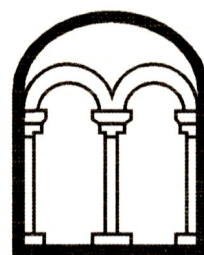


**THORN TURN EMPLOYMENT LAND
THORN ROAD
HOUGHTON REGIS
BEDFORDSHIRE**

ARCHAEOLOGICAL MITIGATION

Albion
archaeology



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ARCHAEOLOGICAL MITIGATION

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Preface

All statements and opinions in this document are offered in good faith. This document has been prepared for the titled project or named part thereof and was prepared solely for the benefit of the client. This document should not be relied upon or used for any other project without an independent check being carried out as to its suitability and the prior written authority of Albion Archaeology (a trading unit of Central Bedfordshire Council).

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The fieldwork was supervised by Benjamin Carroll with the assistance of Adam Williams, who led a team consisting of Matt Billings, Jonathan Durman, Ania Orłowska-Synus, Matteo Palombeli, Arkadiusz Pruchniak, Anna Rebisz-Niziolek, Ernie Rizzo, Krzysztof Ryniec, Irene Sala, Gareth Shane, Catie Watts and Adrian Woolmer from Albion Archaeology; and Gareth Carmichael, Sara Farey, Anna Rojek, Guilherme Sarmiento, Paige Savage and Tim Sharman from MOLA Northampton. Digital GPS surveying was undertaken by Mercedes Planas; metal-detecting was undertaken by Archie Gillespie and Mike Head. The fieldwork stage of the project was managed by Drew Shotliff, with the support of Benjamin Barker; the post-excavation stage was managed by David Ingham.

This report has been prepared by Benjamin Carroll and David Ingham, with contributions from Dana Challinor (wood charcoal), Holly Duncan (non-ceramic artefacts), John Giorgi (plant remains), Rebecca Gordon (animal bone), Natasha Powers (human bone) and Jackie Wells (ceramic artefacts). All Albion projects are under the overall management of Drew Shotliff.

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Key Terms

The following abbreviations are used throughout this report:

BAR	British Archaeological Reports
CBC	Central Bedfordshire Council
CBCA	Central Bedfordshire Council Archaeologist
EAA	East Anglian Archaeology
HER	Central Bedfordshire and Luton Historic Environment Record
WSI	Written scheme of investigation



Non-Technical Summary

Outline planning permission was granted by Central Bedfordshire Council for the creation of an employment park at Thorn Turn, Thorn Road, Houghton Regis, Bedfordshire (CB/15/04918/REG3). As the proposed development had the potential to impact on heritage assets with archaeological interest, a condition (no. 5) was attached to the planning consent, requiring the implementation of a programme of archaeological works.

The development area comprises c. 14ha of land centred on SP 999 244 at a height of c. 98m OD, overlooked by Chalk Hill to the south. The land slopes gently down from north to south towards the Ouzel Brook. The underlying geology consists of the West Melbury Marly Chalk Formation, overlain by a superficial Head deposit of alluvial clays, silts and gravels.

Archaeological evaluation of the proposed development area in 2012 identified a relatively large number of field boundaries, ranging from Roman to post-medieval in date. The lack of artefacts suggested that the land lay at some distance from any settlement focus, although Iron Age, Roman and Anglo-Saxon settlements have all been identified to the north of Thorn Road. The medieval moated site of Thorn Spring also lies a short distance north-east of the site.

Based on the results of the evaluation, an excavation area of c. 9.5ha was stripped to the top of the undisturbed geological deposits under close archaeological supervision. This area was investigated archaeologically between 24th April and 25th July 2018, with the work monitored on behalf of the local planning authority by the Central Bedfordshire Council Archaeologist.

The excavation revealed features dating from the late Bronze Age to the modern era, primarily in the form of enclosures and field systems and a small amount of settlement-related activity. A few lengths of pit alignments and a ring ditch were also identified, as well as an inhumation burial. Very few finds were recovered, suggesting that this land was primarily used in relation to the known settlements on the slightly higher ground to the north.

A summary of the work will be published in Bedfordshire Archaeology, and this report will be uploaded onto the OASIS website (ref. no.: albionar1-281601). With the landowner's permission, the archive will be deposited with The Culture Trust Luton (accession no: LUTNM 2018/16).



1 INTRODUCTION

1.1 *Project Background*

Outline planning permission was granted by Central Bedfordshire Council for the erection of up to 61,336m² of B1, B2 and/or B8 employment development floorspace with associated infrastructure and ancillary works at Thorn Turn, Thorn Road, Houghton Regis, Bedfordshire (CB/15/04918/REG3). As the proposed development had the potential to impact on heritage assets with archaeological interest, a condition (no. 5) was attached to the planning consent, requiring the implementation of a programme of archaeological works.

Archaeological evaluation of the proposed development area in 2012 identified a relatively large number of field boundaries, dating from Roman to post-medieval in date (Albion Archaeology 2012). The lack of artefacts suggested that the land lay at some distance from any settlement focus.

Based on the results of the evaluation, a Written Scheme of Investigation (WSI) was produced for the strip, map and sample investigation of the development area (Albion Archaeology 2017b). This was approved in advance by the Central Bedfordshire Council Archaeologist (CBCA) on behalf of the local planning authority, and defined the methodological approach that was used for the archaeological investigations.

1.2 *Site Location and Description*

The development area comprises *c.* 14ha of land centred on NGR SP 999 244 (Fig. 1), and is bounded to the west by the A5 and to the north by Thorn Road. The highways depot, waste park and sewage treatment works that form the remainder of the overall 'Land at Thorn Turn' development are sited immediately to the south, while former agricultural land lies to the east.

The development area lies at a height of *c.* 98m OD, overlooked by Chalk Hill to the south. The land slopes gently down from north to south towards the Ouzel Brook. The underlying geology consists of the West Melbury Marly Chalk Formation, overlain by a superficial Head deposit of alluvial clays, silts and gravels (British Geological Survey 2017).

1.3 *Archaeological and Historical Background*

The development area lies in a landscape that was densely settled in the Iron Age and the Roman period, while also containing extensive medieval landscape remains.

Some of the earliest remains identified nearby are Neolithic pits found near Sewell (HER 3110), to the south-west of the development area. Two Iron Age occupation sites have also been identified near Sewell (HER 14581; HER 15141), while surface finds to the north of there indicate the existence of Iron Age and Roman occupation (HER 16179). Watling Street itself (HER 5508) forms the western boundary of the development area.

