‘The Roman Families Project’

Roman Park Playing Fields, Credenhill:

A Community Excavation

Herefordshire Archaeology Report No 347.

EHE80121

January 2015

Herefordshire Archaeology

Places and Communities Directorate

Herefordshire Council

This project has been made possible by funding from the MOD Armed Forces Community Covenant Grant

‘The Roman Families Project’

Roman Park Playing Fields, Credenhill:

A Community Excavation

This report has been compiled by:

Christopher Atkinson *BA (Hons), MA*

David Williams *BA (Hons), MCifA*

Graham Lantz *BA (Hons), MA*

Dr Nigel Baker *BA (Hons), PhD, FSA, MCifA*

With contributions from:

Jane Evans *BA (Hons), MA, MCifA*

Catherine Longford *BA/BSc (Hons), MSc*

Dr Peter Guest

Cover Image: *Pupils participating in the excavation. © Christopher Atkinson*

Herefordshire Archaeology is Herefordshire Council’s county archaeology service. It advises upon the conservation of archaeological and historic landscapes, maintains the county Sites and Monument Record, and carries out conservation and investigative field projects.

Herefordshire Archaeology, PO Box 230, Blueschool House,

Blueschool Street, Hereford, HR1 2ZB

Contents

Summary

This investigation was carried out as part of the Roman Families Project, a project established by Herefordshire Council's archaeological service (Herefordshire Archaeology). This project has been made possible by funding from the MOD Armed Forces Community Covenant Grant.

The following report discusses the results of a community excavation led by Herefordshire Archaeology, in which members of the local community of Credenhill, Herefordshire's Armed Forces Community, Schools and Hereford Sixth Form College were invited to attend and contribute in the investigations. The focus of these excavations and the supporting geophysical survey was the site of a previously unrecognised high status Roman farm/villa complex with activity dating to between the late first and fourth centuries AD.

The excavation, which consisted of a single trench, uncovered the rubble remains of a stone and mortar structure dated to between the third and fourth centuries as well as a sample of the external enclosure ditch. The ditch showed evidence for two phases in use, the final phase being similar to that of the building itself. The earliest phase could not be dated however, although kiln debris, likely to originate from a kiln located within the sampled courtyard would suggest a first to second century AD date.

The excavated kiln, its condition and location is unique in Herefordshire to date. The structure has been dated to *c.*140AD although its construction is most certainly earlier. The structure was accompanied by a flue to the east and a pit (possible waster's pit) to the northeast.

This Report follows the practice as formulated by the Institute For Archaeologists (C*Ifa*), Standard and Guidance for archaeological geophysical survey (CIFA, 2011) and CIFA, (2009). 'Standard and Guidance for archaeological field evaluation'. Reading, Institute for Archaeologists

1.0 Introduction

The Roman Families Project was a Herefordshire Archaeology County Council Project, made possible by funding from the MOD Armed Forces Community Covenant Grant.

The Roman Families Project aimed to involve and attract families, youth groups and local inhabitants of the Credenhill Garrison community in the archaeological investigations of 'Roman Credenhill', in particular the area immediately around the Roman town of Kenchester (Magnis). The project aim was to enable families from both the military and civilian realms (both adults and youth) to work as a team within an entirely different setting and acquire new skills and experiences through the process of archaeological investigation and event days. The project focused upon an enclosure site within the Roman Park Playing Fields, Credenhill; a park owned by Herefordshire Council and maintained by the Credenhill Parish Council. Investigations of the site started in April 2014 with a geophysical survey (Atkinson & Williams 2014). The results of this survey were used to guide a community excavation carried out between the 7th and 27th July 2014. This report discusses the results of that excavation, along with the subsequent post-excavation analysis.

A key component of the excavation was the involvement of school groups, with pupils from both a military and civilian backgrounds. They were not only introduced to the techniques of archaeological excavation and recording, but also encouraged to learn more about life in Iron Age and Roman Credenhill.

It was the intention of the investigation to improve the general understanding of the Roman occupation within this region and beyond, but also to engage and inform members of the military and civilian communities of the 'heritage beyond their door-step'.

2.0 Location and geology

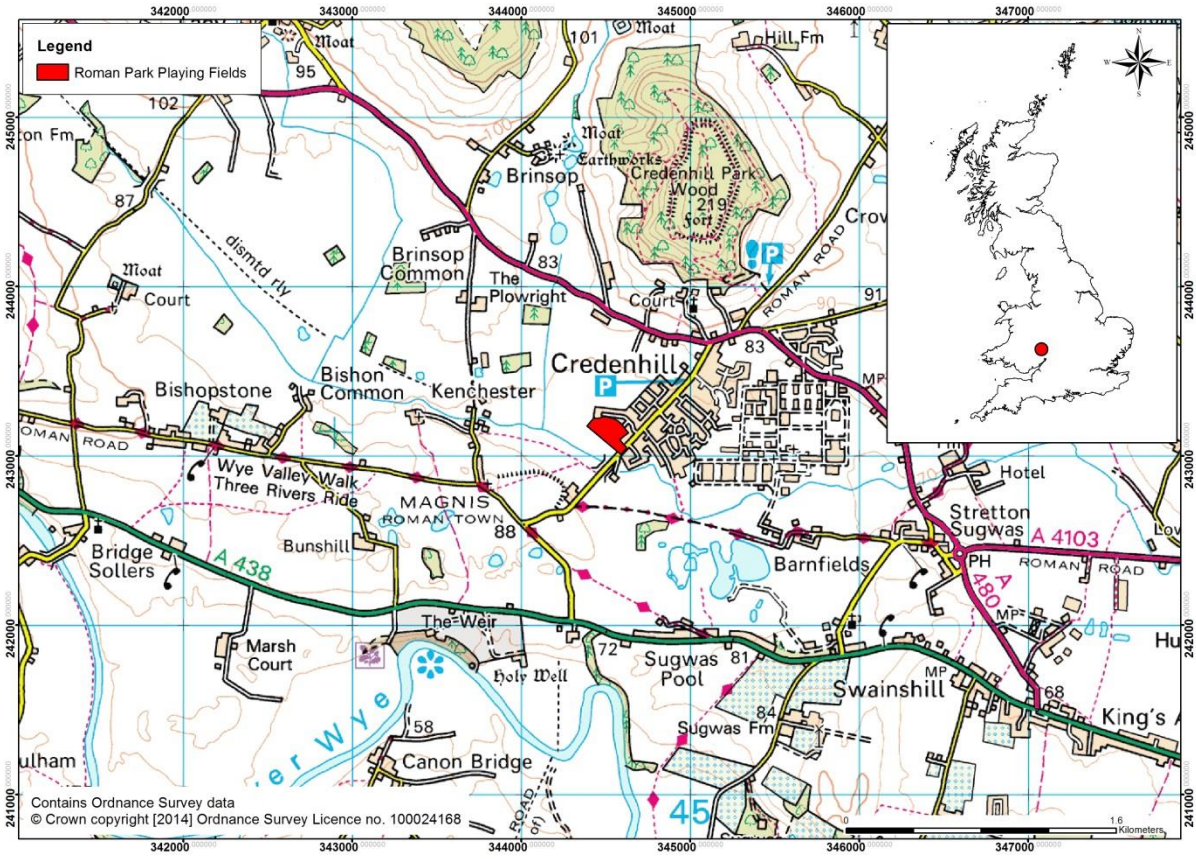


Figure 1: Location of the Roman Park Playing Fields, Credenhill, Herefordshire. Contains Ordnance Survey data © Crown copyright [2014] Ordnance Survey Licence no. 100024168

The Roman Park Playing Fields is situated to the south of the village of Credenhill, Herefordshire (NGR: 344520 243145). The Roman Playing Fields are used for sport and recreation activities with facilities including both a full-size and half-sized football pitch, sports pavilion and play area.

To the north the site is overlooked by the hill of Credenhill Park Wood which stands at approximately 221m above sea level. 125m to the southwest of the Roman Park Playing Fields is the course of the east flowing Yazor Brook, beyond which the ground gently rises, representing the eastern end of a low spur that protrudes from the foot of Garnons Hill, 3km to the west. On the summit, at the eastern end of the spur approximately 350m southwest of the Roman Park Playing Fields is the site of the Roman Town of Magnis. At the foot of the spur to the south is the meandering course of the River Wye.

The Roman Park Playing Fields utilise the very gentle south-facing slopes that form the foot of a shallow valley formed during the last glacial period. Of which Credenhill and subsequent hills to the west as well as the spur described above represent the watershed. The Roman Park Playing Fields lie between 75 and 80m above sea level.

The underlying bedrock of the Roman Park Playing Fields consists of Interbedded Siltstone and Mudstone of the Raglan Mudstone Formation, which formed approximately 416 to 419 million years ago during the Silurian Period. The bedrock can measure up to 800m thick (BGS, 2014).

This bedrock is overlain by superficial glaciofluvial sheet deposits of sand and gravel formed up to 2 million years ago in the Quaternary Period, during which time glaciers deposited moraines of till with outwash sand and gravel deposits from seasonal and post glacial meltwaters (BGS, 2014).

To the south the course of Yazor Brook is dominated by superficial alluvial deposits of clay, silt, sand and gravel (BGS, 2014).

3.0 Historical and archaeological background

The parish of Credenhill is rich in heritage relating to the Iron Age and Romano-British periods. Prior to the Roman conquest, the region was dominated by the Iron Age hill top enclosure of Credenhill (HER 906, see Appendix 1), which is located in Credenhill Park Wood to the north of the Roman Park Playing Fields.

With the Roman conquest, the Roman road, Watling Street West, which runs through the centre of Credenhill on a roughly northeast-southwest alignment was established. It was during the pre-Flavian era (48-69AD) that the road, along with the hill top enclosure of Credenhill, formed part of the Roman military frontier against the British tribes to the west such-as the Silures and Ordovices (Arnold & Davies, 2000).

Following the Roman conquest the road through Credenhill was established, and this became one of the main thoroughfares linking the Roman Town of Magnis (located some 300m to the south of the Roman Park Playing Fields) with the Roman towns of Wroxeter to the north and Gloucester to the south. The site of the Roman Park Playing Fields itself however does not have any identified association to Roman activity.

The outline of the field is modern with the exception of the curvilinear northern boundary which marked the northern extent of a narrow northwest – northeast aligned field under pasture, which at the time of the 1840 Tithe Survey was known as Bridge Meadow (Figure 2). The remainder of the playing fields lay within Dunn Meadow, which extended to the south bounded by the flow of the Yazor Brook. To the east both Dunn Meadow and Bridge Meadow are bounded by the course of the Roman Road.

The boundary that divided the two fields (Figure 2) was utilised during the First World War and incorporated into a track that serviced a munitions depot that stretched along its southern edge. The structures formed one of two storage depots established to support the National Filling Factory at Rotherwas (HER 22555) constructed by November 1916 (Blackwell, 2013).

Although the structures no longer exist within the field, aerial photography has identified their location as parch marks (Figure 3). The course of the track remains visible as a low, broad bank earthwork within the field.

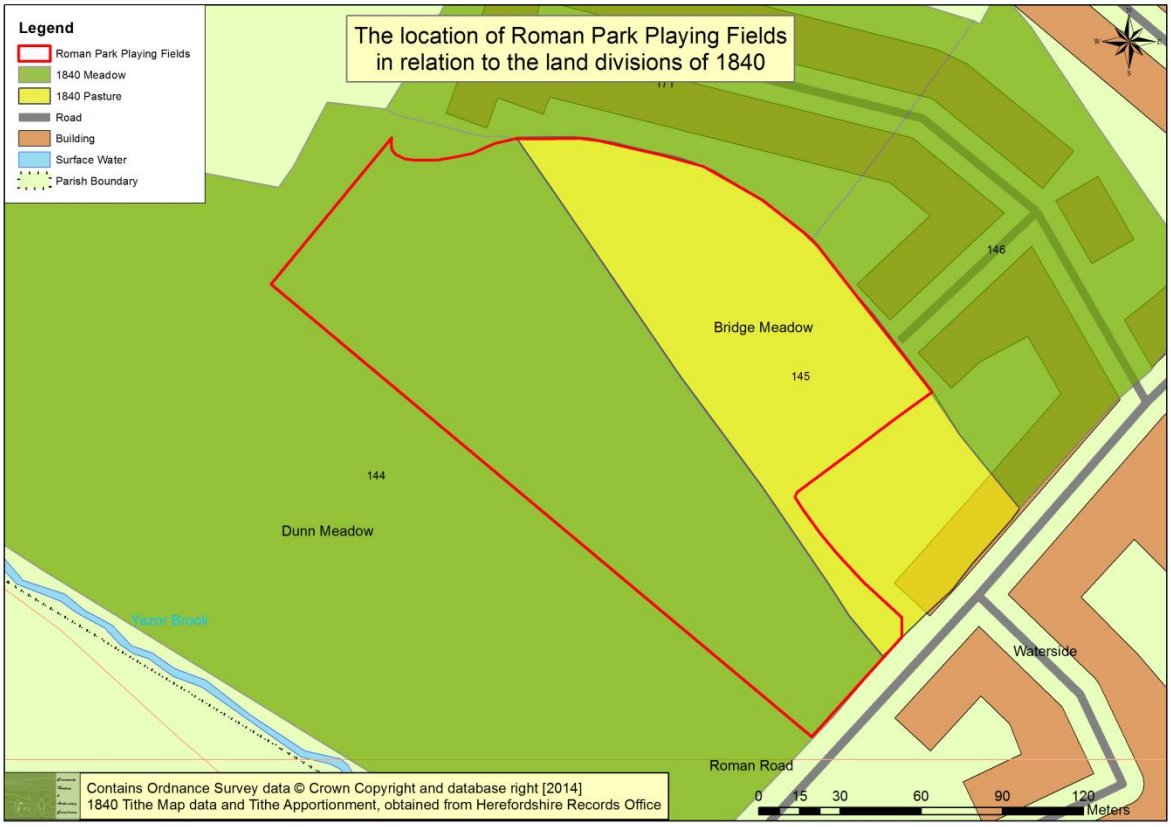


Figure 2: Land divisions at the time of the 1840 Tithe Survey and their relation to the later Roman Park Playing Fields. Contains Ordnance Survey data © Crown copyright and database right [2014]

Across the Roman Park Playing Fields and the surrounding fields to the south and west, cropmarks have been identified outlining ditched land divisions that appear to predate any of the divisions identifiable from historic mapping resources (HER 10165, see Appendix 1). Amongst the early field divisions are at least two rectangular ditched enclosures, one of which lies within the Roman Park Playing Fields, to the south of the foundation parch marks associated with the munitions depot.

An aerial photograph taken in 1975 (Figure 3) clearly shows the details of the ditched enclosure including, within the western half, a buried rectangular structure arranged around a central courtyard. Although the details are faint, it is possible to identify

internal divisions within the structure. A possible entrance into the enclosure is also apparent along the centre bottom of the enclosure (northwest side of enclosure), at a point where the course of the 'dark line' representing the buried ditch is interrupted.

From the form and arrangement of the structure around a central courtyard, including its spatial association with the neighbouring Roman town of Magnis, it was thought possible that the structure was Romano-British in date; perhaps representing a high status farm or villa complex.

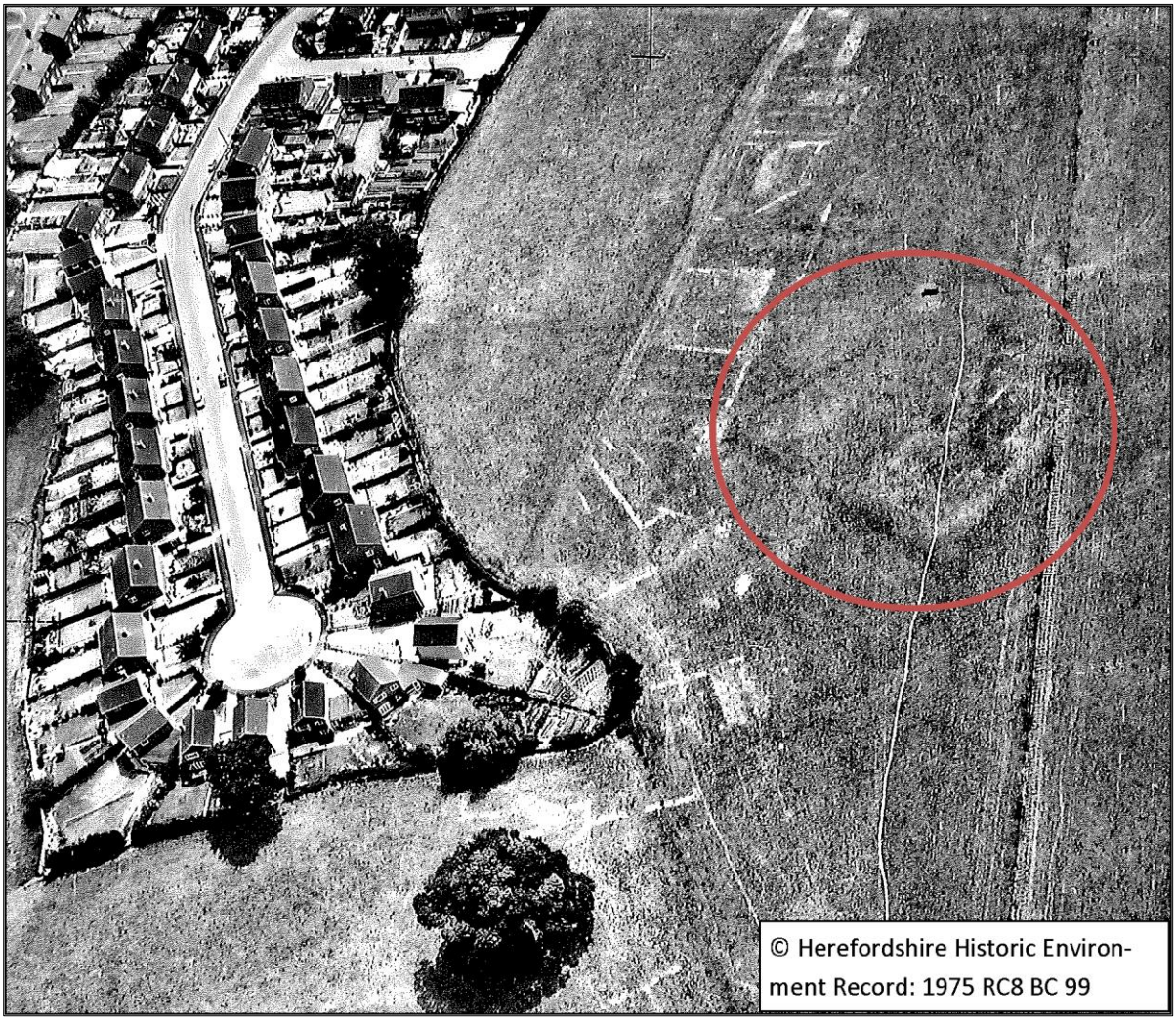


Figure 3: Extract of a 1975 aerial photograph of the Roman Park Playing Fields indicating the detail of the munitions depot and the possible Romano-British rectangular enclosure (highlighted in red). © Herefordshire Historic Environment Record: 1975 RC8-BC-99

Due to the potential and interesting nature of this little known site (including its visual appeal to the general public), the enclosure site served as a focus of the community investigation that was carried out as part of the Roman Families Project.

Initial investigations by means of a geophysical survey at the site were undertaken in April 2014 (Atkinson & Williams, 2014). The results of this investigation led to the identification of the buried foundations and debris of a courtyard structure (Figure 4). The structure was interpreted as containing up to 15 rooms, set around a central courtyard. The building itself is set within the western end of a large rectangular ditched enclosure, the ditches of which were also partially identified as a result of this initial geophysical survey.

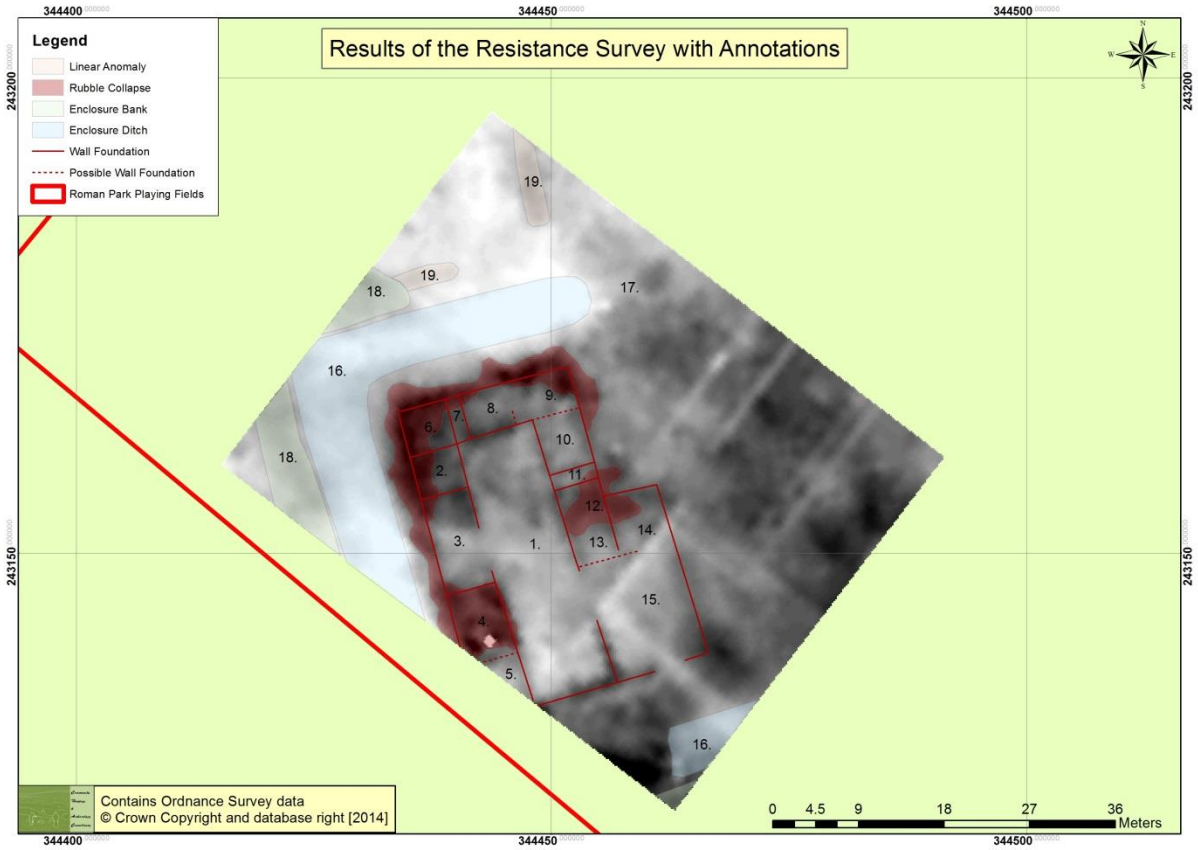


Figure 4: Annotated results of the geophysical survey. Contains Ordnance Survey data © Crown copyright and database right [2014]

These results served to determine the location of the excavation discussed within this report.

4.0 Aims and purpose of the evaluation

The aims of this evaluation were to:

1. Investigate the buried remains of the courtyard structure by means of an archaeological excavation. This was to identify the form, date and use of the feature. The single trench excavated provided a cross section through the enclosure ditch, structure and courtyard.
2. Simultaneous to the excavation, an enhanced geophysical survey was undertaken to gauge the full extent of the ditched enclosure, in order to determine its scale as well as the likelihood for further buried structural remains within the interior.
3. Engage with the local community and armed forces community via public presentation, on-site investigation and hands-on experience in archaeological excavation.
4. Involve local schools of both military and civilian connections with all aspects of the archaeological excavation techniques.

5.0 Methodology

5.1 Geophysical Survey

The geophysical survey and its results discussed within this report were carried out alongside the excavations, undertaken between the 7th and 27th July 2014. The aim of the survey was to enlarge and enhance the findings of the earlier geophysical survey of the site (Atkinson & Williams, 2014) which focused solely on the buried foundations of a structure identified on an earlier aerial photograph (Figure 4).

The enhanced geophysical survey served not only to re-investigate and compare with that of the previous results, but also to identify the full extent of the ditched enclosure in which the discovered buried foundation remains were located. The survey also aided in the identification of any associated features not previously recognised by means of aerial photography.

