or it may be a response to the unstable arch of C1. None of these conditions are life affecting in themselves, but clearly the unstable joints went on to develop osteoarthritis and in the case of SK 86 additional bone growth to stabilise the joint.

The developing rib cage is also prone to defects. SK 50 had a bifurcated rib, this usually occurs at the 3rd, 4th or 5th level during development. Two ribs articulate in the child SK 30. This is known as a bridge (Barnes 2012).

Other developmental

Os trigonum is an accessory bone in the talus. SK 25 had an extension of bone to the posterior of the right talus, which was partially detached. The incidence in the modern population is about 5% (Scheuer and Black 2000: 460). The persistence of the os trigonum can give rise to pain during activities that involve forced plantar flexion (e.g. ballet dancers, javelin throwers, footballers etc.).

Developmental hip dysplasia

Congenital hip dysplasia is a common condition (Anderson 2000). It could have a large effect on the individuals' mobility as the limb would not be weight bearing resulting in a severe limp. This would impact on the other muscles and bones in the body, especially for example if a crutch was used. At birth 2% of neonates have clinical evidence of hip instability. By 3 months only 1 in 1000 has evidence of dislocation. There are several known risk factors including family history, breech presentation and post-natal swaddling. Girls are much more likely to be affected than boys. The left hip is affected four more times than the right (Waldron 2009). A study using medieval skeletal assemblage from Britain found there to be 2.7 per 1000 hips affected (Mitchell and Redfern 2008).

At Littlemore two subadults presented with the left hip displaced. These were SK 52 and 73 both between 6 and 10 years. Developmental hip dysplasia is not a life limiting condition and is seen in adults. It is likely therefore that these two children died from a short acute illness which leaves no trace on the bone. There were 12 cases (adults) in Roberts and Cox survey

(2000) representing about 0.31% of the population who experienced this disability (9 female and 1 male).

The Littlemore children; the pelvis and femur at this age (6-10 years) is unfused, but it was possible to observe that the left unfused femoral head in both cases was misshapen and subluxated, so that it extended down towards the medial shaft to be level with the epiphyses of the greater trochanter. The acetabulum was irregular and undulating when compared to the right. The vertical height of the left ischium to pubis was smaller than the right. The left leg was atrophied compared to the right, particularly the femur. The limb was also shorter. SK 52 it was possible to observe that the femur was articulating posterior to the acetabulum where a false joint had been created. The femoral epiphyses was also malformed in a lunate shape (where it should be a half sphere).

The atrophy of the leg and the shortened length would suggest in both cases the left leg was not weight bearing. It is also statistically more likely that the children were female, as the condition is seen more commonly in females than males and they were buried in a nunnery burial ground. Although examples are reported on in adults, there are few found in children. A very similar example comes from medieval Poland, 8-10 year old child (Agnew and Justus 2013) and Eastern Europeans currently have one of the highest incidences of DDH. Although an adult example, Hereford cathedral (H1093) had a case of bilateral hip dysplasia and the femoral heads appeared very similar to those at Littlemore (Boylston pers comm unpublished report).

Musculo-skeletal stress markers

Hawkey and Merbs (1995) distinguished between robusticity markers caused by ‘‘normal reaction of the skeleton to habitual muscle use and [which] reflect daily activities that produce rugged markings at the musculoskeletal site of attachments’’ and stress lesions, ‘‘a pitting or furrow into the cortex to the degree that it superficially resembles a lytic lesion.’’ It was suggested that the differences in appearance reflected a continuous response to overload (Hawkey and Merbs, 1995)

Table 11: MSM by side and grade of expression (after Hawkey and Merbs 1995)

		Left				Right			
	Grade	N	1	2	3	N	1	2	3
Ulna olecranon		29	4	0	0	30	5	0	0
pelvis iliac crest		17	7	2	0	17	8	3	0
pelvis ischial tuberosity		30	7	3	0	30	6	4	0
femur linea aspera		31	10	9	1	33	11	8	1
femur gluteus maximus		30	8	8	4	31	8	7	4
patella anterior surface		16	1	1	1	18	1	2	1
calcaneum posterior spur		26	5	3	3	28	6	3	3
tibia tuberosity		29	2	0	1	28	1	1	0
tibia soleal crest		30	7	0	0	28	4	0	0
clavicle rhomboid fossa		27	7	5	2	29	5	5	5
humerus bicipital groove		29	8	4	0	33	9	2	0
humerus intertubercular groove		30	10	3	0	33	9	2	0

Specific muscle insertion sites were scored in the assemblage in order to examine any possible patterns. These were graded from 0-3 after (Hawkey and Merbs 1995) Particular sites were used as these have been shown to indicate activity.

Lower limb MSM is usually not indicative of a particular repeated action or occupation. These muscles are used for many different activities.

A common site was the rhomboid fossa where there were 12 left and 15 right bones affected. Five on the right side were grade 3, the most severe the defect greater than 5 mm deep. Interestingly there was a cortical defect observed on SK 17, child probably 5-10 (age approximate based on bone size) at the left clavicle rhomboid fossa.

The results seem to indicate that the population stressed the upper thigh muscles more than the lower leg and knee. The least strained muscle was that at the site of the ulna olecranon, or elbow.

5.3.3 Joint Disease *(extra spinal)*

Joint degeneration

Osteoarthritis (OA) is the most common condition seen in the skeleton (Tables 12-14), apart from dental disease. The cause is not certain but there are a number of predisposing factors; age, genetics, sex, race, obesity and trauma and most importantly movement. It is uncommon under the age of 40. Degeneration of the joints is seen in stages as the articular cartridge breaks down. Firstly new bone formation around the margins of the joint, then new bone on the joint surface, followed by pitting on the joint surface, changes in the normal contour of the joint and finally the production of eburnation. Eburnation is pathognomonic of osteoarthritis.

The bony changes have been divided into those not diagnostic of OA and definite OA (after Waldron 2007).

18 adults were observed to have some joint changes. The shoulder and hip joints were commonly affected.

12 individuals had osteoarthritis (7 female and 5 male). There is a range of joints affected, as noted in other populations a commonly affected area was the acromio-clavicular joint (2 individuals). There were also 2 male individuals with OA of the hip, which is more common in females than males (Walron 2007). Osteoarthritis of the knee is strongly associated with obesity, a male and female were both affected in this area. The first toe was affected in two female individuals, this again is a common finding. The ankle was affected in SK 77 and this is an unusual joint and where found is commonly secondary to trauma. The metacarpophalangeal (MCP) joints were affected bilaterally in SK 48. This is also often seen secondary to trauma. It involved metacarpals 3 and 4 with the corresponding phalanges. The distal interphalangeal (DIP) joint of the hand and the same of the foot were affected on skeleton 78 and 77 (possibly secondary to fracture). The elbow of SK 92 was affected and this is a rare joint to be affected and again is usually seen as secondary to trauma.

Table 12: skeletons with joint changes

Skeleton No	Sex	Age	Joint Affected	Changes
12	Female	45+	Acromo-clavcular & sterno clavicular	Porosity, Osteophytic growth
13	Undetermined	Adult	Right tibia and femur articular (knee)	Osteophytic lipping
14	Male	45+	Sternoclavicular, right shoulder, elbow (ulna) wrist (radius) hip (left pelvis)	Porosity, osteophytosis
18	Male	50+	Acromoclavicular, humerus, glenoid, hip	Porosity & osteophytic growth
35	Male?	45+	Right arm	Osteophytosis
36	Male	50+	Acetabulum	Osteophytosis
41	Female	45+	Hip	Osteophytosis
44	Female	45+	Right acromion	Porosity
48	Male	60+	Hip, elbow, clavicle	Osteophytosis
57	Female	50+	Left and right scapula, left hand metacarpal, right patella	Osteophytosis
59	Male	45+	Acromoclavicular, glenoid, elbow	Osteophytosis
67	Male	35-45	Acromoclavicular	Porosity
68	Male	60+	Left foot phalanges, right scapula glenoid fossa	Fusion (phalanges) Osteophytosis
79	Male	50+	Left foot intermediate and distal phalanges	Fusion
80	Female	45+	Hip, glenoid fossa, ulna	Osteophytosis
83	Female	60+	Right distal pedal phalanx	Osteophytosis
85	Female	40+	Left scapula and clavicle	Osteophytosis and porosity
89	Female	60+	Right scapula acromion	Porosity

Table 13: skeletons with Osteoarthritis

Skeleton No	Sex	Age	Joint Affected
18	Male	50+	Bilateral Sterno-clavicular, left knee (femur and patella)
33	Male	45+	Left acromio-clavicular and hip
45	Female	35-45	Right wrist (ulna, radius)
48	Male	60+	Left and right hand (metacarpal) wrist (radio-uln) joint.
54	Female??	Adult	Right 1st metatarsal
57	Female	50+	Left knee
64	Female?	Older age	Right 1st metatarsal
77	Female	60+	Right phalanges (foot) left calcaneus/talus
78	Female	60+	Bi lateral Acromio-clavicular, left sterno-clavicular, left Hand distal interphalangeal
81	Male?	45+	Left rib articulation for transverse process
89	Female	60+	Left mandibular condyle
92	Male	45+	Right hip, left elbow

Not detailed in the table (13) are two individuals whose pathology may have a multiple aetiologies. SK14 (45+ male) and SK49 (45+ male) both had fusion of the sacrum to the pelvis. This could be a result of joint disease or trauma, or both. SK 49 had a crush fracture of the 5th lumbar vertebrae and therefore it is suggested that the fusion of the sacrum and ilium (definitely the right side, post mortem damage to the left, but possibly it was fixed posterior to the joint) was related to this. SK 14 had osteoarthritis in the cervical vertebrae and a fused

left ilium in the form of a mass of new bone growth on the anterior aspect. Unfortunately there was no right side preserved. Fusion of the sacroiliac joints are seen in reactive arthropathy and ankylosing spondylitis and these are possible alternative diagnoses for the pathology.

Table 14: true prevalence of osteoarthritis

Joint	No. observed/observable (N/n) left	No. observed/observable (N/n) Right	TPR left	TPR Right
TMJ	1/	0/		
Sterno/Clavicular	2/	1/		
Shoulder	0/16	0/15		
Rib/vertebrae	1/	0/		
Hip	1/33	1/28	3.03%	3.5%
Knee	2/16	0/15	12.5%	
Elbow	1/27	0/28	3.7%	
Wrist	1/12	2/13	8.3%	15.8%
Hand	1/20	1/19	5%	5.26%
Ankle	1/22	0/23	4.54%	
Foot	0/15	1/17		5.88%

Possible Gout

The legs and right foot only remained of a possible male, SK 25. The right first metatarsal distal head on the medial side had two erosive lesions. The lesions were smooth-walled with sharp but rounded edges. Unfortunately the phalanges were absent. The first metatarsal phalangeal joint is the most commonly affected by the disease. The criteria for diagnosis require not only asymmetrical erosions but also the overhanging margins (Martel hook) of bone which has formed over the tophus (Waldron 2009). Since the corresponding proximal phalanx was absent it is not possible to confidently diagnose gout as the cause of the erosive lesions.

5.3.4 Joint Disease *(Spinal)*

Osteoarthritis

Osteoarthritis is the most commonly reported pathology in archaeological bone. It is a chronic and progressive non-inflammatory disease process of the synovial joints (Aufderheide and Rodríguez-Martín 1998, 93). In severe cases, degradation of the joint cartilage may progress to the stage where bone-on-bone contact occurs (eburnation) Eburnation is considered the most diagnostic of all bony changes associated with osteoarthritis (Rogers and Waldron 1995, 43-5). While osteoarthritic changes can occur at any synovial joint, areas most commonly affected comprise the facet joints of the vertebrae, the hands, the hip and knee joints, the acromio-clavicular joint, and the first metatarsophalangeal joints of the feet (Rogers 2000, 166). There is a positive correlation with age and females are more likely to suffer from the disease at a younger age than males (Rogers and Waldron 1995, 32).

Spondylosis deformans

Table 15: Number of vertebrae affected by joint disease

	Intervertebral disc disease (N/n) %	Osteophytosis (body) (N/n) %	Schmorl's nodes (N/n) %	Osteoarthritis apophyseal joints	Osteoarthritis body
Cervical vertebrae Male	13/53 24.5%	13/53 24.5%		13/53 24.52%	
Cervical vertebrae Female	10/102 9.8%	14/102 13.7%	?3	7/102 6.86%	3/102 2.94%
Thoracic vertebrae Male	9/137 6.6%	33/137 24.08%	28/137 20.4%	6/137 4.37%	
Thoracic vertebrae Female	5/190 2.6%	34/190 17.9%	34/190 17.9%	3/190 1.57%	
Lumbar vertebrae Male	6/81 7.4%	39/81 48.1%	7/81 8.6%	5/81 6.17%	
Lumbar vertebrae Female	8/95 8.4%	22/95 23.2%	16/95 16.8%	2/95 2.1%	
Sacral S1 Male	1/15 6.6%	4/15 26.6%			
Sacral S1 Female	1/20 5%	3/20 15%			

Spondylosis deformans is degeneration of the intervertebral disc (Table 15), which in turn affects the intervertebral space between the bodies of opposing vertebrae. It is usually associated with increasing age (Kahl and Smith 2000, 433). Osteophytosis (new bone growth) usually occurs as a response to this process on the margins of the superior and inferior surfaces of the vertebral bodies. Reactive new bone formation and pitting on the vertebral body surfaces is also typical (Ortner 2003, 555). Osteoarchaeological literature suggests that prolonged labour-intensive physical activities may cause the onset of the condition (Jurmain 1977, 353-6; Lovell 1994).

Cases of marginal osteophytosis occurring alone, without pitting and densification of the vertebral body surface, were considered separately for the purposes of this report, but may indicate an early stage of spondylosis deformans.

Schmorl's nodes

Schmorl's nodes are identified as small lesions in the vertebral end plates. These lesions are 'pressure defects' arising after intervertebral disc herniation ('slipped disc'). Schmorl's nodes are most commonly identified in archaeological bone in the lower back region.

The spinal afflictions amongst the assemblage were low. The most commonly observed were Schmorl's nodes, which is the case amongst most skeletal assemblages (Aufdeheide and Rodríguez-Martin 1998, 97). The cervical vertebrae were more affected by osteoarthritis and spondylosis deformans than the thoracic. Although the rates given here are crude rates (true prevalence not calculated due to the low numbers) they may not give a true reflection. It is possible though that there was a local practice (weight bearing on the head) which contributed to the incidence. Joint degeneration is a combination of genetic inclination, health and lifestyle and activity. All the skeletons with spinal disease were over 45 years (where age could be ascertained) and afflicted males and females equally.

51 adults had at least one vertebrae for observation of these 32 adults had spinal changes, 62%. Frequency of occurrence of spondylosis deformans is reported by Elstow Abbey and Clementhorpe Priory, 50% and 20% (Keeping 2000). Differing reporting processes and definitions of joint disease and degenerative changes makes it difficult to compare with other sites from the period. It is suggested that nearly one third of individuals had spinal changes suggesting osteoarthritis (Roberts and Cox 2000). 6 out of 32 adults at Littlemore had changes associated with osteoarthritis (18.75%). The quantities of spinal joint disease are within the range expected for the period. Some of the spinal changes are associated with trauma (reported earlier).

Age-related changes

Bony changes which are age-related were observed. Six individuals had ossified cartilage, usually this was of the thyroid cartilage.

Other bone pathology

SK 76, 15-16 years female, on the frontal bone endocranial surface were capillary-like impressions, not new bone, but the surface appeared remodelled. Considerable gross changes. Aetiology unknown, but many explanations have been purported which cause inflammation and/or haemorrhage of the meningeal vessels (Lewis 2007).

SK 79, male 50+, additional bone on right navicular extending 3 mm, not on the articular surface, but adjacent to it. Additionally the right calcaneus had an extension of bone on the lateral side (origin of the extensors) and on the anterior. The enthesophyte for Achilles tendon was 5 mm. It is possible that trauma or repeated activity has resulted in the additional bone growth due to extreme stress on the ligaments/tendons and muscles. The lateral side extension of bone on the calcaneus is due to persistent hyperextension of the toes (Stirland 1996). To note the left leg is shorter than the right.

SK 82 bilateral 1st phalanx bone growth on the lateral side. This is likely to be due to a response to stress placed on this distal interphalangeal joint. Perhaps activity-related or ill-fitting foot wear.

The extension of bone growth on the lateral side of the calcaneus was seen bilaterally on SK 13. This individual also had osteophytic lipping on the knee joint (tibia and femur) and periostitis on the tibiae and fibulae.

5.4 Conclusions

This assemblage represents those buried at Littlemore Priory and covers the areas thought to be reserved for the more wealthy or eminent individuals (Daniell 1998). The entire extent of the cemetery was not excavated and this limits interpretations. The total number of individuals available for complete skeletal analysis was 91. Few nunnery sites have been investigated archaeologically and the number of individuals has allowed some meaningful analysis to be undertaken. It was estimated that at the time of the dissolution there were 153 nunneries in the UK. Only 17 of these have produced human remains as part of the excavations. Of these only 4 had a sufficient number of individuals to conduct statistical analyses. Littlemore priory therefore contributes significantly to knowledge of the medieval nunnery population.

As expected for a nunnery, there were more females than males in the assemblage. There was a low presence of children and infants, which has been observed at other religious institutional sites.

The pathologies observed may suggest an infirmary or at least nursing element to the nunnery, since some of these ailments were long term afflictions and debilitating. For example the two cases of developmental dysplasia of the hip in children. This would have a resulted in reduced length of the leg and therefore a severe limp and perhaps needing the use of a crutch. These children therefore would not have been able to partake in the usual activities and work of others of their age. The individuals with osteomyelitis would have been quite sick when the infection was active. SK 35 had possible leprosy and if this was a correct diagnosis, then this individual would have been subjected to the social stigma associated with the disease. The presence in the nunnery cemetery suggests that perhaps they were being cared for by the community. Skeletons exhibiting signs of leprosy have been found at other religious institutions in low numbers (Gilchrist and Sloane 2005: 211). There were also hospitals specifically for lepers (e.g. SS James and Mary Magdelen, Chichester).

As with most human remains it was not possible to determine cause of death. However, in the instance of SK 53, who had a perimortem blunt force trauma to the frontal bone, it showed no sign of healing and is therefore likely to have been the cause of death. There was a large proportion of the assemblage over the age of 45 years. This is to be expected in an institution which ensured access to regular food and provided adequate shelter and to some extent buffered the nuns from the perils of childbirth. The laity buried within the church and chapel are likely to have been those of the community with prestige, honour and money and their wives and children (Daniell 1998). They are also more likely to have access to better and regular food and living conditions. As a result joint disease was the most commonly observed bone pathology as it is associated with longevity. This is comparable to other monastic assemblages where degenerative joint disease and osteoarthritis were also frequent findings (Gilchrist and Sloane 2005: 211).

At Littlemore there was a lack of indicators of metabolic disease, which suggests there was adequate nutrition and a reasonably healthy living environment. The documented monastic diet (assumption that a nunnery would be similar) appears to be low in fresh fruit and vegetables and would be expected to result in deficiency of vitamin C and perhaps A and D. Interestingly the monastic levels of cribra were lower than the general population (Gilchrist and Sloane 2005 : 210). Cribra is now seen as not just indicative of low levels of iron, but general metabolic disease. There has been much recent work on the identification of scurvy (vitamin C deficiency) in skeletal remains, which was not available when previous assemblages were examined, which may have contributed to the apparent low levels observed in other monastic assemblages (ibid). The low number of children at Littlemore may affect the presence of metabolic disease, as the rapid turnover of bone in children means that short term deficiencies are more readily observable on the bone.

Dental disease was at a level expected for this time period. Only the enamel hypoplasia was notably lower than expected. This is in line with the lack of metabolic disease indicators, as enamel hypoplasia marks periods of childhood stress, of which nutritional imbalance is a known cause (Schwartz 1995: 162).

Height of adults (stature) is a combination of genetics, diet and health. Final stature is deemed to be an indicator of status, as genetic potential is more likely to be achieved by those with good access to food. It would therefore be expected that those buried at a nunnery, especially from the more desirable locations, would have a greater than average stature. The range and means of stature from Littlemore were comparable with other medieval assemblages and nunneries. The numbers available for the assessment of stature was quite low (11 males and 19 females) which would affect the mean. In addition, the less truncated inhumations were from inside the church and chapel, which meant there were more stature estimations from amongst this group than those buried outside the buildings. It is therefore not possible to observe whether there is a statistical difference in height between those within the church and those outside in order to explore the status of individuals.

Indices were calculated for the crania and the degree of flattening of the femur and tibia to explore the variation and possible influence of activity. The cranial indices were spread across the various head shapes and the femoral flattening was similar to other nunnery sites. The tibia was not as flattened as at other sites. The metric analysis confirms a typical medieval population.

In conclusion, the Littlemore assemblage has enhanced our understanding of medieval nunnery mortality, demography and health.

5.5 Non-metric Analysis of knee and feet (*By Branka Franičević*)

Abstract

Non-metric analysis of female skeletons recovered in the grounds of Littlemore Priory, Oxfordshire, has exposed possible long-term continuous kneeling practice as evident from bone changes in the knees and ankles. The aim of this project was to record the incidence of knee-ankle dorsiflexion associated with kneeling, by scoring the presence of bone modification in the form of squatting/kneeling facets on the tibia and talus. Nineteen female samples were examined from the Littlemore Priory collection and compared to 17 mixed-sex burials at Scalloway cemetery in Shetland. Preliminary results indicate a larger prevalence of bone damage to the knee and feet areas at Littlemore Priory. The results may be indicative of extensive kneeling practice at the Priory, contributing to our knowledge of the lifestyle of this small nunnery community.

Introduction

The female skeletal population of Littlemore Priory has been studied in this project for the biocultural synthesis of repetitive kneeling, for prayer and genuflection. Habitual movement at the knee and ankle joints are known to be evident in form of “squatting facets” on the tali and tibiae (Boulle 2001). The solemn commitment of Section 17 in chapter 58 of the *Rule of Saint Benedict* (the Benedictine vow) asks the recruited community to promise stability (*conversatio morum* - ‘conversion of manners’) and obedience (to God and the community's superior). Prayer is known to be the most regular observance of the vow, practised within the order several times a day (Southern, 1970). Squatting facets on the neck of the talus and associated distal end of the tibia were first reported by Thomson (1889). The ankle joint comprises of the articulation of tibia and talus; hence, bone modification on tibiae and tali can appear due to the compression of body structures during maximal ankle dorsiflexion (Fig. 33). In the process, the proximal tibia and the foot move simultaneously, while the lower part

of the proximal tibia approaches the proximal talus. If activities involving dorsiflexion such as kneeling/squatting are extensive, cartilage on the bone wears off, causing inflammation and modification to the bones. Related studies have focused on examination of the presence of tibia and talus facets in modern and ancient societies in order to assess habitual feet postures, suggestive of lifestyles and daily activities (Barnett, 1954; Bautch, 1999; Rao, 1966). The osteological analysis in this project aimed to test the association between bony changes in lower skeletal structure in this nunnery community for a better understanding of the life of religious women in the middle ages.

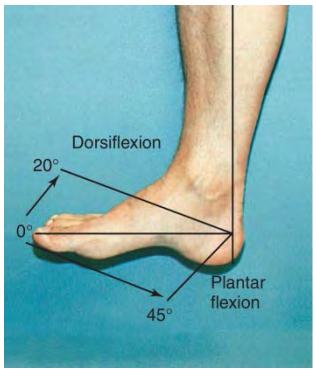


Figure 33: Showing principle of ankle dorsiflexion. Source: http://medical-dictionary.thefreedictionary.com/dorsiflexion

Methodology

The methodology employs osteological analysis of non-metrical bone examination of musculoskeletal markers of a known adult female sample, specifically chosen to maximise information concerning the habitual kneeling posture and its association with religious practice, to make data available to a broader field of monastic studies in Oxfordshire and other counties.

A total of 19 adult female samples buried within the church grounds were analysed from Littlemore Priory (which was active from c. AD 1100 to 1524), and compared to male and female non-church burials from Scalloway cemetery, Shetland, dating from AD 1325 to 1465: these were 17 known adults (seven males and 10 females). Both sets of bones were scored for the presence or absence of bone facets: on tibiae, the medial and later faces and on tali, medial and lateral squatting facets and lateral extension of the trochlear surface. The scoring system for the bones follows the standards for skeletal data collection proposed by Buikstra and Ubelaker (1994) and Finnegan (1978).

Results

Incidence of talar and tibial non-metric traits was compared between the two medieval sites. Preliminary results indicate medial tibial facets to be present on 79% (15/19) of the Littlemore sample and lateral facets on 42.1% (8/19) (Table 16). This is in comparison to the Scalloway burials, which showed 11.6% (2/17) medial facets and 11.6% (2/17) lateral facets. Medial talar facets were evident on 80% (12/15) at Littlemore in comparison to Scalloway samples 6% (1/17). At Littlemore, lateral facets were evident on 73.3% (11/15) with no lateral facets noted on the Scalloway samples.

The Littlemore samples showed 60% (9/15) featuring lateral tali extension in comparison to 17.8% (3/17) of the Scalloway samples.

Table 16: Talus Non-Metric Traits

Talus	**Medial facet**	**Lateral Facet**	**Lateral Extension**
Littlemore Priory	12/15	11/15	9/15
Scalloway cemetery	1/17	--	3/17
Tibia	**Medial facet**	**Lateral facet**	
Littlemore Priory	15/19	8/19	
Scalloway cemetery	2/17	2/17	

Conclusions

Bone markers indicative of repetitive hyperdorsiflexion of the foot reveal a squatting/kneeling practice to be practised more regularly in a population associated with a religious setting as compared to the samples buried at a village cemetery. The greater presence of squatting facets in the religious community is likely to be associated with kneeling during prayer, by means of repetitive habitual postures where the body mass is moved onto the knees, and weight is pressed on the ankle joint during squatting. Results of this project are preliminary and only indicative, and therefore should be taken with caution due to the small sample size. For a better understanding of bone changes in the knee and ankle during kneeling practices, further study may expand on sample sizes and include the examination of non-metrical traits of metatarsals.

5.6 Preliminary Carbon and Nitrogen Stable Isotope Analysis (Diet and Lifestyle)

(*by Charlotte Scull*)

Introduction

The extent to which the daily lives and ideologies of women following a "religious life" in medieval England differed from their secular or male contemporaries is a broad and complex topic, encompassing questions about gender roles, perceptions and values. Culinary choices can reflect both the practical elements of available technology, agricultural regimes, personal choice and wider cultural preferences. In the later middle ages, eating and fasting were powerful symbolic actions seen as more intrinsic to female spirituality than male (Bynum, 1987:73). Despite this, a focused study on the production and consumption of food within nunneries has not yet been carried out, despite the considerable insights gained from analysing monastic diets (Bond 2001, 54-88; O'Connor 1993, 107-110; Dembinska 1986; Ervynck 2004, 215-223). In these studies, exploring diet has provided a range of insights into the way monastic communities functioned whilst adhering to their omnipresent social and religious constraints. It seems a logical progression to apply the same archaeological methodologies to the diets of the less well documented religious women of the twelfth to fourteenth centuries, and this preliminary study into the diet at Littlemore nunnery is well placed to fill this gap in our knowledge.

The mid twelfth century saw the widespread foundation of female only religious houses across England at a point when regulations and theories about sexual segregation were growing more and more rigorous (Elkins 1988, 119; Gilchrist 1995, 107). There were decrees warning against the dangers of the male and female religious existing in close proximity to prevent "*Satan's cunning and people's gossip,*" (Thompson 1991, 55). Littlemore nunnery is

an example of exactly this type of foundation and would have been occupied during this phase of broader ideological change, particularly relating to food and growing fears about the inherently sinfulness of women. Into the later Middle Ages it became more fiercely promoted that a person's spiritual purity was dependent on their bodily actions, and the religious significance of fasting and food became stronger and more complex. Littlemore nunnery was suppressed in 1525, and it is documented that this resulted from the nuns' seemingly flagrant disobedience of its holy orders. This makes Littlemore as a historical case study particularly well suited for analysis of diet and lifestyle. The results of this study could lend themselves to re-evaluations of the written records pertaining to this site, and will contribute more widely to explorations into how far reaching and justified the fears of clerics relating to food and women were in this period.

Isotope Analysis: Principles and Application

The analysis of stable isotopes had been extensively applied to archaeological investigations, and has been particularly successful in its incorporation into questions about dietary differentiation, change and processes of migration in Medieval Europe (Pluskowski, 2011:55). This method is a well proven and accurate method of dietary reconstruction and works on the principal that the chemical composition of foods is assimilated into the body tissues of the consumer. Everything in the atmosphere is made up of atoms of different elements. Isotopes are versions or "species" of elements which have common chemical properties but a different atomic mass due to a different number of neutrons. Variations occur in the ratios of isotopes of the elements of carbon and nitrogen depending on ecosystems, photosynthetic pathways and a range of other factors and these variations within foods can be reconstructed using the bulk bone collagen in the animal and human consumers.

When applied to archaeological bone, the technique can reflect a lifetime average of the foods consumed and is one of the very few archaeological methods via which an understanding of life experience at an individual level can be reached. Isotope analysis can only truly be meaningful when large, well-phased sample sizes are used to explore social differentiation and establish patterns, outliers and any diachronic changes. However, in time this small study on individuals from Littlemore will form part of a much wider project investigating the 'Foodways' of Medieval Religious women, incorporating data from a range of nunnery sites. The Littlemore individuals will be placed in wider context among other contemporaneous religious and secular women and monastic men for wider comparisons and understanding.

The specific chemical properties of carbon and nitrogen, which have been chosen for this research, are integral to how their isotope results are interpreted. They will now be considered.

Carbon

Carbon enters the food chain during photosynthesis where atmospheric Co2 and H_2o are converted into the organic matter of plants. The $´^{13}C$ (‰) value in archaeological bone can show to a certain degree the types of plant consumed (C_3, C_4 or CAM) but also the topography and climate of the environment the plants consumed were grown in. However, most relevant to the current study is the way that carbon isotope values can show the contribution from terrestrial and marine sources of protein to the diet (Schoeninger *et al*. 1983). The consumption of marine protein is seen in elevated $´^{13}C$ values, especially

recognisable in regions where this is unlikely to be caused by the input of C_4 plants (Vogel and Van der Merwe, 1977). The elevation in marine ´^{13}C values of marine protein may result from the long food chains in the sea (O'Connell & Lawler, 2009:317) and be a consequence of what is known as the 'trophic level effect' (Van Klinken *et al*. 2000:47). The 'trophic level effect• also impacts on terrestrial signatures, with an increase of 0.5 to 2 (0) in ´^{13}C values occurring during the transfer of biomass up the trophic levels. This means that omnivores have more elevated carbon isotope values than herbivores, and carnivores more elevated than that. The more animal protein a person eats, the higher their carbon isotope value is likely to be. However, trophic level (and therefore level of animal protein consumed) is much more recognisable in nitrogen isotope values.

Nitrogen

Nitrogen has two stable isotopes, ^{15}N and ^{14}N, and exists in the atmosphere as N_2 which is stable and unreactive (Faure and Mensing 2005). Nitrogen enters the food chain through plants as nitrogenous compounds in the soil or fixed from atmospheric nitrogen (Noe-Nygaard *et al*. 2005, 13). The enrichment up the food chain is usually 3-4(‰) per trophic level in terrestrial ecosystems (Van Klinken *et al*. 2000, 47). The nitrogen isotope values of aquatic animals usually exhibit much higher ´^{15}N values than terrestrial signatures; so can be used in conjunction with carbon values to determine the dietary input of marine protein to the diet. If both nitrogen and carbon values in human isotope data are elevated, then this can indicate a diet predominantly based on marine protein. In instances when nitrogen values are elevated, but carbon values remain terrestrial, this can suggest the consumption of pork (omnivore) protein or the consumption of freshwater fish (Müldner and Richards, 2005:44). Nuances and variations in both carbon and nitrogen signatures can indicate a number of things, which will be discussed in relation to the dataset.

Materials and Methods

Sample Selection

Cortical bone from 41 specimens has been selected for stable isotope analysis of bulk body collagen. Mainly rib was sampled, showing the last three years of life, to account for some women who may have retired to nunneries after living a life in the secular habit which was not uncommon.

As of March 2016, 31 samples have been analysed and will be presented and discussed here. But 11 are still under analysis, with teeth being taken from around 20 samples to give an indication of childhood diet compared with adult, which is currently being processed.

Methodology

Before collagen extraction, samples were drilled from the bone or broken off and cleaned using a drill. The collagen extraction of Longin (1971) was followed, with modifications as recommended by Collins and Galley (1998). Samples were demineralized in 0.5M hydrocholoric acid at 6-8°C until soft, with acid changed when necessary. They were then rinsed with de-ionized water until neutral before being gelatinised in pH3 HCl solution at 70°C for 48 hours. The resulting liquid was isolated through filtration using 5-8µm Ezee® mesh filters (Elkay Laboratory products). The filtered solution was frozen for 12 hours and then freeze-dryed (lyophilised) for 48 hours. The resultant collagen was weighed into tin

capsules before being analysed as duplicates on a Europa 20-20 isotope ratio mass spectrometer coupled to a Sercon elemental analyser in the Department of Archaeology, University of Reading. The analytical error was ±0.2 (0) (1 s.d) for ´^{13}C and ´^{15}N measurements and was calculated from repeat analysis of internal laboratory standards of Reading pork gelatine and amino acid methionine. The reproducibility of the duplicates was excellent with an average difference between them of under 0.05 (‰). Before analysing the isotope data, the quality of the collagen extracted was assessed.

Results and Discussion

Entire Population

Table 17 and Fig. 34 present the isotope data across the whole population. The data have been presented in this way first to give an idea of the parameters of the dataset, and to highlight any outliers or immediately recognisable groupings. The cattle sample from Littlemore has been analysed because environmental factors must always be monitored in isotopic studies through complementary analysis of animal bone to set a baseline for the region. This ensures that when comparing data sets from different regions and time periods that any variations are *dietary* and not simply environmental. More faunal samples from the region will be analysed to strengthen this baseline.

Table 17. Littlemore entire population ”^{13}C and ”^{15}N means and standard deviations

	´^{13}C mean	St. Dev	**´^{15}N mean**	St. Dev	**No. Samples**
Males	-19.39	0.3	12.68	0.9	11
Females	-19.4	0.29	12.8	0.8	20

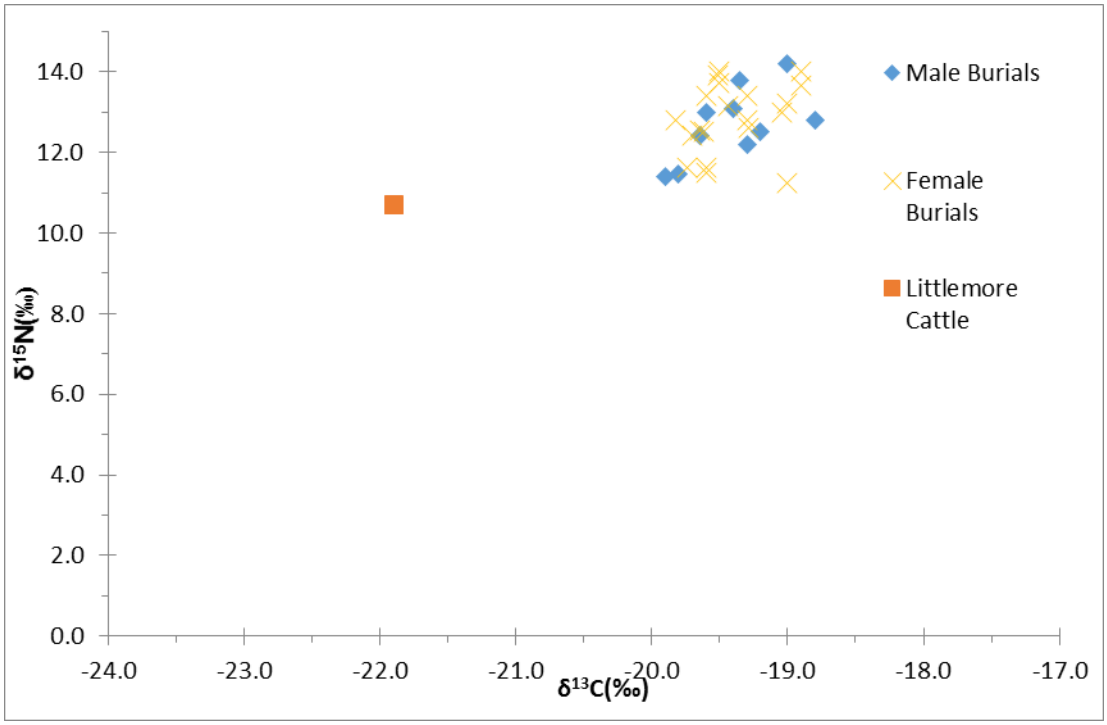


Figure 34: Littlemore Priory whole population data

We would (generally) expect the largely ‘homogenous’ diet of the lower classes, and therefore the majority of the medieval population, to produce an isotopic signature of between -19.5‰ to -21‰ (Carbon) and 9.5‰ and 12‰ (Nitrogen). These data obviously

depend on regional variations and other factors, but they generally indicate a diet consisting of the consumption of C_3 plants (those most commonly consumed across temperate Europe) and some level of animal protein (dairy products and some meat). It is from the written and other archaeological sources that we know that standard diet of the peasantry was based around cereals and pulses, with some animal proteins and varying input of meat and fish depending on social status, region and accessibility (Dyer, 1998). Fig. 24 shows that the Littlemore individuals generally plot within this expected range, with no immediate outliers and some level of marine input into the diet, possibly of higher status individuals. There is very little distinction between the male and female values, but more than anything this emphasises that groupings other than 'male' and 'female' need to be selected for detailed analysis. These will be discussed in the next section.

Status Based Groupings

There has been a degree of work on the spatial analysis and zoning of monastic cemeteries for the inference of status and role (Gilchrist and Sloane, 2005:56-77). Following careful consideration of these classifications with regards to our dataset, a selection of samples have been put into the following preliminary groupings for dietary comparison:

Nuns

Skeletons **91, 15, 41, 2, 57, 1, 11, 89** and **65** were selected as possible nuns or religious women due to their particular burial location within the Church. The burial of these individuals in the nave, choir, crossing or North Transept Chapel it seems likely that these women held a religious role. This is further strengthened by our contextual knowledge of the site and the dispersal and demography of the other burials, some of which are discussed and categorised below.

Laity

Skeletons **18, 26, 33, 35, 48** and **80** were selected as possible members of the lay community due to their burial in the densely packed cemetery east of the Choir.

High Status Men

Written records suggest that burial within the Church was often sought after by nobles, and was a highly valued and symbolic burial location (Gilchrist & Sloane, 2005:56-77).