Excavations from the early 1950s to mid-1970s on Puddlehill, the chalk ridge to the south of the development area, produced evidence for a sequence of occupation from the Neolithic to Anglo-Saxon periods (HER 687). More recent excavations on the line of the A5-M1 link road to the north of the development area revealed extensive remains dating primarily to the Iron Age (Brown 2020), but with Bronze Age field systems and



a medieval building as well. Evaluation of the former agricultural land to the east of the development area identified remains from the early Neolithic onwards, but dominated by evidence for Iron Age to Roman settlement activity.

The north-east part of the development area falls within an area identified as Thorn Green (HER 12242) — the site of a former village green that is probably associated with the medieval settlement of Thorn (HER 16088). The scheduled monument of Thorn Spring (HER 1013519), a medieval moated site, lies c. 400m farther north-east.

Excavation of the southern part of the overall ‘Land at Thorn Turn’ development revealed an early–middle Bronze Age water-pit and a late Bronze Age/early Iron Age field system (Albion Archaeology 2017a).

1.4 Project/Research Objectives

The overall objective of the archaeological investigations was to establish the date, nature and extent of surviving buried archaeological remains within the excavated areas, thereby enabling the remains to be placed within their local, regional and national context.

The programme of archaeological investigation was conducted within the general research parameters and objectives defined by *Research and Archaeology Revisited: a revised framework for the East of England* (Medlycott 2011).

1.5 Project Archive

On publication of the final report, the project archive (subject to the landowner’s permission) will be deposited with The Culture Trust Luton (accession no: LUTNM 2018/16). Details of the project and its findings will be submitted to the OASIS database (reference no.: albionar1-281601) in accordance with the guidelines issued by Historic England and the Archaeology Data Service.



2 CONTEXTUAL RESULTS

The results of the excavations are presented below. Section 2 presents the contextual evidence, while information on the artefacts and ecofacts that were recovered can be found in Section 3. For ease of reference, the features recorded on site have been combined into Groups (indicated by a 'G' prefix); the Groups were then assigned to chronological Periods, except for two which remain undated.

Period	Group	Description	No. contexts
1: early prehistoric	1	Palaeochannel and alluvial silts	5
	3	Tree-throw	2
	4	Pit	10
2: late Bronze Age	5	Pit alignment	111
	6	Pit alignment	25
	7	Ring ditch	45
	8	Pit alignment	66
	9	Two ditches	15
3: early–middle Iron Age	10	Roundhouse gully and associated pits/postholes	29
	11	Roundhouse gully	13
	12	Spread of fifteen pits	36
	13	Spread of fifteen pits	39
	14	Six dispersed pits	12
	15	Two pits	5
	16	Three pits and three postholes	16
	17	Nine dispersed pits	20
	18	Spread of fourteen pits and postholes	40
	19	Three dispersed pits	8
	20	Pit	3
	21	Twelve dispersed pits	30
	22	Five dispersed pits	12
	23	Pit	2
	24	Two pits	4
	25	Posthole	2
	26	Pit	4
	27	Ditch and recut	20
	28	Ditch and recut	24
	29	Gully	8
	30	Gully	5
	31	Enclosure ditch	10
	32	Enclosure ditch	23
	33	Enclosure ditch	12
	34	Enclosure ditch	22
	35	Enclosure ditch	21
	36	Enclosure ditch	29
	38	Enclosure ditch	3
	39	Enclosure ditch	56
	40	Pit	3
	41	Pit	4
	42	Enclosure ditch	17
	43	Ditch	2
44	Enclosure ditch	43	
45	Ditch	5	
46	Ditch	20	
47	Ditch	8	
48	Ditch	2	
49	Ditch	5	
50	Ditch	5	
51	Ditch	5	
52	Ditch	5	
53	Three dispersed pits and posthole	8	



Period	Group	Description	No. contexts
	54	Line of three pits	6
	55	Sixteen dispersed pits and six postholes	45
	56	Animal burial	3
	57	Three dispersed pits and three postholes	12
	58	Eight dispersed pits	16
	59	Crouched inhumation burial	3
	60	Posthole	2
	61	Gully	2
	62	Spread of four pits and two postholes	13
	63	Two postholes	4
	64	Pit	2
	65	Roundhouse gully and associated pit	14
	66	Gully	5
	67	Enclosure ditch	2
	69	Enclosure ditch	15
	70	Pit	2
	71	Enclosure ditch	11
	72	Ditch	6
	73	Ditch	16
	74	Ditch	2
	78	Enclosure ditch	38
	79	Enclosure ditch	26
	83	Enclosure ditch	33
	84	Ditch	2
	85	Enclosure ditch	7
	86	Enclosure ditch	5
	87	Ditches	39
	88	Ditch	2
	89	Ditch	5
4: late Iron Age–early Roman	90	Ditch	69
	92	Ditch	13
	93	Ditch	3
	94	Ditch	57
	95	Ditch	5
	96	Ditch	6
	97	Ditch	5
	98	Ditch	10
	99	Field ditch	38
	100	Field ditch	13
	101	Field ditch	16
	102	Field ditch	13
	103	Field ditch	30
	105	Field ditch	30
	106	Ditch	6
	107	Pit	2
	108	Enclosure ditch	16
	109	Enclosure ditch	8
	110	Pit	3
	111	Ditch	8
	112	Ditch	2
	113	Ditch	16
	114	Pit	3
	115	Pit	2
	116	Ditch	9
	117	Field ditch	22
	118	Pit	2
	119	Field ditch	16
	120	Field ditch	28
	121	Ditch	6
	122	Pit	2



