Archaeological Investigations at The Old Fire Station, Merstow Green, Evesham, Worcestershire

Worcestershire Archaeology

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THE OLD FIRE STATION MERSTOW GREEN, EVESHAM WORCESTERSHIRE

Archaeological investigation report

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SITE INFORMATION

Site name:	Old Fire Station, Merstow Green, Evesham, Worcestershire
Local planning authority:	Wychavon District Council
Planning reference:	W/14/02407
Central NGR:	SP 03466 43771
Commissioning client:	Wychavon District Council through Prospect Archaeology
WA project number:	P5107
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Summary Archaeological investigations at The Old Fire Station, Merstow Green, Evesham, Worcestershire

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Summary

A series of archaeological investigations was undertaken at the Old Fire Station, Merstow Green, Evesham, Worcestershire (NGR SP 03466 43771). It was commissioned by Prospect Archaeology on behalf of Wychavon District Council, in advance of a proposed supermarket development for which planning permission had been granted subject to a programme of archaeological works.

Following an evaluation with four trial trenches across the site, two areas were excavated to investigate the medieval deposits identified. The excavations revealed a sequence of activity from the Iron Age through to the 17th century. A small number of Middle Iron Age pits were identified in the eastern area, with pottery from this period also found as residual material throughout later deposits. Roman activity was also present in the eastern area. Three steep sided ditches indicating successive replacement formed the northern edge of a probable enclosure dated to the 2nd-4th century.

A stone lined medieval well was found next to three successive phases of an oven, which were probably used for baking bread on a commercial level or drying grain brought into the town for storage. Further medieval features were indicative of backyard activity associated with a burgage plot: a number of pits of a range of functions, including cess deposition and gravel extraction. The well and ovens were abandoned and backfilled in the 17th century, while the level of medieval pitting in the backyard plot was not replicated in the early post-medieval period, with just two pits identified.

The animal bone assemblage suggested disposal onto domestic midden heaps before being deposited in pits as a secondary fill. Environmental evidence demonstrated intentional cultivation of edible plants, indicating either the presence of a kitchen garden or the disposal of waste from one. This analyses also showed that the well became a dumping ground for human and animal faeces, followed by a change in land use from one of varied species cultivation to probable abandonment and colonisation by scrub.

The pottery assemblage was mainly of medieval date, with over 90% of material from that period being of local wares. The majority of the assemblage consisted of domestic forms, either for cooking, storing, or serving food and drink. The fluctuating fortunes of the Worcester and Malvern pottery industries is illustrated within the assemblage.

Radiocarbon samples from fills within two phases of the oven returned dates of 1160 – 1270 cal AD and 1280 – 1400 cal AD, giving a broad start and end date to the structure.

Report

1 Introduction

1.1 Background to the project

A series of archaeological investigations were undertaken by Worcestershire Archaeology (WA) from at The Old Fire Station, Merstow Green, Evesham, Worcestershire (NGR SP 03466 43771). This comprised an evaluation followed by two excavation areas. The project was commissioned by Prospect Archaeology on behalf of Wychavon District Council, in advance of a proposed supermarket development, for which planning permission had been granted subject to a programme of archaeological works (planning reference W/14/02407).

An archaeological evaluation was undertaken in April 2017 (WSM 68377). Following discussions with the Historic Environment Advisor for Worcestershire County Council, a project proposal (including detailed specification) for an archaeological excavation was produced (PA 2017).

The project also conforms to the industry guidelines and standards set out by the Chartered Institute for Archaeologists in *Standard and guidance: for archaeological field evaluation* (CIfA 2014a) and *Standard and guidance: for archaeological excavation* (CIfA 2014b) and the *Standards and guidelines for archaeological projects in Worcestershire* (WCC 2010).

1.2 Site location, topography and geology

The site is located in the centre of the town of Evesham. The Fire Station had been demolished immediately prior to the start of the evaluation phase, whilst the rest of the site was given over to a public car park. The site is bordered to the west, north and east by residential and commercial properties and to the south by Merstow Green Road. The ground is generally flat, and sits at *c* 33m AOD.

The site sits upon Wasperton Sand and Gravel Member, which lies above Blue Lias Formation and Charmouth Mudstone Formation (undifferentiated) Mudstone (BGS 2018).

2 Archaeological and historical background

A desk-based assessment was prepared in 2013 to accompany the planning application (Rosenberg 2013). A summary of the historical and archaeological background is presented below.

> *There is limited evidence for prehistoric and Roman activity from the town centre although more widely settlement sites dating from the Bronze Age are known. A Bronze Age settlement was partially excavated and recorded at Abbey Road, to the south of the town, in 2007. This recorded a roundhouse and grain storage pits in use for a short-period during the late Bronze Age. It is unlikely that the whole of the settlement was uncovered in this excavation and evidence from finds collected during the work indicate a much longer period of human activity in the vicinity spanning the Mesolithic to post-medieval periods (WSM45210, WSM37561; Mann 2008).*
>
> *A possible Iron Age settlement is believed to have been sited to the rear of the High Street, where excavations took place in the 1990s. Another possible prehistoric and/or Romano-British site may be located to the south where cropmarks of early boundary ditches have been recorded Occasional finds of Roman material from the abbey church and courtyard, added to documentary evidence for an extant church when the Anglo-Saxon church was established in c.700 AD, have led to the suggestion hint at the presence of a Roman villa on, or near, the abbey site. Excavation to the rear of 13 Vine Street has, however, confirmed the presence of 3rd century Roman settlement activity in the town centre but at a depth of 1.75m below the current ground level.*
>
> *The documentary evidence is substantial for the establishment of a minster church in Evesham by Ecgwine, Bishop of Worcester, in c 700 (Dalwood 1996). Ecgwine's church*

collapsed and was rebuilt in c 970 and a new church dedicated to the Holy Trinity built between 1017 and 1037. The abbey owned and controlled the town prior to the Norman Conquest, but to date no archaeological evidence of the pre-Conquest church or precinct found. A major rebuilding programme was undertaken in 1078 and it is believed that the settlement may have been granted borough status in or around this date.

Evesham was granted a market and port by King Edward in 1055. Merstow Green was the location of the original Saxon settlement and was one of two medieval markets in the town but its location directly outside the abbey gates and the 'planned town' arrangement of the market on the High Street/Market Place/Vine Street suggest Merstow Green is the earlier, possibly pre-Conquest and the High Street market was established when the town was given borough status. It is suggested that the area north of Merstow Green and south of Bewdley Street is the most likely location of the early medieval settlement prior to the planned town being laid out to the northeast and east, along Vine Street, High Street and Market Place.

The Abbey dominated the town throughout the medieval period but was quickly demolished following the Dissolution of the Monasteries in 1539. Those elements of the medieval abbey and precinct that survive are protected as Scheduled Monuments (NHL1005297). It is unknown how heavily occupied the Merstow Green area was during the medieval period. Merstow Green continued as a market place, although trading activities shifted more heavily towards the Vine Street / Market Place area. Bordering Merstow Green to the south was the lower precinct of the Abbey. The development site is believed to have been occupied by tenement plots throughout the medieval period, although no specific records or maps of the layout of the medieval town have been found.

The layout of the site is believed to have remained largely the same from the medieval period onwards. The eastern side of the area is likely to have been developed throughout the post-medieval period, with settlement and retail activities focusing on the Market Place / Vine Street area to the north of the abbey. The western side of the site is likely to have been developed at a later date.

The layout of Merstow Green and the properties surrounding it retains a considerable element of the medieval form with the current Merstow Green car park having formerly been the market place with shops and houses fronting onto it. However, the setting of these buildings has been lost as result of use of the central island for car parking. Buildings within the Merstow Green area of the Conservation Area are varied in scale, appearance and date, although most originate in the 16th-19th centuries. Many of the 18th and 19th century buildings are likely to be rebuilds within earlier plots. The current Fire Station is the exception and does not follow the historic line of the streets and buildings.

3 Project aims

The aims of the initial evaluation were;

- establish the presence or absence, quality and extent of archaeological remains and their location within the development area.
- gather sufficient information to enable an assessment of the potential significance of any archaeological remains to be made and the impact which development will have upon them.
- enable an informed decision to be made regarding the future treatment of any archaeological remains and consider any appropriate mitigatory measures to be undertaken either in advance of and/or during development.

The aims of the subsequent excavation were:

- to further investigate the extent and character of the medieval occupation revealed during the evaluation.

4 Project methodology

4.1 Evaluation methodology

A Written Scheme of Investigation (WSI) for the evaluation was prepared by Prospect Archaeology (PA 2016). Fieldwork was undertaken between 10 and 13 April 2017. The site reference number used by the Historic Environment Record to record archaeological "events", and site code used in the archive is WSM 68377.

Four trenches, amounting to just over 161m² in area, were excavated over the effective site area of 2.7ha. The location of the trenches is indicated in Figure 2. Initially, six trenches were proposed, but following analysis of the DBA it was recognised that the north-western part of the site had previously been monitored under an archaeological watching brief. Trenches 1-3 were situated within the grounds of the old fire station, and were located to avoid services where possible. Trench 4 was located over the proposed location of an attenuation tank. The majority of the development site as illustrated in Fig 1 will remain as car parking or road, and won't impact upon any archaeological deposits.

Deposits considered not to be significant were removed under constant archaeological supervision using a JCB 3CX type wheeled excavator, employing a toothless bucket. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012) and trench and feature locations were surveyed using a differential GPS with an accuracy limit set at 0.04m. On completion of excavation, trenches were reinstated by replacing the excavated material.

All fieldwork records were checked and cross-referenced. Analysis was undertaken through a combination of structural and artefactual evidence, allied to the information derived from other sources.

4.2 Excavation methodology

Following the evaluation of the site, a programme of archaeological excavation was proposed. A detailed specification was prepared by Prospect Archaeology (PA 2017).

Fieldwork was undertaken in two stages, between 30 May and 8 June 2017, and 20 December 2017 to 18 January 2018. The site reference number used by the Historic Environment Record to record archaeological "events", and site code used in the archive is WSM 69226.

Two areas were excavated. Area 5 measured 235m^2 and Area 6, 127m^2. Their locations are indicated in Figure 2.

Deposits considered not to be significant were removed under constant archaeological supervision using a JCB 3CX type wheeled excavator, employing a toothless bucket. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature. Deposits were recorded according to standard Worcestershire Archaeology practice (WA 2012) and trench and feature locations were surveyed using a differential GPS with an accuracy limit set at 0.04m.

All fieldwork records were checked and cross-referenced. Analysis was undertaken through a combination of structural and artefactual evidence, allied to the information derived from other sources.

The project archive is currently held at the offices of Worcestershire Archaeology. Subject to the agreement of the landowner it is anticipated that it will be deposited with Museums Worcestershire.

5 Archaeological results

5.1 Introduction

The features recorded in the trenches and the excavation areas are shown in Figures 3-16 and Plates 1-28. The results are discussed by phase, amalgamating the four trenches and two excavation areas into one discourse.

Context Group	Contexts	Feature Type
1	652-653, 690, 769-770	Ditch
2	650-651, 689, 759-760, 771	Ditch
3	647-649, 749-753	Ditch
4	786-787, 790-796, 802-807	Pit, Ditch
5	608-609	Ditch
6	677-679, 693-694, 729-730, 764-768, 783	Ditch
7	614-615, 619-620	Ditch
8	612-613	Ditch
9	635-636, 726-728, 784-785, 788	Ditch
10	680-684, 754-758, 695, 772-781	Pit
11	621-624, 799-801	Pit
12	539, 541, 543-544	Structure
13	540, 545-550, 596, 598	Structure
14	515-516, 518, 551-553, 593-594, 597	Structure
15	664-665	Posthole
16	209, 527-528	Structure
17	315	Ditch
18	503-504, 533-537, 559-561, 585-591	Structure
19	685-686, 691-692, 723-725, 731-734	Posthole
20	626, 638-646, 671-672, 735-745	Pit
21	633-634, 687-688, 698-722	Pit
22	655-663	Pit
23	606-607, 627-632, 673-676, 797-798	Pit
24	Modern	Modern Truncation
25	554-557	Pit
26	506-507, 509-510, 513-514, 517, 519-521, 531-532, 558	Pit
27	208-214	Pit
28	511-512	Pit
29	562-584, 595	Pit
30	529-530	Ditch
31	522-524	Pit

Table 1: Context Groups and associated context numbers

5.2 Phasing descriptions

5.2.1 Natural deposits

The geology consisted of a soft yellow orange silty sand, with patches of sub-rounded gravels and pebbles.

5.2.2 Phase 2: Iron Age deposits

A small amount of Iron Age pottery was recovered from features across Area 6 (Fig 4). Whilst some of this was clearly residual in medieval pits, some sherds were found in stratigraphically early features, and so could potentially be prehistoric.

Pits, CG11

A cluster of three pits was located in the northern part of Area 6 (Plate 15). Two of these, 622 and 624, contained fire-cracked stones and burnt clay, with 624 also containing Iron Age pottery. These were partially truncated by a medieval boundary ditch, and the fire-cracked stone and burnt clay in the

fills was not seen in any of the more firmly dated features, which supports the proposition that these were prehistoric in origin.

Gully and posthole, CG5

A small gully ran east to west in the middle of Area 6 (Plate 16). This was truncated at its eastern end by a medieval ditch, and terminated in a possible posthole at the western end. It was a small V-shaped gully, 0.24m deep and 0.28m wide. Its function was not possible to determine, although the presence of the possible posthole at one end suggests some form of structure. It contained pottery of Iron Age date.

5.2.3 Phase 3: Roman

Enclosure ditches, CG1-3

In the southern side of Area 6, three Roman ditches were identified (Plates 17-19). All three ran east to west, before curving south at their eastern end. The earliest, CG1, was replaced by CG2, which in turn was superseded by CG3, each one lying on its antecedent's northern edge. CG1 was heavily truncated by these replacements and by later activity, and measured 0.37m deep and at least 0.3m wide, with a concave base. The full width of the ditch was not visible as it extended beyond the edge of the excavation area. CG2 was better preserved, and in one of the three excavated sections had steep edges becoming near vertical at the bottom of the slope, to a flat base. This was either a deliberate 'ankle-breaker' in the base of the ditch, or the result of regular cleaning. It measured 0.12m wide. In the excavated slot to the west this 'ankle-breaker' had become more rounded and concave, being 0.2m wide. At its largest the ditch measured 0.93m deep and 0.6m wide. The final iteration of these ditches was CG3, of which a full profile was observed. This mirrored the change in base profile in CG2, being a concave base at the western end before changing to a vertically sided 'ankle-breaker' in the middle of the area. A larger amount of the corner of this ditch survived than it did for CG1 or CG2, revealing that the base was much shallower in profile. At this point the width was at least 1.8m, and the depth 0.9m. Medieval pottery was recovered from the fills of two of the ditches, though in one instance it was high up in the deposit, and in the others, it was from where a medieval pit had truncated it. As such, both are considered to be intrusive. A single well-preserved rim sherd dating to the late 1st to 2nd century was recovered from the basal fill of ditch CG2. These ditches truncated the natural gravels at their bases, and the nature of this ground changed. Where the possible ankle-breakers were, the natural geology was iron-rich, and very compacted. It is possible that these conditions were present during the lifetime of these features, and that regular cleaning out of the ditches resulted in this shape. Conversely, it is possible that the solid geology preserved the original ankle breaker shape that was lost in softer parts of the ditch.

Spread and pits, CG4

In the north-western corner of Area 6 was a large sandy spread (CG4). This was excavated in quadrants. In the north-western quadrant a pit was revealed [791], 0.72m deep and 2.1m long, filled with three sandy deposits. It is considered that the pit was originally dug to extract gravel, and was backfilled with unwanted material soon afterwards. Some Roman and Iron Age pottery was recovered from the top of the pit. This truncated possible ditch 796. This was aligned north to south, but was truncated by medieval ditches at the northern end, and did not extend into either the south-western or north-eastern quadrants. It did not contain any finds but is dated by its stratigraphic relationships. It measured at its widest possible extent 1.2m and was 0.76m deep. Two further features of probable Roman date were identified within the spread of material. One was a small pit with sterile fills, again probably for gravel extraction. The final feature was a small gully, truncated at its northern end by an aforementioned pit and at its southern end by medieval pitting.

Ditch, CG9

A north to south aligned ditch, at least 1.24m wide and 0.55m deep was excavated in the north-east corner of Area 6. This could potentially relate to ditch 796 described above, being roughly parallel to it, *c* 5m apart. This ditch was observed for 2.5m south from the northern edge before it disappeared

under later features and was not identified elsewhere. It contained a single well-preserved sherd of Roman pottery.

5.2.4 Phase 4: Medieval

Boundary ditches CG6, CG7, CG8, CG15, and postholes CG19

In Area 6, running roughly north-east to south-west was a ditch that may represent the original line of the housing plot that can still be seen on the street frontage to the south (Plates 22-23). This ditch (CG6) only contained one abraded sherd of Iron Age pottery, but cut prehistoric and Roman features, so residual material can be expected. It is the earliest stratigraphic feature from the medieval period, and remained largely respected by later activity. It was clipped by two rubbish pits in the south and was more fully bisected by a later medieval ditch (CG15) running perpendicular to it at the northern end of the area. The ditch was roughly v-shaped, and at its greatest extent was 1.2m deep and 1.8m wide.

Five postholes (CG19) were dug through the top of ditch CG6, or next to it. It is probable that despite the closure of the ditch, the boundary was maintained and demarcated in a different way, potentially by a fence or hedge line. None of these postholes contained any dateable material, although one truncated a pit containing 12th-14th century pottery.

Three ditches were located running roughly east to west at the northern end of Area 6. CG8 appears to have been a direct replacement of CG7, with both terminating at the same point (Plate 25). CG15, as already discussed, overlay boundary ditch CG6, and terminated opposite CG7. The gap between CG7 and CG15 was 2.2m. These ditches may represent a later northern limit to the property plots, or a subdivision within them.

These plots shall be referred to as Plot W (west) and Plot E (east) for ease of discussion.

Pits in Plot W (CG20 and CG23)

The pits in Plot W can be grouped into two general types: large quarry/borrow pits (CG20; Plates 18-20) and smaller refuse/miscellaneous pits (CG23). The large pits were located on the western edge of Area 6, and were probably dug for gravel extraction. The earliest of these, 646 was roughly circular with steep sides, and measured 1.6m across. The base of this feature was not reached due to the high water table. It appeared to have been intentionally backfilled with material which contained 12th to 14th century pottery.

Cutting this circular pit was a much larger sub-rectangular pit, roughly 3m by 3.5m. This feature (643/736) contained large deposits of dumped sterile sandy fills interspersed with charcoal and pottery rich domestic waste material. This included a large piece of cooking pot and probable fire rake-out. The pottery assemblage amounted to nearly 800g, and dated to the 12th to 14th century.

The final feature 639 in the sequence could potentially have been a ditch rather than a pit, although this would have made it substantially larger than the burgage plot ditch CG6. Such a large ditch within a small plot seems unlikely. It was a sub-rectangular feature, measuring 2.3m long and 1.7m wide, and contained three distinct fills, the lower two indicative of rapid backfilling with domestic waste material. This too returned pottery dating from the 12th to 14th century.

The second group of pits were smaller and generally discrete from any other features. They were between 0.9m and 1.3m across and were oval to sub-rectangular in shape. All but one of the five pits contained pottery, returning a date range of 11th to 14th century. Their function is unclear.

Pits in Plot E (CG10 and CG21)

In the southern half of Plot E were three large pits (CG10; Plate2 22-24), backfilled with a series of deposits indicative of episodes of domestic waste disposal interspersed with general backfilling. These yielded large amounts of pottery fragments, and were rich in organic matter. The artefactual

material dated from the 12th-14th century. The pits were 2.1m to 2.7m across and up to 0.9m deep, though pit 772 was not bottomed due to the water table being reached.

The second pit group (CG21; Plate 26) consisted of a series of smaller intercutting pits on the eastern edge of the site. The function of these pits is unknown. Whilst there is some domestic waste present, this is considered unlikely to have been the primary purpose. Not all were rich in artefactual evidence. Only three of the nine pits returned dateable material, from the 12th-14th century.

The well (CG18)

A stone built well lay in the middle of Area 5 (Figs 3 and 11; Plates 2-6). It had an internal diameter of 1.06m, and was built in a construction cut 3.28m across. The well was constructed of irregular courses of roughly hewn limestone, measuring between 0.1 x 0.1 x 0.04m and 0.3 x 0.4 x 0.1m. No formal bonding material was used; rather inwashed silt had deposited between the stones. The structure was excavated by hand to a depth of 2m, with a further depth of 2.75m achieved through auguring. Heavy blue clay was encountered at this point, and it was concluded with some confidence to be the base, as the bedrock geology is Blue Lias and Charmouth Mudstone.

The lowest fills of the well were dark organic-rich silts, but were so waterlogged that they fell out of the auger as it was lifted. It was therefore not possible to obtain a detailed or stratigraphic description of these deposits.

The lowest hand dug fills were dark black organic silty sands, with occasional different deposits interspersed between them. One such deposit was a band of small angular stones, 0.8m thick, whilst another was a thin lens of fine ash, possibly associated with the ovens to the east (CG12-14). These dark organic-rich fills were present up to the final upper metre of the well as it stood, following which it had been rapidly backfilled with stone rubble and silts. The slowly accumulated organic deposits represent the gradual abandonment of the well, before the infilling completed the process in the 17th century.

The ovens (CG 12-14)

Three potential ovens were identified in Area 5, running east to west on the eastern side of the area, forming a line of intercutting features (Plates 7-12). The earliest iteration, CG12, at the western end. This was a roughly circular concave bowl, measuring 1.74m in diameter, and 0.26m deep. Lining this bowl was a poorly preserved stone wall, constructed of roughly hewn limestone, surviving as one partial course. The base of the oven, being the natural gravel through which the oven was cut, was heat affected, and had been scorched red. Two deposits filled the oven. 541 was a charcoal rich material in the base, which may represent the remains of the last firing, before abandonment. This phase was represented by 539, a mottled clay silt deposit. The oven was almost certainly robbed of stone following its abandonment, and was truncated on its eastern side by replacement oven CG13, which was probably the recipient of the stone.