Two further individuals, skeletons **68** and **92** have been classified as high status men as they were buried within the Church and therefore probably held a position of authority in either the ecclesiastical community or as local nobility. These two samples are anticipated to have isotopic values indicating a diet richer than the other samples. This is because even if these were Bishops or prelates associated with the nunnery; high-ranking ecclesiastical men of this period often had lifestyles resembling those of the aristocracy (Woolgar, 2006).

Phasing

For the purposes of comparison, those labeled 'nuns' and 'laity' have been broadly assigned to the 13th-15th century as it is assumed their burials are likely contemporaneous with the Church, and it is also assumed that the burials in the church yard east of the choir very likely fit in with this timeline as well. Three 'nuns' from the North Transept chapel: **1**, **11**, and **89,** can probably be more securely phased to the 14th to early 16th century corresponding with the construction of the chapel they are buried in, but they can still be included in our rough date range.

Phasing and groupings will be adjusted and refined following further analysis.

Grouped Data

Table 18 and Fig. 35 present the data grouped into the above stated categories.

Table 18. Littlemore status based groupings "^{13}C and "^{15}N means and standard deviations

		´ ^{13}C mean	St. Dev	**´ ^{15}N mean**	St. Dev	**No. Samples**
Nuns (?)		-19.2	0.3	13.4	0.5	9
Laity		-19.6	0.2	12.3	0.8	6
High Status Men		-19.1	0.4	12.95	0.2	2

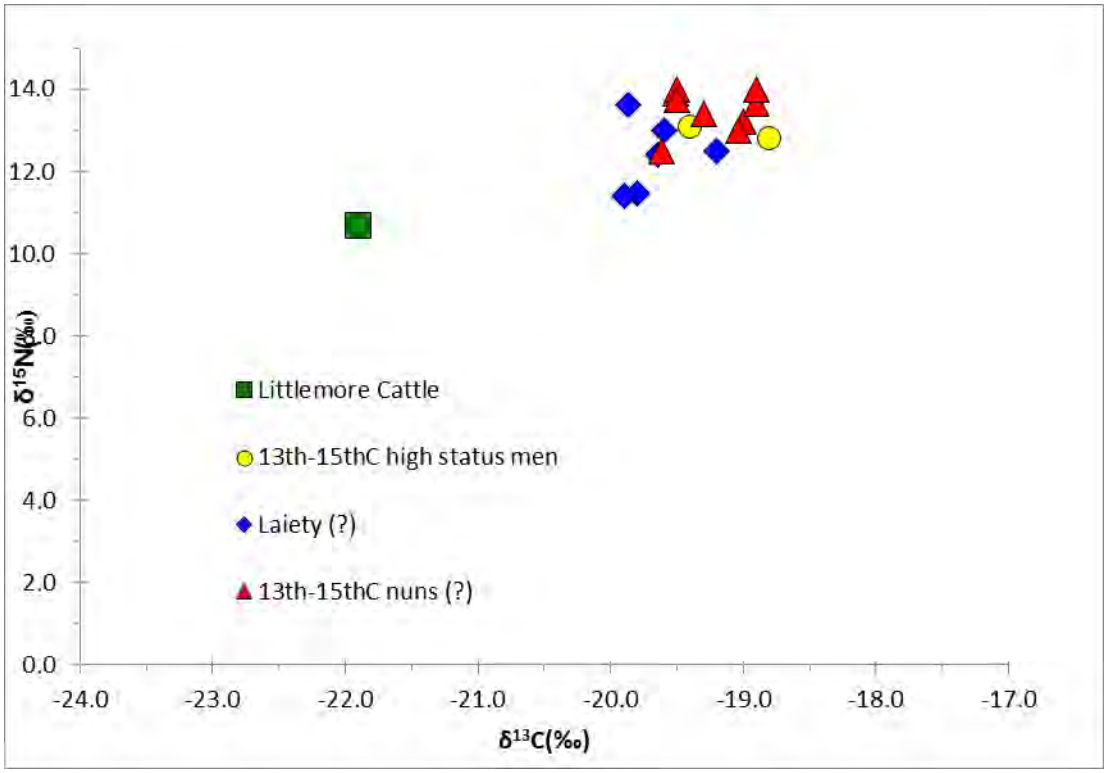


Figure 35: Littlemore Priory status based diet

From these preliminary groupings, there seems to be an emerging distinction between the 'nuns' and the 'laity' in Fig. 25. Of particular interest are two members of the lay population (older males): **33** and **35**, who appear to have been consuming an almost vegetarian diet,

maybe with some input of terrestrial protein, as their nitrogen values are almost as low as the cattle sample. These are values that might be expected for members of the local peasantry, or lay workers of the nunnery. The 'nuns' of Littlemore have more elevated signatures than the laity, and more elevated than the two high status male burials. This could suggest that these nuns were eating more richly than the two other groups as their values suggest higher levels of animal protein and the input of some marine protein into the diet. The contribution of marine protein to the diets of these women, at an inland site like Littlemore, could suggest interaction with local markets and a degree of financial flexibility. This has interesting implications for quality of life and personal agency at this nunnery, particularly as the absence of a marine signal in the values of the 'laity' suggests that the consumption of fish was not commonplace in this region. The osteoarchaeological data for these individuals suggested relatively low levels of cribra orbitalia (for the period) in the nunnery population, a condition which can indicate malnutrition and anaemia (Clough 2015). This, alongside the isotopic data, suggests that the religious women at least were eating well and not only that, were consuming a broad and varied diet. What is particularly striking is that this varied diet seems limited to the 'religious' women and not their male and secular contemporaries. Nunneries were the option for unmarried high status women, and documentary evidence suggests that when daughters or nieces of patrons or well-known families entered into nunneries they could often be given special privileges not in keeping with the intended equality of nunnery life (Power, 1922, 7). This may be what is happening at Littlemore. However, the patterns and groupings presented in Fig. 25 are only tentative, and caution should be taken, but these initial findings are nonetheless very interesting. When further samples have been analysed, and the Littlemore data has been placed in its wider context a clearer picture can be developed.

Individuals of Note

Skeleton 15

This individual was a young woman aged between 19 and 25 buried at the west end of the nave, prone, and with a 6-month-old baby. Her location within the Church, and with a child, has led to speculation and discussion over her identity and the events that may have led to her burial. It has been argued that prone burials could be penitential acts for either the sins of the individual or the sins of their family, however to be buried prone could also be an expression of religious humility in monastic contexts which would be fitting if this individual was a nun (Gilchrist and Sloane 2005, 154). Her isotope values were -19‰ (carbon) and 13.2‰ (nitrogen), which are comparatively elevated values suggesting a mixed and even relatively rich diet, with possible marine input. The other 'religious women' have a similarly rich diet, which could strengthen the theory that this individual was a nun. The child may well have been a local baby who was buried in an available open grave, but if skeleton 15 was the mother of the child, her comparatively rich dietary signature suggests she may have been an aristocratic or religious woman. If she was not a nun, then she may have potentially been a member of a noble family associated with the nunnery.

Skeleton 1

This individual was shrouded and buried with pins, indicative of a nun's headdress, and was buried in the North Transept Chapel. This individual had values of 19.5‰ (carbon) and 14‰ (nitrogen), an elevated nitrogen ratio but more terrestrial carbon value. This is a pattern seen in several of the samples. This signature could suggest the input of freshwater fish or pork to

the diet as has been interpreted in other similar medieval datasets (Müldner and Richards 2005). The burial location of this individual within the North Transept Chapel puts this individual at a mid-15th century to early 16th century date, and by this time most monasteries and nunneries were no longer upholding dietary ideals, and instead enjoying their growing wealth and more varied and exotic foods available during this period (Bond, 2001). Therefore the consumption of pork by this individual is not completely unlikely, but the zooarchaeological assemblage of this site is not extensive enough to confirm this.

Skeleton 2

This individual has been interpreted as a possible prioress, or woman of high religious standing, due to her burial in a limestone cist, the foot of which was located at the center of the crossing of the Church. This is a unique and symbolic burial location. Interestingly, this individual's dietary signature at -19.62‰ (carbon), and 12.5‰ (nitrogen) was not as elevated as some of the other 'religious women' and actually plots more comfortably within the ranges of the laity. This suggests that this prioress may have upheld a model of a humble diet and exercised restraint, not indulging in large quantities of animal protein or fish as the other women seem to have been doing. There are alternative explanations. As the 13th-15th century is a relatively wide time span, this individual may date from a phase in the nunnery's occupation when fish and other levels of animal protein were not as readily available. Alternatively, it must be remembered that different monastic Orders had specific dietary ideals (Woolgar 2006, 194), and Littlemore nunnery was gifted to the Knights Templar in the mid-13th century. This changing affiliation may have led to the initial enforcement and promotion of the Knight's Templar's specific lifestyle regulations, impacting on this prioress.

Other skeletons of note will be discussed more comprehensively once the entire dataset is complete.

Conclusions and Further Research

The role religious women played in an evolving society is directly linked to how they procured, processed and consumed food. The Littlemore individuals have tremendous potential in aiding our understanding of the medieval life course, values and ideologies. The site has produced some very interesting preliminary results, suggestive of a good quality of life and a level of access to a variety of food sources. Some input of marine protein into the diet of the nuns, and not the lay community, could be evidence of the nuns of Littlemore adhering to the Benedictine stipulations (not to consume the flesh of quadrupeds). However, their isotope values demonstrate that they were not solely consumers of marine protein, and so this rule may have been followed intermittently.

Analysis of additional samples and of tooth samples to reconstruct childhood diet will provide further insights, including how much lifestyle really changed for aristocratic women upon entering into a nunnery. More comparative samples are also being collected from contemporaneous sites around Oxford to compare and see how distinct provisioning and consumption within this nunnery actually was. The dataset will be completed, and placed within a wider context of sites also currently under analysis, by summer 2016.

5.7 Radiocarbon dating and chronological modelling assessment (*By Peter Marshall*)

Radiocarbon determinations were simulated using the OxCal (Bronk Ramsey 2009) function R_Simulate and calibrated using data from Reimer *et a*l (2013). Estimates for the number of burials in four main medieval phases (Yeates and Murray 2016, Figs. 2-4) – without a definitive list of the phases burials have been assigned to this might not be completely accurate but for the purposes of this assessment it should suffice (table 19).

Table 19. Estimated number of medieval burials by phase

Phase	Estimated date range (AD)	Burials (east)	Burials (west)	Burials total
1b	1216–1248	3	10	13
2b	1247–1300	2	-	2
3b	1247–1427	6	1	7
4b	1247–1525	17	7	24

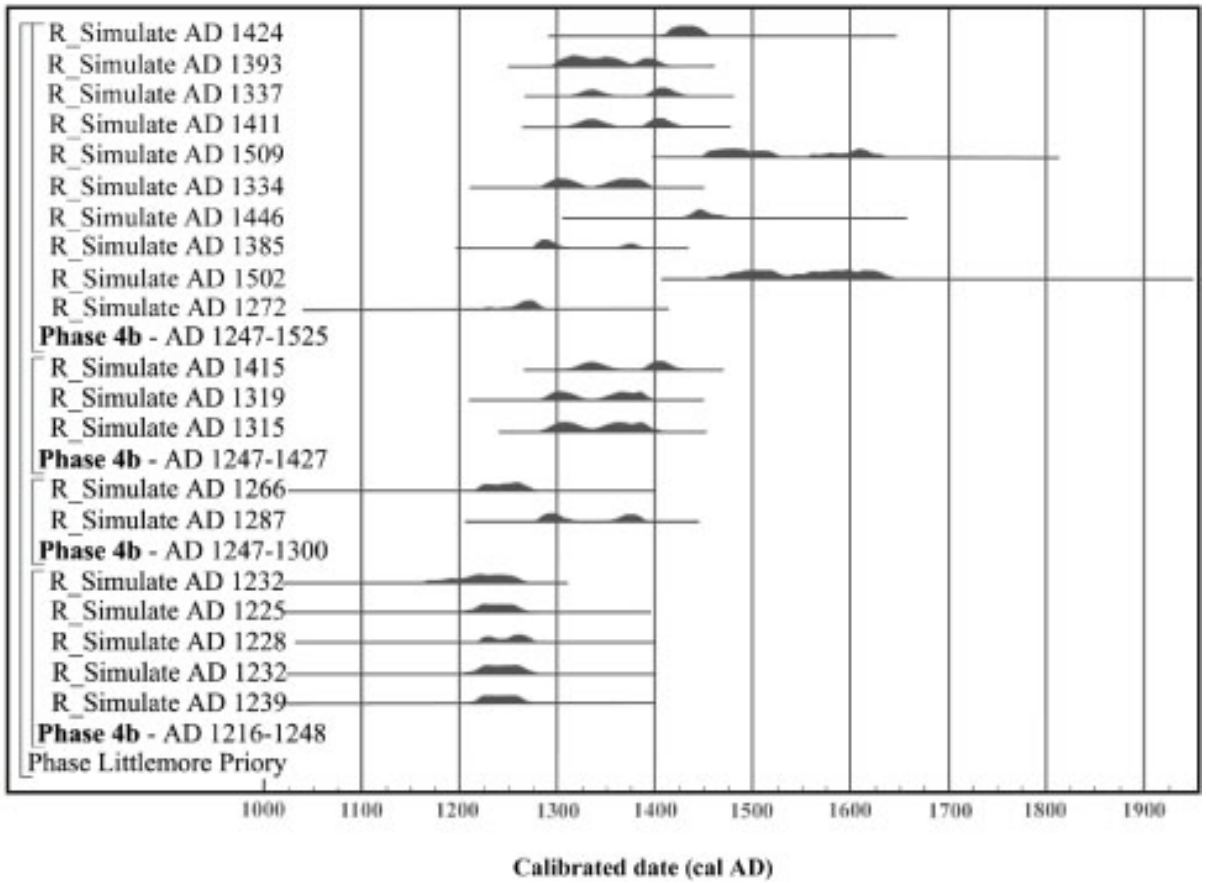


Figure 36. Stimulated radiocarbon determinations from Littlemore Priory. The derivation from simple radiocarbon calibration (Stuiver and Reimer 1993)

The probability distributions in Fig. 36 show the likely results that could be obtained from radiocarbon dating a sample of the burials assigned to each of the four phases. This simulation suggests that the broad phasing derived from the stratigraphic relationships of burials to the Priory is for the most part not significantly going to be improved by radiocarbon dating unless a large number of those currently assigned to the broad Phase 4b (AD 1247–1525) are dated. Given where the postulated phases fall on the radiocarbon

calibration curve (Fig. 37) a tripartite division of them chronologically is only probably achievable.

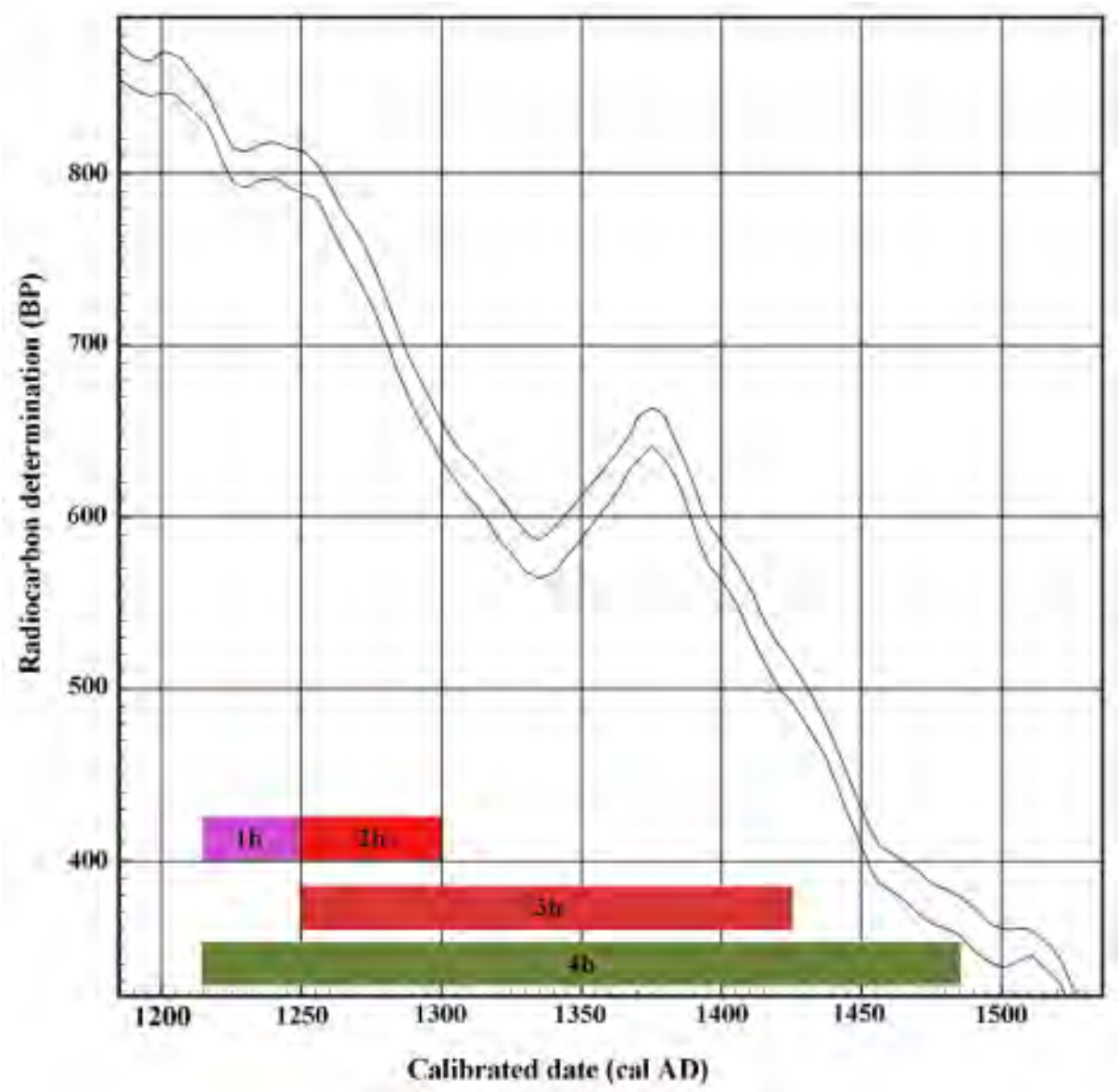


Figure 37. Radiocarbon calibration curve (Reimer et al. 2013) and archaeologically derived estimates for the dates of the main medieval burial phases from Littlemore Priory

Dietary stable isotopes

Diet-induced radiocarbon offsets if dated individuals had taken up carbon from a reservoir not in equilibrium with the terrestrial biosphere (Lanting and van der Plicht 1998) might have implications for the determining the chronology of burials at Littlemore. If one of the reservoir sources has an inherent radiocarbon offset — for example, if a dated individual consumed marine fish or freshwater fish from a depleted source — then the bone will take on some proportion of radiocarbon that is not in equilibrium with the atmosphere. This makes the radiocarbon age older than they would be if the individual had consumed a diet consisting of purely terrestrial resources. Such ages, if erroneously calibrated using a purely terrestrial calibration curve will produce anomalously early radiocarbon dates (Bayliss *et al.* 2004).

The preliminary dietary stable isotope results would suggest that the majority of the individuals consumed a purely terrestrial diet. Given the highly enriched ´15N value for the single cattle bone (average ´15N values for terrestrial herbivores are typically 5-6‰ (Müldner and Richards 2007) it is not clear what the freshwater fish component of the diet if any might be as an enrichment of 3–50 in ´15N values is common in trophic level enrichment (Hedges and Reynard 2007).

Recommendations

Radiocarbon dating and chronological modelling of medieval burials from Littlemore Priory is not recommended given the currently available archaeologically derived chronology.

5.8 Further Work

Two reports are currently underway at the University of York. Sarah Delaney will be analysing the microdebris entrapped in the calculus of selected individuals to investigate diet, occupation and living conditions. This work will commence as part of a PhD in October and there may be preliminary results in the spring of 2017. Camilla Speller will look at the ancient DNA at some time in the future. The time frame for this is as yet unspecified (Dr Michelle Alexander per. com).

6 FINDS

6.1 Prehistoric Flint *(By David Gilbert)*

Introduction

A total of six struck flints and one piece of chert were recovered during the excavation. Following Andrevsky (1998, 104) dorsal cortex is divided into four categories; the term primary flake refers to those with cortex covering 100% of the dorsal face while secondary flakes have cortex on between 50% to 99% of the dorsal face. Tertiary flakes have cortex on 1% to 49% of the dorsal face while flakes with no dorsal cortex are referred to as uncorticated.

Table 20: Flint

Context	SF	Artefact	L (mm)	W (mm)	B (mm)	Notes
126	142	Tertiary Flake	30	18	5	Proximal end missing
220	143	Uncorticated Flake	22	16	5	
365	144	Tertiary Flake	17	17	4	Distal end missing
702	145	Uncorticated Flake	30	26	7	
527	146	Tertiary Flake	42	23	10	
177	147	Primary Flake	24	30	8	
196	148	Microlith	27	11	3	Damaged

Discussion

The chert was a honey-brown colour, while the majority of the flint a mid to dark grey with a pale grey patina just starting to form on a few. The majority displayed hard hammer techniques that suggests a late Neolithic-Bronze Age date. However, the presence of the microlith indicates a Mesolithic element, although all these pieces are likely to be residual in nature.

6.2 Pottery

6.2.1 Roman Pottery *(By Jane Timby)*

Introduction

The archaeological work resulted in the recovery of a small collection of 53 sherd of pottery weighing c 550 g, accompanied by five fragments of ceramic building material (CBM).

Most of the pottery dates to the Roman period but there is one possible Saxon piece and one medieval sherd present. One of the fragments of CBM comes from a medieval glazed floor tile.

The pieces were quite well-fragmented with an average sherd weight of just 10 g. Pottery was recovered from 39 recorded contexts with the number of sherds ranging between one and three pieces. Dating of some undiagnostic bodysherds can thus only be general.

Table 21: Roman Pottery

Context	OXFRS	OXFWH	Oxford	BB1	Ro other	no date	Sx?	Med	Tot No	Tot Wt	Date
101	0	0	1	0	0	0	0	0	1	12	Roman
126	0	0	1	0	0	0	0	0	1	5	Roman
144	0	0	1	0	0	0	0	0	1	5	Roman
159	0	0	1	0	0	0	0	0	1	4	Roman
196	2	0	0	0	0	0	0	0	2	44	240-400
218	0	0	1	0	0	0	0	0	1	4	Roman
234	2	0	0	0	0	0	0	0	2	20	240-400
236	0	0	1	0	0	0	0	0	1	5	Roman
238	0	0	1	0	0	0	1	0	2	22	Ro/?Sx
240	1	0	0	0	0	0	0	0	1	2	240-400
252	0	1	0	0	0	0	0	0	1	36	C3
313	0	0	0	0	0	1	0	0	1	2	no date
325	0	1	0	0	1	0	0	0	2	38	Ro/med
354	0	0	0	0	1	0	0	0	1	6	Roman
365	0	0	0	0	1	0	0	0	1	4	?LIA-ERo
373	0	0	0	0	1	0	0	0	1	0.5	Roman
399	0	0	2	1	0	0	0	0	3	21	C3+
409	1	0	0	0	0	0	0	0	1	16	240-400
411	0	0	0	0	0	0	0	1	1	12	Med
449	0	0	1	0	0	0	0	0	1	15	Roman
461	1	0	0	0	0	0	0	0	1	16	240-400
464	0	1	0	0	0	0	0	0	1	54	C3
512	1	0	0	0	0	0	0	0	1	13	240-400
520	0	1	0	0	0	0	0	0	1	20	C3-C4
522	1	0	0	0	1	0	0	0	2	6	240-400
534	0	0	1	0	0	0	0	0	1	10	Roman
565	0	0	0	0	1	0	0	0	1	19	Roman
590	0	0	0	0	1	0	0	0	1	9	Roman
590	1	0	0	0	0	0	0	0	1	8	240-400
592	0	0	0	0	1	0	0	0	1	7	C4
602	1	0	0	0	1	0	0	0	2	12	240-400
606	1	0	0	0	0	0	0	0	1	33	240-400
645	1	0	0	0	0	0	0	0	1	4	240-400
702	3	0	0	0	0	0	0	0	3	8	240-400
722	0	0	0	0	1	0	0	0	1	5	Roman
722	1	0	0	0	0	0	0	0	1	22	240-400
741	2	0	0	0	1	0	0	0	3	12	240-400
743	1	0	0	0	0	0	0	0	1	4	240-400
2052	3	0	0	0	0	0	0	0	3	14	240-400
TOTAL	**23**	**4**	**11**	**1**	**11**	**1**	**1**	**1**	**53**	**549.5**	

For the purposes of the assessment the sherds were scanned and quantified by count and weight. Known, named, Roman traded wares are reference using the National fabric codes (Tomber and Dore 1998). The resulting data is summarised in Table 21.

Description of Roman wares

The assemblage is very much dominated by wares from the local Oxfordshire kilns including colour-coated wares (OXF RS); white wares (OXF WH) reduced (grey) wares (OXF RE/ OXF FR) and oxidised wares.

Colour-coated wares in particular account for 46% of the Roman pottery and indicate a date after the mid-3rd century through into the 4th century. Forms of note include Young (1977) bowls C63, dishes C45 and? C54; mortaria C97, C100 and jar (C18). The white wares include three mortaria, probably all form M17 dating to the 3rd century.

The only regional import is a single Dorset black burnished ware (DOR BB1) plain-walled dish from context (399).

Wares of note include one grog-tempered and one sand and grog-tempered sherd which are more likely to date to the later Iron Age or early Roman period.

Post-Roman wares

A single sherd in a grey sandy ware with burnt out-organic matter and small voids possibly from leached out calcareous inclusions came from (238) accompanied by a Roman grey ware. This sherd of potentially of early medieval date.

A single sherd from an unglazed medieval jar in a sandy ware with sparse flint came from cxt (411).

Summary and Potential

This is a small collection of pottery which demonstrates late Roman activity in the area but is too small to draw further conclusions. Two, possibly three sherds hint at potentially earlier activity in the later Iron Age or early Roman period but are very small. No further work is recommended.

6.2.2 Medieval Pottery (By Paul Blinkhorn)

Introduction

The medieval and later pottery assemblage comprised 73 sherds with a total weight of 1,537g. It was recorded using the conventions of the Oxfordshire County type-series (Mellor 1984; 1994) as follows:

OXAM: **Brill/Boarstall Ware**, AD1200 – 1600. 22 sherds, 217g.
OXBX: **Late Medieval Brill/Boarstall Ware**, 15th – early 17th century. 2 sherds, 9g.
OXCL: **Cistercian Ware, 1475-1700**. 1 sherds, 3g.
OXDR: **Red Earthenwares**, 1550+. 3 sherds, 36g.
OXFH: **Border Wares**, 1550 - 1700. 2 sherds, 20g.
WHEW: **Mass-produced White Earthenwares**, 19th - 20th C. 43 sherds, 1,252g.

Table 22: Medieval Pottery occurrence by number and weight (in g) of sherds per context by fabric type

	OXAM		OXBX		OXCL		OXDR		OXFH		WHEW		
Cntxt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	No	Wt	Date
100	1	29									1	2	19thC
101			1	5									15thC
103													RB
110	1	7											13thC
114											19	540	20thC
135											1	38	20thC
138	1	4											13thC
159					1	3	2	33	2	20			E17thC
178											13	97	19thC
282	1	6											13thC
295			1	4									15thC
313	3	21											13thC
373	1	21											13thC
392	1	11											13thC
398	1	7											13thC
407	2	31											13thC
434											1	10	19thC
441	2	45											13thC
448											1	380	20thC
455													RB??
503	1	1											13thC
541	1	5											13thC
567	1	5											13thC
614	1	4											13thC
643							1	3					M16thC
672	1	3											13thC
687	1	9											13thC
745	1	6											13thC
761	1	2											13thC
2000											7	185	19thC
Total	22	217	2	9	1	3	3	36	2	20	43	1252	

Discussion

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 22. Each date should be regarded as a *terminus post quem*. The range of fabric types is typical of sites in the region. Most of the context-specific assemblage comprise one or two small sherds, which is fairly typical of cemetery assemblages, and suggests very strongly that most of the pottery, if not residual, is the product of secondary deposition. The medieval material comprises almost entirely Brill/ Boarstall Ware, with coarse-wares common in the region during the earlier medieval (11th – 13th century) era entirely absent, suggesting that all

the post-Roman activity at the site dates to the 14th century or later, although this may simply due to the vagaries of archaeological sampling.

One of the sherds of Border Ware, from context 159, is brown-glazed, and thus is no earlier than the early 17th century (Pearce 1988).

6.3 Tiles *(By Cynthia Pool)*

Introduction

A large assemblage of ceramic building material (CBM) together with a small quantity of stone building material and mortar/cement was recovered from all areas of the excavation amounting to 1302 fragments weighing 114kg. A breakdown of totals by form, fabric and material is provided in Table 23. A large proportion of the assemblage was found in robber trenches and graves, with smaller quantities found in pits, service trenches and miscellaneous features of medieval, post medieval and modern date. None was found *in situ*, though some items were found in secondary contexts, reused to line graves. The assemblage consisted mainly of broken fragments with an overall mean fragment weight of 88g, though several complete or near complete floor tiles were recovered and a small number of complete widths and lengths were present of other forms. In general the assemblage had suffered little abrasion (in contrast to wear whilst in use) suggesting redeposition was rapid following demolition. However some of the roof tile showed signs of weathering and much of the floor tile was heavily worn on the surface whilst in use. The assemblage dates almost entirely to 13th to 15th century, with only a tiny fraction of later material present.

Methodology

The assemblage has been fully recorded on an Excel spreadsheet in accordance with guidelines set out by the Archaeological Ceramic Building Materials Group (ACBMG 2007) The record includes quantification, fabric type, form, surface finish including glaze and decoration, markings, peg holes, keying and evidence of use/reuse (mortar, burning etc.) Fabrics were characterised on macroscopic features and with the aid of x20 hand lens and were compared to the reference collection of Oxford roof and floor tile fabrics held by Oxford Archaeology. These fabric codes were originally designated by Robinson (1980) for the Hamel site. More recent descriptions and a more detailed introduction to medieval Oxford tile fabrics have appeared in the reports on Merton College (Cotter 2006) and Oxford Castle (Cotter unpub). Floor tile design refers to catalogues by Haberly (1937), Hohler (1942) and the Parker-Hore record held by the Ashmolean (http://tileweb.ashmolean.org/ accessed May/June 2015) (abbreviated to LH, Ho and P-H respectively in referring to tile designs).

Fabrics

None of the early Oolitic limestone tempered fabric IB was found, though contemporary fabric VIIA and B were present and VII BB formed a significant proportion of the assemblage. Taken together the group VII fabrics formed almost a quarter of the assemblage, whilst the red sandy fabric IIIB and IIIB/VIIBB formed about half of the assemblage. The later fabrics IIIC / St Giles and IVA/B accounted for slightly less than a quarter of the assemblage. The proportions of fabrics and their date range are summarised in table 24.

Table 23: *Summary quantification tabulated by form and fabric*

Fabrics		**Roof Tile**	**Floor**	**Brick**	**Field ..**	**Flat Tile**	**Wall Tile**	**Indent.**	**Masonry**	**Roofing**	**Wall ..**	**Render /Bedding**	**Total**
VIIA	Nos	12		1									13
(Med: c.1175/1200-1325?)	Wt (g)	1179		1228									2407
VIIB	Nos	83		1									84
(Med: c.1175/1200-1325?)	Wt (g)	7552		7									7559
VIIBB	Nos	201		1									202
(Med: c.1175/1200-1325?)	Wt (g)	16187		91									16278
IIIB/VIIBB	Nos	199											199
(Med: 1175-1400)	Wt (g)	18495											18495
IIIB	Nos	280	156	1				3					440
(Med: c 1175-1500+?)	Wt (g)	14048	21528	63				37					35676
IIIC /StG	Nos	248		20		5							273
(Med-Early Pmed Late C14-C16)	Wt (g)	18059		2041		549							20649
III	Nos	1											1
(Med: c.1200-1400)	Wt (g)	7											7
IVA/IVB	Nos		17										17
(Med: 1330-1380+ (- c.1520)?)	Wt (g)		1969										1969
F (red sandy)	Nos		1	7									8
(Postmed: C16-C19)	Wt (g)		243	864									1107
Grog	Nos				1								1
(C19-C20)	Wt (g)				7								7
MOD: VII	Nos			1									1
(Postmed)	Wt (g)			93									93
Mod	Nos						1						1
(C20)	Wt (g)						221						221
Unclassified	Nos	15						22					37
	Wt (g)	225						10					235
Mortar/plaster, cement	Nos										1	2	3
	Wt (g)										2	127	129
Stone BM													
Limestone	Nos								4	14			18
	Wt (g)								2479	6524			9003
Sandstone	Nos							3	1				4
	Wt (g)							76	104				180
Total Nos		**1039**	**174**	**32**	**1**	**5**	**1**	**28**	**5**	**14**	**1**	**2**	**1302**
Total Wt (g)		**75752**	**23740**	**4387**	**7**	**549**	**221**	**123**	**2583**	**6524**	**2**	**127**	**114015**

Table 24: CBM Fabrics as percentages and their date range

Fabric	% Nos	% Wt	Fabric date range	Floor tile date range
VIIA	0.71	2.11	*c.1200-1325?*	
VIIB	6.59	7.23	*c.1200-1325?*	
VIIBB	16.25	15.67	*c.1200-1325?*	
IIIB/VIIBB	15.62	17.69	*1175-1400*	
IIIB	34.22	33.43	*c.1175-1500+?*	*(1250) c.1280-1330*
IIIC / St Giles	21.51	20.43	*Late C14-C16*	
IVA/IVB	1.33	1.86	*1300-1400*	*1330-1380+ (- c.1520?)*
U	2.9	0.23	~	~
PMed fabrics	0.86	1.34	*C16-C19*	

Fabric IIIB: Coarse sandy orange-red or orange-brown fabric with a grey core. Sometimes reduced. Clear, white and pink quartz. Sparse iron compounds. Clear, orange, or greenish-brown glaze, sometimes mottled, sometimes dark brown to black. Very similar to the fabric of Ashampstead ware (Fabric OXAG, formerly Abingdon-type ware) made from the London Clay, and therefore thought to come from the Newbury-Reading area of Berkshire. This was used for 'stabbed Wessex' floor tiles. The inlay on several of the floor tiles had fired pink rather than remain white and also contained large clay pellets instead of being reduced to a smooth paste (plate 9: Sf171). In other heavily fired tiles the inlay had turned grey, similar to the colour of burnt chalk (plate 10: Sf128). This was also the main fabric used for medieval roof tiles in Oxford, but these may have been more locally produced. A small number of roof tiles in this fabric and IIIB/VIIBB had animal imprints including cat paw prints and hoof prints of ovicaprid/deer, suggesting manufacture was taking place in a fairly rural area. This (or a later variant of IIIB) also appears to have been used for brick and quarry tile of post-medieval date. Date c 1175-1500+?

Plate 9: Tile Sf171

Fabric IIIC / St Giles: Orange, red or maroon laminated or marbled clay fabric with streaks of cream marl or clay containing less sand than standard IIIB but with frequent coarse red clay pellets and cream or buff marly clay pellets up to 15mm and smaller dark red ferruginous grits. In what appears to be a later post-medieval version of the fabric chalk flecks and small grits <5mm were also present. It is similar to fabric IVA/IVB and possibly originated from the Nettlebed area of SE Oxfordshire or from the Penn/Chilterns area of Buckinghamshire. Glaze, dark brown or black is rare. Mainly used for flat roof tile, occasionally ridge tile. This or a very similar fabric was also used for bricks, quarry tile or paviours up to 18th/19th century. Date: 15th-17th century.

Plate 10: Tile Sf128

Fabric VIIA: Cream or yellow fabric (sometimes with a pale grey or lavender core) with a fairly smooth texture relatively low in quartz sand. Moderate fine chalk or limestone inclusions and sparse coarse red-brown iron oxide. Patchy clear or greenish or yellow glaze. Mainly roof tiles. See also Fabric VIIB below. VIIA is similar to a Roman fabric (source unknown) found at sites in the Thames valley from the Cirencester area to Didcot (pers. obs. author). Used for peg and ridge; a brick in this fabric is probably later in date than the normal range for the roof tile. Generally early in date, perhaps c 1200-1325?

Fabric VIIB: As VIIA above but pink or pinkish-brown sometimes with a grey core. Rounded chalk inclusions can be common. Chalk often dissolved from surfaces leaving a finely pock-marked texture. Surfaces sometimes off-cream in colour resembling a thin slip (probably leaching caused by high calcium carbonate content). Glaze clear, amber or olive-green, sometimes leached and opaque. Mainly flat roof tiles, also ridge tiles; a small fragment of brick was also identified as this fabric. Possibly made from outcrops of the Gault Clay - as they resemble other medieval tiles made from this (eg. Naccolt, near Wye, Kent). Source unknown but presumed to be fairly local to Oxford where they are common on monastic sites. Generally early in date, perhaps c 1200-1325?

Fabric VIIBB: First described from the Tidmarsh Lane site as Fabric ‘B’ (Booth 2003, 408) but modified here to VIIBB. This is similar to VIIB above but was generally orange or light orange in colour with a sharply defined mid-light grey core and the chalk and limestone inclusions are sparse or rare. Quartz sand moderate-abundant. Glaze brown and olive green, less commonly amber. Mainly used for flat roof tiles, also ridge tile and a single brick fragment identified in this fabric. Source and date as for VIIA and VIIB.

Fabric IVA/IVB: Red, orange with red core, or pinkish red clay with cream silty/marly streaks, containing a high density of coarse-medium quartz sand and common rounded red ferruginous grits 1-3mm. Used for printed floor tiles. It is similar to the material from Penn and the Chilterns area, Buckinghamshire.

6.3.1 Date and Nature of the Assemblage

Roof tile

Ceramic roof tile accounted for 72% (by weight) of the ceramic building material assemblage. A breakdown of the different roof tile forms are quantified in table 25. Nearly three quarters of this was categorised as flat tile having no distinguishing characteristics that allowed the tile form to be defined further. Normally this would be synonymous with peg tile, but the possibility remains that a proportion of ridge tile was present within this category. Fragments of flat tile with glaze were also separately logged accounting for 11% of the roof tile and whilst it would be tempting to regard all of this as ridge tile it was clear that it must certainly include both peg and ridge tile. No evidence of ornamental roof furniture in the form of louvres or finials was found and it seems probable that all the roof tile derived from only peg and ridge tile. This material had the typical appearance of crude manufacture of medieval tile, often with a rough or undulating surface, lumps of surplus clay, and wipe marks from finger smoothing across the surface, often most prominent alongside the edges. Corners were rounded and edges irregular and rough, varying between flat, rounded and concave in profile. A common occurrence was protruding lips of clay at the arris, where clay had oozed under or over the side of the tile mould. In a few cases a small upright rounded flange c. 8-10m wide and high had formed along the tile edge. Marks of thumb and finger tip depressions on the surfaces and edges from handling the tiles during manufacture and before firing were fairly common.