Period	Group	Description	No. contexts
	124	Field ditch	10
	125	Ditch	5
	126	Field ditch	24
	176	Ditch	25
	178	Ditch	9
5: medieval	127	Ditch	5
	128	Ditch	7
	129	Ditch	11
	130	Ditch	15
	131	Field ditch	12
	132	Ditch	9
	133	Field ditch	26
	134	Field ditch	2
	135	Four pits in a line	11
	136	Ditch	17
	137	Two gullies	8
	138	Alignment of pits and postholes: Fence-line B	25
	139	Four-post structure and associated posthole	11
	140	Six-post structure	12
	141	Two pits	10
	142	Twelve postholes in a line	24
	143	Posthole structure	34
	144	Gully	2
	145	Posthole structure	34
	146	Cluster of four postholes	8
	147	Cluster of thirteen pits near Structure A	38
	148	Six-post structure	12
	149	Pit	11
	150	Beam slots forming Structure A	123
	151	Postholes forming Structure A	50
	152	Two pits	13
	153	Pit	3
	154	Gully associated with Structure A	12
	155	Cluster of postholes associated with Structure A	51
	179	Cluster of two postholes and a pit	7
6: post-medieval	156	Four pits	11
	157	Ditch	5
	158	Ditch	18
	159	Ditch	23
	160	Ditch	3
	161	Gully	1
	162	Two postholes	4
	163	Animal burial	3
	164	Pit	2
	165	Ditch	27
	166	Ditch	10
	167	Ditch	1
	168	Ditch	1
	169	Ditch	27
	170	Ditch	2
	171	Three pits in a line	8
	172	Subsoil	4
7: modern	173	Topsoil	1
	174	Pit	2
8: undated	2	Geology	1
	175	Sixteen tree-throws	37
Total			2,583

Table 1: Summary of phasing



The assignment of features to discrete chronological periods was tentative in many cases, as very few datable artefacts were recovered. This is particularly true of the field systems assigned to Periods 3–5: although stratigraphic dating provides some measure of relative chronology for them, their assignment to dates between the early Iron Age and the Middle Ages often relies on little more than a handful of potsherds.

The text which follows is structured by Period and discussed by the main elements of activity, with reference to Groups as required. For ease of discussion, the development area was split into two areas: ‘A’ to the west and ‘B’ to the east. The site location is shown on Figure 1, a phased plan of all the excavated features can be found on Figure 2, and more detailed plans plus selected section drawings are on Figures 3–8. Selected photographs are on Figure 9.

Most of the deposits on site comprised relatively homogeneous, mid/dark brown-grey clayey silt, with minor variations. Individual deposits are only described below where they differed significantly from this.

2.1 Early Prehistoric (Period 1): Figure 3

Palaeochannel and associated alluvial deposit G1, tree-throw G3 and a large oval pit G4 were assigned to Period 1, which is broadly dated to the late Mesolithic/early Neolithic. Evidence for dating comprises a leaf-shaped flint arrowhead (RA37), a piece of worked flint, and tentative stratigraphic relationships with the Period 2 features.

2.1.1 Palaeochannel and alluvium (G1)

A marked increase in the depth of overburden was observed primarily along the south edge of Area B, caused by a deposit of alluvium overlying a large palaeochannel — presumably an early course of the present Ouzel Brook. The combined depth of overburden increased to *c.* 1.5m in what is likely to have been the centre of the channel.

The palaeochannel measured *c.* 30m wide at its maximum, with the alluvium covering roughly twice that distance. The palaeochannel had gently sloping sides, becoming narrower to the south-west. Whereas deposits within the palaeochannel were uniformly dark and humic, containing twigs and other organic matter, the yellowish brown alluvial silts varied in darkness, suggesting that they accumulated over a prolonged period of time. No direct dating evidence exists for the channel, but Period 2 pit alignment G8 was dug into the alluvium that overlay the channel.

2.1.2 Tree-throw (G3)

Tree-throw hole G3 was one of many such features found across the site. Most are undated, but this feature yielded dating evidence in the form of a piece of worked flint.

2.1.3 Large oval pit (G4)

Pit G4 measured 3m by 2.3m in surface area and was 1.67m deep. Its stratigraphic relationship with Period 3 ditch G77 was ambiguous, but the recovery of a leaf-shaped flint arrowhead (RA37) from the pit suggests that it was the earlier feature.

2.2 Late Bronze Age (Period 2): Figure 3

Pit alignments G5, G6 and G8, ring ditch G7 and ditches G9 were assigned to Period 2, which is loosely dated to the latter half of the Bronze Age. Evidence for dating is essentially restricted to nineteen sherds (59g) of late Bronze Age/early Iron Age pottery and tentative stratigraphic relationships with the Period 3 features.



2.2.1 Pit alignments (G5, G6 and G8)

Three pit alignments were identified: G5–G6 in Area A, and G8 in Area B. The dating evidence for all three is tenuous: the only datable artefact recovered from them was a single sherd of late Bronze Age pottery, and the only significant stratigraphic relationship was with Period 3 roundhouse gully G11, which is itself dated only tentatively to the early–middle Iron Age.

The seventeen pits in G8 were spaced at fairly regular intervals, with a gap of *c.* 0.9m between them (Fig. 9: Photograph 2). They were mostly sub-circular in plan, measuring *c.* 1.1m in diameter and *c.* 0.4–0.6m deep (*cf.* Fig. 3: d). Those in G6 and particularly G5 were less regular in size, shape and distribution, however: some pits were spaced more than 3m apart, whereas others were separated by as little as 0.6m. This could perhaps be explained in some cases by a subsequent episode of pit-digging: the presence of intercutting pits demonstrates that not all were contemporaneous, and some of the more closely spaced pits may represent the insertion of a new pit into what had previously been a wide gap. The pits in G5 and G6 ranged from circular to sub-rectangular in plan, with the smallest measuring just 0.7m in diameter and the largest (the southernmost pit in G6, only partially revealed within the excavated area) measuring 2.9m by >1.5m. They were generally a little shallower than those in G8, with none deeper than 0.5m (*cf.* Fig. 3: a and b). Based on a single sherd of pottery recovered from the pits and their stratigraphic relationships, a late Bronze Age date is likely.

G5 (Fig. 9: Photograph 1) comprised thirty-five pits, with ten in G6. There was a gap of 48m between the two pit alignments; it is unclear whether they represent two parts of a single pit alignment, separated perhaps by a natural feature such as a copse, or two separate monuments. No sign of G6 was identified in the previous excavations to the south (Albion Archaeology 2017a); like pit alignment G8, it may therefore have stopped at the edge of palaeochannel G1. In contrast, G5 continued beyond the excavated area to the north, where it was revealed during excavations by MOLA at Site M of the A5-M1 Link (Brown 2020, 33–6).