The replacement oven, CG13, was slightly larger at 1.96m wide by 2.25m long, oval in plan at its western end, narrowing into a rectangle to the east. The oval bowl was deeper than the "flue" part of the oven. A stone structure survived to a single course along the northern and western edges. It was constructed of the same material as CG12. There was some possible collapse of this wall into the bowl, which must have happened early in the lifespan of the structure, as these displaced stones were buried beneath various charcoal-rich deposits and were heat affected. There were up to six distinct deposits indicating the use of the oven within the structure, before it ceased to function, and was partially backfilled. This oven was seemingly replaced by CG14, truncating CG13 on its eastern side.

Oven CG14 differed from the two previous ovens in that it did not have a circular bowl, instead being rectangular. It was also in a better state of preservation, although was bisected by an area of truncation between 0.3m and 0.9m wide. The end wall in the western half was partially tumbled, and was less well preserved than the northern and southern walls immediately next to it. These survived to five courses high, and were trench built against the natural geology. Large slabs of stone formed

the base. The eastern end of this part of oven structure was truncated, with both walls and the floor all absent. The extant eastern half of the oven was of similar shape to the western half, although of slightly different construction. Where the walls of the western half were constructed of small stones (*c.* 30-50mm high), forming several thin courses, this eastern side had just one course surviving, but was built of stone *c* 100mm high. The western walls were also thicker, at 0.46m wide compared to 0.16m. The base was also subtly different, being made of generally smaller slabs of stone. These differences may well have been simply a matter of available materials dictating the construction method, although there remains the possibility that these are two separate ovens. However, no evidence of this could be seen in the sections that were excavated through the structures.

The western half of the oven measured 1.84m in length before the truncation, with the eastern half measuring 0.8m long, before it was truncated by a modern intrusion and reached the edge of excavation. There was a slight slope from the east to western end, dropping 0.25m. The oven was between 1.68m and 1.16m wide.

The earliest surviving fill from this oven represented a possible resurfacing of the base of the structure. Directly above that was evidence of the last firing of the oven, with a charcoal-rich sandy fill. It contained pottery dating from the 13th-14th century. This was overlaid by an abandonment deposit that contained several fragments of pottery and two pieces of painted window glass (Plate 29).

Rake-out pit, CG28

A pit on the southern side of oven CG14 contained a charcoal-rich fill, indicative of a possible function as a rake-out pit. The fill had frequent lenses of charcoal within it, indicating successive depositions.

Gravel pit, CG29

A large circular pit was excavated in the northern part of Area 5 (Plate 13). It measured 1.9m across and 1.35m deep. It was filled by a series of irregularly lain deposits; initially thick layers of clay were interleaved with thin bands of gravel, indicating low energy natural deposition with occasional high energy in-wash. Later deposits were intentionally dumped, and contained large fragments of 14th century pottery. Throughout this backfilling were thinner lenses of sands and gravels, indicative of seasonal weather events. The pit was probably dug for gravel extraction, then left to backfill naturally for a period of several years, before sporadic infilling with domestic waste.

Pits and postholes, CG26

A group of pits were located in the southern half of Area 5. All were probably rubbish pits of medieval date, with two of them, 506 and 507 being smaller circular features measuring 0.7m and 0.4m across respectively. The two larger pits, 532 and 520, were oval, and measured 2.4m to 2.7m in length. The two smaller pits were located next to each other, and were truncated by a 15th century pit 505 (see Phase 5.1). On the southern side of CG14 was a large pit 519 filled with a sterile silty sand. This pit was also truncated by rake-out pit CG28. Two postholes were located in the central part of Area 5. Neither had evidence for a post pipe, and could not be specifically associated with any feature. Their wider purpose is unknown.

Pits, CG27

Four pits were excavated in Trench 2 which adjoined Area 5 on its eastern side. Each contained similar fills and were all 0.25-0.30m deep. These features were the truncated bases of rubbish pits, containing humic loam fills, animal bone and pottery of 12th-14th century date.

Ditch in Eval Trench 3 315 CG17

A ditch running roughly north-west to south-east was excavated in Trench 3, to the south of Area 5. It was over 2m in width, and extended beyond the trench section. It contained three fills, and was cut by later recut (310) and a gully (307) on the same alignment. It was 0.64m deep and had a rounded base and irregular sides. The later ditch, 310, was 0.56m deep and 1.28m wide with two fills, neither of

which contained datable material. It was truncated by gully 307, which was 0.34m deep and 0.7m wide, and also yielded no datable material.

5.2.5 Phase 5: 15th-17th century

Pits, CG31

Two shallow pits were excavated in Area 5 that contained 15th century pottery. Both were of uncertain function, associated with the general activity in the backyard of burgage plots. Pit 522 was filled with possible rake-out material, although the nearby ovens are unlikely to have remained in use by this period. The second pit was a wide but shallow feature that truncated two earlier pits (see CG26).

Pits, CG22

Three pits were excavated in the north-east corner of Area 6, within Plot E (Plates 27-28). The earliest of these features was an elongated pit 663. This was mainly seen in section and may have been misinterpreted. There is the possibility it should be considered part of underlying medieval ditch CG15. Two larger sub-rectangular pits truncated it. 660 was 1.6m long by 1m wide, and was excavated to a depth of 1m before the water table prevented further investigation. It was backfilled with three dark humic deposits. Distinct tip lines were visible, particularly the upper fill (657), which contained several roof tiles. Quantities of animal bone and pottery, along with glass and copper pins, were recovered from the fills. The pottery dated to the 17th century. This pit was truncated by 656, which was slightly larger in area but much shallower, at 0.4m deep. It contained 15th-16th century pottery and animal bone.

The Well, CG18

As discussed in Phase 4, the later backfilling of the well occurred in the 17th century, apparently following a long period of disuse in the late medieval period (Figs 3 and 11; Plates 2-6). These deposits, predominantly of stone rubble, suggest a reorganisation of the land, with the last remnants of medieval activity being levelled and covered.

5.2.6 Phase 6: Modern

In Area 5, two pits dating to the 19th-20th century were sealed by a mixed levelling layer. This was cut by several modern concrete footings from the recently demolished building. A modern timber beam truncated the eastern end of the ovens.

In Area 6 a dark soil layer of probably 18th century date sealed the earlier deposits, representing a garden soil. This was cut by a foul water pipe, along the line of the early medieval ditch CG6. Sealing this and the garden soil were modern rubble build-up layers for the former tarmac surface.

5.2.7 Undated

Undated feature, CG30

On the northern side of CG13 was a small gully 529. This was truncated by the oven, and also had a large stone slab partially overlying it. The ditch did not continue to the south of the ovens, nor was it identified further to the north when Area 5 was extended.

Postpad stones CG16

Two large stones (*c* 0.5m across) were identified in Trenches 2 and 5. Stone 527 may have been associated with a potential post pad identified in evaluation Trench 2 (209).

6 Artefactual evidence by Laura Griffin, ACIfA

The finds work reported here conforms to the following guidance: for finds work by CIfA (2014), for pottery analysis by PCRG/SGRP/MPRG (2016), for archive creation by AAF (2011), and for museum deposition by SMA (1993).

6.1 Methodology

6.1.1 Recovery policy

The artefact recovery policy conformed to standard Worcestershire Archaeology practice (WA 2012; appendix 2).

6.1.2 Method of analysis

All hand-retrieved finds were examined. They were identified, quantified and dated to period. A terminus post quem (tpq) date was produced for each stratified context. The date was used for determining the broad date of phases defined for the site. All information was recorded on a pro forma Microsoft Access 2007 database.

The pottery and ceramic building material was examined under x20 magnification and referenced as appropriate by fabric type and form according to the fabric reference series maintained by Worcestershire Archaeology (Hurst and Rees 1992 and www.worcestershireceramics.org).

All ironwork was radiographed by Drakon Heritage and Conservation, in order to aid identification where possible.

6.2 Results

The assemblage recovered from the site totalled 739 finds weighing 18.3kg (see Table 2). The majority of material could be dated to the medieval and post-medieval periods, but small amounts of earlier prehistoric, Iron Age, Roman and modern material were also identified. Level of preservation was generally good, with finds displaying low-moderate levels of surface abrasion.

period	material type	material subtype	specific object type	total	weight (g)
earlier prehistoric	ceramic		pot	3	123
Late Neolithic - Bronze Age	stone	flint		1	2
Iron Age	ceramic		pot	72	725
Roman	ceramic		pot	15	460
Roman	ceramic		cbm	2	6
medieval	ceramic		pot	445	6235
medieval	ceramic		cbm	4	42
medieval	ceramic		ridge tile	15	882
medieval	ceramic		roof tile(flat)	36	3504
medieval	ceramic		?roof furniture	6	135
medieval	stone	building material		3	557
medieval	stone		roof tile(flat)	4	1024
medieval	glass		window	5	41
medieval	metal	copper alloy		1	3

medieval	metal	iron		10	148
late med/ post-med	ceramic		pot	48	1394
late med/ post-med	ceramic		brick	1	545
late med/ post-med	ceramic		roof tile(flat)	36	1834
late med/ post-med			mortar	5	245
late med/ post-med	metal	iron		18	266
post-medieval	ceramic		pipe	1	3
modern	ceramic		pot	7	156
undated	slag			1	3

Table 2: Quantification of the assemblage

6.2.1 Discussion of the artefactual evidence by period

Earlier prehistoric

Pottery

Two very thick body sherds in a grog, organic and flint tempered fabric were thought to be of earlier prehistoric date (fabric 97; unstratified). They appeared to be from a coil-built vessel and were reminiscent of Early-Middle Bronze Age jar/urn type vessels from Clifton Quarry near Severn Stoke (pers obs). Although unstratified, the presence of these sherds suggests earlier prehistoric activity in the vicinity.

Flint

A residual utilised flake of Late Neolithic - Bronze Age date (Rob Hedge pers comm), was the only worked flint found on the site, from Trench 2 (context 206).

Iron Age

Pottery

A fairly substantial assemblage of Iron Age pottery amounting to 72 sherds (725g) was identified. Although the majority of sherds were residual, a gully (CG5) and pit (CG11) could be dated Middle-Late Iron Age by the pottery retrieved. Preservation was variable with some sherds displaying high levels of surface abrasion and/or leeching of inclusions, whilst others appeared relatively unaffected. This was reflected in individual sherd weights varying from 119g to just 4g and an overall average 10.2g for the group.

Six fabric types were identified (see Table 3), all locally produced and consistent with those previously excavated from the town (Edwards and Hurst 2000). All diagnostic sherds were from jar forms, a small number of which displayed decoration in the form of pattern burnish. The group included four fragments of organic briquetage (fabric 2), indicating that salt from Droitwich was coming into the site.

A small sherd of an unidentified fine sand and organic fabric with closely spaced burnished lines was identified as Late Iron Age, possibly Belgic (fabric 97; context 786, CG4).

Fabric code	Fabric common name	Total	Weight (g)
2	organic briquetage (BD 121)	4	105
3	Malvernian ware	3	86
4.1	Palaeozoic limestone	57	498
4.3	fossil Shell	5	16
5.1	sand	1	5
5.6	ironstone and sand	1	13
97	Miscellaneous prehistoric wares	1	2

Table 3: Quantification of the Iron Age pottery by fabric type

Roman

Pottery

Material of Roman date came from Area 6 and amounted to 15 sherds of pottery weighing 460g. Although the group was small and the majority of sherds were residual, preservation was good with low levels of surface abrasion and an exceptionally high average sherd weight of 30g suggesting little post-depositional disturbance of the material. The majority of sherds were of locally produced oxidised Severn Valley ware (fabric 12). Other fabrics consisted of two sherds of fine sandy greyware (fabric 14), one of grog-tempered ware (fabric 16) and a fragment of Oxfordshire whiteware (fabric 38).

Diagnostic sherds indicated activity throughout the Roman period and four features were assigned a Roman *tpq* date based on the pottery retrieved. These included two enclosure ditches (CGs 2 and 3), a possible gravel pit (CG4) and a smaller ditch (CG9).

Fabric code	Fabric common name	Total	Weight (g)
12	Severn Valley ware	11	322
14	Fine sandy grey ware	2	53
16	Grog tempered ware (BD32/33)	1	80
38	Oxfordshire white ware	1	5

Table 4: Quantification of the Roman pottery by fabric type

Ceramic building material

Two fragments of undiagnostic ceramic building material were thought to be of Roman date due to the soft, fine oxidised fabric. Both were residual within the upper fill of a pit which also contained tile of medieval date (context 584, CG29).

Medieval

Pottery

A total of 445 sherds (6235g), accounting for 70% of the pottery assemblage, were identified as being medieval (Table 2). Preservation was good, largely due to low levels of residuality; 73% of the assemblage came from medieval contexts. This was also reflected in a notably high average sherd weight of 14.1g, suggesting minimal disturbance following initial discard. The assemblage was of a standard domestic nature with a relatively narrow range of forms and fabrics identified (see Table 5).

Fabric number	Fabric common name	Total	Weight (g)
53	early Malvernian glazed ware	4	119
55	Worcester-type sandy unglazed ware	190	2682
56	Malvernian unglazed ware	14	131
57	Cotswolds unglazed ware	3	18
58	sandy limestone tempered ware	2	14
62	Deritend-type ware	7	76
63	Brill/Boarstall ware	10	176
64.1	Worcester-type sandy glazed ware	32	648
64.4	unglazed sandy white ware	2	69
65	Minety-type ware	3	92
66	Herefordshire glazed fine micaceous ware	1	17
69	oxidized glazed Malvernian ware	44	323
99	miscellaneous medieval wares	10	72
143.2	Ham Green type B	2	34
148.1	unglazed Evesham micaceous ware	40	816
148.2	glazed Evesham micaceous ware	20	284
55/148.1	?Worcester or Evesham unglazed wares	50	587
99	Miscellaneous medieval wares	11	77

Table 5: Quantification of the medieval pottery by fabric type

Locally produced wares

Pottery of this period was dominated by locally produced wares, primarily of Worcester-type, Malvernian and Evesham fabrics (see Table 5). In total, 91% of the medieval assemblage analysed comprised seven local fabric types: early Malvernian glazed ware (fabric 53), unglazed Worcester-type ware (fabric 55), unglazed Malvernian ware (fabric 56), sandy glazed Worcester-type ware (fabric 64.1), oxidised glazed Malvernian ware (fabric 69), Evesham unglazed micaceous ware (fabric 148.1) and Evesham glazed micaceous ware (fabric 148.2). All of these fabric types have been described, dated and discussed at length by Hurst and Rees (Upwich, Droitwich; 1992), and by Bryant (Deansway, Worcester; 2004 and 31 Cowl Street, Evesham; 2003). Distinguishing between sherds of Worcester and Evesham production by fabric was extremely difficult due to the underlying geology of both areas being almost identical and the occurrence of micaceous sandstone in Evesham fabrics being rare. Diagnostic sherds, particularly of unglazed fabric, were easier to separate with Evesham cooking pots having rim forms distinctly different from any seen in Worcester products. Sherds of the glazed fabric (fabric 148.2) also appeared to have a much thinner glaze than seen on Worcester-type wares.

The range of forms identified was narrow, with cooking pots dominating the group, supplemented by a small number of pitcher and jug forms. Cooking pots were almost all of unglazed Worcester-type ware, with diagnostic sherds primarily thickened, everted rim forms (Deansway form 55.3). Typologically, this is the latest cooking pot form of Worcester production, with examples from Deansway indicating production from the start of the 12th century until the mid-14th century and a definite peak in supply during the 13th century. The marked decrease in the number of these vessels identified with deposits of the mid and late 14th centuries in both Worcester and Droitwich is thought to result from the increase in availability and popularity of metal cooking pots at all levels of society (Le Patourel 1968; Bryant 2004, 290). Although far fewer in number, diagnostic sherds of unglazed Malvernian ware were also of 12th-14th century date. Due to a lack of large or published assemblages, no typology currently exists for vessels of Evesham micaceous ware. However, associated dating by other pottery and finds suggests that the dating of cooking pots in the unglazed fabric was consistent with that of the Worcester and Malvernian examples. A large number of cooking pot sherds displayed blackening and soot deposits characteristic of this vessel type and confirming their function.

In contrast to the unglazed assemblage, glazed wares of Malvernian production outnumbered those from Worcester. Presumably this is the result of chronology rather than supply, with the production of Worcester glazed wares ceasing around the same time as that of their cooking pot counterparts, whilst the Malvernian industry continued throughout the medieval period. The earliest diagnostic glazed ware sherds came from early glazed Malvernian and sandy glazed Worcester-type ware pitchers of 12th-13th century date (fabrics 53 and 64.1). In addition, although undiagnostic, a number of sherds in Evesham glazed micaceous ware (fabric 148.2) were also thought to come from pitchers due to their wide body diameter and decoration which included roller-stamping and combing reminiscent of that seen on tripod pitchers of Worcester fabric.

Other identifiable glazed forms were fewer in number but included jugs of 13th-14th century date (fabrics 64.1, 69 and 148.2) as well as two jars (fabrics 69 and 148.2). In addition, a heavily sooted sherd of sandy glazed Worcester-type ware was thought to come from either a pipkin or dripping dish but was too abraded for definitive identification.

Non-local wares

Just 28 non-local sherds were identified within the assemblage. All were of fabric types previously identified within medieval assemblages from Evesham. The earliest of these sherds included three fragments of Cotswolds unglazed ware cooking pot dated 11th-12th century (fabric 57; unstratified and CG20 and 21) and two sherds of similar date from a sandy limestone tempered ware straight-sided jar (fabric 58; CG29). The earliest glazed wares consisted of three sherds of Minety-type ware, all from pitcher forms of early-mid 12th century date (fabric 65; CG22 and 23 and context 206).

Other diagnostic sherds of non-local production were all of 13th-14th century date and largely from jug forms. These included one sherd of Deritend-type ware (fabric 62; CG14), two of Ham Green type B (fabric 143.2; CG26) and 10 sherds of Brill-Boarstall ware (fabric 63; CG10, 14 and 29). These Brill-Boarstall sherds also included fragments of cooking pot/jars. All remaining non-local sherds were undiagnostic.

Ceramic building material

A total of 55 fragments of medieval roof tile were identified. Of these, 36 were from flat tiles and 15 were ridge fragments. A range of different fabrics were present, including examples of Malvernian and Worcester production. In addition, there was a distinctive buff fabric with large white ?calcite inclusions, a sand and shell-tempered fabric and an oxidised fabric visually similar to Malvernian products but with angular white rock rather than Malvernian rock inclusions.

Diagnostic features were few but there was one nibbed tile (context 530, CG30), one nibbed and pegged with a pierced square hole and one with a pierced square hole (both from context 534, CG18). Nibbed tiles and nib and peg tiles are thought to have been the earliest form of flat roof tile,

being produced from the 13th century onwards. These appear to have been superseded by pegged forms by the 14th century, which had become virtually universal by the end of the 15th century (Fagan 2004, 345; Drury 1981, 131). All ridge tiles had a thin green glaze.

Over half of the assemblage was residual (30 fragments), coming from deliberately backfilled deposits within the well (CG18) and a rubbish pit (CG22).

Roof? furniture

Six pieces of highly abraded material in a ceramic building material fabric were retrieved from the fill of a medieval pit (context 582, CG29). Although the surfaces were roughly finished, they appeared to have a definite shape, with two fragments looking to have formed a 'collar', indicating that the object would have slotted into something. Therefore, these fragments have been tentatively identified as roof furniture or part of a chimney.

Stone building material

Seven fragments of stone building material were retrieved from the site. None were inherently datable, but came from features in Phases 4 and 5, and looked to have either been discarded (rubbish pits CG22 and 26 and fill of well, CG18) or reused in later structures (oven 1, CG13 and oven 2, CG14). The group included five pieces of blue lias roof tile, three with round peg holes. Remaining fragments were of oolitic limestone and undiagnostic but thought to have been used as building material due to having at least one flat surface.

Window glass

Five fragments of medieval window glass were retrieved. All were of heavily patinated, non-durable potash glass typical of the later medieval period (Rees et al 2008, 298). Three were plain and dark green in colour (contexts 659, CG22 and 776, CG10), whilst the remaining two adjoining pieces were decorated with reddish-brown painted lines (context 515, CG14; Plate 29). Although the fragments were small, the design could be seen to include curved lines and trefoils (Plate 29). Although it is not possible to identify the specific building(s) from which this glass came, it is known that window glass was used in high status houses as well as ecclesiastical buildings from the 13th century onwards and was relatively widespread by the 14th century (Egan 1998, 51). Due to the decorated fragments being found in a mixed context containing material ranging from 12th-17th century, it was not possible to date them more closely than 13th-15th century.

Metalwork: Copper alloy

A length of twisted copper wire was found within one of the Phase 4 well fills (context 589, CG18). It had a distinctive yellowish gold colouration due to waterlogging. The function of this find is not clear due to it coming from a mixed waste deposit. However, copper wire is known to have been used to attach completed glass window panels to iron window bars during the medieval period (Ottaway and Richards 2002, 2833), and therefore it is possible that this wire is related to the window glass found elsewhere on the site.

Metalwork: Iron

A total of 10 iron objects were identified as medieval in date. Five of these were nails of varying size, which were only datable to the general period by associated finds. A highly corroded piece was tentatively identified as a possible padlock spring (context 659) due to having a distinctive sharp angle (D Hurst pers comm). However, it was not possible to confirm this identification even after x-ray due to the poor condition of the object.

More diagnostic finds included three horseshoe nails or 'fiddle keys', identifiable by a distinctive flat, semi-circular head (contexts 638, 645 and 658). Nails of this form were most common from the late 11th-13th century. Also identifiable was part of an iron pinned hinge of a type commonly used on caskets. A similar example from York was dated mid 14th-early 15th century (Ottaway and Rogers 2002, 2842, no.13965).