Table 25: Roof tile types and quantities (material recorded as roof: flat/peg were groups of flat roof tile which included one or more pieces with a peg hole: these have been separated in the number count but not weight)

Type	Nos	% Nos	Wt (g)	% Wt
Roof: flat	357	34%	18326	24%
Roof: flat/peg - flat	367	35%	33715	44.5%
Roof: flat/peg - peg	73	7%		
Roof: peg	66	6%	11359	15%
Roof: flat glazed	111	11%	8108	10.7%
Roof: ridge	10	1%	917	1.2%
Roof: ridge crest	1	+	7	+
Roof: ridge crested	1	+	99	0.1%
Roof: ridge?	34	3%	2979	4%
Roof: indeterminate	19	2%	242	0.3%
Total	**1039**		**75752**	

Peg tile

A total of 139 fragments actually retained evidence of one or two peg holes. No complete tiles survived except one (ctx 608) which had been deliberately shortened, the lower end having been cut through post-firing to create a tile measuring 198-205mm long by 217mm wide and 18mm thick, presumably for use in the row at the eaves of the roof. Context 608, a grave lined with stone and tile, produced most of the tiles with complete dimensions of width and length. A flat tile with no peg holes surviving, (but presumed to be a peg tile) measured 355mm long, 215mm wide and 12-14mm thick. A second peg tile measured 222mm wide by over 190mm long and 15mm thick. Both these tiles had imprints of cloven hoofs, either ovicaprids or deer. Two further tiles had complete widths of 216 and 217mm and surviving (incomplete) lengths of 275 and 190mm; an incomplete length of 290mm was also recorded. Apart from this, two complete widths survived, measuring 200mm (ctx 274) and 171mm (ctx183). The lower half of a peg tile (ctx 602) measuring 212mm wide and over 245mm

long had a patchy wash of amber glaze with green mottles and speckles across its lower section up to 145mm from the base edge thinning to only splashes towards the periphery. A central section of peg tile with splatters of brown glaze had a complete width of 180mm (ctx 612) and the upper half of a peg tile from the same grave fill measured 180mm wide, >200mm long and 16mm thick (the lower end having weathered away). Overall thickness ranged from 10 to 22mm, with a substantial number falling at the thicker end of the range, though 14-16mm was most common.

Peg holes (or nail holes) had usually been punched through from the top and were all circular, sometimes conical with a distinct taper to the base, which was particularly apparent in examples of blind peg holes. A taper may have been desirable to ensure the wooden peg holding the tile was securely wedged. Blind peg holes accounted for nine out of the 92 surviving peg holes. In these the hole only partially pierced the tile leaving a thin septum of clay about 5mm thick across the base and forming a raised boss in the base surface about 25mm diameter. It is clear from some examples of fully perforated holes that this clay was sliced out from the underside leaving the peg hole with a slightly biconical profile and a halo of surplus clay encircling the base. Several tiles had only one fully perforated peg hole, the second left blind. One of the blind peg holes had a small perforation piercing the base suggesting a nail may have been used to pierce it and secure the tile. Peg holes ranged from 10 to 19mm diameter, but *c.* 80% measured 12-15mm. They were placed between 18 and 40mm from the upper edge and from 25 to 90mm from the side edge (measured from the peg hole centre). Where both holes were present on a tile the distance apart varied from 25 to 120mm and though in most cases they appear to have been placed symmetrically, this was not always the case. The distance between peg holes or from the sides is unlikely to have had a significant impact on the laying of the tiles, but if the pairs varied significantly in distance from the top this could have more impact on laying the tiles evenly. Details of peg hole measurements are fully tabulated in the archive data. Similar characteristics of peg holes have been found at Oxford Castle (Cotter unpubl) and Pembroke College (Cotter forthcoming).

Eleven peg tiles had splashes or patches of glaze over the lower half of the tile. Colour depended on the underlying fabric colour with amber-brown glaze on oxidised fabrics and greenish-brown, olive green or more rarely dark brown to black glazes on reduced fabrics. Amber or brown was most common on the peg tile, whilst green was rare, though shades of green, olive and greenish brown were common amongst the glazed flat roof tile, which certainly included some peg tile. The pieces with a sharp boundary to the glaze, which was washed across only a part of the tile are likely to derive from the lower halves of peg tiles, which commonly had a distinct band of glaze across the lower quarter or third of the tile.

The proportion of roof tile occurring in the earlier fabrics of VIIA and VIIB is small compared to the quantities of VIIBB and IIIB (Table 26). These fabrics appear to have been gradually replaced by the late medieval type IIIC / St Giles, which probably dates from the late 14th century to the early 17th century but is typical of 15th-16th century contexts. It was the commonest type noted at the St Giles Classics Centre (Cotter 2008) and was also found at Pembroke College (Cotter forthcoming).

Table 26: *Roof tile categories quantified in relation to fabric and date.*

Date	Fabric	**Roof: flat**		**Roof: flat/peg**		**Roof: peg**		**Roof: flat glazed**		**Roof: ridge**		**Roof: ridge?**	
		Nos	**Wt (g)**	**Nos**	**Wt (g)**	**Nos**	**Wt (g)**	**Nos**	**Wt (g)**	**Nos**	**Wt (g)**	**Nos**	**Wt (g)**
c.1200 -1325?	VIIA	6	297			1	28	2	566	3	288		
c.1200 -1325?	VIIB	27	2003	18	2237	11	1529	19	1240	2	244	5	200
c.1200 -1325?	VIIB								**Crested ridge**	1	99		
c.1200 -1325?	VIIBB	54	3427	67	4558	23	3109	45	3965	1	42	11	1086
1175-1400	IIIB/VIIBB	95	4926	58	6123	17	5631	19	1208	1	68	6	531
C13-C14	Gp III variant								**Ridge crest**	1	7		
c 1175-1500+	IIIB	113	3791	120	7112	11	796	22	982	1	196	12	1162
LC14-C16	IIIC /StG	62	3882	177	13685	3	266	4	147	2	79		
	Total	**357**	**18326**	**440**	**333715**	**66**	**11359**	**111**	**8108**	**12**	**1023**	**34**	**2979**

Ridge Tile

Ridge tile could only be positively identified in a handful of pieces. These included several pieces with a slightly curved profile or flat sides with part of a curved plain apex. There were also two pieces of crested ridge tiles. One in fabric VIIB preserved the complete profile of the side up to the base of the crest spurs, but insufficient of the crest survived to identify its form (ctx 354). It had a thin green glaze. The second piece was a detached triangular spur from a 'coxcomb' type crest (ctx 241) thickly coated on one side and edge with an olive brown glaze. It was made in a light orange sandy fabric containing frequent fine-medium quartz sand and rare sparse small chalk and iron oxide grits: it was not typically IIIB, but appears to be a variant of the group III fabrics. In addition to these a further group was identified as possible ridge tile on the basis of general characteristics of surface finish and edge treatment, such as knife trimming or thickening of the edge, which is more commonly associated with ridge tile. Several of these had splashes or patches of mottled green and amber or brown glaze.

The only complete dimension for the ridge tile is thickness, which measured 12-16mm. The crest spur was cut to its triangular form and measured 9mm wide at its apex increasing to 16mm at its base, 20mm high and slightly over 46mm long. It comes from a form equivalent to No. 5 illustrated by Jope (1951) and is probably of later 13th or 14th century date. The lack of crests suggests most ridge tiles were plain and it is possible only a very few crested ridge tiles were used on the roofs, perhaps more in the manner of finials to provide a decorative flourish at the end of a ridge.

It is probable that a considerable number of the tiles categorised as flat glazed roof tile derive from ridge tiles. Many of these have a uniform thick glaze coating the sherd, which is more likely to occur on ridge tile. The glazes are clear, amber, brown, green and olive green. The glazed flat tiles exhibit the same range of thickness as the flat and peg tile and no characteristics could be isolated that might identify ridge tile amongst this group.

Floor Tile

A substantial quantity of decorated and plain floor tile was recovered forming just over 20% (by weight) of the CBM assemblage. Two varieties were present: 'Stabbed Wessex' tiles (c 1280-1330) formed the bulk of the floor tile, whilst the later Penn/Chiltern tiles (c 1330-1380/1400) occurred in much smaller quantities. Both groups have been described and illustrated in the extensive and overlapping regional corpora of decorated tiles published by Loyd Haberly (1937) and Hohler (1942). More recently the floor tiles from Merton College (Cotter 2006) have been discussed in some detail. References to tiles in Haberly's catalogue are usually abbreviated 'LH' followed by the catalogue number (e.g. LH: XLII). The 'Stabbed Wessex' tiles were all heavily worn from long usage in contrast to the Penn/Chiltern tiles, which all preserved their glazed surface in good condition.

The regional 'Stabbed Wessex' tiles (c 1280-1330) have a hard and very sandy red - orange or reduced dark grey fabric (IIIB) with deeply 'inlaid' white slip decoration under a clear or amber - brownish glaze. The inlay survived to depths of 1-4mm. The tiles occur in roughly equal proportions of reduced and oxidised surfaces. The undersides usually display characteristic stabbed keying. The keying is broadly the same as that described at St Peter's in the East (Emden 1969, 30-31) and took the form of pointed conical stab marks 6-9mm diameter and the same deep, mostly vertical, though some were diagonal causing distortion of the clay on one side. In most cases too small an area survived to perceive any pattern, though on the complete tiles a possible arrangement was as a rough spiral (IIP - Illustrated in Publication) though on other pieces some appeared to lie in straight lines. Assuming the tilers would want to effect the keying as quickly as possible a rough spiral from the tile centre or a zigzag of lines may be envisaged as the most efficient. Most of the plain glazed tiles of this type have been cut into smaller squares, rectangles and triangles along pre-scored lines. Although this stylistic tradition is widespread throughout Wessex and the west Midlands the tiles found in Oxfordshire are thought to come from somewhere in Berkshire, possibly the Newbury-Reading area.

The Penn/Chiltern tiles (c 1330-1380/1400) made in a lighter orange marl streaked sandy fabric (IVA/IVB) have a printed decoration, where the white slip is shallowly impressed on the surface and the undersides are unkeyed. The quantities, which included only two fragments of plain glazed tiles, were considerably smaller than the 'Stabbed Wessex' and in most cases there was considerably less wear on the surfaces with the glaze on some very fresh.

Three complete decorated 'Stabbed Wessex' tiles provided complete dimensions for these types, together with ten plain 'Stabbed Wessex', most of which had been cut to a variety of shapes and sizes for use as mosaic tiles. A number of partial tiles also preserve a complete width including one Penn/Chiltern, which measured 152mm wide. The 'stabbed Wessex' tiles range between 131 and138mm square and the surviving thickness was 18-24mm, but all were worn some very heavily so only a thin remnant of the inlay survived. Only one fragment had a fresh brand-new appearance, suggesting it may have been damaged before use and never used or was located in such a position as to suffer no wear. Two plain glazed Stabbed Wessex tiles measured 129 and 136mm wide, whilst the smaller geometric plain tiles measured between 61 and 70mm wide/square. They were 17-24mm thick, but all were heavily worn and one extremely so, its surface forming a deep hollow in the centre where the tile was only 11mm thick. In most cases the glaze only survived on the edges, but it is clear

that from four tiles with patches of white slip surviving on the surface that the tiles were produced in light and dark colours, probably contrasting yellow and dark brown, green or almost black, based on the surviving dribbles of glaze on the tile edges. The plain tiles were used as full size tiles, but more frequently they appear to have been scored and snapped into quadrants to create small square tiles, or less commonly in half to form a rectangular tile. It is also clear from scoring that they were also divided into eighths to create small triangular tiles. The only complete triangular tile measured 62 by 65mm. Similarly scored tiles were found in situ in the crypt at St Peter in the East, Oxford (Emden 1969) and at Godstow (Howard-Drake 1970).

It was possible to determine the original design for a substantial number of the decorated medieval floor tiles (93 out of 104 inlaid and six out of 15 fragments of printed tiles) A total of eighteen designs of the inlaid 'stabbed Wessex' tiles and five of the printed Penn/Chiltern group have been identified and details are summarised in table 27 and illustrated in fig. 39-40. Proportions of the different designs based on fragment count are illustrated in fig. 38. The designs mainly fall into the categories of floral/curvilinear or floral/geometric and animal or animal/curvilinear and less commonly geometric. Where two similar designs are known such as LM10, the examples at Littlemore all appear to be of the earlier example. The most notable absences in the designs are human representations and birds, which are common occurrences elsewhere.

Figure 38: Percentage of floor tile designs based on fragment count

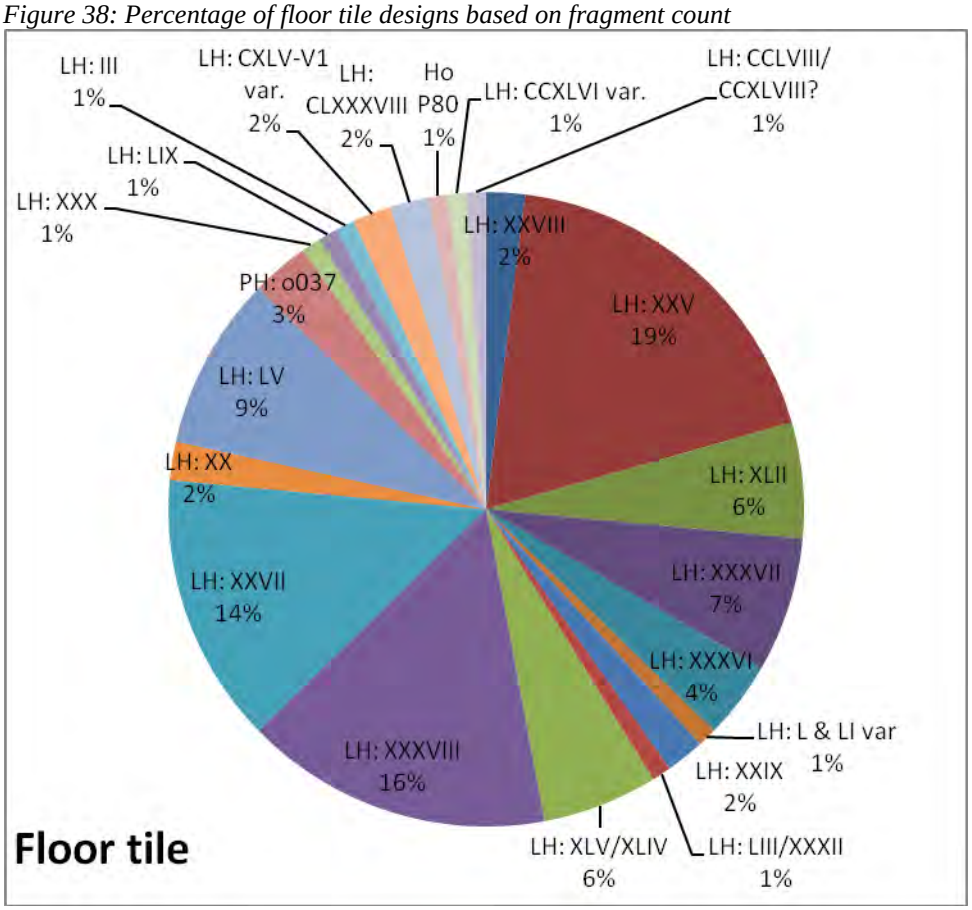


Table 27: 'Stabbed Wessex' inlaid (LM1-17) and Penn/Chiltern printed (LM18-21 & U) floor tile designs and parallels (abbreviations LH: Loyd Haberly (1937) Ho: Hohler (1940) Eames (1980) PH: Parker-Hore archive prefix o = Oxfordshire, b=Berkshire, u=Bucks, j=Leics)

LM 1	Cruciform fret attached to four studded quadrants.	LH: XXVIII, Ho W19	-	Oxford: St Peter's (No. 15); Christchurch; Godstow Abbey, St Frideswide Priory (Oxford Cathedral) St. Ebbe's; Bucks: Ludgershall, Notley Abbey; Leics: Leicester Abbey	100, 612
LM 2	Part of a 4-tile pattern featuring a floriated cross framed in a double quatrefoil surrounded by a studded circle containing a small trefoil in each spandrel and with a small double circle enclosing four annulets at the outer corner.	LH: XXIV/XXV Ho W38/W39	o115, o169, o294	Oxford: St Peter's (no.5) St. Ebbe's, St Frideswide Priory (Oxford Cathedral) Christchurch, Merton; St Martin's; Rewley Abbey, Eynsham Abbey, Bicester Abbey, Dorchester Abbey; Notley Abbey Bucks	100, 218 (2) 282, 324 (2) 354, 363, 508, 567 (4) 590, 592, 602, 755 (2) 2022
LM 3	Triple trefoil sprays in each corner, the stems joining to form a central framed square	LH: XLII; Ho W12	o291	St Frideswide Priory (Oxford Cathedral) Dorchester Abbey, Notley Abbey	101, 309, 565 (3) 609
LM 4	Design figuring a griffin facing left intersecting a quadrant of a circle with a cogged inner edge.	LH: XXXVII; Ho W24	o127	Oxford: StEbbe's (no. 8); The Hamel, Christchurch, Godstow, Littlemore Church, Eynsham Abbey	218 (2) 324, 434, 512, 514, 590
LM 5	Design figuring a griffin facing right intersecting a quadrant of a circle with a cogged inner edge.	LH: XXXVI; Ho W23	o128	Oxford: St Peter's; St Ebbe's (no.7); St Frideswide Priory (Oxford Cathedral) Godstow, Eynsham Nunnery, The Hamel, Littlemore Church	218, 282, 508, 567
LM 6	Cinquefoil with central dot or stemmed flower enclosed by double lined square frame on inner sides, but not along tile edge. Overall design probably consists of a double lined cross dividing the tile into 4 quadrants each of which contains a dotted cinquefoil (or quatrefoil)	cf. LH: L and LI	P-H: j574; b537	Bicester Abbey; Christchurch; Reading Abbey; Trinity Hospital Leics.	102
LM 7	One of 4-tile pattern figuring 2 concentric circles, from the inner of which spring 9 flowered sprays with 4 larger sprays in the centre and one in each outer angle.	LH: XXIX; Ho W34	b549	Oxford: King Edward St; Dorchester Abbey, Godstow Abbey, Berks: Uffington, Notley Abbey	567, 590
LM 8	One of 4-tile pattern featuring a floriated cross in the centre of the group with a fleur de lys set diagonally springing from the angles. Dotted hexafoils to either side of the fleur de lys and trefoils in corners and between its petals.	LH: LIII /XXXII	o009	Oxford: Greyfriars (var) Blackfriars (Dominican Priory) (var) St Frideswide Priory (Oxford Cathedral) Christchurch, Eynsham, Godstow, Oseney, Dorchester and Notley Abbeys	567
LM 9	Lion rampant facing left (9a) or right (9b) framed in a quatrefoil with small trefoils at outer corners.	LH: XLV, XLIV Ho W5/W6	o32, o048, o102,	Oxford: St. Peter's (no.6) Eynsham Abbey, Blackfriars, St Frideswide Priory (Oxford Cathedral) Carfax Church,	101, 274, 354 (3) 755

				Dorchester and Notley Abbeys; Northmoor and North Moreton churches	
LM 10	One of a 4-tile pattern figuring flambeaux radiating from the centre enclosed by an elaborate octofoil incorporating foliate motifs with mantling around the edges.	LH: XXXVIII (XXXIX is an early variant of XXXVIII) Ho W32	o336; later var. o332;	Notley Abbey, Great Milton church, the Hamel, (XXXIX Notley Abbey, Godstow, St Frideswide Priory (Oxford Cathedral) Oseney &Rewley Abbeys, Carfax church, High St, Oxford) Great Milton Vicarage	101, 181, 218, 347, 508, 565 (5) 577, 590, 612 (2) 689, 743
LM 11	One of a four-tile pattern of formal foliage springing from a central stem set diagonally within a sixteen-cusped frame.	LH: XXVII; Ho W30	o007	Oxford: St. Peter's (no.14); St Frideswide Priory (Oxford Cathedral) St. Martin's, Carfax church, The Hamel, Greyfriars; Notley Abbey,	567 (10) 577, 755 (2)
LM 12	Trifoliate spray with main stem set diagonally.	LH: XX	o295, o331	Oxford: St Peter's (no.12); Dorchester Abbey, Great Haseley Rectory	592 (2)
LM 13	Fleur de lys diagonally in each corner joined at base to form square frame around 4 square dots creating the shape of a small cross	LH: LV	o123	Oxford: St Frideswide Priory (Oxford Cathedral) Christchurch, Eynsham Abbey, Oseney, St. Ebbe's; Blackfriars (Dominican Priory) (No.13); St. Peter's (No.3); Dorchester and Notley Abbeys (var); Leicester Abbey	282, 313, 509, 590, 602, 637 (3) 2022
LM 14	Alternating castle and fleur-de-lys motifs set in vertical panels divided by studded lines. Castle with turrets and crenellations set into upper RH corner of tile bounded by a plain vertical line along the side edge and to the LH bounded by 4 more vertical lines - 2 thin alternating with 2 thick studded lines. In the panel below the castle is a fleur-de-lys.	-	o037 (partial tile of similar design, possibly a variant)	Carfax Church, St Frideswide Priory (Oxford Cathedral); design influenced by representation of castles on tiles from Chertsey Abbey tiles.	218, 565, U/S
LM 15	One of four-tile design comprising 4 fleur de lys forming central cross, enclosed by quatrefoil with trefoil adjoining each cusp, and with floriate sprig springing from the quatrefoil angles in the spandrel.	LH: XXX; HoW28	o155, o288	Oxford Cathedral, Greyfriars, Oseney Abbey, Godstow, Eynsham Abbey, Dorchester Abbey, Notley Abbey, Kirtlington moated cottage, Leicester Abbey	508
LM 16	Design of intersecting elipses enclosing a pierced quatrefoil and with 4 circles in the apices of the ellipses.	LH: LIX	o218	Oxford: St Peter le Bailey, Post Office site, Oseney Abbey, The Hamel; Brightwell Baldwin church, North Stoke church, Kidlington moated site	612
LM 17	The end of an arc of a semi-circle or quadrant starting a little in from the corner enclosing a cinquefoil or hexafoil with pierced centre.	LH: III	o285	Dorchester Abbey, Northmoor church, Oseney Abbey, St Frideswide Priory (Oxford Cathedral)	567
LM 18	Part of 4-tile pattern figuring a central cusped roundel	related to L.H.: CXLV-		Rewley Abbey T5 (Cotter2007) var. at Thame	354, 590

	containing a cross or wheel, around which human headed monsters walk framed by an outer cusped circle.	V1 & Ho W25; but Littlemore tiles not identical.		Park, Rycote, Crowell church, Notley Abbey	
LM 19	Tile with 2-part design divided diagonally into 2 unrelated motifs. One half (sf92) consists of a roundel enclosed by cabling/rope patterned circle in which are 4 fleur-de-lys springing from the corners. The other half of the tile is divided into 2 triangles one filled with a fleur de lys (sf175) the other with an ornate leaf.	L.H: CLXXXVIII Ho W35 is similar in general layout and concept, but alot of variation in individual motifs.		also found at Rewley Abbey (1986 & Cotter2007) Paradise St (Cotter Unpubl OXPSBC04 (861)); Blackfriars (Dominican Priory) (Lambrick 1985, No.33)	101, 436
LM 20	Motif uncertain but most probable is pointed quatrefoil / four-petalled flower with petals pointing into tile corners.	Ho P80; Eames 2282.	u006; b510	Thame Abbey; Bucks: Little Marlow Priory; Drayton Beauchamp and Pitstone; Berks: Hurley Priory, Cookham; London: St Saviour Southwark;	100
LM 21	Part of repeating 4-tile design. Geometric design of a central thin circle intercutting with arcs of dotted quarter circles to create a cross infilled with a ?geometric floral motif - probably a quatrefoil with pointed petals. The corner is infilled with a multi-lobate motif which may join with adjacent tiles to create a floral motif within the dotted circle.	LH: CCXLVI - very similar but not identical	cf. H-P: b554 similar concept, but design is different	var. at Easington church, Brasenose College, Crowmarsh Gifford; West Hendred, Berks	347
LM 22	The design is un clear. It may represent an animal's legs (?horse and rider or lion?) but it has not been possible to fit this with any known design. There is no real reason to suppose this is a previously unknown design but the small area of design visible and the quality of glaze and imprint have impeded identification.	Similar to parts of LH: CCLVIII or CCXLVIII or Ho P12, P32-P34, Eames 1909	-	-	101 (sf105)

The majority of the tile designs are known from sites in and around Oxford as well as further afield. Virtually all have parallels at other ecclesiastical establishments cited by Haberly (1937) and Hohler (1942) including Eynsham Abbey, St Ebbe's, Godstow Abbey (Howard-Drake 1970), Oxford Cathedral, Greyfriars, Oseney Abbey, Dorchester Abbey, Notley Abbey and Leicester Abbey as well as at more recent excavations at St Peter's in the East (Emden 1965), Bicester Priory (Hinton 1968), the Hamel (Robinson 1980), Blackfriars (the Dominican priory) (Lambrick 1985), St Frideswide's Abbey (Green 1988, Duncan 1988), Rewley Abbey (Tibbles 2007) and Christ Church (Roberts and Williams 2012). Less common in the local area is type LM6 (Illustrated in Publication) a pierced cinquefoil (or possibly in this case a stemmed 4-petalled flower) inset into one quadrant of the tile divided by a double lined cross into quarters. The closest parallels are recorded in the Parker-Hore

collection from Leicestershire, Berkshire and Nottinghamshire. Stopford (2005, Fig18.2 no. 145) also illustrates a similar design in the Nottinghamshire tile group. It is similar to LH: L/LI, though in Haberly's examples each quatrefoil is enclosed by a square frame. Another rare form is type LM14, which is possibly the same design as o037 from Carfax church, Oxford in the Parker-Hore catalogue. It also occurs at St Frideswide's (Duncan 1988, 47-8) where two fragments were found. Both the Parker-Hore record and the tiles from Littlemore are also partial, but the design appears to consist of panels divided by vertical dotted/pierced lines in which small castles and fleur de lys alternate (Illustrated in Publication) Though the tile is of the local 'Stabbed Wessex' type, this design may be described as 'Chertsey type' as it is influenced by designs originating from Chertsey Abbey (Eames 1985, 46) dated to the period 1260-80, where the tiles included depictions of castles and the vertical dotted lines may be a debased version of the architectural frames depicted (van Lemmen 2000, 22).

Five fragments of CBM came from four contexts were sent away with the Roman pottery. These were too small to be diagnostic but one flat fragment from (325) had green glaze on the side and is probably from a medieval glazed floor tile.

Catalogue of illustrated tile (Figs. 39-40)

Roof tile

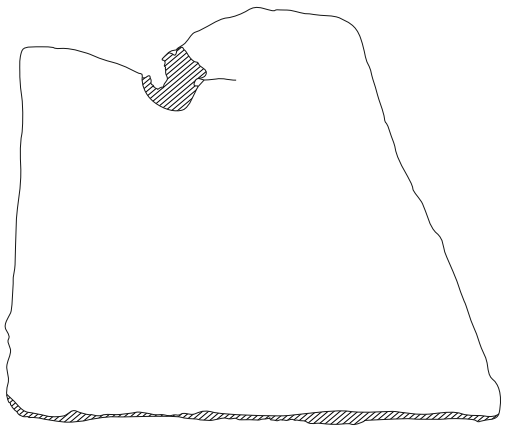
1. Peg tile: The lower end has been cut down to a smaller size post-firing. Peg holes biconical 19mm dia. Fabric: IIIB/VIIBB. L: 198-205mm Br: 217mm Th: 18mm Date: AD1175-1400, ctx 608
2. Peg tile: two pegholes 17mm dia, one blind with projecting boss of clay on base surface. Fabric: VIIB. L: >155mm Br: 200mm Th: 15mm. Date: c.1200-1325? ctx 274
3. Peg tile: patchy wash of amber glaze with green speckles across lower section of tile up to 145mm from base edge. Fabric: IIIB/VIIBB. L: >245mm Br: 212mm Th: 15mm. Date: AD1175-1400, ctx 274, sf82 (not located)
4. Ridge tile: thin greenish glaze, matt and weathered. Fabric: VIIB. Th: 13mm. Date: c.1200-1325?
5. Ridge tile spur: low cut triangular cox comb crest; brown – olive glaze thickly coated on one side and edge, thinner on other face. Fabric: III. L: >46mm Br: 9-16mm Ht: 20mm. Date: C13-C14

Floor tiles

'Stabbed Wessex' Inlaid, Fabric IIIB, Date: c.1280-1330

6. LM1: LH XXVIII, L: 135mm Br: 134mm Th: 20mm, , sf114/115, ctx602
7. LM2: LH XXV, L: 108mm Br: >60mm Th: 22mm, sf188, ctx567
8. LM2: LH XXV, L: 136mm Br: 136mm Th: 23mm, sf122, ctx 602 a. decorated surface, b. keyed surface
9. LM2: LH XXV, L: 105mm Br: >95mm Th: 22mm, sf158, ctx755
10. LM3: LH XLII, L: >110mm Br: >90mm Th: 20mm sf94, ctx101
11. LM3: LH XLII, L: 137mm Br: 135mm Th: 20mm, sf117, ctx 609 a. decorated face, b. keyed face
12. LM4: LH XXXVII, L: >61mm Br: >63mm Th: 19mm, sf119, ctx512 & sf144, ctx 514
13. LM5: LH XXXVI, L: >90mm Br: 131mm Th: 21mm, sf194, ctx567 & sf 134 ctx218
14. LM6: P-H: b537, nn502; c.f. LH: L/LI, L: >75mm Br: >68mm Th: 21mm. sf107, ctx102
15. LM7: LH XXIX, Ho W34,L: >110mm Br: >45mm Th: 22mm, sf176, ctx590
16. LM8: LH LIII / XXXII, L: >80mm Br: 135mm Th: 21mm, sf203, ctx567
17. LM9a: LH XLV, L: >80mm Br: >73mm Th: 21mm, sf128, ctx354
18. LM9a: LH XLV, L: 135mm Br: >90mm Th: 19mm, sf172, ctx274
19. LM9: LH XLV, L: >80mm Br: >80mm Th: 22mm, sf161, ctx755
20. LM10: LH XXXVIII, L: >105mm Br: >100mm Th: 22mm. sf83, ctx218
21. LM10: LH XXXVIII, L: >74mm Br: >60mm Th: 23mm, sf79, ctx181
22. LM11: LH XXVII, L: 136mm Br: 135mm Th: 22mm, sf191 & 201, ctx567
23. LM11: LH XXVII, L: >100mm Br: 135mm Th: 23mm, sf202, ctx567
24. LM11: LH XXVII, L: >85mm Br: >112mm Th: 20mm, sf159, ctx755
25. LM12: LH XX, L: >80mm Br: >50mm Th: 20mm, sf155, ctx592
26. LM13: LH LV, L: >85mm Br: 131mm Th: 19mm, sf99, ctx637
27. LM13: LH LV, L: 134mm Br: >75mm Th: 19mm, sf171, ctx282
28. LM14: 'Chertsey type' castle and fleur de Lys, L: >45mm Br: >55mm Th: 19mm, sf123, u/s & L: >68mm Br: >80mm Th: 21mm, sf132, ctx218

Roof tiles



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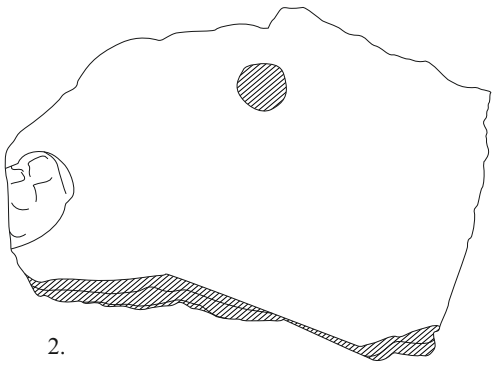

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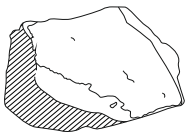
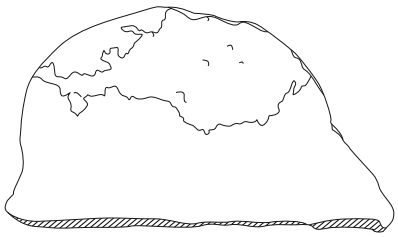


4.



5.

0 10cm

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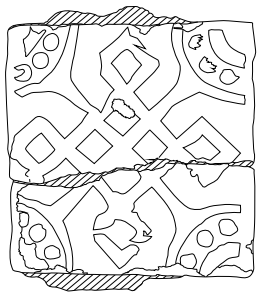
Floor tiles



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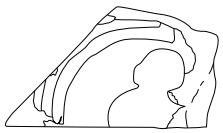

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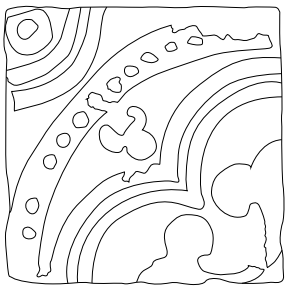

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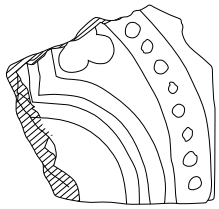

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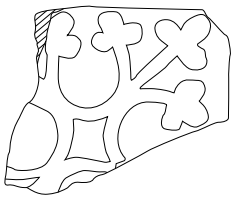

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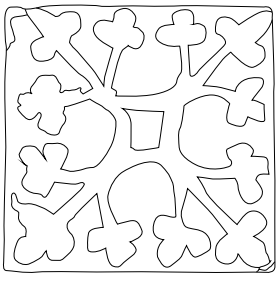

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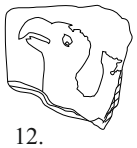
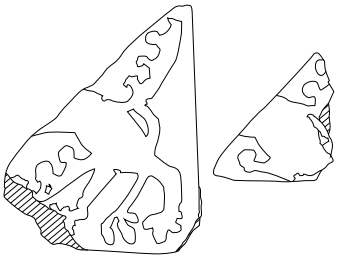


12.



12.

0 20cm

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Figure 39: Roof and Floor Tiles

Roof tiles

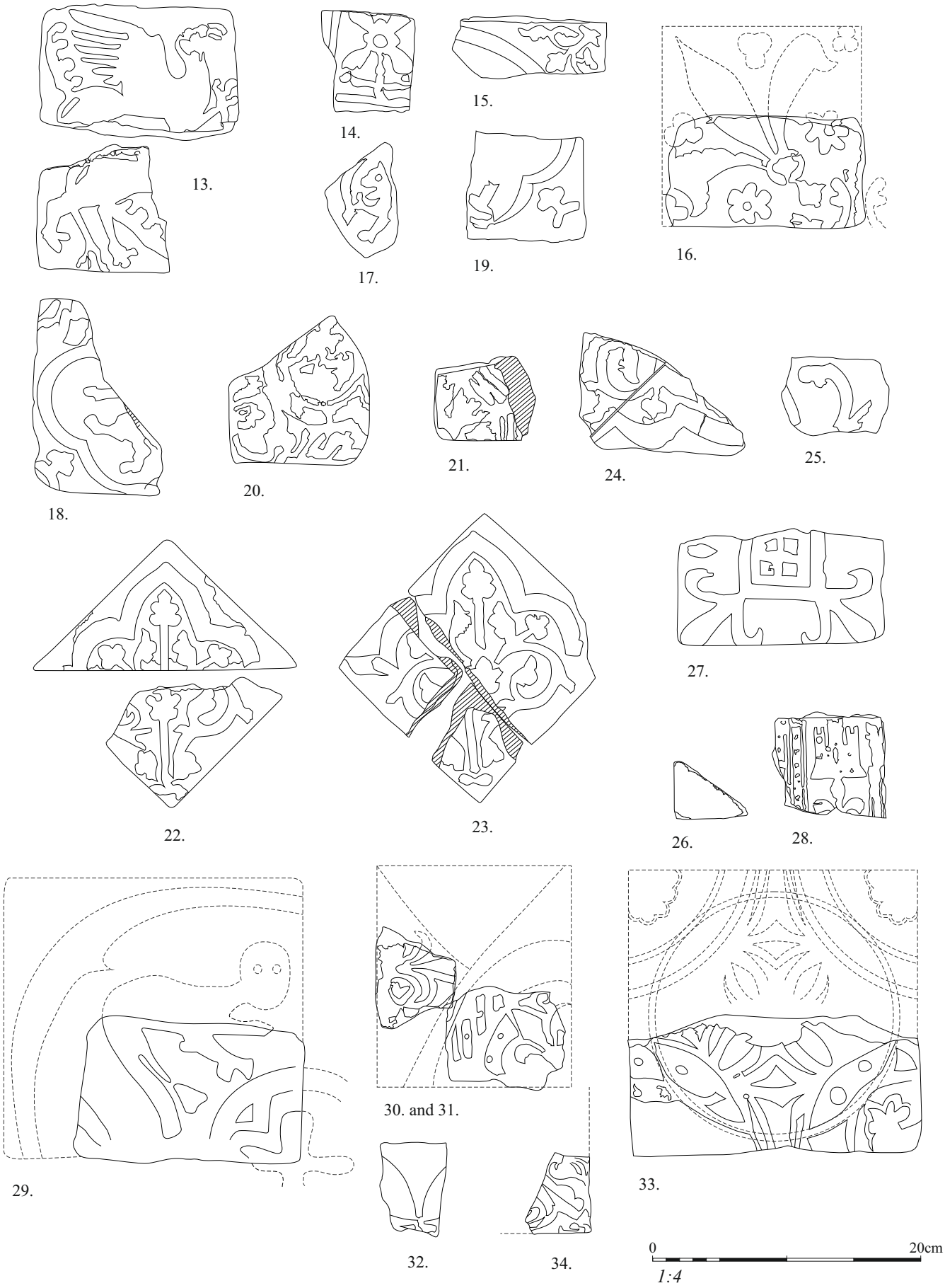


Figure 40: Floor Tiles

Printed Penn floor tile, Fabric:IVa/IVb , Date: 1330-1380+
29. LM18: LH CXLV/VI var., Fabric: IIIB. L: mm Br: mm Th: mm, sf177, ctx590
30. LM19: LH CLXXXVIII; Ho W35 L: >90mm Br: >70mm Th: 23mm, sf92, ctx101
31. LM19: LH CLXXXVIII, Ho: W35, Fabric: IVa/IVa. L: >70mm Br: >55mm Th: 24mm Date: 1330-1380+. sf175, ctx436
32. LM20: Ho P80; Eames 2282, L: >70mm Br: >50mm Th: 22mm sf90, ctx100
33. LM21: LH CCXLVI (var) L: 152mm Br: >73mm Th: 26mm, sf102, ctx347
34. LM22: Design not identified, L: >82mm Br: >67mm Th: 24mm, sf105, ctx101

Quarry tiles and paviours

Besides the medieval tiles there are two plain late medieval or early post-medieval 'quarry' tiles of 16th-17th century date. One was found in an early 17th century pit (161). They were made in fabric IIIB and measured c. 40-45mm or more thick. One was glazed black and whilst the second had no evidence of glaze surviving its grey fired surface suggests it may also have been glazed originally to a dark colour. A paviour or paving brick of 18th-19th century date, measuring 38mm thick and made in a red fine sandy fabric, was found in the topsoil (100).