2.2.2 Ring ditch (G7)

Annular monument G7 comprised a *c.* 1m-wide and *c.* 0.5m-deep ditch (Fig. 3: c), which enclosed an area measuring *c.* 4m in diameter (Fig. 9: Photograph 3). No internal features were identified and no burials were found in association with the monument. Evidence for its date comprises eighteen sherds (49g) of highly abraded late Bronze Age pottery.

2.2.3 Ditches (G9)

Two shallow ditches G9 were *c.* 0.8m wide. Their spatial relationship suggests that they were contemporaneous, perhaps forming a trackway. No artefacts were recovered from them, and they are assigned to this period due solely to their stratigraphic relationships with later features.

2.3 Early–Middle Iron Age (Period 3): Figures 4–5

The earliest firm evidence for settlement dates to the early–middle Iron Age, located across the whole site. It comprises three roundhouses G10, G11 and G65, burial G59, enclosures A–G, a possible trackway, and large open field systems with scatters of pits. Despite the extensive nature of the remains, only 142 sherds (924g) of pottery and 1.9kg of animal bone were recovered from the features assigned to Period 3.



2.3.1 Burials (G56 and G59)

Animal burial G56 contained 131 fragments of animal bone within a small pit (see Section 7.5). It was tentatively placed in this period due to its spatial relationships with other features assigned to Period 3. Inhumation burial G59 is described in Section 6.

2.3.2 Roundhouses (G10, G11 and G65)

The drainage gullies associated with roundhouses G10, G11 and G65 were mostly *c.* 0.5–0.7m wide and 0.2–0.3m deep, encircling areas measuring *c.* 8m, 7m and 6m respectively in diameter. The entrance to G10 faced south-east, whereas G11 faced north-west; modern disturbance precluded the identification of G65's orientation. The only surviving internal features were two shallow postholes near the entrance to G10, which could represent a structural element of the roundhouse. External features thought to have been associated with roundhouse G10 comprised an intercutting pit cluster near the entrance and a posthole *c.* 2m west of the gully, while a large pit 3m north-west of gully G65 may similarly have been associated the roundhouse. Four sherds of probably early Iron Age pottery and a small amount of animal bone were recovered from G10, and four sherds from G11; no finds were recovered from G65.

2.3.3 Enclosures (A–G)

It is likely that enclosures A–G all coexisted, although dating evidence is limited and at best tentative. Some elements of the enclosure system may not have been in use throughout its whole existence, yet some may have continued in use to form a transition with the Period 4 enclosures.

All seven enclosures were rectilinear apart from D, which was defined by a curvilinear ditch G44. They ranged from 35m to 75m in width and 40m to 120m in length. Access points into and between the enclosures were identifiable in some instances, although some of the gaps in the enclosure ditches are more likely to be the result of truncation than genuine entrances. The tapering arrangement of ditches G36 and G42 at the south end of Enclosure A may have been designed to help direct livestock.

Enclosures A–D each contained between four and fifteen pits, although little dating evidence was recovered to support the spatial suggestion that they were contemporary. Five small pits and inhumation burial G59 were located within Enclosure F, but there were no features inside Enclosure E and just one posthole in Enclosure G. Few finds were recovered from either the enclosure ditches or the pits within the enclosures.

2.3.4 Trackway

A *c.* 4m-wide trackway was revealed along the south-west side of Enclosures B and C, defined on the opposite side by ditch G28. It extended beyond the limit of excavation into the area investigated to the north by MOLA (Brown 2020, 182). Ditch G27 may have been associated with the trackway, perhaps representing a widening of it, but its failure to appear in the MOLA excavations suggests that it is more likely to have formed part of a further enclosure to the south-west.

2.3.5 Dispersed pits and postholes

More than 100 pits and/or postholes across Areas A and B were assigned to Period 3, some of which were close together, but with no pronounced clusters. Their date is questionable, however, as they had few stratigraphic relationships with other features and produced very few finds. The only one to stand out was water-pit G41, in the north



of Area A, which was *c.* 3m in diameter and 1.8m deep (Fig. 4: f). It appeared visually to have been dug through ditch G39, though in reality the two are likely to have been broadly contemporary, with the partially open ditch feeding the water-pit.

2.3.6 Field systems (A–D)

At least four possible field systems A–D were identified in between the enclosures, most of them extending beyond the excavated area. Field systems A and B are likely to have been part of the same system, straddling the unexcavated area between Areas A and B. Three pits G54 were located along boundary G87 of field system B, suggesting a direct association, as does the location of pit G70 in the middle of the narrow entrance between field systems C and D.

2.4 Late Iron Age/Early Roman (Period 4): Figure 6

This period was characterised by a system of fields and enclosures which developed out of the early–middle Iron Age ones established in Period 3, suggesting an element of continuity in the landscape. Some of the Period 3 enclosures — especially those in Area A — were reworked to form new ones, while further reworking was evident in Period 4, meaning that not all the enclosures assigned to this period were directly contemporary. The possibility that some of the stratigraphically later enclosures were in fact post-Roman cannot be discounted, as dating evidence from them is minimal — just eleven sherds of pottery and a fragment of Roman tile.

2.4.1 Enclosures (H–P)

A series of at least nine rectilinear and square enclosures H–P were identified within Area A, measuring between *c.* 45m by 50m and *c.* 85m by 150m. Overlap between enclosures suggests that not all elements were directly contemporary — rather, they evolved and were reworked over time, with several recuts visible and some elements possibly combining with activity from Period 3. One notable find from Enclosure O was an iron billhook.

2.4.2 Field systems (E–F)

At least two possible field systems E–F were identified in Area A, both extending beyond the development area. They may, however, have been additional examples of enclosures, with further ditches present outside of the excavated areas.

2.4.3 Boundary ditches

Two parallel boundary ditches G90/G92, situated *c.* 50m apart, were the only features in Area B that were assigned to Period 4. Stratigraphic relationships with other features suggest a broad contemporaneity with the Period 4 enclosures in Area A, although the differences in character and alignment make a later date possible, and certainly demonstrate a much clearer disconnect with the Period 3 landscape.

2.4.4 Dispersed pits

Four shallow pits G110, G114, G115 and G195 were assigned to this period based primarily on their geographical distribution, as well as stratigraphic relationships in the case of G195. No finds were recovered from any of them.