The Site Grid consisted of 15 block grids, measuring 20m x 20m (Figure 5). The total area covered by the survey area measured 100m northwest-southeast by 60m

northeast-southwest, giving a total surveyed area of 6000 m². The Site Grid was surveyed and plotted using a Leica Builder509 Total Station which was stored and downloaded into ArcMap 10.1 using the total station's data logger.

The geophysical survey employed a Geoscan RM15 Resistance Meter in a twin electrode configuration with the remote probes spaced approximately 0.50m apart in order to obtain resistance measurements to a depth of 75cm. Within each grid square, the survey commenced from the northwest corner and proceeded southeast along 1m wide traverses, in a zig-zag pattern, while sample readings were obtained at 0.50m intervals (unlike the previous survey during which readings were obtained at 1.0m intervals).

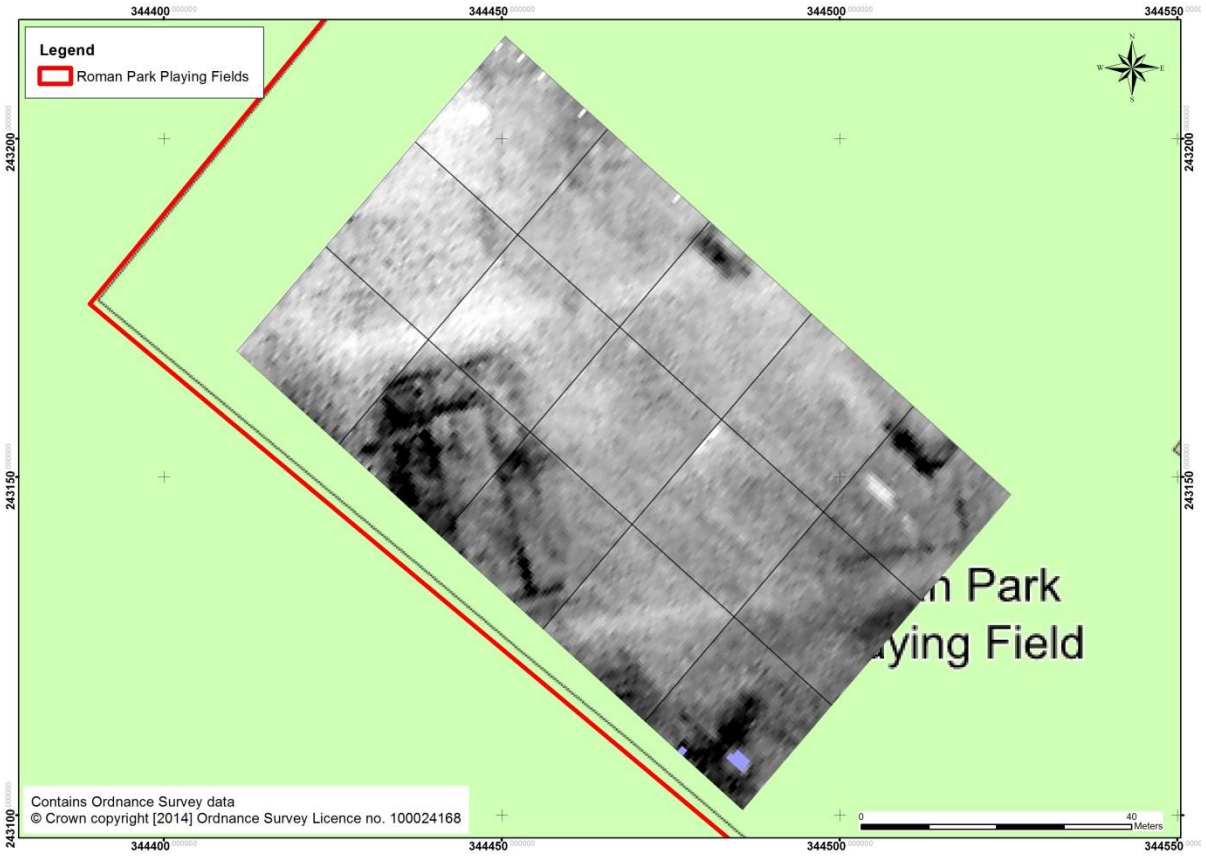


Figure 5: Location of the geophysical block squares and results within the Roman Park Playing Fields.

Survey data was downloaded and processed using Geoplot 3.0. The results are illustrated as a shade plot (Figure 5).

An X and Y axis representation of (-3, 3) and a contrast of (1) was used to produce the optimal image. Next, the image was despiked to filter out unwanted noise or abnormalities from the readings. X and Y axis ranges of (1, 1) and a threshold of (3.0) was used to gain the optimal outcome. As differences can emerge between survey grid blocks when the stationary probes are moved in a larger survey, a zero mean grid scan was completed to smooth the edges of the blocks and create a uniform image. Finally, an interpolation in the Y direction was used to increase reading amounts to blend the image together, essentially smoothing the image and removing obvious pixilation. Areas shaded in blue on the results represent “dummy logs” taken in place of obstacles obstructing regular survey testing (Figure 5); in this instance a park bench with concrete foundations.

5.2 Site/Trench Survey

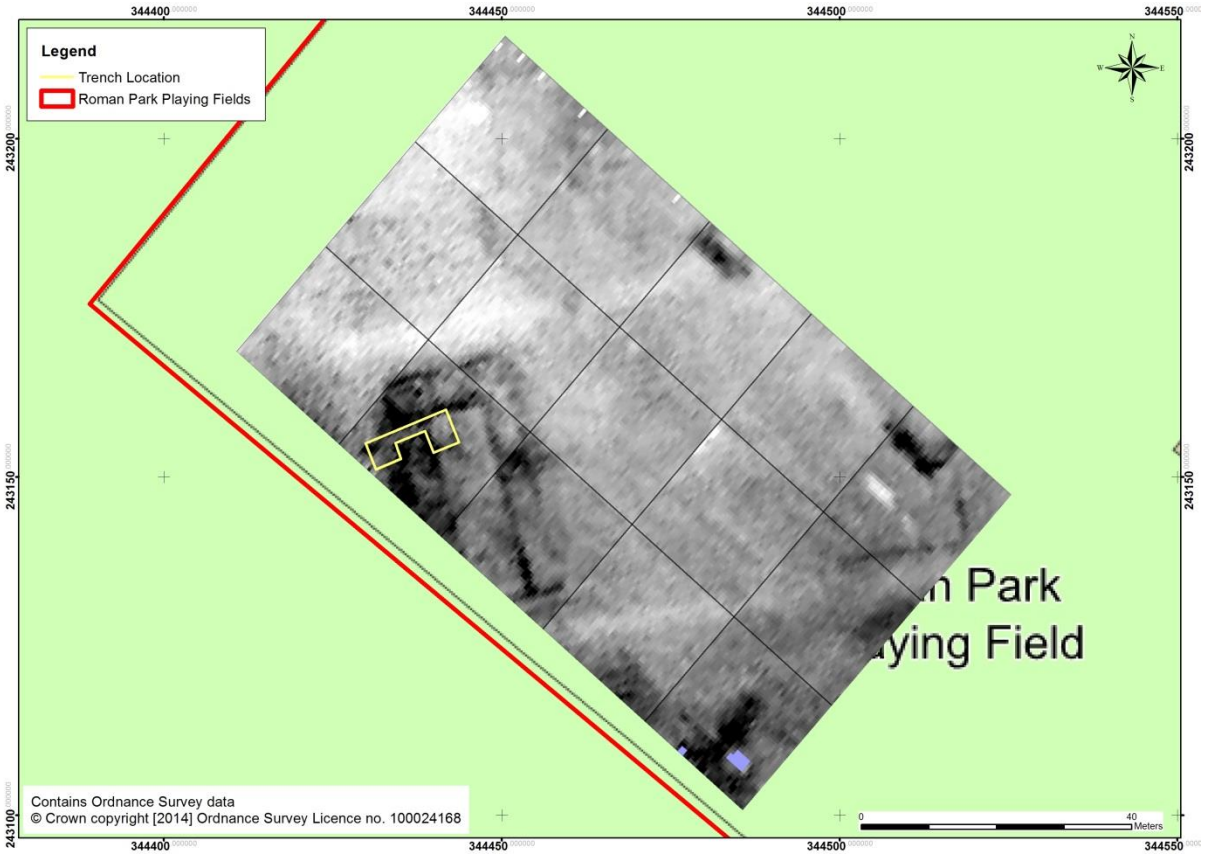


Figure 6: Location of the trench in relation to the results of the geophysical survey discussed within this report.

The excavated trench and control grid was measured by hand and surveyed using Leica Builder509 Total Station which was stored and downloaded into ArcMap 10.1 using the total station's data logger.

The trench originally consisted of two rectangular trenches; the first measured 4m x 4m and targeted the enclosure ditch. The second measured 5m x 4m and targeted the interior of the structure and courtyard. The two trenches were subsequently merged by a 1.70m wide narrow trench.

In total the trench measured 12.70m long (Figure 6) and at its deepest level 1.60m.

5.3 Excavation

The excavation was carried out by hand. Turves were cut and stacked to enable re-laying after completion of the excavation. Topsoil removed during excavation was kept separate from material excavated from deeper levels to assist with successful reinstatement.

Reinstatement was to the original profiles of the site prior to excavation. Subsoil deposits were backfilled first. Backfilling was carried out in stages with compaction being carried out at the end of each stage to minimise the amount of post-backfilling settling. Turves, which were separately stored, were laid last and the surface left slightly proud of the surrounding area to allow for a small amount of settling.

Full written and drawn records of all excavated contexts were made in accordance with best archaeological practice. Archaeological deposits, which were not excavated, were recorded to the maximum extent possible. Records include the overall excavation area and phase plans, as appropriate.

All on-site recording was undertaken in accordance with the requirements of the Institute for Archaeologist's Standard and Guidance for Archaeological Excavations (as amended 1999).

A continuous unique numbering system was operated for the trench. Written descriptions were recorded on pro-forma sheets comprising factual data and interpretative elements.

Where stratified deposits were encountered a Harris matrix was compiled during the course of the excavation.

Hand drawn plans were drawn at a scale of 1:50 or 1:20 as appropriate. Section plans were drawn at a scale of 1:10. A register of plans and section plans was kept and all sections and plans were tied in to an Ordnance Datum located at Terrace House, Roman Road, Credenhill at a height of 76.90m. A temporary bench mark was established at the site and measured 77.10m.

A full digital photographic record, illustrating in both detail and general context the principal features and finds discovered, will be maintained. The photographic record also includes working shots to illustrate more generally the nature of the archaeological work.

A named officer was responsible for finds and sample management. A register of small finds and environmental samples was maintained. Recording, cleaning and conservation of finds followed the IFA Guidelines for Finds Work.

5.4 Environmental Sampling

A programme of sampling to recover archaeobotanical, palaeozoological and pedological evidence was undertaken under the supervision of the project manager, Christopher Atkinson.

Key targets for environmental sampling were:

1. Buried soils.
2. Identified floor deposits within structures.
3. Pit and Midden deposits.

5.5 Dating strategy

The recovery of datable material from buried soil horizons or from phases of soil development within the ditch, from primary ditch fills, and from later fills and floor surfaces were key targets in on-site sampling.

Metal detecting was used on site under close archaeological supervision. This was primarily to assist with locating small finds during the excavation, within the excavation trenches and adjacent spoil storage areas.

Coins were sent to Dr Peter Guest, Senior Lecturer in Roman Archaeology, Cardiff University for specialist assessment.

The pottery assemblage was sent to Jane Evans, Senior Finds Archaeologist at Worcestershire Archive and Archaeology Service, Worcestershire County Council for specialist analysis

Archaeobotanical deposits were sent to Catherine Longford, University of Sheffield for specialist assessment.

Samples for the purpose of radiocarbon dating were sent to Scottish Universities Environmental Research Centre (SUERC) for analysis.

This report along with its georeferenced data will be made available for view by means of Herefordshire HER and OASIS. This report includes a digital archive.

6.0 Results

6.1 Enhanced Geophysical Survey

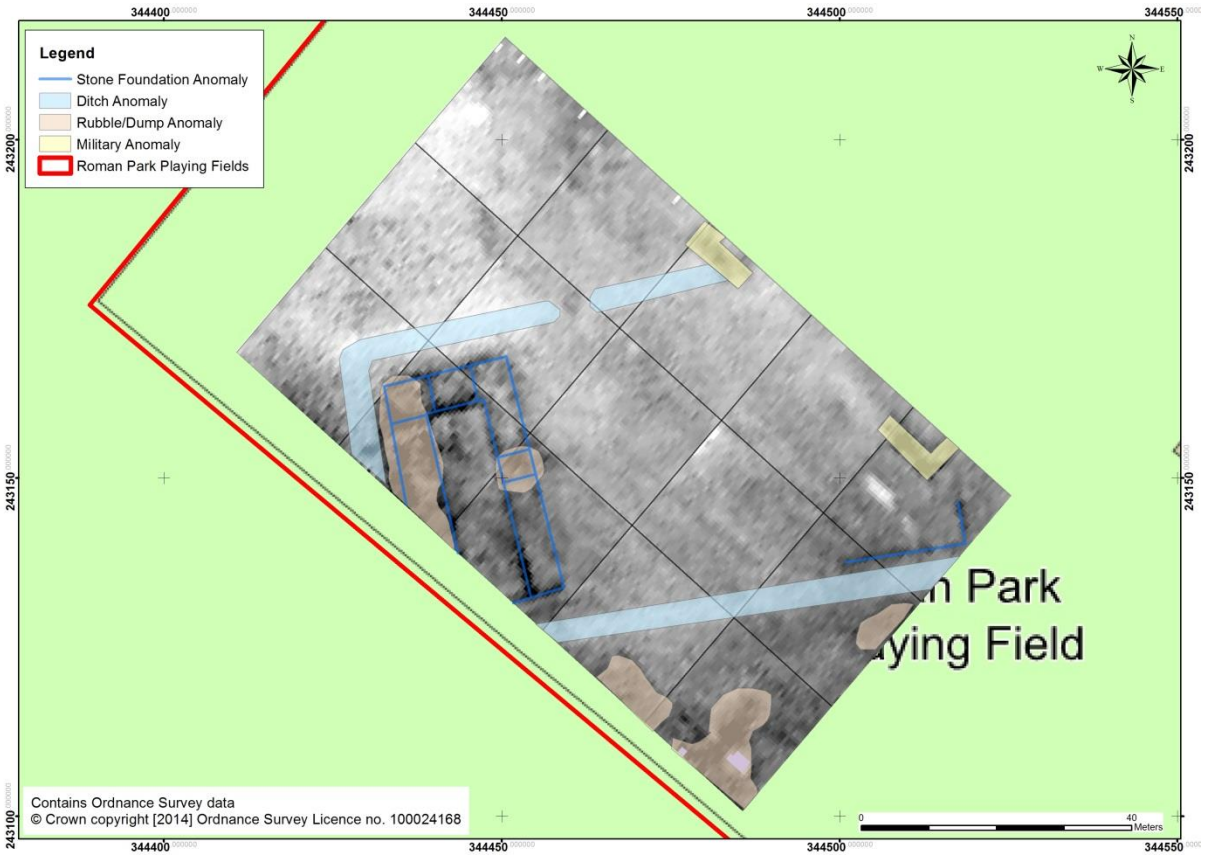


Figure 7: Annotated resistivity results indicating the site of the enclosure and structure, the focus of these investigations.

The results of the resistance survey carried out to gauge the full extent of the enclosure returned positive. The results complimented the earlier survey focussed upon the site of the structure (Atkinson and Williams, 2014) as well as enhancing the understanding of the sites extent to the east.

6.1.1 The Structure

For a full detailed account of the structure, which was the focus of an earlier geophysical survey, see Atkinson & Williams, 2014. The results of this complimentary survey clearly show the extent of the structure (represented as dark linear anomalies), which is located within the west of the ditched enclosure (Figure 5 & 7). The building is oriented northwest-southeast and measures approximately

20m wide x 40m long. Within the interior of the building, particularly within the western half, there are considerable strong readings of higher resistance (darker areas). These are likely to relate to buried masonry rubble, perhaps the collapsed remains of the building. Within the eastern half of the site however, only the linear anomalies relating to the buried wall foundations are visible. Although this is useful in indicating the width and length of individual rooms, it also implies that any masonry relating to building collapse or any paved floors may have been removed from the site.

In plan the complex is U-shaped (Figures 5 & 7), consisting of a block to the north with a wing extending to the south-south-east from each end. To the south the U-shaped complex is enclosed by a single wall, which acts to enclose the southern extent of a central courtyard.

Access into the building complex cannot be established as a result of this survey, although it is presumed to be located along the east-facing side as the building is tightly enclosed to the north, south and west by the enclosure ditch.

6.1.2 The Enclosure

Although first identified enclosing the north, south and west sides of the building complex, the second survey served to trace the full extent of the ditched enclosure to the east. In total the ditch (a linear anomaly of low resistance) extended approximately 60m to the east (Figures 5 & 7), however the enclosures eastern face could not be determined as a result of later ground disturbance caused by construction and demolition works associated to the First World War Munition Depot (HER 22555, see Appendix 1) (Figures 5 & 7) located within the northern half of the Roman Park Playing Fields.

As indicated in the earlier survey (Atkinson & Williams, 2014), with the exception of a subtle break in the course of the ditch along the north-western edge of the enclosure, there is no clearly definable access way into the site.

Of particular interest is the course of a buried wall foundation (Figures 5 & 7) within the east of the survey area. The anomaly is narrow and forms an L-shape which is

aligned parallel to the southern course of the ditched boundary before re-orientating north. It is possible that these apparent wall foundations represent the remains of an enclosure wall that ran parallel to the interior edge of the enclosure ditch, or alternatively the site of a secondary structure within the southeast corner of the enclosure. The absence of associated remains within this area may relate to destruction caused during the construction of the munitions depot.

Within the enclosure no other anomalies representative of structures were identified as a result of this survey.

6.1.3 Anomalies

Across the surveyed area a number of anomalies highlighted as locations of either high or low resistance were identified. To the south of the enclosure three anomalies of high resistance were identified (Figures 5 & 7) and interpreted as representing likely locations for debris/rubble dumping, perhaps associated to the demolition of the Munitions Depot following the Second World War.

Within the southeast corner of the enclosure two small oval anomalies of low resistance were identified, the purpose of which is unknown. However their location within the enclosure may imply their use as pits for either refuge or storage. Alternatively the anomalies may relate to late ground disturbance attributed to the Munitions Depot.

To the north of the enclosure, subtle linear anomalies of high resistance may indicate the presence of further structures. The subtlety of the anomalies would suggest that any structures present were likely of timber construction with stone employed as a packing material at the foundations.

6.1.4 Conclusion

Overall, the survey has greatly enhanced the understanding of the area targeted as part of an earlier geophysical survey (Atkinson & Williams, 2014) of the Roman Park Playing Fields, Credenhill. By conducting the geophysical survey at 0.50m intervals over the previous 1m intervals, it has improved upon the detail of the below ground archaeological anomalies providing a greater level of resolution. Although

enhanced, it is still not possible to definitively conclude that the structure is solely Romano-British in date without excavation. The results of this survey not only place the results of the excavation discussed within this report (Chapter 6.2) in context with the rest of the structure but also spatially within the enclosure.