Bricks

The brick probably all dates from the 16th to 19th century, though some may be slightly earlier from the 15th century. Although some fragments occur in supposedly medieval features there is nothing in the character of the fragments to suggest a medieval date and though the fabrics used are similar to those of the medieval roof tile it is more likely these merely represent a local or regional source that continued to be exploited in the post-medieval period. Only one brick from a post-medieval cobbled surface (669) had all three dimensions surviving and measured 53mm thick by 104mm wide by 221mm long suggesting a date of 15th – 17th century, though it is made in a fabric very similar to VIIA. A group of broken brick fragments with burning or sooting on the surface from post-medieval pit 160 may be of a similar date; they measured 40, 43 and 44-50mm and were made in a fabric similar to IIIC. Other bricks with surviving dimensions are all likely to be of later 17th – 19th century date. Four measured 64-68 thick by 108-111mm wide. Two were made in fabrics very similar to the medieval fabrics VIIA/B and IIIC. Two were made in a red fine sandy fabric (fabric F) typically post-medieval in character, and one of these had two skintling marks on a stretcher face parallel to long axis indicating a late 18th-19th century date. Two bricks both made in fabrics similar to IIIC measured 70mm or more thick: the greater than average thickness suggests these were manufactured during the years of the brick tax 1784-1850. One of these, which related to the farmhouse, had a longitudinal skintling mark set at a slight diagonal.

Miscellaneous

A small quantity of miscellaneous items included a fragment of field drain, a late 20th century wall tile, indeterminate CBM, fragments of mortar, plaster and burnt sandstone. The only unusual item was a large flat tile measuring 18mm thick, 175mm wide and over 143 mm long with smooth surfaces on all sides with a narrow angled groove cut longitudinally on one surface down the centre of the tile. The function is uncertain, but it is unlikely to be earlier than the 19th century.

6.3.2 Conclusions

The building material indicates that the priory was roofed predominantly with ceramic tile, though some stone roofing was also in use (see 6.3.3). The main roofing material was peg tile, much of which was glazed, whilst the ridges were capped with plain angular ridge tiles, glazed green and brown, but for the most part without crests. The few pieces of crested ridge tile may have been used for decorative effect more in the manner of finials, as there was no evidence for more elaborate roof furniture in the form of purpose-made finials or louvers suggesting the roofline remained without further embellishment.

Brick was a minor component of both the medieval and post-medieval buildings on the evidence of surviving material and was probably only used in limited areas such as door or window surrounds.

The floors of the priory had been constructed primarily with the highly decorative 'Stabbed Wessex' inlaid floor tiles in a wide variety of designs of which seven formed parts of 4-tile whilst an eighth could have stood alone or as in a group of four. The lion and griffin tiles could be used in pairs or fours. Although no floor tiles were found *in situ* a distribution of the tiles found within graves (to be produced in publication) shows that all types were concentrated within or close to the chancel indicating that this was the main area of the church to be floored with both plain and decorated glazed floor tiles. It suggests that the tile flooring may have been in use at the time of the burials and if this were so and the tiles were disturbed by the digging of the graves it suggests the designs were mixed across the area, as often a variety of designs was found in a single grave. The densest concentrations occurred in graves 564, 566, 591, 639 and 2028.The tiles had been used to line the graves or to create a head or foot rest for the body. The mix of designs found in the area may indicate the tiles were laid out in blocks of four-tile patterns framed with plain tiles and interspersed with lines or borders of single or paired tiles. The presence of half tiles scored to form triangular tiles suggests that at least some of the tiles were laid on a diagonal creating a diamond effect, rather than square to the walls. The arrangement may have been similar to that found in the Queen's Chamber at Clarendon Palace (Eames 1968, Plate V) or surviving in Winchester Cathedral.

6.3.3 Worked Stone (*by Stephen Yeates and Cynthia Pool*)

Five pieces of larger worked stone were recovered from Littlemore Priory site. There were also a number of smaller worked pieces that may be part of tracery, and a group of stone slates.

WS1: Piece of shelly oolitic limestone measuring 320mm x 180mm x 154mm, recovered from context 446. The piece is probably a moulding from the side of an opening such as a door or window surround. The moulding is that of a quadrant chamfer with fillet that was commonly used in England from the late 12th century and into the 13th century (Morris 1992, 14) perhaps 1180-1240. The quadrant chamfer contains an area of whitewash.

WS2: Piece of shelly oolitic limestone measuring 378mm x 180mm x 168mm, recovered from context 446. The piece is part of the same moulding as WS1. The moulding contains a quadrant chamfer with fillet that was commonly used in England from the late 12th to the 13th century, perhaps 1180-1240. There is no surviving plaster or paint.

WS3: This is a piece of shelly corelian ragstone measuring 237mm x 210mm x 135mm, recovered from context (490). The piece is a squared stone and thus was used as a quoin at the corner of an internal feature. The stone contains evidence of a whitewash on two of its faces, one of which has evidence of a broad black straight line about 8mm across. Over part of the whitewash there is a skim of pink plaster that measures 220mm x 145mm. The plaster is painted with a design showing two black to brown bands 3mm wide and 12mm apart. The area between the bands is white and also one of the areas adjacent to the bands. The other area adjacent to the band is a deep ochre red in colour.

WS19: This is a piece of oolitic limestone which was recovered from a cist that measured approximately 380mm x 250mm x 190mm. The stone is well worked in places and diagonal chisel marks survive in others. The stone is an abacus from a capital, likely to be from an opening in a wall with squared or angular profiles, possibly a chancel arch or arch associated with the crossing. The profile of the worked stone has a double quirk around a bead with an angle roll or broader bead at the base (Morris 1992, 1-17). The pieces is probably 11th or 12th century and could belong to a Romanesque structure or one of Early English. It is unlikely to be later than this.

WS25: A piece of oolitic limestone that measures 680mm x 460mm x an unknown depth. The stone has at least two worked faces and on the angle between them a protruding square moulding measuring 140mm x 80mm. There is a rough north cut into one face of the stone measuring 180mm x 70mm. Though it is apparent that the stone was worked it is difficult to determine the proper shape of the stone and thus identify and date it.

The indications from the architectural fragments that survive is that the moulded pieces WS1 and WS2 are pieces from a probable Early English church c 1180-1240. WS19 is part of an abacus that could be of a Romanesque or Early English date.

There was a further group of five masonry fragments (2583g) in the form of architectural mouldings mostly made of Jurassic/Corallian limestone as the roofing, apart from a single piece in a brown sandstone. This included two dressed rectangular or squared blocks, one of which measured 63-75mm thick and had two faces dressed with fine diagonal chisel tooling. The upper surface was worn and slightly convex and had possibly been (re-)used as paving. Two mouldings, one in sandstone, with a curved surface of semi-circular cross-section 37mm and 70mm wide are probably part of window mouldings.

The stone building material also comprised a small quantity of roofing slabs and mouldings made in local limestone and sandstone. The limestone was all varieties (quartzitic, oolitic, shelly/fossiliferous or combinations of these) derived from the Jurassic/Corallian beds and are typical of the material commonly used for buildings in Oxford. The roof slabs amounting to fourteen fragments (6524g) were all broken though four were 80% or more complete. The slabs had been split along planes in the rock and the edges chipped to shape resulting in a rough edge bevelled on both faces. Where peg or nail holes survived these have all been neatly drilled resulting in a smooth cylindrical hole 7-10mm diameter. Details and sizes of the more complete pieces are summarised in table 28. A group of three was found in a medieval pit (207) and another fragment was found in a 13th-century pit (374) as well as in the fill of robber trenches.

Table 28: Summary of stone roofing sizes and shapes

Context	Completeness	Thickness	Width	Length	Shape	Peghole	Phase
204	80%	25	100 - 187+	>223	Trapezoidal/pentagonal	10mm dia	Med
204	85%	0	145-170	210	Lozenge?	8mm dia	Med
204	95%	30	135	220	Subrectangular with convex top	10mm dia	Med
2002	nr complete	21	120	210	Subrectangular	8.5mm dia	
111	50%	20	155	>140	Rectangular (lower half)	-	-
577	50%	16	105	>160	Lozenge?	9mm dia	
2012	50%-75%	17	>122	>255	Polygonal	7.5mm dia	

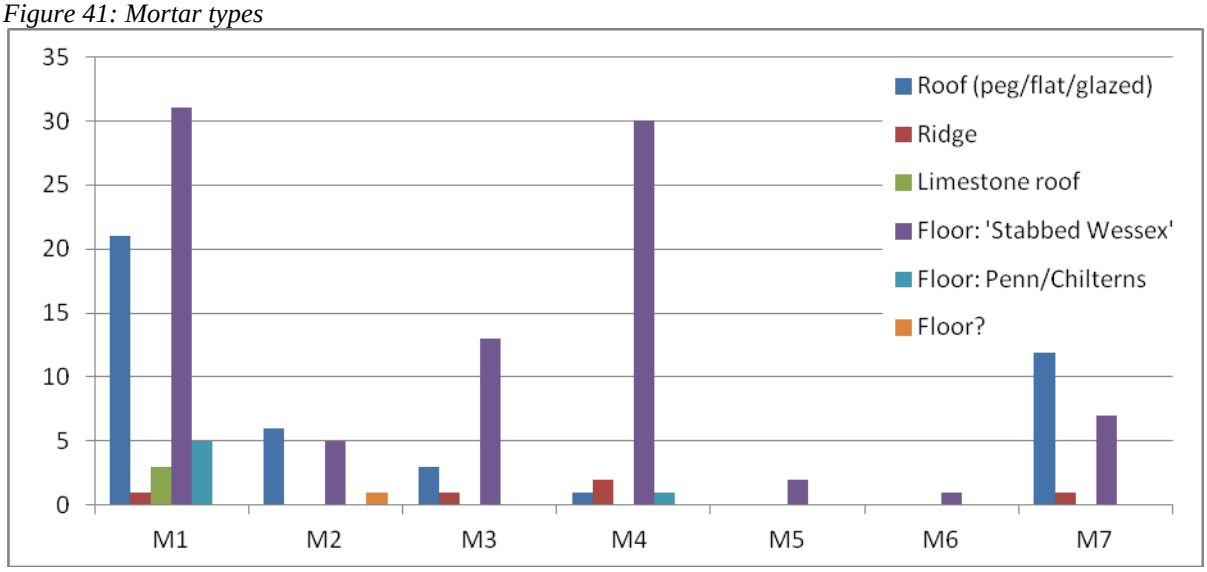
6.3.4 **Mortar** (*By Cynthia Pool*)

A small fragment of white wall plaster and two bedding fragments of grey Portland cement were the only individual items recovered. Mortar was found on most of the floor tile and much of the roof tile. Seven varieties of mortar were identified:

- M1: cream lime mortar containing moderate/high density of uniform clear medium quartz sand. Some examples were very white possibly containing a high density of crushed chalk dust in the matrix.
- M2: light brown chalky lime mortar containing sparse fine-medium quartz sand and small white rounded chalk grits or lime balls.
- M3: buff – cream lime mortar containing frequent medium - coarse quartz sand clear and brown 1-2mm and a dark sand possibly glauconite or iron rich rock.
- M4: cream fossiliferous lime mortar containing quartz sand and coarse white tabular grits of shell 1-2mm and other fossils
- M5: light brown lime mortar containing a high density of medium-coarse brown quartz sand
- M6: light brown chalky lime mortar containing frequent medium - coarse quartz sand, clear and brown, 1-2mm and dark sand possibly glauconite or iron rich rock, and frequent rounded chalk grit 1-5mm.
- M7: light brown lime mortar containing a high density of medium-coarse brown quartz sand and frequent coarse angular and rounded brown / dark ?fluvial grits 1-4mm.

The occurrences of mortar types occurring on different forms is illustrated in Figure 41. Mortar M1 is the most common and is of a type that occurs at all periods. It is associated with both floor and roof tile. Mortars M3 and M4 are particularly associated with the floor tile, whilst M7 is most commonly associated with the roof tile. The latter also occurs on the 20th century wall tile fragment but in this case may be a more modern version than that occurring on other tile.

Figure 41: Mortar types



6.4 Metal Objects *(By Simona Denis)*

Introduction

A total of 176 metal objects, of a combined weight of 2676 gr, was recovered during the excavations at the Littlemore Priory (table 29). Iron is the most represented metal, with 159 items, forming 90% of the collection. 16 objects, (9% of the assemblage) are made of copper alloy, while lead represents only 1% of the group. Precious metals (gold and silver) constitute a minor part of the assemblage, with 2 objects (1% of the collection).

The state of preservation of the objects is generally poor; moderate to extensive oxidation was observed on the entirety of the iron assemblage, in some cases preventing from the very identification and measurement of the item. Copper alloy objects are better preserved, although affected by verdigris. The lead items, though largely fragmentary, show limited signs of degradation of the material. The remaining silver and gold objects are fairly preserved.

The vast majority of the metal objects (134 items, or 76% of the assemblage) was recovered in association with 25 individual human burials. 18 items (10% of the collection) were found in 9 different pits, while 2 postholes yielded 4 additional objects. The remaining 6 items were collected from 5 wall foundation trenches or robber's trenches.

6.4.1 Gold *(By Simona Denis)*

The complete gold finger ring SF 40 (BERK-C4E18A) (Plate 11) was found in context (590) backfill of the grave for Sk57. The object is a very well preserved, undecorated hoop measuring 18 mm in diameter and 1 mm in thickness and weighing 1 gr.

The ring was found on the vertebral column of Sk57, between lumbar vertebrae L2 and L3; considering the position of its recovery, the object may have been attached to a garment at burial, or alternatively it may have been a symbolic 'wedding' ring of a nun, showing her marriage to God, and kept in a purse about the waist.

Table 29: Metal finds

Context	Small Find No.	Skeleton	Material	Type	No. of Items	Technique	Weight (gr)	Length (mm)	Width (mm)	Diameter (mm)	Thickness (mm)	Shank cross-section	Stem diameter (mm)	Head	Head diameter (mm)	Degradation	Decoration	Comments
177			Slag	Slag	2	N/A	9.2	max 25	max 20	N/A	17	N/A	N/A	N/A	N/A			Slag
177			?Tin	Unidentified	3	Unidentified	25.1	max 40	25	N/A	1	N/A	N/A	N/A	N/A		Unknown	
183	139		Cu A	Sheet	2	?Cast	0.1	max 8	max 4	N/A	0.5	N/A	N/A	N/A	N/A	Verdigris	Unknown	Unidentified
252			Fe	Unidentified	1	Cast	50	95	31	N/A	4						Unknown	
111			Fe	Unidentified	1	Cast	130.5	48	max 42	N/A	12	N/A	N/A	N/A	N/A			?Fitting element
114			Cu A	?Nozzle	1	Cast	21	72	N/A	15	1	N/A	N/A	N/A	N/A		incised line around ends	
126	140	27	Fe	Casket mount	15	Cast	27.7	max 31	max 28	N/A	4						Unknown	flat ?strip/plate
142	1	1	Cu A	Shroud pin	2, conjoining	Drawn wire	0.2	32	N/A	N/A	N/A	Round	1	Single spiral wound head	1.5	Verdigris		Complete
142	2	1	Cu A	Shroud pin	7	Drawn wire	0.5	max 16	N/A	N/A	N/A	Round	1	Double spiral wound head	2.5	Verdigris		fragments of at least 2 identical pins
142	3	1	Cu A	Shroud pin	2	Drawn wire	0.3	max 16	N/A	N/A	N/A	Round	1	Single spiral wound head	2	Verdigris		fragments of single pin
181			Fe	Unidentified	1	Unidentified	7.4	N/A	N/A	13	4							extremely corroded
208	27		Pb	Window lead	1	Cast	7.4	45	7	N/A	4	N/A	N/A	N/A	N/A			Diamond-shaped flanges
250			Fe	Unidentified	3	Unidentified	65	max 70	45	N/A	27						Unknown	
356	8	27	Fe	Casket mount	1	Cast	34.4	70	32	N/A	3							slightly curved strip plate
356	10	27	Fe	Casket mount	4	Cast	53.8	max 80	27	N/A	3							2 conjoining + 2 conjoining. Flat stip
356	15	27	Fe	Casket mount	1	Cast	29.5	64	30	N/A	4							conjoining. Curved strip
356	17	27	Fe	Casket mount	2	Cast	118.5	202	37	N/A	4							conjoining. Slightly curved strip
356	11	27	Fe	Casket mount	2	Cast	66.7	123	35	N/A	3							slightly curved strip
356	13	27	Fe	Casket mount	2	Cast	74.7	max 74	33	N/A	4						?embossed	slightly curved strip
356	7	27	Fe	Casket mount	1	Cast	23.2	35	34	N/A	4							flat strip
356	14	27	Fe	Casket mount	3	Cast	78.9	max 160	30	N/A	3							2 conjoining. curved stip
356	6	27	Fe	Casket mount	3	Cast	51.9	max 90	34	N/A	3							2 conjoining. curved stip
356	16	27	Fe	Casket mount	4	Cast	64.3	max 105	30	N/A	3						?embossed	curved strip
356	5	27	Fe	Casket mount	1	Cast	23.8	77	28	N/A	2							slightly curved strip
356	12	27	Fe	Casket mount	1	Cast	17.2	34	36	N/A	2							slightly curved strip
356	9	27	Fe	Casket mount	3	Cast	36	max 65	27	N/A	4							slightly curved strip
541			Fe	Unidentified	1	Cast	23	52	41	N/A	3							
567		90	Pb	?Decorative element	2	Cast	3.8	max 23	4	N/A	2	N/A	N/A	N/A	N/A			
571	4		Cu A	Tobacco pipe cover	1	Cast	4.1	N/A	N/A	24	5	N/A	N/A	N/A	N/A	Verdigris	Maker's Mark A. A. Percy Glasgow Scotland	Complete
590	39	57	Cu A	Shroud pin	1	Drawn wire	0.1	27	N/A	N/A	N/A	Round	0.5	?Single spiral wound head	1	Verdigris		Point missing

754	156	89	Silver	Ring	1	Cast	2	N/A	N/A	19	2	N/A	N/A	N/A	N/A	Oxidation. Broken in one place		Complete
754	185	89	Cu A	Shroud pin	2, conjoining	Drawn wire	0.6	42	N/A	N/A	N/A	Round	1.5	Double spiral wound head	4	Verdigris. Shank bent		Complete
754	179	89	Cu A	Shroud pin	1	Drawn wire	0.2	29	N/A	N/A	N/A	Round	1	Single spiral wound head	2	Verdigris		Complete
754	182	89	Cu A	Shroud pin	1	Drawn wire	0.4	40	N/A	N/A	N/A	Round	1	Missing	N/A	Verdigris		Point missing
754	181	89	Cu A	Shroud pin	1	Drawn wire	0.4	23	N/A	N/A	N/A	Round	1	Missing	N/A	Verdigris		Point missing
754	183	89	Cu A	Shroud pin	1	Drawn wire	0.5	13	N/A	N/A	N/A	Round	1	Cast flattened spherical, hollow head	5	Verdigris		Point missing
754	184	89	Cu A	Shroud pin	2, conjoining	Drawn wire	0.8	44	N/A	N/A	N/A	Round	1	Cast globular, ?2 halves	5	Verdigris		Point missing
754	180	89	Cu A	Shroud pin	1	Drawn wire	1.1	42	N/A	N/A	N/A	Round	1	Cast flattened spherical, hollow head	8	Verdigris	dotted head	Point missing
588	31	56	Fe	Unidentified	1	Unidentified	3.8	N/A	N/A	20	N/A							extremely corroded
590	40	57	Gold	Ring	1	Cast	1	N/A	N/A	18	1	N/A	N/A	N/A	N/A	None		Complete. Symbolic wedding ring or attached to garment
628	57	64	Fe	Unidentified	1	Unidentified	11.8	38	N/A	N/A	N/A							extremely corroded

6.4.2 Silver *(By Simona Denis)*

A slightly damaged silver ring SF156 (BERK-C539AE) (Plate 12) was recovered from grave backfill (754) associated with the inhumation of Sk89. The object is an undecorated hoop, weighing 2 gr and measuring 19 mm in diameter and 2 mm in thickness, and visibly tarnished.

The ring was found on Sk89's right hand and therefore tentatively identified as a finger ring, although the oval/lentoid cross-section would be an unusual characteristic for the period.

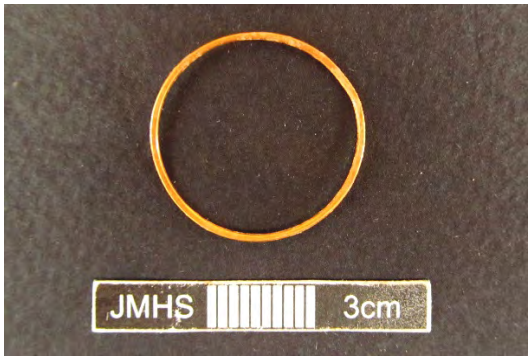


Plate 11: Gold ring " 40

Plate 12: Silver ring " 156

6.4.3 Copper Alloy Nuremberg Jeton (*by Andrej Čelovský*)

Plate 13: Nuremberg Jeton FS 26

A single copper-alloy Nuremberg jeton SF 26 (Plate 13) was recovered during the archaeological investigations at the Littlemore Priory in Oxford.

The jeton represents early type of Rose and Orb jeton of anonymous Nuremberg maker dated to 16th / early 17th century (UKDFD). The closest analogy to this jeton was found during the archaeological investigations at All Saints' Church in Faringdon, Oxfordshire (• elovský 2014, 127). Both jetons have exactly the same reverse, which suggest that they were minted at the same time, and perhaps were imported to England as a part of a larger lot, presumably

purchased by a common body and subsequently distributed within individual parishes. The details of the jeton are given in table 30.

Table 30: Nuremberg Jeton description and dimensions

Ruler/Issuer	Anonymous
Catalogue reference	OMS Acc. No. 2014.114 (N/A) SF 26
Date of issue	16th / early 17th century
Mint	Nuremberg
Denomination	Jeton
Obverse legend and type	Fictitious legend, three crowns, alternately with three fleur-de-lis, arranged around a central rose.
Reverse legend and type	Fictitious legend, Imperial orb within a tressure of three arches and three angles.
Condition	slightly worn
Diameter	24.20 mm
Thickness	0.81 mm
Weight	2.12 g
Die-axis	Uncertain
Archaeological information	Context N/A
Other information	Recorded before conservation

6.4.4 Copper Alloy (*by Simona Denis*)

A small collection of 26 copper alloy fragments of a combined weight of 30.3 gr, was recovered from 6 different contexts. The state of preservation of the items is generally fair, although verdigris largely affected the assemblage.

Shroud pins

The vast majority (87%) of the copper alloy assemblage is composed of pins, found in association with three different burials (table 31). Pins were commonly used in funerary contexts to keep the shroud in place and hold garments to prevent slippage (McCarthy 2012) although no remains of textile were recovered at Littlemore.

Only one of the pins collected during the excavation was recovered complete; three other examples are composed of conjoining fragments. 5 additional remains preserved the head and part of the stem; the remaining 7 items are plain stem fragments.

All of the objects were identified as drawn wire pins with circular cross section, with a standard stem diameter of 1 mm; the only exception being SF39 with a recorded diameter of 0.5 mm and SF185, the largest example, measuring 1.5 mm.

Four different types of head were recorded:

- Type 1: single spiral wound head, formed from a single twist of wire around the top of the stem. Similar to Mould Type 1 (Mould 2011) observed on 4 of the examples from Littlemore
- Type 2: double spiral wound head, formed from a double twist of wire loosely crimped onto the top of the stem, with the spiral lines of the twisted wire clearly visible. Similar to Mould Type 3 and Caple type B (Mould 2011) 2 of the pins in the assemblage preserved this head type

- Type 3: cast, slightly flattened spherical head; made in two hollow hemispheres with a central seam, present on 2 of the pins, one of which with remains of a decoration.
- Type 4: globular head, possibly cast in two halves. A single example preserved this head type.

Pins comprising a wire shaft with a head formed by wrapping the wire once (type 1) or twice (type 2) around one end are a very common find in later medieval and post-medieval sites.

Generally, earlier examples of drawn wire pins tend to be larger and thicker, as recorded in Southampton (13th C) and York (13th -16th C) (Ottaway 2002); smaller, finer objects seem to become more common between the 15th and the 17th century (Margeson 1993) as those found at St Peter's, Barton-upon-Humber (Mould 2011).

The majority of the pins found at Littlemore is very finely manufactured, indicating a later dating, possibly between the 14th and the 16th C.

Pin SF 180, found in context (754) is the only item in the assemblage bearing a decorative pattern, limited to the top of the head and consisting of a cluster of equally spaced raised dots.

The group of pins recovered from (142) and associated with Sk1 comprises at least 4 different examples, with type 1 and type 2 heads. Pin " 1 was found in the cervical vertebrae area, suggesting it was used to hold the shroud in place around the neck.

Table 31: Copper alloy shroud pins

Small find no.		Skeleton	No. of items	Weight (gr)	Length (mm)	Head type	Date range
1		Sk1	2, conjoining	0.2	32	1	14th-16th C
2			7	0.5	max 16	2	
3			2	0.3	max 16	1	
39		Sk57	1	0.1	27	1	
179		Sk89	1	0.2	29	2	
180			2	1.1	42	3	
181			1	0.4	23	Unk	
182			1	0.4	40	Unk	
183			1	0.5	13	3	
184			2, conjoining	0.8	44	4	
185			2, conjoining	0.6	42	2	

The single pin SF 39 associated with Sk57 was found on the lumbar vertebrae, in the same area as the gold ring SF 40.

7 examples, or 58% of the shroud pins were found in association with Sk89 (illustrate table 27) together with the silver ring SF 156. The shroud pins group comprises type 2, type 3 and type 4 heads, and includes SF 180, the only decorated example of the collection. The distribution of the pins along the vertebral column (SF179, SF 182) around the cranium (SF 180, SF 181, SF 183) and near the feet (SF 184) clearly indicates the body was completely wrapped in a shroud. The absence of nails or staining caused by the degradation of wooden planks suggests the body was buried without a coffin.

Nail

A single, complete copper alloy nail, weighing 2.7 gr and measuring 39 mm in length, was found in context (101). The item has a tapered shaft with a square cross-section, and a round, flat head, and was identified as a general purpose nail. The object, machine-cut, can be dated to the post-medieval period.

Tobacco Pipe Cover (SF 4)

The complete copper alloy object recovered from context (571) was positively identified as a tobacco pipe cover. The item, measuring 24 mm in diameter and weighing 4.1 gr (Plate 14) shows the incised makers' mark on the back: AA PERCY GLASGOW SCOTLAND. The cover design was patented by Percy in 1894, and accompanied by the following description:

In the arrangement shown in Plate 9 in section by Fig. 1, in plan by Fig. 2 and in elevation by Fig. 3, the cover consists of a disk or plate which has two slots 17 converging from the circumference toward the centre cut in it in a straight line. Through these slots there pro ect downward two holders or grips c which may be arranged to hold upon either the interior or exterior of the bowl. Each of the said grips is connected to or made one with a push d which works in a curvilinear or other shaped tube or channel 6 attached to or formed on the upper or under surface of the disk or plate a. The pushes are hollow and are made to receive the ends of the spiral spring f. The pushes slide telescopically in the channels or tubes e. d are extensions which are formed on the pushes d and serve as guides. The cover is fitted to the pipe bowl by merely compressing the pushes (1 so that the grips a can enter the interior of the pipe bowl. The spring f holds the grips in the adjusted position in the bowl and prevents the cover falling off.

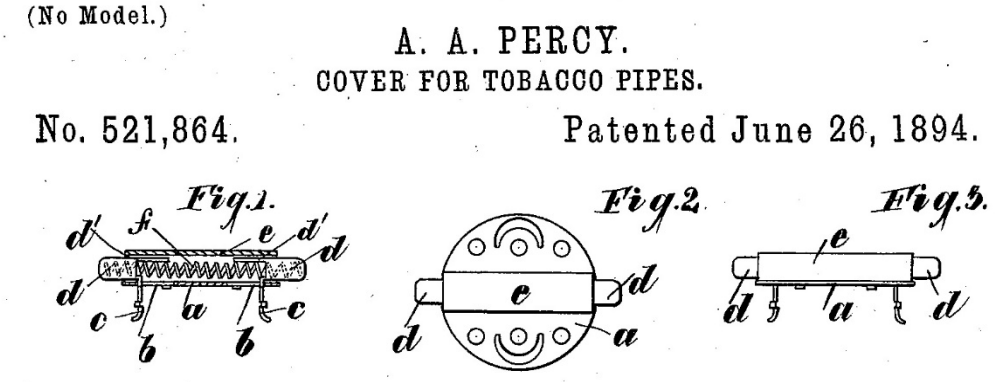


Plate 14: A. A. Percy Patent No. 521,864 (http://www.google.co.uk/patents/US521864).

Nozzle or Pipe

One complete copper alloy object weighing 21 g and measuring 72 mm in length was found in context (114). The item was tentatively identified as a nozzle or stretch of pipe and dated to the post-medieval period on the basis of its general aspect and manufacturing details.

Unidentified Object (SF 139)

Two very small fragments of copper alloy sheet, of a combined weight of 0.1 gr, were found in context (183). Function and date of the items remain undetermined due to their extremely fragmentary state.

6.4.5 Lead

Three lead objects, with a total weight of 11.2 gr, were found in two individual contexts.

Window Lead (SF 27)

A single fragment of cast lead was found in context (208). The item, weighing 7.4 gr and measuring 45 mm in length and 7 mm in width, was positively identified as a window lead profile. The object profile shows partially cut-out flanges typically associated with medieval stained glass windows (Strobl 2002).

Decorative element

Two small fragments of cast lead, weighing 3.8 gr, were collected from context (567) associated with Sk90. The two objects show a similar Y-shaped form, and are made of a thin (2 mm in thickness) lead strip with a T-shaped section, possibly for fitting on a different material, such as wood.

The items are too fragmentary to be positively identified; a function as decorative elements can be tentatively suggested.

6.4.6 Iron

A collection of 159 iron objects, of a combined weight of 2581.6 gr, was found in 54 different contexts. The entirety of the assemblage is poorly preserved and severely oxidised, therefore only limited observations were possible.

128 of the iron items were positively identified as fasteners; the largest part (101 examples) of the collection was recovered in connection with human burials. A group of 17 cast iron fittings was also found in connection with a single inhumation, and identified as a set of burial casket mounts.

With the exception of a single fragment found in context (111) and tentatively identified as a fitting element, the function of the remaining 5 iron items rests undetermined, due to the very poor state of preservation of the objects.

Nails

Iron nails are among the simplest and most common objects produced blacksmiths in medieval times; simple forms, like general purpose nails, were used in the construction of all types of wooden structures and objects. In most cases metal nails are the only remaining record of the original wooden object (Zori 2006); particularly in the case of coffins, nails found *in situ* can indicate the presence and shape of the object even in absence of traces of wood.

With the exception of 3 examples from post-medieval contexts, showing the round cross-section typical of nails produced after from the 1880s, all of the nails were hand-wrought, with square as well as rectangular shaft cross-section. Head types are extremely variable, comprising T- and L-heads, as well as rose and round flat heads. The great variations in dimensions and general appearance of the nails confirms that the assemblage from Littlemore was almost exclusively handmade.

Coffin Nails

Table 32: Iron coffin nails

Skeleton	Context	Context type	No. of items	Coffin part			
				Head piece	Right side panel	Foot piece	Left side panel
Sk1	144	Grave backfill	1				
Sk5	124	Grave backfill	1				
Sk12	240	Grave backfill	1				
Sk22	320	Grave backfill	1				
Sk41	258	Coffin	6	x			x
Sk45	466	Grave backfill	2				
Sk46	476	Grave backfill	1				
Sk49	520	Grave backfill	1				
Sk50	522	Grave backfill	2				
Sk56	586	Grave backfill	5				
	588	Coffin	8		x		x
Sk57	590	Grave backfill	2				
	598	Coffin	2		x		
Sk58	596	Grave backfill	1				
Sk59	601	Coffin	9	x	x	X	x
Sk64	628	Coffin	6	x	x	X	x
Sk68	637	Grave backfill	10				
	638	Coffin	6	x	x	x	
Sk77	684	Grave backfill	1				
Sk79	689	Coffin	8	x		x	x
Sk82	724	Coffin	7		x		x
Sk84	741	Grave backfill	1				
Sk85	743	Grave backfill	1				
Sk88	757	Coffin	17	x	x		x
Sk90	567	Grave backfill	1				

101 of the examples from Littlemore were recovered in association with 22 different burials. Although dimensions and manufacturing details vary (appendix) and the advanced corrosion of the objects allowed only limited observation, all of the nails found in connection with inhumations were tentatively identified as general purpose nails and dated between the 13th

and 16th centuries. The only exception is the possible staple ” 164 found in connection with Sk50.

In 11 cases, a single nail was found in the grave backfill; the absence of any trace of black organic staining indicating the decaying of wooden planks only allows a tentative identification of these examples as originally belonging to a coffin. In these cases, it is possible that the coffin planks were held together by wooden pegs or carpentry joints, with a limited number of nails used only to secure the lid (Boston 2009, 172).

The remaining 11 burials had a larger number of nails, mostly found *in situ*, varying from a minimum of 4 (Sk57) to a maximum of 17 (Sk88); Sk57 and Sk59 preserved traces of degraded wood staining as well as nails. 8 of the identified coffins had at least one nail bearing traces of mineralised wood.

Other Nails

The remaining 26 nails were collected from14 different contexts, including pits, post-holes, wall foundations and robber’s trenches.

All of the identified nail types were commonly used in carpentry and masonry: the largest part (16 examples, or 61%) of the group is composed of a variety of general purpose nails; 3 roof clamps and 3 floor brads were also identified.

Table 33: Iron nails

Context	Context type	No. of items	Type	Context date range
100	Layer	1	Roof clamp	19th C
		3	General purpose	
		1	Unidentified	
101	Layer	1	Floor brad	15th C
		1	General purpose	
107	Pit	2	General purpose	Post-medieval
159	Pit	1	Roof clamp	17th C
		3	General purpose	
171	Robber’s trench	2	General purpose	
177	Pit	1	General purpose	Post-medieval
217	Wall foundation	1	Lath/ferrier’s nail	Post-medieval
373	Pit	2	General purpose	13th C
461	Modern feature	1	Brag	Post-medieval
553	Pit	1	Rivet	Medieval
702	Pit	1	General purpose	
		1	Spring	
726	Layer	1	General purpose	Post-medieval
2000	Wall	1	Floor brad	Post-medieval
2052	Wall	1	Floor brad	Post-medieval

Bolt

A single bolt was found in context (337) the fill of post-medieval posthole [338]. The object weights 158.9 gr and is preserved to its complete length of 138 mm.

Casket Mounts

During the excavation of grave [127] for Sk27, a group of 43 cast iron fragments, of a combined weight of 700.6 gr, was found. The items were recovered as 13 different clusters, arranged along the four sides of the grave cut; in six cases (SF6, SF10, SF14, SF15 and SF17) 2 or more fragments were found to be conjoining. None of the objects collected was complete.
All of the items are cast iron strips or fairly regular dimensions, with a width ranging from a minimum of 27 to a maximum of 37 mm, and a thickness between 2 and 4 mm. The fragments are slightly as well as decisively curved, and are preserved to variable length, with a recorded maximum of 202 mm (SF17).

The objects were positively identified as a set of casket mounts, which would have been fitted onto a wooden casket which was not preserved. The very limited dimensions of the grave suggest it was occupied by an infant.

Table 34: Iron mounts for casket (256).

Context	Small Find no.	No. of fragments	Weight (gr)	Maximum length (mm)	Casket part
126	140	15	27.7	31	N/A
256	5	1	23.8	77	Right side panel
	6	3	51.9	90	
	7	1	23.2	35	Foot piece
	8	1	34.4	70	
	9	3	36	65	
	10	4	53.8	80	Left side panel
	11	2	66.7	123	
	12	1	17.2	36	
	13	2	74.7	74	Head piece
	14	3	78.9	160	
	15	1	29.5	64	
	16	4	64.3	105	
	17	2	118.5	202	Right side panel

Fitting Element

Context (111) yielded a solid cast iron object, largely fragmentary, weighing 130.5 gr. The item is trapezoidal, with an L-shaped profile preserving a complete corner. Although a possible function as fitting element was suggested, the object remains unidentified and undated.

Unidentified Objects

Three fragments of a very thin (1 mm) metal strip, possibly belonging to the same object, were found in context (177). The strip appears to be folded at a right angle along one of the sides. The poor state of preservation of the items prevents from identification or dating.

One cast iron item, weighing 25 gr and measuring 95 mm in length, was collected from feature [253]. The object is elongated, with one rounded terminal; a possible function as strap or hinge is tentatively suggested, although no piercing or nail holes were observed due to the advanced corrosion of the item.

Context (541) yielded a single iron object. The item, weighing 23 gr, is too fragmentary to be identified or dated.

Three severely oxidised iron objects weighing 65 gr were found in context (250). The lack of a proper recognizable shape suggests the items could possibly be severely damaged objects or clusters of smaller items like nails or iron scraps.

6.5 Animal Bone (*By Simona Denis and Stephen Yeates*)

An assemblage of 65 animal bone fragments, weighing 566.4g in total, was collected from 32 different contexts. The sample was extremely small and fragmentary so a basic analysis of the material was carried out in house at JMHS.