2.5 Medieval (Period 5): Figures 7–8

The remains of a small farmstead were identified at the west end of Area A, orientated on Watling street. It consisted of five post-built structures (A–E), two fence-lines (A



and B) and a short line of pits (G135). Two possible enclosures Q and R covered the area east of the farmstead, and are thought to have been broadly contemporary with a small group of ditches in Area B.

Despite the presence of several structures, relatively few finds were recovered from Period 5 features — just 100 sherds (628g) of 12th–13th-century pottery, 120 pieces of animal bone and a handful of other items. Again, dating evidence for this period is tentative: only Structure A and Fence-line B are securely medieval in date, accounting between them for most of the finds from this period. Spatial proximity is largely behind the assignment of the other features to Period 5.

2.5.1 Structures (A–E)

Structure A appears to have been the main building within the farmstead, measuring, *c.* 15m by 3m. It was constructed using a combination of structural slots and postholes; overlapping of the slots indicates that not all elements were directly contemporary and that the building was reworked or rebuilt over time. The building was separated into three rooms, measuring (from south-west to north-east) 3.7m by 4.7m, 2.9m by 6.5m and 1.7m by 1.8m. The postholes were mainly located within the structural slots, broadly measuring 0.5–0.7m in diameter and up to 0.5m deep, but it is unclear whether they represent the use of a post-in-slot building technique or a further rebuild. It is also unclear whether four large pits at the north-east end of the structure, measuring 0.6–1.5m wide by 1.0–1.85m long and 0.2–0.6m deep, formed part of an earlier iteration of the building, or were simply unrelated earlier features.

Immediately south of Structure A, groups of pits and postholes represent associated activity linked to the building. Some of these postholes were in groups which may have formed boundaries or additional structural elements for the building.

Structure B was represented by a roughly square, possibly L-shaped arrangement of eleven postholes G143, defining a small building with maximum internal dimensions of 4.1m by 4.5m. Six postholes to the north are likely to have been associated with the building, perhaps marking a boundary or representing a structure such as a windbreak.

Possible rectangular Structure C was represented by fifteen postholes G145, defining an area of at least *c.* 4m by 8m and possibly continuing beyond the excavated area. Three of the postholes on the interior of the structure are likely to represent a partition.

Structures D and E were rectangular and square respectively. The former was represented by six postholes G140 defining an area of 4.8m by 8m, the latter by four postholes G139 that formed a structure 1.3m across. Similar structures are often found on late prehistoric sites, and an earlier date for these cannot be ruled out, but their location and alignment here suggest an association with Structure A.

2.5.2 Fence-lines (A–B)

Two alignments of postholes were interpreted as substantial fence-lines, both of which were broadly aligned with the other structures in the farmstead.

Fence-line A was defined by twelve postholes G142, forming a structure 15.5m in length. A possible entrance through the fence was suggested by the presence of two large postholes, up to *c.* 1m in diameter; these were markedly different from the rest, and both posts appear to have been replaced at some point.



Fence-line B was defined by a combination of postholes, pits and gullies. Three of the postholes and one of the gullies were located out of line, perhaps indicating a replacement, or maybe the presence of structural supports.

2.5.3 Pits (G135)

These four pits were positioned in a line, possibly functioning as a boundary, or maybe following one that did not survive within the archaeological record.

2.5.4 Enclosures (Q–R)

A possible enclosure measuring at least 15m by 30m was identified within Area A, represented initially by Enclosure Q (G134) but later redefined as Enclosure R (G132). The south-east side of the enclosure shared part of a boundary with ditches G133 and G131 respectively.

2.5.5 Ditches (Area B)

Ditches G127–130 in Area B probably represent field boundaries, though too little of them was revealed to characterise them further. Stratigraphic relationships indicate that the ditches were not all contemporary.

2.6 Post-medieval (Period 6): Figure 7

This period is mainly represented by several field boundary ditches located across the site, dated partly by small numbers of artefacts but primarily by stratigraphic relationships and their correspondence with boundaries shown on the 1762 estate map (HER 12242). Recutting was apparent in several of the ditches, though the minimal deviation in their course during this exercise suggests that their routes had already been fixed by adjacent hedgerows.

In addition to the field boundaries, animal burial G163 was excavated in the east of Area A. Only part of the skeleton survived, comprising fifty-six elements of animal bone.

2.7 Modern (Period 7): Figure 2

Modern features within the development area consisted primarily of pit G174, land-drains and geotechnical pits.

2.8 Undated (Period 8): Figure 2

Although the dating evidence for many of the features in Periods 1–7 is somewhat insubstantial, sixteen tree-throws were recorded across the site which offered no clue at all as to their date. It is unclear whether they were contemporary and represent evidence of tree clearance, or if they stemmed from isolated events.



3 CERAMIC ARTEFACTS

3.1 Introduction

The pottery assemblage totals 279 abraded sherds (1.8kg) representing a minimum of 147 vessels, the largest concentrations occurring within features assigned to Periods 3 and 5 (Table 2). The material is well-fragmented, with a mean sherd weight of only 6g: most vessels weigh less than 50g, with the largest, represented by fifteen sherds, weighing 214g.

Period	Sherd no.	% sherd	Wt. (g)	% Wt.
2	19	6.8	59	3.2
3	142	50.9	924	50.6
4	11	3.9	141	7.7
5	100	35.9	662	36.4
6	7	2.5	39	2.1
Total	279	100	1,825	100

Table 2: Pottery quantification by Period

Pottery fabrics, based on surface appearance and the type, size and density of principal inclusions, are summarised in Table 3 by chronological period in accordance with the Bedfordshire Ceramic Type Series. Wares and forms are all common and well-represented from published excavations in the county: none have been selected for illustration.