6.2 Excavation Results

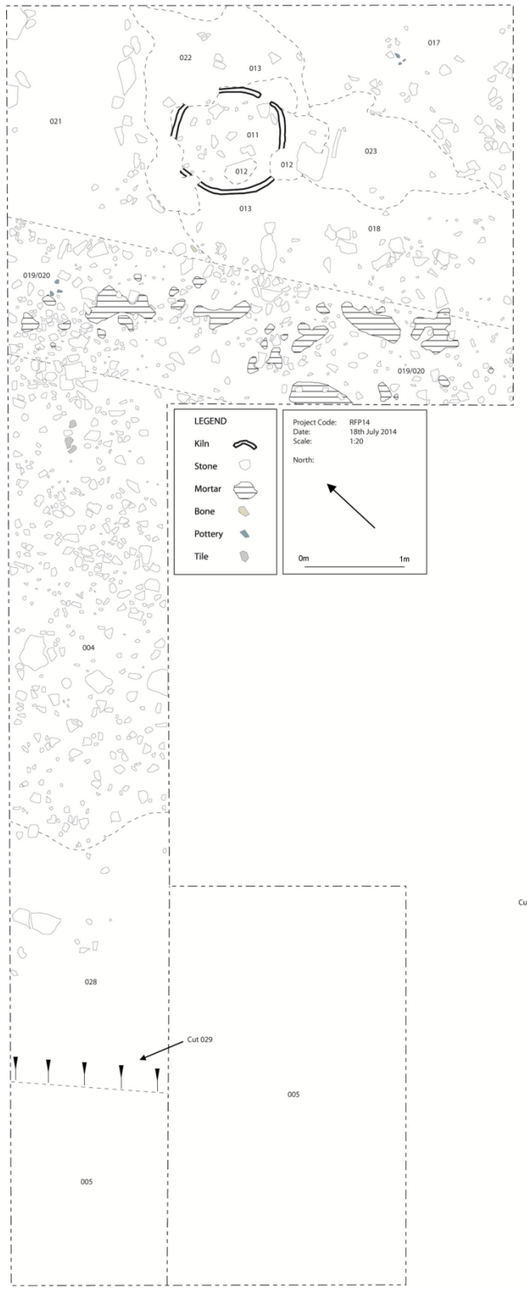


Figure 8: Phase 1

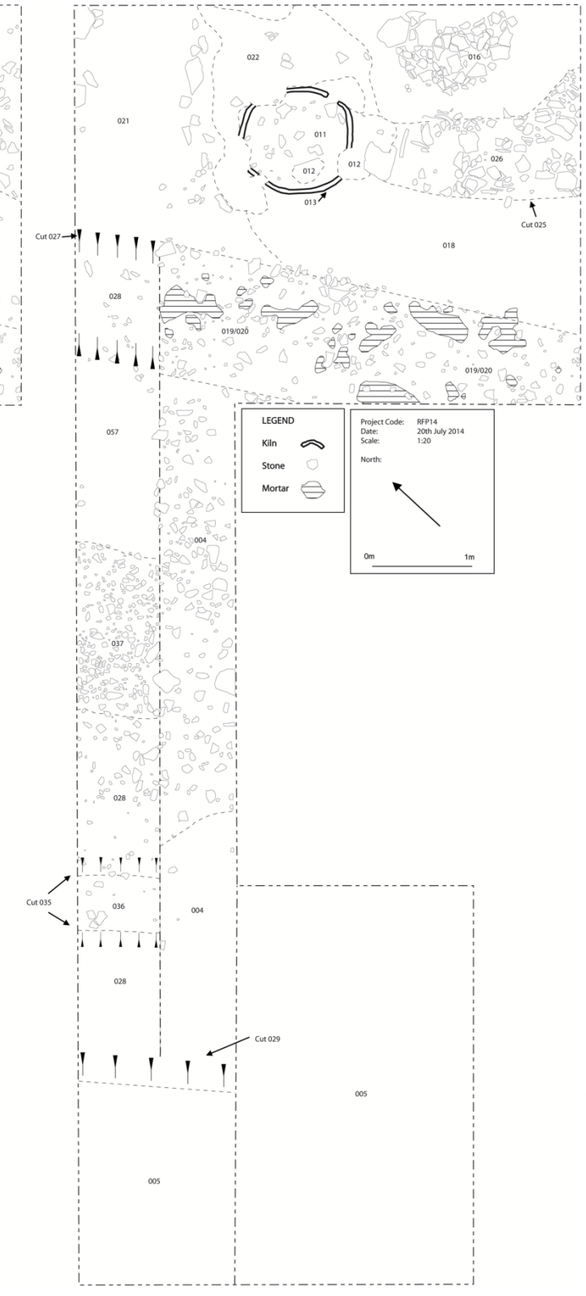


Figure 9: Phase 2

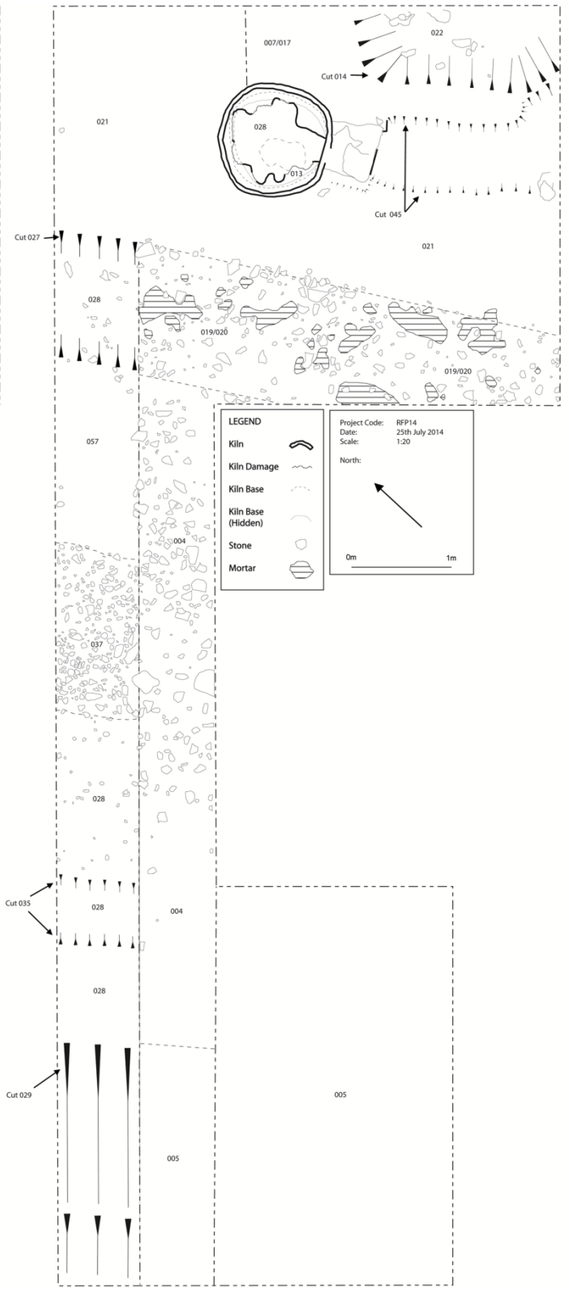


Figure 10: Phase 3

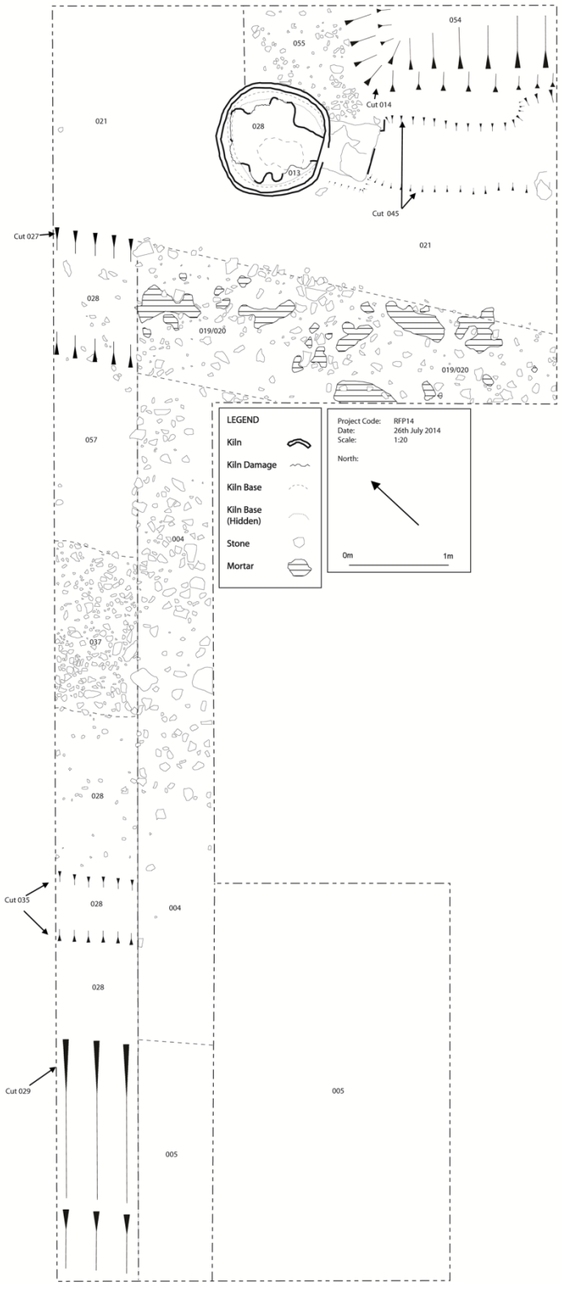


Figure 11: Phase 4

Trench Plans illustrating the phases in excavation. © Herefordshire Archaeology

In order to make the context descriptions easier to understand, this section has been divided into three parts; the exterior ditch, the building and the inside courtyard which includes a description of the kiln, flue and pit. Inevitably, this results in some repetition in places as all contexts are discussed in each section for clarity. It is also important to note that the descriptions in each section are discussed stratigraphically; i.e. they are described as they were excavated. The discussion to each section is in chronological order, outlining the development of the site from the earliest to most recent phase of activity.

6.2.1 Enclosure Ditch

The turf line (001) was a 0.07m thick layer of dark brown silty clay that directly overlay the uppermost fill of the ditch (005). Within the turf line (001) a significant number of Roman finds, including pottery, tile and kiln debris were retrieved. Context 005 consisted of a horizontal, 0.35m deep layer of firm clay with occasional angular stone. Like the previous context, pottery (Table 1), tile and kiln debris was present, as was a single heavily worn coin (Table 2) and blue coloured glass bead. Underlying 005 were two deposits 008 and 009. The first, 008 (see Figure 13) was only half sectioned as it was located towards the centre of the ditch infilling, slumping on to the underlying deposit (009). This consisted of a 0.16m deep layer of medium sized angular stones (0.19m x 0.15m) in a reddish brown silty clay matrix. Within this deposit an abundant quantity of Roman tile was recovered. Underlying this was a layer comprising frequent angular stone (009) in a grey-brown clay silt matrix.

This layer also showed the same slumping towards the middle of the ditch as 008. The layer was horizontal for a distance of 1.20m, as it extended from the eastern side of the ditch, before dipping *c*.0.16m towards the centre. This layer contained frequent pottery and tile a single coin (see Appendix 5) and the remains of a copper alloy ring with vertical decorative indentations. Underlying 009, context 010 was a 0.17m thick layer of firm, dark reddish brown silty clay with inclusions of small stone and occasional charcoal. Like the previous contexts this layer contained frequent Roman pottery (Table 1), tile, single sherd of glass from a vessel and a green stone bead. Also included within this context were both animal bone and occasional ironwork, predominantly in the form of nails and a single coin (Table 2).

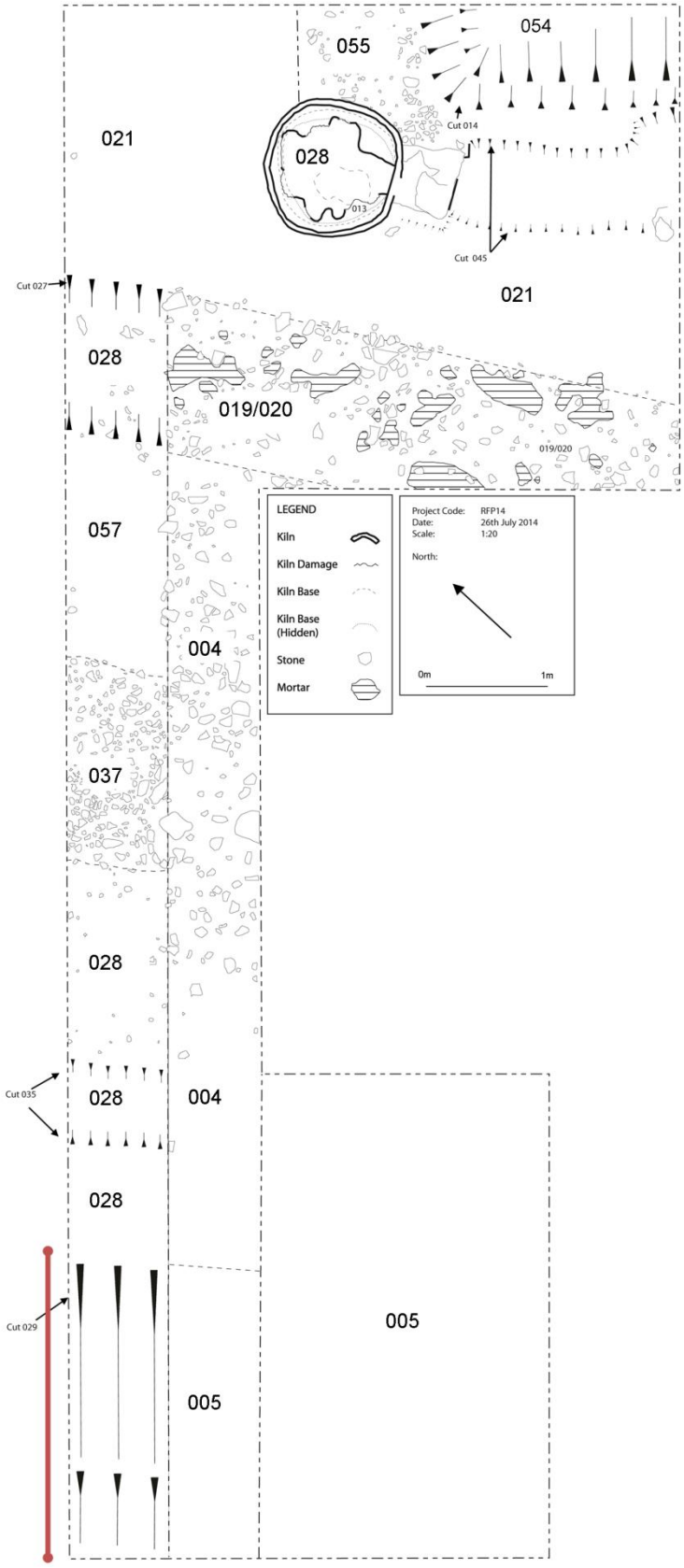


Figure 12: Site plan highlighting the location of the exterior ditch (Red). © Herefordshire Archaeology

Plate 1: Section through the excavated exterior ditch, viewed from the southeast. © Herefordshire Archaeology

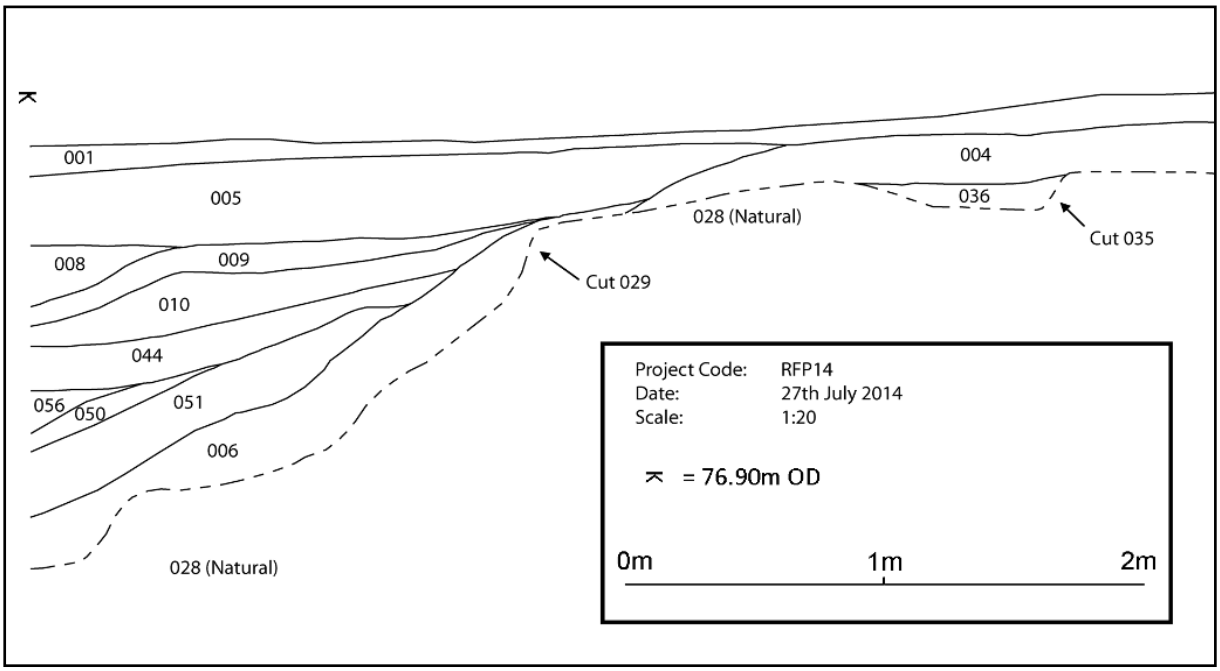


Figure 13: Northwest section of the excavated exterior ditch. © Herefordshire Archaeology

Underlying 010 were two further deposits, neither of which extended into the north section. The first, 033, was a thin layer of stone in a silt matrix, and the second, 034, was very similar to 010. Context 034 was a 0.15m thick layer of dark reddish brown silty clay with abundant stone in the form of both angular and rounded pebbles. As with 010, this layer contained Roman pottery (Table 1), bone and ironwork, as well as a quantity of charcoal. A single coin was also uncovered from context 034 (Table 2). The underlying layer, 044, marks the change in re-depositional phase; below this was the initial phase and that above and already described, was the second. This layer consisted of dark brown silty clay, 0.15m thick.

Underlying 044 was 056. This was similar to 008 in that it filled a slump in the underlying deposits. At its maximum thickness this silt layer was 0.20m thick. There were no finds in this deposit. Underlying this layer was 050, a sloping layer, parallel to the eastern ditch cut edge (029), which was also visible higher up the profile beneath context 044. This 0.10m thick layer consisted of rounded gravels and sub-angular stones in a mid-brown silt matrix. Several pieces of undiagnostic pottery were recovered from this horizon. Below this was context 051. Like 050, this layer was also parallel to the ditch cut edge (029) and was also visible beneath context 044. This was a 0.22m thick layer of medium brown silty clay.

The primary fill (006) consisted of grey brown blocky silty clay with inclusions of abundant squared stone towards its base (0.18m x 0.14m max). This layer extended from beyond the eastern edge of the ditch cut and was therefore first visible below context 005; it extended down the eastern face of cut (029). At its thickest this deposit was 0.28m. From within the primary fill a single bone hair pin was uncovered. The final context of this feature, 029, represented a flat bottomed ditch cut into the natural reddish brown glacial gravels (028); it has a maximum proven depth of 1.40m, and 2m of a total width of *c.*5m was excavated.

Table 1: Pottery recovered from the ditch section (see Appendix 4).

Feature type	Fill of	Context	Object type	Count	Weight (g)	Start date	End date (tpq)
Location	Feature	Context	Type	No.	Weight	Beginning	End
Ditch	29	005	kiln debris	6	116		
			pot	202	802	late 3rd	4th
			tile	18	390		
		006	pot	27	124	Roman	Roman
			tile	8	54		
		008	tile	1	120		
		009	pot	96	1082	late 2nd-mid 3rd	late 3rd-4th
			tile	4	162		
		010	bone	1	4		
			kiln debris	1	22		
			pot	229	1754	late 3rd	4th
			tile	6	162		
		034	pot	58	474	late 3rd	4th
		044	pot	1	14		
			pot	113	1156	Early 3rd?	late 3rd-4th
			tile	1	58		
		050	pot	14	58	Roman	Roman
			tile	2	32		
		051	pot	1	6	late 3rd	4th

Table 2: Coins recovered from the ditch section (see Appendix 5).

RA no.	Denomination	Ruler/type	Date	Clean?
005	AE3	uncertain	late 3rd-4th c.	x
009	Barb. Radiate	uncertain	260-300	x
010	Barb. Radiate	Tetricus II - sacrifical implements	273-300	x
034a	Barb. Radiate	Gallienus?	260-300	y (obv)
034b	Barb. Radiate	uncertain	260-300	x
044	Barb. Radiate	uncertain	260-300	x

6.2.2 Discussion

This was a substantial feature, which as the geophysics has shown, surrounds the building (see Chapter 6.1). The eastern ditch cut sloped into the base and there was no evidence of a re-cut. The base appeared to level out but was not fully excavated as part of this project. Eleven deposits in total made up the fill of this ditch and on initial analysis the sequence of ditch development appears to include two phases. Phase One, the earliest, could not be dated, as although pottery was recovered from the primary fill, this was undiagnostic. In addition, no datable finds were recovered from the overlying deposits of this phase, but on the basis of the finds from 044 the *terminus anti quem* for the primary phase of the ditch is the early 3rd/4th century.

Subsequently, there appears to be a period of stability during which the ditch remained open and a clean silt horizon (056) was deposited. Overlying this, the Phase two fills contained an abundance of dateable finds. The primary fill (044, as previously mentioned) of this second phase was dated from the pottery finds to the early 3rd/4th century, and coin dating indicates a post 260 AD date. The same date is attributable to the rubble layer overlying this deposit (034). The penultimate fill (008) appears to represent a levelling of the ditch fill and the final fill (005), with abundant stone, is clearly of 4th century AD date. As indicated by the pottery recovered (late 3rd/4th from the single coin find). The material within this horizon appears to show that this feature was at least partially stone capped. Overlying this

pit was the topsoil (001), which itself contained pottery dating to the 3rd/4th century; but these finds were clearly the result of ploughing as recorded in context 002 (see below).

Other finds from within this phase include both animal bone and small scale metalwork debris, suggestive of a domestic function. Clearly dumped material, including building demolition debris (005 and 034), was also found in large quantities, in the phase 2 deposition. The first 034 was found at the base of this phase and the second (005) at the top, possibly indicating two periods of structural activity. Perhaps most importantly was the presence of kiln debris, recovered from within several layers including 005 and 010. The only known kiln on the site is a significant distance from the ditch, which may suggest that, at least during the second phase of the ditches use, infilling was primarily a deliberate act; as also indicated by the dumping of the previously mentioned building debris. This may therefore suggest that the function of the ditch had changed between the primary and secondary phases of the sites use, perhaps indicating a shift from a defensive to a more domestic function at this location or a shift from stock control towards more of a boundary/drainage function.

6.2.3 Building

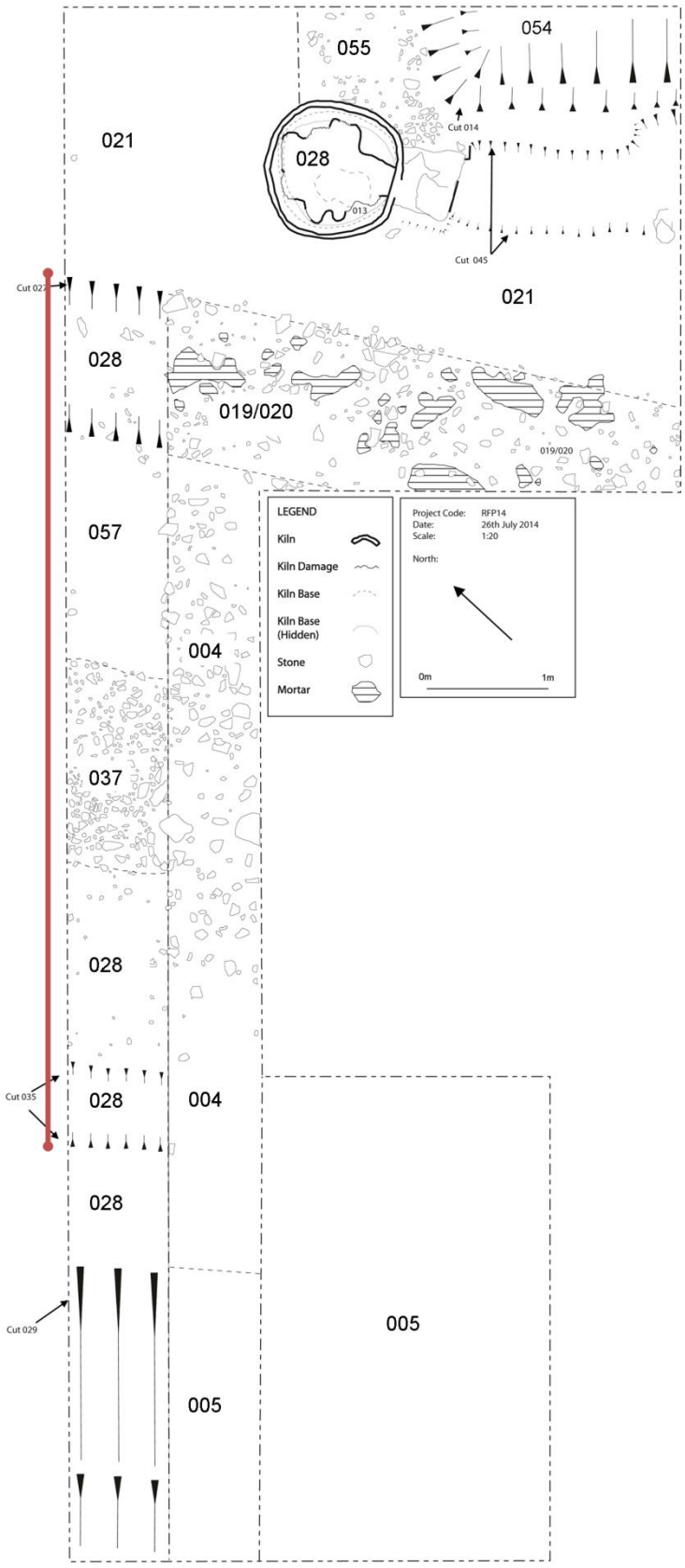


Figure 14: Trench plan highlighting the location of the building (Red). © Herefordshire Archaeology

At a distance of 1.30m from the eastern edge of the ditch was a slight depression, marked by the cut 035. Underlying the turf (001) at this location was a 0.06m thick layer (002) of grey-brown, silty sand with inclusions of gravel (in patches), small angular stones and occasional charcoal flecks. This in turn overlay a 0.11m thick layer of masonry rubble (003). This debris included angular stone (*c*.0.16m x 0.15m), mortar and occasional charcoal flecks, in a matrix of grey-brown silty clay (mortar stained). Also from this layer roof tiles, kiln debris and pottery, as well as a single coin were recovered. The layer below this (004) was very similar to 003 but was more compacted. This also contained kiln debris, pottery, roof tiles, two coins (Table 4) and a single green glass bead. Perhaps of more significance was the presence of opus signinum and tessera. This context (004) sealed the fill (036) of cut 035. The fill 036 consisted of 0.10m thick, very silty clay with inclusions of occasional rounded and sub-angular stone as well as Roman iron nails. The cut (035) was into the natural glacial gravels (028); it had convex sides and was 0.70m wide and 0.15m deep. No *in situ* structural remains were evidenced in this feature.

In the area between 035 and the exterior ditch, and also underlying context 003, was an area of compacted stone (037). This horizontal surface comprised of compacted small angular and sub-rounded stone in firm grey-brown silt, very similar to the natural (028). This surface was not excavated.

At a distance of seven meters to the east was a further linear trench-like feature 028. As with 035, this was, on the west side, overlain by what appeared to be masonry rubble (004, see above). On the east side however this feature was covered by the plough soil (002), which in turn underlay the turf line 001. Context 002 was on average 0.08m thick and consisted of an unconsolidated grey-brown silty clay horizon. Within this horizon were small gravel patches, occasional small angular stones and occasional small charcoal flecks. Visible within this context were a series of east-west aligned plough marks. Underlying context 002 were two contexts, 003 and 019/020. The first, 003, partially overlay 004 and comprised of demolition debris that extended predominantly to the east. This 0.11m thick context consisted of angular stone (*c*.0.16 x 0.15m in size), mortar and occasional charcoal flecks in firm grey-brown silty clay. The second context 019, although similar to 003, formed a

clear 0.50m wide linear strip, 0.22m thick, which extended north-south across the eastern end of the excavated area for a distance of *c*.5m (Plate 2).

There was a high mortar content within this horizon (020), and although not *in situ*, numerous stones with mortar bonded to them were also recovered in this layer. Underlying 020 was a dark brown/black deposit (056/057), but this was not fully excavated as part of this project. Within this layer seven sherds of Roman pottery were recovered (Table 3). Both 019 and 056/057 were found to be contained within a linear, north-south-aligned cut (027) that was 5m long (maximum excavated length) and 1.30m wide.

Plate 2: Band of mortar and rubble core visible orientated roughly north-south within the east of the trench (viewed from the south). © Herefordshire Archaeology

Table 3: Pottery recovered from the building debris (see Appendix 4).