Table 35: Animal bones

Context	Identification	No. of Items	Weight (g)	Comments
U/S	?Cow/Horse	4	173	Cut marks
100	?Cow/Horse	1	22	
101	?Cow/Horse	2	55	
103	Unidentified	1	0.7	
111	?Cow/Horse	1	24	Cut marks
113	?Cow/Horse	6	96	Cut marks
159	?Sheep/Goat	1	10	Cut marks
161	?Chicken	3	2.8	
	?Cow/Horse	3	56.1	Cut marks
171	?Sheep/Goat	2	17	
177	?Sheep/Goat	2	14	
218	?Cow/Horse	4	43	
222	?Sheep/Goat	1	4	
234	?Sheep/Goat	2	11.2	
	?Chicken	1	1.5	
241	?Cow/Horse	1	41	
324	Undetermined	1	3	
347	?Cow/Horse	1	30	
354	?Sheep/Goat	2	18	
373	?Sheep/Goat	1	13	
392	?Cow/Horse	3	117	
403	?Cow/Horse	6	221	Cut marks
436	?Sheep/Goat	1	11	
541	?Sheep/Goat	2	15	
552	?Cow/Horse	1	61	
557	?Sheep/Goat	1	0.4	
677	?Cow/Horse	2	150	
688	?Cow/Horse	1	11	
	?Chicken	1	2.2	
699	?Sheep/Goat	1	1.47	
741	?Cow/Horse	1	8	
743	?Sheep/Goat	2	0.7	
748	?Sheep/Goat	1	8	
755	?Sheep/Goat	1	13	Cut marks
2000	?Cow/Horse	1	11	Cut marks

The state of preservation of the items is mediocre, and extremely fragmentary; the very limited size and the lack of diagnostic features prevented from any positive identification of the species. Undiagnostic mammal fragments were, when possible, divided by size range and attributed to small (sheep/goat) or large (cow/horse) mammals.

Due to the variable sizes and robustness of animal bones taphonomic factors may favour preservation of certain species, resulting in the under-representation of other, smaller animals (Kasumally 2002).

The most represented type is large mammal, with 38 fragments or 58% of the collection. Small mammals, tentatively identified as sheep/goat, represent 31% of the group, with 20 fragments.

A minor part (5 items, or 7%) of the assemblage was positively identified as avian, and tentatively attributed to chicken. 2 items remain unidentified due to their extremely limited size.

Possible butchering marks were observed on bone fragments recovered from 11 different contexts.

Discussion on date

Of the 32 contexts that contained bone fragments, nine of these were assigned to the medieval period. The remaining contexts were considered to be post-medieval, Imperial, Industrial or modern in date. Of the medieval contexts that contained animal bone one (677) was attributed to phase 1b (dated 1216-1245), two contexts (552, 699) from phase 2a (dated 1245-1247), one context (755) from phase 2b (dated 1247-1300), two contexts (403, 688) from phase 3b (dated 1247-1427), one context (741) from phase 4a (dated 1247-1427), and two contexts (222, 743) from phase 4c (dated 1280-1427). In all of these cases the context concerned are grave backfills, thus it is suggested that these deposits contain animal bone debris that comes from archaeological remains that pre-date the monastery and are here considered to be probably Roman in date. In these contexts there were a total of 15 animal bone fragments, which represents 23.07% of the bone recovered. This bone material is unlikely to inform us about the dietary regime of the nuns at Littlemore, which was criticised in a visitation to the monastery.

Of the remaining animal bone the majority is of a post-medieval origin, and this can probably be considered to have been deposited in *situ*. Seven contexts (103, 218, 234, 354, 436, 557) where attributed to phase 5 (1525-1722), two contexts (159, 171) to phase 6a (1525-1722) and three contexts (373, 392, 748). These contexts contained 21 bone fragments which formed 32.3% of the animal bone.

Of the remaining bone that was part of contexts that were phased it is apparent that one context (177) belonged to phase 8 (1876-1899) a late imperial context and that the other phases were of a 20th century origin. Phase 9 (1899-1913) contained one context (200), and phase 10 (20th century) contained four contexts (100, 101, 161, 347). This is indicative of some 13 bones being recovered from these late contexts, representing 20% of the material recovered. It is probable that much of this may also be residual in origin.

It is suggested here that the animal bone remains recovered from Littlemore Priory are unlikely to be off any help in contributing to the dietary analysis of the skeletons from the nunnery, as all of the medieval contexts that bone was recovered from was grave backfill. As none of the bone has been identified as a funeral offering, which is extremely unlikely in a Christian context, it is considered that the material here is all to be classed as residual from an

earlier phase of activity on the site. As Roman material was recovered in the Paddock that adjoins The Priory site it is considered that this material is redeposited Roman remains. It should be noted that on the Priory site there was much Roman pottery recovered, all or most of which was considered to be residual as no Roman features were noted, only a layer that was considered to be a Roman plough soil.

The post-medieval animal bone remains and the 19th and 20th century deposits are all to late in their deposition to have anything to contribute to the remains of the dietary regime of the nuns and others recovered from the Littlemore Cemetery, the period of use for which can be dated 1216 to 1524. The animal bone samples are extremely small and fragmentary thus the current analysis has been done in house.

7 DISCUSSION (*by Stephen Yeates and Paul Murray*)

The excavations and building recording that have been carried out were as part of a mitigation strategy for the development of a hotel alongside the old priory building. The main excavations took place between April and December 2015. The archaeological investigations at Littlemore Priory have enabled an investigation into the site of a small medieval nunnery of the Benedictine order. The surviving building has been identified as part of the dormitory buildings that are considered to have at least a 15th century origin, as there are indications that they were rebuilt or refurbished in or after 1447. The east range exists as a two story building, with the nun's dormitory likely to have been on the first floor with other rooms probably occupying the ground floor. It is assumed the cloister is located to the west of the east range. This building is a listed structure, which indicates that the structure and the priory site are considered to be nationally important.

The excavations have produced artefacts that imply that there was prehistoric and Roman activity in the area, although no features apart from a possible soil horizon were noted as being associated with these periods. The neighbouring Paddock that was excavated by the East Oxford Archaeology Group uncovered Roman material on the adjacent land.

Church Development and Design

Activity on the site of the church commenced in the high medieval period when a nunnery was established by Robert de Sandford. He is known to have come of age in 1111 and subsequently the initial priory church is considered to have been established in some form by the end of King Stephen's reign (1135-1154). The church was dedicated to SS. Mary and Nicholas. Due to the nature of the robbing it is difficult to fully appreciate the phasing of the building, but there are certain features that are apparent that may help in this matter. The initial building is considered to have consisted of a choir, crossing or retro-choir and nave. The remains of two buttresses and a small section of foundation survive on the north and south sides of the choir. Foundations relating to the north and west wall of the north transept also survive, revealing the foundations were constructed from two layers of un-bonded limestone, the lower pitched vertically and the upper horizontally. It is difficult from what survives to fully appreciate the full extent of the nave at this time and whether it was completed, as financial resources, and income appear to be a persistent problem for the nunnery. The choir from the shape of the later robber trench on the plan appears to have a clasping buttress on the northeast corner, such features are associated with Norman architecture that was in vogue from 1066 to 1175. It is likely that the Norman choir and presumably crossing survived in some format, although it is feasible that later windows and arches could be inserted into this structure. The line of the nave as planned appears to have a slight deviation along its course. This raises a number of issues on the construction of the nave; was this started and initially left unfinished, or was it completed in the Norman period and then altered.

As no pictures survive of the superstructure of this part of the building it is difficult to envisage what the Norman parts of the structure looked like. However there are some descriptions and assertions that could be made of the building from post-medieval or Georgian antiquaries. If, as seems likely, the east end was part of the 12th century structure, it either had one or three lancet Norman widows on its east end, being flanked by what would seem to be corner clasping buttresses. A reference to the stables in 1722 noted that the stable located to the north of the choir was located by a tower and chapter house. For this to be the

case we have to envisage that there was a central tower above the crossing or retro-choir. The central tower would also be of a Norman design, perhaps rather squat inform, a similar tower to that which survives at Tewkesbury Abbey, but on a more modest scale. Wall remains would indicate that the north side of the tower had its arch blocked, and that there were buttresses. This was not recognised in respect to the south arch (for the nave), or the south (chapel of some type).

Documentary evidence would indicate that a major attempt was made to rebuild the church or complete the church 1245 to 1247. It is probably at this time that the nave was finished in its apparent form and that a western structure was added. Foundations relating to the west wall of the church also survive, revealing a similar construction method to the choir. The feature at the west end is considered to be a tower as supposed to a simple porch or west galilee chapel or narthex. On the northwest corner of this structure there appears to be part of an angle buttress. The angle buttress, like the clasping buttress, was a common component of a specific period of church building, mainly in the 13th century and is associated with Early English Gothic (1175-1275). It is thus the case that this feature would appear to indicate that the western part of the church was of a 13th century build or character. It can be recognised from butt joints that the north transept was added, probably at this time. The transept is unusual in that the walls on the east side extend outside the line of the church crossing. Though this design is evident in the plan of Abingdon Abbey (Tyack, Bradley et al. 2010, 100-103) it is not always the case. It has been usual to suggest that the chapter house was located off the cloisters, on the east side. This is conventional in most church arrangements, for example Gloucester Cathedral originally a Benedictine abbey (Verey and Brooks 2002, 395-403), however, the chapter house is noted as being by the stable in 1722. This could indicate that the chapter house was located either in the barn like building excavated to the north, and was in the north transept, or was located to the south of the retro-choir, and alongside the barn or stable that was attached to the north side of Minchery Farm. The south would be in the more conventional position, however, the former cannot be ruled out. A small cell was added on the east side of the north transept at this time. It is presumed at this time that the buildings to the south were added and that the nunnery took on a form that could be identified as a nunnery or priory. The walls running to the south of the nave have to be associated with the construction of either an aisle or more likely the cloisters. The bell casting pits at the base of the west tower, would indicate that this tower contained the belfry.

This church plan clearly indicates that the structure was more complex than had previously been considered (Fig. 42), which in some respect counteracts later statements concerning the poverty of the nuns and the house to which they belonged. The main axis of the church in the mid-13th century contained a choir in the east, a central retro-choir located under a lantern or squat tower, a nave, and a west bell tower. An irregular north transept was added. There was a chapel or chapter house constructed to the south of the retro-choir or central tower. This plan is evident from Norman period churches, sometimes being reworked over time.

The design is evident with such churches as Ely Cathedral, that has a large west tower and a more central and ornate lantern over the crossing (Bradley and Pevsner 2014, 480-515). The building at Ely was a Norman construction that was started in 1109 and completed by c. 1190. This development included the west tower and west crossing. The Norman apse and crossing were taken down in the 13th century and construction on a rebuild began in 1234. This thus means that Ely probably started off as a 12th century structure with a tower on the crossing and at the west end, and that the 13th century alterations enabled this basic design to be kept, but significantly altered as the octagonal lantern was added. Hereford Cathedral is

also known to have had a central tower, and also a single western tower (Brooks and Pevsner 2012, 270-306) that fell in 1786 and was replaced with the more standard conventional front that is evident now dated 1902-8. Prints show that the base of the tower was of a Norman origin and contained much blank arcading, which was added to in the 14th century. The current central tower is of an early 14th century date, being started in 1303. However, the underlying core of the Cathedral is Norman Romanesque architecture (Morris 2000, 203-240), which implies that the two tower design was part of the concept for the church from its construction 1107-1148. Both of these churches have a Norman or late 11th to 12th century origin. Perhaps, more significant than any of these churches, was the now lost abbey at Osney, which has various pictorial drawings surviving of its superstructure. These images show that the largest abbey in the Oxford area had a similar design to those already described in that the main axis of the church contained a choir, a central crossing under a squat tower, a nave and a large western bell tower that originally housed the Tom bell now at Christchurch College (Sherwood and Pevsner 1974, 334). The church at Osney was established in 1129, and considering the manorial and church holdings that it had at its disposal it is unlikely that this church was left uncompleted at any time. Though it is possible to see that Osney Abbey uses a recognisable plan, the design is less frequent than most. It is probably the design at Osney that influenced that at Littlemore. Thus Littlemore Priory architecturally appears to have been envisaged as a smaller church, of a female house, but with the grand designs of Osney.

A similar church design is recognized in the current form of Saint Mary and Saint Thomas of Canterbury at Wymondham in Norfolk (Pevsner and Wilson 2002, 792-798). This abbey appears to have a tower over the crossing, which acts as a more decorative lantern and the large west tower that contains the belfry. Here, however, excavations have suggested an unusual development of the church. A Norman church was built 1107-c. 1200 that is considered to have had a conventional Benedictine design: crossing, choir, transepts, chapels, nave, aisles and two west towers. Excavations have suggested that the two tower arrangement of the church developed from the late 14th to the late 15th century when the church took on its two tower design. This implies that although, Wymondham Abbey has a current design to the church that is evident in plan at Littlemore, it did not reach this design until after the mid-13th century when Littlemore had already obtained this form.

The eventual church design is evidently more complex than was envisaged by Pantin (1970), and as such one should consider that the 13th century revenue stream for finishing this construction must have been more substantial than the financial supply in the late 15th and early 16th century. Though comparisons can be made with Ely, Hereford, both of these the location of Norman cathedrals, it has to be the design of Osney Abbey locally that had the largest influence on the design of Littlemore Priory church.

The latest phase of activity on the church was the construction of a northeast chapel. Documentary evidence would indicate that this was before 1427-8 when the will of a Thomas Mokking described the following features *"the chapel of SS. Peter and Paul and left money for paving said chapel and chapel of The Holy Trinity, the retro choir, the chapter house, and the cloister; for the repair of the lavatorium in the cloister. Also oil for lamps before St. Lawrence and the high alter"*. If the floor tiles are considered from the site, then presumably the evidence would probably indicate a construction date about 1300 or thereafter. Decorated and glazed floor tiles account for the majority (60) of the small finds; which were almost exclusively Wessex stabbed tiles, dated between 1270 and 1330. On present evidence it is not apparent that there ever was a north or south aisle to the nave.

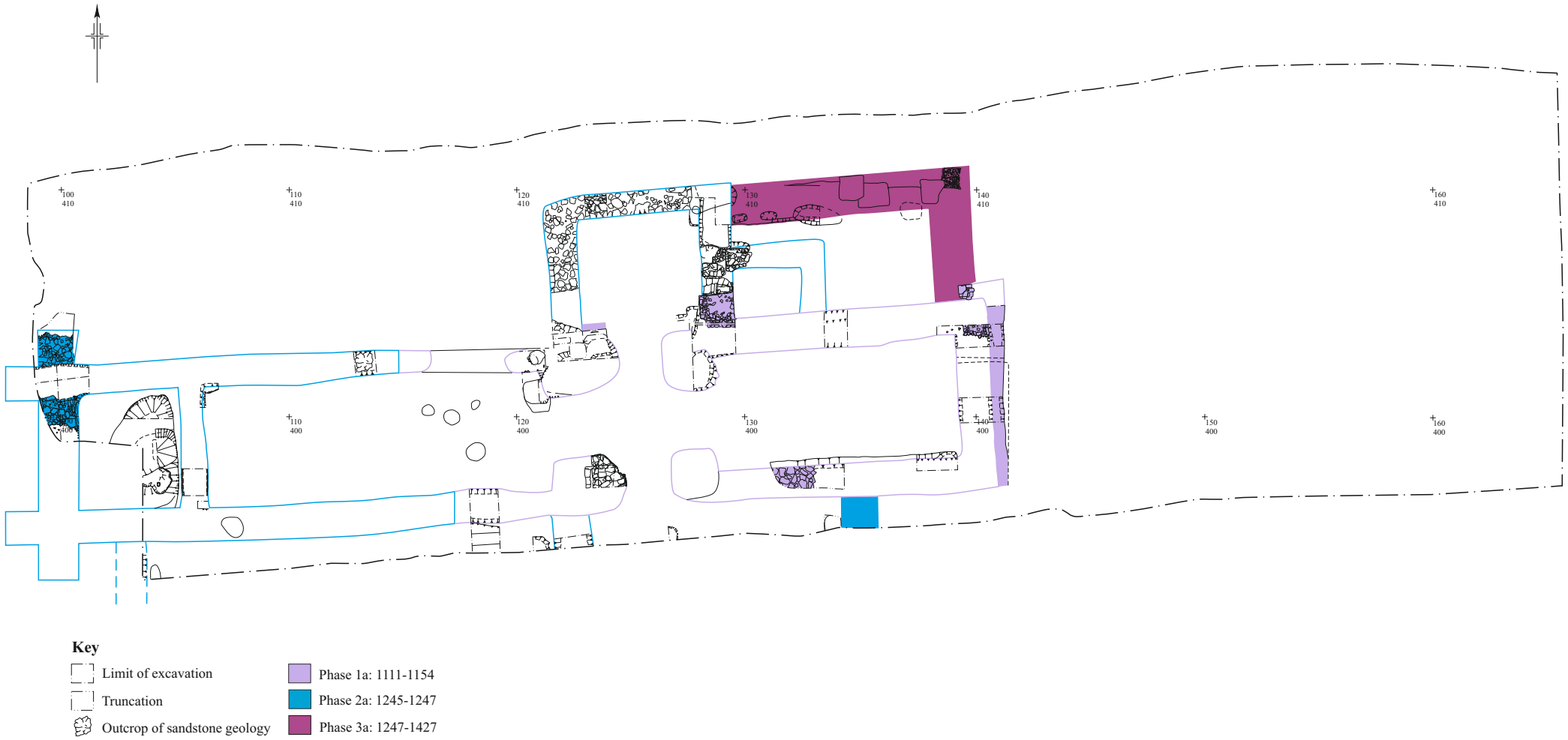


Figure 42: Church phases

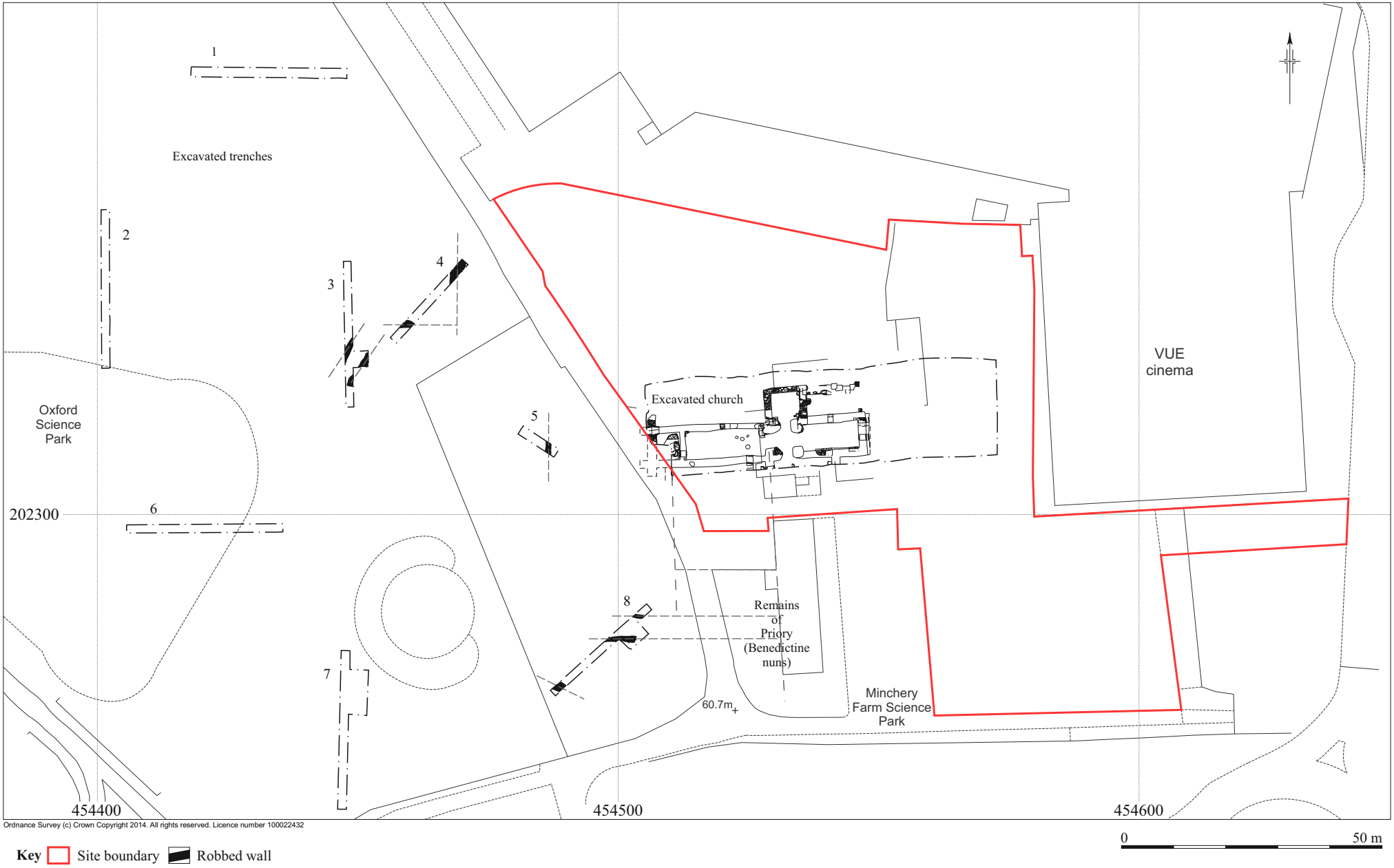


Figure 43: Priory complex

The design of the Priory Church may be now known, but the exact design of the outbuildings of the priory church are not known (Fig. 43). The evaluation carried out on the Paddock by JMHS, may provide some information as to where certain wall lines were located. It does not, however, fill in all the locations of walls missing in the southwest and west part of the priory church. The location of the church was detected further north than had previously been considered, this thus meant that there was some form of irregularity between the Farmhouse building and the church and thus the cloister area that would be produced. Normally the size of the nave of the church determines the size of the cloister, and this often, though not always has a square shape. What can be determined about the plan of the church is that there probably was a south transept or chapel and that it occupied part of the space between the church and the current surviving building. The cloister probably was of a roughly square shape, which means that the dormitory only partially bordered the cloister. A square cloister would also indicate that the western projection of the Minchery Farmhouse building indicates where the south range of the cloister was located.

Three of the trenches in the Paddock (Trenches 4, 5 and 8) have wall lines that run in the same orientation as the walls of the church and the dormitory. This implies that these walls mark in some way the outer walls of the priory complex. With the information available at present it is not possible to fill in the detail of the shape. With additional information from the East Oxford Archaeology Group it is hoped that it would be possible to achieve a better plan. Trenches 8 and 3 also had the remains of wall lines, but these appear to be associated with structures that were not placed on the same orientation as the church and cloister complex. Such arrangements are known at monastic complexes where the differently orientated structures are located beyond a culverted stream or a drain which provides a water flow that carried water away from the lavatorium.

The surviving Priory building (the dormitory) is known from a visitation to have been in a state of disrepair. This event is dated to 1445 and the construction or reconstruction date of the Dormitory to about 1447.

It is apparent that the elaborate design of the church and priory, would indicate that the sisters had access to a greater revenue stream than they are generally perceived as having. However, it is perhaps noting that some of this revenue in the mid-13th century and in the 15th century was perhaps associated with outside influences and access to revenues that they are granted for a short period of time.

Holdings of Littlemore

The holdings of a medieval priory should be collated in a Cartulary, a document that was intended to demonstrate and support the individual grants of land and property. There is no complete surviving account of this and thus it is the case that much of this has to be reconstructed from other sources. Historically it is known that there were a number of holdings associated with Littlemore Priory, however, these were never very substantial. The monastery appears to have a series of groups of holdings, which included pieces of land, halls in Oxford, and the appropriation of churches. Though the Priory was associated with the manor of Sandford, it does not appear to have fully held this but appears to have been subservient to the Sandford family that held the manor. Sandford Manor was in its earliest history held by Abingdon Abbey, and later becomes granted to the Knight Templars. Thus one could argue that the Benedictine Nunnery at Littlemore initially operated as a cell of

Abingdon and then operated as a cell to the Templars Preceptory, though the cross order association is unusual.

The land holdings included that at Cherley on which the monastery was established. There are indications of an associated wood at Littlemore, which presumably is also part of the land holdings of Cherley. A later account of the Priory holdings by Hearne indicates that they also held Ladnum Acre, but it is not determined if this was part of the original holdings at Cherley or a later grant. The 1819 Inclosure Act appears to indicate that Loddenham Fielde in 1605, as identified on a Corpus Christi map, lies in the later parish of Littlemore (Gelling 1953. i.180). The name is interesting as Lodden is the recognised ancient river-name (Gelling 1973, i. 13), and this this could contain the ancient name of the Littlemore Brook. From c 1232 there are indications that the Priory held land at Garsington. A later account of the Priory holdings, provided by the surviving documentations of Mr Powell, indicates that the holding in Garsington was at a place called Hawling Close. The name Hawling Leys or Hawlings Close is recorded at Garsington, the earliest forms of the name indicate that the earliest forms of the name *Hawenildelese* of 1278-9, contained the component parts **haga**, **h(i)elde** and **læs** (Gelling 1953, i.175). The first component of this name **haga** indicates an enclosure bank of a hunting park. Hawling Leys was located on a 17th century map adjacent to the Sandford parish boundary between the Northfield Brook and the Sandford Brake Sub Station (VCH 1957, 134-156). There was further lands held by the Prioress of Littlemore noted in 1279, which had been obtained from the Knights Choche and Sumers, the former giving pasture land and the latter 10 acres (VCH 1957, 134-156). In 1247 there was a discussion of tithes in the parish of Saint Michael South at Stockwell. The name Stockwell appears to be associated with the site of Worcester College (Gelling 1953, i.36), and also the Plain (Gelling 1953, i.24), neither of these locations would appear to be in Saint Michael South. This may be an earlier name for Christchurch Meadow. There was also an account of land being rented out in the parish of Saint Thomas the Martyr. There was also a holding at Minchin Court in the parish of Stanton Saint John in 1472. These landholdings, presumably covered specific hides that were rented out, none of them represents the income from a full manor.

There were a series of medieval halls that Littlemore had possession of also. From 1180 there is an indication that a hall was owned in the parish of Saint Michael South, this would presumably have been located on the site of Christchurch. From 1259 there are indications that properties are held in the parishes of All Saints and Saint Peter in the East, some 14th and 15th century documents indicate that the hall in Saint Peter in the East was that called Sheld Hall. Two further properties were held in the parish of Saint Mary the Virgin, one in Cat Street, known about from the mid-13th century. The other was Paschalle that is known about from 1303. In the 13th century it is known not to have been a property of the Priory. In 1339 there was a further property noted in Saint Peter-le-Bailey. These properties again would have provided some income, but again unsubstantial income. Hearne also provides later indications that the Priory also held a tenement called Swadling's in the village of Kennington.

The other holdings that are known about are the churches that were appropriated. These include the church at Sandford-on-Thames, which they appropriated in 1220. The church at Woodperry, an extremely small parish, had been appropriated by 1296. The Priory was accused of neglecting services in the church of Woodperry. In c 1220 there was a dispute over the appropriation of the church of Puttenham. The identification of this church s difficult, as the name was used for that of a Surrey parish and also a Hertfordshire parish, neither of histories as produced by the VCH make reference to any interest from Littlemore

Priory. The holding must be considered either short lived or Puttenham was the name of a manor or church that has been altered. The appropriation of the church meant that there was an entitlement for the Priory to control the church land, have access to the tithes and oblations to the church, and also perhaps more significantly access to its burial rights. Certain amounts of revenue came from these manors. However, would this be substantial enough to construct the church and Priory buildings at Littlemore.

The Cartulary of Littlemore Priory does not survive in the same format as a number of other Cartularies in the area, this may occur as a result of the holdings of Littlemore being split up amongst the Oxford colleges and other parties or simply by chance. Littlemore Priory's holdings are thus known from attempts to reconstruct the Cartulary from other surviving sources. In contrast to Littlemore Priory, which always appears to be a subservient church, as part of the Manor of Sandford. This was unlike the other Benedictine Nunnery that lay outside Oxford at Godstow. The abbey at Godstow appears to have been better support, and acquired more independence within the order.

Godstow Abbey was founded at an earlier date than Littlemore Priory in about c. 1180 (Amt 2014, xix-xx), by Ediva Launceleve of Winchester, a family that was based in the Kingsclere part of Hampshire. Patronage of the abbey appears to have been taken over by the Saint Valéry family and also obtained gifts from Henry II and his mother Empress Matilda. This latter association at Godstow may play into some of the early post-medieval interpretations of Littlemore Priory history, although incorrectly. In the immediate discussion of Littlemore and Godstow, though both are Benedictine Nunneries, it is apparent that the address of the senior occupant and the description of the site that Godstow is not comparable in that it is an abbey while Littlemore is a priory. It is apparent that major Benedictine monasteries such as Tewkesbury, held subordinate monastic foundations such as Deerhurst Priory, which may have originated as an early minster church; as Deerhurst did. In this case Deerhurst's holdings are treated as holdings of the main abbey.

The apparent holdings of Littlemore have been mentioned, a discussion of the holdings of Godstow Abbey are far more excessive, one because a Cartulary survives, and the other because they accumulated these holdings from having a greater status. The Godstow Cartulary enables the identification of some hundred holdings, which were mainly focused in Oxfordshire, but were also evident in Gloucestershire, Wiltshire, Berkshire, Hampshire, and Buckinghamshire, and to a lesser extent in Somerset, Dorset, Sussex, Surrey, Kent, Middlesex, Northamptonshire, Worcestershire, Lincolnshire and at York (Amt 2014, map of estates). These estates varied as manors, farm estates within manors, and tenements and halls. The extent of these holdings thus implies a greater status for the abbey, as opposed to the priory.

With the title and holdings, Godstow Abbey, had greater access to wealth from soul-scot. This increased status of the abbey at Godstow, probably also resulted in the burial at the abbey of Rosamund Clifford, the mistress of Henry II, and thus his interest in patronage of the abbey. Rosamund died in about 1175 (Amt 2014, xxviii). The significance of a specific burial in a medieval abbey is exemplified by that of Edward II at Gloucester Abbey in 1327, which led to the reconstruction of the whole east end of the church in a Gothic Perpendicular style (Verey and Brooks 2002, 395-403). The major building phase at Littlemore commenced 1245-47, but there were no indications that this occurred due to the deposition of a significant individual like Rosamund Clifford or Edward II.

These various relationships of abbeys to priories and the consequence of land holdings all have to be considered. As a priory one has to consider if Littlemore Priory was a cell of another monastery. Here we should note that Littlemore Priory was founded by Robert de Sandford, who historically was a knight of the Benedictine Abbey at Abingdon. There is thus the possibility that Littlemore Priory as it was part of the Benedictine order may always have been considered a cell to that Abbey.

Perhaps of some significance is the grant of the Manor of Sandford to the Knights Templars in 1239 (Leys 1938), an act that led to the reorganisation of the Templar holdings in Oxfordshire. The site of the Preceptory was moved from Temple Cowley to Sandford-on-Thames, and it was after this change the Priory was granted an indulgence to obtain further revenue for the construction of the Priory buildings. As a part of the Manor of Sandford there also appears to be an association with the Preceptory at Sandford, however, as this is a different order it is possible to question that the priory was a cell of the Templar Preceptory. The order was disbanded in 1312 and the holdings granted to the Knights Hospitallers.

Burial analysis and waste assemblage (*By Paul Murray and Stephen Yeates*)

A total of 92 burials were excavated, with a further 6 burials identified, but preservation in-situ as they were not impacted by the development.

The majority of the burials, some 52, were confined to a small area outside of the church, directly east of the choir, where up to seven phases were identified. This area was particularly dense in burials with frequent intercutting graves and the resultant quantities of charnel. These burials are likely to represent the laity, and a general desire to be buried as close to the religious heart of the church as possible. Twenty five burials were interred within the church itself. Eleven burials, broadly in a row, were interred at the west end of the choir, including a neonate interred in a casket. Five burials were located within the crossing, including a female aged 45+ who was interred in a well constructed limestone cist, the foot of which was located at the exact centre of the crossing. Four burials, again broadly in a row were located towards the west end of the nave; interestingly, one of these graves contained the remains of a young female (19-25) buried in a prone position. This was perhaps a penitential act to atone for their sins or the sins of their families. Her lower legs had been truncated by the later internment of an infant (6 months +). The north transept, likely to have been a chapel or chapter house, contained seven burials. The small chapel contained two intercutting burials, the earliest of which is likely to be contemporary with the chapel. Other graves include a single grave to the south of the nave, presumed to be the cloister, and three graves to the south of the choir. There did not appear to be any significant correlation between the age and sex of the buried individual and their location within the church. Burials within the church are likely to represent wealthy or eminent individuals (or their families), nuns and prioresses. Those buried outside of the church most likely represent the laity.

The age of the burials ranged from neonate to 60+ years. Older adults (45+ years) account for the majority of the burials, some 32, with nine estimated to be 60+ years. Adults (16-40 years) account for 23 of the burials. Children (3-10 years) account for 11 of the burials. Young adults (18-28 years) and mature adults (25-45 years) account for 16 (8 in each group) of the burials. Prime adults (25-35 years) account for four of the burials. Adolescences (8-16 years) account for four of the burials. A single neonate was excavated from the south side of the choir and an infant was excavated from the area to the east of the choir.

Perhaps as expected females make up the majority of the burials, at 35, with males accounting for 28; with the remainder (29) being indeterminate.

Eleven of the burials were interred within coffins. Three of the graves had been earth cut with head niches, whilst a single grave interred at the centre of the crossing was buried in a constructed stone coffin (cist) with a head niche. A further grave to the east of the choir had had roof tiles placed around the head to form a niche.

Copper alloy shroud pins were recovered from three burials, one producing seven pins. Other notable finds include a gold wire loop or ring placed on the abdomen of a female buried in the choir. A silver ring had been found on the hand of a burial within north transept.

The pathologies observed may suggest an infirmary or at least nursing element to the nunnery. Since some of these ailments were long term afflictions and debilitating. For example, there were two cases of developmental dysplasia of the hip in children. This would have resulted in reduced length of the leg and therefore a severe limp and perhaps needing the use of a crutch. These children, therefore would not have been able to partake in the usual activities and work of others of their age. A single burial possibly had leprosy, and if this diagnosis is correct, its presence in the cemetery suggests that perhaps they were being cared for by the community despite the social stigma associated with the disease. A burial to the east of the choir had a perimortem blunt force trauma to the skull, it showed no sign of healing and is, therefore, likely to have been the cause of death. There was a lack of indicators of metabolic disease, which suggests there was adequate nutrition and a reasonably healthy living environment.

Analysis of Talar and Tibial non-metric traits, bone alterations associated with the process of kneeling associated with the lower leg and ankles, show that the Littlemore Priory examples had far higher ratios than those as a control sample at Scalloway. Preliminary results indicate medial tibial facets to be present on 79% (15/19) of the Littlemore sample and lateral facets on 42.1% (8/19). This is in comparison to the Scalloway burials, which showed 11.6% (2/17) medial facets and 11.6% (2/17) lateral facets. Medial talar facets were evident on 80% (12/15) at Littlemore in comparison to Scalloway samples 6% (1/17). At Littlemore, lateral facets were evident on 73.3% (11/15) with no lateral facets noted on the Scalloway samples. The Littlemore samples showed 60% (9/15) featuring lateral tali extension in comparison to 17.8% (3/17) of the Scalloway samples. Bone markers indicative of repetitive hyperdorsiflexion of the foot reveal a squatting/kneeling practice to be practised more regularly in a population associated with a religious setting as compared to the samples buried at a village cemetery.

Isotope analysis was carried out on the skeletal remains from Littlemore as the role religious women played in an evolving society is directly linked to how they procured, processed and consumed food. The site has produced some very interesting preliminary results, suggestive of a good quality of life and a level of access to a variety of food sources. Some input of marine protein into the diet of the nuns, and not the lay community, could be evidence of the nuns of Littlemore adhering to the Benedictine stipulations (not to consume the flesh of quadrupeds). However, their isotope values demonstrate that they were not solely consumers of marine protein, and so this rule may have been followed intermittently.

Some analysis will be made that connects the medieval faunal remains found at the Paddock to those of the isotope analysis as carried out in this report. However, though an initial

discussion has taken place on the cross reference of data no information is yet available for the Paddock site.

No radiocarbon dates were carried out for the burials as there was considered little possibility of defining the age of the burials any closer than had been achieved through documentary sources and stratigraphic and find analysis.

Social upheaval

The latter part of the history of the priory at Littlemore appears to be a contradiction to the presumed wealth that helped to construct such an elaborate church in the 12th and 13th centuries. The Priory was part of Sandford Manor, and had appropriated the church, before the manor had been given to the Knights Templars. It is presumably during this time period that the church and many of the nunnery buildings were constructed. The priory may also be an unrecognised cell to a larger monastery, which has been endowed to a far greater extent. It is noticeable that the Manor at Sandford was held by a knight, a vessel to Abingdon Abbey.

A visitation carried out in 1445 describe the dormitory as "*so ruinous the nuns were afraid to sleep there*" and "*that the nuns were sleeping two to a bed*" with even the prioress having to share her bed. This statement is considered to indicate the reconstruction of the dormitory in the 15th century, although this was probably on 13th century foundations. After this the Priory becomes a allegedly becomes a focus for controversial activity, but there is also a political undertone to the unfolding events.

The priory certainly had a somewhat controversial later history, which appears to have been largely accepted in early monastic interpretation. Eileen Power in her book Medieval English Nunneries (1922) describes the priory as "*in such grave disorder that it might justly be described as one of the worst nunneries of which records survived*" and this was "*largely due to a particularly bad prioress, Katherine Wells*". The records of Bishop Atwater visitations in 1517 paint a scandalous picture, stating that Katherine had an illegitimate daughter who was still visited by the father, Richard Hewes, a priest from Kent. Also that she had ordered the five nuns under her to lie, and say all was well during the visitation. She is also accused of taking the property- pottes, pennes and candlesticks amongst other things- belonging to the monastery to provide a dowry for her daughter. Some months later, in 1518, the Bishop himself made a visitation, although things were as scandalous as ever with complaints that the prioress "*played and romped* (*luctando*)" with boys in the cloister and refused to be corrected. She was put in the stocks, although was soon rescued by three of the nuns who broke down the door, burnt the stocks and broke a window to escaped to friends where they remained for two or three weeks. Complaints from the nuns saying that they were punished for speaking the truth on the last visitation and that she had put one in the stocks without cause, and that she had hit another "*on the head with fists and feet, correcting her in an immoderate way*".

Two of the burials at the priory would support these claims of improper behavior by the nuns, this would be the prone burial (Skeleton 15) and also the young burial (Skeletons 16) that removed part of the prone burials legs. These two burials are indicative of improper activity, however, this concerns two burials out of a total of 92. There are some earlier references to inappropriate behavior, most noticeably the resignation of an abbot at Abingdon Abbey at the end of the 13th century. The infrequency in the deviant burials may suggest occasional episodes of deviation from Benedictine rules. If this is so one has to consider that even

though some elements of the early 16th century claims may be true, that there was a far more significant underlying political situation that concerned Cardinal Wolsey and his wishes to establish a college in Oxford.

The dissolution of the Priory allegedly occurred due to activities at the Priory that were perceived to be immoral in the eyes of the church. Such activities concerning gender relationships and abstinence from sexual activity must have provided impetus in the creation of the Protestant movement generally. At the Lutheran Diet of Augsberg it is apparent that priestly confession and the sexual activities of priests led to the development of a clergy that were allowed marriage. A similar development occurred with the Act of Supremacy in England and Wales which again led to the development of a priesthood that were allowed to marry. In respect to this there are other gender issues in that the development of Protestantism legitamised the sexual activities of male priests but it could be argued that this did not affect women in the same way.