Late medieval – post-medieval

Pottery

A small assemblage of 48 sherds could be dated between the late 15th and 17th centuries. Just one sherd was residual (pit fill 557, CG25), the remainder coming from contexts/features attributed to Phase 5. As a result, preservation of sherds in this group was good with low levels of abrasion, as reflected in a very high average sherd weight of 29g.

The only locally produced wares by this period were of oxidised glazed Malvernian ware, reflecting the regional dominance and expansion of this industry during this period, with distribution stretching as far afield as the south of Bristol and along the coast of South Wales by the early 17th century (Vince 1977, 286).

Other fabric types seen in smaller quantities included Tudor green ware (fabric 70.1), brown glazed speckled ware (fabric 72), post-medieval red ware (fabric 78), Raeren/Aachen stone ware (fabric 81.8) and Frechen stoneware (fabric 81.11) (see Table 6).

The range of forms was narrow but consistent with what would be expected for a domestic assemblage of this date. Malvernian sherds included a flared bowl and two bunghole jars, whilst those of brown glazed speckled ware comprised mainly cup and tyg sherds and the imported stonewares included two drinking jug forms.

Fabric number	Fabric common name	Total	Weight (g)
69	oxidized glazed Malvernian ware	24	572
70.1	Tudor green ware	1	3
72	brown glazed speckled ware	13	554
78	post-medieval red ware	1	20
81.11	Frechen stoneware	6	31
81.8	Raeren stoneware	3	214

Table 6: Quantification of the late medieval/early post-medieval pottery by fabric type

Ceramic building material

Ceramic building material of this period consisted of 33 fragments of flat roof tile and one piece of brick. All were retrieved from deposits in the well (CG18) and the same rubbish pit (CG22) as the earlier roof tiles. The group comprised two distinctive fabric types – one with limestone inclusions, suggesting a Cotswolds source and the other having soft, pink inclusions typical of Worcester products dating from the 15th century onwards (fabric 2c).

Diagnostic features included two nibs and one stamp. This stamp was on a tile of Worcester production and was circular with a cross in the middle. Other examples of this stamp have been noted in assemblages from Worcester, including that from Deansway (Fagan 2004, 358).

Mortar

Five pieces of mortar were identified from the fill of a late medieval rubbish pit (CG22) containing a large amount of domestic and building waste.

Metalwork: Iron

A total of 18 iron objects, primarily nails were retrieved from contexts of this period. All were highly corroded and none sufficiently diagnostic to date more closely.

Modern

Seven sherds of modern pottery were retrieved from the site (fabric 85; CG 24 and 25).

7 Environmental evidence

Environmental sampling was undertaken according to standard Worcestershire Archaeology practice (WA 2012).

7.1 Plant macrofossils by Elizabeth Pearson, ACIfA

7.1.1 Project parameters

The environmental project conforms to relevant sections of the Standard and guidance: Archaeological excavation (CIfA 2014b), and Environmental Archaeology: a guide to the theory and practice of methods, from sampling and recovery to post-excavation (English Heritage 2011).

7.1.2 Methods

Sampling policy

Samples were taken according to standard Worcestershire Archaeology practice (WA 2012). A total of 35 samples, each of each of up to 20 litres, were taken from the site (Table 7). All samples were processed, and of these, residues were scanned from 19 samples. Assessment of macrofossil plant remains focussed on the waterlogged well, where deposits appeared to be well-preserved as a result of waterlogging, and two oven fills in which charred plant remains were abundant.

Good preservation of charred plant remains and charcoal was noted in other samples. Although it was not possible to include these in the present analysis, these remains and data from scanning of residues are available in the archive for further research.

It was not possible to provide fully quantified results for the macrofossil remains, rather estimates of abundance for each taxa have been recorded.

Context	Sample	Spit/Sub-sample	Feature type	Fill of	Period	Phase	Context group	Sample volume (L)	Volume processed (L)	Assesed	Flot assessed
508	1		Pit		Medieval	5	0	10	0	No	No
103	2		Subsoil			0	0	10	10	Yes	No
307	8		Cut of gully			0	0	10	10	Yes	No
310	7							10	10	Yes	No
404	3		Dark Earth			0	0	10	10	Yes	No
415	5							10	10	Yes	No
524	7		Pit	522	Medieval	5	31	20	20	Yes	Yes
540	8		Oven	518		4	13	20	20	Yes	Yes
545	9		Oven	518		4	13	10	10	Yes	Yes
547	10		Oven	516		4	13	10	10	Yes	No

552	11		Oven		Medieval	4	14	20	10	Yes	Yes
564	17		Pit	595		4	29	20	10	Yes	No
572	16		Pit	595	Medieval	4	29	20	10	Yes	No
577	15		Pit	595	Medieval	4	29	20	10	Yes	No
584	14		Pit	595	Medieval	4	29	10	10	Yes	No
587	20	34-39cm	Well	504	Medieval	4	18	10	3	Yes	Yes
588	20	78-83cm	Well	504	Medieval	4	18	10	3	Yes	Yes
590	20	0-5cm	Well	504	Medieval	4	18	10	3	Yes	Yes
621	22		Pit	622		2	11	20	10	Yes	No
626	27		Pit	639		4	20	30	10	Yes	No
632	23		Pit	627		4	23	10	10	Yes	No
658	25		Pit	660		5	22	10	10	Yes	No
659	24		Pit	660		5	22	20	10	Yes	No
695	31		Pit	754		4	10	30	10	Yes	No
741	30		Pit	736		4	20	10	10	Yes	Yes
755	33		Pit	754		4	10	20	10	Yes	No
756	32		Pit	754		4	10	10	10	Yes	No
776	35		Pit	772		4	10	20	10	Yes	No
780	34		Pit	772		4	10	10	10	Yes	No

Table 7: List of bulk samples

Processing and analysis

For the three waterlogged samples from the well selected for assessment, a sub-sample of 3 litres was processed by the wash-over technique as follows. The sub-sample was broken up in a bowl of water to separate the light organic remains from the mineral fraction and heavier residue. The water, with the light organic faction was decanted onto a 300mm sieve and the residue washed through a 1mm sieve. The remainder of the bulk sample was retained for further analysis.

The remaining samples selected for assessment were processed by flotation using a Siraf tank. The flots were collected on a 300mm sieve and the residue retained on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were scanned by eye and the abundance of each category of environmental remains estimated. A magnet was also used to test for the presence of hammerscale. The flots were scanned using a low power MEIJI stereo light microscope and plant remains identified using modern reference collections maintained by Worcestershire Archaeology, and a seed identification manual (Cappers et al 2012). Nomenclature for the plant remains follows the New Flora of the British Isles, 3rd edition (Stace 2010).

Discard policy

Remaining sample material will be discarded after a period of three months following submission of this report unless there is a specific request to retain them.

7.1.3 Results

The results are summarised in Tables 8 to 10.

Medieval oven [518] (fills 540 and 545)

Both fills were dominated by charred grain, with a range of associated crop weed seeds surviving. However, the composition of fill (545), representing the use of the oven differed from (540), representing the backfill.

During the use Phase (545), free-threshing wheat (*Triticum* sp free-threshing) and hulled barley (*Hordeum vulgare*) were the dominant crops processed in the oven, with small amounts of rye (*Secale cereale*). Oat (*Avena* sp) may also have been a crop, although it was not possible to distinguish between cultivated oat and wild oat, growing as a weed in these samples.

Seeds of stinking mayweed (*Anthemis cotula*) were the most abundant, suggesting that the crops were mainly grown on heavy clay soils, which are common around Evesham. The weed flora also included sedge (*Carex* sp), brome grass (*Bromus* sp), sheep's sorrel (*Rumex acetosella*), black mustard (*Brassica nigra*), possibly cultivated flax (cf *Linum usitatissumum*) and melilot/medick (*Melilotus*/*Medicago* sp). Flax may have been residual in the fields from previous flax crops.

Charred grains of free-threshing wheat (*Triticum* sp free threshing) from this fill were radiocarbon dated to 1160 – 1270 cal AD (Section 8; Fig 10).

Free-threshing wheat was the dominant crop in the backfill phase (540), although oat was moderately abundant. Common vetch (*Vicia sativa* ssp *sativa*) was the dominant weed, but melilot/medick, black mustard, stinking mayweed and brome grass were recorded, as they were for the use phase. Weed seeds not recorded previously included, for instance, wild radish (*Raphanus raphanistrum*), mallow (*Malva* sp), woodruff/cleavers (*Asperula*/*Galium* sp) and knapweed/cornflower (*Centaurea* sp).

In both samples, field gromwell (*Lithospermum arvense*) was found mineralised. As this is an archaeophyte, this may have been a weed of arable fields or garden plots; mineralised in residues of latrine waste present generally in deposits around the site.

A radiocarbon date from fill (552) of oven [516] dates the final firing of this oven to 1280 to 1400 cal AD (Section 8; Fig 10).

The medieval well

At the base of the well, of interest are seeds of cultivars that are likely to have grown in a kitchen garden. The most abundant potential garden cultivar is celery. However, celery can also tolerate and flourish in environments affected by brackish ground-water, and hence its status as a garden cultivar is uncertain. Locally, elsewhere, it tends to be found archaeologically where brackish ground water is known, such as at Hanbury Road, Droitwich (Mann *et al* 2015) where there are well-known brine springs and in medieval waterfront dumps at Newport Street, Worcester, which are likely to have been affected by brackish waters of the River Severn, then tidal at Worcester (Pearson 2016). Celery appears on the Botanical Society of Britain and Ireland distribution maps (BSBI 2019) in the above environments and in Evesham. Low levels of salinity are known in the Evesham area, for example at George Lane, Wyre Piddle, where *Apium graveolens* was also recorded.

Fennel (*Foeniculum vulgare*), parsnip (*Pastinacea sativa*) and carrot (*Daucus carota*) were also identified in the basal fill of the well suggesting the presence of a kitchen garden plot nearby, or disposal of kitchen waste in to the well. Violet (*Viola* sp) may have been grown as a garden ornamental.

Seeds of plants growing on a mosaic of disturbed and neglected ground, particularly nitrogen-rich ground were also recorded (Table 10). Some of these were commonly foraged for food, such as bramble/blackberry (*Rubus* sect *Glandulosus*) and elderberry (*Sambucus nigra*).

At 0.34 – 0.39m (bgs), cultivars included pear/apple (*Pyrus*/*Malus*), celery and carrot. Fairy flax (*Linum catharticum*) is often recorded archaeologically alongside cultivated flax. As a possible charred seed of cultivated flax was recorded from oven fill (545), it is likely that flax crops were being brought on to the site. Occasional foragable food plants such as bramble and elderberry were also noted here.

In the upper fill (0.00 – 0.05m), only food plants which could have been foraged from hedgerows, such as sloe (*Prunus spinosa*) and elderberry, were recorded. Elderberry was particularly abundant, as was the fat hen (*Chenopodium album*), both of which favour nitrogen-rich neglected ground. The upper assemblage appears to reflect an abandonment phase.

Occasional mineralised *Brassica* seeds suggest that dung or faecal matter contaminated the well deposits. The Brassica seeds were of a type which could derive from cultivated species.

context	sample	large mammal	small mammal	fish	charcoal	charred plant	hammerscale	artefacts
540	8	occ	occ	occ	occ	abt	mod	occ shell, mineral concretion. mod mortar
545	9	mod		occ	mod	occ	occ	occ shell (other), Fe objects. abt concretions

Table 8: Summary of environmental remains from bulk samples selected for analysis; occ = occasional, mod = moderate, abt = abundant

Latin name	Family	Common name	Habitat	540	545
Mineralised plant remains					
Lithospermum arvense	Boraginaceae	field gromwell	AD	+	+
Charred plant remains					
cf *Viola* sp					
Triticum	Poaceae	emmer/spelt wheat	F	+	

dicoccum/*spelta* rachis					
Triticum aes and brome grasstivo-compactum grain	Poaceae	club wheat	F		+
Triticum sp (free-threshing) grain	Poaceae	free-threshing wheat	F	+++	++/+++
Hordeum vulgare grain (hulled)	Poaceae	barley	F	+	+++
Secale cereale grain	Poaceae	rye	F		+
Cereal sp indet culm node	Poaceae	cereal	F		+
Avena sp grain	Poaceae	oat	AF	+/++	++
Vicia sativa ssp nigra	Fabaceae	common vetch	AB	++/+++	
Melilotus/*Medicago* sp	Fabaceae	melilot/medick	ABD	+	+
Malva sp	Malvaceae	mallow	AB	+	
cf *Linum usitatissimum* seed	Linaceae	flax	AF		+
Brassica nigra	Brassicaceae	black mustard	ABF	+	+
Raphanus raphanistrum (pod fragments)	Brassicaceae	wild radish	ABG	+	
Rumex acetosella	Polygonaceae	sheep's sorrel	ABD		+
Rumex sp	Polygonaceae	dock	ABCD	+	
Asperula/*Galium* sp	Rubiaceae	woodruff/cleavers	ABC	+	
Centaurea sp	Asteraceae	knapweed/cornflower	ABD	+	
Anthemis cotula	Asteraceae	stinking chamomile	AB	+	++/+++
Carex sp (3-sided) nutlets	Cyperaceae	sedge	CDE		+
Cyperaceae sp indet	Cyperaceae	sedge	CDE	+	
Rumex/*Carex* sp	Polygonaceae/Cyperaceae	dock/sedge	ABCDE		+
Bromus sp grain	Poaceae	brome grass	AF	+	
Poaceae sp indet grain (small)	Poaceae	grass	AF	+	+

Table 9: Charred and mineralised plant remains from ovens

Latin name	Family	Common name	Habitat	587	588	590
Mineralised plant remains						
Brassica sp	Brassicaeae	cabbages	ABDF	+		
Waterlogged plant remains						
Prunus spinosa	Rosaceae	sloe	C			+
Pyrus/*Malus* sp	Rosaceae	pear/apple	CF		+	
Rubus sect *Glandulosus*	Rosaceae	bramble	CD	+	+	+
Alnus glutinosa (fruits)	Betulaceae	alder	CE		+	
Euphorbia helioscopia	Euphorbiaceae	sun spurge	AB	+		
Euphorbia peplus	Euphorbiaceae	petty spurge	AB	+	++	+
Euphorbiaceae sp indet fruit segment	Euphorbiaceae	spurge	ABCD	+		
Viola sp	Violaceae	violet	DF	+		
Linum catharticum	Linaceae	fairy flax	D		+	
Polygonum aviculare	Polygonaceae	knotgrass	AB		+	
Rumex sp	Polygonaceae	dock	ABCD	+		+
Stellaria media	Caryophyllaceae	common chickweed	AB	++/+++	+	+
Agrostemma githago	Caryophyllaceae	corn cockle	AB			
Silene sp	Caryophyllaceae	campion	AB	+	+	
Chenopodium album	Amaranthaceae	fat hen	AB	+++		
Atriplex sp	Amaranthaceae	orache	AB	+	+++	+++
Lamium sp	Lamiaceae	dead-nettles	ABF	+	++	
Marrubium vulgare	Lamiaceae	white horehound	ABD	+	+/++	++
Centaurea cf *cyanus*	Asteraceae	cornflower	D	+		
Lapsana communis	Asteraceae	nipplewort	BCD	+		

Sonchus oleraceus	Asteraceae	smooth sow-thistle	ABD	+	+	
Sonchus asper	Asteraceae	prickly sow-thistle	ABD		+	
Sambucus nigra	Caprifoliaceae	elderberry	BC	+	+	+++
Aethusa cynapium	Apiaceae	fool's parsley	AB	+		+
Foeniculum vulgare	Apiaceae	fennel	ABF	+		
Apium graveolens	Apiaceae	wild celery	E	++	+	
Pastinaca sativa	Apiaceae	parsnip	BDF	+		+
Daucus carota	Apiaceae	carrot	DF	+	+	
Carex sp (2-sided) nutlets	Cyperaceae	sedge	CDE		+	
Carex sp (3-sided) nutlets	Cyperaceae	sedge	CDE	+		
unidentified stem fragments	unidentified					+++
unidentified twig/bud fragments	unidentified				+++	
unidentified thorn	unidentified				+	
unidentified wood fragments	unidentified					+++
unidentified straw fragments	unidentified				+++	
unidentified wood fragments	unidentified				+	

Table 10: Waterlogged plant remains from the medieval well

Key:

habitat	quantity
A= cultivated ground	+ = 1 - 10
B= disturbed ground	++ = 11- 50
C= woodlands, hedgerows, scrub etc	+++ = 51 - 100
D = grasslands, meadows and heathland	++++ = 101+
E = aquatic/wet habitats	* = fragments
F = cultivar	

7.1.4 Discussion

Ovens

The presence of ovens containing burnt cereal crop waste is consistent with a medieval urban environment where crops from surrounding farmland are likely to have been brought in for processing and consumption within the town, and distribution elsewhere. This would particularly be the case for a town surrounded by farmland located largely on relatively fertile soils. Much of the farmland lies on highly fertile lime-rich loamy and clayey soils. These soils are ideal for arable farming, although suffer from poor drainage (Cranfield Soil and Agrifood Institute 2019).

It is likely that the waste resulted from accidental burning, rather than parching of cereals, some of the ovens having been abandoned after the last firing. Charcoal was only found in low to moderate levels and is not reported on here.

The well

Plant remains from the well indicate the presence of a kitchen garden nearby, or disposal of kitchen waste. Fennel, parsnip and carrot were identified, alongside celery, which may have been a garden cultivar, but is also known to grow wild where brackish ground water is present. Low levels of salinity are known in the surrounding area.

7.2 Animal bone by Matilda Holmes

7.2.1 Summary

An assemblage of nearly 700 animal bone fragments was recovered from features dating from the Iron Age to modern periods. The medieval and post-medieval periods were best represented, but problems with contamination means further work on these assemblages is not recommended. Basic comments on the nature of the animal deposits are described.

7.2.2 Methods

All bones and teeth were recorded, although for some elements a restricted count was employed to reduce fragmentation bias: vertebrae were recorded when the vertebral body was present, and maxilla, zygomatic arch and occipital areas of the skull were identified from skull fragments. A basic recording method was employed to assess the potential of the animal bone assemblage. The number of bones and teeth that could be identified to taxa were noted, as well as those used to age the major domesticates (tooth wear and bone fusion). The quantity of bones likely to be useful for metrical data were also recorded. Other information included condition and the incidence of burning, gnawing and butchery marks. All fragments were recorded by context including those that could not be identified to taxa. Recording methods and analysis are based on guidelines from Baker and Worley (2014).

7.2.3 Summary of findings

Bones were generally in fair to good condition (Table 11). Roughly a third of all contexts contained gnawed bones suggesting that bones were often not buried immediately following disposal, but were available for dogs and cats to chew. A similar proportion of contexts contained butchered bones reflecting the likely origin of the assemblage as food waste. Very few burnt bones were recovered suggesting they were not routinely exposed to fire, either during cooking or as a means of disposal.

No specific deposits of butchery, skin-processing, antler, bone or horn working waste were identified, although a piglet skeleton was recovered from medieval context 633. The character of the assemblage is consistent with the deposition of food waste.

Very few bones were identified to taxa from the earliest periods. Two cattle teeth and one fish bone were recovered from Iron Age contexts (Tables 12 and 13), while cattle, sheep/goat and equid (horse or donkey) remains came from Roman deposits. The largest sample came from medieval features, of which sheep/goat were most common, followed by cattle and pig, with a few bones of equid, cat, red deer (antler plus skull fragment), chicken and goose also recovered (Table 12). Further finds of small

passerines (e.g. robin-sized birds), herring, eel and salmonid came from the sieved samples (Table 13). Sheep/goat also dominated the post-medieval period assemblage, then cattle and pig as well as red deer (tibia), hare/rabbit, chicken, goose, oyster and gadid (cod species).

The potential for small amounts of ageing data to be recorded came largely from long bone fusion, as well as occasional mandible and tooth wear (Table 14). A small number of measurable bones were noted. As well as the piglet skeleton mentioned previously, lamb bones were also observed from the medieval phase, while several post-medieval calf, lamb, piglet and chick bones were recorded.

		Preservation						Bone Modification		
Phase	**Description**	**Good**	**Good-fair**	**Fair**	**Poor**	**Fair-poor**	**Good-poor**	**Gnawed**	**Butchered**	**Burnt**
Unphased		1		1				1		
Iron Age	Pits and gully			2						
Roman	Enclosures, pit and ditch		1	1	3			1		
Medieval	Town	9	10	18	5	2	2	15	15	2
Post-medieval	Backyards	6	3	4		1		6	6	1
Modern				1						
Total N contexts		16	14	27	8	3	2	23	21	3
Proportion (%) of all contexts		23	20	38	11	4	3	32	30	4

Table 11: Preservation and bone modifications observed on the bones for each context

Phase		**Cattle**		**Sheep**		**Pig**		**Bird**	**Fish**	**Other**	**Total**	**Other taxa**
	Unidentified	Bones	Teeth	Bones	Teeth	Bones	Teeth				Identified	
Unphased	6	1		1		2		1			5	Chicken
Iron Age	2		2								2	
Roman	47	5	1	2	1					1	10	Equid
Medieval	183	43	6	52	8	24	3	21		5	162	Equid, cat, chicken, red deer, goose

Post-medieval	159	25	3	45	1	11	3	24	3	4	119	Red deer, chicken, goose, hare/ rabbit, oyster, gadid
Modern				1							1	
Total	397	74	12	101	10	37	6	46	3	10	299	

Table 12: Number of fragments recorded for the major domesticates, birds and other taxa

Phase	Burnt	Fish	Birds	Micro-mammal	Amphibian	Cattle	Sheep/ goat	Pig	Other	Other taxa
Iron Age		1				1				
Medieval	37	49	15	1	1	5	4		1	equid, chicken, goose, small passerine, herring, eel, salmonid
Post-medieval	6	14	2	1			3	1	3	Chicken, hare/ rabbit

Table 13: Number of bones identified to taxa from samples

	Cattle				Sheep/ goat				Pig			
Phase	MWS	TWS	Fusion	Meas	MWS	TWS	Fusion	Meas	MWS	TWS	Fusion	Meas
Roman			3		1							
Medieval		1	29	38	5		41	49	1		21	10
Post-medieval	1		17	6			51	34	2		9	2
Modern							1					
Total	1	1	49	44	6		93	83	3		30	12

Table 14: Number of bones and teeth likely to provide ageing and metrical data for the major domesticates. MWS= mandibular wear stage; TWS= wear from individual teeth; fusion= bone fusion; meas= metrical data

7.2.4 Potential and recommendations

The small size of Iron Age and Roman assemblages, the absence of sub-phases and likelihood of contamination from medieval and post-medieval periods means that there is little potential for additional analysis to be productive. No further work is therefore recommended.