Fabric type	Common name	No. sherds	Wt. (g)	Mean sherd weight (g)
<i>Late Bronze Age/early Iron Age</i>				
F01A	Coarse flint	22	231	10.5
F01B	Fine flint	48	159	3.3
F01C	Flint and sand	21	83	3.9
F02	Flint and grog	24	176	7.3
<i>Iron Age</i>				
F03	Grog and sand	2	6	3.0
F06B	Medium grog	4	64	16.0
F16	Coarse shell	46	355	7.7
F18	Sand and shell	7	39	5.5
F19	Sand and organic	1	2	2.0
F39	Grog and mica	1	6	6.0
F	Non-specific Iron Age	7	6	0.8
<i>Roman</i>				
R06C	Fine grey ware	2	1	0.5
R14	Sandy ware (red-brown harsh)	1	31	31.0
<i>Early medieval</i>				
B07	Shelly ware	1	1	1.0
B13	Chalky ware	27	306	11.3
B14	Limestone	5	31	6.2
C01	Sandy ware	28	133	4.7
C03	Fine sandy ware	2	5	2.5
C05	Sandy ware (red margins)	1	9	9.0
C59B	Coarse sandy ware	4	43	10.7
C67	Mixed inclusions	24	136	5.7

Table 3: Pottery quantification by fabric type

Later prehistoric wares constitute 66% of the assemblage by sherd count, with early medieval wares totalling 33% and Roman the remainder. A brick fragment and five



pieces of roof tile (418g) were also recovered. The assemblage is discussed chronologically below by fabric, form and deposition across the development area.

3.2 Late Bronze Age (Period 2)

Eighteen highly abraded body sherds (49g) were collected from ring ditch G7, and a single sherd (10g) from pit alignment G5. An absence of diagnostic vessel forms means dating is based largely on fabric types, which are predominantly flint-tempered, and typical of transitional late Bronze Age/earliest Iron Age Post-Deverel Rimbury assemblages in south-east England (c. 850–600 BC).

3.3 Early–Middle Iron Age (Period 3)

The Period 3 assemblage totals 142 sherds, weighing 924g (Table 4). Pits account for 50% by sherd count (64% by weight), ditches/gullies 49% (35% by weight), and postholes the remaining 1%. Wares are mainly flint-tempered, with a smaller number of shell- and sand-tempered examples; the prevalence of flint-tempered wares suggests that the bulk of the Period 3 pottery is of early Iron Age date. No diagnostic forms occur; feature sherds are an upright flattened rim and a body sherd with fingertip-impressed decoration.

Group	Description	Sherd no.	Wt. (g)
10	Roundhouse gully and associated pits/postholes	4	24
11	Roundhouse gully	4	12
12	Spread of fifteen pits	10	38
18	Spread of fourteen pits and postholes	2	6
20	Pit	44	503
21	Twelve dispersed pits	8	8
28	Ditch and re-cut	12	45
32	Enclosure ditch	8	43
36	Enclosure ditch	12	49
39	Enclosure ditch	5	79
41	Pit	1	3
43	Ditch	1	1
44	Enclosure ditch	15	44
46	Ditch	1	2
55	Sixteen dispersed pits and six postholes	7	38
87	Ditches	7	26
89	Ditch	1	3
Total		142	924

Table 4: Period 3 pottery quantification by Group

3.4 Late Iron Age/Early Roman (Period 4)

Eleven sherds (141g) were recovered from several field and enclosure ditches (G90, G94, G95, G99, G119 and G129) and a single pit (G118). Five grog-tempered sherds (70g) are datable to the early 1st century AD; feature sherds are two small beaded rims and a body sherd with faint linear combed decoration. Three sand-tempered Roman coarse-ware sherds (32g) include a complete jar base (diameter 57mm). Residual and intrusive material respectively comprises a late Bronze Age sherd and two early medieval examples. Field ditch G124 yielded a highly abraded piece of sand-tempered Roman *imbrex* (107g).

3.5 Medieval (Period 5)

Period 5 deposits yielded 100 abraded sherds (662g) datable to the 12th and 13th centuries, most deriving from the disuse fills of features associated with Structure A



(Table 5). The pottery is highly fragmented and survives in poor condition. Wares are mainly sand-tempered, some characterised by calcareous inclusions, and are considered of local manufacture, perhaps within a radius of *c.* 20–25 miles from the site. Both handmade and wheel-thrown vessels are represented, two with linear combed decoration. Forms represented are five fine-walled jars with simple everted rims.

Group	Description	Sherd no.	Wt. (g)
132	Ditch	1	1
134	Field ditch	5	43
136	Ditch	1	3
137	Two gullies	17	60
138	Alignment of pits and postholes: Fence-line B	22	112
140	Six-post structure	1	2
141	Two pits	1	3
142	Twelve posts in a line	3	1
146	Cluster of four postholes	3	9
147	Cluster of thirteen pits near Structure A	28	259
150	Beam slots forming Structure A	8	100
152	Two pits	3	9
154	Gully associated with Structure A	6	49
155	Cluster of postholes associated with Structure A	1	11
Total		100	662

Table 5: Period 5 pottery quantification by Group

3.6 *Post-medieval (Period 6)*

Seven abraded Iron Age body sherds (39g) were collected from subsoil G172. Their poor condition is consistent with their recovery from unstratified deposits. Post-medieval building material deriving from ditch G159 and pits G171 comprises three pieces of sand-tempered plain, flat roof tile (86g) and a brick fragment (225g).



4 NON-CERAMIC ARTEFACTS

4.1 Introduction

Twenty-nine non-ceramic artefacts were recovered, all but one from phased deposits (Table 6). Each object was identified, quantified by number and/or weight, and assigned to a functional category. This data was entered into the project database. All ironwork and selected non-ferrous objects have been x-rayed by Pieta Graves of Birmingham Museum and Art Gallery, and the relevant plate numbers are in the database.

Material	Period							Unphased	Total
	1	2	3	4	5	6	7		
Silver	-	-	-	-	-	1	-	-	1
Copper alloy	-	-	-	4	-	1	-	-	5
Lead alloy	-	1	-	-	1	-	-	-	2
Iron	-	-	-	1	6	3	1	1	12
Stone	-	-	-	-	1	-	-	-	1
Flint	2	-	2	-	-	-	-	-	4
Glass	-	-	-	-	-	2	1	-	3
Wood	-	-	-	-	1	-	-	-	1
Total	2	1	2	5	9	7	2	1	29

Table 6: Non-ceramic artefact assemblage by material and Period

The following sections discuss the assemblage by Period and Group. A selected catalogue of objects is included at the end of each Period discussion; nail shanks and small fragments whose function cannot be determined are generally not included in the catalogue, but are listed within the text or in tables. The following information is appended to each entry in the catalogue: Period (P); Group (G); feature number (F); context (in parenthesis); and Registered Artefact (RA) number (if relevant). Entries prefixed with an asterisk indicate an x-ray on Plate 1.