Post-reformation

The initial robbing of the church probably occurred in a short period of time with the removal of glazed floor and roof tiles, sculptural pieces, and any other desirable objects being recycled. In the 16th century the church is estimated to have been 85-90% robbed of re-usable stone when the priory was converted into a farmhouse. Material from Littlemore Priory and the neighbouring Sandford Preceptory probably found their way to Cardinal College, which was established by Cardinal Wolsey and who had acquired the manor at Sandford, which included these two religious sites.

Architectural assessments suggest that the house was constructed *c*. 1600, but it should be noted in a will of 1592 that there is already reference to the house known as the Minchery Farm, and one could consider that the house was mainly constructed at the end of the 16th century. As the house and farm buildings evolved so the rubble of the medieval complex were removed.

Some further possible observations that could be made about the layout of the priory and how it impacted on the design of Minchery Farmhouse can be made. The projecting feature or wing on the west side of the building appears to be located in a position where the underlying foundations may be associated with the south side of the cloister buildings. If so the stairwell located in this appendage may have earlier origins.

The farm buildings that can be recognised on the northeast part of the excavation area, appear to have been constructed prior to 1722, which is the date at which the Hearne's illustration and description are dated. On the southeast side of the site there is evidence of a barn, which may have been an open fronted shed. To the north of this there is a yard. On the west side of the yard there was a barn orientated north to south and joining this at the north end there was a further open fronted barn orientated east to west. In the northwest part of the site the information is more fragmentary in that in 1722 a gatehouse is noted on the illustration.

On a general level it is possible to recognise from the illustration of 1722 that the range of buildings that are developing around the complex are associated with areas of the religious complex. The Minchery Farmhouse would appear to be located on the east range of the cloister buildings. The northeast barns were constructed around the east end of the church. Hearne draws a building that he refers to as the cart shed, which has to be located on or

alongside the buildings on the west side of the cloister, which presumably contained the lavatorium and under which must have run a culvert from Littlemore Brook.

The structures that survived in any form on the northwest side of the site would appear to be of a more recent origin in that they appear to be newer walls (late 19th or 20th century) in origin.

A full synthesis of all of the data has not been provided here, due to the urgency for the acquirement of the initial report. What is apparent is that the excavation will be seen not only as significant in the research strategy of South East Regional archaeology but also nationally. It is the case that the plans of very few minor nunneries are recognised nationally, and it is also the case that there are very few cemetery sites nationally that have been excavated to any great extent. These factors will thus have an important impact to these fields on a number of different levels.

Acknowledgments
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Historic Maps

CP/103/M/1 1767 Jefferys' Map

CH.XX/2 1797 Davis of Lewknor's map

O-138-09-M-1 1830

CH.XXIV/4 1850 Ordnance Survey Map

Oxon 39.12 1876 First Edition 1: 2,500

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Plan 9 · SK 1 · SK 2 · SK 3 · SK 4 · SK 5 · SK 6 · SK 7 · SK 9 · SK 10 · SK 11 · SK 12 · SK 13 · SK 14 · SK 15 · SK 16 · SK 18 · SK 20 · SK 21 · SK 22 · SK 23 · SK 24 · SK 25 · SK 26 · SK 27 · SK 28 · SK 30 · SK 31 · SK 33 · SK 34 · SK 35 · SK 36 · SK 37 · SK 38 · SK 39 · SK 40 · SK 41 · SK 42 · SK 43 · SK 44 · SK 45 · SK 46 · SK 47 · SK 48 · SK 49 · SK 50 · SK 51 · SK 52 · SK 53 · SK 54 · SK 55 · SK 56 · SK 57 · SK 58 · SK 59 · SK 60 · SK 61 · SK 62 · SK 63 · SK 64 · SK 65 · SK 66 · SK 67 · SK 68 · SK 69 · SK 70 · SK 71 · SK 72 · SK 73 · SK 74 · SK 75 · SK 76 · SK 77 · SK 78 · SK 79 · SK 80 · SK 82 · SK 83 · SK 84 · SK 85 · SK 86 · SK 87 · SK 88 · SK 89 · SK 90 · SK 91 · SK 92 · Plan 118

Service trench · Skull fragments · ? pelvis fragment · ? Leg fragment · R. hand · Charcoal

Scale of casket 0 1 m

0 2 m

Figure 44: Burials

APPENDIX A

Skeleton Catalogue

For illustrations see figure 44.

SK1. Age: (25-29) (Young adult) Sex: Female. Stature: 149.43 +-3.27cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all postcranial represented except fibulae and pubis, small hand and foot bones absent. Dental pathology: N/A. Non-metric traits: calcaneus facet double. Skeletal pathology: Sacrialisation of 5th lumbar vertebrae.

SK2. Age: (50-70) (Older adult) Sex: Female. Stature: 161.29 +-3.27cm (femur) Cranial index 77.24. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except pubis, distal phalanges, most spine, L clavicle, patellae, and facial bones. Dental pathology: Calculus (8/16) caries (2/16) abscess (2/12) hypoplasia (5/13) periodontal 14 (grade 4) Non-metric traits: calcaneal double facet left, infraorbital foramen. Skeletal pathology: Humeral enthesophytes. Cervical vertebrae 2 and 3 fused on right side.

SK3. Age: (Adult) Sex: ?male. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 0. Bones present: left humeral shaft, left ulna shaft, left lat clavicle and scapula, rib fragments, left tibia shaft, left MC1-3, right MTs. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Left humerus enthesophytes

SK4. Age: (Adult) Sex: ?female. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: Cervical, thoracic and lumbar spine. Right 5^{th} metacarpal, shaft mid femur unsided. Sacrum. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Thoracic and lumbar vertebrae osteophytes, Schmorl's nodes and TVs porosity on facets.

SK5. Age: (Adult) (Adult) Sex: Indeterminate. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 3. Bones present: Shafts of long bones represented, fragments of pelvis, some CV, TV and LV, rib fragments, right mandible. L and R Talus and calcaneus. Dental pathology: 1 tooth present, 1 lost ante mortem, hypoplasia (1/1) Non-metric traits: N/A. Skeletal pathology: N/A.

SK6. Age: (12-16) (adolescent) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: Left upper side only: cranium, mandible, humerus, radius, ulna, ribs, clavicle. Dental pathology: 3 adult teeth present, 2 sockets. Non-metric traits: N/A. Skeletal pathology: N/A.

SK7. Age: (Adult) (Adult) Sex: ?male. Stature: 173.62 +- 3.37 cm (Right tibia) Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: Left and right tibia and fibula, tarsals and metatarsals. Metacarpals and distal ulna, right. Femoral shaft ?right. Dental pathology: N/A. Non-metric traits: Calcaneal double facet. Skeletal pathology: Enthespohytes, calcaneum posterior spur strong. Tibial tuberosity and soleal crest strong and moderate. Healed fracture right distal fibula.

SK8. Age: (Adult) (Adult) Sex: Indeterminate. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: right tarsal and metatarsals only. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK9. Age: (5-6) (child) Sex: Undetermined. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: mandible, parietal, occipital, temporal, ribs, upper arm bones, lower vertebrae, pelvis (mostly right) Dental pathology: deciduous 11, 6 adult. Non-metric traits: N/A. Skeletal pathology: N/A.

SK10. Age: (3+) (child) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: lower arms shafts,1 right carpal, 2 metacarpal. Fragments of pelvis, femoral fragments. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK11. Age: (45+) (older adult) Sex: Female. Stature: 155.37 +-3.72 cm (femur) Preservation: completeness 50-75 %, Bone surface condition grade 1. Bones present: (found disarticulated) humerii, ulnae, lower ribs, pelvis (minus pubis) femorii, tibiae, fibulae, right foot. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Left fibula osteomyelitis, no cloacae, but small ident where possibly a healed one.

SK12. Age: (45+) (older adult) Sex: Female. Stature: 162.78 +-3.72 cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all post cranial except top cervical and lower sacrum. Dental pathology: N/A. Non-metric traits: Left femur third trochanter, exotosis In fossa and tibia squatting facet (L&R) Skeletal pathology: Femur enthesophtyes. Absent transverse process of Lumbar 2 and 3. Spinal osteophytes and Schmorl's nodes. Cervical OP and Porosity, Clavicle OP and PO.

SK13. Age: (Adult) (Adult) Sex: Indeterminate. Stature: Left Tibia 409 mm. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: Left and right tibia and fibula, tarsals and metatarsals. Distal right femur. Dental pathology: N/A. Non-metric traits: Calcaneal double facet. Skeletal pathology: Right knee OP. Left anf right tibia and fibula periostitis healed. L & R calcaneus enthesophytes.

SK14. Age: (45+) (older adult) Sex: Male. Stature: 181.33 +-4.05 cm (Left humerus) cranial index 73.29. Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: Upper half except right pelvis, sternum. Includes upper 2/3 left femur. Dental pathology: Calculus (7/14) caries (1/14) hypoplasia (3/8) periodontal (13/14) Non-metric traits: superior atlas facet double left side. Skeletal pathology: Enthesophytes humerus moderate, clavicle moderate, ulna, pelvis, femur faint. Joint porosity and osteophytes-sternoclavicular, humerus, glenoid, elbow, ulna, wrist radius, hip, pelvis. Vertebrae cervical body osteophytes and facets eburnation, IVD, thoracic Schmorl's nodes, lumbar osteophytes, left ilium fusion to sacrum. Left rib fracture, 1 shaft, 1 head.

SK15. Age: (19-25) (Young adult) Sex: Female. Stature: 156.75 +-4.45 cm (right humerus) Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: all superior half. Femur and below absent. Dental pathology: (28/28) calculus (8/28) hypoplasia (10/28) periodontal (2/28) grade 2. Non-metric traits: 1 large lambdoid ossicle right. Skeletal pathology: Left cribra oribtalia. Sinus small porosity, not new bone growth.

SK16. Age: (6 months +) (infant) Sex: Undetermined. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: Upper half and left femur. Except hands. Dental pathology: 9 deciduous, 4 M1 CoC. Non-metric traits: N/A. Skeletal pathology: N/A.

SK17. Age: (5-10 years) (child) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: upper ribs, left clavicle, scapulae fragments, humerii. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Cortical defect left clavicle rhomboid fossa.

SK18. Age: (50+) (older adult) Sex: male. Stature: 164.94 +-3.27cm (femur)Cranial indices 82.18. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except lower right arm and hand phalanges. Dental pathology: Calculus (21/21) caries (3/21) Antemortem (10) enamel hypoplasia (4/21) periodontal (22/22) grade 4. Non-metric traits: Left and right lower canine rotation. Exotosis trochanteric fossa left. Calcaneal double facet left and right. Parietal foramen absent. Skeletal pathology: Femur enthesophytes, calcaneal spur grade 3 enthesophytes. Left humerus and clavicle grade 1. Ossified haematoma left femur, osteoarthritis spine and sternoclavicularjoint, left knee and patella. DJD acromoclavicular, humerus glenoid, hip.

SK19. Age: (Adult) (Adult) Sex: ??female. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: cranium only. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK20. Age: (45+) (Older adult) Sex: ??male. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: cranium, left mandible, vertebrae, scapulae, left arm, fragments of right ilium. Fragments of ribs. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Slight enthesophytes left ulna. Lumbar vertebrae osteophytes.

SK21. Age: (Adult) (Adult) Sex: Indeterminate. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 2. Bones present: Fragments of scapulae, clavicles, rib, parietal. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK22. Age: (35-45) (mature adult) Sex: male. Stature: 162.32 +-3.27cm (femur) Preservation: completeness 75 + %, Bone surface condition grade 0. Bones present: cranium, right zygomatic and frontal fragment. Ribs, clavicles, thoracic and lumbar vertebrae, left arm and hand, right lower humerus and arm and hand. Pelvis minus pubis and sacrum. Femorii, patellae, upper right tibia and fibula, left tibia and fibula. No feet. Dental pathology: N/A. Non-metric traits: sagittal ossicle, lambdoid ossicles 4 left 1 right. Ossicle at lambda. Femoral plaque left. Skeletal pathology: Femur grade 2 enthesophytes. Clavicle grade 2 and 3 rhomboid fossa. Schmorl's nodes.

SK23. Age: (25-55) (mature adult) Sex: Female. Stature: 162.03 +-3.72 cm (femur) Preservation: completeness 50-75 %, Bone surface condition grade 1. Bones present: Lower half only, lumber vertebrae, right lower arm and hand, pelvis, legs and feet. Right tibia absent. Dental pathology: N/A. Non-metric traits: Femur third trochanter bilateral. Skeletal pathology: Enthesophytes femur gluteus max grade 1, left tibia soleal crest grade 1. Spondylolysis 5th lumbar vertebrae. Right 5th lumbar superior facet fracture across the center.

SK24. Age: (adult) (adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 3. Bones present: Fragment of ischium, ribs, right third metacarpal, distal fibula, right calcaneus. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK25. Age: (Adult) (Adult) Sex: Male?. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 0. Bones present: Lower half, legs from upper femoral shaft below. Right foot, not left. Hand phalanges. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Os trigonum right talus, possible gout right 1st MT. Left leg more enthesophytes than right.

SK26. Age: (35-45) (mature adult) Sex: Male. Stature: 163.75 +-3.27cm (femur right) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: Mostly lower half, ribs, distal fragments of humerii, fragments of radii & ulnae. Metacarpals and phalanges, pelvis, femorii, patellae, tibiae shaft fragments, fibula , metatarsals. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK27. No bone recovered

SK28. Age: (adult) (adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: femoral shaft only and distal fragments. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK29. Age: (45+) (Older adult) Sex: Female. Stature: 161.09 +-4.3 cm (Left ulna) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: Upper half mostly. Cranial fragments, mandible fragments, cervical vertebrae, clavicles, scapulae, humerii (minus heads) left radius and ulna, metacarpals. Left pelvis, left femoral head and upper shaft. Dental pathology: Calculus (1/1) 2 AMTL. Non-metric traits: 4 left lambdoid ossicles. Skeletal pathology: N/A.

SK30. Age: (4-7) (child) Sex: indeterminate. Stature: N/A. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except cranium, hand phalanges and feet. Dental pathology: 17/20, calculus 1/17. Non-metric traits: Skeletal pathology: 2 Left ribs articulate superior to inferior via an incomplete articulating bridge – developmental anomaly.

SK31. Age: (adult) (adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: Left mid and distal humerus, left ulna. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK32. Age: (35-45) (mature adult) Sex: Female. Stature: Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: right upper femur, right fragments of pelvis, lumbar and thoracic vertebrae, ribs, hand phalanges and metacarpal. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Osteophytosis lower thoracics left side 2-4 mm.

SK33. Age: (60+) (older adult) Sex: Male. Stature: N/A. 173.95 +-4.32 cm (Left ulna) Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except skull, upper cervical, sacrum, feet, patellae. Dental pathology: N/A. Non-metric traits: Left femur third trochanter, right calcaneus double facet. Skeletal pathology: Enthesophytes pelvis

grade 1, calcaneum posterior spur grade 1, left tibia soleal crest grade 1. Osteoarthritis left shoulder and right hip. Osteoarthritis spine, thoracic and lumbar. Osteoarthritis right mid thoracic facets. Osteophytosis vertebra. Bilateral tibia periostitis.

SK34. Age: (60+) (older adult) Sex: Female. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: Cranium, mandible, cervical, thoracic and lumbar vertebrae, clavicles, ribs, right scapula, humerus. Pelvis & femoral heads. Left distal rad and uln, metacarpals and phalanges. Dental pathology: 7/5. 2 AMTL. 1/7 calculus, 3/5 periodontal (grade 2) Non-metric traits: Skeletal pathology: Spinal osteoarthritis cervical vertebrae body. Left rib spur. Left distal ulna healed fracture (parry's) Pelvis ischial tuberosity enthesophytes grade 2. Arachnoid granulations right parietal (age-related)

SK35. Age: (45+) (Older adult) Sex: ?Male. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: Cranium, left facial bones and mandible. Right humerus, scapula fragment, upper radius and ulna. Right ribs. Lumbar vertebra. Dental pathology: 3/12. 10 AMTL. Calculus (1/3) 1/3 hyplopasia. Non-metric traits: N/A. Skeletal pathology: Enthespohytes right ulna olecranon grade 1 and right humerus bicipital groove grade 1. Osteophtosis lumbar spine. Right arm elbow joint osteophytosis. 5th Lumbar vertebrae spondylolysis. Possible leprosy, left maxilla much reduced in height. Left nasal margin very rounded smooth bone, apparent absorption.

SK36. Age: (60+) (older adult) Sex: Male. Stature: 165.65 +-3.27cm (femur right) Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: right pelvis (minus pubis) right femur, left mid and distal femur. Left and right proximal tibiae and fibulae. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Left and right tibiae upper shaft periostitis healed. Slight lipping right femoral acetabulum.

SK37. Age: (adult) (adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: upper cervical, right ribs, right mid shaft humerus. Right upper mid shaft tibia. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Enthesophytes tibia soleus and humerus deltoid. Osteoarthritis on cervical vertebrae facet, body porosity and osteophytes.

SK38. Age: (adult) (adult) Sex: ??male. Stature: 171.6 +- 3.37 cm (Left tibia) Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: left and right distal femorii. Left and right tibia and fibula, metatarsals and tarsals. Dental pathology: N/A. Non-metric traits: Left and right squatting facet tibia medial. Skeletal pathology: N/A.

SK39. Age: (adult) (adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: Right distal tibia and right fibula. Left and right feet. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK40. Age: (adult) (adult) Sex: ??Female. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: Right radius and ulna and metacarpals. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK41. Age: (45+) (older adult) Sex: Female. Stature: 167.84 +-4.45 cm (Left humerus) Cranial index 74.71. Preservation: completeness 75+ %, Bone surface condition grade 3. Bones present: all except sternum, distal wrist and hand. Dental pathology: 29/29. 1 AMTL. Calculus (1/29) caries (4/29) 4/27 hyplosplasia, 16 periodontal (grade 2) Non-metric traits:

Lambdoid 2 left ossicles. Left and right mastoid foramen exsutural. Skeletal pathology: Enthesophytes femoral grade 2, patella grade 3, humerus grade 2 and 1, calcaneum posterior spur grade 1. Vertebrae osteophytes and IVD, Schmorl's nodes. Osteophytes acetabulum bilateral.

SK42. Age: (9-13) (older child) Sex: Indeterminate. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: cranium, left and right hands. Left lower arm. Pelvis, sacrum. Legs and feet. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Cribra femora left and right femurs.

SK43. Age: (4-7) (child) Sex: Indeterminate. Stature: N/A. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all represented except right pelvis, left lower arm, hand and left foot, and lower vertebrae. Dental pathology: 22/14. Non-metric traits: N/A. Skeletal pathology: N/A.

SK44. Age: (45+) (older adult) Sex: Female. Stature: 168.69 +-4.24 cm (right radius) Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: Cranium, mandible, ribs, clavicles, right arm. Parts of left arm. Some left and right metacarpals and phalanges. Fragments of pelvis. Left and right femur upper half. Dental pathology: 3/7. 5 AMTL. Calculus (2/3) Non-metric traits: N/A. Skeletal pathology: right clavicle acromion porosity.

SK45. Age: (35-45) (mature adult) Sex: Female. Stature: 153.64 +-3.72cm (femur right) Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: Fragment of mandible. Vertebrae. Ribs. Clavicles. Left humerus. Right humerus, ulna, radius. Metacarpals and phalanges. Fragments of pelvis. Left and right femur. Left tibia proximal. Right tibia. Left and right fragments of fibula. Dental pathology: 6/4. Calculus (4/6) Slight crowding right lower I2/C1. Non-metric traits: N/A. Skeletal pathology: Grade 1 enthesophytes pelvis, femur, humerus. Vertebrae lumbar body osteophytes, IVD, Schmorl's nodes. Right distal ulna and radius eburnation – osteoarthritis.

SK46. Age: (Adult) (Adult) Sex: ?male. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: cranium fragment, zygomatic. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK47. Age: (3-3.5 years) (child) Sex: Undetermined. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 1. Bones present: all areas represented except skull and neck and shoulder. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK48. Age: (60+) (older adult) Sex: Male. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 1. Bones present: cranium, mandible and maxilla. Ribs, left clavicle, manubrium, left humerus, radius and ulna. Lumbar vertebrae, fragments of pelvis and sacrum. Right radius. Metacarpals. Proximal femurs. Dental pathology: 9/16. 9 AMTL. Calculus (9/9) 2 periodontal (grade 3) Non-metric traits: N/A. Skeletal pathology: Enthesophytes femur grade 1 and 2. vertebrae cervical, thoracic and lumbar body osteophytes, IVD and thoracic Schmorl's nodes. Lumbar body deep irregular depressions - extensive IVD. Wrist osteoarthritis, left and right metacarpal (hand) osteoarthritis. Osteophytes at acetabulum, radius elbow and clavicle.

SK49. Age: (45+) (older adult) Sex: male. Stature: 175.17 +-4.05 cm (Left humerus) Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: all upper half except sternum and pubis. Most of hands absent. Dental pathology: 22/24. 5 AMTL. Calculus (20/22) caries (3/22) 5/7 hyploplasia. Crowding upper incisors. Rotation upper left pm1. Non-metric traits: N/A. Skeletal pathology: Enthesophytes pelvis iliac crest grade 2. Crush fracture of lumbar vertebrae 5 with resultant osteophytosis of other vertebrae. Fusion of sacrum to pelvis.

SK50. Age: (15-24) (Young adult) Sex: Female. Stature: 156.35 +-3.72cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: cranium, clavicles, ribs, vertebrae represented. Left and right arms and hands. Fragmented pelvis. Left and right femurs. Left proximal tibia and fibula. Patellae. Dental pathology: 5/0. 1 caries. Heavy attrition to front teeth, but molar unworn. Non-metric traits: 1 lambdoid ossicle. Right humeral septal aperture. Skeletal pathology: Enthesophytes clavicle rhomboid fossa grade 3. Bilateral cribra femora. Osteomyelitis left fibula and tibia and right ulna. Right rib bifurcated.

SK51. Age: (25-35) (prime adult) Sex: ?male. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: right humerus and scapula, ribs, lower cervical and lumbar vertebrae. Sacrum, pelvis. Upper femurs. Left radius. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: 2 lumbar vertebrae body Schmorl's nodes.

SK52. Age: (6-10 years) (older child) Sex: Undetermined. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: cranium (except frontal) maxilla and mandible. Vertebrae and ribs. Left arm. Right clavicle, scapula and humerus. Pelvis. Femora. Dental pathology: 19/20. Calculus (2/20) Non-metric traits: N/A. Skeletal pathology: Developmental hip dysplasia left hip.

SK53. Age: (45+) (older adult) Sex: Male. Stature: N/A 80.55 cranial index. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: cranium, mandible. Clavicle, left scapula, cervical vertebrae, ribs. Dental pathology: 12/15. Calculus (9/12) caries (3/12) periodontal 7. Non-metric traits: Metopism. Lambdoid ossicle 3 left, 6 right. Asterionic bone right side. Skeletal pathology: Perimortem blunt force trauma left frontal bone.

SK54. Age: (adult) (adult) Sex: ?? female. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 1. Bones present: left and right tibia. Distal left femur. Right fibula and left proximal shaft fibula. Metatarsals, tarsals. Dental pathology: N/A. Non-metric traits: Calcaneal double facet left. Skeletal pathology: Right 1st metatarsal osteoarthritis.

SK55. Age: (8-13 years) (adolescent) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: distal femoral epiphyses, left and right tibia and fibula. Tarsals and metatarsals, phalanges. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A

SK56. Age: (30s-40s) (mature adult) Sex: ?male. Stature: 178.98 +-3.27cm (femur right) Preservation: completeness 25-50 %, Bone surface condition grade 3. Bones present: mandible. Clavicles, humerui, radi, ulnae. Left and right ilium. Femorii. Tarsals and 1st metatarsal right. Vertebrae thoracic and lumbar. Dental pathology: 12/12. Calculus (7/12) Lower right crowding. Non-metric traits: right double calcaneus facet. Skeletal pathology: N/A.

SK57. Age: (60+) (older adult) Sex: Female. Stature: 160.8 +-3.72cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except right pubis and thoracic vertebrae Phalanges carpals and tarsals absent. Dental pathology: 0/12. 20 AMTL. 6 abscess, 1 extends into sinus. Non-metric traits: right coronal ossicle. Left lambdoid ossicle. Squatting facets lateral. Skeletal pathology: Enthesophytes grade 1 pelvis, femur and calcaneum and humerus. Clavicle right grade 3 rhomboid. cervical vertebrae osteoarthritis left and right facets and body osteophytes. Thoracic body osteophytes and Schmorl's nodes. Lumbar osteophytes and IVD. Left knee osteoarthritis. Left and right scapula, left hand Metacarpal and right patella osteophytes

SK58. Age: (18-25) (Young adult) Sex: ?male. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: cranial fragments, right maxilla, mandible. Ribs and fragments of clavicle. Right and left arm (minus humeral head) Thoracic and lumbar spine. Pelvis fragments. Left femur. Dental pathology: 14/16. Calculus (7/14) Non-metric traits: N/A. Skeletal pathology: N/A.

SK59. Age: (45+) (Older adult) Sex: Male. Stature: 181.6 +-3.27cm (femur) Preservation: completeness 75 %+, Bone surface condition grade 0-1. Bones present: all except cervical vertebrae, sternum, patella, facial bones, right fibula, tarsals and carpals.
Dental pathology: 5/6. 6 AMTL. Caries (2/5) Non-metric traits: Left and right double facet calcaneus. Skeletal pathology: Enthesophytes femur, calcaneum, clavicle, humerus. Schmorl's nodes thoracic and lumbar spine. Osteophytes lumbar bodies. Clavicle acromial end porosity. Glenoid osteophytes. Elbow, humerus and ulna and radius osteophytes.

SK60. Age: (60+) (Older adult) Sex: Female. Stature: N/A cranial index 75.69. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except spongy bone areas e.g bone ends and vertebrae bodies. Carpals and tarsals and phalanges absent. Dental pathology: 16 AMTL (mandible) Non-metric traits: Left and right epiteric bone. 2 ossicles left and right lambdoid. Skeletal pathology: Enthesophytes grade 1 iliac crest and clavicle. Congenital non-fusion C1 arch. Cervical vertebrae 4-6 facet and body osteophytes and porosity. Left radius fracture. Healed fracture distal shaft of left radius, angled slightly.

SK61. Age: (adult) (adult) Sex: Indeterminate. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 0. Bones present: right arm, clavicle and ribs. Right tibia and fibula. Both feet. Dental pathology: N/A. Non-metric traits: Calcaneal double facet. Skeletal pathology: Enthesophytes subclavius grade 2.

SK62. Age: (60+) (Older adult) Sex: Female. Stature: 150.3 +-3.72cm (femur right) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: Mandible. Left and right humerus (proximal absent) Thoracic and lumbar vertebrae. Ribs. Pelvis. Right radius and ulna (distal absent) Left ulna proximal. Right femur, tibia and fibula. Left fibula. Dental pathology: 2/6. 5 AMTL. Calculus (1/2) 2 periodontal (grade 4) Non-metric traits: Squatting facet lateral. Skeletal pathology: lumbar vertebrae 2-4 osteophytic lipping body, porosity

SK63. Age: (adult) (adult) Sex: Indeterminate. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 0. Bones present: left distal tibia. Right distal fibula. Left and right feet. Dental pathology: N/A. Skeletal pathology: N/A

SK64. Age: (Older age range) (Older adult) Sex: ?Female. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: Long bone shafts. Maxilla, mandible and cranium. Fragments of pelvis. Metatarsals. Dental pathology: 11/23.2 AMTL, caries (3/11) Non-metric traits: metopic suture. Skeletal pathology: right metatarsal 1, distal articular plantar surface small patch eburnation. Erosive lesions and minor new bone growth. ?OA or erosive RA?

SK65. Age: (25-35) (prime adult) Sex: Female. Stature: 156.6 +-3.72 cm (femur) Preservation: completeness 0-25 %, Bone surface condition grade 2. Bones present: Left humerus, radius and proximal ulna. Left and right pelvic fragments. Right proximal radius and ulna. Left femur. Left fibula fragment. Left metacarpal and phalanges. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK66. Age: (5-7 years) (child) Sex: indeterminate. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: all areas represented. Dental pathology: 6/8. Calculus (4/6) Non-metric traits: N/A. Skeletal pathology: N/A

SK67. Age: (35-45) (mature adult) Sex: Male. Stature: Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: upper half represented. No hands or cranium. Dental pathology: 3/6. Non-metric traits: N/A. Skeletal pathology: Enthesophytes grade 1 olecranon, grade 2 humerus. Left rib healed fracture. Thoracic vertebrae Schmorl's nodes. Clavicle acromial end porosity.

SK68. Age: (60+) (older adult) Sex: Male. Stature: 176.12 +-3.27cm (femur) Cranial index 79.88. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except right patella and manubrium. Dental pathology: 13/20. 10 AMTL. Calculus (8/13) caries (3/13) 25 periodontal (grade 4) Non-metric traits: Accessory transverse foramina C6 left complete. Femur third trochanter and exotosis in trochanteric fossa. Skeletal pathology: Enthesophytes femur and patella grade 3. Calcaneum posterior spur grade 2. Grade 1 for other areas. Right clavicle fracture, healed with overlap. Ossified cartilage - hyoid, thyroid, xiphoid. Fused medial and distal phalanges left foot. Right scapula glenoid fossa osteophytic growth. Cervical vertebrae right facets eburnation, IVD. Thoracic vertebrae body osteophytes.

SK69. Age: (Adult) (Adult) Sex: ?female. Stature: 163.03 +-3.37 cm (Left tibia) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: left scapula, fragments of rib, left proximal radius and ulna. Left femur. Left and right tibia and fibula. Tarsals and 1st metatarsal. Left fragments of pelvis. Dental pathology: N/A. Non-metric traits: left and right tibia squatting facet lateral. Skeletal pathology: N/A.

SK70. Age: (16-28) (Young adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: Legs and feet. Lower arms represented, fragments of pelvis and ribs. Hands. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A

SK71. Age: (Adult) (Adult) Sex: ?female. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 3. Bones present: right ribs and clavicle fragment. Left clavicle and scapula fragment. Left ilium. 2 thoracic vertebrae. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK72. Age: (60+) (Older adult) Sex: Female. Stature: 159.56 +-3.72 cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 1. Bones present: all except facial bones, manubrium, some sacrum. Dental pathology: 15/18. Calculus (15/15) caries (1/15) 1 AMTL, 1 abscess, 12 periodontal (grade 2-4) Heavy calculus left side. Non-metric traits: humeral septal aperture left. Sagittal ossicles 6. Skeletal pathology: Schmorl's nodes lumbar vertebrae and thoracic . Slight 'orange peel' posterior parietal. calculus one side of mandible only.

SK73. Age: (6-8 years) (Child) Sex: Indeterminate. Stature: N/A. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except skull and cervical vertebrae. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Developmental hip dysplasia - left hip.

SK74. Age: (4-8 years) (child) Sex: Indeterminate. Stature: N/A. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except facial bones and distal phalanges. Dental pathology: 20/20. 4 abscess, caries (4/20) Non-metric traits: N/A. Skeletal pathology: N/A.

SK75. Age: (Adult) (Adult) Sex: Undetermined. Stature: N/A. Preservation: completeness 0-25 %, Bone surface condition grade 5+. Bones present: right mid shaft humerus. Right clavicle fragments. Rib fragments. Left ulna shaft. Fragments of vertebrae. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: N/A.

SK76. Age: (15-16) (Adolescent) Sex: Female (pelvis fused) Stature: 152.9 +- 3.72 cm (femur right) Preservation: completeness 50-75 %, Bone surface condition grade 1. Bones present: all except left lower arm, left pelvis and femur, sacrum, sternum. Right clavicle absent. Dental pathology: 27/27. Calculus (19/27) Non-metric traits: N/A. Skeletal pathology: frontal bone capillary-like impressions either side of frontal crest on endocranial surface. Not new bone laid down, appears to be surface remodelled. Aetiology unknown.

SK77. Age: (53-92) (Older adult) Sex: Female. Stature: 156.6 +-3.72cm (femur right) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: right humerus, fragments of clavicle and scapula, proximal radius and ulna. Right ribs. Right fragment of pelvis. Rights femur, tibia and fibula, tarsals and metatarsals. Left femur mid and distal, tibia and fibula, talus and calcaneus. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: left and right tibia and left fibula healed periostitis. Right toes (phalanges) osteoarthritis. Left calcaneus eburnation talus articulation. Right femur cribra femora.

SK78. Age: (53-92) (Older adult) Sex: Female. Stature: 151.66 +-3.72cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 1. Bones present: all except facial bones, lower cervical and upper thoracic vertebrae, sternum, most of sacrum, most of ilium and pubis. Dental pathology: 16 AMTL. Non-metric traits: left femur exotosis trochanteric fossa. Bilateral tibial squatting facets lateral. Skeletal pathology: Enthesophytes pelvis femur, humerus grade 1. Femur gluteus max grade 2 and calcaneum posterior spur. Femur greater trochanter medius and minimus grade 3. Acromioclavicular osteophytes, clavicle eburnation. Sternoclavicular left eburnation, osteophytes and porosity. Hand - distal interphalangeal eburnation and osteophytes. Thoracic and lumbar body osteophytes. 2 lumbar vertebrae facets with eburnation. Left radius distal fracture, healed. Colle's fracture.

SK79. Age: (50+) (older adult) Sex: Male. Stature: 172.79 +-3.27cm (femur) Preservation: completeness 75+ %, Bone surface condition grade 3. Bones present: all except cervical vert and upper thoracic. Ribs absent. Dental pathology: 32/32. Calculus (32/32) hypoplasia 2/26. Periodontal 28 (grade2-3) Non-metric traits: double calcaneal facet. Skeletal pathology: Enthesophytes femur, pelvis, patella, clavicle calcaneum all grade 2 or 3. Right calcaneus extension of bone on lateral side. Additional bone on navicular. Fusion of left foot intermediate and distal phalanges. Schmorl's nodes thoracic and lumbar vertebrae. Osteophytes body lumbar and thoracic. IVD thoracic.

SK80. Age: (45+) (older adult) Sex: Female. Stature: 156.35 +-3.72cm (femur) Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: all except skull, c1-3, sternum, distal radii and ulnae and parts of the humerii. Carpals absent and phalanges. Dental pathology: N/A. Non-metric traits: calcaneal double facet. Skeletal pathology: Enthesophytes iliac crest, linea aspera, soleal crest and rhomboid fossa all grade 1. Calcaneum, patella and ischial tuberoisity grade 2. osteophytic lipping acetabulum, glenoid fossa, ulna. Schmorl's nodes thoracic vertebrae. Osteophytes thoracic body.

SK81. Age: (45+) (Older adult) Sex: ?male. Stature: 159.77 +-? cm (Right humerus) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: upper half to L5. Pelvis and legs absent. Left radius absent, skull fragmented. Some hand bones absent. Dental pathology: 19/20. 5 AMTL. Calculus (16/19) caries (3/19) 2 abscess, periodontal 6. Non-metric traits: N/A. Skeletal pathology: left rib vertebrae articulation eburnation and osteophytes – OA.

SK82. Age: (20-46) (Prime adult) Sex: Male. Stature: 159.46 +-3.27cm (femur) Preservation: completeness 75 + %, Bone surface condition grade 1. Bones present: all except soe facial bones, and most of the spine represented as fragments. Few ribs and little of sacrum. Dental pathology: 19/16. Calculus (6/19) Periodontal 6 (grade 3-4) Non-metric traits: calcaneal facet double. Tibia squatting facets lateral. skeletal pathology: Enthesophytes femur linea aspera grade1. Crest of greaer tubercle on humerii is prominent. Femur just below lesser trochanter spiral line for iliosopas muscles. left and right 1st phalanx extra bone growth on lateral side.

SK83. Age: (53-92) (Older adult) Sex: Female. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 1. Bones present: Left upper half, lower tvs and lvs only, parts of pelvis, legs and feet. Left hand present. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Enthesophytes femur grade 2. Right distal pedal phalanx osteophtic growth medial. Osteophytes thoracic vertebrae and lumbar. IVD lumbar vertebrae.

SK84. Age: (20-27) (Young adult) Sex: Male. Stature: 169.22 +-3.27cm (femur) cranial index 75.69. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except right tibia and fibula and sternum. Dental pathology: 24/27. 2 AMTL. Calculus (9/24) caries (1/24) Hypoplasia 12/24. Crowding upper left I2 & C. Upper right I2 absent, no alveolar present. Non-metric traits: 1 lamboid ossicle left and right. Accessory transverse foramina C4 left, C6 both. Calcaneal facet double. Skeletal pathology: left and right cribra femora. Left tib and fibula periostitis. Sinusitis left and right. Grade 1 enthesophytes pelvis, femur, humerus, grade 2 clavicle.

SK85. Age: (40+) (mature adult) Sex: Female. Stature: 152.40 +-3.72cm (femur right) Preservation: completeness 50-75 %, Bone surface condition grade 0. Bones present: all

except lumbar vertebrae, left pelvis, left femur, left radius and left hand. Dental pathology: 2/10. 16 AMTL. Calculus (1/2) abscess 1. Non-metric traits: Tibia squatting facets lateral. 7 Left and 8 right lambdoid ossicles (many more probably lost post-mortem) Bilateral foramen of huschke. 1 sagittal ossicle. Skeletal pathology: Enthesophytes at most attachments grade 1, clavicle grade 2. Vertebrae body osteophytes and IVD cervical, thoracic. Schmorl's nodes thoracic. Left humerus possible healed fracture. Neck is lateral to normal position. Left scapula and clavicle ostephytes and porosity.

SK86. Age: (20-40) (Young adult) Sex: Female. Stature: 157.34 +-3.72cm (femur) cranial index 80.83. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except C6, 7.patella absent and carpals. Dental pathology: 32/32. Calculus (27/32) Crowding upper I1/2, rotation of right I2. Crowding lower I & 2 with rotation of left I2. Non-metric traits: 2 left lambdoid ossicles. Skeletal pathology: congenital developmental defect, reduced pedicle on right 5th lumbar. Resulting additional bone growth to stabilise joint. thoroacic vertebrae Schmorl's nodes. Left navicular avulsion fracture of tuberosity.

SK87. Age: (21-48) (prime adult) Sex: Female. Stature: 157.34 +-3.72cm (femur right) cranial index 84.3. Preservation: completeness 25-50 %, Bone surface condition grade 1 arms grade 4. Bones present: skull some facial bones absent. Vertebrae, right arm, left scapula and clavicle and radius and ulna. Left pelvis and femur. Dental pathology: 20/27. Calculus (11/20) caries (8/2) abscess 4. Periodontal 15 (grade 2-5) Non-metric traits: 2 large ossicles at mid point lambda, not large enough to be Inca bone. Skeletal pathology: Right side enthesophytes pelvis, femur grade 1 and 2. Schmorl's nodes thoracic vertebrae.