7.3 Pollen by Suzi Richer

7.3.1 Methods

Sampling policy

A 90 cm monolith <20> was taken by excavators through the lower deposits found within the well (CG18; Plates 29 and 30). These deposits were considered to be of high potential for the recovery of pollen due to waterlogging. Six subsamples were taken from monolith <20>. Subsampling for pollen analysis focused on the contexts below the stone rubble backfilling and aimed to include each context within the waterlogged deposits.

Processing and analysis

Six subsamples were submitted to the laboratories of the Department of Geography & Environment at the University of Aberdeen for chemical preparation. The full methodology is described in Appendix 2.

A GS binocular polarising microscope was used for identification at x400 magnification. Where preservation allowed, 300 land pollen grains (from trees and shrubs, and herbs) were counted per sample. The pollen reference manuals by Moore et al (1991) and Beug (2004) were used to aid in pollen identification alongside the author's own reference collection. Nomenclature for pollen follows Beug (2004).

Reference photographs and criteria from Aptroot and van Geel (2006), Bosi et al (2018), van Geel (1978), and van Geel et al (2003) were used to aid in the specific identification of NPPs. Types of microscopic charcoal were identified according to Courtney Mustaphi and Pisaric (2014). Whipworm ova were identified following Fernades et al (2005).

The results of the pollen analysis have been presented as a percentage diagram (Plate 29) using Tilia 2.1.1 (Grimm 2017). The pollen from trees and shrubs, and herbs have been presented as percentages of Total Land Pollen (TLP), which excludes spores, aquatics, non-pollen palynomorphs (NPPs) and charcoal, these are expressed as counts.

7.3.2 Results

Sediment and sample information

Information about the subsamples and their associated sediments, can be found in Table 15.

Monolith	Subsample Depth (in monolith	Context	Sediment description	Pollen [illegible]	Pollen preservation	Pollen concentration
<20>	0.05–0.06m	559	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Average
<20>	0.21–0.22m	559	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Low
<20>	0.31–0.32m	585	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Very low
<20>	0.45–0.46m	587	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Low
<20>	0.67–	588	Waterlogged organic dark silty clay with occasional small stones, fine sand and	Yes	Excellent	Low

	0.68m		visible macros.			
<20>	0.83–0.84m	589	Waterlogged organic dark silty clay with occasional small stones, fine sand and visible macros.	Yes	Excellent	Low

Table 15 Summary of subsample and sediment information for monolith <20>.

Pollen and NPPs

Pollen was present in all six subsamples and preservation was excellent across them all, however pollen concentration was low, which made it impossible to achieve full counts in five out of the six subsamples. The only subsample where a full count could be made was the uppermost one at 0.05–0.06m. A full pollen diagram can be found in Plate 29, but it should be borne in mind that this diagram is not based on full counts. Raw pollen counts are presented in Appendix 3.

Herbaceous pollen dominated all the subsamples comprising 94–100% of total land pollen (TLP), with the main taxa coming from grasses (Poaceae; 2–42%) and Cerealia-type (3–52%), the exception to this was the uppermost subsample (0.05–0.06m which was dominated by meadowsweet (*Filipendula*). The greatest variety of herbaceous taxa was recorded in subsample 0.67–0.68m, which included elder (*Sambucus nigra*-type) comprising 28% of total land pollen, ragworts (included within *Senecio*-type), black nightshade (*Solanum nigrum*-type), common violet (*Viola orodata*-type), dog's mercury (*Mercurialis perennis*), goosefoot (Chenopodiaceae), (*Plantago media-major*), oats/wheat (*Avena-Triticum*-type). Four small clusters of pollen grains of *Senecio*-type were observed, which suggests that whole flowers were entering deposits.

Trees were a minor component of the whole assemblage, with only occasional grains of birch (*Betula*) and alder (*Alnus*) being noted. The exception to this was the lowest subsample (0.83-0.84m) where oak (*Quercus*) made a significant contribution (16%) to the pollen assemblage. Of note was the presence of walnut (*Juglans regia*) pollen grains in the two lowest samples (0.83–0.84m and 0.67–0.68m) and the uppermost (0.05–0.06) sample.

Microcharcoal was observed throughout the profile in large quantities. This is likely to have originated from wood and from deciduous leaves/grasses, the latter is consistent with fly ash (Courtney Mustaphi and Pisaric 2014). Dung fungal spores were present in all six subsamples, but *Sporormiella*-type (Type 113), Chaetomium-type (Type NN14) and *Sordaria*-type (Type 55a) dominated the lower most subsample 0.83–0.84 and *Cercophera*-type dominated the uppermost subsample. Parasite ova *Trichuris trichiura/suis* (whipworm) were recorded in all six subsamples, none of the ova contained polar plugs, and the average length measured 41.5µm and the median length was 42.5µm (n=48). Size and length is the main criteria for distinguishing between *Trichuris trichiura*, which infects people and *Trichuris suis* which infects pigs; with *Trichuris trichiura* being the shorter (Fernandes et al 2005). Two larger ova (52.5µm) were also present; the presence of these larger ova suggest there is a range in the lengths and therefore the shorter ones are not just a product of shrinkage. This observation, in conjunction with other examples of larger types existing at other sites (processed using the same techniques) e.g. in Canterbury (Richer 2018), suggest that the majority of ova at Merstow Green are human in origin.

7.3.3 Discussion

Overall, the subsamples taken from the well deposits are suggestive of waste disposal. The presence of parasite ova from whipworm (*Trichuris trichiura/suis*) likely being the type with a human host (*Trichuris trichiura*), also implies that a component of this was from human faeces. The ova were present throughout the profile suggesting the continual usage of the well for this purpose.

The large number of dung fungal spores in conjunction with cereal pollen suggests that animal and crop processing waste are also likely to have been discarded into the well, these two types of waste may also be indicative of animal bedding. Whilst there was some presence of arable weeds e.g. poppy (*Papaver rhoeas*), the assemblage was a very mixed assemblage of herbaceous species. As

noted above, the species richness was highest in subsample 0.67–0.68m. However, the diversity of species was high across all the subsamples, in spite of the low pollen counts. These subsamples contained a number of pollen types that are known to have grown in medieval gardens (Harvey 1985) e.g. *Mentha*-type (which includes mint, thyme and marjoram), black nightshade (*Solanum nigrum*-type), common violet (*Viola orodata*-type), St John's wort (*Hypericum perforatum*), plantain (*Plantago major*), cowslip (*Primula veris*). Many of these types and species are often not present in pollen samples as they are insect pollinated and do not necessarily grow together naturally, and therefore a degree of intention is needed for them to end up together. This suggests the plants/pollen were being placed/dumped directly in the well, or that the pollen was consumed by people in food/drink/medicine and was passing through them in their faeces. The presence of clumps of pollen in 0.67–0.68m suggests that whole flowers were being put into the well. Although it is not possible to ascertain the exact method by which all these pollen grains found their final resting place in the well, it does inform us that they were likely being cultivated and/or processed within the vicinity of the well. Two other edible species were also present, walnut (*Juglans regia*) and elder (*Sambucus nigra*). Walnut was likely introduced to Britain in the Roman period (van der Veen et al 2008), and it was certainly widespread by the medieval period (Greig 1995). Elder, also produces edible flowers and berries, tends to grow near habitation and has many culinary and medicinal uses. Another cultivated type that was present throughout, was cereal pollen, with some grains being identified to oats/wheat (*Avena*/*Triticum*).

The uppermost sample 0.05–0.06m was different in nature, primarily because it was dominated by meadowsweet pollen. The large numbers would suggest that the flowers had been incorporated into the sediment, or that it was growing very close to the site. The variety of herbaceous taxa had disappeared by this time, despite this being the only sample where full counts were achieved. This would suggest that the well was now receiving less cultural/deposited material, and was more representative of the local environment, whilst this still contained cereals and walnut, there were fewer 'garden' species either because they were no longer being grown or no longer being deposited in the well.

7.3.4 Summary

A 0.90m monolith was taken from feature (CG18) interpreted as a medieval and post-medieval stone-built well. The monolith was subsampled for the analysis of both pollen and non-pollen palynomorphs (NPPs). Pollen grains within all the subsamples were generally present in low concentrations, but preservation was excellent. Subsamples were dominated by microcharcoal, dung fungal spores, whipworm ova, cereal and grass pollen, and other unusual types of pollen grain such as walnut, St John's wort, English violet, black nightshade. Overall, the fills of the well are indicative of waste disposal and of a range of cultivated/garden species.

7.4 Environmental Synthesis

Although food cultivars identified in the well could derive from kitchen food waste and need not have been cultivated on site, walnut pollen (Section 6.3) is more likely to derive from garden trees than from imported nuts. That the cultivars were grown in a garden, therefore, seems more likely. Although pollen from the mint family could be interpreted as originating from garden cultivars such as mint, thyme or marjoram it is more likely to derive from the hedge woundwort (*Marrubium vulgare*) identified in the plant macrofossil assemblage.

Clumps of pollen that suggest whole plants or flowers dumped into the well also indicate a garden environment. The presence of walnut and high levels of elderberry and cereal pollen correspond well with the plant macrofossil results. A lower level of pollen from cultural or deposited material in the uppermost fill, like the plant macrofossil remains, suggests an abandonment phase or change of use of the backplot in the vicinity of the well at this time.

Animal bones of medieval date suggest a diverse diet, which is consistent with the urban location. Sheep and goat were common. Also recorded were red deer, chicken, goose, small passerine birds,

hare or rabbit and gadid (cod species). The cat recorded may have been a pet or kept for keeping down pests.

8 Radiocarbon dating, by Liz Pearson, ACIfA

A total of two radiocarbon determinations have been obtained from:

- Charred *Triticum* sp free-threshing wheat grains fill 552 of oven 516 and
- Charred *Triticum* sp free-threshing wheat grains from fill 545 of oven 518.

Samples were dated at Beta Analytic, Florida, USA by AMS.

The results are conventional radiocarbon ages (Stuiver and Polach 1977) (Table 16). The calibrated date ranges for the samples have been calculated using the maximum intercept method (Stuiver and Reimer 1986), and are quoted with end points rounded outwards to ten years. The probability distributions of the calibrated dates, calculated using the probability method (Stuiver and Reimer 1993) are shown in the graphs in Appendix 4. They have been calculated using OxCal v4.2 (Bronk Ramsey 2009) and the current internationally-agreed atmospheric calibration dataset for the northern hemisphere, IntCal13 (Reimer *et al* 2013).

Laboratory code	Context number	Material	$\delta^{13}C$ (‰)	Conventional Age	OxCal calibrated age (95.4% probability or 2 sigma)
Beta - 520855	552	Charred grain: *Triticum* sp free-threshing	-22.3 ‰	640 ± 30 BP	1280 – 1400 cal AD
Beta - 520856	545	Charred grain: *Triticum* sp free-threshing	-21.0 ‰	820 ± 30 BP	1160 – 1270 cal AD

Table 16: Radiocarbon dating results

9 Discussion

9.1.1 Earlier prehistoric

Although no early prehistoric features or horizons were identified, the presence of a Late Neolithic - Bronze Age worked flint, and some large fragments of Early-Middle Bronze Age pottery, all residual within later features, indicates the presence of earlier prehistoric activity in the vicinity of Merstow Green.

9.1.2 Iron Age

Whilst the Iron Age is only represented by a small number of features, a Middle Iron Age site was previously excavated 520m to the north-east, at 93-97 High Street (Edwards and Hurst 2000). This revealed evidence of occupation, with a possible roundhouse, metalled surfaces and pits, dating from the 3rd-2nd centuries BC. The final phase of this prehistoric activity saw the area change to agricultural use. Although the exact nature of activity revealed at Merstow Green is unclear the presence of a gully, fire-cracked stones, burnt clay, briquetage, and the quantity of pottery are indicative of occupation in the Middle-Late Iron Age.

9.1.3 Roman

Evidence for Roman occupation at Evesham is slight. A complete cinerary urn was discovered in the 19th century at Bewdley Street, the road which runs east to west as the northern boundary of the development site. Until recently, artefactual evidence was the only indication of occupation (Dalwood 1996, 2).

The first securely dated Roman features were not discovered until fieldwork at 13 Vine Street in the 2000s (Lockett and Griffin, 2006). This site, some 120m to the east of the excavation, revealed a series of ditches that may represent boundary gullies related to settlement, generally dating to the 2nd-3rd century. Several pieces of tegulae were recovered, indicating the presence of a substantial building in the area. Further such finds have been made at excavations within the abbey grounds immediately to the south and south-east of Vine Street. The minster church was established around 700 AD, and according to William of Malmesbury was built on the site of an old church that was "the work of the Britons"; this old church has been hypothesised as a Roman estate church, suggesting that a villa complex had developed in this area (Cox 1990, 123).

Some 100m due south of the Merstow Green excavations, investigations at the former Vauxhall Inn site revealed quantities of residual Roman pottery within medieval deposits associated with the 14th century construction of Abbot Chiriton's Wall (Wilkins and Vaughan 2017). This mainly consisted of 1st-2nd century pottery, including Samian ware, and some tegulae. A metalled surface of possible Roman origin was identified below the Abbot's Wall, although this could not be definitively dated.

The three successive ditches seen in the south of Area 6 (CG1-3) form the north-eastern corner of an enclosure, with the interior located to the south, beyond the limit of excavation. The 'ankle breaker' base that was seen in some parts of these ditches was not continued through all of the observed length. The size of the ditches, whilst truncated by later activity, are not so substantial as to suggest a military function, rather they are considered likely to represent a settlement enclosure. The single well preserved sherd of pottery dated from the late 1st-2nd century. The dearth of artefacts from the ditches may indicate an agricultural function rather than occupation, with the succession of ditch cuts being simple changes in enclosure shape, the form of which could not be realised in the limited window these excavations provide. The ditches were sealed by a thick agricultural soil of medieval date, indicating that once they fell out of use, the landscape was not developed further until probably the 11th or 12th century.

The evidence for Evesham suggests a settlement pattern common to south Worcestershire, with Romano-British rural settlements developing out of Middle or Late Iron Age sites along the gravels of the river valleys (Dalwood et al 2018, 58). If the theory of the 'old church' were correct, then it would suggest that a villa settlement developed in what is now the abbey precinct, probably in the 3rd or 4th century, and was still extant to some degree at the start of the 8th century when the Saxon minster was established by Ecgwine, the bishop of Worcester. The rural nature of the landscape would have continued throughout the Roman period, with the morphology of the enclosures changing. The limited scale of the excavations in Evesham to date has not been conducive to mapping such patterns.

9.1.4 Medieval

There was a noticeable difference in the functions of Areas 5 and 6. Area 6 appeared to comprise a domestic backyard plot, whilst Area 5 was more agricultural, with the ovens used for either grain drying or bread making. The well adjacent may have been used in association with either function.

The earliest feature of probable medieval date was boundary ditch CG6. This seemed to divide the excavated area in two, with pit activity on both sides generally respecting this demarcation despite it having been backfilled before their creation. The boundary existed until the present development, indicating the longevity of the property plots.

Merstow Green developed due to its proximity to the abbey complex, although the absence of any Saxon phase in the archaeological record extends across Evesham, even into the Abbey Precinct itself (Dalwood 1996, 6). Evesham's original market place directly south of the site. As such it was likely to be extant before the planned development of the High Street and new market place in the 11th-12th century. The organised burgage plots that line High Street probably did not extend to this area, although the layout of the plots may have been ostensibly the same. The boundary ditch CG6 is of note for having no medieval pottery in it, and for being backfilled probably by the 12th century. It suggests that it was an early feature (possibly pre-Conquest?), that was either very short-lived or

regularly cleaned before final abandonment and backfilling. It clearly continued to be respected and therefore marked in some way. A number of postholes were identified in the top of it, which may have formed part of a fence line that replaced the ditch. Further sub-division was represented by the small ditches running perpendicular to the ditch at the northern end of the site (CG7-9).

The pits that defined the backyards of the medieval plots in Area 6 were probably of varying function. The large rectangular pit in Plot W (736: CG20) may well have been dug initially for gravel extraction, but was probably then backfilled with a combination of domestic waste and surrounding soils. This pit was later truncated by smaller pits, which indicates that they may have had a different initial function than gravel extraction. The pits excavated in Plot E ranged in both size and the nature of the fills. Those pits that formed CG21 were generally quite small, and contained little in the way of environmental or artefactual remains. Conversely, the pits immediately to the south (CG10) were much larger, and yielded much more cultural and environmental information.

The function of such pits, seen throughout the medieval urban landscape of the country, has not been fully determined. Buteux and Jackson (2000) argue that if pits were used for the day-to-day disposal of refuse, the ceramic they would contain should include large parts of individual vessels, the majority of the sherds should be relatively large and unabraded, there should be a small amount of residual pottery but the majority should be contemporary, and there should be quite a high concentration of discrete groups of pottery (and other surviving refuse such as bone).

Only one pit of the dozens excavated at Deansway fitted that model (Dalwood and Edwards 2004, 87). The suggestion of this analysis is that domestic rubbish was discarded onto heaps, which were then probably cleared away from the property, with just the residual material making its way into pits. These features were probably cess pits, which are often unidentifiable as such if the conditions are not right for preservation. The pits at Evesham almost certainly included cess pits, although whether all of them were is indeterminate. The cess pits at Deansway were often placed along property boundaries, a common occurrence in medieval towns (*ibid* 88). The present site seems to be no exception. The animal bone assemblage helps to confirm this hypothesis for heaps of domestic rubbish, as a third of contexts contained gnawed bones, indicating they were available for animals to chew before they made their way into the pits. Furthermore, no signs of industrial processing were discernible from the assemblage. The high average sherd weight of the pottery assemblage does not contradict the hypothesis, as many of these sherds were rim and handle sherds, which are heavier than body sherds. Discarded vessels thrown onto a midden may only move once more from midden to pit, and wouldn't have been subjected to ploughing or other factors that typically influence the sherd size on rural sites.

The pits that were excavated in Trenches 1 and 2 and Area 5 were generally of uncertain function, often being too small to be cess pits, and lacking the level of domestic waste which characterise rubbish pits as outlined above. Also, it would seem an unlikely place to be disposing of human waste next to an oven and a well. They may simply have been bedding pits, dug as one might in any garden to plant trees and shrubs.

The well had a medieval origin, with pottery recovered from the construction cut backfill. The first datable deposit within the well itself was a body sherd and so only a broad medieval date could be assigned. Further up in the sequence of deposits, material dated to the 17th century was recovered. The changing nature of the fills indicated that there had been a period of abandonment and slow silting, followed by rapid intentional backfilling with rubble building material.

Environmental evidence demonstrates that the slow silting was the result of human and animal faeces being disposed of in the well, along with various crop waste. This combination of animal dung and plant material suggests that the well was potentially used to dispose of waste following mucking out of stables.

The pollen analysis indicated that the surrounding area was probably a garden, with the range of species identified unlikely to have been present together naturally. The well was being used for the

disposal of garden waste as well as animal waste, with clumps of pollen indicating whole plants were being deposited.

The site saw a change in use, likely ceasing to be a cultivated garden, as the pollen from the last fill before rapid backfilling in the 17th century indicated a drop in the number of garden species, with the herb Meadowsweet becoming dominant.

The sequence of oven structures seems to have lasted for around 100-150 years, with a likely initial construction sometime in the 13th century, and a final firing in the 14th century. It is uncertain at what point the well stopped being used for its primary function and became a cess pit, but it should be considered that the well and the ovens were functioning together at least initially.

It is clear that the ovens went through a number of iterations, with three versions identifiable. Following the abandonment of the final oven, it seems that the site may have lain open for a while, as 17th century material was found within the backfill, along with the decorated window glass. As has been noted, this window glass was in use in high status secular buildings as well as ecclesiastical structures. Either way, it shows that a building of some stature was in the vicinity, and that it had presumably fallen into some disrepair. The 17th century backfilling of the ovens aligns with the final closure of the well, indicating a site-wide change in use.

The specific function of the ovens is not certain from the available evidence, although the environmental analysis offers the best information. The presence of a range of charred cereal crops in the fills of the ovens could suggest a drying and processing function rather than bread production. If they were for corn drying then they would technically be kilns rather than ovens. These work by slow, indirect heating of wet grain via a fire placed in a flue, with the grain suspended over the heat by means of a lattice of sticks (Merryn Dineley 2021) or a kiln hair (Bolton 1960). Such heating would result in heat discolouration at the mouth of the flue, rather than in the bowl where the grain is heated. The earliest structures had discoloured ground in the base of the bowls, along with charcoal layers, suggesting firings within the bowl. It is possible that the structures caught fire and were not intended to have direct heat in the bowls, although more burnt grain might be expected to be found in the fills if that were the case. The final iteration had very little heat discolouration visible. An isolated concentration of stones were the only ones to show evidence of heating, and these were possibly reused stones from an earlier structure so discoloured previously.

It is possible that the structures are bread ovens, consisting of a circular dome with direct heat from underneath. The third phase of structure would then act as the working/stoking pit to feed the fire under the main oven structure. If this is the case, then the second and third oven structures should be seen as contemporary. A more complete example of such a bread oven was excavated in Pershore (Napthan *et al* 1994), which had a stoking pit of approximately 0.85m x 1.25m, and was constructed of peg tiles and limestone blocks. It is thought to have dated to no earlier than the 14th century.