4.2 Early Prehistoric (Period 1)

A patinated, blade-like tertiary flake was found within tree-throw G3. This flake possesses a narrow butt and was soft-hammer-struck, indicating a Mesolithic to early Neolithic date. A patinated leaf-shaped arrowhead (RA37) was recovered from pit G4; invasive retouch on both faces and a rounded base suggest that it belongs to Green's type 3b or 4b (Green 1980, figs 28–29), dating to the early Neolithic.

Catalogue

Flake. Patinated flint. Long blade-like flake, elongated triangular in plan, with narrow butt and narrow blade-like removal scars. L. 70mm; w. (max) 21.2mm; th. 4.9mm. P1; G3; tree-throw F8852 (8853)

Arrowhead. Opaque, patinated grey-brown flint. Slender leaf-shaped arrowhead, rounded base (Green type 3b/4b), invasive retouch both faces. L. 38mm; w. 15.5mm; th. 2.5mm. P1; G4; pit F10331 (10280); RA37

4.3 Late Bronze Age (Period 2)

A cast rectangular lead weight with rounded perforation at one end was recovered from ring ditch G7. Such weights may have served a variety of purposes, but it bears many similarities to fishing-net weights, used to weigh down the foot of the net. Such weights have been found in Iron Age, Roman and 15th-century deposits (Steane and Foreman 1988, 162). Although the practice of adding lead to bronze during the manufacture of implements is known in the late Bronze Age (Northover 1981, 216 and 218), it is rare to find a contemporary object made solely of lead; a lead socketed axe-head from Mam



Tor in Derbyshire (Guilbert 1996) is an exception, and may reflect the greater availability, and importance, of lead in that region. On balance it is likely that the rectangular weight came to be incorporated within the fills of ring ditch G7 long after the ditch was first dug.

Catalogue

Weight. Lead. Incomplete cast rectangular weight with rounded perforation near one end (diameter 5.5mm), opposing end missing. Rectangular in section. L. 43.5mm; w. 21.5mm (max); th. 13.5mm; wt. 76.4g. P2; G7; ring ditch F8739 (8743); RA25

4.4 Early–Middle Iron Age (Period 3)

The assemblage from Period 3 deposits is limited to two pieces of flint debitage, both pieces comprising patinated tertiary flakes. One flake, from pit G12, was soft-hammer-struck and exhibits platform abrasion scars, indicative of a Mesolithic to early Neolithic date. The second flake, from ditch G28, is squat with a thick butt, suggestive of a later Neolithic to Bronze Age date. The lack of contemporary objects such as loom weights, weaving tools and querns recovered from the development area supports the impression of only low-density habitation in the early–middle Iron Age.

4.5 Late Iron Age/Early Roman (Period 4)

Ditch G117 yielded a billhook of Rees' type III (Pl. 1: RA20), defined as long socketed choppers with large curving blades (Rees 1979, 469). Billhooks were used for pruning or lopping branches and other vegetation. Type III billhooks have been found in both civil and military contexts, with parallels known from Newstead (2nd century AD), Eckford (1st to early 2nd century), Gunard Bay (3rd–4th century) and Derby (2nd–3rd century) (Rees 1979, 470). A fairly close parallel to the Thorn Turn example was found at Usk (Rees 1979, fig. 226).

The remainder of the Period 4 assemblage consists of four coins, all recovered from ditches (Table 7). The recovery of these late 3rd- and 4th-century coins presumably reflects continuing Roman activity in the area, despite the disuse of the field system and enclosures from whose ditches they derived.

Group	Denomination	Date	Obverse	Reverse
90	AE3	330–35	House of Constantine	Gloria Exercitus I Standard
94	AE3	330–35	Urbs Roma	Wolf and twins
99	AE3	347–48	Constans	Victoriae DD AVGG Q NN
99	Radiate	286–93	Carausius	Pax AVG

Table 7: Coins from Period 4 deposits

Catalogue

***Billhook.** Iron. Large socketed implement with triangular-sectioned blade back curving at obtuse (140–160 degrees?) angle from socket, tip damaged but has a projection set at an angle. Socket straight 'neck' between socket and blade curves to join line of blade back. Choil between socket and blade edge. L. 337mm (socket *c.* 145mm); blade w. 62mm. P4; G117; ditch F8191 (8192); RA20

4.6 Medieval (Period 5)

With one exception, the Period 5 assemblage was concentrated in the west of Area A. The exception is a nearly complete example of a horseshoe with lobate outer edge with rounded nail holes, which equates to Clark's type 2a horseshoes (Clark 1995, 86). This form of shoe was in use by at least the mid-11th century and remained in use until at least AD 1150 (Clark 1995, 95–6). A second example of this form of horseshoe was recovered from gully G137. Two 'fiddle key' shoeing nails, one from G137 and one



from G138 (both forming Fence-line B), were also identified. These shoeing nails were contemporaneous with Type 2a horseshoes, and may have continued in use for a slightly longer period, into the 13th century (Clark 1995, 86–7 and 96).

Group	Description	Object	Quantity
128	Ditch	Iron horseshoe	1
137	Two gullies	Iron horseshoe	1
		Iron shoeing nail	1
138	Alignment of pits and postholes – Fence-line B	Iron shoeing nail	1
141	Two pits	Iron nail (shank only)	1
147	Cluster of pits near Structure A	Wooden plank	1
150	Beam slots forming Structure A	Lead decorative fragment	1
		Iron arrowhead	1
155	Cluster of postholes forming structure A	Sandstone paving slab?	1

Table 8: Period 5 non-ceramic artefact assemblage

One of the pits forming G147, adjacent to Structure A, was waterlogged and contained a poorly preserved, tangentially-faced plank of oak(?). Due to erosion and rot, it could not be determined whether it was a structural plank or part of a floor.

A beam slot in G150 contained an iron socketed arrowhead with leaf-shaped blade (Pl. 1: RA33). This appears to equate to Jessop's type MP4, in use in the mid-13th century, a form of arrowhead which could have been employed for both hunting and warfare (Jessop 1996, 196). G150 also contained a decorative fragment of cast lead alloy. The function of this fragment cannot be identified with certainty, but possible functions include part of a lead-tin mirror case or mirror frame (Bazley 2019), part of an ornate lead-alloy brooch (*e.g.* Egan and Pritchard 1991, fig. 174 no. 1374), or a fragment of a badge (*e.g.* Spencer 1998, cat. no. 114); these varying suggestions span a date range of 13th–15th-century. A rectangular sandstone slab from one of the postholes in Structure A has flat surfaces and traces of mortar on the reverse face; it may have served as a post-pad.