SK88. Age: (45+) (Older adult) Sex: Male. Stature: N/A. Preservation: completeness 50-75 %, Bone surface condition grade 3. Bones present: mostly left side. Fragmented cranium maxilla and mandible. Right clavicle and scapula. Vertebrae minus cervical, left humerus, clavicle, scapula. Ribs. Left pelvis, femur shaft, tibia and fibula and foot. Right tibia and fibula and foot. Sacrum. Dental pathology: 26/26. Calculus (15/26) caries (/26) abscess 3. 4 AMTL. 1/28 hypoplasia. 5 periodontal grade 2. Crowding lower incisors and right canine. Upper right 2nd incisor more posterior. Non-metric traits: N/A. Skeletal pathology: osteophytes thoracic and lumbar vertebrae body.

SK89. Age: (60-92) (Older adult) Sex: Female. Stature: 162.05 +-4.24 cm (right radius) Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except some facial bones, left hand and left proximal femur. Dental pathology: 12/19. 8 AMTL. Calculus (2/12) caries (4/12) 2 abscess. Angled wear on upper first incisor. Non-metric traits: right C6 accessory transverse foramina. Left tibia squatting facet. Double calcaneal facet. Skeletal pathology: Cervical vertebrae body porosity, eburnation. Facets osteoarthritis. Osteophytes on body of cervical and thoracic. Schmorl's nodes thoracic and lumbar. C1 posterior arch unfused - congenital defect. C2-3 fusion left inferior -superior facets. Porosity right scapula acromion. cribra orbitalia very minor porosity. Osteoarthritis left mandibular condyle eburnation and minor osteophytes.

SK90. Age: (6-8 years) (child) Sex: Undetermined. Stature: N/A. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except some phalanges, carpals and epiphyses. Dental pathology: 14/19 Calculus (2/14) Non-metric traits: N/A. Skeletal pathology: N/A.

SK91. Age: (21-30) (Young adult) Sex: Female. Stature: 151.66 +-3.72cm (femur right) cranial index 82.08. Preservation: completeness 75+ %, Bone surface condition grade 0. Bones present: all except patella. Dental pathology: 28/28. Calculus (18/28) caries (2/28) 4 AMTL, 2 abscess. 6 periodontal (grade 2) 1st upper incisors shoveling. Non-metric traits: metopism. Left and right epiteric bones. 2 left lambdoid ossicles. Right femoral exotosis in trochanteric fossa. Skeletal pathology: Femoral enthesophyte gluteus maximus grade 3, very large. Linea aspera grade 1. Femorii anterior-posterior bowed ? Residual rickets. Very slight bowing medial lateral tibiae. Left 1st proximal phalanx cortical defect.

SK92. Age: (45+) (Older adult) Sex: Male. Stature: 164.94 +-3.27 cm (femur) Preservation: completeness 25-50 %, Bone surface condition grade 1. Bones present: cranium. Left radius and ulna and hand. Right hand. Pelvis right side ilium absent. Femorii, tibiae, fibulae, feet. Dental pathology: N/A. Non-metric traits: N/A. Skeletal pathology: Enthesophytes left femur grade 2, tibia grade 1. Fracture left pubic bone. Right hip osteoarthritis. Left elbow osteoarthritis.

APPENDIX B - *Indices*

Platymeric Index

skeleton	A-P sub troch fem	M-L subtroch fem	Index
1	26	31	83.87096774
2	27	29	93.10344828
11	26	29	89.65517241
12	28.5	31	91.93548387
14	32	36	88.88888889
18	30	34	88.23529412
22	26	35	74.28571429
23	26	32	81.25
25	25	35	71.42857143
26	25	34	73.52941176
29	23	31	74.19354839
33	29	37	78.37837838
36	28	34	82.35294118
41	25	29	86.20689655
44	26	32	81.25
45	25	31	80.64516129
50	23	36	63.88888889
56	27	34	79.41176471
57	27	32	84.375
59	29	37	78.37837838
60	25	34	73.52941176
62	23	31	74.19354839
65	24	27	88.88888889
68	29	33	87.87878788
69	22	26	84.61538462
72	26	30	86.66666667
76	23	27	85.18518519
77	20	30	66.66666667
78	22	31	70.96774194
79	28	36	77.77777778
80	24	30	80
82	22	28	78.57142857
84	28	31	90.32258065
85	23	32	71.875
86	25	29	86.20689655
87	27	28	96.42857143
89	24	27	88.88888889
91	25	34	73.52941176
92	26	31	83.87096774

Platycnemic Indices

Skeleton	A-P Nut-For Tib	M-L Nut-For tib	Index
1	26	20	76.92308
2	32	23	71.875
7	36	29	80.55556
11	29	24	82.75862
12	31	23	74.19355
18	31	27	87.09677
22	35	24	68.57143
23	31	26	83.87097
25	35	23	65.71429
26	34	26	76.47059
33	33	24	72.72727
38	31	25	80.64516
41	32	22	68.75
45	28	22	78.57143
54	28	22	78.57143
57	33	25	75.75758
59	40	32	80
61	33	24	72.72727
62	27	22	81.48148
68	34	24	70.58824
69	28	22	78.57143
72	28	22	78.57143
76	26	22	84.61538
77	24	19	79.16667
78	32	23	71.875
79	32	25	78.125
80	28	24	85.71429
82	28	19	67.85714
84	33	26	78.78788
85	29	21	72.41379
86	28	23	82.14286
89	27	21	77.77778
91	27	22	81.48148
92	27	20	74.07407

Context	Type	Description	Depth	Width	Length	Finds	Interpretation	Date
100	Layer	Soft, mid to dark brown silt with small to medium stones.	0.10m			87-90	Topsoil, found in patches across excavation area	19th century
101	Layer	Firm, mid to dark brown silty sand with stones	0.40m			92-94, 101, 105, 120, 151, 153	Overburden, resulting from Modern building demolition	15th century
102	Layer	Soft, light brown sand				107	Natural	
103	Fill	Mid brown silty sand with sub-angular limestone	0.32m				Fill of robber trench	
104	Cut	Linear feature with steep sides and flat base. Orientated E-W	0.50m	1.02m	1.50m		Cut of robber trench	
105	Fill	Soft, light greyish sand and silt with sub-angular limestone	0.39m				Fill of robber trench	
106	Cut	Linear feature with vertical sides and flat base. Orientated N-S	0.39m	0.60m	0.39m		Cut of robber trench	
107	Fill	Friable, mid to dark brown/ greyish silty sand with small stones	0.20m	0.75m	0.50m		Fill of pit	
108	Cut	Sub-circular feature with irregular concave sides and irregular rounded base.	0.20m	0.75m	0.50m		Cut of pit	
110	Layer	Soft mid brown silty sand with occasional stones		1.30m	2.50m		Layer at base of evaluation trench	
124	Fill	Semi-compact grey/brown/yellow silty sand with few small stones	0.08m	0.44m	1.80m		Fill of grave	
125	Cut	Rectangular feature with vertical sides and flat base		0.44m	1.80m		Cut of grave	
126	Fill	Soft mid to dark brown silty sand with wood fragments	0.04m	0.20m	0.60m	140, 142	Fill of grave	
127	Cut	Sub-rectangular feature with straight sides and flat base	0.04m	0.20m	0.60m		Cut of grave	
134	Fill	Soft, dark brown silty sand with occasional gravel	0.40m			150	Fill of construction cut 2052	
142	Fill	Loose, yellow/brown sandy loam with stones	0.08m	0.60m	1.90m	1-3	Fill of grave	
143	Cut	Rectangular feature with concave sides and flat base	0.08m	0.60m	1.90m		Cut of grave	
144	Fill	Compact, yellow/brown silty sand with occasional stones	0.21m	0.30m	1.70m		Fill of 2028	
145	Fill	Compact, yellow/brown silty sand with stones	0.15m	0.50m	1.60m		Fill of grave	

146	Cut	Semi-rectangular feature with straight sides and flat base	0.15m	0.50m	1.60m		Cut of grave	
147	Layer	Compact grey concrete	0.08m				Modern concrete surface	
148	Layer	Compact dark grey sand with gravel	0.10m				Dark fill	
149	Layer	Compact dark grey sand with limestone	0.10m				Flagstone surface	
150	Layer	Compact grey concrete	0.06m				Concrete floor	
151	Layer	Compact red brick and tile	0.08m				Layer of red brick and tile	
152	Layer	Compact yellow sand	0.04m				Layer of yellow sand	
153	Layer	Compact, dark grey sandy loam	0.06m				Dark deposit above 154	
154	Floor cobbles	Single course of rough limestone cobbled surface	0.40m	1.00m			Cobbled surface	
155	Cobble surface	Single course of rough limestone cobbled surface	0.80m	1.00m			Cobbled surface	
156	Cobble surface	Single course of rough limestone cobbled surface		1.00m			Cobbled surface	
157	Fill	Soft, mid brown/reddish silty sand	0.20m	0.50m	1.20m		Fill of grave	
158	Cut	Sub-rectangular, with a flattish base.		0.50m	1.20m		Cut of grave	
159	Fill	Compact, mid to dark brown silty sand with large stones and gravel	1.20m				Fill of pit	17th century
160	Cut	Sub-circular with concave sides and a flattish base. Extends past edge of excavation	1.20m		1.20m		Cut of pit	
161	Fill	Compact orange/brown sandy silt with stones					Fill of irregular feature	
162	Cut	Rectangular feature with straight sides and flat base	0.32m	0.72m	1.57m		Cut of irregular feature	
165	Fill	Loose mid greyish/brown clayey sand with stones	0.40m	0.35m	5.80m		Fill of pipe trench	
166	Cut	Linear feature with vertical sides	0.40m	0.35m	5.80m		Cut of pipe trench	
167	Fill	Soft, dark greyish/brown silty sand with decayed wood	0.42m	0.15m	0.15m		Fill of post-med post hole	
168	Fill	Soft mid grey clayey sand	0.42m	0.50m	0.50m		Fill of post-med post hole	
169	Cut	Square feature with vertical sides and concave base	0.45m	0.50m	0.50m		Cut of post-med post hole	
170	Layer	Compact, mid brown/grey clayey sand with stone and charcoal flecks	0.05m	2.00m	3.00m		Compact layer	

171	Fill	Firm, mid greyish/brown silty sand with stone and charcoal flecks.	0.22m	2.00m	Max 13.00m		Fill of robber trench	
172	Cut	Rectangular/ U-shaped feature with concave sides and base	0.22m	2.00m	Max 13.00m		Cut of robber trench	
173	Structure	Wall of roughly faced limestone		9.00m	23.50m		Post-med farm wall	
174	Fill	Soft, light yellowish/grey clayey sand	0.35m	0.10m	23.50m		Fill of wall construction cut	
175	Cut	Linear feature with vertical sides and uneven base	0.35m	0.80m	23.50m		Wall construction cut	
176	Cut	Sub-circular feature with vertical sides and concave base	0.48m	0.47m	0.64m		Sub-circular pit	
177	Fill	Mid brown silty sand with occasional stones	0.38m	0.47m		147	Fill of sub-circular pit	
178	Fill	Loose dark grey ashy sand with occasional charcoal	0.10m	0.44m			Fill of sub-circular pit	19th century
179	Fill	Medium, mid greyish/brown clayey sand	0.21m	1.02m			Fill of robber trench	
180	Cut	Linear feature with vertical sides and flat base	0.38m	1.04m	1.10m		Cut of robber trench	
181	Fill	Hard, mid brown silty sand with limestone	0.38m	1.04m	1.10m	79	Fill of robber trench	
182	Cut	Oval feature with concave side and undulating base	0.70m	1.56m	1.10m		Cut of bell casting pit	
183	Fill	Hard, mid brown silty sand with limestone	0.70m	1.56m	1.10m	139	Fill of bell casting pit	
184	Cut	Sub-rectangular feature with sharp sides	>0.58m	0.70m	6.70m		Foundation cut for concrete footings	
185	Cut	Feature with stepping sides and concave base	0.26m				Construction cut	
186	Fill	Compact sandy fill with limestone inclusions	0.26m				Fill of construction cut	
187	Cut	Oval feature with concave sides	>0.20m	0.10m	0.15m		Cut of strickle hole	
188	Fill	Firm dark grey silty sand with limestone	>0.20m	0.10m	0.15m		Fill of strickle hole	
189	Structure	Squared rough limestone wall		0.50m	12.00m		Post-med farm wall	
190	Cut	Linear feature					Wall construction cut	
191	Fill	Soft, mid greyish/brown silty sand					Fill of wall construction cut	
192	Fill	Loose, light yellowish/brown silty sand	0.16m	0.28m	0.69m		Fill of grave	
193	Cut	Rectangular feature with flat base	0.16m	0.28m	0.69m		Cut of grave	

194	Fill	Loose, light yellowish/brown silty sand	0.16m	0.23m	0.32m		Fill of grave	
195	Cut	Rectangular feature with flat base	0.16m	0.23m	0.32m		Cut of grave	
196	Fill	Firm, mid reddish brown silty sand	0.35m	1.20m	5.00m	136, 148	Fill of robber trench	
197	Cut	Linear feature with vertical sides and flat base	0.35m	1.20m	5.00m		Cut of robber trench	
198	Fill	Firm, mid reddish brown silty sand	0.35m	1.00m	15.00m		Fill of robber trench	
199	Cut	Linear feature with concave sides and flat base	0.35m	1.00m	15.00m		Cut of robber trench	
200	Fill	Coarse-grained compact, mid brownish-yellow silty sand	0.05m	0.23m	0.35m		Fill of grave	
201	Cut	Rectangular feature disturbed by later activities	0.05m	0.23m	0.35m		Cut of grave	
202	Fill	Soft, mid brown silty sand with occasional stones	0.09m	0.25m	1.30m		Fill of grave	
203	Cut	Sub-rectangular feature with straight sides	0.09m	0.20m	1.30m		Cut of grave	
204	Fill	Firm mid reddish brown silty sand	0.20m		2.10m	27	Fill of pit	
205	Fill	Soft mid greyish brown silty sand	0.25m		2.10m		Fill of pit	
206	Fill	Firm, mid yellowish brown clayey sand	0.08m		2.10m		Fill of pit	
207	Cut	Ovoid feature with steep/overcut sides and concave/irregular base	0.50m		2.10m		Cut of pit	
208	Structure	Stone structure of irregular shape and size	0.47m	0.115m	0.156m		Stone wall	
209	Fill	Coarse-grained compact, mid yellowish-brown silty sand	0.47m	0.115m	0.156m		Fill of wall construction cut	
210	Cut	Rectangular feature with straight steep sides and irregular base	0.47m	0.115m	0.156m		Wall construction cut	
213	Structure	Foundations and single course of limestone structure		1.50m	1.20m		N-S wall	
216	Cut	Linear feature with vertical sides and flattish base	0.40m	0.10m	0.60m		Wall construction cut	
217	Fill	Soft dark brown-greyish silty sand	0.40m	0.10m	0.60m		Fill of wall construction cut	
218	Fill	Compact, mid grey-brown clayey sand	0.10m-0.30m	1.30m		83, 111-113, 132-134	Fill of robber trench	
219	Cut	Linear feature with vertical sides and flat base	0.42m	1.30m			Cut of robber trench	
220	Fill	Compact greyish brown silty sand with	0.11m	0.42m	0.60m	143	Fill of grave	

		occasional stones						
221	Cut	Semi-rectangular feature with flat base	0.11m	0.42m	0.60m		Cut of grave	
222	Fill	Compact greyish brown silty clay with occasional stones	0.02m	0.38m	0.50m	106	Fill of grave	
223	Cut	Semi-rectangular feature with flat base	0.02m	0.38m	0.50m		Cut of grave	
229	Fill	Compact, mid brown sand with silt and limestone	0.40m	0.56m	0.50m		Fill of robber trench	
230	Cut	Linear feature with vertical sides and flat base	0.40m	0.56m	0.50m		Cut of robber trench	
231	Structure	Foundations and single course limestone structure		1.50m	1.20m		N-S wall	
234	Fill	Compact, mid brown sand with silt and limestone	0.36m	0.70m	1.30m		Fill of robber trench	
235	Cut	Linear feature with vertical sides and flat base		1.60m	2.20m		Cut of robber trench	
236	Fill	Compact, mid brown sand with silt and limestone	0.40m	0.50m	1.00m		Fill of robber trench	
237	Cut	Linear feature with concave sides and flat base	0.40m	0.50m	1.00m		Cut of robber trench	
238	Fill	Compact, mid brown sand with silt and limestone	0.36m	0.80m	0.90m		Fill of robber trench	
239	Cut	Linear feature with vertical sides and flat base	0.36m	0.80m	0.90m		Cut of robber trench	
240	Fill	Soft mid brown silty sand with stones	0.18m	0.50m	1.70m		Fill of grave	
241	Fill	Compact mid brown sandy loam	0.54m	1.20m	0.70m		Fill of robber trench	
242	Cut	Linear feature with vertical sides and concave base	0.54m	1.20m	0.70m		Cut of robber trench	
243	Cut	Sub-rectangular feature with concave sides and flat base	0.18m	0.50m	1.70m		Cut of grave	
244	Fill	Compact yellowish-brown silty sand with occasional stones	0.05m	0.30m	0.60m		Fill of grave	
245	Cut	Semi-rectangular feature with straight sides and flat base	0.05m	0.30m	0.60m		Cut of grave	
246	Fill	Compact brown-yellow silty sand with occasional stones	0.18m	0.50m	1.16m		Fill of grave	
247	Cut	Semi-rectangular feature with straight sides and flat base	0.18m	0.50m	1.16m		Cut of grave	

248	Fill	Compact brown-yellow silty sand with occasional stones	0.10m	0.70m	1.10m		Fill of pit	
249	Cut	Semi-rectangular feature with straight sides and flat base	0.10m	0.70m	1.10m		Cut of pit	
250	Fill	Semi-compact greyish/brownish yellow silty sand	0.25m	0.40m	0.60m		Fill of posthole	
251	Cut	Oval feature with straight sides and flat base	0.25m	0.40m	0.60m		Cut of posthole	
252	Fill	Compact yellowish/ greyish brown silty sand	0.42m	1.70m	1.80m		Fill of large pit	
253	Cut	Irregular feature with sloping sides and an irregular base	0.42m	1.70m	1.80m		Cut of large pit	
254	Fill	Semi-compact greyish/brownish yellow silty sand	0.14m	0.50m	0.60m		Fill of posthole	
255	Cut	Semi-circular feature with sloping sides and flat base	0.14m	0.50m	0.60m		Cut of posthole	
256	Structure	Linear feature of roughly squared limestone	>0.11m	0.50m	2.5m		Post-med barn wall	
257	Cut	Linear feature		0.50m	2.50m		Wall construction cut	
258	Structure	Linear feature of roughly squared limestone	>0.05m	0.40m	2.50m		Post-med barn wall	
259	Cut	Linear feature		0.40m	2.50m		Wall construction cut	
260	Structure	Linear feature of roughly squared limestone	0.05m	0.50m	2.10m		Post-med barn wall	
261	Cut	Linear feature		0.50m	2.10m		Wall construction cut	
262	Structure	Linear feature of roughly squared limestone	0.36m	0.60m	2.10m		Post-med barn wall	
263	Cut	Linear feature		0.60m	2.10m		Wall construction cut	
264	Structure	One course limestone feature		0.75m	1.10m		Post-med barn wall	
265	Cut	Truncated, square shaped feature with vertical sides and flat base	0.20m	0.88m	0.90m		Wall construction cut	
266	Structure	L-shaped, roughly squared limestone feature		1.10m	5.20m		Post-med barn wall	
267	Cut	L-shaped feature		1.10m	5.20m		Wall construction cut	
268	Cut	Ovoid feature with vertical sides and flat base	0.25m	0.55m	1.00m		Cut of grave	
269	Fill	Firm, mid reddish brown clayey sand	0.25m	0.55m	1.00m		Fill of grave	

270	Cut	Sub-ovoid feature with vertical sides and flat base	0.25m	0.40m	0.80m		Cut of grave	
271	Fill	Firm, mind reddish brown silty clay	0.25m	0.40m	0.80m		Fill of grave	
272	Cut	Cut of feature, disturbed by modern activity	0.24m	0.24m	0.43m		Cut of grave	
273	Fill	Course-grained, mid yellowish brown sandy clay	0.24m	0.24m	0.43m		Fill of grave	
274	Fill	Compact, mid brown sandy loam with limestone	0.56m	0.80m	1.70m		Fill of pit	
275	Cut	Oval feature with concave sides and base	0.16m	0.20m	0.40m		Cut of pit	
277	Cut	Oval feature with concave sides and base	0.55m	0.40m	1.30m		Cut of pit	
278	Cut	Oval feature with concave sides and base		0.50m	0.54m		Cut of pit	
280	Fill	Compact orange/brown sandy loam	0.24m	0.26m			Fill of possible grave	
281	Cut	Cut only visible in section	0.24m	0.26m			Cut of possible grave	
282	Fill	Compact Mid brown sandy loam with limestone	0.24m	1.00m	0.80m		Fill of possible robber trench	13th cnetury
283	Cut	Linear feature with concave sides and flat base	0.22m	0.94m	0.80m		Cut of possible robber trench	
284	Fill	Coarsely grained, mid yellowish brown sand clay		0.30m	0.37m		Fill of grave	
285	Cut	Cut of feature, disturbed by modern activity		0.30m	0.37m		Cut of grave	
286	Fill	Coarsely grained, mid yellowish brown sand	0.45m				Fill of grave	
287	Cut	Rectangular feature with vertical sides and flat base		0.45m	1.63m		Cut of grave	
288	Cut	Rectangular feature with vertical sides and flat base	0.38m	0.60m			Cut of robber trench	
289	Fill	Mid loose, mid grey brown silty sand	0.38m				Fill of robber trench	
290	Cut	Roughly round feature	0.38m	0.50m			Post-medieval posthole cut	
291	Fill	Loose, mid grey sandy silt					Fill of posthole	
292	Structure	Linear concrete structure		0.70m	>6.70m		Concrete footings	
293	Fill	Compact, yellow brown silty sand	0.10m	0.60m	0.80m		Fill of grave	
294	Cut	Semi-rectangular feature, disturbed by later activity	0.10m	0.60m	0.80m		Cut of grave	

295	Fill	Compact, mid brown sandy loam	0.27m	0.70m	0.70m		Fill of robber trench	15th century
296	Cut	Linear feature with vertical sides and flat base	0.27m	0.70m	0.70m		Cut of robber trench	
297	Fill	Compact, dark brown sandy loam	0.32m	0.50m	1.50m		Fill of service trench	
298	Cut	Linear feature with vertical sides and flat base	0.32m	0.50m	1.50m		Cut of service trench	
299	Cut	Sub-circular feature with vertical sides and flat base	0.20m		0.30m		Cut of charnel pit	
300	Fill	Soft, mid grey clayey sand	0.12m	0.20m	0.30m		Fill of charnel pit	
301	Cut	Ovoid feature with concave side and base	0.20m	0.50m	0.70m		Cut of post-medieval pit	
302	Fill	Firm dark brown clayey silt with charcoal flecks and stones	0.20m	0.50m	0.70m		Fill of post-medieval pit	
303	Cut	Linear feature with steep sides and slightly concave base	0.34m	1.50m	4.50m		Wall construction cut	
304	Fill	Firm, mid reddish brown clayey sand	0.30m	1.50m	4.50m		Fill of construction cut	
305	Cut	Linear feature with steep sides and flat base	0.40m	1.50m	4.50m		Wall construction cut	
306	Fill	Firm, mid reddish brown clayey sand	0.40m	1.50m	4.50m		Fill of construction cut	
307	Cut	Linear feature with steep sides and flat base	0.40m	1.60m	2.40m		Cut of robber trench	
308	Fill	Firm, mid greyish brown clayey sand	0.40m	1.60m	2.40m		Fill of robber trench	
309	Fill	Compact, mid brown silty sand	0.63m	1.10m	1.22m		Fill of robber trench	
310	Cut	Linear feature with vertical sides and flat base	0.63m	1.10m	1.22m		Cut of robber trench	
311	Cut	Square shaped feature	0.12m	0.60m	0.66m		Cut of post pad	
312	Structure	Roughly hewn limestone structure, one course high	0.14m	0.60m	0.65m		Post pad	
313	Cut	Square shaped feature	0.16m	0.60m	0.64m		Cut of post pad	
314	Structure	Unfinished limestone structure	0.21m	0.60m	0.65m		Post pad	
315	Fill	Soft, mid to dark brown silty sand	0.07m	0.40m	0.40m		Fill of grave	
316	Cut	Sub-rectangular feature with flattish base	0.07m	0.40m	0.40m		Cut of grave	
317	Structure	Linear feature of limestone rubble	0.60m	0.99m	2.10m		Wall	
318	Fill	Compact, mid yellow-brown mottled silty sand	0.10m	0.30m			Fill of construction cut	
319	Cut	Linear feature with angled sides and flat	0.60m	0.99m	1.15m		Wall construction cut	

		base						
320	Fill	Hard, mid brown sandy loam	0.10m	0.48m	1.40m		Fill of grave	
321	Cut	Sub-circular feature with vertical sides and flat base	0.10m	0.48m	1.40m		Cut of grave	
324	Fill	Hard mid brown clayey sand	0.30m	1.30m		98	Fill of robber trench	
325	Fill	Compact, light brownish yellow silty sand	0.08m	0.50m	1.16m		Fill of grave	
326	Cut	Semi-rectangular feature with straight sides and flat base	0.08m	0.50m	1.16m		Cut of grave	
327	Fill	Compact, dark brown sandy loam	0.32m	0.50m	1.50m		Fill of pipe trench	
328	Cut	Linear feature with vertical sides and flat base	0.32m	0.50m	1.50m		Cut of pipe trench	
329	Fill	Compact, mid brown clayey sand	0.36m	0.86m	0.93m		Fill of modern feature	
330	Cut	Sub-circular feature with vertical sides and slightly concave base	0.36m	0.86m	0.93m		Cut of modern feature	
331	Fill	Compact, mid to dark grey brown sandy clay	0.60m	0.70m	1.70m		Fill of robber trench	
332	Cut	Linear feature with vertical sides and flat base	0.60m	0.70m	1.70m		Cut of robber trench	
333	Structure	Linear, limestone flag structure	0.10m	0.45m	1.50m		Buttress	
334	Cut	Sub-rectangular feature	0.10m	0.45m	1.30m		Buttress construction cut	
335	Fill	Soft mid brown silty sand	0.03m	0.45m	>0.68m		Fill of grave	
336	Cut	Sub-rectangular feature with flattish base	0.30m	0.45m	>0.68m		Cut of grave	
337	Fill	Loose greyish brown loamy sand with brick pieces	0.28m	0.42m	0.48m		Fill of post-medieval post hole	
338	Cut	Semi-circular feature with sloping sides and flat base	0.28m	0.42m	0.48m		Cut of post-medieval post hole	
339	Fill	Compact, yellowish brown silty sand	0.22m	0.40m	1.16m	137	Fill of post-medieval pit	
340	Cut	Semi oval feature with straight sides and flat base	0.22m	0.40m	1.16m		Cut of post-medieval pit	
341	Structure	Linear concrete structure		0.90m	7.40m		Concrete footings	
342	Cut	Sub-rectangular feature	>0.68m	0.90m	>7.40m		Cut of concrete footings	
343	Fill	Coarse grained, mid yellowish brown sand	0.50m	0.50m	0.97m		Fill of grave	
344	Cut	Rectangular feature with shallow sides		0.50m	0.97m		Cut of grave	

		and flattish base						
345	Fill	Compact, yellowish brown silty sand	0.17m	0.50m	1.60m		Fill of grave	
346	Cut	Semi-rectangular feature with sloping sides and flattish base	0.17m	0.50m	1.60m		Cut of grave	
347	Fill	Compact mid brown silty sand	<0.30m	1.52m	1.52m	102, 103	Fill of robber trench	
348	Cut	Sub-rectangular feature with vertical sides and irregular base	0.30m	1.52m	1.52m		Cut of robber trench	
349	Layer	Hard yellowish-brown, sandy loam					Charnel deposit	
350	Fill	Compact, dark brown sandy loam	0.32m	0.50m	1.50m		Fill of pipe trench	
351	Cut	Linear feature with vertical sides and flat base	0.32m	0.50m	1.50m		Cut of pipe trench	
352	Structure	Limestone blocks and rubble linear feature	0.48m	2.05m	1.40m		Wall	
353	Cut	Linear feature with vertical sides and flat base	<0.68m	2.00m	1.52m		Wall construction cut	
354	Fill	Compact, brown silty sand	0.70m	1.50m	2.70m	127-129	Fill of robber trench	
355	Cut	Linear feature with Vertical sides and flat base	0.70m	1.50m	2.70m		Cut of robber trench	
356	Stain	Traces of wooden bottom and sides visible on ground. Metal fixings and metal elements preserved.		0.20m	0.60m	5-19	Coffin stain	
357	Fill	Loose, mid brown loamy sand	0.10m	0.23m	0.24m		Fill of post-medieval post hole	
358	Cut	Semi-circular feature with straight sides and flat base	0.10m	0.23m	0.24m		Cut of post-medieval post-hole	
359	Fill	Compact, yellowish brown silty sand	0.12m	0.58m	1.62m		Fill of grave	
360	Cut	Semi-rectangular feature with straight sides and flattish base	0.12m	0.58m	1.62m		Cut of grave	
361	Fill	Semi-compact yellowish grey sand		0.46m	1.90m		Fill of grave	
362	Cut	Rectangular feature with straight side and flat base		0.46m	1.90m		Cut of grave	
363	Fill	Moderately compacted, mid to light brown silty sand	0.60m	1.06m	1.60m		Fill of robber trench	
364	Cut	Linear feature with vertical sides	0.60m	1.06m	1.60m		Cut of robber trench	
365	Fill	Compact, light orange-brown silty sand	<0.50m	1.40m	1.66m	144	Fill of robber trench	
366	Cut	Sub-rectangular feature with vertical sides	<0.50m	1.40m	1.66m		Cut of robber trench	

367	Fill	Compact, yellow-brown with some grey		0.26m	1.12m		Fill of grave	
368	Cut	Feature cut with vertical sides and flat base		0.26m	1.12m		Cut of grave	
369	Fill	Loose light brown loamy sand	0.32m	1.00m	1.30m		Fill of charnel pit	
370	Fill	Compact dark brown silt	0.20m	0.90m	1.50m		Fill of post-medieval feature	
371	Cut	Sub-circular feature with concave sides and flattish base		0.90m	1.50m		Cut of post-medieval feature	
372	Fill	Firm yellowish-brown sand	0.34m	0.50m	0.40m		Fill of pit	
373	Fill	Firm, dark brownish grey sandy loam	0.78m	1.78m	0.84m		Fill of pit	13th century
374	Cut	Oval feature with concave sides and base	1.03m	0.80m	1.10m		Cut of pit	
375	Fill	Firm grey-brown sandy loam	0.26m	1.18m	0.84m		Fill of pipe trench	
376	Cut	Liner feature with concave sides and undulating base	0.26m	1.18m	0.84m		Cut of pipe trench	
377	Fill	Compact, mid grey-brown silty sand	0.32m	0.37m	0.38m		Fill of pipe trench	
378	Cut	Square feature with vertical sides and flat base	0.32m	0.37m	0.38m		Cut of pipe trench	
379	Fill	Compact dark grey sand silt	0.40m	0.40m	0.44m		Fill of post hole	
380	Cut	Sub-square feature with vertical sides and flat base	0.40m	0.40m	0.44m		Cut of posthole	
381	Fill	Soft mid brown silty sand	0.02m	0.15m	0.40m		Fill of grave	
382	Cut	Sub-rectangular feature with flattish base		0.15m	0.40m		Cut of grave	
383	Fill	Compact, light brownish yellow silty sand	0.12m	0.36m	0.75m		Fill of grave	
384	Cut	Semi-rectangular feature with straight sides and flattish base	0.12m	0.36m	0.75m		Cut of grave	
385	Structure	Sandstone block feature	0.15m	0.55m	0.55m		Foundation	
386	Cut	Sub-rectangular feature with vertical sides and concave base	0.20m	0.50m	0.70m		Foundation construction cut	
387	Structure	Sandstone block feature	0.15m	0.55m	0.70m		Foundation	
388	Cut	Truncated irregular cut feature	0.15m	0.65m	0.72m		Foundation construction cut	
389	Structure						Foundation	
390	Cut						Foundation construction cut	
391	Cut	Oval feature with concave sides and base	0.80m	0.68m	0.60m		Cut of pit	
392	Fill	Compact, grey-brown silty sand	0.57m	0.97m	1.48m		Fill of pit	13th century

393	Cut	Rectangular feature with angled sides and uneven base	0.22m	0.60m	0.72m		Post-medieval post hole cut	
394	Fill	Compact, mid grey-brown sandy silt	0.22m	0.60m	0.72m		Post-medieval post hole fill	
395	Cut	Sub-rectangular feature with uneven sides and base	0.20m	0.56m	0.72m		Post-medieval post hole cut	
396	Fill	Compact, mid grey-brown sandy silt	0.20m	0.56m	0.72m		Post-medieval post hole fill	
397	Cut	Cut of feature					Post-medieval post hole cut	
398	Fill	Compact mid grey silty sand					Post-medieval post hole fill	13th century
399	Fill	Soft mid brown silty sand	0.10m	0.80m	1.70m		Fill of grave	
400	Cut	Sub-rectangular feature with straight sides and flat base	0.10m	0.80m	1.70m		Cut of grave	
401	Cut	Semi-rectangular feature with sloping sides		1.00m	1.30m		Cut of pit	
402	Cut	Sub-oval feature with vertical sides and concave base	0.57m	0.97m	1.48m		Cut of pit	
403	Fill	Loose yellow-brown silty sand	0.13m	0.39m	0.82m		Fill of grave	
404	Cut	Rectangular feature with shallow sides and flat base	0.13m	0.39m	0.82		Cut of grave	
405	Fill	Compact mid to dark brown silty clay sand	0.40m	0.80m	1.20m		Fill of pit	
406	Cut	Cut of truncated feature	0.40m	0.80m	1.20m		Cut of pit	
407	Fill	Compact, mid grey silty sand	0.25m	0.50m	1.15m		Fill of pit	13th century
408	Cut	Sub-oval feature with concave base	0.25m	0.50m	1.15m		Cut of pit	
409	Fill	Compact, light brown-yellow silty sand	0.12m	0.48m	0.77m		Fill of grave	
410	Cut	Semi-rectangular feature with straight sides and flat base	0.12m	0.48m	0.77m		Cut of grave	
411	Fill	Compact, mid orange-brown silty sand	0.42m				Fill of robber trench	
412	Cut	Compound feature with vertical sides and flat base					Cut of robber trench	
413	Fill	Compact, brown yellow silty sand	0.15m	0.70m	0.90m		Fill of modern pit	
414	Cut	Semi-oval feature with straight sides and flat base	0.15m	0.70m	0.90m		Cut of modern pit	
415	Layer	Compact, brown yellow silty sand	0.28m	0.15m			Modern disturbance	
416	Fill	Compact, dark brown sandy loam	0.32m	0.50m	1.50m		Pipe trench fill	
417	Cut	Linear feature with vertical sides and flat	0.25m	0.40m			Pipe trench cut	

		base						
418	Fill	Compact, dark grey brown silty sand					Construction cut fill	
419	Structure	Sandstone block linear feature	0.30m	0.70m	0.70m		Masonry	
420	Cut	Not excavated					Construction cut	
421	Fill	Compact greyish yellow silty sand	0.13m	0.36m	0.80m		Fill of grave	
422	Cut	Semi-rectangular feature with straight sides and flat base	0.13m	0.36m	0.80m		Cut of grave	
423	Fill	Compact greyish yellow silty sand	0.06m	0.20m	0.33m		Fill of grave	
424	Cut	Semi-rectangular feature with straight sides and flat base	0.06m	0.20m	0.33m		Cut of grave	
425	Fill	Compact, orange-brown sandy silt	0.08m	0.25m	0.80m		Fill of grave	
426	Cut	Rectangular feature with vertical sides and flat base		0.25m	0.80m		Cut of trench	
427	Fill	Compact yellowish brown sandy loam	0.20m	1.32m	1.20m		Fill of robber trench	
428	Cut	Linear feature with vertical sides and flat base	0.20m	1.32m	1.20m		Cut of robber trench	
429	Structure	Linear, roughly hewn limestone feature		0.65m	1.30m		N-S wall	
430	Fill	Compact yellowish/brown sand	0.14m	0.68m			Construction cut fill	
431	Cut	Linear feature with vertical sides and flat base	0.14m	0.68m	1.30m		Wall construction cut	
432	Fill	Compact, dark brown/grey sandy silt loam	0.70m	0.56m	0.90m		Fill of modern pit	
433	Cut	Oval feature with concave sides and base		0.86m	0.60m		Cut of modern pit	
434	Fill	Compact yellowish brown sandy loam with gravel	0.22m	0.50m	1.50m		Fill of pipe trench	19th century
435	Cut	Linear feature with vertical sides and flat base	0.22m	0.50m	1.50m		Cut of pipe trench	
436	Fill	Compact greyish brown sandy loam	0.18m	0.65m	1.30m		Fill of pit	
437	Cut	Oval feature with concave sides and base	0.18m	0.65m	1.30m		Cut of pit	
438	Cut	Cut of a round feature		0.50m			Cut of modern post hole	
439	Fill	Loose mid grey sandy silt	0.26m				Fill of modern posthole	
440	Cut	Rectangular feature with vertical sides and uneven base	0.26m	0.90m	0.96m		Cut of Victorian posthole	
441	Fill	Compact, mid brown silty sand	0.26m				Fill of Victorian post hole	Post medieval