The cultivation of a range of plants, the bread production/grain processing, and the presence of painted glass, may suggest a possible ecclesiastical link. The absence of boundary plots like those seen in Area 6 suggest that the land use was not given over to domestic dwelling and could have been part of holdings belonging to the Abbey.

9.1.5 15th-17th century

The last iteration of the oven was backfilled in the 17th century, suggesting that like the well, there had been a period of abandonment before a redevelopment of the land took place that resulted in the intentional backfilling of the feature. Quite what form that change took is unclear, with only a handful of small pits in Area 5 dating to this phase.

The only features from this period in Area 6 were two pits forming CG22 in the northern end of Plot E. One of these may have been a cess pit, being rectangular in shape with steep sides. It was backfilled partially with dumps of roof tile.

This dearth of later features suggests that the activities undertaken in backyard plots had changed by the early post-medieval period, or at least reduced, such as municipal collection of waste material.

10 Conclusions

Following an evaluation of four trial trenches across the site, two areas were excavated to further investigate the medieval deposits identified. These excavations showed a sequence of activity from the Iron Age through to the 17th century, along with residual evidence for activity in the vicinity of Late Neolithic to Middle Bronze Age date. A small number of Middle-Late Iron Age pits were identified in the eastern area, with pottery from this period also found as residual material throughout later deposits. Roman activity was also only present in the eastern area. Three steep sided ditches indicating successive replacement formed the northern edge of a probable enclosure, dated to the 2nd-4th century.

A medieval well was found next to three iterations of an oven, which may have been used for baking bread on a commercial level or drying grain brought into the town for storage. Further medieval features indicated backyard activity associated with a burgage plot. There were a number of pits with a range of functions, including gravel extraction and cess deposition. The well and ovens were abandoned and eventually backfilled in the 17th century, after which the density of activity declined, with just two pits of post-medieval date identified.

The animal bone assemblage suggested disposal onto domestic midden heaps before being deposited in pits as a secondary fill. Environmental evidence demonstrated intentional cultivation of edible plants, indicating either the presence of a kitchen garden or the disposal of waste from one. This analysis also revealed that the well was used for dumping human and animal faeces, followed by a change in land use from one of varied species cultivation to probably abandonment and scrubland.

The pottery assemblage was mainly of medieval date, with over 90% of material from that period being of local wares. The majority of the assemblage consisted of domestic forms, either for the cooking, storing, or serving of food and drink. The fluctuating fortunes of the Worcester and Malvern pottery industries is illustrated within the assemblage.

Radiocarbon samples from fills within two of the ovens returned dates of 1160 – 1270 cal AD and 1280 – 1400 cal AD, giving a broad start and end date of the features.

The methods adopted allow a high degree of confidence that the aims of the project have been achieved. Conditions were suitable in all of the trenches to identify the presence or absence of archaeological features. It is considered that the nature, density and distribution of archaeological features provides an accurate characterisation of the development site as a whole.

11 Project personnel

The fieldwork was led by Peter Lovett, ACIfA, and Andy Mann, MCIfA, assisted by Jamie Wilkins, ACIfA, Jesse Wheeler, ACIfA, Morgan Murphy, Elspeth Iliff, PCIfA, and Andy Walsh, MCIfA.

The project was managed by Tom Vaughan, MCIfA. The report was produced and collated by Peter Lovett. Specialist contributions and individual sections of the report are attributed to the relevant authors throughout the text.

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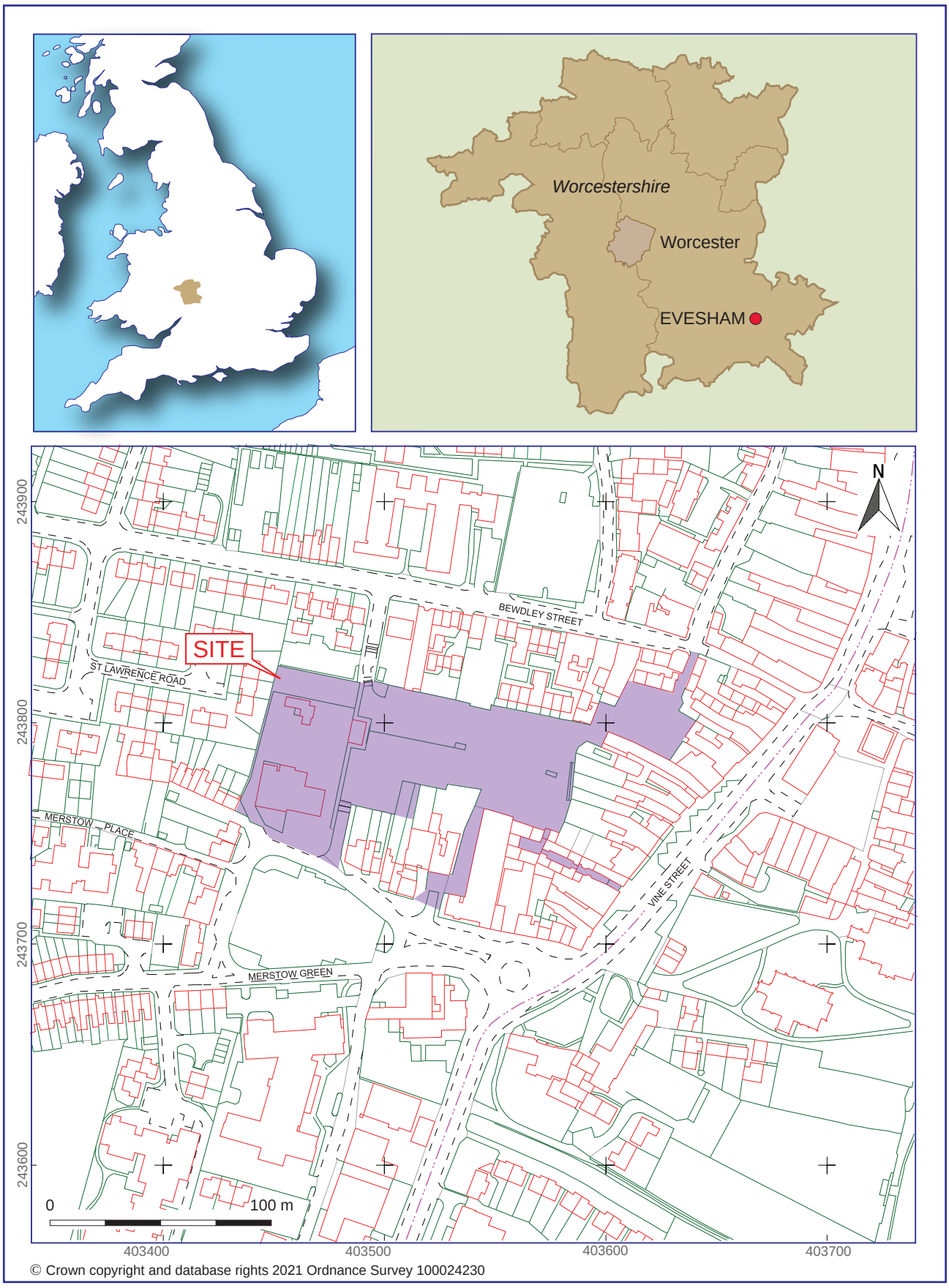
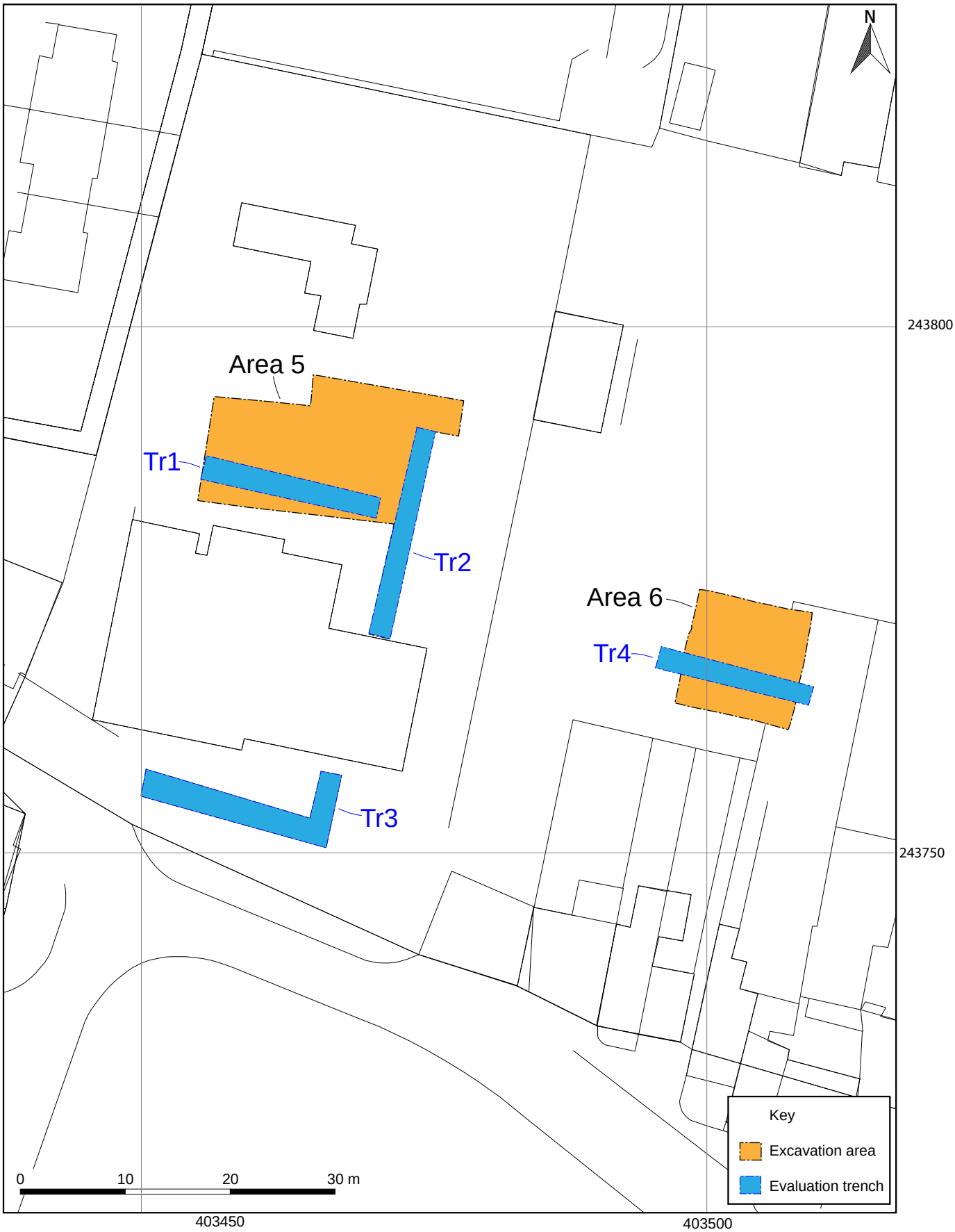
Figures