Feature type	Fill of	Context	Object type	Count	Weight (g)	Start date	End date (tpq)
Wall	27	031	pot	4	28	120+	3rd?
		056	pot	7	96	2nd	3rd

Table 4: Coins recovered from the building debris (see Appendix 5).

RA no.	Denomination	Ruler/type	Date	Clean?
003a	AE3	Gloria Romanorum	364-78	x
004a	AE4	uncertain	late 3rd-4th c.	y
004b	Barb. Radiate	Carausius - Pax	286-300	x

6.2.4 Discussion

Although identified by geophysics, no *in-situ* structural remains were uncovered as a result of this project. What was evident however were the cuts of two roughly north-south aligned walls (cuts 027 and 035), *c*.7.20m apart and each *c*.1m wide. It is also clear from the quantity of mortar bonded stone (020) that this was a masonry structure and that there was a stone tiled roof, as evidenced by the large quantity of roof tiles recovered from the east side of this wing in contexts 003 and 004 as well as within both the kiln, flue and internal pit, located within in the interior courtyard (see Section 6.2.5).

On the basis of the excavations to date, it appears that the features excavated in this area represent the west wing of a significant complex (as highlighted by the geophysics; Chapter 6.1). The earliest dating evidence came from context 056, the deepest context excavated within the building confines. Pottery from this horizon, which infills the wall cut 027, dates to between the 2nd and 4th century. This does however represent a demolition horizon and is not specific evidence as to the date of the underlying structure, only providing a *terminus anti quem*. The overlying layers of demolition, 003 and 004, produced coin evidence giving dates of 364-378 AD and

286-300 AD respectively (see Appendix 5). Also within context 004, both opus signinum and tessera were recovered which suggests that this building was of a high status, potentially, either a rich farmstead or villa complex.

In the upper horizons, namely context 002, there was evidence of shallow ploughing within the building footprint, and whilst this does not appear to have had any impact on the building itself, it is possible that damage to the kiln (see below) may have been caused by this ploughing. This ploughing helps to explain the large quantity of Roman pottery recovered from the topsoil.

6.2.5 Courtyard

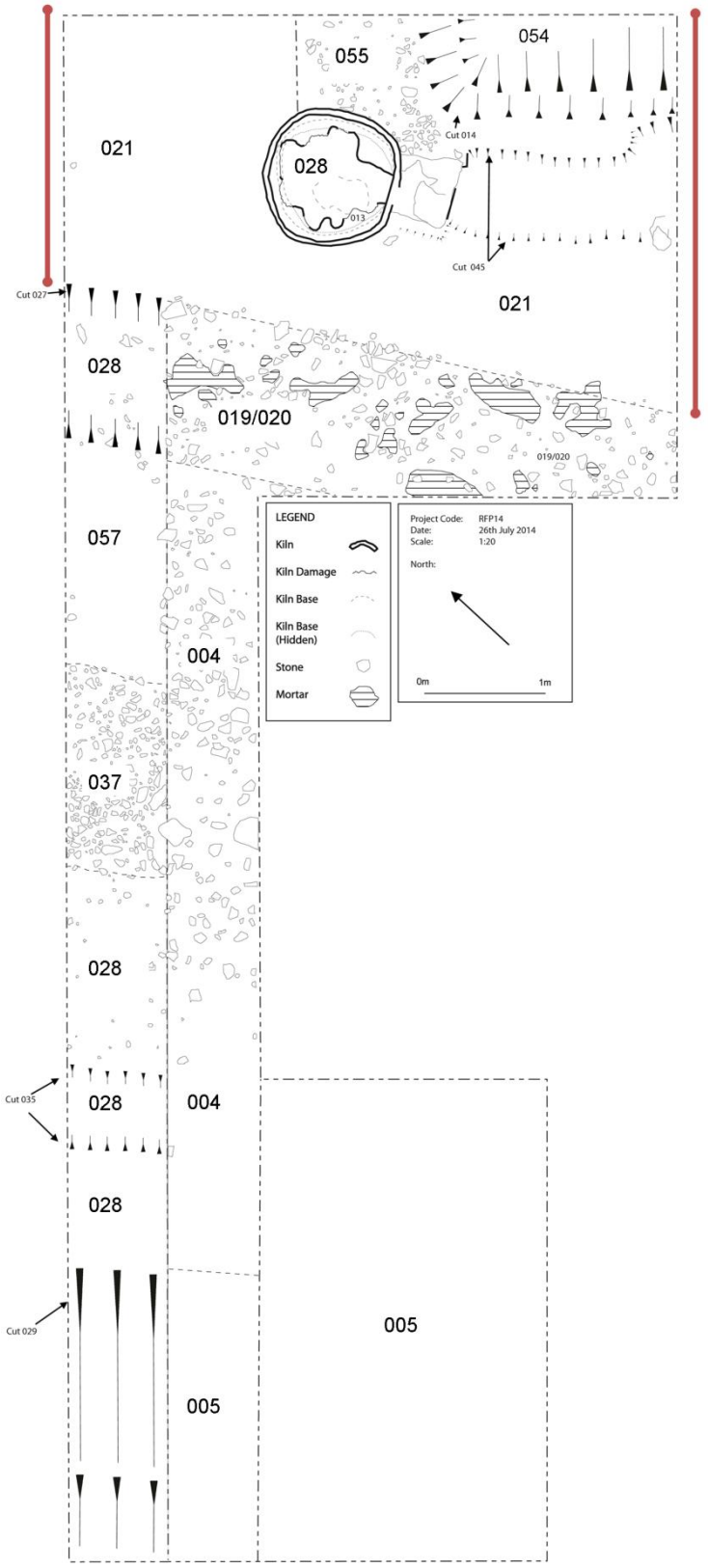


Figure 15: Trench plan highlighting the location of the Courtyard and depicting the relationship between the kiln, flue and pit (Red). © Herefordshire Archaeology

Underlying the previously mentioned contexts 001, 002 and 003 was context 022. This was a fine layer, *c*.0.02m thick consisting of yellow brown silty clay with disintegrated mortar, located within the confines of the courtyard. This was one of several deposits associated with the eventual demolition of this building, but as outlined below, this layer proved to be particularly useful for the later phasing of the site.

Underlying 022 was context 011, contained within a 1m diameter circle of brittle fired clay (013 [Plate 3]) which at this level was 0.04m thick. Context 011 consisted of a 0.22m thick layer of grey brown silt clay with abundant angular stone (0.12m x 0.10m), roof slates and pottery. Upon excavation this clay circle (013) was found to extend down, as did the stone fill, but also in evidence was the fact that this clay circle also extended up, as evidenced by the abundant but fragmented fired clay (012) found within the upper fill 011 (Plate 4). This damage could possibly be the result of the ploughing previously mentioned in context 002 (Section 6.2.4).

Plate 3: Initial evidence of the kiln, a faint, very thin and brittle circle of fired clay (013). © Herefordshire Archaeology

Plate 4: The uppermost fill including possible remains of the kiln roof and rubble collapse. © Herefordshire Archaeology

Plate 5: Section through context 011, confined within the clay walls of the kiln 013. © Herefordshire Archaeology

Underlying 011 was kiln fill 015 (Plate 6). This was a thin grey brown soil similar to 011 but with higher silt content, this layer also contained pottery. Underlying this was a medium grey brown, slightly granular clay soil (030) with charcoal, mortar flecking and a large quantity of degraded clay fragments from the kiln structure. Included there were also a large quantity of slab like sandstone fragments set at all angles (Plate 7 & 8).

Plate 6: Uppermost fills 011 and 015 half sectioned down to the lower stone fill (030 [including roof tile]). Also evident at either end of the black and white scale are the clay pilasters. © Herefordshire Archaeology

Plate 7: Stone fill 030, but also the first sight of possible fired clay pillars extending from the kiln sides and the filled flue in the southern wall (top of frame). © Herefordshire Archaeology

Plate 8: Stone rubble fill 030 as well as structural 'shelf features' and filled flue. © Herefordshire Archaeology

Underlying 030 was context 038. This context consisted of a large quantity of fired and unfired red-orange clay as well as a large quantity of pottery made of the same fabric (Plate 15, Table 5). This pottery was in a matrix of fine mid brown silt that was sampled for botanical remains (Table 6).

This in turn overlay 024, a tip of collapsed clay superstructure that extended from the east side of the kiln and corresponds with a missing section of pillar and shelf, visible on Plate 9). This collapsed material was in a matrix of grey brown silty-clay soil and contained undiagnostic Roman pottery.

Plate 9: Excavated kiln. © Herefordshire Archaeology

At the base of the kiln was a very thin degraded and compacted fired clay feature (058). This structural feature, although irregular in shape measured *c*.0.50m x 0.50m x 0.01m and within it were five possible vent holes with average diameter of 0.09m (Plate 10)

Plate 10: At the base of the kiln is the possible remains of the perforated 'shelf' that would have originally been positioned on the protruding pillars visible above it and onto which the unfired pottery would have been placed. © Herefordshire Archaeology

This feature was interpreted as representing the original 'shelf' on which the pottery was fired. This is further supported by the remaining shelf and pilaster supports, located half way up the remaining kiln structure sides and all around the interior (except where it had collapsed [024]). The spacing between each of the moulded pilasters was similar in size to the voids identified within the 'shelf', context 058 (Plate 10, 11 & 12).

The primary deposit, 039, underlay 058. It was a grey brown ash and soil with large quantities of grey ash and abundant quantities of charcoal. There was also a quantity of degraded red kiln lining

The entrance into the flue from the kiln (Plate 13 & 14, Figure 16) is made entirely of clay. The base is 0.50m wide and the top is 0.20m wide, the sides rise from the base 0.40m, before sloping inwards towards the top.

Plate 11: Close up of the shelf support showing a circular perforation/vent hole similar in size to those identified in 058. © Herefordshire Archaeology

Plate 12: Possible shelf with clearly visible circular vent holes. © Herefordshire Archaeology

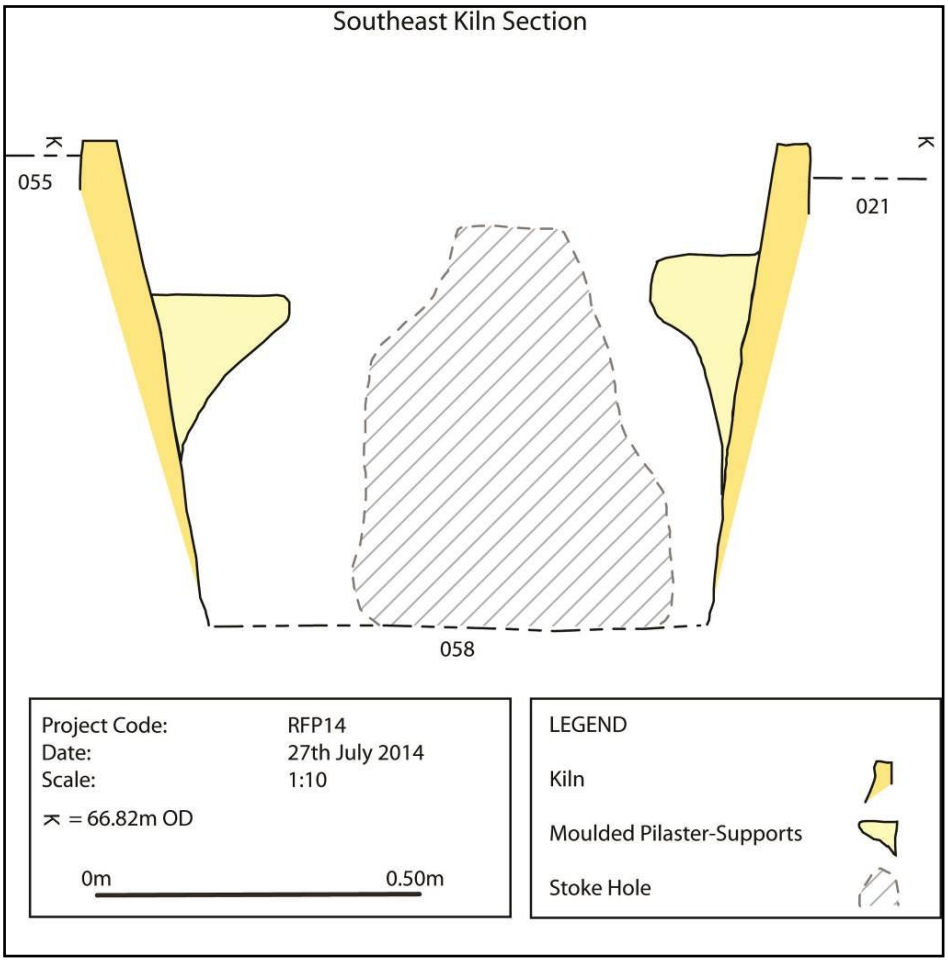


Figure 16: Section Plan 1 through the kiln as seen from the north showing the moulded pilasters. The flue entrance is shown in this section to show the comparison in position and size to the rest of the structure. © Herefordshire Archaeology

Plate 13: Rubble filled flue as seen from within the kiln (kiln fill not flue fill) and the remaining moulded pilasters as seen from the north. © Herefordshire Archaeology

Of particular note within the entrance to the kiln was the identification of two vertical indentations discovered on the northeast side (Plate 14, Figure 17). These were only *c*.0.03m wide and extended from the base of the entrance and into the roof.

Plate 14: Possible construction grooves identified within the flue entrance of the kiln. Beyond, the exterior stone and clay lined entrance is visible. © Herefordshire Archaeology

Plate 15: The pottery assemblage excavated from within the kiln fill 038. © Herefordshire Archaeology

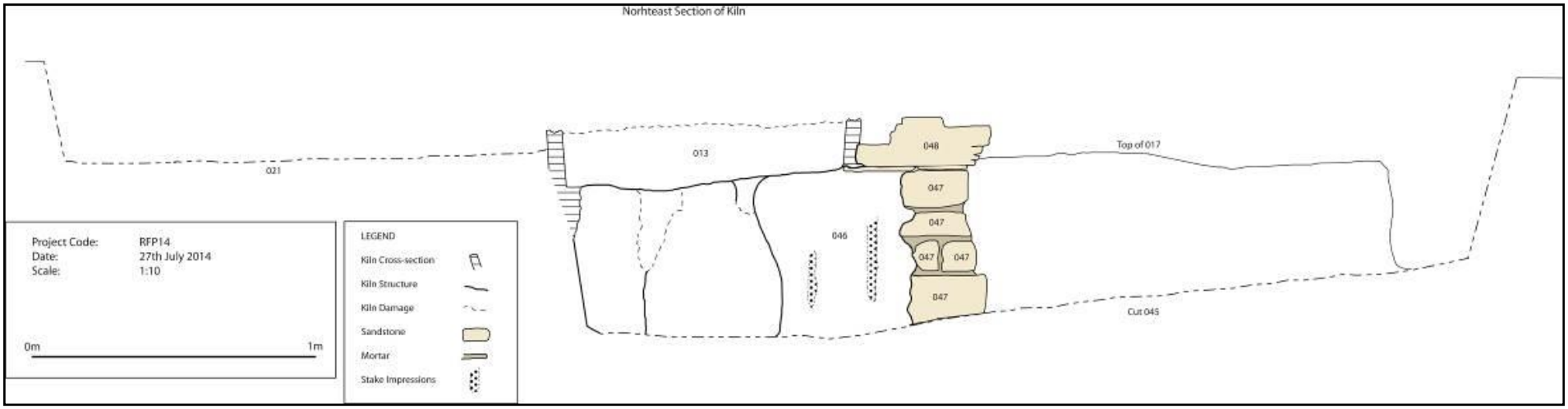


Figure 17: Section Plan 2 through both the kiln and flue from the west. This shows the flue and the stone lined stoke hole entrance as well as the possible construction grooves within the flue tunnel (see plate 14). © Herefordshire Archaeology

6.2.5.1 The Flue

Underlying 003 was 022. As previously mentioned this also overlay the uppermost kiln fill (011). which clearly suggests that these two features were out of use at the same time.

The uppermost fill of the flue (026) consisted of a 0.32m thick layer of stone slabs and roof tiles in a matrix of mid brown very silty soil (Plate 16). Within this horizon eight sherds of pottery were recovered (Table 5).

Plate 16: Uppermost flue fill (026) as seen from the south. © Herefordshire Archaeology

Plate 17: North-facing flue cut 025 and the associated fills. © Herefordshire Archaeology

Underlying the rubble fill (026) was a 0.05m thick layer of loose mid brown coloured silt (041). Included within this horizon were abundant fragments of kiln debris and a total of 59 pottery sherds (Table 5). Beneath this was a 0.05m thick layer of dark brown/black clay-silt mix (042) with small angular stone and charcoal flecks. The base fill (045) was 0.04m thick and consisted of a very compact dark brown/black clay silt mix with charcoal smears and burnt clay.

Each of these fill horizons were contained within the flue cut (025). This was 0.60m wide at the base and 0.90m at the top (Plate 17). The excavated portion of this feature was 2m in length, extending from the southeast side of the kiln and measured 0.40m deep at the south end and sloped to 0.50m deep at the kiln entrance. The structural element of the flue lay at the juncture with the kiln.

Plate 18: Stone lined entrance from the flue into the kiln structure as seen from the south. © Herefordshire Archaeology

The covered entrance (stoke hole) to the kiln was stone lined with four squared sandstone blocks (047) on either side, topped with a large flat stone (048). The stone structure was bonded by a red brown silty clay (046 [Plate 18, Figure 17]). The entrance was 0.48m high and 0.40m wide and extended into the kiln a distance of 0.64m, lined on both sides by the same red bonding clay 046. Evidence for possible construction elements appeared in the form of two (northeast side) vertical grooves set into the clay as it entered the kiln itself. These may represent the location of a frame employed for moulding the clay roof as it enters the flue entrance (Plate 14, Figure 17).

Table 5: Pottery recovered from the kiln and flue (see Appendix 4).

Feature type	Fill of	Context	Object type	Count	Weight (g)	Start date	End date (tpq)
Kiln	13	011	pot	8	84	late 3rd	4th
		015	pot	2	28	2nd?	2nd
		024	pot	5	214	Roman	Roman
		030	pot	1	20		
			pot	8	490	2nd	2nd
		038	pot	71	3460	2nd?	2nd
Flue	25	026	pot	1	4		
			pot	7	128	2nd?	3rd?
		041	kiln debris	4	186		
			pot	14	1334		
			pot	45	1148	2nd?	2nd

Table 6: Extract of botanical results (see Appendix 6).

Flot Number	RFP3		RFP8		RFP9	
Trench	1		1		1	
Unit number	38		42		42	
Volume (L)	2.5		7		7	
Comment	lower kiln fill		42A		42B in entrance to kiln	
Context	Kiln		Flue fill 25		Flue fill 25	
wood charcoal >2mm >50 pieces	y		y		y	
	>2mm	1mm	>2mm	1mm	>2mm	1mm
Cereal Grain						
Triticum dicoccum/spelta			2		3	
Triticum spelta	10		15		30	
Triticum cf. *spelta*					20	
Triticum spelta/aestivum/durum			18			
Triticum aestivum/durum/compactum	10		34		13	
Triticum sp.	9		28		19	
Hordeum distichum	1				1	
cf. *Horduem*					2	
Detached germinating embryoes		9		3	3	21
Cereal chaff						
Triticum spelta glume base	1	200+	1032		3	500+
Triticum cf. *dicoccum* glume base			20			
Triticum sp. glume base			288			
Triticum hexaploid/tetraploid rachis internode			12			7
Triticum/Hordeum rachis internode		3				
Hordeum distichum rachis internode						2
Hordeum sp. rachis internode						2
Culm node	1		3	4		1

6.2.5.2 Discussion

The kiln was well preserved and is of 2nd century date, as indicated by the 71 sherds of pottery recovered from its base fill (038). It measured 1.05m in diameter at the existing top and 0.70m at the base. The remaining depth was 0.80m and there were moulded pilasters lining the inside of the kiln (058) measuring 0.50m from the base, which extend into the kiln *c*.0.20m. The kiln currently lacked a roof, as this had been partially damaged by ploughing (002). Some of the internal pilasters on which the pottery was fired had also fallen to the base of the kiln (024). At the base of the kiln was a very fragile, roughly circular layer of fired clay (058) *c*.0.50m in diameter,

in which at least six, *c*.0.09m diameter holes were visible. This corresponded with the remains of similar such holes/voids between each moulded pilaster. It can be suggested therefore that the pilasters originally supported the aforementioned fired clay feature (058) and that this was the collapsed 'shelf' on which the pottery was fired. No central supporting pillar for this shelf was found, although it may be that this was not required due to the kilns limited diameter.

The stoke hole entrance into the kiln was located on the southern side and as can be seen in Figure 17, predominantly underlies the pilasters and hence the shelf, possibly confirming the previous suggestion. The fact that there are vertical indentions in the sides of the stoke hole entrance, that extend into the roof, may indicate the presence of a pro-forma structure, used to create the stoke hole entrances arched roof.

The fills above the main pottery deposit (038), namely 015 and 030, were all dated to the 2nd century from the pottery retrieved. The uppermost fill (011) however, was distinctly different, in that pottery from this layer was dated to the late 3rd/4th century.

The samples taken from the base deposits of the kiln proved of interest. It appears that cereal chaff, especially *T. spelta* glume bases, was used as a supplementary fuel for the kiln. The density of charred plant remains in the lower kiln fill (038) was 122 items per litre of soil. There were also very few straw culm nodes in the samples, indicating that only the final discard from crop processing was used, supporting the idea that it was used as fuel.

The stoke hole was 0.60m wide at the base and 0.90m at the top and the excavated portion of this feature was 2m in length, extending from the south side of the kiln. It was 0.40m deep at the south end and sloped to 0.50m deep at the kiln entrance. This kiln entrance was stone lined and capped.

At the base of the flue was context 042 and although no pottery was recovered, several samples were taken.

Charcoal samples were analysed that dated the final firing to 1916/-30 BP Appendix 7), but this analysis also identified the species as five year old hazel. It is of note that this sample was taken from next to the kiln entrance, so although it most likely represents the heating material, it may also indicate that hazel was used to construct the previously mentioned pro-forma.

Samples were also taken from the base deposit 042. Like the base deposit of the kiln itself, it appears that cereal chaff, especially *T. spelta* glume bases, was used, as well as wood, as a fuel for the kiln. The density of charred plant remains is very high in the flue (207/107 items per litre of soil) as compared to the kiln fill which contained 122. As with the kiln, very few straw culm nodes were identified within the samples, indicating that only the final discard from crop processing was used as fuel.

The layer overlying this was context 041. Within this layer was pottery dated to the 2nd century but there was also clay kiln debris. This strongly suggests that the kiln had fallen out of use towards the end of the 2nd century and that debris from the kilns roof had been deposited in the flue fill after the last firing. The upper fill consists of flat slab like stones and roof tiles with pottery dating it the 2nd/3rd century. That this deposition was deliberate can clearly be seen in Plates 15 & 16 where the surrounding area is devoid of any such stone.

6.2.5.3 Interior Pit

Underlying 003, partially beneath the northeast section, within the eastern most corner of the excavation, was a large pit (cut 014), immediately northeast of the kiln flue. The upper fill (017 [Plate 19]) consisted of a dark brown/black very silty soil with a maximum depth of 0.12m at its deepest. Within this horizon was a small quantity of small angular and sub rounded stone and fourteen sherds of pottery (Table 7). Underlying this was a layer of large mudstone slabs and roof tiles (016 [Plate 19]).