442	Fill	Semi-compact, orangey brown sandy silt	0.05m	0.20m	1.20m		Fill of grave	
443	Cut	Rectangular feature with vertical sides and flat base		0.20m	1.20m		Cut of grave	
444	Fill	Compact yellowish brown sandy loam	0.20m	0.60m	0.80m		Fill of robber trench	
445	Cut	Square shaped feature with vertical sides and flat base	0.20m	0.60m	0.80m		Cut of robber trench	
446	Structure	Rectangular limestone structure	0.07m	0.14m	0.22m		Modern structure	
447	Cut	Rectangular feature with straight sides and flat base	0.23m	0.70m	1.30m		Cut of modern structure	
448	Fill	Soft, dark brown silty sand	0.23m	0.70m	1.30m		Fill of modern structure	20th century
449	Cut	Round feature with angled sides and flat base	0.18m	0.36m			Cut of modern post hole	
450	Fill	Loose mid grey sandy silt	0.16m				Fill of modern post hole	
451	Fill	Semi-compact yellowy orange sandy silt	0.60m	0.12m	0.25m		Fill of grave	
452	Cut	Rectangular feature with straight sides and flat base		0.12m	0.25m		Cut of grave	
453	Structure	L-shaped brick feature		0.80m	2.40m		Modern brick wall	
454	Cut	L-shaped feature cut		0.80m	2.40m		Cut of modern wall	
455	Layer	Friable, dark brown greyish silty sand	0.04m	0.40m	2.20m		Modern disturbance	
456	Fill	Semi-compact, yellow brown sandy silt	0.56m	0.43m	1.78m		Fill of grave	
457	Cut	Rectangular feature with flat base		0.43m	1.78m		Cut of grave	
458	Coffin	Grey wood staining and iron nail/pins				21-25	Coffin	
459	Cut	Ovoid feature with steep sides and slightly concave base	0.60m	0.60m	1.90m		Cut of grave	
460	Fill	Firm, mid yellowish brown silty sand	0.60m	0.60m	1.90m		Fill of grave	
461	Fill	Firm dark brown silty sand	0.13m	0.70m	0.90m		Fill of modern feature	
462	Fill	Compact, dark greyish yellow silty sand	0.10m	0.34m	1.14m		Fill of grave	
463	Cut	Semi-rectangular feature with flat base	0.10m	0.34m	1.14m		Cut of grave	
464	Fill	Compact, brownish yellow silty sand	0.11m	0.30m	1.20m		Fill of grave	
465	Cut	Semi-rectangular feature with straight sides and flat base	0.11m	0.30m	1.20m		Cut of grave	
466	Fill	Compact brown yellow silty sand	0.09m	0.38m	1.30m		Fill of grave	
467	Cut	Rectangular feature with straight sides and flat base	0.09m	0.38m	1.30m		Cut of grave	

468	Cut	Linear feature with angled sides and flat base	0.32m	0.60m			Cut of linear ditch	
469	Fill	Compact mid brown silty sand	0.32m				Fill of linear ditch	
470	Cut	Linear feature with angled sides and flat base	0.48m	1.50m			Cut of wall	
471	Fill	Compact, mid brown silty sand	0.50m	0.24m			Fill of wall cut	
472	Cut	Linear feature with flat base		0.48m	1.28m		Cut of robber trench	
473	Fill	Mixed soils					Fill of robber trench	
474	Cut	Linear feature					Cut of pipe trench	
475	Fill	Tough					Fill of pipe trench	
476	Fill	Compact brownish yellow sand	0.27m	0.19m	0.26m		Fill of grave	
477	Cut	Rectangular feature with flat base	0.27m	0.19m	0.26m		Cut of grave	
478	Cut	Linear feature with vertical sides and flat base	0.36m		1.30m		Wall construction cut	
479	Fill	Compact mid brown silty sand	0.16m				Wall foundation	
480	Fill	Compact mid brown silty sand	0.32m				Wall foundation	
481	Fill	Compact mid grey brown sandy silt	0.20m				Layer	
482	Structure	Linear roughly squared limestone feature	>0.07m	0.50m	6.00m		Barn wall	
483	Cut	Cut of linear feature		0.50m	6.00m		Construction cut	
484	Structure	L-shaped roughly squared limestone feature		1.30m	2.90m		Barn wall	
485	Cut	L-shaped cut of feature		1.30m	2.90m		Construction cut	
486	Structure	Linear stone feature	>0.07m	1.80m	2.80m		Barn wall	
487	Cut	L-shaped cut of feature		0.50m	0.60m		Construction cut	
488	Cut	Sub-circular feature with concave side and base	0.95m	2.00m	2.40m		Cut of pit	
489	Fill	Compact, mid brownish yellow clayey sand	0.12m	1.30m			Fill of pit	
490	Fill	Soft mid brown silty sand	0.30m	1.30m			Fill of pit	
491	Fill	Firm mid yellowish brown silty sand	0.60m	2.00m			Fill of pit	
492	Cut	Circular feature with steep sides and flat base	0.60m	0.80m	0.80m		Cut of post-medieval pit	
493	Fill	Firm brownish grey silty sand	0.60m	0.80m	0.80m		Fill of post-medieval pit	

494	Fill	Soft dark brown greyish silty sand	0.37m	0.35m	3.80m		Fill of service trench	
495	Cut	Linear feature with straight sides and rounded base	0.37m	0.35m	3.80m		Cut of service trench	
496	Fill	Soft mid brown-greyish silty sand	0.38m	0.55m	1.40m		Fill of modern pit	
497	Cut	Sub-circular feature with concave side and rounded base	0.38m	0.55m	1.40m		Cut of modern pit	
498	Cut	Oval feature with sloping sides and concave base	0.14m	0.38m	0.60m		Cut of small pit	
499	Fill	Compact light brown sand	0.14m	0.38m	0.60m		Fill of small pit	
500	Cut	Oval feature with sloping sides and concave base	0.14m	0.32m	0.36m		Cut of small pit	
501	Fill	Compact light brown sand	0.14m	0.32m	0.36m		Fill of small pit	
502	Cut	Oval feature with sloping sides and concave base	0.14m	0.75m	0.80m		Cut of small pit	
503	Fill	Compact light brown sand	0.14m	0.75m	0.80m		Fill of small pit	13th century
504	Cut	Circular feature with sloping sides and irregular base	0.10m	0.72m	0.75m		Cut of small pit	
505	Fill	Compact light brown sand	0.10m	0.72m	0.75m		Fill of small pit	
506	Layer	Compact mid brown sand	0.12m	2.50m	6.40m		Possible Roman cultivation horizon	
507	Fill	Compact mid brown sand	0.20m	1.32m	0.95m		Fill of robber trench	
508	Fill	Compact yellow/brown sandy loam	0.30m	2.10m	0.95m	80, 81	Fill of robber trench	
509	Fill	Compact mid brown sandy loam	0.12m	1.00m	0.95m		Fill of robber trench	
510	Fill	Compact mid brown sand	0.12m	0.80m	0.50m		Fill of robber trench	
511	Fill	Compact grey/brown sandy loam	0.20m	2.10m	0.95m		Fill of robber trench	
512	Fill	Compact mid brown sandy loam	0.14m	1.88m	0.95m	119	Fill of robber trench	
513	Cut	Oval feature with vertical sides and undulating base	0.76m	2.20m	3.30m		Cut of robber trench-column base	
514	Fill	Compact grey brown sandy loam	0.68m	0.60m	0.70m	124	Fill of modern post hole	
515	Cut	Oval feature with concave side and base	0.68m	0.60m	0.70m		Cut of modern post hole	
516	Fill	Soft mid brown silty sand	0.08m	0.35m	0.97m		Fill of grave	
517	Cut	Cut of sub-rectangular feature	0.08m	0.35m	0.97m		Cut of grave	
518	Fill	Compact yellow brown silty sand	0.16m	0.35m	1.05m		Fill of grave	
519	Cut	Semi-rectangular feature with straight sides and flat base	0.16m	0.35m	1.05m		Cut of grave	

520	Fill	Compact yellow brown silty sand	0.14m	0.40m	0.80m		Fill of grave	
521	Cut	Semi-rectangular feature with straight sides and flat base	0.14m	0.40m	0.80m		Cut of grave	
522	Fill	Soft mid brown silty sand	0.11m	0.48m	1.56m		Fill of grave	
523	Cut	Cut of sub-rectangular feature	0.11m	0.48m	1.56m		Cut of grave	
524	Fill	Soft mid brown silty sand	0.12m	0.45m	0.85m		Fill of grave	
525	Cut	Cut of sub-rectangular feature	0.12m	0.45m	0.85m		Cut of grave	
526	Cut	Linear feature with moderate to steep sides and uneven base	0.20m	0.60m	1.40m		Cut of robber trench	
527	Fill	Soft mid brown silty sand	0.10m	0.60m	0.60m	146	Fill of robber trench	
528	Fill	Firm, mid yellowish brown clayey sand	0.20m	0.60m	1.40m		Fill of robber trench	
529	Cut	Sub-square feature with steep sides and concave base	0.10m	0.35m	0.35m		Cut of small pit	
530	Fill	Soft mid greyish brown silty sand	0.10m	0.35m	0.35m		Fill of small pit	
531	Cut	Cut of linear feature		0.50m	0.80m		Cut of service trench	
532	Fill	Compact, mid yellow brown sandy silt					Fill of service trench	
533	Cut	Cut of sub-rectangular feature		0.80m	2.00m		Cut of grave	
534	Fill	Compact mid brown sandy silt					Fill of grave	
535	Cut	Cut of sub-rectangular feature		0.50m	2.10m		Cut of grave	
536	Fill	Compact mid yellowish brown silty sand					Fill of grave	
537	Layer	Soft mid brown silty sand	0.04m	0.20m	0.30m		Charnel deposit	
538	Fill	Soft dark brown greyish silty sand	0.08m	0.30m	0.40m		Modern disturbance containing charnel	
539	Fill	Soft mid brown silty sand	0.14m	0.40m	1.40m		Fill of grave	
540	Cut	Sub-rectangular feature with concave side and flat base	0.16m	0.50m	1.00m		Cut of grave	
541	Layer						Cobbled surface	13th century
542	Cut	Linear feature with steep sides and flat base	0.60m	1.40m	1.50m		Cut of robber trench	
543	Fill	Soft mid greyish brown clayey sand	0.12m	1.00m			Fill of robber trench	
544	Fill	Loose mid brownish grey clayey sand	0.12m	1.10m		26	Fill of robber trench	
545	Fill	Firm mid reddish brown clayey sand	0.10m	1.20m			Fill of robber trench	
546	Cut	Irregularly sub-rounded feature with	0.08m	0.30m	0.40m		Cut of modern disturbance	

		concave side and rounded base						
549	Fill	Compact pale greyish white sandy silt	0.30m	0.35m	1.40m		Fill of robber trench	
550	Layer	Firm mid reddish brown silty sand	0.15m	0.70m			Layer of redeposit natural	
551	Cut	Circular feature with step sides and convex base	0.90m	0.70m	0.90m		Cut of pit	
552	Fill	Soft mid grey brown silty sand	0.10m	0.70m			Fill of pit	
553	Fill	Loose mid greyish brown silty sand	0.40m	0.90m			Fill of pit	
554	Fill	Firm mid yellowish brown clayey sand	0.30m	0.90m			Fill of pit	
555	Fill	Soft mid brown grey clayey sand	0.12m	0.80m			Fill of pit	
556	Fill	Compact grey/brown sandy loam	0.26m	0.50m	1.38m		Fill of robber trench	
557	Fill	Compact mid brown sandy loam	0.14m	0.50m	1.38m		Fill of robber trench	
558	Layer	Compact greyish, whitish limestone					Bedrock outcrop, eastern area	
559	Cut	Cut of sub-rectangular feature		0.60m	2.00m		Cut of grave	
560	Fill	Compact mid brown silty sand					Fill of grave	
561	Layer	Semi-compact brownish yellow silty sand	0.10m	0.50m	1.00m		Layer with charnel	
564	Cut	Cut of sub-rectangular feature		0.75m	1.80m		Cut of grave	
565	Fill	Compact mid to light brown/yellow sandy silt					Fill of grave	
566	Cut	Cut of sub-rectangular feature		0.55m	1.70m		Cut of grave	
567	Fill	Compact mid grey brown silty sand				91	Fill of grave	13th century
568	Fill	Soft mid brown silty sand	0.14m	0.25m	0.30m		Fill of grave	
569	Cut	Cut of sub-rectangular feature	0.14m	0.25m	0.30m		Cut of grave	
570	Cut	Cut of sub-circular feature	0.20m	1.20m	1.30m		Foundation construction cut	
571	Structure	Roughly coursed limestone structure	0.15m	0.30m	0.35m		Foundation	
572	Cut	Sub-circular feature with vertical sides	0.65m	2.60m	2.90m		Cut of robber trench	
573	Fill	Stiff pale greyish yellow silty sand	0.10m	1.30m			Fill of robber trench	
574	Fill	Firm pale brownish yellow silty sand	0.24m	1.30m			Fill of robber trench	
575	Fill	Firm, mid greyish brown silty sand	0.25m	0.40m			Fill of robber trench	
576	Fill	Firm, pale greyish brown silty sand	0.20m	1.30m			Fill of robber trench	
577	Fill	Loose, mid brownish fine sandy gravel	0.20m	1.30m		100	Fill of robber trench	
578	Cut	Sub-rectangular feature with sharp sides and flat base	0.80m	0.50m	0.60m		Cut of grave	

579	Fill	Soft mid brown silty sand	0.80m				Fill of grave	
580	Cut	Sub-rectangular feature with vertical sides and flat base	0.14m	0.35m	1.00m		Cut of grave	
581	Fill	Compact mid brown silty sand	0.14m				Fill of grave	
582	Cut	Cut of linear feature					Cut of modern wall	
583	Structure	Concrete structure					Modern wall	
584	Cut	Cut of sub-rectangular feature					Cut of modern feature	
585	Fill	Loose dark grey ash, silt and sand					Fill of modern feature	
586	Fill	Compact brown/yellow silty sand	0.10m	0.76m	1.46m	138	Fill of grave	
587	Cut	Semi-rectangular feature with straight sides and flat base	0.10m	0.76m	1.46m		Cut of grave	
588	Coffin	9 coffin nails found in situ				23-37	Coffin	
589	Layer	Loose, light brownish yellow sand		1.70m		38	Charnel deposit	
590	Fill	Semi-compact yellowish greyish brown silty sand	0.29m	0.64m	1.90m	39, 40, 52, 104, 134	Fill of grave	
591	Cut	Rectangular feature with straight side and flat base	0.29m	0.64m	1.90m		Cut of grave	
592	Fill	Soft mid greenish grey silty sand	0.40m	0.90m	2.80m	154, 155	Fill of charnel pit	
593	Cut	Ovoid feature with vertical sides and flat base	0.40m	0.90m	2.80m		Cut of charnel pit	
594	Fill	Soft mid reddish brown clayey sand	0.10m	0.20m	0.20m		Fill of post hole	
595	Cut	Sub-circular feature with steep sides and concave base	0.10m	0.20m	0.20m		Cut of post hole	
596	Fill	Semi compact yellow brown silty sand	0.09m	0.56m	1.82m		Fill of grave	
597	Cut	Semi-rectangular feature with straight sides and flat base	0.09m	0.56m	1.82m		Cut of grave	
598	Coffin	2 coffin nails and traces of wood staining				41, 42	Coffin, sk57	
599	Fill	Loose light brownish yellow sand	0.27m	0.46m	1.70m		Fill of grave	
600	Cut	Rectangular feature with vertical sides and flat base		0.46m	1.70m		Cut of grave	
601	Coffin	7 iron nails found in situ with clear outline of coffin visible				43-50, 52	Coffin	
602	Fill	Firm mottled grey/green fill		0.60m	1.70m	114-116, 121, 122	Fill of grave	
603	Cut	Oval feature with concave sides and flat		0.60m	1.70m		Cut of grave	

		base						
604	Fill	Coarse grained, loose yellowish brown sand	0.31m	0.35m	1.79m		Fill of grave	
605	Cut	Rectangular feature with vertical sides and flat base		0.35m	1.79m		Cut of grave	
606	Fill	Soft, mid dark brown silty sand	0.20m	0.34m	1.83m		Fill of grave	
607	Cut	Cut for feature					Cut of grave	
608	Structure	Sub-rectangular feature of reused roof tiles		0.34m	1.83m	82	Stone lined cist	
609	Fill	Compact, mid brown sandy loam		0.60m	2.14m	117	Fill of grave	
610	Cut	Rectangular feature with vertical sides and flat base		0.60m	2.14m		Cut of grave	
611	Layer	Coarse grained, loose brown yellow sand			1.74m		Cleaning layer	
612	Fill	Coarse grained, loose brown yellow sand	0.20m	0.62m	1.74m	84-86, 95	Fill of grave	
613	Cut	Rectangular feature with vertical sides and flat base		0.62m	1.74m		Cut of grave	
614	Fill	Firm, mid brown sandy loam	0.14m	0.60m	1.50m		Fill of grave	13th century
615	Cut	Rectangular feature with vertical sides and flat base	0.14m	0.60m	1.50m		Cut of grave	
618	Cut	Cut of semi-rectangular feature	0.08m	0.50m	0.76m		Cut of grave	
619	Fill	Compact yellow brown silty sand	0.08m	0.50m	0.76m		Fill of grave	
620	Cut	Cut of a linear feature		0.50m	1.75m		Robber trench cut	
621	Fill	Compact mid brown sandy silt	0.60m	050m	1.75m		Fill of robber trench	
622	Cut	Roughly round feature with angled sides and flat base		1.75m	2.60m		Cut of pit	
623	Fill	Compact, mid grey sandy silt	0.8m	1.75m	2.60m		Fill of pit	
624	Fill	Compact, mid brown sand	0.10m	0.40m	1.60m		Fill of grave	
625	Cut	Rectangular feature with vertical sides and flat base	0.10m	0.40m	1.60m		Cut of grave	
626	Structure	Linear concrete structure					Concrete footings	
627	Cut	Hard mid brown clayey sand					Cut of concrete footings	
628	Coffin	7 nails found in situ					Coffin	
629	Structure	Square shaped stone feature		0.83m	0.90m		Buttress	
630	Cut	Cut of square feature		0.83m	0.90m		Cut of buttress	

631	Fill	Compact, mid dark brown silty sand		0.60m	0.80m		Fill of pit	
632	Cut	Cut of sub-circular feature		0.60m	0.80m		Cut of pit	
633	Fill	Compact, mid dark brown silty sand		>0.40m	1.10m		Fill of pit	
634	Cut	Cut of sub-circular feature		>0.40m	1.10m		Cut of pit	
635	Fill	Compact, mid dark brown silty sand		>0.40m	0.90m		Fill of pit	
636	Cut	Cut of linear feature		>0.40m	0.90m		Cut of pit	
637	Fill	Compact mid brown sand	0.28m	0.68m	2.00m	99, 108-110, 130, 131	Fill of grave	
638	Coffin	Traces of wooden sides visible with 5 iron nails in situ				60-64	Coffin stain	
639	Cut	Rectangular feature with vertical sides and flat base	0.32m	0.68m	2.00m		Cut of grave	
640		Worked sandstone in situ, part of 352	0.35m	0.14m	0.65m		Worked stone	
641	Structure	Linear feature of stone scattering		0.80m	3.80m		Wall	
642	Cut	Cut of linear feature		0.80m	3.80m		Wall construction cut	
643	Fill	Compact, light brown yellow silty sand	0.05m	0.45m	1.66m	118	Fill of grave	
644	Cut	Cut of semi-rectangular feature	0.05m	0.45m	1.66m		Cut of grave	
645	Fill	Compact brown silty sand	>0.03m	0.40m	1.80m		Fill of grave	
646	Cut	Cut of sub-rectangular feature					Cut of grave	
647	Fill	Compact mid brown-yellow silty sand					Fill of post hole	
648	Cut	Cut of semi-circular feature					Cut of post hole	
649	Structure	Linear feature of roughly hewn limestone		1.00m	2.00m		Wall/buttress	
650	Fill	Compact greyish brown sand	0.32m	1.00m	2.00m		Fill of wall/buttress	
651	Cut	Linear feature with vertical sides and flat base	0.32m	1.00m	2.00m		Construction cut	
652	Fill	Compact dark grey sandy loam	0.20m	0.40m	0.50m		Fill of modern pit	
653	Cut	Oval feature with concave sides and base	0.20m	0.40m	0.50m		Cut of modern pit	
654	Fill	Compact dark grey sandy loam	0.16m	0.30m	0.86m		Fill of modern pit	
655	Cut	Rectangular feature with vertical sides and flat base	0.16m	0.30m	0.86m		Cut of modern pit	
656	Fill	Compact, dark yellowish brown silty sand	0.16m	0.60m	2.00m		Fill of modern linear feature	
657	Cut	Linear feature with straight sides and flat					Cut of modern linear feature	

		base						
658	Fill	Compact yellowish brown silty sand	0.03m	0.35m	1.04m		Fill of grave	
659	Cut	Cut of semi-rectangular feature	0.03m	0.35m	1.04m		Cut of grave	
660	Fill	Firm mid greyish brown silty sand	0.25m	0.70m	1.90m		Fill of grave	
661	Cut	Sub-ovoid feature with steep side and concave base	0.25m	0.70m	1.90m		Cut of grave	
662	Fill	Compact mid brown sand	0.08m	0.40m	1.27m		Fill of grave	
663	Cut	Oval feature with vertical sides and flat base	0.08m	0.40m	1.27m		Cut of grave	
664	Cut	Linear feature with vertical sides and flat base	0.24m		1.20m		Cut of robber trench	
665	Fill	Medium beige sand	0.20m				Fill of robber trench	
666	Fill	Moderate dark brown/yellow brown silty sand	0.15m				Fill of robber trench	
667	Cut	Linear feature with concave sides and rounded base	0.10m		0.60m		Cut of robber trench	
668	Fill	Brown silty sand	0.10m				Fill of linear feature	
669	Layer	Surface of limestone, sandstone and CBM	0.30m				Cobbled surface	
670	Structure	Linear concrete structure					Concrete footings	
671	Cut	Sub-rectangular feature					Cut of concrete footings	
672	Fill	Firm mid brown sand	0.08m	0.42m	1.17m		Fill of grave	13th century
673	Cut	Oval feature with vertical sides and flat base	0.08m	0.42m	1.17m		Cut of grave	
674	Cut	Cut of sub-rectangular feature		0.40m	0.80m		Cut of grave (possible)	
675	Fill	Compact mid grey brown sandy silt					Fill of grave (possible)	
676	Cut	Cut of sub-rectangular feature		2.10m	2.30m		Cut of grave (possible)	
677	Fill	Compact mid grey sandy silt					Fill of grave (possible)	
678	Fill	Moderate mid to light brown silty sand	>0.03m	0.25m	0.90m		Fill of grave	
679	Cut	Cut of sub-rectangular feature		0.25m	0.55m		Cut of grave	
680	Fill	Medium compact, mid to light brown sand	>0.06m	0.40m	1.55m		Fill of grave	
681	Cut	Cut of sub-rectangular feature		0.30m	1.35m		Cut of grave	
682	Fill	Moderate mid to light brown sand	>0.05m	0.25m	1.45m		Fill of grave	

683	Cut	Cut of sub-rectangular feature	0.10m	0.20m	1.40m		Cut of grave	
684	Fill	Moderate mid to light brown sand	>0.15m	0.45m	1.75m		Fill of grave	
685	Cut	Cut of sub-rectangular feature		0.40m	1.58m		Cut of grave	
686	Referenc e	Collection of human skull fragments. Left in situ					Human bone fragment	
687	Fill	Soft mid greyish brown silty sand	0.15m	0.80m	1.90m	149	Fill of grave	13th century
688	Fill	Firm mid reddish brown clayey sand	0.05m	0.50m	1.70m		Fill of grave	
689	Coffin	Wood staining and 6 iron nails		0.50m	1.70m	65-70	Coffin stain	
690	Cut	Sub-rectangular feature with steep sides and flat base	0.30m	0.80m	1.90m		Cut of grave	
691	Layer	Compact mid grey sandy silt					Grave fills	
692	Layer	Medium, mid dark brown sand	0.05m				Layer overlying sk77 and sk78	
693	Cut	Cut of sub-rectangular feature		0.60m	1.70m		Cut of grave (probable)	
694	Fill	Compact mid brown sandy silt					Fill of grave (probable)	
695	Cut	Roughly rectangular feature with vertical sides and flat base	0.40m	2.80m	3.60m		Machine dug sondage	
696	Cut	Cut of sub-rectangular feature		0.60m	2.00m		Cut of grave (possible)	
697	Fill	Compact mid grey sandy silt					Fill of grave (possible)	
698	Cut	Cut of sub-rectangular feature		0.60m	1.75m		Cut of grave	
699	Fill	Compact mid grey sandy silt					Fill of grave	
700	Cut	Cut of circular feature		1.15m			Cut of grave (possible)	
701	Fill	Compact mid grey sandy silt					Fill of grave (possible)	
702	Fill	Semi-compact brownish yellow silty sand	0.24m	1.45m	1.50m	145	Fill of charnel pit	
703	Cut	Semi-circular feature with straight sides and flat base	0.24m	1.45m	1.50m		Cut of charnel pit	
704	Fill	Semi-compact, dark greyish-brown loamy sand	0.11m	0.23m	0.23m		Fill of post hole	
705	Cut	Circular feature with straight sides and flat base	0.11m	0.23m	0.23m		Cut of post hole	
706	Fill	Firm mid brown sand	0.24m	0.50m	1.50m		Fill of grave	
707	Cut	Oval feature with vertical sides and flat base	0.24m	0.50m	1.50m		Cut of grave	
708	Fill	Moderate, mid to light brown sand	>0.10m				Fill of grave	

709	Cut	Sub-rectangular feature with vertical sides and flat base	0.10m	0.40m	0.60m		Cut of grave	
710	Fill	Semi-compact, mid yellow brown sand	0.19m	0.40m	0.60m		Fill of post hole	
711	Cut	Semi-circular feature with straight sides and flat base	0.19m	0.40m	0.60m		Cut of post hole	
712	Cut	Cut of sub-rectangular feature		0.50m	0.50m		Cut of grave	
713	Fill	Compact mid brown sandy silt					Fill of grave	
714	Fill	Compact mid grey to dark brown sandy silt					Fill of grave	
715	Cut	Linear feature with vertical sides	0.90m	0.70m	5.00m		Cut of linear ditch	
716	Fill	Loose mid grey silt sand		0.50m			Fill of linear ditch	
717	Fill	Soft mid yellowish grey silty sand	0.18m	0.60m			Fill of linear ditch	
718	Fill	Firm, mid reddish brown sandy silt	0.75m	0.70m	5.00m		Fill of linear ditch	
719	Cut	Sub-circular feature with steep sides and concave base	0.60m	2.60m	4.00m		Cut of post-medieval pit	
720	Fill	Friable mid yellowish brown silty sand		1.90m			Fill of pit	
721	Fill	Firm mid greyish brown sandy silt		2.60m	4.00m		Fill of pit	
722	Fill	Soft brown grey sandy clay	0.20m	0.45m	1.70m		Fill of grave	
723	Cut	Sub-rectangular feature with vertical sides and flat base	0.20m	0.45m	1.70m		Cut of grave	
724	Coffin	8 iron nails and outline of coffin				71-78, 141	Coffin stain	
725	Structure	Single layer of roughly hewn limestone		1.70m	5.00m		Post-medieval cobbled surface	
726	Layer						Levelling deposit underlying 725	
727	Fill						Fill of structural cut	
728	Group number						Modern pipe	
729	Cut						Possible grave-unexcavated	
730	Fill						Fill of 729	
731	Structure						Wall	
732	Cut						Construction cut for 731	
733	Layer						Sub-soil or Roman plough soil	
734	Cut						Post hole	
735	Fill						Fill of 734	

740	Cut						Grave cut filled by 741 & sk84	
741	Fill						Fill of 740	
742	Cut						Grave cut filled by 743 & sk85	
743	Fill						Fill of 742	
744	Cut						17th century post hole	
745	Fill						Fill of 743	13th century
746	Cut						Modern post hole filled by 749	
747	Cut						Charnel pit filled by 748	
748	Fill						Fill of 747	
749	Fill						Fill of 476	
750	Fill						Lower fill of 696	
751	Cut						Grave cut filled by 752 & sk88	
752	Fill						Fill of 751	
753	Cut						Grave cut filled by 754 & sk89	
754	Fill						Fill of 753	
755	Fill						Fill of 758	
756	Cut						Cut for cist 2028	
757	Coffin						Coffin no for sk88	
758	Fill						Fill of 2028	
2000	Wall	Linear feature of roughly squared stone	0.26m	0.50m	8.70m		Stone wall related to farmhouse	
2001	Cut	Linear cut with straight sides		0.50m	8.70m		Foundation cut for farmhouse wall	
2016	Wall	Firm mid brown-yellowish silty sand with large stones and gravel	0.28m		>1.20m		Fill of robber trench	
2017	Cut	Linear feature with concave sides and flat base		0.28m	1.30m		Cut of robber trench	
2018	Wall	Linear feature of roughly squared stone		1.20m	3.70m		Post-medieval barn wall	
2019	Cut	Cut of linear feature		1.20m	3.70m		Cut of post-medieval wall	
2028	Structure	Sub-rectangular feature made from block squared sandstone		0.58m	2.00m		Stone cist for sk.2	
2029	Cut	Rectangular feature with straight sides and flat base	0.24	0.58m	1.70m		Cut of cist	
2030	Wall	Linear feature of roughly squared limestone		0.50m	4.00m		Post-medieval barn wall	

2031	Cut	Cut of linear feature		0.50m	4.00m		Construction cut for post-medieval barn wall	
2032	Wall	Linear feature made from brick		0.40m	5.20m		Modern brick wall	
2033	Cut	Cut of linear feature					Cut of modern brick wall	
2034	Wall	Linear feature of roughly squared stone		0.60m	6.80m		Post-medieval barn wall	
2035	Cut	Cut of linear feature					Cut of post-medieval barn wall	
2036	Wall	Sub-rectangular feature of roughly squared stone		1.30m	2.80m		Sub-rectangular modern feature abutting post-medieval barn wall 2034	
2037	Cut	Cut of Sub-rectangular feature					Cut of sub-rectangular modern structure	
2038	Wall							
2039	Cut							
2040	Wall							
2041	Cut							
2044	Wall							
2045	Cut							
2046	Wall							
2047	Cut							
2048	Wall							
2049	Cut							
2052	Wall	Linear feature of un-worked stone		0.95m			Foundation for stone wall	
2053	Cut	Linear feature with concave side and rounded base		1.20m			Foundation cut for wall	
1	Skeleton	Female skeleton. Mostly complete. Lying E-W				5-19	Inhumation	Medieval
2	Skeleton	Female adult skeleton. Mostly complete. Lying N-E				1, 2	Inhumation	Medieval
3	Skeleton	Female skeleton. Less than half complete. Lying E-W				20-25	Inhumation	Medieval
4	Skeleton	Unknown adult skeleton. 30% complete. Lying W-E				28-37	Inhumation	Medieval
5	Skeleton	Female skeleton. 40% complete. Lying E-W				39, 40	Inhumation	Medieval
6	Skeleton	Unknown skeleton. 30% complete. Lying E-W				43-50, 52-58	Inhumation	Medieval

7	Skeleton	Unknown skeleton. 10% complete. Lying E-W				60-64	Inhumation	Medieval
8	Skeleton	Big toe and a few small toes remain				65-70	Inhumation	Medieval
9	Skeleton	Female adult skeleton. 40% complete. Lying E-W				71-78	Inhumation	Medieval
10	Skeleton	Unknown juvenile skeleton. 30% complete. Lying E-W					Inhumation	Medieval
11	Skeleton	Female adult skeleton. 20% complete. Lying W-E					Inhumation	Medieval
12	Skeleton	Female adult skeleton. 90% complete. Lying W-E					Inhumation	Medieval
13	Skeleton	Female skeleton. 20% complete. Lying E-W					Inhumation	Medieval
14	Skeleton	Female skeleton. 45% complete. Lying E-W					Inhumation	Medieval
15	Skeleton	Unknown skeleton. 75% complete. Lying E-W					Inhumation	Medieval
16	Skeleton	Neonate skeleton. 80% complete. Lying E-W					Inhumation	Medieval
17	Charnel	Part of ribs and arm, not in situ					Charnel	Medieval
18	Skeleton	Male skeleton. 85% complete. Lying W					Inhumation	Medieval
19	Charnel Skull	Skull, not in situ					Charnel	Medieval
20	Skeleton	Unknown skeleton. 40% complete. Lying E-W					Inhumation	Medieval
21	Skeleton	Female adult skeleton. 10% complete. Lying W-E					Inhumation	Medieval
22	Skeleton	Female adult skeleton. 80% complete. Lying WNW-ESE					Inhumation	Medieval
23	Skeleton	Female skeleton. 50% complete. Lying E-W					Inhumation	Medieval
24	Skeleton	Unknown juvenile skeleton. 20% complete. Lying W-E					Inhumation	Medieval
25	Skeleton	Unknown skeleton. 20% complete. Lying W					Charnel	Medieval
26	Skeleton	Female skeleton. 80% complete. Lying E-W					Inhumation	Medieval

27	Skeleton	Bone fragments from neonate. 55 complete. Lying W-E					Charnel	Medieval
28	Skeleton	Unknown adult skeleton. 10% complete. Lying E-W					Inhumation	Medieval
29	Skeleton	Unknown skeleton. 15% complete. Lying W					Inhumation	Medieval
30	Skeleton	Unknown juvenile skeleton. 90% complete. Lying W					Inhumation	Medieval
31	Skeleton	Unknown adult skeleton. 5% complete. Lying W-E					Inhumation	Medieval
32	Skeleton	Female skeleton. 30% complete. Lying E-W					Inhumation	Medieval
33	Skeleton	Male adult skeleton. 90% complete. Lying W-E					Inhumation	Medieval
34	Skeleton	Unknown skeleton. 65% complete. Lying W					Inhumation	Medieval
35	Skeleton	Unknown skeleton. 15% complete. Lying E-W					Inhumation	Medieval
36	Skeleton	Unknown skeleton. 30% complete. Lying E-W					Inhumation	Medieval
37	Skeleton	Tibia bones from unknown skeleton					Inhumation	Medieval
38	Skeleton	Unknown skeleton. 15% complete. Lying W					Inhumation	Medieval
39	Skeleton	Unknown skeleton. 10% complete. Lying W					Inhumation	Medieval
40	Skeleton	Unknown skeleton. 5% complete. Lying W					Inhumation	Medieval
41	Skeleton	Unknown skeleton. 90% complete. Lying W					Inhumation	Medieval
42	Skeleton	Unknown, early teens skeleton. 75% complete. Lying E-W					Inhumation	Medieval
43	Skeleton	Unknown juvenile skeleton. 80% complete. Lying E-W					Inhumation	Medieval
44	Skeleton	Unknown skeleton. 80% complete. Lying E-W					Inhumation	Medieval
45	Skeleton	Unknown skeleton. 85% complete. Lying E-W					Inhumation	Medieval
46	Skeleton	Skull of unknown skeleton. Lying E-W					Inhumation	Medieval

47	Skeleton	Unknown juvenile skeleton. 75% complete. Lying W-E					Inhumation	Medieval
48	Skeleton	Unknown skeleton. 80% complete. Lying E-W					Inhumation	Medieval
49	Skeleton	Unknown adult skeleton. 70% complete. Lying E-W					Inhumation	Medieval
50	Skeleton	Female adult skeleton. 80% complete. Lying W-E					Inhumation	Medieval
51	Skeleton	Female adult skeleton. 40% complete. Lying W-E					Inhumation	Medieval
52	Skeleton	Unknown juvenile skeleton. 75% complete. Lying W-E					Inhumation	Medieval
53	Skeleton	Unknown adult skeleton. 10% complete. Lying W-E					Inhumation	Medieval
54	Skeleton	Unknown 15-25 years old skeleton. 25% complete. Lying E-W					Inhumation	Medieval
55	Skeleton	Unknown 15-25 years old skeleton. 20% complete. Lying E-W					Inhumation	Medieval
56	Skeleton	Unknown skeleton. 70% complete. Lying E-W					Inhumation	Medieval
57	Skeleton	Unknown skeleton. Complete. Lying E-W					Inhumation	Medieval
58	Skeleton	Unknown adult skeleton. 90% complete. Lying E-W					Inhumation	Medieval
59	Skeleton	Unknown skeleton. 95% complete. Lying W					Inhumation	Medieval
60	Skeleton	Female adult skeleton. 85% complete. Lying E-W					Inhumation	Medieval
61	Skeleton	Unknown skeleton. 25% complete. Lying W					Inhumation	Medieval
62	Skeleton	Unknown adult skeleton. 70% complete. Lying W-E					Inhumation	Medieval
63	Skeleton	Unknown adult skeleton. 5% complete. Lying E-W					Inhumation	Medieval
64	Skeleton	Unknown skeleton. 60% complete. Lying W					Inhumation	Medieval
65	Skeleton	Female adult skeleton. 30% complete. Lying E-W					Inhumation	Medieval

66	Skeleton	Unknown juvenile (8-10 years old) skeleton. 99% complete. Lying E-W					Inhumation	Medieval
67	Skeleton	Unknown skeleton. 45% complete. Lying E-W					Inhumation	Medieval
68	Skeleton	Female adult skeleton. 95% complete. Lying E-W					Inhumation	Medieval
69	Skeleton	Unknown adult skeleton. 30% complete. Lying E-W					Inhumation	Medieval
70	Skeleton	Unknown adult skeleton. 60% complete. Lying W-E					Inhumation	Medieval
71	Skeleton	Unknown juvenile skeleton. <20% complete. Lying E-W					Inhumation	Medieval
72	Skeleton	Unknown skeleton. Complete. Lying E-W					Inhumation	Medieval
73	Skeleton	Female juvenile (5-10 years old) skeleton. 90% complete. Lying E-W					Inhumation	Medieval
74	Skeleton	Female juvenile (5-10 years old) skeleton. 95% complete. Lying E-W					Inhumation	Medieval
75	Skeleton	Unknown juvenile skeleton. 20-25% complete. Lying W-E					Inhumation	Medieval
76	Skeleton	Unknown adult skeleton. 70% complete. Lying W-E					Inhumation	Medieval
77	Skeleton	Unknown adult skeleton. 20% complete. Lying W-E					Inhumation	Medieval
78	Skeleton	Unknown adult skeleton. 90% complete. Lying W-E					Inhumation	Medieval
79	Skeleton	Unknown young adult skeleton. 90% complete. Lying E-W					Inhumation	Medieval
80	Skeleton	Female adult skeleton. 80% complete. Lying E-W					Inhumation	Medieval
81	Skeleton	Unknown adult skeleton. 50% complete. Lying W-E					Inhumation	Medieval
82	Skeleton	Unknown adult skeleton. Complete. Lying E-W					Inhumation	Medieval
83	Skeleton	Unknown skeleton. 80% complete. Lying E-W					Inhumation	Medieval
84	Skeleton	Unknown adult skeleton. 60% complete. Lying N-E					Inhumation	Medieval

85	Skeleton	Unknown adult skeleton. 65% complete. Lying W-E					Inhumation	Medieval
86	Skeleton	Female adult skeleton. Complete. Lying E-W					Inhumation	Medieval
87	Skeleton	Female adult skeleton. 70% complete. Lying E-W					Inhumation	Medieval
88	Skeleton	Unknown adult skeleton. 80% complete. Lying W-E					Inhumation	Medieval
89	Skeleton	Female adult skeleton. 90% complete. Lying W-E					Inhumation	Medieval
90	Skeleton	Unknown juvenile skeleton. Complete. Lying E-W					Inhumation	Medieval
91	Skeleton	Female adult skeleton. Complete. Lying E-W					Inhumation	Medieval
92	Skeleton	Unknown adult skeleton. 65% complete. LyingW-E					Inhumation	Medieval