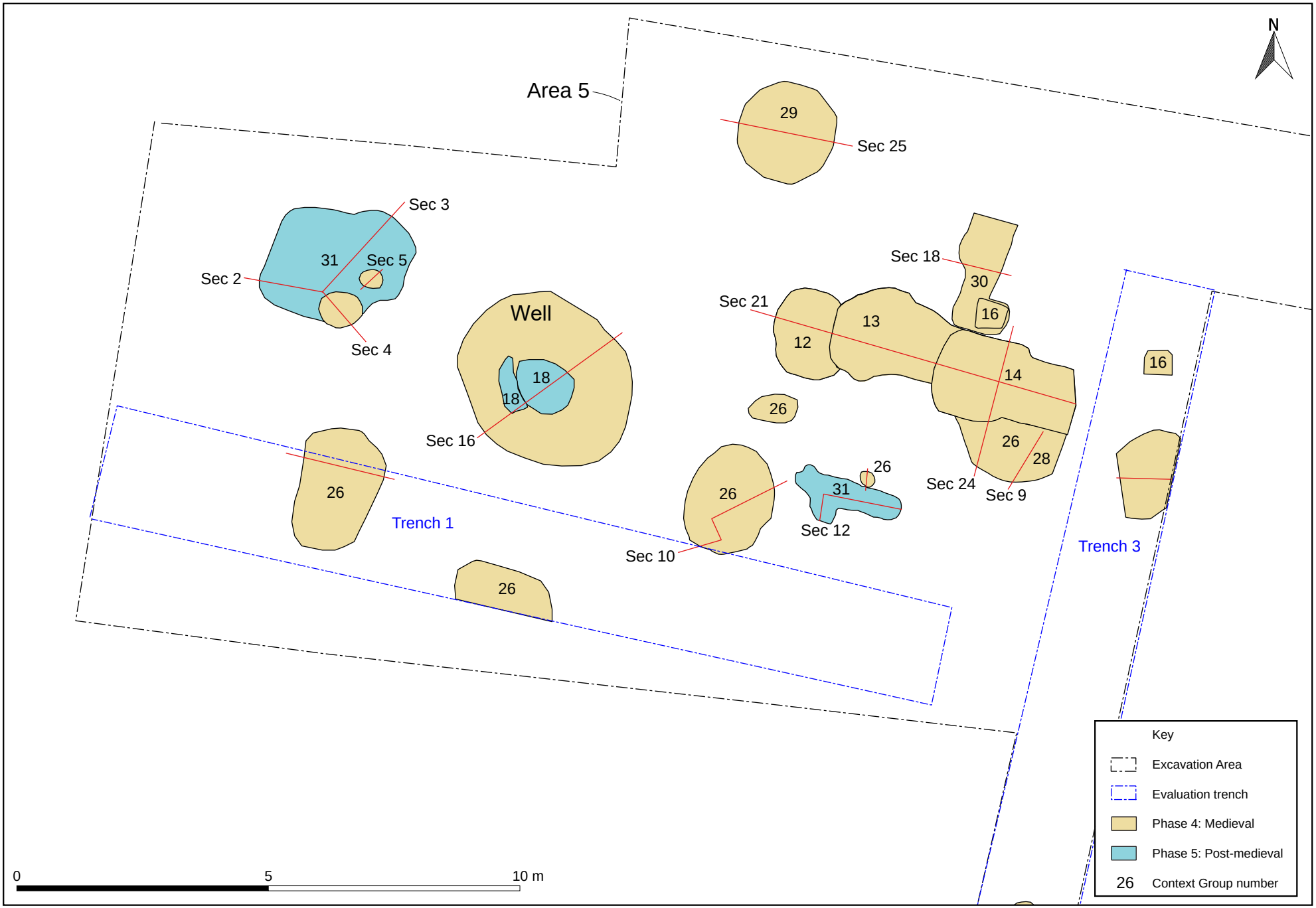
By Laura Templeton, MCIfA



Location of the site *Figure 1*

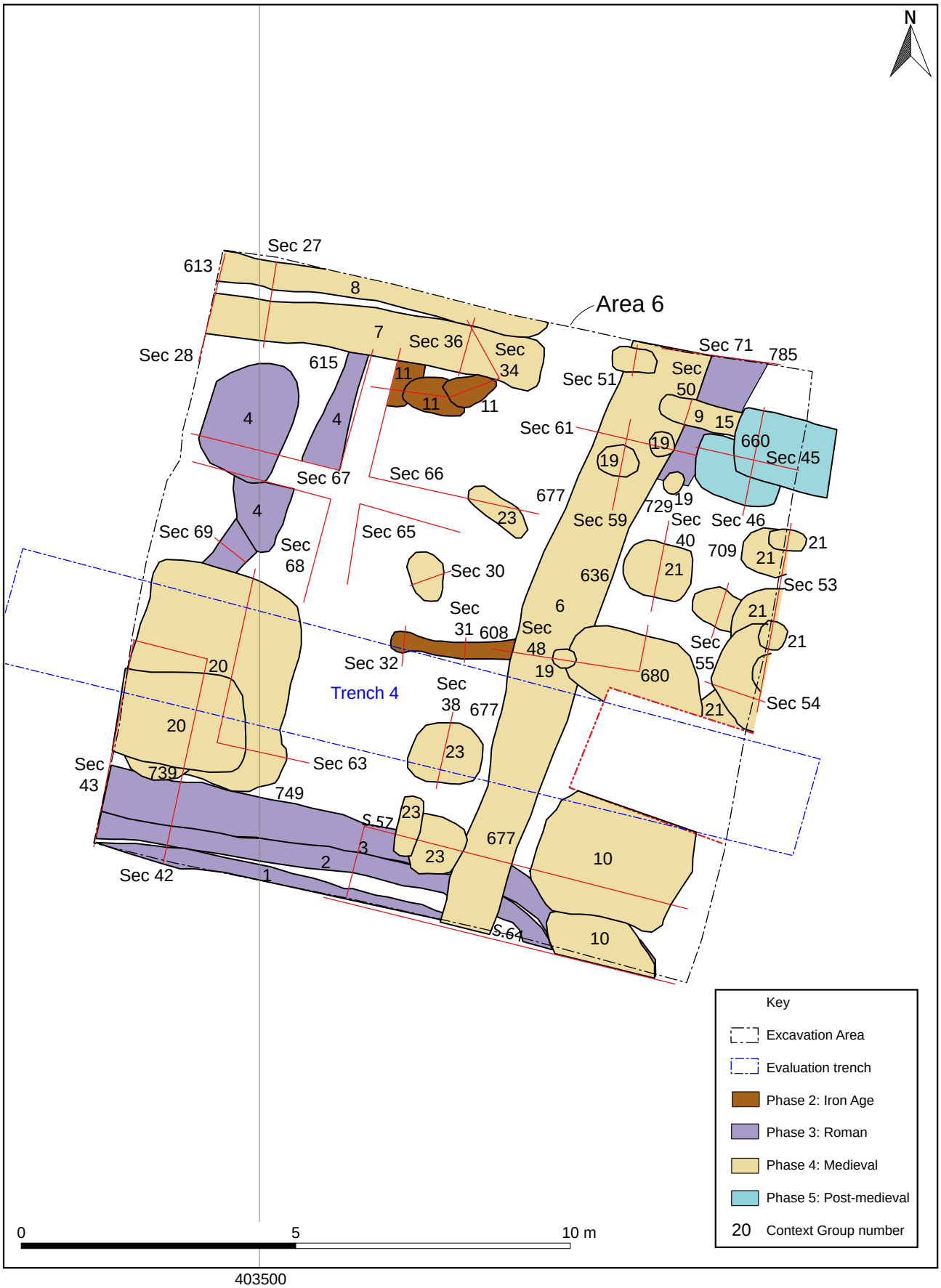


Location of evaluation trenches and excavation areas *Figure 2*



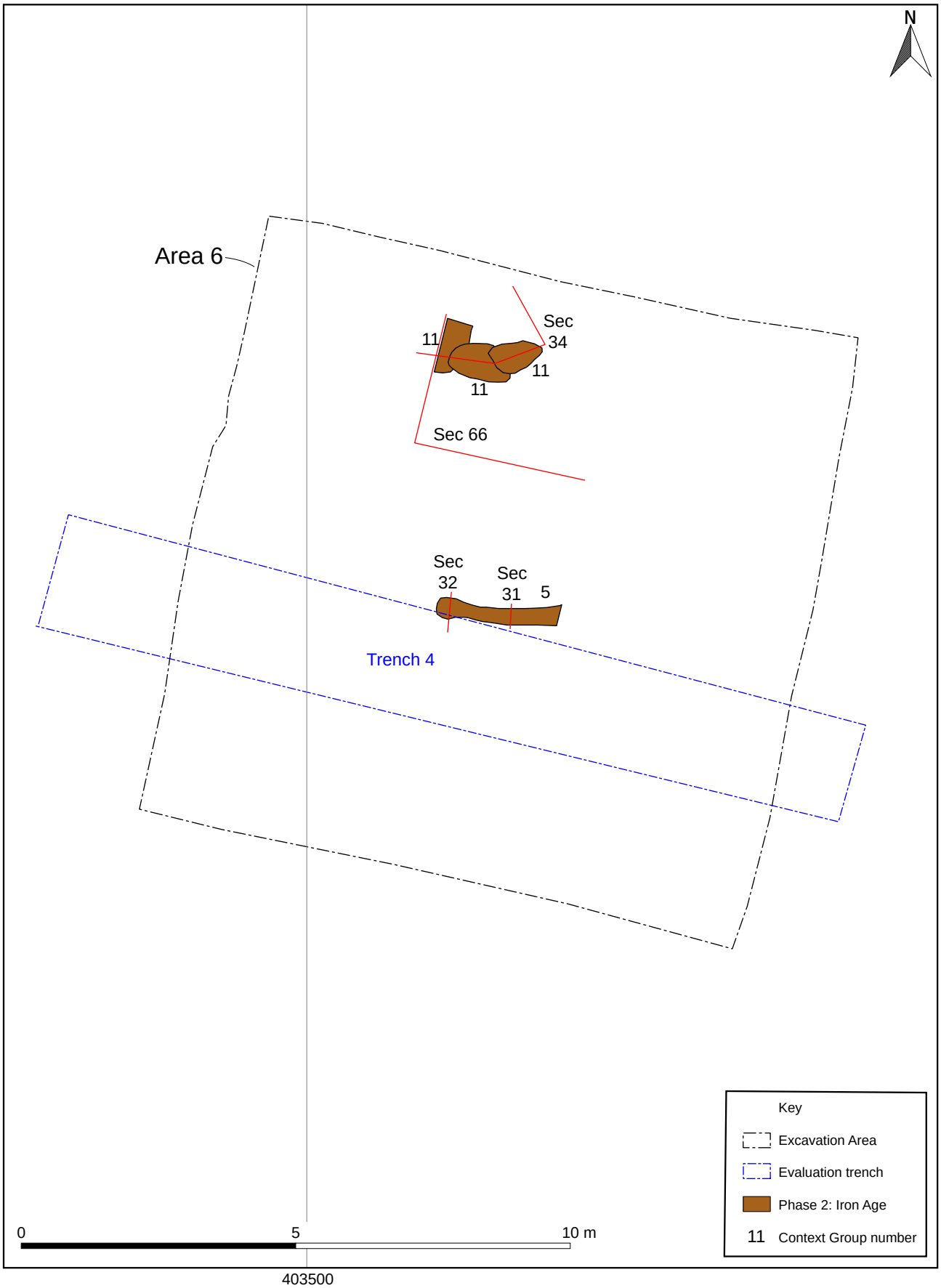
Area 5: Phases 4 and 5

Figure 3



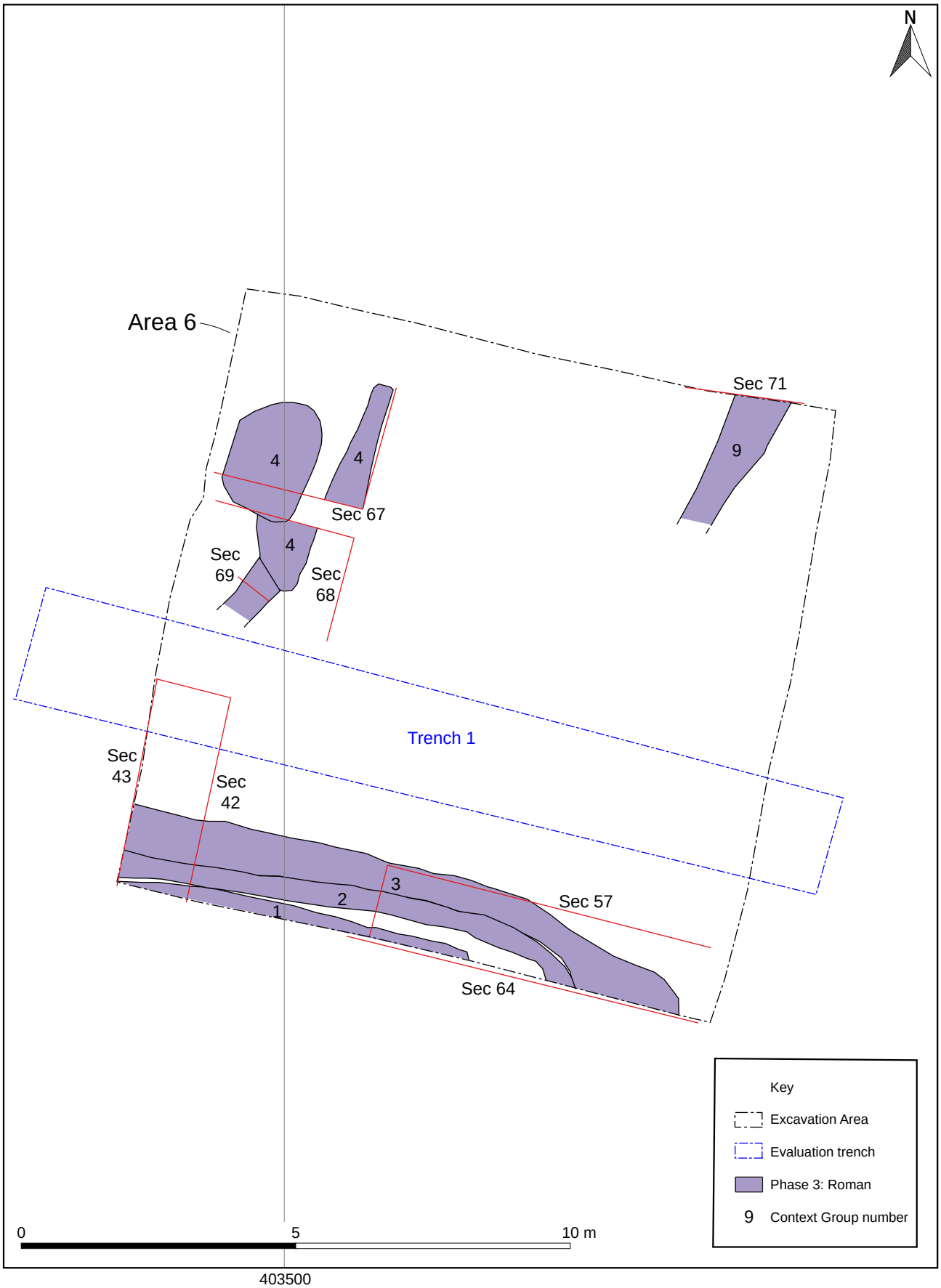
Area 6: Phases 2, 3, 4 and 5

Figure 4



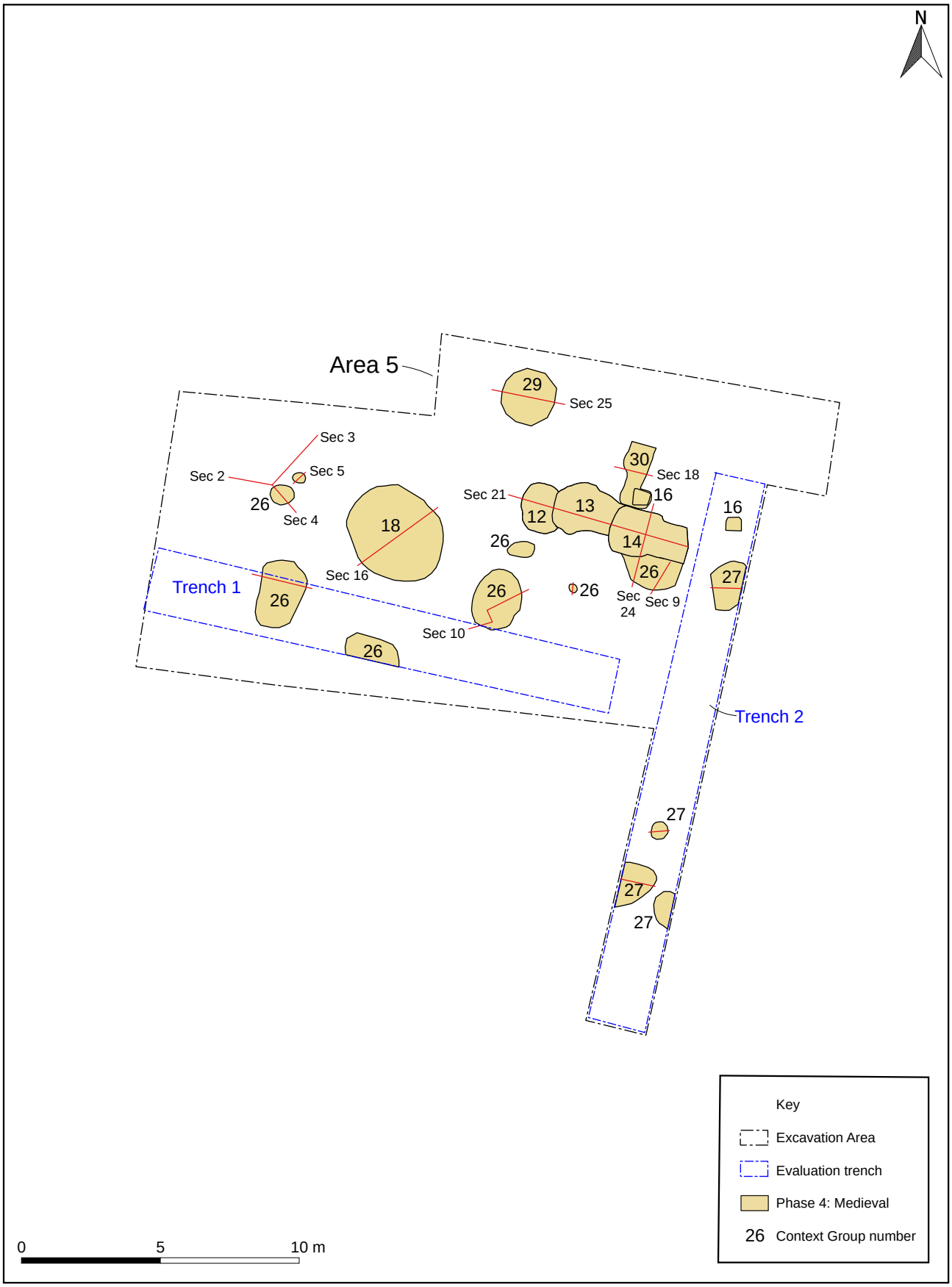
Area 6: Phase 2

Figure 5

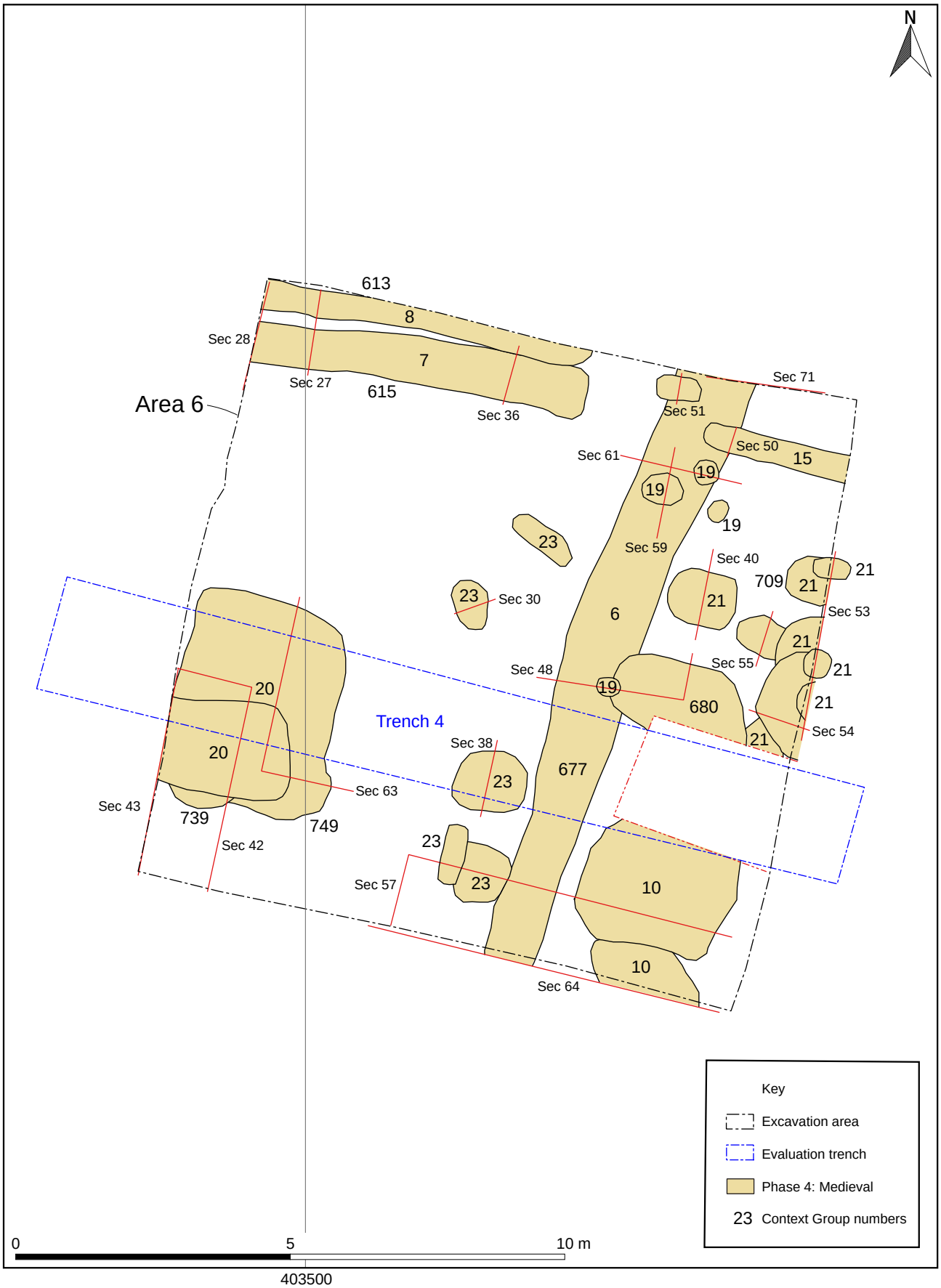


Area 6: Roman, Phase 3

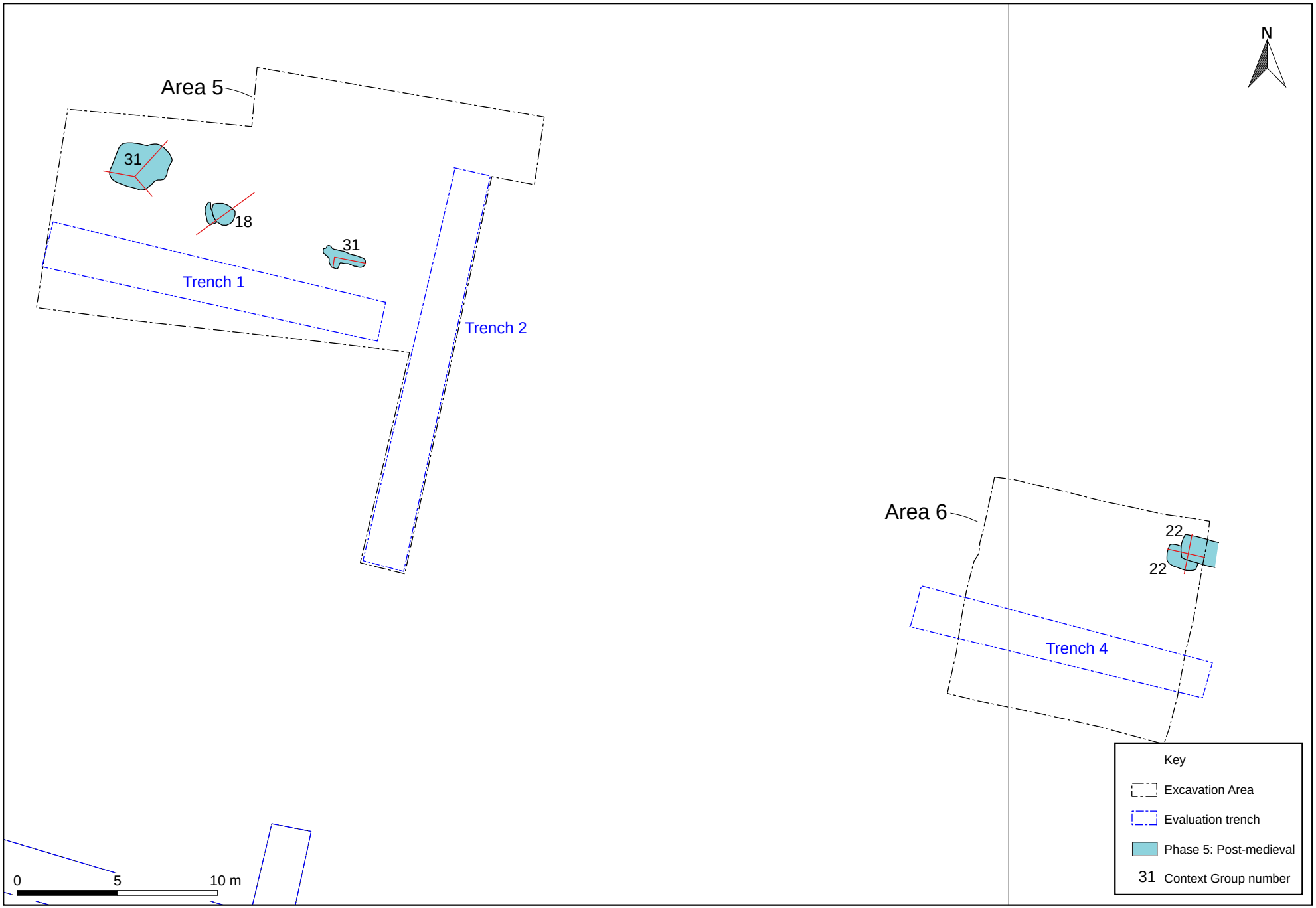
Figure 6



Area 5 and Trenches 1 and 3: Medieval, Phase 4 *Figure 7*

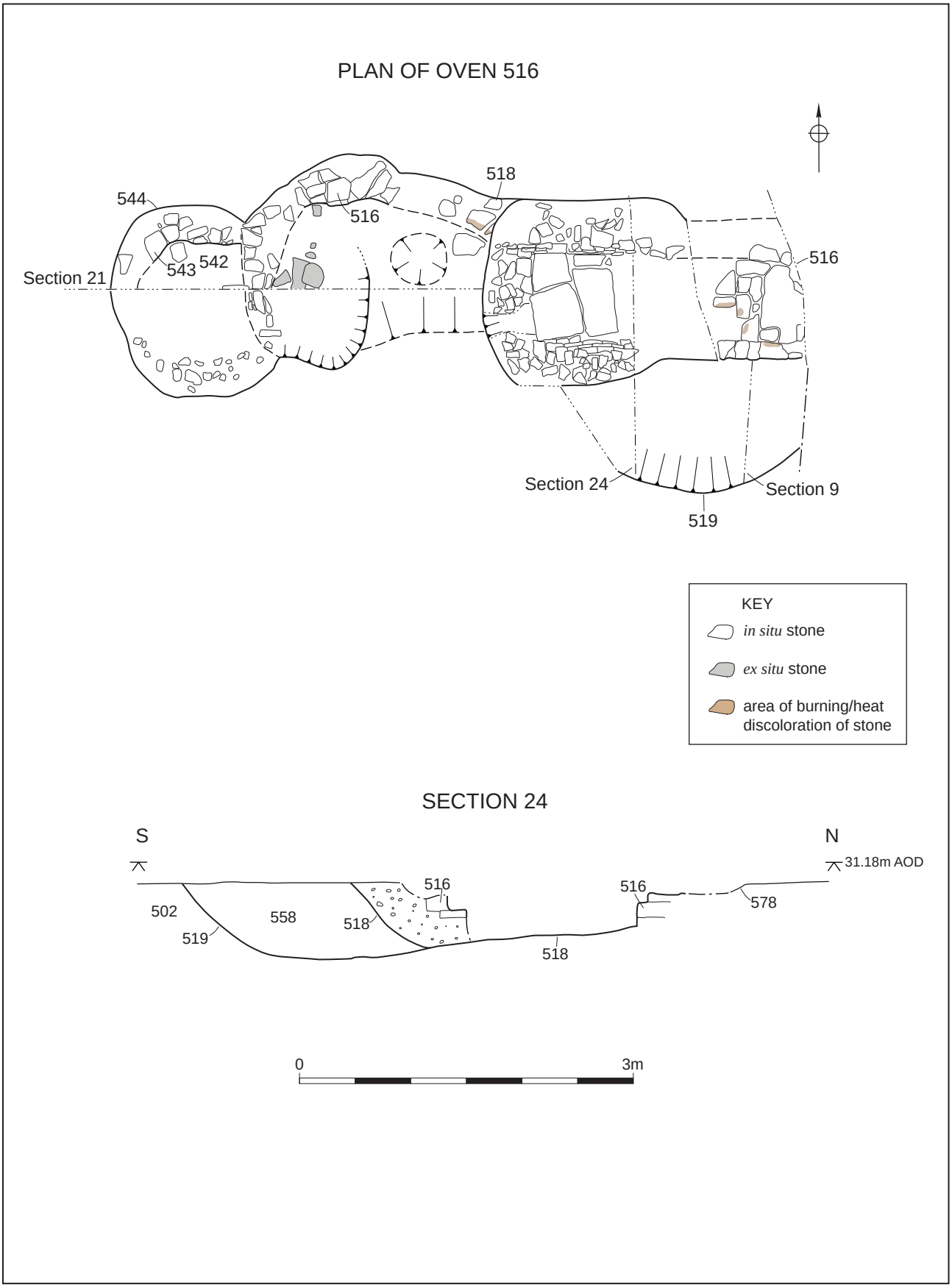


Area 6: Medieval, Phase 4 *Figure 8*



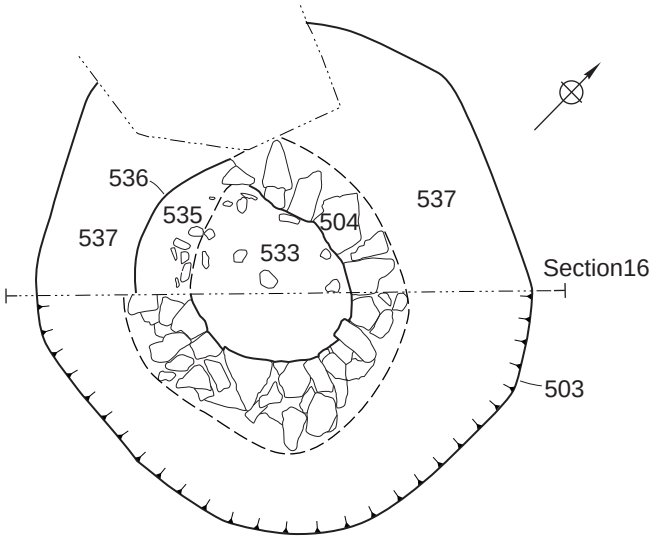
Areas 5 and 6: P ost-medieval, Phase 5

Figure 9

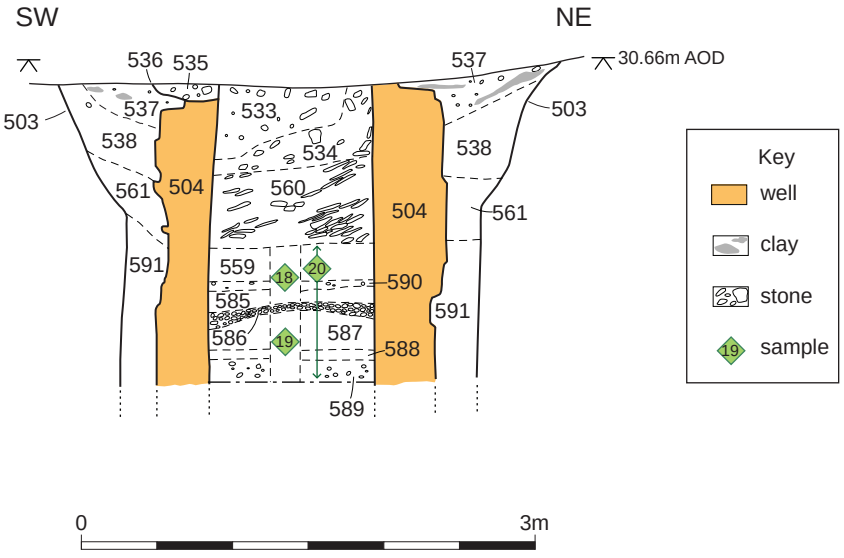


Plan and section of ovens *Figure 10*

PLAN OF WELL 504

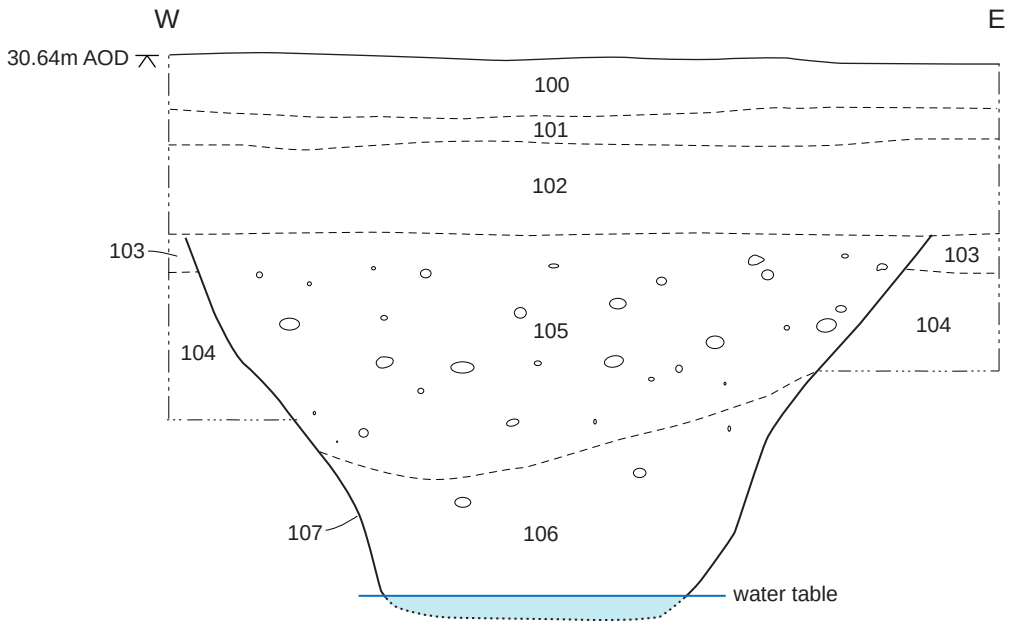


SECTION 16: WELL 504

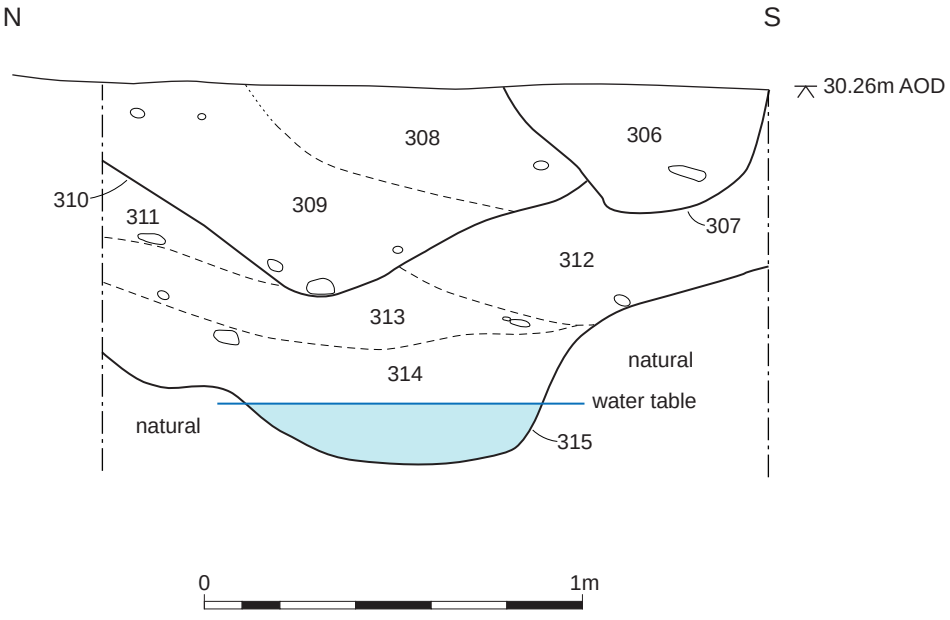


Plan and section of well 504 *Figure 11*

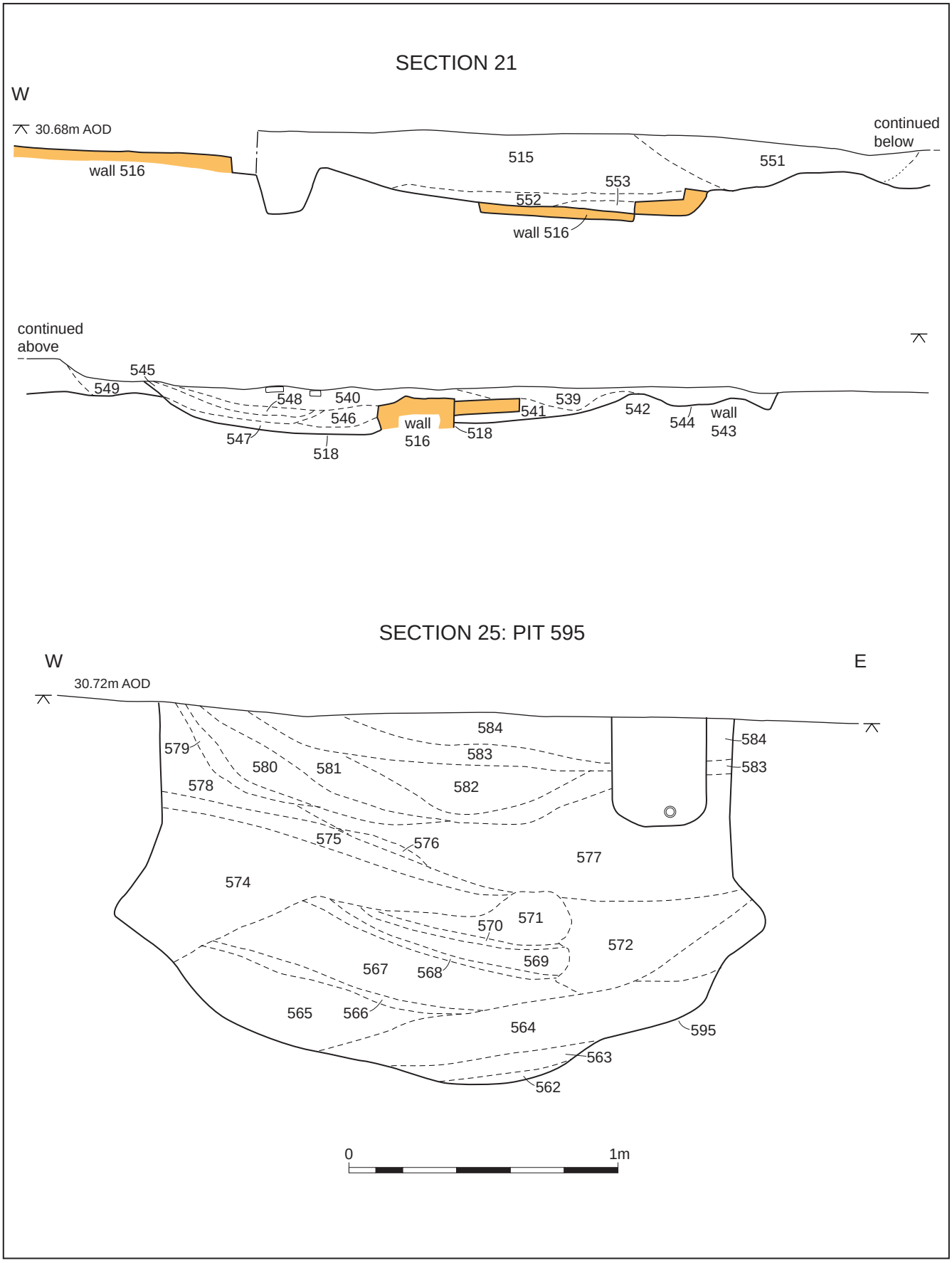
SECTION 1: DITCH 107



SECTION 13: DITCH 315

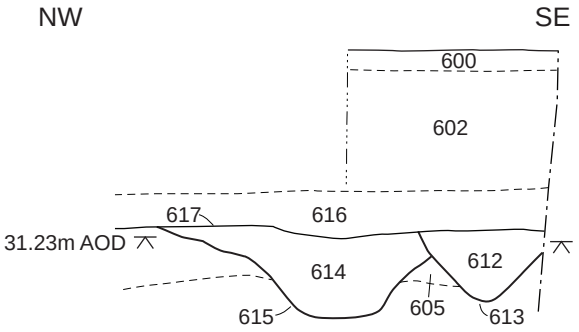


Sections 1 and 13 *Figure 12*

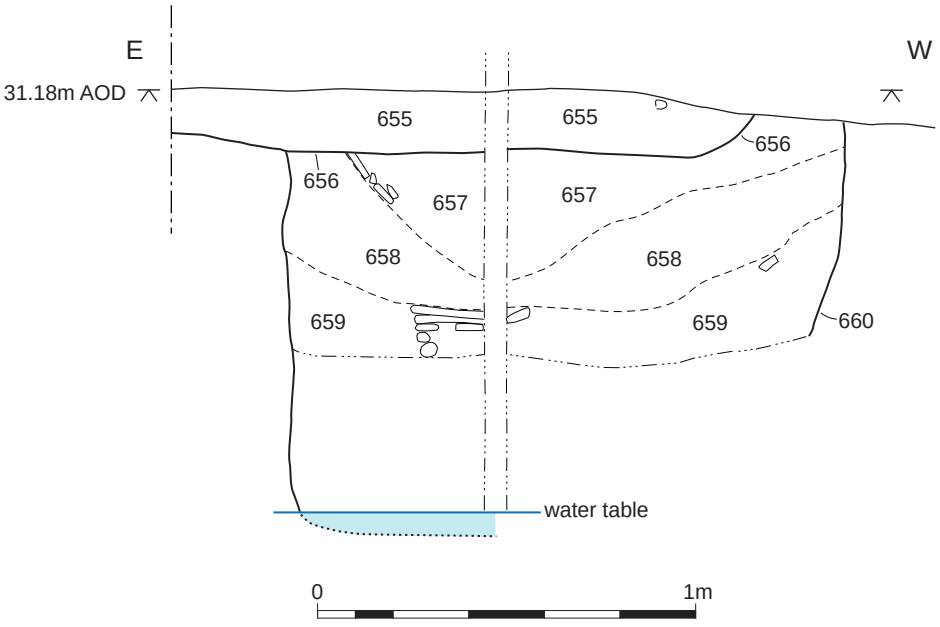


Sections 21 and 25 *Figure 13*

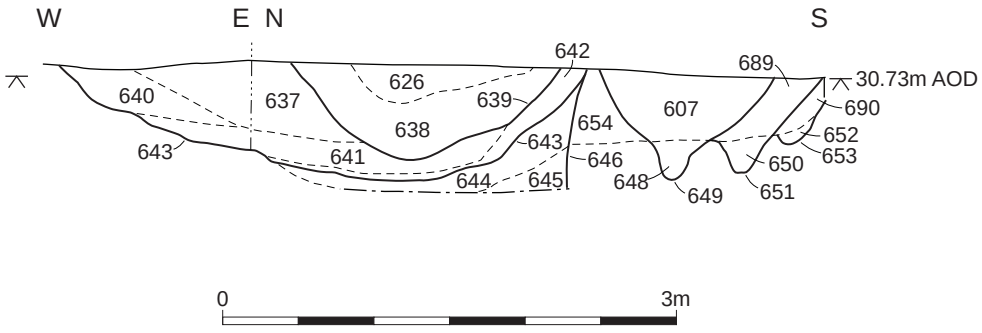
SECTION 28: GULLIES/ DITCHES 613 AND 615



SECTION 45: DITCHES 660 AND 656



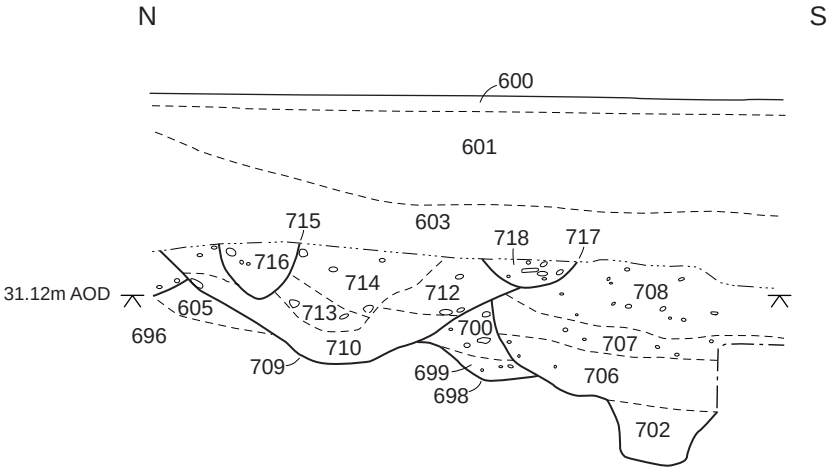
SECTION 42: 643, 646, 649, 651 AND 653



Sections 28, 45 and 42

Figure 14

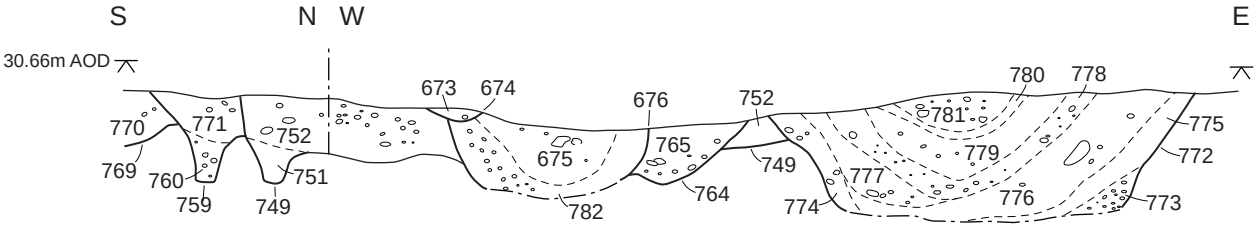
SECTION 53: DITCH 709



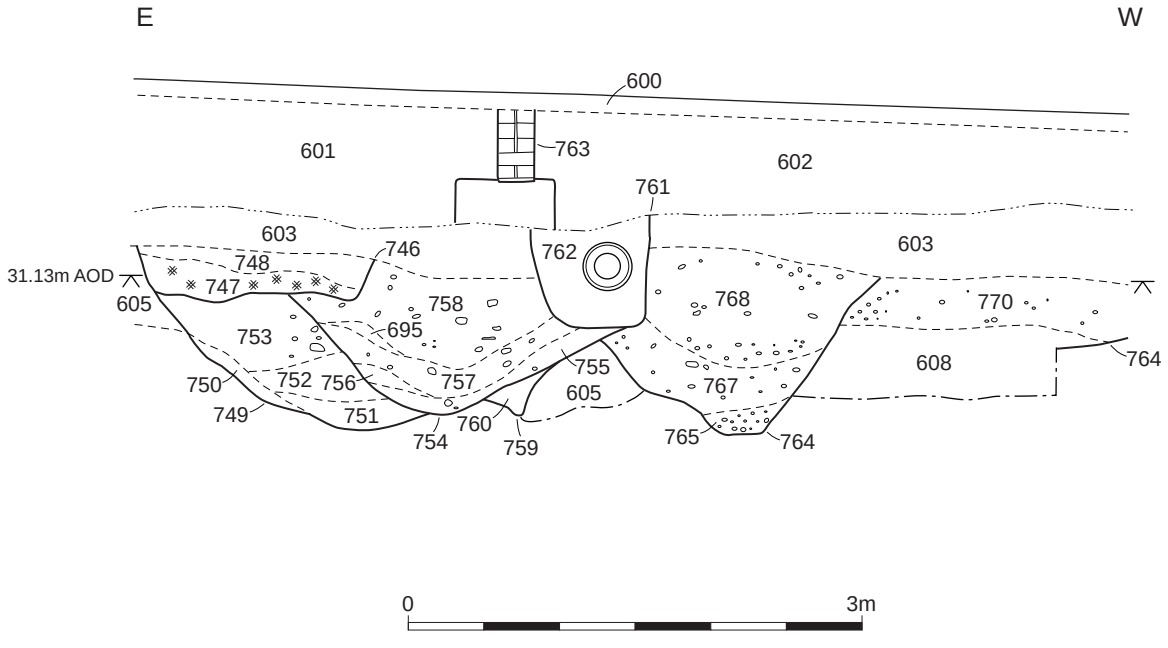
SECTION 63: DITCHES 736 AND 739

Sections 53 and 63 *Figure 15*

SECTION 57: DITCH 764



SECTION 64: DITCH 704



Sections 57 and 64 *Figure 16*

Plates

Plate 1: Area 5 pre-excavation, looking south-west (1m scales)

Plate 2: Well CG18 after initial excavation, looking north-west (1m scales)

Plate 3: Excavation of the well in progress, CG18

Plate 4: Well CG18 upper deposits looking north-west (1m scales)

Plate 5: Well CG18 showing stonework, looking north-west (1m scales)

Plate 6: Well CG18 lower deposits, looking north-west (1m scales)

Plate 7: Ovens CG12-14 half-sectioned, looking south (1m scales)

Plate 8: Ovens CG12-14 half-sectioned, looking east (1m scales)

Plate 9: Excavation of the medieval ovens in progress