Plate 19: Upper fills of large pit 014 depicting the upper dark band 017 and the underlying stone slab fill 016. © Herefordshire Archaeology

Plate 20: Northeast section of pit 014 viewed from the southwest. © Herefordshire Archaeology

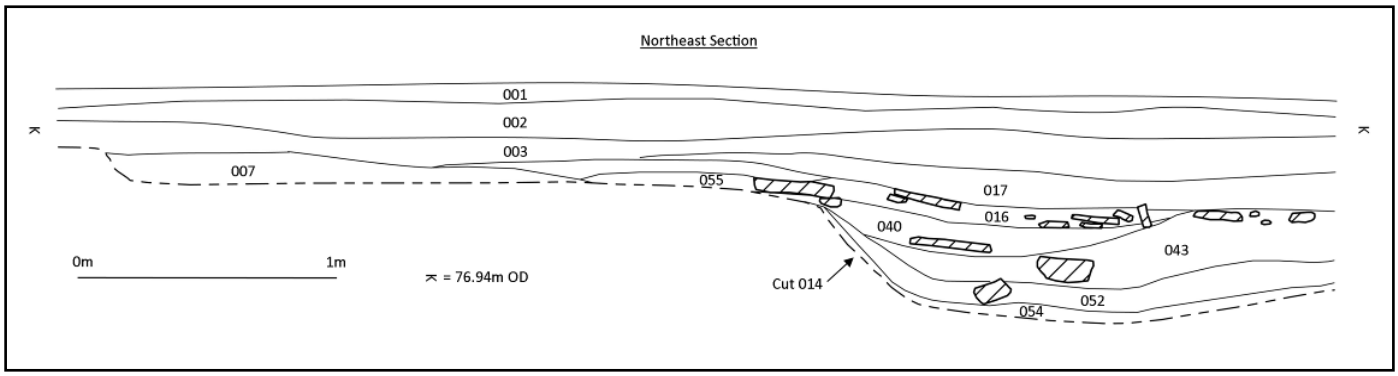


Figure 18: Section Plan 4 of northeast section plan depicting the fills of pit 014. © Herefordshire Archaeology

Below context 016, and obviously deposited from the northwest side of the pit, was fill 040. This was 0.24m deep (at its deepest towards the centre of the pit) and consisted of a dark grey brown clay soil with roof slates. Two sherds of pottery were recovered from this context (Table 7).

Also underlying 016 and butting 040 was context 043. This was deposited from the south side of the pit and consisted of a very dark silty soil, 0.20m thick. Six sherds of

pottery were recovered from this horizon (Table 7). This layer in turn overlay the previously mentioned sandy layer context 022 (see Section 6.2.5.1 & 6.2.5.2). Underlying both 043 and the previously described context 040 was context 052. This was a 0.22m thick layer of dark red/brown silty clay with abundant khaki sandy mortar, numerous small stone slabs with abundant small angular and sub rounded stones. Two finds, a coin and a pillar base (Plate 21) were retrieved from this horizon.

Underlying 052 was a 0.05m thick layer of soft brown silty soil with abundant yellow/orange clay flecking and occasional rounded grit (053). The primary fill of this pit, was context 054, a powdery light grey ash with lumps of burnt orange clay and charcoal flecks. The excavated portion of this pit (cut 014) was parallel to the flue (Plate 22), it measured 2m north-south x 0.80m wide x 0.67m deep

Plate 21: Limestone pillar base found within pit fill context 052. © Herefordshire Archaeology

Plate 22: Proximity of all three features excavated within the courtyard. © Herefordshire Archaeology

Table 7: Pottery recovered from the pit section (see Appendix 4).

Feature type	Fill of	Context	Object type	Count	Weight (g)	Start date	End date (tpq)
Pit	14	017	pot	14	154	120+	2nd
		040	pot	2	98	3rd	4th
		043	pot	6	90	late 3rd	4th
			tile	1	4		
		052	pot	1	8	1st?	1st

6.2.5.4 Discussion

This pit (cut 014) was not fully excavated as it extended outside the excavation area. Its known dimensions are 2m north-south, 0.80m east-west and 0.67m deep; it is also parallel to the kiln flue. The base fill 054 consisted of an ash like material that may represent debris from clearing the flue. No dating was however retrieved from this or the overlying layer. The third fill however, 052, produced two finds of interest. The first, a single sherd of pottery, was dated to the 1st century AD. This may indicated that either the kiln had more than one firing and that the ash at the base of this pit is the result of an earlier firing. This would potentially extend the life of the kiln into the 2nd century. The second possibility is that an earlier structure was in place before the existing one. The second find of interest was a section of limestone pillar base (Plate 21). This, together with the opus signinum and tesserae found within context 004 (see above) may indicate the potential status of this building complex. Overlying these deposits and half way down the pit fill was the previously mentioned context 022. This layer overlay both the kiln and flue fills which dates all those deposits above to at least the 2nd/3rd century. No second century pottery was retrieved from below this horizon but some was discovered above it. Redeposited pottery dating to >120 AD was found within a later horizon 012. As found during the excavation of the flue, the pit was similarly sealed with stone slabs and roof tiles indicating that it was filled purposely sometime in the 3rd century.

7.0 Conclusion

This project is a prime example of what can be achieved through the contribution of the local community, Armed Forces community, schools, and colleges in the improvement of understanding and investigation of a community's heritage. It is with thanks to the support and funding of the MOD Armed Forces Community Covenant that this investigation was able to take place. Through all aspects of the project Herefordshire Archaeology actively engaged with the public, involving members in all aspects of archaeological investigation, from field survey, geophysical analysis, excavation, recording and artefact conservation. Alongside these activities presentations to the public have been held both onsite and off as well as by means of weekly online blogs promoting the history and results of the investigations as they progressed. Two event days have also been held, one for the interest of Armed Forces Community and one to celebrate the end of the field work and promote the free booklet. The success of the project has been measured by the attendance of those at the project which has numbered over 400 individuals.

As far as the public's contribution to the archaeological investigations go, the results have been superb. Combining the results of the primary school groups geophysical survey carried out between the 7th and 11th April 2014 (Atkinson & Williams, 2014) with those of Graham Lantz, a University of Sheffield Masters student who investigated the wider area whilst the excavations were in operation (Lantz, 2014). We have a clearer understanding as to the extent of the site. The ditched enclosure, oriented northeast-southwest measured approximately 84m long and 48.50m wide. The courtyard structure located within the west of the enclosure and oriented northwest-southeast measured 35m long and 19.50m wide. Individual rooms of the U-shaped structure measure approximately 4.80m x 4.80m in size. The central courtyard was identified as measuring approximately 8.0m wide by 28.29m long.

The community excavation provided a cross section through the western most wing of the identified structure, sampling the ditch to the west and the courtyard to the east. The structure itself at this location was found to have been damaged as a result previous ploughing activity, as noted by the numerous plough marks that cut through the stone rubble remains. Despite this two cuts, presumably the foundation

cuts to the wall, were identified, the fill to which represented demolition debris. No *in-situ* foundations were uncovered. From the debris however, deposits of mortar, stone and stone tile roof slates indicate that the structure was substantial. The discovery of opus signinum and tessera within the upper rubble deposits would also suggest the building to be of a high status construction, perhaps part of a villa complex; which may also be supported by the discovery of a single green glass round bead. Ceramic artefacts uncovered from the site of the structure dates predominantly between the 3rd and 4th century with a few sherds indicating an earlier 2nd century date.

The excavated portion of the ditch also mirrored the structure in containing material predominantly of a 3rd and 4th century date in its later phase, which not only included pottery and domestic artefacts as well as building debris, but also kiln fragments. However the earlier phases of ditch fill could not be dated beneath horizon 056, although it is likely that the ditch is likely at least 2nd century in date if not earlier.

A second century date to the ditch enclosure is perhaps supported by the discovery of a nearly intact kiln itself within the courtyard of the structure. The preserved kiln, along with the stone and clay constructed stoke hole and flue cut; contained large quantities of 2nd century pottery which was also supported by a radiocarbon date of *c*.140AD before being deliberately sealed using stone roof tiles by the 3rd century. A neighbouring pit, which was not fully excavated also, indicated its deliberate sealing during the 3rd century. However underlying fills identified a possible 1st century pottery sherd close to the base of the pit. A limestone column base was also uncovered from the same horizon (052). Although the purpose of the pit is unclear, an ashy deposit at the foot of pit may indicate its use as a refuge pit for clearing out the flue and kiln.

In summary, the excavations have uncovered at least three probable phases in the sites use. Phase One is marked by the construction of the enclosure ditch, kiln, flue and pit sometime between the 1st and 2nd centuries AD but certainly before *c*.140AD, as indicated by the radiocarbon and pottery dates of the kiln. Phase Two is marked by a period of construction and change in site use. This is likely to have occurred during the late 2nd and early 3rd century in which the kiln, flue and pit were sealed

and the stone and mortar courtyard high status domestic structure established. Phase Three likely dates to a point in the 4th possibly 5th century when, like Roman Magnis (the neighbouring town) went into decline and abandonment.

8.0 Acknowledgements

It is with thanks that we acknowledge the support of the ***MOD Armed Forces Community Covenant Grant*** who awarded and continue to support the Roman Families Project through the provision of grant aid.

We gratefully thank the members of ***Credenhill Parish Council*** and ***Herefordshire HIVE*** who have supported the project from its initial application phase and continue to do so.

It is with special thanks that we celebrate the involvement of the primary school pupils from across Herefordshire, without whose help during the course of the survey the results would not have been a success, paving the way to a future excavation. We hope that all of those who attended the event both enjoyed their involvement and improved their understanding of Iron Age and Roman Credenhill.

Thank you to the staff and pupils and students of:

St Mary's Primary School, Credenhill

Much Birch Primary School

Riverside Primary School

Kingstone High School

Herefordshire Sixth Form College

We also like to thank the community of Credenhill and those of the Armed Forces Community, the countless individuals, the families and those who frequent the park regularly who took a keen and active interest in the projects discoveries.

9.0 Bibliography

Online Resource

BGS 2014 *'Geological map of Great Britain'* in The British Geological Survey

http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Date accessed 29th April 2014

HER 10165: Cropmark Complex (Enclosures), West of Glebe Close, Credenhill Village. Historic Environment Records, Herefordshire Council. Available online through Herefordshire Through Time

http://htt.herefordshire.gov.uk/smrSearch/Monuments/Monument_Item.aspx?ID=10165

Date accessed: 29th April 2014

Published Resources

Arnold, C. J and Davis, J. L, (2000), *Roman & Early Medieval Wales*. Stroud, Sutton Publishing Limited

Atkinson, C and Williams, D. (2014). '*The Roman Families Project', Roman Park Playing Fields, Credenhill: A Geophysical Survey*. Herefordshire Council, Herefordshire Archaeology Report No. 342

Blackwell, B, (2013). *In the Munitions: Women at War in Herefordshire*. Logaston, Herefordshire Lore & Logaston Press

IFA, (2009). *'Standard and Guidance for archaeological field evaluation'*. Reading, Institute for Archaeologists

IFA, (2011). *'Standard and Guidance for archaeological geophysical survey'*. Reading, Institute for Archaeologists

Jones, David. M. (2008) (ed). 'Geophysical Survey in Archaeological Field Evaluation'. Wyndehams, English Heritage Publishing

Wacher, John, (2001). *Roman Britiain*. Stroud, Sutton Publishing Limited

10.0 List of Illustrations

Figures

Plates

Tables

Appendix 1: HER Records

Credenhill Camp

SMR Number: 906

Grid Reference: SO 451 446

Parish: CREDENHILL, HEREFORDSHIRE

Irregular form generally following contours. High inner rampart, small outer rampart with medial ditch at present time inner rampart 23-40' above ditch bottom and average of 12' above spoil at base of scarp. Outer rampart now destroyed in several places and ditch infilled. Three entrances: SE corner has inturned ramparts (damage on N side); middle of E side inner ramparts inturned also approached by covered way; NW corner is modern, but may occupy place of earlier entrance (but no proof). (1) Encloses 20ha 'Univallate'. Excavations in 1963 established site occupied c390BC - AD75. Four-posters discovered. (3) A number of features associated with the hill-fort were noted during a rapid survey of the area. These include two small enclosures, embanked trackways, and a possible postern gate. (8) During a site visit a number of terraces, low banks and levelled areas within the hillfort were noted. It is believed that at least some of the terraces and platforms could represent hut platforms. Other features may represent woodland boundaries dating from the medieval and post-medieval periods. One wide but subtle bank which appears to possibly form an earlier rampart pertaining to the expansion and development of the hillfort. (9) Survey work was carried out in 2003. This identified a number of features on the fort itself, including features such as springs, and erosion from drains. The work suggests that there may be three contemporary entrances to the east, southeast and southwest. The present north entrance needs further work to establish its antiquity. The gap on the west side of the fort is probably a later breach(10) (11) A three-year excavation project was undertaken at the site between 2007 and 2009. In 2008, three new areas were targeted, and an area examined in 2007 was re-opened and expanded. Complex archaeology was encountered comprising metalled surfaces, possible beam slots and other cut features dating to the Roman and Iron Age periods of use of the site. An area within the internal quarry ditch just south of

the eastern entrance was opened and excavated to an extensive metalled surface associated with Romano-British artefacts. A slot was excavated through the rampart, which at this point appears to be of two phases, though with little structural complexity. The time interval between the two phases may have been as little as a season. An intact buried soil with a very clear grass or turf horizon was preserved below the rampart. (12) Six areas were excavated in 2009, and the area opened in 2007 and 2008 was re-opened and completed. The archaeology here comprised cut features mainly of the early Romano-British period, including a series of large parallel timber foundation slots, and rubbish disposal pits. Preliminary analysis of the ceramic assemblage suggests Roman military activity possibly associated with the use of the site as a supply base for troops campaigning up the Wye Valley into Wales, apparently during a pre-Flavian period of operations. A significant assemblage of later Bronze Age ceramics, and a representative sample of Iron Age wares indicated the Prehistoric occupation component. An evaluation was carried out in 2008 prior to tree felling. Four trenches were excavated, and archaeological deposits were recorded in three of them. In two cases these appear to be beam slots possibly associated with Roman military buildings. The only artefacts recovered were two small fragments of Iron Age pottery though these are likely to be residual. Evidence of ploughing, probably during the Medieval period, was also apparent. The results of the evaluation were used to agree a methodology for monitoring timber felling and extraction from the site. (13)

Monument Type(s)

1. HILLFORT (Early Iron Age to 2nd Century - 800 BC to 200 AD)

Associated Files

Sources and Further Reading

1. ---SHE18985 - Unpublished Report: Boucher, A and Eisel, J. 2004. Park Wood Credenhill Archaeological Survey, Herefordshire: Archaeological Landscape Survey and Site Assessment. Archaeological Investigations Ltd. 595.

2. <1>SHE132 - Bibliographic reference: Royal Commission on Historical Monuments. 1932. Inventory of Monuments, Herefordshire East, Vol II. Herefordshire East, Volume II. II,65.

3. <2>SHE12647 - Bibliographic reference: Stanford, S C. 1963. Transactions of the Woolhope Naturalists' Field Club. 37,331.
4. <3>SHE12634 - Bibliographic reference: Stanford, S C. 1970. Credenhill Camp, Herefordshire: an Iron Age Hill-fort capital. The Archaeological Journal. 127. Pages 82-129.
5. <4>SHE2162 - Bibliographic reference: 1975. Guide to Prehistoric & Roman Sites. Transactions of the Woolhope Naturalists' Field Club. p16.
6. <5>SHE12635 - Bibliographic reference: Stanford, S C. 1981. Archaeology of Welsh Marches. 94.
7. <6>SHE16398 - Bibliographic reference: Anon. Woolhope, various articles,. Transactions of the Woolhope Naturalists' Field Club. XIV.
8. <7>SHE16398 - Bibliographic reference: Anon. Woolhope, various articles,. Transactions of the Woolhope Naturalists' Field Club. Pages 151.
9. <8>SHE15399 - Unpublished Report: Hoverd, Tim. 2003. A Reconnaissance Survey of Credenhill Hill-fort, Herefordshire. Herefordshire Archaeology. 33.
10. <9>SHE16155 - Unpublished Report: Ray, Keith and Tim Hoverd. 10/12/2004. Archaeological Reconnaissance. Surveys of Sites in Herefordshire 1999. Herefordshire Archaeology. 8. 8.
11. <10>SHE18465 - Bibliographic reference: Woolhope Naturalists' Field Club. 2003. Transactions of the Woolhope Naturalists' Field Club. Volume 51. 2003. 99.
12. <11>SHE18985 - Unpublished Report: Boucher, A and Eisel, J. 2004. Park Wood Credenhill Archaeological Survey, Herefordshire: Archaeological Landscape Survey and Site Assessment. Archaeological Investigations Ltd. 595.
13. <12>SHE18754 - Article in serial: Shoesmith, Ron. 2008. Archaeology, 2008, Transactions of the Woolhope Naturalists' Field Club. 56, 2008. 114-131. 127.
14. <13>SHE18758 - Article in serial: Shoesmith, Ron. 2009. Archaeology, 2009, Transactions of the Woolhope Naturalists' Field Club. 57, 2009. 134-162. 153.

Associated Finds

1. FHE3237 - SHERD (1st Century to 2nd Century - 1 AD to 200 AD)
2. FHE3238 - SHERD (Bronze Age - 2400 BC to 801 BC)
3. FHE3239 - SHERD (Iron Age - 800 BC to 42 AD)

Associated events

1. EHE1974 - Excavations at Credenhill Hillfort, 2007-2009 (Ref: SMR Event: 49271)
2. EHE1975 - Evaulation, Credenhill Hillfort, July 2008 (Ref: SMR Event: 49272)
3. EHE27 - (Ref: SMR Event: 906)
4. EHE1218 - (Ref: SMR Event: 7332)
5. EHE2129 - Field Survey, Credenhill Camp, 2003

Protected status

1. Scheduled Monument 61: Credenhill camp

Associated Historic Landscape Character Records

1. HHE262 - Woodland – Woodland

National Filling Factory (Rotherwas Royal Ordnance Factory), Rotherwas

SMR Number: 22555

Grid Reference: SO 530 385

Parish: LOWER BULLINGHAM, HEREFORDSHIRE

Established during WWI and operational from 1916. Used for filling a variety of munitions with explosives. All the components were produced elsewhere. It was also used for filling H.S. (Mustard Gas) shells towards the end of the war. The only one of 25 factories retained by HMG. In the late 1930s it was used for filling sea mines for use in WW2. (1) Subject of M Phil dissertation. (2) Rotherwas Shell Filling Factory was constructed by the Ministry of Munitions in early 1916 on the site of Rotherwas Mansion, which had been demolished to make way for the new factory complex. Shell filling began on 11 November 1916 and employees, which numbered up to nearly 6000 at the peak in 1918, were brought from all over the UK, including Ireland. Special trains were run from Barrs Court Station in Hereford out to the factory station, bringing employees on free tickets, who came in from their billets around Hereford, Leominster, Ross and elsewhere. The average output of shells was 70,000 per week during World War I, with both Lyddite and Amatol explosives being used in their production. The factory complex was used again in World War II

as the Royal Ordnance Factory Rotherwas, when both shells and bombs were manufactured. A major accident occurred on 30 May 1944 when a 2000 pound bomb exploded and set off a chain reaction. The particular filling house was destroyed and a number of other buildings damaged. Where this occurred can be deduced from the large-scale plan held in Hereford Record Office under Ref. B3 86/13 [copy attached to form in HER file]. The centre of the explosion appears to have been in the south section of the complex, just to the east of the centre. This area was cleared first for redevelopment in the 1970s when Herefordshire County Council purchased a large part of the complex for use as an industrial estate. The plans indicate that the original ordnance factory complex was well spread to limit the possibility of chain reaction explosions, with a large number of the buildings served directly by railway sidings and surrounded by earth blast walls. The site was well chosen to take advantage of the railway system to move raw materials in and finished shells and bombs out, as well as transporting employees to and from the factory. Although much of the site has been redeveloped in the last 20 or 30 years, a number of WWI buildings remain and have been refurbished. A large number of Romney huts erected in the north-east section of the site during WWII also survive and have been restored as industrial starter units for the estate. All of the railway sidings appear to have been dismantled but it is still possible to deduce where these ran through some of the surviving buildings. The buildings along the south side of the site retain their earth walls for blast protection. A WWII guardhouse and associated small pillbox still exist near the east end of the site and adjoining, on the north side, the B4399 road through the site. The pillbox has been recorded separately (HER 25193). A second, all-concrete, Type 24 pillbox is to be found to the west of the factory in Lower Bullingham and was almost certainly located there to defend against attack from that direction. This is also recorded separately (HER). (3) Lubienski-Bodenham family sold the Rotherwas Estate in 1912, parts of which were bought by Herefordshire Council. The site was acquired by the Ministry of Munitions on 15 June 1916 with the aim of building a factory cheaply in the shortest time possible. It was built to a standard set of designs. The WWI site consisted of 27 miles standard gauge railway, 3 miles road, 9 miles of guard fence, 10 miles of footpaths and sentry paths, 370 buildings varying in floor area. It covered about 100 ha. The site was a Filling

Factory, inserting explosive into shell and fitting detonators. The first Lyddite shell was filled on Nov 11 1916. Employed mainly women, many of whom came from outside Herefordshire. Several thousand were employed. BETWEEN WARS Rotherwas was retained on a care and maintenance basis. From 1926 onwards it resumed filling gas shells, but was staffed now by about 400 men. 2ND WORLD WAR Broadly covered the same amount of land but the buildings were refurbished and modernised during the run up to the war. Staffed largely by women, several thousand were employed. On 27 July 1942 a German bomber dropped 2 x 250kg bombs, killing about 22 people. On 30 May 1944 a 2000 lb bomb in a filling shed overheated and set off a chain reaction in the middle of the south section. No-one killed but much damage incurred. By the end of WWII 44 Royal Ordnance Factories were in operation in the country. POST WAR From 1945 the Council lobbied for businesses to locate at Rotherwas. In 1950s the site was developed with factories, the most consistently used area being the central section. The ROF closed in 1967. A major portion of the depot (93 ha) was sold in 1975 to Herefordshire Council. (4) (2) During 1st World War a rail-connected outpost of the Royal Ordnance Factory of Rotherwas was established at Credenhill (HSMR 30856). (5) Three major bombing incidents occurred in the factory. On Sept 12 1941 a milling machine overheated, explosions followed and three people were killed. On June 27 1942 a German bomber dropped two 250kg bombs on the factory, the first killed 19 people the second several people sleeping in the Police Superintendent's house. On May 30 1944 a fire started in south section shed where 2000 pound bombs were made. An explosion was inevitable. Several people stayed on risking their lives to damp the fire while others escaped to safety. Huge explosions occurred but though people were injured no-one was killed. (6) The following information is added to correct inconsistencies and errors supplied by above mentioned sources. The site covered 507 acres (205ha). It is not certain how many men were working there in the inter-war years, however, in WWI just under 6,000 women were employed and in WWII a maximum of 8,000 women. During the May 1944 explosion, two people were killed. Following medals were awarded for bravery and presented at Buckingham Palace: 5 George Medals, 1 OBE, 1 MBE, 9 BEMs, and 34 other commendations. (7) Luftewaffe reconnaissance aerial photo shows site in 1940. (8) Full history of site

with pictures, social, political and economic history. (9) Watching brief during topsoil stripping for the Chapel Road waste site in 2002 revealed traces of a ballast base for a railway or road, running across the site. Thin layer of industrial debris lay across much of site. There was an area of hard standing over S and SW areas of site. Trench excavation revealed three pits with clinker and ash deposits, poss mortar floor surface, ditch containing industrial debris, and remains of a cobbled surface. The track base, pits and building remains date to the site's use as a munitions factory during WWI and WWII. Mortar floor and cobbled surface probably belong to an earlier house. (10) A survey was carried out of one of the TNT magazines and a pillbox, both of which were to be demolished in advance of construction of the Rotherwas Access Road. (11) A Heritage Lottery project (Herefordshire Lore) produced a social history book detailing recordings from around 30 former workers at the munitions factory. (12) A photographic survey of 4 of the 5 remaining south magazines was carried out in 2008 in advance of their demolition. (13) Heritage Management Strategy (14)

Monument Type(s)

1. MUNITIONS FACTORY (World War I to World War II - 1916 AD to 1945 AD)
2. PICRIC ACID WORKS (World War I to World War II - 1916 AD to 1945 AD)
3. PILLBOX (World War I to World War II - 1916 AD to 1945 AD)

Associated Files

Sources and Further Reading

1. <1>SHE131 - Bibliographic reference: Cocroft, W D. 1995. Letter to Simon Woodiwiss, HWCC Archaeology Section, 26 June 1995. Royal Commission on Historical Monuments, England.

2. <2>SHE13741 - Bibliographic reference: Edmonds, J. 1998. The Rotherwas Industrial Estate. Unpublished M Phil dissertation.

3. <3>SHE18912 - Document: Wilks, M. 1998. Defence of Britain Project record form and report: Rotherwas Shell Filling Factory.

4. <4>SHE15216 - Unpublished Report: Rowley-Williams, L. 04/2000. Rotherwas Royal Ordnance Factory Management Study, Vol I and II.. Gifford. 2664. Rep No. 2664.