Plate 10: Ovens CG12-14 excavated, looking west (1m scales)

Plate 11: Ovens CG12-14 excavated, looking east (1m scales)

Plate 12: Ovens CG12-14, looking south (1m scales)

Plate 13: Gravel extraction pit CG29 (2m and 1m scales)

Plate 14: Area 6 pre-excavation, looking west (2m scales)

Plate 15: Iron Age pits CG11 cut by medieval ditch CG7, looking south-east (1m scale)

Plate 16: Possible Iron Age gully and posthole CG5, looking east (0.2m and 0.3m scales)

Plate 17: Base of Roman ditches CG1-3, looking west (1m scale)

Plate 18: Medieval pits CG20 and Roman ditches CG1-3, looking east (1m scales)

Plate 19: Medieval pits in CG20 and Roman ditches CG1-3, looking west (1m scales)

Plate 20: Medieval pits in CG20, looking west (1m scales)

Plate 21: Morgan Murphy cleaning Roman ditches

Plate 22: Medieval pit CG10 and posthole CG19 cutting early medieval boundary ditch CG6, looking south (1m scales)

Plate 23: North-facing section showing medieval pits CG10, medieval boundary ditch CG6 and Roman ditches CG1-3 (1m scales)

Plate 24: Detail of north-facing section showing medieval pits CG10 and Roman ditches CG1-3 (1m scales)

Plate 25: Medieval boundary ditches CG7 and 8, looking west (0.5m scale)

Plate 26: Intercutting medieval pits in CG21, looking east (1m and 0.5m scales)

Plate 27: Pits in CG22, looking east (1m and 0.5m scales)

Plate 28: Showing tip lines in CG22, looking north-east (1m and 0.5m scales)

Plate 29: Medieval glass recovered from oven CG14 (5cm scale)

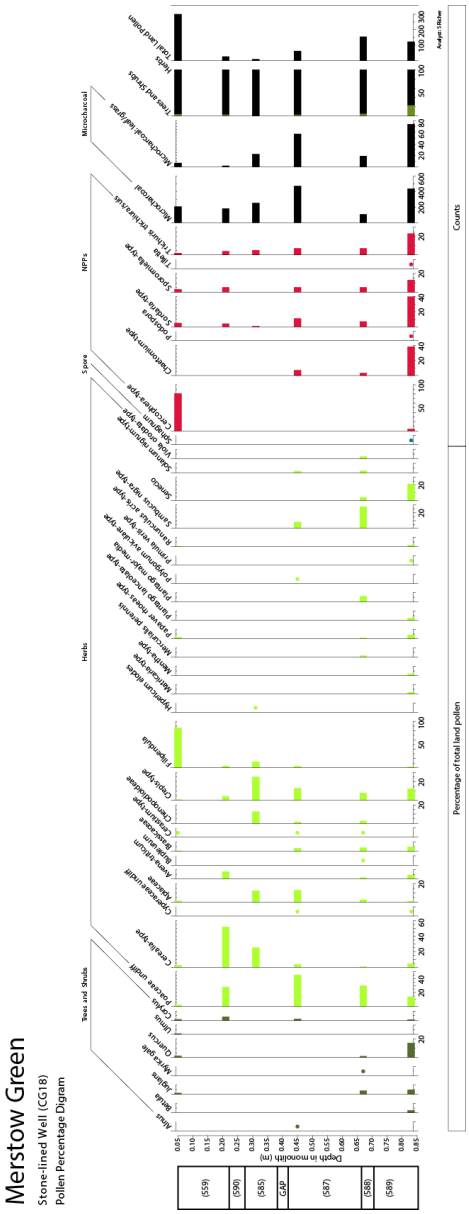


Plate 30: Pollen diagram for subsamples from monolith <20> CG18. Percentages are shown on the x axis. LPAZ = Local Pollen Assemblage Zone. • = Rare Occurrence, no more than one grain observed

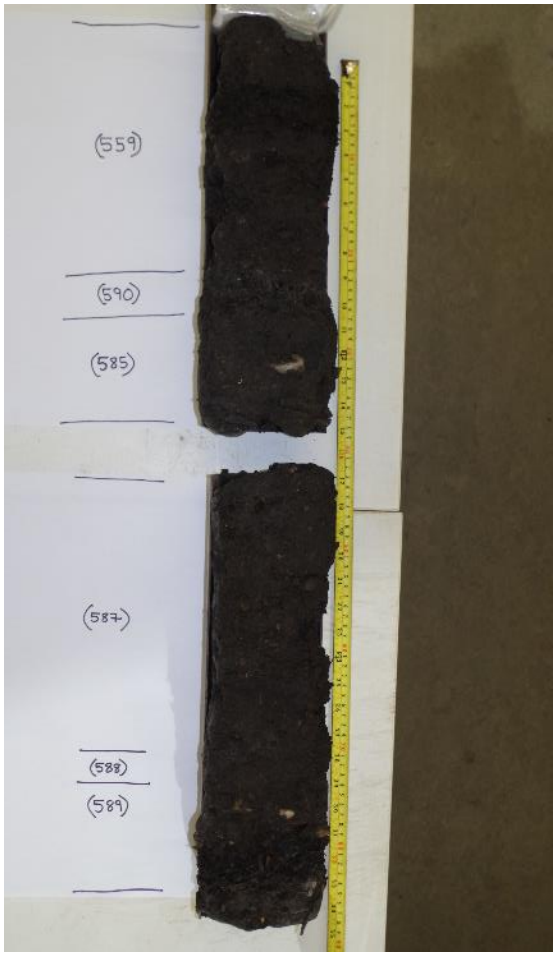


Plate 31: Monolith <20> from CG18

Appendix 1: Summary of project archive

(WSM 68377, WSM 69226)

TYPE	DETAILS*
Artefacts and Environmental	Animal bones, Ceramics, Environmental, Glass, Metal,
Paper	Context sheet, Drawing, Report, Section
Digital	Database, GIS, Images raster/digital photography, Spreadsheets, Survey, Text

**OASIS terminology*

Appendix 2: Pollen preparation methodology

Floatation Method for Pollen Preparation using Sodium Polytungstate – (Dr. T Mighall)

Protective clothing must be worn throughout the procedure. Breathing masks must be used when making up Sodium polytungstate.