5. <5>SHE14276 - Bibliographic reference: Smith, W H. 1998. Herefordshire Railways. Book published by Sutton Publishing Ltd.

6. <6>SHE14714 - Bibliographic reference: Blackwell, Bobbie. 05/2002. The Hidden History. Rotherwas in World War II. South Wye News.

7. <7>SHE14562 - Verbal communication: Edmonds, John. 2001. personal observation. personal observation.

8. <8>SHE15973 - Aerial Photograph: Anon. 01/12/1940. Luftwaffe aerial photograph. copy given to SMR.

9. <9>SHE16132 - Bibliographic reference: Edmonds, John. 2004. The History of Rotherwas Munitions Factory, Hereford. book, Logaston Press.

10. <10>SHE15492 - Unpublished Report: Rouse, D. 2002. Chapel Road Waste Site, Rotherwas, Hereford. A report on an Archaeological watching brief.. Archaeological Investigations Ltd. 537.

11. <11>SHE18541 - Unpublished Report: Sworn, Simon, Jackson, Robin and Woodiwiss, Simon. 2011. Rotherwas Access Road, Herefordshire: Archaeological Assessment and Updated Project Design. Worcestershire Archaeological Service.

12. <12>SHE18718 - Bibliographic reference: Bill Laws (Ed.). 2003. In The Munitions: Women At War in Herefordfordshire. Logaston.

13. <13>SHE18396 - Unpublished Report: Mayes, S R. 2009. Rotherwas Futures, Hereford, Herefordshire. Archaeological photographic building survey. Archaeological Investigations Ltd. 820.

14. <14>SHE18786 - Unpublished Report: Bapty, Ian. 2012. A Heritage Management Strategy for the Rotherwas Enterprise Zone (Draft). Herefordshire Archaeology.

Associated events

1. EHE31093 - (Ref: SMR Event: 31093)
2. EHE32002 - (Ref: SMR Event: 32002)
3. EHE44153 - Rotherwas Access Road Mitigation: Building Survey, 2006-2007 (Ref: SMR Event: 44153)

4. EHE51963 - Photographic Building Survey, Munitions Bunkers, Rotherwas Futures Site, Rotherwas Industrial Estate, 2008 (Ref: SMR Event: 51963)

5. EHE1897 - Evaluation and Watching Brief, Rotherwas Futures Connect 2 Flood Alleviation Scheme, 2011-2012

Protected status

1. Listed Building (II) 508418: THE PICRIC ACID EXPENSE STORE TO THE WEST OF THE NORTHERN MAGAZINE SECTION, ROTHERWAS INDUSTRIAL PARK

Associated Historic Landscape Character Records

1. HHE766 - Urbanisation - Urbanisation 1

Cropmark Complex (Enclosures), West of Glebe Close, Credenhill Village

SMR Number: 10165

Grid Reference: SO 44352 43329

Parish: CREDENHILL, HEREFORDSHIRE

Large sub-rectangular enclosure, visible as slight cropmark. (1) One of a number here and in field to SE (SMR 1732) . (2) Series of enclosures visible on APS. One large square enclosure surrounded by three more rectilinear enclosures to the west, south and east. (3) SO 445 431 Possible building foundations NE of Magnis (4) SO 4437 4334 Rectangular enclosures with internal structures (5) 'Building foundations' at 445 431 are modern (6) Several adjacent square enclosures, running on a north-south axis, visible on APs. Building foundations previously mentioned are probably not associated with these enclosures. (7) (8) All mapped from AP sources (1) (2) (3) and Google Earth. The area of the Roman Playing Field contains some features which are visible on CUCAP photo K17 Al 172. This photo lies at the edge of a run so the actual extent of these features to the north is not known. They are similar in appearance to the features recorded at Magnis Roman town to the south and may be the site of further buried foundations associated with this former settlement. (9)

Monument Type(s)

1. SQUARE ENCLOSURE (Unknown date)
2. RECTILINEAR ENCLOSURE (Unknown date)

Associated Files

Sources and Further Reading

1. <1>SHE2067 - Aerial Photograph: 07/1949. EO35. Cambridge University Aerial Photograph.
2. <2>SHE10519 - Aerial Photograph: Musson, C R. 07/1990. 90-MB-0928. Clwyd and Powys Archaeology Trust.
3. <3>SHE18476 - Aerial Photograph: Pickering, J. 1991. 405. Oblique. Colour.
4. <4>SHE6223 - Aerial Photograph: Baker, W A B. 06/1957. Bham EM46, p338.

5. <5>SHE12573 - Aerial Photograph: St Joseph, J K. EO 035-6. Cambridge University Aerial Photograph.

6. <6>SHE10190 - Bibliographic reference: MHB. 1969. SO44SW8. Ordnance Survey.

7. <7>SHE18477 - Aerial Photograph: Musson, C R. 1990. 90-C-246. Oblique. Colour.

8. <8>SHE18478 - Aerial Photograph: Musson, C R. 1990. 90-C-247. Oblique. Colour.

Appendix 2: Site Location

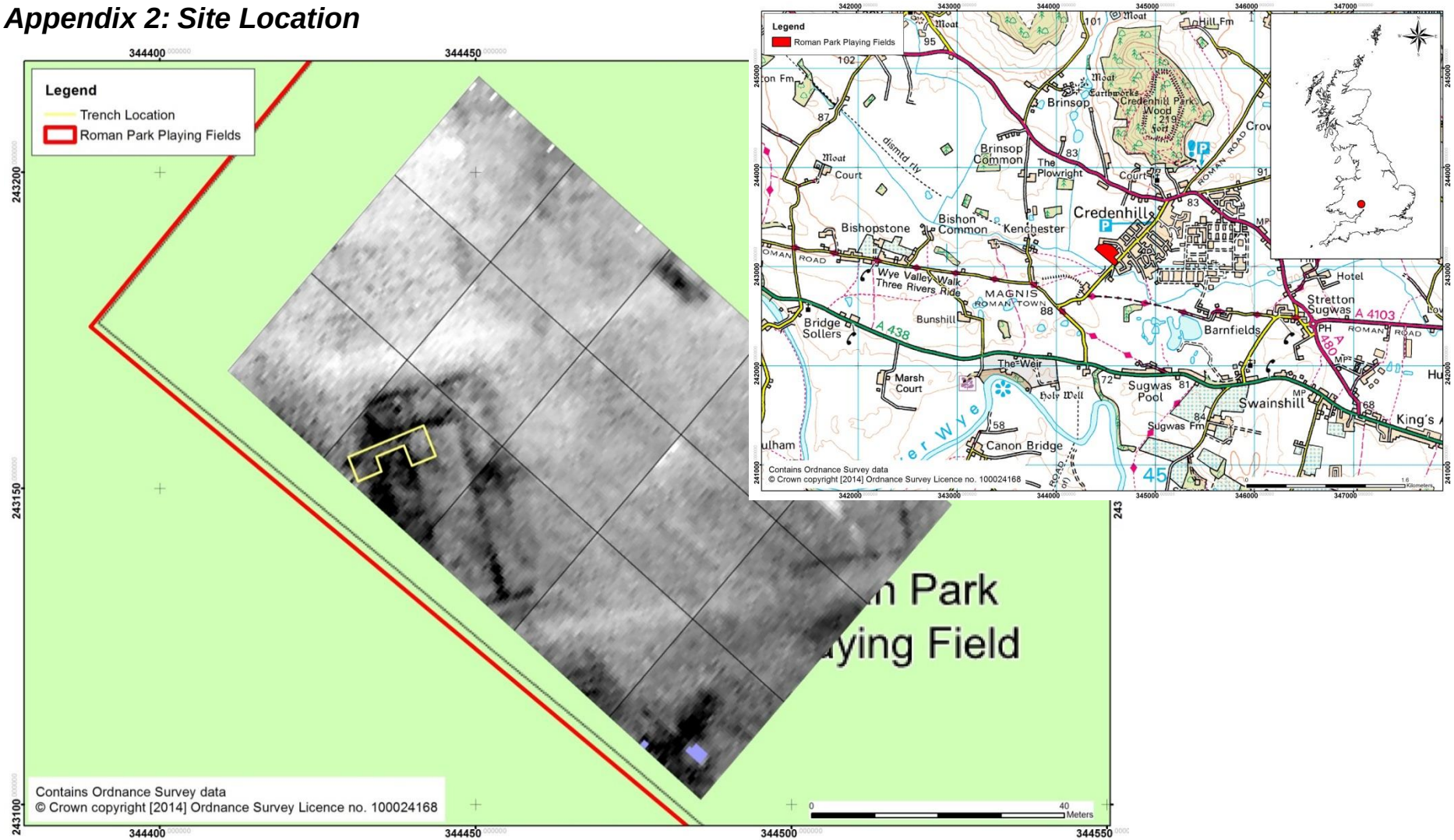


Figure: Site and Trench location within the Roman Park Playing Fields, Credenhill.

Appendix 3: Geophysical Results

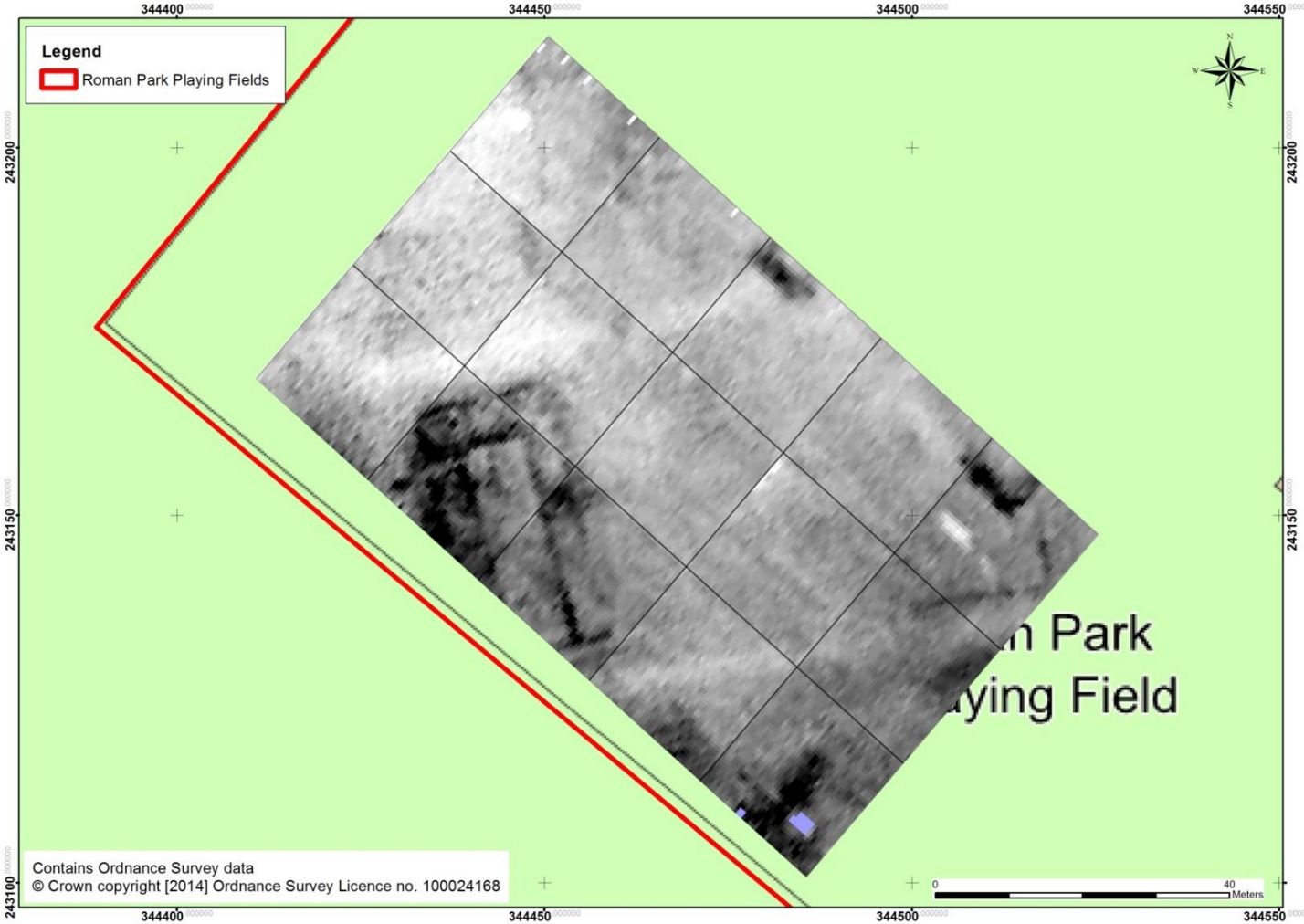


Figure 5: Location of the geophysical block squares and results within the Roman Park Playing Fields.

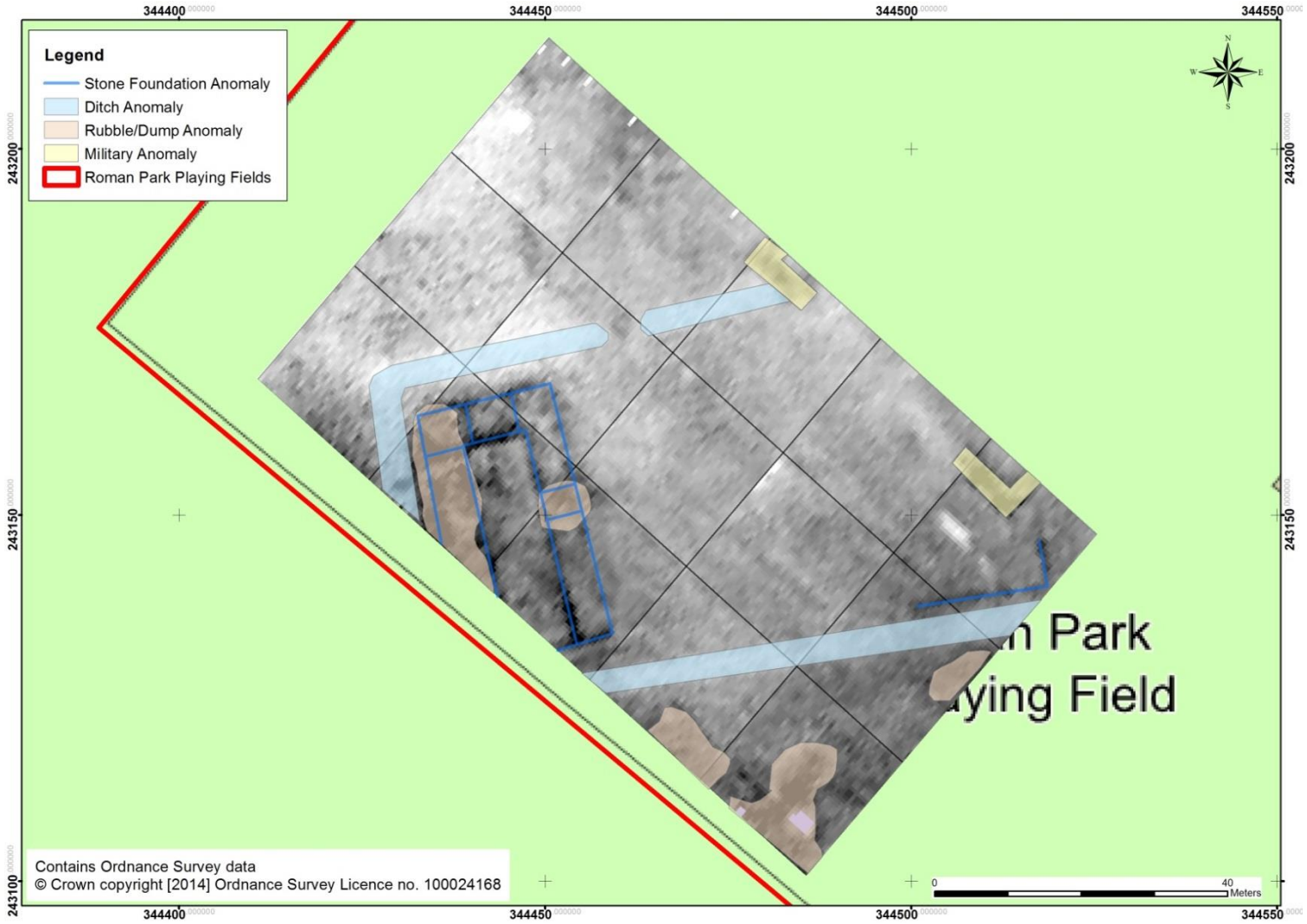


Figure 5: Annotated resistivity results indicating the site of the enclosure and structure, the focus of these investigations.

Appendix 4: R/B Ceramic Assessment
By Jane Evans BA (Hons), MA, Mifa

Worcestershire Archaeology Report 2169
Ceramic finds from Credenhill Roman families project 2014 by C Jane Evans

A range of ceramic material was received for assessment, including Roman pottery, tile and kiln debris (Table JE1). Also included was a handful of bone fragments (context 001, 3, 5g; context 005, 3, 10g; context 043, 1, 14g) and a fragment of coal (context 003, 6g). These are not included in the report below.

Feature type	Fill of	Context	Object type	Count	Weight (g)	Start date	End date (*tpq*)
Layer		001	pot	80	1296		
			pot	192	1868	3rd	early 4th
			tile	1	94		
		003	kiln debris	2	16		
			pot	249	1576	2nd?	late 3rd-early 4th
			tile	4	298		
		004	kiln debris	96	2230		
			opus signinum	10	586		
			pot	115	956	late 3rd	early 4th
			tessera	1	6		
			tile	6	318		
		007	pot	13	110	2nd	3rd?
		018	pot	17	254	late 3rd	4th
		020	pot	15	218	Roman	Roman
Ditch	29	005	kiln debris	6	116		
			pot	202	802	late 3rd	4th
			tile	18	390		
		006	pot	27	124	Roman	Roman
			tile	8	54		
		008	tile	1	120		
		009	pot	96	1082	late 2nd-mid 3rd	late 3rd-4th
			tile	4	162		
		010	bone	1	4		
			kiln debris	1	22		
			pot	229	1754	late 3rd	4th
			tile	6	162		
		034	pot	58	474	late 3rd	4th
		044	pot	1	14		
			pot	113	1156	early 3rd?	late 3rd-4th
			tile	1	58		
		050	pot	14	58	Roman	Roman
			tile	2	32		
		051	pot	1	6	late 3rd	4th
Flue	25	026	pot	1	4		
			pot	7	128	2nd?	3rd?
		041	kiln debris	4	186		
			pot	14	1334		

			pot	45	1148	2nd?	2nd
Kiln	13	011	pot	8	84	late 3rd	4th
		015	pot	2	28	2nd?	2nd
		024	pot	5	214	Roman	Roman
		030	pot	1	20		
			pot	8	490	2nd	2nd
		038	pot	71	3460	2nd?	2nd
Pit	14	017	pot	14	154	120+	2nd
		040	pot	2	98	3rd	4th
		043	pot	6	90	late 3rd	4th
			tile	1	4		
		052	pot	1	8	1st?	1st
Wall	27	031	pot	4	28	120+	3rd?
		056	pot	7	96	2nd	3rd

Table JE1: summary of ceramic finds by feature and context/layer

The Roman pottery

1618 sherds of Roman pottery were recovered, coming mainly from the various layers, the ditch and the kiln structure (Table JE2). All the pottery was scanned, spot dated, and quantified by count and weight. There was not time within the constraints of this project for more detailed analysis by fabric and form, or to record rim EVEs. The pottery spot dating is supported by the coin dates. The assemblage indicates two phases of activity; the pottery associated with the kiln dates to the 2nd century, and the pottery from other features generally has a late 3rd–4th century *tpq*, though residual material is included.

The pottery from the layers, ditch, pit and wall was more fragmentary than the assemblage from the kiln and flue, as reflected in the average sherd weights (Table JE2). Variation was also noted in the degree of abrasion; the pottery associated with the kiln was well preserved, while the pottery from other assemblages was more abraded. The fact that the pottery found in the kiln is well preserved is encouraging; it suggests that this material was dumped in the kiln fairly promptly after it went out of use, rather than having been moved around the site and redeposited later on.

Feature type	**Fill of**	**Context**	**Count**	**% Count**	**Weight(g)**	**% Weight**	**Average weight (g)**
Layers		001	272	17%	3164	17%	12
		003	249	15%	1576	8%	6
		004	115	7%	956	5%	8
		007	13	1%	110	1%	8
		018	17	1%	254	1%	15
		020	15	1%	218	1%	15
Total layers			*681*	*42%*	*6278*	*33%*	*9*

Ditch	29	005	202	12%	802	4%	4
		006	27	2%	124	1%	5
		009	96	6%	1082	6%	11
		010	229	14%	1754	9%	8
		034	58	4%	474	2%	8
		044	114	7%	1170	6%	10
		050	14	1%	58	0%	4
		051	1	0%	6	0%	6
Total ditch 29			*741*	*46%*	*5470*	*29%*	*7*
Flue	25	026	8	0%	132	1%	17
		041	59	4%	2482	13%	42
Total flue			*67*	*4%*	*2614*	*14%*	*39*
Kiln	13	011	8	0%	84	0%	11
		015	2	0%	28	0%	14
		024	5	0%	214	1%	43
		030	9	1%	510	3%	57
		038	71	4%	3460	18%	49
Total kiln			95	6%	4296	22%	45
Pit	14	017	14	1%	154	1%	11
		040	2	0%	98	1%	49
		043	6	0%	90	0%	15
		052	1	0%	8	0%	8
Total pit			*23*	*1%*	*350*	*2%*	*15*
Wall	27	031	4	0%	28	0%	7
		056	7	0%	96	1%	14
Total wall			11	1%	124	1%	11
Total pot			***1618***	***100%***	***19132***	***100%***	***12***

Table JE2: summary of the pottery by feature and context/layer

Discussion: Pottery and debris from the kiln

No pottery was found in the primary fill of the kiln (039). The fill above this (024) produced five sherds of very hard-fired pottery, likely therefore to be misfired kiln products. Two of these, probably from a jar or bowl, had distinctive and unusual burnished-scroll decoration on the exterior of the vessel. The largest assemblage came from the deposit above this (038). These vessels are likely to be kiln products; forms included jars with slightly thickened or beaded rims, and a flange-rimmed bowl. The assemblage included a number of bases, all re-tooled. While not a hard and fast rule, this degree of finishing is generally a characteristic of earlier Roman assemblages (1st to 2nd century rather than later). Of particular interest were two bases with trimmed edges, possibly intended for re-use as lids or perhaps even as kiln spacers. These had tooled grooves, indicating that the thrown vessel was taken off the wheel and worked further by the potter. Unusually, the wire marks created when the vessel was removed from the wheel were left visible in the central area of the base. It may be that faults were identified in the vessels at this stage and the final finishing was abandoned. One of the jars had a

splash of black glaze on the shoulder. This appeared to be where an accidental inclusion in the clay (perhaps lead?) had reacted in the kiln to form a glaze. The layer above this (030) produced a much smaller assemblage but provided valuable dating evidence. An over-fired and warped sherd from a jar was decorated with acute cross-hatch burnish. This would again indicate a 2nd century date, assuming that this is imitating BB1 jars. Another sherd was in a red colour-coated ware, raising the possibility that this was also being produced in the kiln. The fill above this produced only two sherds, though both were again very hard fired and likely to be associated with the kiln. One was from a bifid or 'pulley' rimmed bowl, decorated with rouletting. This form is characteristic of assemblages dating from the late 1st to early 2nd century, for example at Holt (Grimes 1930, fig 66.94) and Wroxeter (Timby *et al* 2000, fig. 4.64 B3.33; Faiers 1990, 82, no 76), continuing into the late 2nd century (Gillam 1970, fig. 23.212; Leary 2008, 153, 155). A similar form was produced at an early 2nd century kiln at Sherifoot Lane, Sutton Coldfield (Evans et al forthcoming, fig. 14.46-8), though the kiln structure there was very different to the kiln excavated here. Interestingly, the jars from the Credenhill kiln also have parallels in the Sherifoot Lane assemblage (op. cit. fig. 11.29-31).

A 2nd century date would also be consistent with the C14 dating obtained from the flue which, if the 95.4% probability is accepted, indicated a date of *c* 140 cal AD. The pottery from the flue (lower fill 041, upper fill 026) was similar to the pottery from the kiln. Fill 041 included two over-fired/mis-fired sherds from red colour-coated, flanged bowls, providing a further indication that these were produced on site. Overfired sherds were also found in a number of other contexts, presumably re-deposited.