This process is carried out in a fume hood and uses:

10% HCl and NaOH, this is an irritant and may cause burns. If spilt on skin or splashed in eyes, wash with copious cold running water and seek medical advice.

Acetic acid is highly corrosive and harmful in contact with skin. Spills and splashes should again be washed with running water.

Acetic Anhydride/Sulphuric acid is volatile when mixed with water. These may cause severe burns when in contact with skin or splashes in eye. Again use copious cold, running water to rinse and seek medical advice.

Sodium polytungstate should be disposed of by storing in a waste bottle and dispose of using a recognised waste disposal company.

1. Take large, round- bottomed, screw-capped tubes and add 1-3g of sample to them, make a note of amounts used.

2. Add 1 lycopodium tablet to each tube along with a small amount of distilled water.

3. When tablet fully dissolved, vortex and add 10% NaOH.

HUMIFICATION

4. Tubes are then placed in a hot waterbath for 20 minutes.

5. Tubes are then centrifuged at 3800rpm for 3 minutes and decant supernatant.

6. Add a small volume of distilled H2O and sieve into a beaker. Wash tube and sieve through with more water.

7. Centrifuge, decant and wash with distilled water twice more.

8. Add 10% HCl to residue and again place in the waterbath for 3 minutes. Vortex, centrifuge and decant.

9. Wash, centrifuge and decant.

10. Add approx 5mls. of Acetic acid, vortex and centrifuge again.

ACETOLYSIS WEAR MASKS

11. Make up acetolysis mixture. Add 6ml of Sulphuric Acid to 54ml of Acetic Anhydride, slowly and carefully stir.

This is a 1:9 mixture ratio.

12. Add this mixture to tubes and place in a boiling waterbath for 2 minutes.

13. Top up tubes with glacial Acetic Acid, then centrifuge, decant into beaker containing acetic acid.

14. Wash, centrifuge and decant twice more. Transfer residue to small, clear round bottomed tubes

15. Make up sodium polytungstate solution in a plastic beaker. Add 56g of sodium polytungstate to 44ml. of

distilled water, stir until dissolved. Wear face mask and gloves.

16. Add 6mls of polytungstate solution to each tube. Mix and centrifuge for 20 minutes.

17. Pipette off the supernatant from round –bottomed tubes into conical tubes already containing distilled water.

18. Centrifuge for 10minutes at 2,500rpm. Decant.

19. Wash, spin and decant twice more.

DEHYDRATION

20. Transfer residue into microfuge tubes, centrifuge and decant. 3,000 for 5 minutes.

21. Add 100 ethanol, stir, centrifuge and decant.

22. Add TBA, stir, centrifuge and decant.

23 Pour off TBA and add a layer of silicon oil, leave alcohol to evaporate overnight.

Appendix 3: Pollen count data

Name	0.05–0.06cm	0.21–0.22m	0.31–0.32m	0.45–0.46m	0.67–0.68m	0.83–0.84m
Alnus				1		
Betula						3
Juglans regia	4				6	6
Myrica gale					1	
Quercus	5				2	19
Tilia cordata						
Ulmus	2					
Corylus	3	1		1		1
Total Trees and Shrubs	**14**	**1**	**0**	**2**	**9**	**29**
Poaceae undiff	7	7		28	46	17
Cerealia-type	7	13	2	2	1	5
Cyperaceae undiff				1		1
Achillea-type						
Apiaceae	4		1	8	4	1
Avena-triticum		2			2	5
Bupleurum					1	
Brassicaceae	1			2	6	6
Cerastium-type	1			1	1	
Chenopodioideae			1	1	4	
Crepis-type	2	1	2	8	12	15
Filipendula	259	1	1	2		2
Hypericum elodes			1			
Matricaria-type						2
Mentha-type						2
Mercurialis perennis					2	
Papaver rhoeas-type	4				1	5

Plantago lanceolata-type						3
Plantago major-media					9	
Polygonum aviculare-type				1		
Primula veris-type						1
Ranunculus acris-type	1					2
Sambucus nigra-type				5	43	
Senecio-type					6	26
Solanum nigrum-type				1	3	
Viola orodata-type					4	
Herbs	**286**	**24**	**8**	**60**	**145**	**93**
Sphagnum						1
Cercophera-type	81					4
Chaetomium-type				7	3	38
Podospora						1
Sordaria-type	5	4	1	11	7	40
Sporormiella-type	3	5		5	5	13
Tilletia						1
Trichuris trichiura/suis	2	4	5	7	7	23
Microcharcoal	205	180	253	471	105	438
Microcharcoal: leaf/grass	7	2	22	57	19	74
Folded				3	3	
Broken				1		
Lycipodium counted	41	33	41	71	53	38
Pitted	7	3	13			
Lycopodium counted	110	115	115			
Total Land Pollen	**300**	**25**	**8**	**62**	**154**	**122**

Appendix 4: Radiocarbon dating graphs

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -21.0 o/oo)

Laboratory number **Beta-520856**

Conventional radiocarbon age **820 ± 30 BP**

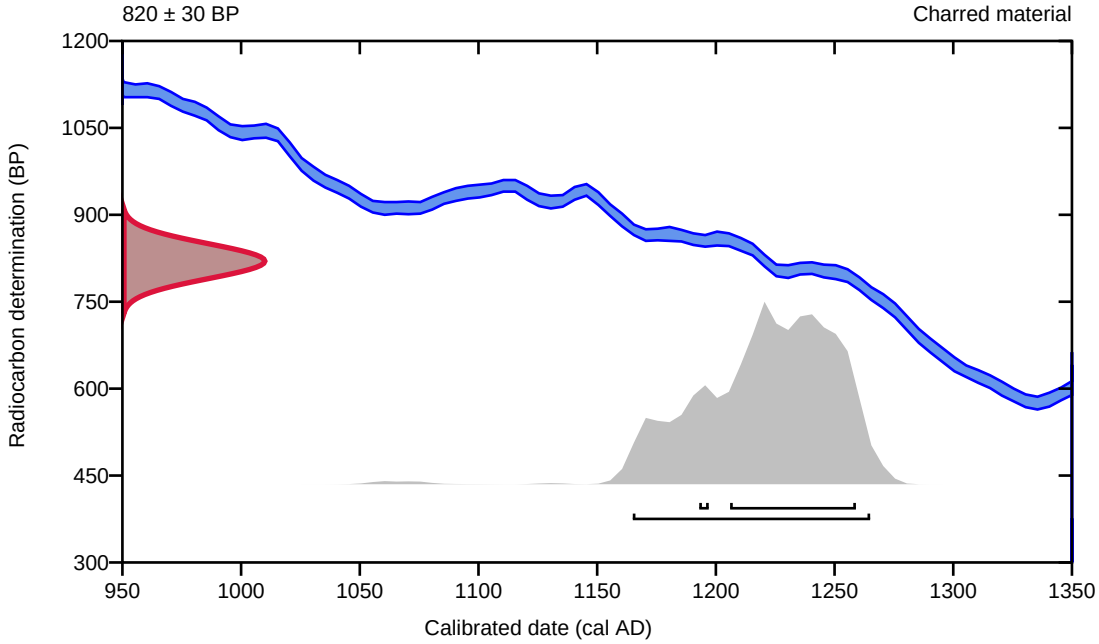
95.4% probability

(95.4%)	1165 - 1265 cal AD	(785 - 685 cal BP)

68.2% probability

(65.1%)	1206 - 1259 cal AD	(744 - 691 cal BP)
(3.1%)	1193 - 1197 cal AD	(757 - 753 cal BP)

P5107/545//9



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

Beta Analytic Radiocarbon Dating Laboratory

4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -22.3 o/oo)

Laboratory number **Beta-520855**

Conventional radiocarbon age **640 ± 30 BP**

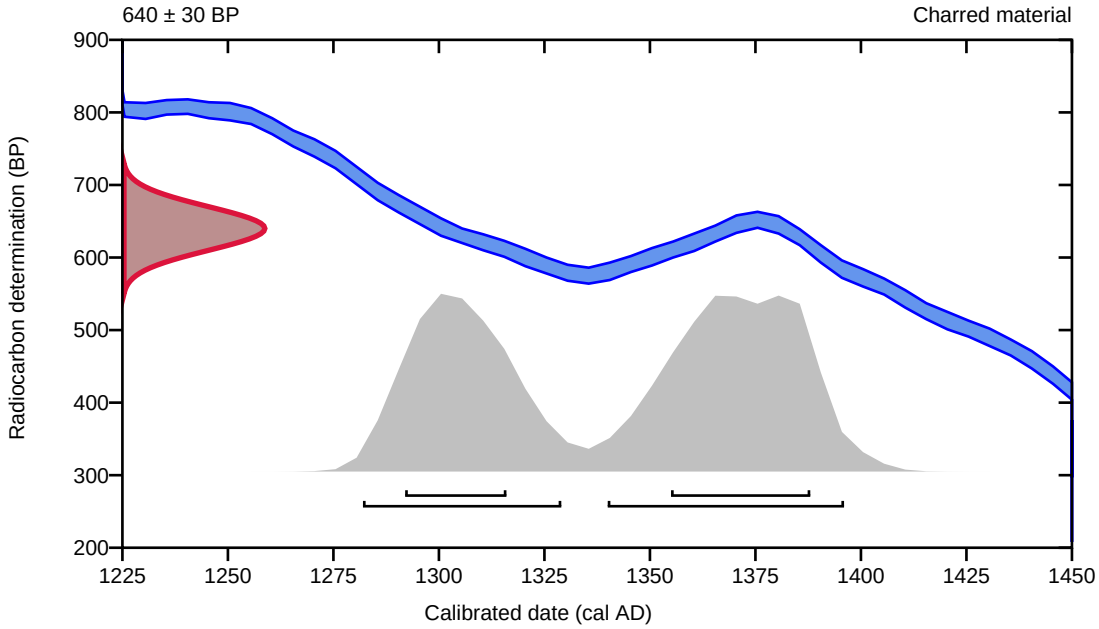
95.4% probability

(54.5%)	1340 - 1396 cal AD	(610 - 554 cal BP)
(40.9%)	1282 - 1329 cal AD	(668 - 621 cal BP)

68.2% probability

(40.7%)	1355 - 1388 cal AD	(595 - 562 cal BP)
(27.5%)	1292 - 1316 cal AD	(658 - 634 cal BP)

P5107/552/11



Database used

INTCAL13

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

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Appendix 5: Summary of data for HER (WSM 68377 & WSM 69226)

Artefact tables

Fabric code	Fabric common name	Total	Weight (g)
2	organic briquetage (BD 121)	4	105
3	Malvernian ware	3	86
4.1	Palaeozoic limestone	57	498
4.3	fossil Shell	5	16
5.1	sand	1	5
5.6	ironstone and sand	1	13
97	Miscellaneous prehistoric wares	1	2

Quantification of the Iron Age pottery by fabric type

Fabric code	Fabric common name	Total	Weight (g)
12	Severn Valley ware	11	322
14	Fine sandy grey ware	2	53
16	Grog tempered ware (BD32/33)	1	80
38	Oxfordshire white ware	1	5

Table 4: Quantification of the Roman pottery by fabric type

Fabric number	Fabric common name	Total	Weight (g)
53	early Malvernian glazed ware	4	119
55	Worcester-type sandy unglazed ware	190	2682
56	Malvernian unglazed ware	14	131
57	Cotswolds unglazed ware	3	18
58	sandy limestone tempered ware	2	14
62	Deritend-type ware	7	76
63	Brill/Boarstall ware	10	176
64.1	Worcester-type sandy glazed ware	32	648
64.4	unglazed sandy white ware	2	69
65	Minety-type ware	3	92

66	Herefordshire glazed fine micaceous ware	1	17
69	oxidized glazed Malvernian ware	44	323
99	miscellaneous medieval wares	10	72
143.2	Ham Green type B	2	34
148.1	unglazed Evesham micaceous ware	40	816
148.2	glazed Evesham micaceous ware	20	284
55/148.1	?Worcester or Evesham unglazed wares	50	587
99	Miscellaneous medieval wares	11	77

Quantification of the medieval pottery by fabric type

Fabric number	Fabric common name	Total	Weight (g)
69	oxidized glazed Malvernian ware	24	572
70.1	Tudor green ware	1	3
72	brown glazed speckled ware	13	554
78	post-medieval red ware	1	20
81.11	Frechen stoneware	6	31
81.8	Raeren stoneware	3	214

Quantification of the late medieval/early post-medieval pottery by fabric type

Context	Context group	Context type	Feature type	Fill of	Finds *tpq*
105	0	Fill	Ditch	107	L11-M14C
202	0	Layer	topsoil		L11-M14C
206	0				E-M12C
211	27	Fill	Pit	210	12-14C
212	27	Fill	Pit	213	12-14C
306	0	Fill	Gully	307	L11-M14C
312	17	Fill	Ditch	315	12-14C
404	0	Layer	Dark Earth		12-14C
508	0	Fill	Pit	508	15C
509	26	Fill	Pit	506	14C
514	26	Fill	Posthole	513	M13C

515	14	Fill	Oven	?518	17C
523	31	Fill	Pit	522	15-16C
524	31	Fill	Pit	522	14C
530	30	Fill	Ditch	529	16-E17C
531	26	Fill	Pit	532	medieval
533	18	Fill	Well	504	16-E17C
534	18	Fill	Well	504	L15-16C
538	18	Fill	Well	503	medieval
539	12	Fill	Oven	544	13-14C
549	13	Fill	Oven	516	medieval
551	14	Fill	Oven		medieval
552	14	Fill	Oven		13-14C
555	25	Fill	Pit	555	19-20C
557	25	Fill	Pit	556	19-20C
558	26	Fill	Pit	519	medieval
559	18	Fill	Well	504	17C
560	18	Fill	Well	504	13-15C
572	29	Fill	Pit	595	14C
574	29	Fill	Pit	595	14C
577	29	Fill	Pit	595	14C
582	29	Fill	Pit	595	14C
584	29	Fill	Pit	595	12(-14)C
603	24	Layer	Modern Layer		18C
604	24	Layer	Modern Layer		14(-15)C
607	23	Fill	Pit	606	L11-14C
609	5	Fill	Gully	608	M-LIA
612	8	Fill	Ditch	613	12-M14C
614	7	Fill	Ditch	615	12-14C
619	7	Fill	Ditch		12-14C
623	11	Fill	Pit	624	IA

625	0	Layer	Subsoil		IA
626	20	Fill	Ditch	639	12-14C
630	23	Fill	Pit	627	L11-M14C
631	23	Fill	Pit	627	13C
632	23	Fill	Pit	627	12-13(14)C
638	20	Fill	Ditch	639	12-13(14)C
641	20	Fill	Pit	643	12-M14C
645	20	Fill	Pit		12-14C
647	3	Fill	Ditch	449	13-15C
655	22	Fill	Pit		15-16C
657	22	Fill	Pit		16-E17C
658	22	Fill	Pit	660	17C
659	22	Fill	Pit	660	16(-17)C
661	22	Fill	Pit		L15-17C
662	22	Fill	Pit	663	13-16C
664	15	Fill	Ditch		13-14C
672	20	Fill	Pit	646	13-14C
673	23	Fill	Pit	674	13-14C
675	23	Fill	Pit	676	12-14C
682	10	Fill	Pit	680	12-M13C
683	10	Fill	Pit	680	12-M14C
684	10	Fill	Pit	680	12-14C
695	10	Fill	Pit	754	13-14C
699	21	Fill	Pit	698	12-14C
706	21	Fill	Pit	703	12-E13(14)C
709	21	Cut	Ditch		12-14C
716	21	Fill	Pit	715	13-14C
718	21	Fill	Pit	717	12-E13C
730	6	Fill	Ditch	729	M-LIA
735	20	Fill	Pit	736	E13C

737	20	Fill	Ditch	739	12-14C
740	20	Fill	Pit	736	12-14C
741	20	Fill	Pit	736	12-14C
743	20	Fill	Pit	736	12-14C
752	3	Fill	Ditch	749	12-14C
752	3	Fill	Ditch	749	MIA
755	10	Fill	Pit	754	2-4C
757	10	Fill	Pit	754	13-14C
758	10	Fill	Pit	754	13(-14)C
760	2	Fill	Ditch	759	L1-2C
776	10	Fill	Pit	772	13-14C
781	10	Fill	Pit	772	12-M14C
784	9	Fill	Ditch	785	Roman
786	4	Fill	Pit	791	1-2C

Dating based on all finds

Environmental tables

		Preservation						Bone Modification		
Phase	**Description**	**Good**	**Good-fair**	**Fair**	**Poor**	**Fair-poor**	**Good-poor**	**Gnawed**	**Butchered**	**Burnt**
Unphased		1		1				1		
Iron Age	Pits and gully			2						
Roman	Enclosures, pit and ditch		1	1	3			1		
Medieval	Town	9	10	18	5	2	2	15	15	2
Post-medieval	Backyards	6	3	4		1		6	6	1
Modern				1						
Total N contexts		16	14	27	8	3	2	23	21	3
Proportion (%) of all contexts		23	20	38	11	4	3	32	30	4

Preservation and bone modifications observed on the bones for each context

Phase		Cattle		Sheep		Pig		Bird	Fish	Other	Total	Other taxa
	Unidentified	Bones	Teeth	Bones	Teeth	Bones	Teeth				Identified	
Unphased	6	1		1		2		1			5	Chicken
Iron Age	2		2								2	
Roman	47	5	1	2	1					1	10	Equid
Medieval	183	43	6	52	8	24	3	21		5	162	Equid, cat, chicken, red deer, goose
Post-medieval	159	25	3	45	1	11	3	24	3	4	119	Red deer, chicken, goose, hare/ rabbit, oyster, gadid
Modern				1							1	
Total	397	74	12	101	10	37	6	46	3	10	299	

Number of fragments recorded for the major domesticates, birds and other taxa

Phase	Burnt	Fish	Birds	Micro-mammal	Amphibian	Cattle	Sheep/ goat	Pig	Other	Other taxa
Iron Age		1				1				
Medieval	37	49	15	1	1	5	4		1	equid, chicken, goose, small passerine, herring, eel, salmonid
Post-medieval	6	14	2	1			3	1	3	Chicken, hare/ rabbit

Number of bones identified to taxa from samples

	Cattle				Sheep/ goat				Pig			
Phase	MWS	TWS	Fusion	Meas	MWS	TWS	Fusion	Meas	MWS	TWS	Fusion	Meas

Roman			3		1							
Medieval		1	29	38	5		41	49	1		21	10
Post-medieval	1		17	6			51	34	2		9	2
Modern							1					
Total	1	1	49	44	6		93	83	3		30	12

Number of bones and teeth likely to provide ageing and metrical data for the major domesticates. MWS= mandibular wear stage; TWS= wear from individual teeth; fusion= bone fusion; meas= metrical data

Monolith	Subsample Depth (in monolith	Context	Sediment description	Pollen [illegible]	Pollen preservation	Pollen concentration
<20>	0.05–0.06m	559	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Average
<20>	0.21–0.22m	559	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Low
<20>	0.31–0.32m	585	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Very low
<20>	0.45–0.46m	587	Waterlogged organic dark silty clay with occasional small stones, coarse sand and visible macros.	Yes	Excellent	Low
<20>	0.67–0.68m	588	Waterlogged organic dark silty clay with occasional small stones, fine sand and visible macros.	Yes	Excellent	Low
<20>	0.83–0.84m	589	Waterlogged organic dark silty clay with occasional small stones, fine sand and visible macros.	Yes	Excellent	Low

Summary of subsample and sediment information for monolith <20>

Laboratory code	Context number	Material	$\delta^{13}C$ (‰)	Conventional Age	OxCal calibrated age (95.4% probability or 2 sigma)
Beta - 520855	552	Charred grain: *Triticum* sp free-threshing	-22.3 ‰	640 ± 30 BP	1280 – 1400 cal AD
Beta - 520856	545	Charred grain: *Triticum* sp free-threshing	-21.0 ‰	820 ± 30 BP	1160 – 1270 cal AD

Radiocarbon dating results