The back fill of the kiln (038) included fragments of overfired imbrex tile. These may have been subjected to repeated use in the kiln, as kiln furniture, or could be local products. They are a similar fabric to some of the pottery, suggesting that they were produced somewhere in the vicinity, if not in this kiln.

Fragments of kiln debris were found mainly in layer 004 (96 fragments, 2230g), with small quantities scattered in layers 003, 041, and the ditch (fills 005, 010). This needs further study, but appeared to contain kiln lining and oven floor.

Discussion: the late 3rd–4th century assemblage and other non-kiln products

The other features and layers produced forms dating to the late 3rd to 4th century (Table JE2) along with residual 2nd–3rd century forms. Much of the evidence for later Roman activity came from BB1 jars with splayed rims and obtuse, cross-hatch burnish, and bowls with drop-flange rims (Gillam 1976, fig. 1.8, fig. 2.10, fig. 4.44-46, fig. 5.80), along with diagnostic Oxfordshire red colour-coated ware forms (Young 2000, fig. 60, C55 dated 240-400+). Of particular interest was a miniature BB1 jar (Gillam 1976, fig. 2.18) found in ditch 029 (rim from fill 101, base from fill 009). This is not a common type; the form and the narrow band of obtuse cross-hatch decoration both indicated a 4th century date. Some forms dated to the 3rd century, for example an Oxfordshire white ware mortarium (Young 2000, fig. 21.M18). This reflects the date of some of the coins. In general the pottery from these other features reflected general occupation debris, rather than waste from a production site. This assemblage included a few sherds of decorated samian, South Gaulish and possibly Central Gaulish, which will need further study.

The ditch and upper layers also produced fragments of building debris, including box flue tile, imbrex and a single tessera, all presumably from demolished structures nearby.

Significance and suggestions for future study

The kiln and its associated products are of enormous significance, most obviously for an understanding of patterns of supply at Kenchester, but also for pottery studies in the wider region. Nothing is known about Roman pottery production in Herefordshire. Even in Worcestershire, where a Severn Valley ware kiln has been excavated (Evans *et al* 2000), no kilns have as yet been discovered with this degree of preservation. The forms are not typical of Severn Valley ware. It is possible that the kiln and associated products reflect the movement of specialist potters into the area, perhaps in the first half of the 2nd century. A high level of skill is indicated by the degree of finishing to the bases and the likelihood that they were also producing colour-coated wares. A movement of potters at this time is consistent with the evidence from Sherifoot Lane, Sutton Coldfield, where the kiln is thought to have been used by potters moving into the area from the Verulamium region, perhaps associated with the establishment of the Mancetter-Hartshill industry. The fabrics produced need to be compared in detail with the pottery used at Kenchester (Tomber 1985) and the hillfort at Credenhill. Recent work at nearby Yazor Brook has thrown new light on chronological patterns of pottery supply to Kenchester (Laura Griffin, pers. comm.), which would inform any future study of this assemblage.

A detailed study of the kiln structure, looking for dated parallels elsewhere, would add to an understanding of this production site. The pottery also needs to be studied in detail and published. At present it is not known whether this a single kiln or one of a number in this area. Any opportunity for further excavation should investigate this question further. It would also be of great interest to have archaeomagnetic dates for the kiln, to compare with the C14 dates from the flue and perhaps thus to refine the dating of the kiln. It is likely that there are larger waster dumps somewhere in the immediate vicinity, and their excavation would provide a wider range of kiln products for study, thereby providing a better understanding of the range of vessels produced here for comparison with assemblages from consumer sites in the region.

Acknowledgements

I would like to thank Laura Griffin, for scanning the material with me and providing information on the assemblage from Yazor Brook, Kenchester, and Derek Hurst for editing this report.

References

Evans, C, J, Jones, L, and Ellis, P, 2000 *Severn Valley ware production at Newland Hopfields: excavation of a Romano-British kiln site at North End Farm, Great Malvern, Worcestershire in 1992 and 1994*. BAR British Ser 313 & Birmingham University Field Archaeol Unit Monogr Ser 2

Evans, C J, Booth, P and Hodder, M, forthcoming, A Romano-British pottery kiln at Sherifoot Lane, Sutton Coldfield, *Birmingham & Warwickshire Transactions*, 117

Gillam, J P, 1970 *Types of Roman coarse pottery vessels in northern Britain*, 3rd edn, Newcastle

Gillam, J P, 1976 Coarse fumed ware in north Britain and beyond, *Glasgow Archaeol J*, 4, 57-90

Faiers, J E, 1990 *The socio-economic aspects of the Roman pottery industry in Britain in the early second century, arising from a detailed study of a large assemblage from construction deposits found during excavation of the south-west corner of the Baths Insula at Viroconium*, unpubl Univ London MPhil thesis

Grimes, W F, 1930 *Holt, Denbighshire: The works-depôt of the Twentieth Legion at Castle Lyons*, Y Cymmrodor 41, London

Leary, R S, 2008 Pre-Roman Iron Age and Romano-British pottery, and Romano-British pottery fabrics, in A B Powell, P Booth, A P Fitzpatrick, & A D Crockett, *The archaeology of the M6 Toll 2000–2003*, Oxford Wessex Archaeol Monogr 2, Oxford, 147–68, 250–71, 465–70

Timby et al 2000, Timby J., with Anderson, A, Anderson, S, Braithwaite, G, Dannell, G, Darling, M J, Dickinson, B, Evans, [C] J, Faiers, J, Hartley, K, Simpson, G, Webster, G, and Williams, W, The Roman pottery, in P Ellis (ed), *The Roman Baths and Macellum at Wroxeter: excavations by Graham Webster 1955–85*, English Heritage Archaeol Rep 9, 193–313. London

Tomber, R S1985, Pottery, in A R Wilmot and S P Q Rahtz, An Iron Age and Roman settlement outside Kenchester (Magnis), Herefordshire. Excavations 1977-79, Transactions of the Woolhope Naturalists' Field Club, 45, 36-185, pottery p99-145, Fiche frames 1-59.

Young, C J, 2000 *The Roman pottery industry of the Oxford region*. British Archaeological Reports (British Series) 43

Appendix 5: R/B Coin Assessment
By Dr Peter Guest

ROMAN FAMILIES PROJECT (RPF14)

COIN ASSESSMENT

Fourteen coins were recovered from the 2014 Roman Families Project excavations, all of which appear to date from the Roman period (two are possibly not coins). The coins are all copper alloy issues from the mid-third to later-fourth centuries

Most of the coins are in a good condition and six could be identified to an emperor's reign or numismatic issue period. Four require some cleaning to facilitate full identification and x-radiography should also be considered prior to any further conservation work.

The table below provides summary descriptions of the RFP coins, as well as recommendations for cleaning.

Of the coins that could be dated, seven are *radiates* dating to the later third century (of which six are barbarous copies), while another two were issued during the fourth century. The latest coins in the assemblage is a single Valentinianic coin of the period 364-78.

The final report should consist of the following elements:

- a full list of coins using standard works of reference for identifications;
- comparison of the assemblage with other groups from Romano-British rural settlements in Herefordshire and neighbouring counties

It is estimated that the final coin list and report should not take more than 1 day to complete.

Peter Guest

Cardiff University

31 October 2014

RA no.	Denomination	Ruler/type	Date	clean?
T1 018	AE1	Tetrarchic follis - Genio Pop Rom?	313-18	y
T1 003a	AE3	Gloria Romanorum	364-78	x
T1 034a	Barb. Radiate	Gallienus?	260-300	y (obv)
T1 034b	Barb. Radiate	uncertain	260-300	x
T1 005	AE3	uncertain	late 3rd-4th c.	x
T1 004a	AE4	uncertain	late 3rd-4th c.	y
T1 009	Barb. Radiate	uncertain	260-300	x
T1 003b	AE3	uncertain - [poss not coin]	late 3rd-4th c.?	x
T1 010	Barb. Radiate	Tetricus II - sacrifical implements	273-300	x
T1 044	Barb. Radiate	uncertain	260-300	x
T1 004b	Barb. Radiate	Carausius - Pax	286-300	x
T1 spoil a	Radiate	Divo Claudio	270	x
T1 spoil b	AE3 frag.	uncertain	4th c.?	y
T1 spoil c	AE3	uncertain - [poss not coin]	late 3rd-4th c.?	x

Appendix 6: Archaeobotanical Assessment
By Catherine Longford BA/BSc (Hons), MSc

Roman Families Project – Archaeobotany Assessement. C. Longford

During the excavations of the Roman Playing Field site, 12 soil samples were taken for archaeobotanical analysis. These samples were taken from the exterior ditch, Pit 14, the kiln and the kiln flue. Table 1 indicates the number of samples and the total volume of soil taken from each context. In total, 57 litres of soil were collected with an average sample volume of 4.75L.

Table 1. Number of samples collected and total soil volume for each context sampled

	Number of samples	Soil volume (L)
Kiln	4	7.5
Large pit	3	16.5
Exterior ditch	3	19
Kiln flue	2	14

Soil samples were transported to the Department of Archaeology at the University of Sheffield for processing. Charred plant remains are recovered from soil samples through water separation. Soil is poured into the flotation machine where heavy particles sink to the bottom of the tank into a 2mm mesh while charred plant remains and other light components float to the surface. The light fraction is collected in fine mesh (0.3mm) as the water flows over the spout of the flotation machine. The heavy fraction is collected in the 2mm mesh and laid out to dry. The floated material from each sample was air dried, then sieved using sieves with 2mm, 1mm and 0.25mm meshes. Sample fractions greater than 1mm were examined under a dissector microscope at low power magnifications (40x magnification). The results of the archaeobotanical assessment are recorded in Table 2. Quantifications represent minimum number of individual counts except for samples RFP 3, 7 and 9 where the amount of *Triticum spelta* glume bases, *Bromus* and *Lolium* seeds have been estimated due to their high quantity.

Overall, the samples have a very similar composition. All samples are dominated by *T. spelta* (spelt wheat) glume bases, and *T. spelta* appears to have been the main crop at site. This is typical for Roman sites in Britain, spelt wheat replaced emmer wheat as the main cereal crop in the Iron Age, and this is thought to be indicative of a shift to extensive cultivation regimes (Van der Veen and O'Connor 1998). Samples have relatively few wheat grains in proportion to glume bases. The grain has been identified primarily as *T. spelta* or free threshing wheat (*T. aestivum/durum*). These wheat grains can be difficult to distinguish based on grain morphology, but both types of wheat appear to be present at the site, although *T. spelta* is more common based on chaff remains. Those grains that are clearly *T. spelta* have a higher incidence of insect damage than other grains. Only samples from the kiln or the kiln flue (contexts 38 (RFP3) and 42 (RFP8,9)) contain *T. aestivum/durum* chaff. Barley grains and rachis internodes are rare in the assemblage, only found in the pit (context 43 (RFP5,7)), the kiln (contexts 30, 38, 39 (RFP3,6,11)) and the kiln flue (context 42 (RFP9)). The barley is probably 2-row hulled barley (*Hordeum distichum*) since only hulled symmetrical grains are distinguishable

and, of the few rachis internodes present, only *H. distichum* rachis internodes have been found. Only one pulse taxa has been identified in the samples, Pea, *Pisum sativum,* and it is present in the ditch (context 44 (RFP1) and pit (contexts 43 (RFP7) and 17 (RFP11)).

The richest samples are from the kiln flue (context 42 (RFP8,9)), the lower kiln fill (context 38 (RFP3)) and the pit (context 43 (RFP5, 7)). The density of plant remains in the ditch is slight, averaging 6.5 items per litre of soil, which indicates that this section of the ditch was not regularly being used to dispose of charred plant refuse. In the kiln and flue, although germinating embryos were found both detached and still attached to *T. spelta* grains, the proportion of germinating embryos to grain ratio is not high enough to suggest the kiln was used for malting grain (Van der Veen 1989). Nor was the kiln used as a corn drier, since the amount of glume bases far out number the amount of wheat grains. It appears that cereal chaff, especially *T. spelta* glume bases, was used together with wood, as fuel for the pottery kiln. The density of charred plant remains is very high in the kiln flue (270/107 items per litre of soil) and lower kiln itself (122 items per litre of soil). There are very few straw culm nodes in the samples indicating that only the final discard from crop processing was used to fuel the kiln. The density of crop remains in the pit is quite variable (268 items per litre/ 9.2 items per litre) and this may indicate multiple deposition events.

Most of these deposits contain the final stage of *T. spelta* processing. Glume wheats, including *T. spelta*, encase their grains in glumes that do not detach from the rachis internode when the crop is threshed. Glume wheats were often stored in their spikelets to protect the grain from insects and fungal infection. To release the grain the spikelet (the grain encased in glumes) needs to be pounded. This can occur after the crop is threshed and winnowed to remove straw or after the crop is sieved to remove weed seeds. The dominant wild species in the assemblage, *Bromus* and *Lolium*, are common crop weeds that, due to their size, are often found with the final residues of crop processing when the crop is sieved to remove small weeds. The quantity of *T. spelta* glume bases, together with the weeds of final crop processing, suggests that grain was being stored in spikelets close to the site and that these remains represent the by-products of day to day processing (Van der Veen and Jones 2006) that, in the case of the kiln, were potentially collected and used as fuel.

Recommendations: Further analysis is recommended to identify and quantify wood taxa present in the wood charcoal rich samples. Eight samples have a viable number of charred wood fragments for analysis. Of these samples, three are from the external ditch, two are from the kiln flue, two are from the base of kiln and one is from the pit. The material from the kiln flue and lower kiln fill has a large number of round wood pieces which will provide evidence for wood fuel selection and possible woodland management. One piece of roundwood from the kiln flue was submitted for carbon dating and this looked to be either a piece of *Corylus* (Hazel) or *Alnus* (Alder) on initial examination.

If excavations are resumed at the Roman Playing Fields site, it is definitely recommended that soil samples continue to be taken for archaeobotanical analysis. Archaeobotanical material from the site has an excellent level of preservation and the site is very rich in plant remains. This site is very important for investigating Roman agriculture in Herefordshire. In particular, the richness of

archaeobotanical material at this site may permit detailed analyses of agricultural practices relating to crop production in terms of crop sowing times, soil quality, and intensity of production by examining the weed flora. In survey of the extent of archaeobotanical knowledge for Roman Britain, only 11 rural sites with archaeobotanical information for this region of the West Midlands/Southern Wales were identified and none of these sites were rated as having 'good' quality datasets (Van der Veen *et al*. 2007). Further analysis of material from this site will increase our understanding of agricultural practices at a rural villa/farm from the second to fourth centuries AD.

References:

Van der Veen, M. (1989) 'Charred grain assemblages from Roman-period corn driers in Britain', *Archaeological Journal*, **146,** pp. 302-319.

Van der Veen, M. and O'Connor, T. (1998) 'The Expansion of agricultural production in late Iron Age and Roman Britain', in J. Bayley (ed) *Science in Archaeology, an agenda for the future*, (London: English Heritage) pp. 127-144

Van der Veen, M. and Jones, G. (2006) 'A re-analysis of agricultural production and consumption: implications for understanding the British Iron Age', *Vegetation History and Archaeobotany* **15**, pp. 217-228.

Van der Veen, M., Livarda, A. and Hill, A. (2007) 'The archaeobotany of Roman Britain: Current state and identification of research priorities', *Britannia*, **38**, pp. 181-210

Table 2. Content of archaeobotanical samples from the Roman Families Project

Flot number	**RFP1**		**RFP2**		**RFP3**		**RFP4**		**RFP5**		**RFP6**	
Trench	1		1		1		1		1		1	
Unit number	44		34		38		50		43		39	
Volume (L)	10		4		2.5		5		1.5		2	
Comment	ditch fill of 29		fill of 29		lower kiln fill		fill		Ashy layer in pit		base of kiln	
Context	Exterior ditch		Exterior ditch		Kiln		Exterior ditch		Large pit 14		Kiln primary fill	
wood charcoal >2mm >50 pieces	y		y		y		y		n		y	
	>2mm	>1mm	>2mm	>1mm	>2mm	>1mm	>2mm	>1mm	>2mm	>1mm	>2mm	>1mm
Cereal Grain												
Triticum dicoccum/spelta									2			
Triticum spelta			2		10		2		11			
Triticum cf. *spelta*												
Triticum spelta/aestivum/durum	1						2		6		3	
Triticum aestivum/durum/compactum					10				5			
Triticum sp.	13		1		9		1		16			
Hordeum distichum					1						1	
cf. *Horduem*												
Detached germinating embryoes		2				9				2		
Cereal chaff												
Triticum spelta glume base		28		3	1	200+		25	5	170		9
Triticum cf. *dicoccum* glume base		1		1								
Triticum sp. glume base		14		3				11		117		7
Triticum hexaploid/tetraploid rachis internode						3						
Triticum/Hordeum rachis internode												
Hordeum distichum rachis internode												

Flot number	RFP1		RFP2		RFP3		RFP4		RFP5		RFP6	
Hordeum sp. rachis internode										2		
Culm node					1							
Pisum sativum	1											
Corylus shell				1								
Wild seeds												
Bromus		5		1	5	20+			2	14		3
Lolium	1	2		1	2	30+			6	2		4
Poaceae	2			1				2		39		3
Vicia/Lathyrus	1			1	1	12				2		
Rumex				1		1				3		
Polygonum avicular agg.												1
Galium sp.	1											1
Cyperaceae												1
Sambucus nigra												
Wild indet								2				
Notes	lots of wood charcoal		fish vertebrae and scales. lots of wood charcoal						matted straw		lots of wood charcoal	
Total Cereal Grain	14		3		30		5		40		4	
Total Cereal Chaff	43		7		205		36		294		16	
Total Wild seed	12		5		71		4		68		13	
charred macroremains per litre of soil floated	6.9		3.75		122.4		9		268		16.5	

Flot number	**RFP7**		**RFP8**		**RFP9**		**RFP10**		**RFP11**	**RFP12**
Trench	1		1		1		1		1	1
Unit number	43		42		42		17		30	24
Volume (L)	10		7		7		5		2	1
Comment	Mid pit 43B		42A		42B in entrance to kiln		fill		mixed fill	burnt material
Context	Large pit 14		Flue fill 25		Flue fill 25		Large pit 14		Kiln	Kiln
wood charcoal >2mm >50 pieces	y		y		y		n		n	n
	>2mm	>1mm	>2mm	>1mm	>2mm	>1mm	>2mm	>1mm	>1mm	>1mm
Cereal Grain										
Triticum dicoccum/spelta			2		3					
Triticum spelta	20		15		30		3			3
Triticum cf. *spelta*					20				3	3
Triticum spelta/aestivum/durum	18		18				1			
Triticum aestivum/durum/compactum	13		34		13		4		2	
Triticum sp.	24		28		19		5		6	
Hordeum distichum	1				1				2	
Cf. *Horduem*	3				2					
Detatched germinating embryoes		10		3	3	21	1		1	
Cereal chaff										
Triticum spelta glume base	9	200+		1032	3	500+		13	65	16
Triticum cf. *dicoccum* glume base				20						
Triticum sp. glume base	2			288				7	29	17
Triticum hexaploid/tetraploid rachis internode				12		7				

Flot number	RFP7		RFP8		RFP9		RFP10		RFP11	RFP12
Triticum/Hordeum rachis internode		2								
Hordeum distichum rachis internode		1				2				
Hordeum sp. rachis internode		2				2				
Culm node			3	4	1	1		1		
Pisum sativum	3						1			
Corylus shell	1									
Wild seeds										
Bromus	11	50+	2	52	8	50+		5	7	5
Lolium		20+	16	184		50+	4	3	14	2
Poaceae	12			148	19				1	3
Vicia/Lathyrus	1	3	1	36	4	10			3	
Rumex		5				1				
Polygonum avicular agg.						1				
Galium sp.		2								
Cyperaceae		4			1					
Sambucus nigra						2				
Wild indet						2			2	
Notes	matted straw plaster ash. 1 sheep/goat faecal pellet		Spelt grains appear to have insect damage.		lots of flat snails and small animal bones. spelt grains with insect damage				lots of flat snails	
Total Cereal Grain	79		97		88		13		13	6
Total Cereal Chaff	216		1359		516		21		94	33
Total Wild seed	108		439		148		12		27	10
charred remains per litre of soil floated	40.3		270.71		107.42		9.2		67	49

Appendix 7: Radiocarbon Assessment
By** Scottish **Universities Environmental Research Centre

Director: Professor R M Ellam

Rankine Avenue, Scottish Enterprise Technology Park, East Kilbride, Glasgow G75 0QF, Scotland, UK Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE 29 October 2014

Laboratory Code	SUERC-55840 (GU35560)
Submitter	Christopher Atkinson Herefordshire Archaeology Blueschool House Blueschool Street Hereford HR1 2ZB

Site Reference RFP14 Trench 1 **Context Reference** 42 **Sample Reference** S1

Material	Roundwood, 5 growth rings : Corylus (Hazel)
δ^{13}C relative to VPDB	-25.5 ‰
Radiocarbon Age BP	1916 ± 30

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature.

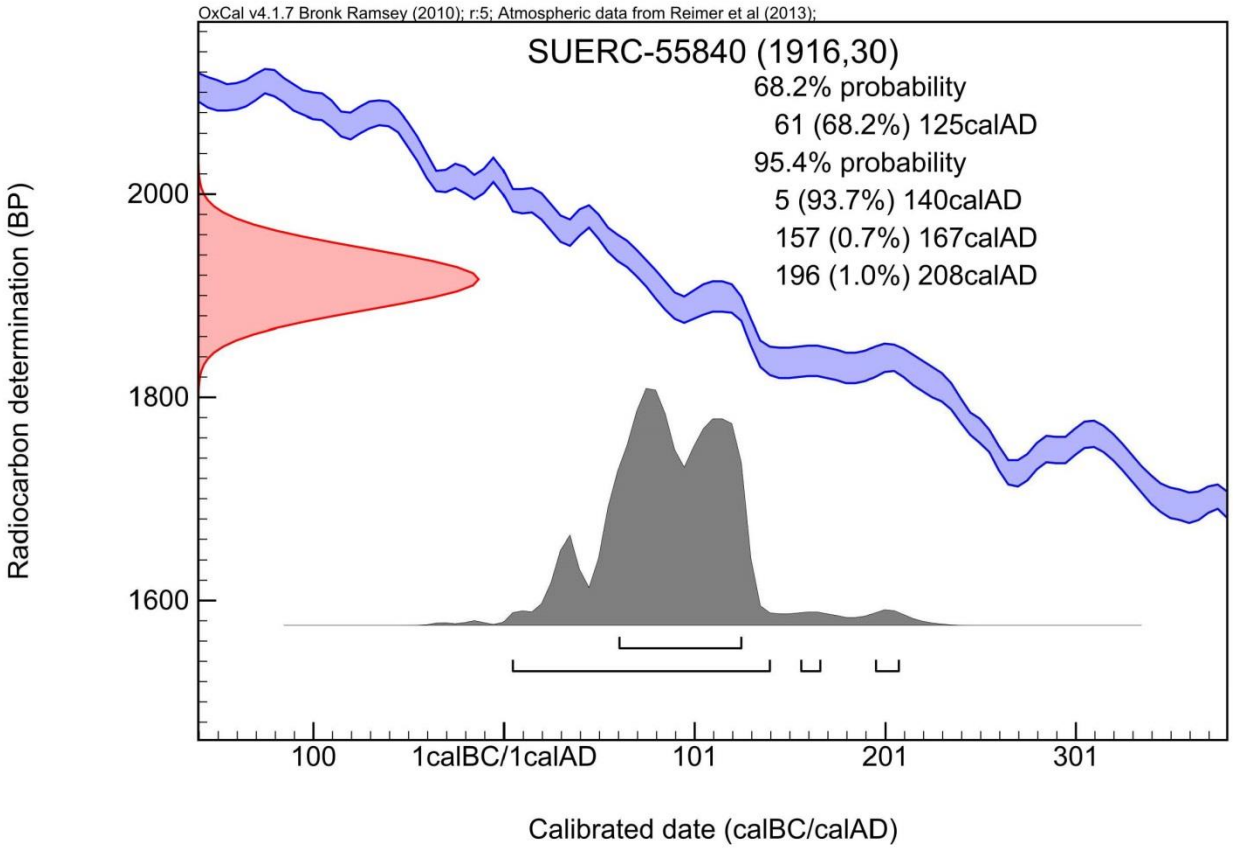
Conventional age and calibration age ranges calculated by :- N. Rutt Date :- 29/10/2014

Checked and signed off by ... Date :- 29/10/2014

University of Glasgow

THE UNIVERSITY OF EDINBURGH

Calibration Plot



Appendix 8: Trench Plans

Table 8: List of site plans

Trench Plan	Section Plan	Detail	Date
3		Trench Plan detailing Phase 1 of the excavation	18th July 2014
4		Trench Plan detailing Phase 2 of the excavation	20th July 2014
5		Trench Plan detailing Phase 3 of the excavation	25th July 2014
6		Trench Plan detailing Phase 4 of the excavation	26th July 2014
	1	Section Plan 1 through the kiln as seen from the north showing the moulded pilasters and flue/stoke hole entrance	27th July 2014
	2	Section Plan 2 through both the kiln and flue detailing the stone lined stoke hole entrance as well as the possible construction grooves within the flue tunnel	27th July 2014
	3	Section Plan 3 detailing the northwest section including the enclosure ditch	27th July 2014
	4	Section Plan 4 of northeast section detailing the pit located within the courtyard	27th July 2014

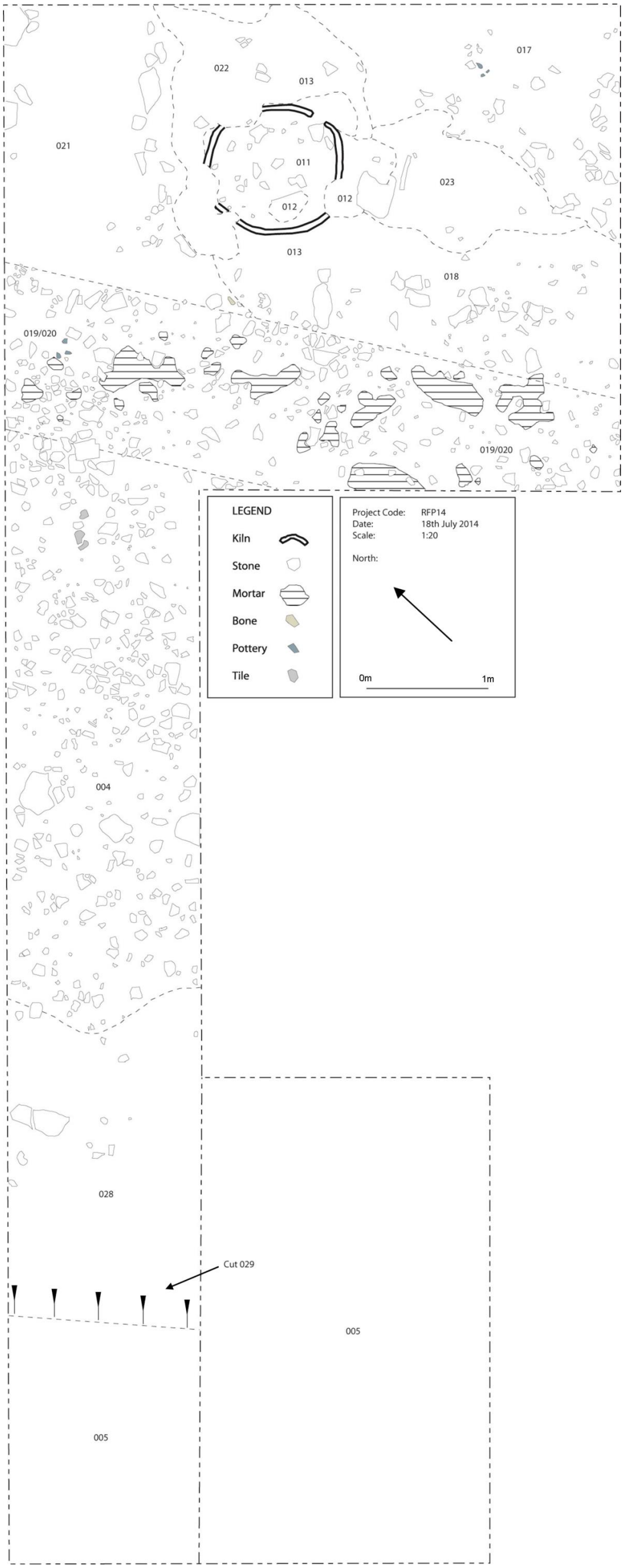


Figure 8: Trench Plan 3 depicting Phase 1 of trench excavations dated 18th July 2014. © Herefordshire Archaeology

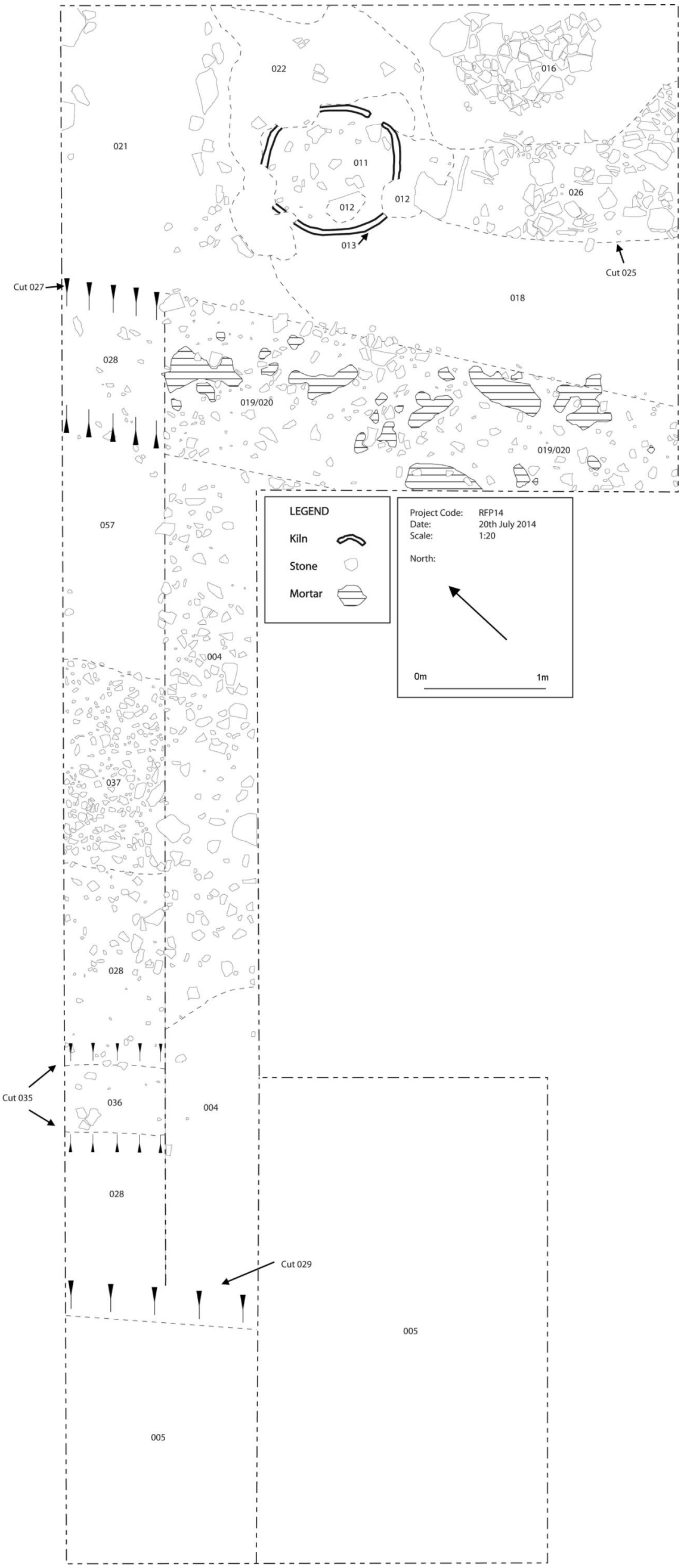


Figure 9: Trench Plan 4 depicting Phase 2 of the trench excavations dated 20th July 2014. © Herefordshire Archaeology

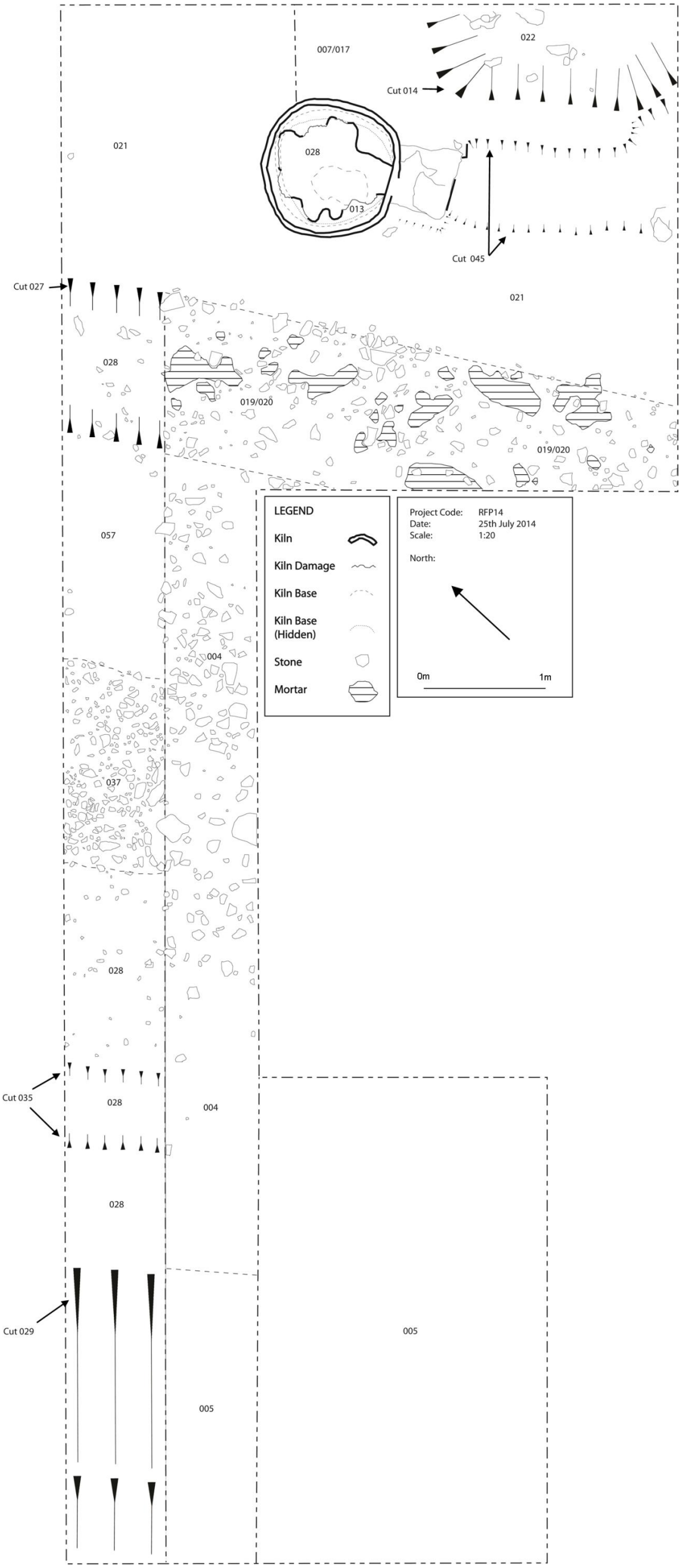


Figure 10: Trench Plan 6 depicting Phase 3 of the trench dated 25th July 2014. © Herefordshire Archaeology

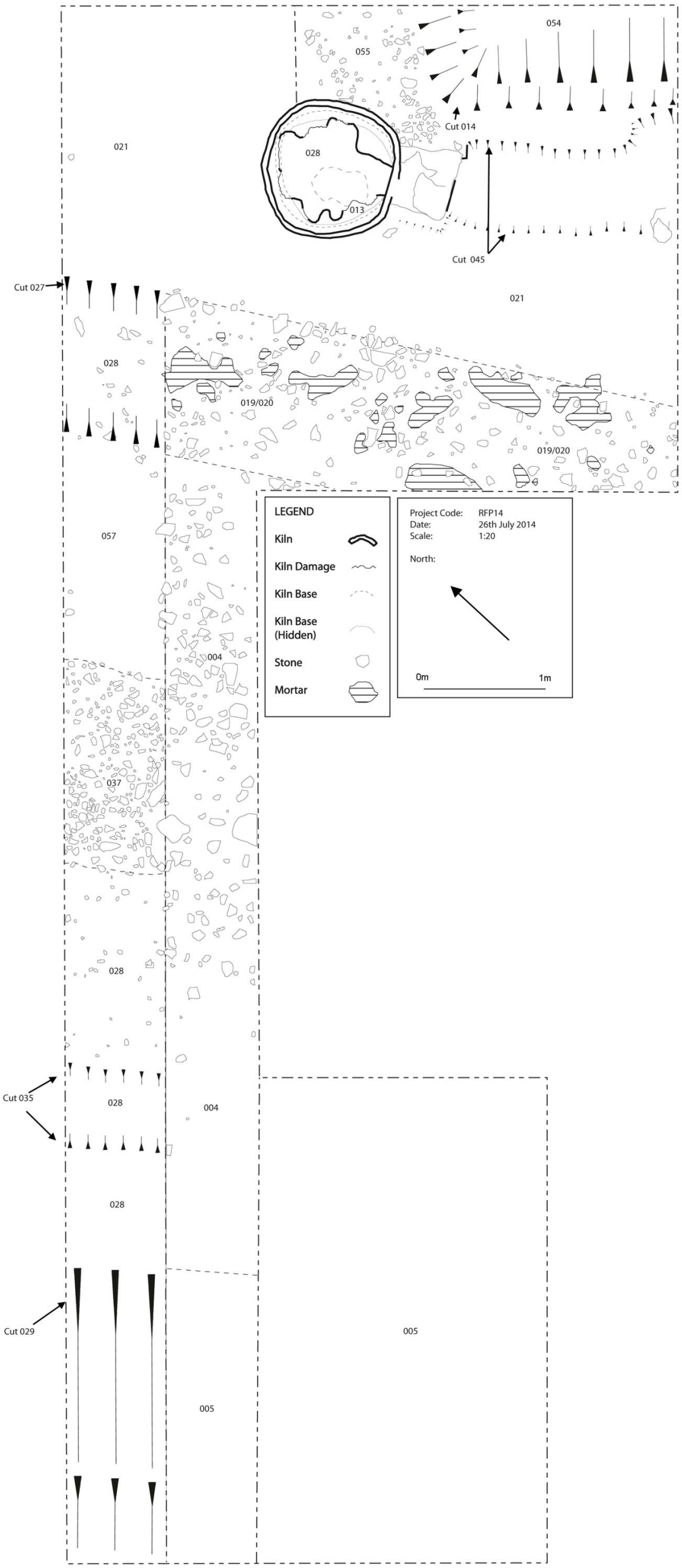


Figure 11: Trench Plan 7 depicting Phase 4 of the trench excavation dated 26th July 2014. © Herefordshire Archaeology

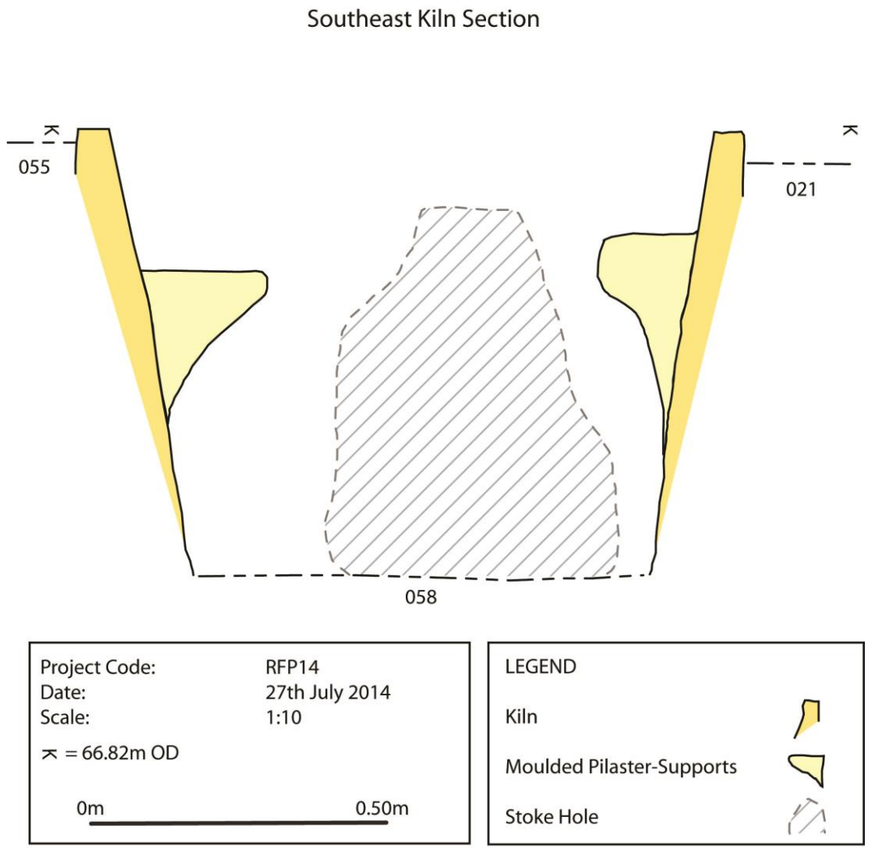
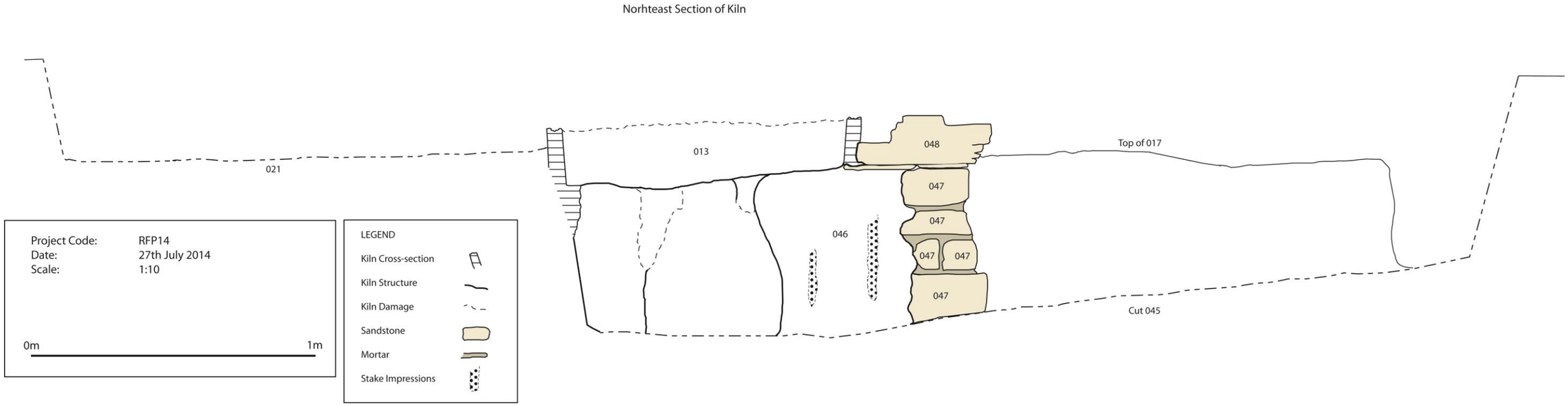


Figure 16 (left): Section Plan 1 through the kiln as seen from the north showing the moulded pilasters. The flue entrance is shown in this section to show the comparison in position and size to the rest of the structure. © Herefordshire Archaeology

Figure 17 (below): Section Plan 2 through both the kiln and flue from the west. This shows the flue and the stone lined stoke hole entrance as well as the possible construction grooves within the flue tunnel (see plate 0). © Herefordshire Archaeology



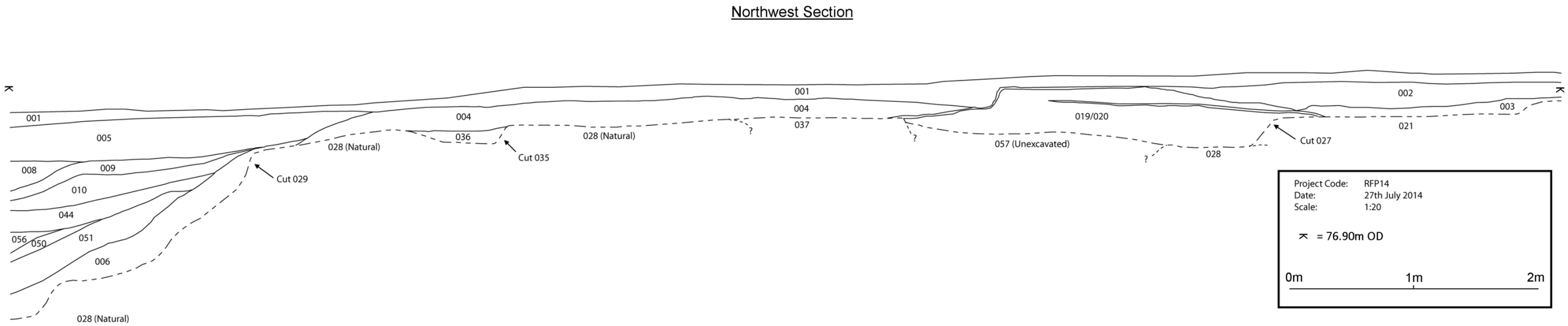


Figure 19: Section Plan 3 detailing the northwest section dated 27th July 2014. © Herefordshire Archaeology

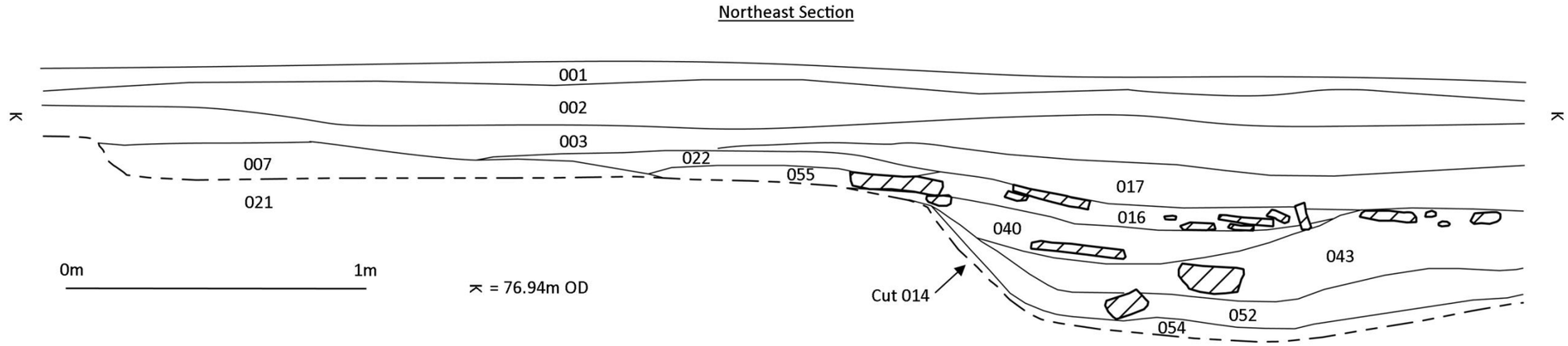


Figure 18: Section Plan 4 of northeast section dated 27th July 2014. © Herefordshire Archaeology

Appendix 9: Digital Catalogue

No.	Name	Format	Data Created or Accessed	Source	Location
1	Trench and Section Plans	tif, jpg	23/01/2015	Site survey/QGIS	Attached CDROM
2	Georeferenced Geophysical Results	tif, aux, ovr, tfw	23/01/2015	Site survey/QGIS	Attached CDROM
3	Geophysical Grid Data	dat, grs, grd	23/01/2015	Geoplot Version 3.0	Attached CDROM
4	Geophysical Composite Data	cms, cmp	23/01/2015	Geoplot Version 3.0	Attached CDROM
5	Geophysical Mesh Data	plm	23/01/2015	Geoplot Version 3.0	Attached CDROM
6	Annotation Shapefiles	shp, shx, sbx, sbn, prj, dbf	23/01/2015	QGIS	Attached CDROM