Catalogue

Horseshoe. Iron. Nearly complete (damage to one branch edge) shoe with lobate outer edge, narrow branch, no caulkin. Nail holes rounded(?) and at least 3 on one branch. L. 110mm; branch w. 19.7mm; th. 7.5mm. Clark's type 2a. P5; G128; ditch F9624 (9625); RA35

Horseshoe. Iron. Part of branch only having lobate outer edge, rounded perforations (2 survive), heel, toe and opposing branch missing. L. 74mm; w. (web) 16.5mm; th. 4.5mm. P5; G137; ditch F9161 (9163); RA32

Shoeing nail. Iron. Fiddle key head and tapering rectangular shaft. L. 37.9mm. P5; G137; gully F9247 (9248).

Shoeing nail. Iron. Worn fiddle key head and part of shank. L. 28.7mm. P5; G138; posthole F9033 (9035)

Uncertain. Wood (oak?). Tangentially faced plank (?), surfaces heavily eroded/rotted, broken both ends. At one end the two lateral edges have been cut in (in-set) in a curve. L397mm; w. 271mm; th.64mm. P5; G147; pit F9651 (9653); RA34

Uncertain. Lead alloy. Fragment of decoratively cast lead alloy (pewter?) retaining double raised lozenge border, the inner border having raised dot at each corner. In the centre of the lozenge is a raised ring and dot. In the field between the ring and the inner lozenge are a series of alternating vertical and diagonal, close-set raised ridges. The fragment continues beyond the outer lozenge border, sloping down



and then rising again before the break (perhaps forming a third raised border?). Outer lozenge *c.* 18 x 18mm; Dimensions fragment 23mm x 15.5mm by 1.2mm. P5; G150; beam slot F9981 (9982); RA31

***Arrowhead.** Iron. Small-bladed, narrow leaf-shaped with rounded edges and welded(?) socket (only start of socket surviving). Total length 75.2mm; blade length *c.* 48mm; blade width *c.* 20.2mm. Very slightly lozenge-shaped in section. Jessop MP4. P5; G150; beam slot F9667 (9669); RA33

Paving. Sandstone. Incomplete, rectangular slab, one worked, straight edge (rounded arises), surfaces flat. Reverse surface retains small patches of mortar. Dimensions 215 x 237 x 35.2mm. P5; G155; posthole F9559 (9558)

4.7 **Post-medieval (Period 6)**

Ditch G159 contained one possibly residual find, along with two contemporary finds. The possibly residual object is an iron stirrup of sub-spherical form with an integral rectangular loop at its apex for suspension. A close parallel for this stirrup was found in Hungarton, Leicestershire (PAS LEIC-62A583). John Clark commented, with regard to the Leicestershire stirrup, that “the rounded form of the footrest is more common in medieval stirrups (ridden in shoes with soft soles) but that the rather primitive loop to take the stirrup leather is a contrast to the neatly shaped disc forming the centre of the foot rest”. Locally made stirrups do not appear to have been standardised, and examples of the same date can vary in form, resulting in difficulties in the typological dating of stirrups (PAS LEIC-62A583). The two other artefacts recovered from ditch G159 include part of the base of a squat wine bottle, possibly of Hume’s type 10 (AD 1720–30; Hume 1961, 103 and fig. 4) and a Charles II copper-alloy farthing (AD 1672–79).

Group	Description	Object	Quantity
159	Ditch	Glass wine bottle	1
		Iron stirrup	1
		Copper alloy coin	1
163	Animal burial	Glass vessel	1
171	Three pits	Iron nail	1
172	Subsoil	Silver coin	1
		Iron knife	1

Table 9: Period 6 non-ceramic artefact assemblage

Animal burial G163 included a fragment from the body of a clear, colourless glass vessel (form indeterminate), probably of modern date. A flat-headed nail was recovered from a pit in G171. Subsoil deposits produced a Charles I silver penny (Tower Mint 2) dated AD 1625–42, and a small whittle-tanged iron knife of Ottaway’s form C3, in use from the mid-Saxon period into the 11th century (Ottaway 1992, 570).

Catalogue

Stirrup. Iron. Sub-spherical form of rectangular section (13.5 x 3.5mm) with an integral rectangular ‘loop’ (broken) at its apex for suspension. A strip (w. 13mm; th. 2.6mm) bent into rectangular shape added to one face of loop (right-angle to loop). Flat circular base plate. Nearly complete but shape distorted and damage to loop and footrest. L. *c.* 165mm; brdth. 125–130mm. P6; G159; ditch F9466 (9468); RA29

Knife. Iron. Small whittle-tang knife, back in line with tang, back straight and downward sloping before gently curving to tip. Choil at junction of tang and blade edge, blade damaged but appears straight before gently rising to tip. L. 82mm (blade *c.* 48mm); w. 10.8mm; th. 3.5mm. P6; G172 subsoil 8001; RA24

4.8 **Modern (Period 7)**

Pit G174 contained an iron nail shank and a fragment of thick, colourless glass with an impressed pattern of close-set ridges, likely to have derived from modern door glass.



5 HUMAN BONE

5.1 Introduction and Methods

An isolated, flexed inhumation burial G59 was recovered during the excavations — mostly by hand, but with small amounts of additional bone from two associated samples <218> and <219>. The body's poor preservation meant that an attempt to obtain a radiocarbon date proved unsuccessful, but the burial is tentatively thought to be early–middle Iron Age (Period 3).

Data was recorded following the methods utilised by the Museum of London (Powers 2012). Age was estimated from dental attrition data (Brothwell 1981). It was not possible to estimate sex due to the incomplete nature of the burial. The poorly preserved and fragmentary nature of the assemblage prevented the collection of non-metric and metric skeletal data, but measurements (in mm) were taken where possible of the teeth.

5.2 Results

The remains were highly fragmentary, with poor preservation of the cortical surface, limiting observation of the original surface features of the bones and definitive identification of a number of long-bone fragments. No joint surfaces were observable except for the right mandibular condyle and the atlanto-axial joint (odontoid peg). Excavation photographs show that some of the body remained only as an organic stain (Pl. 1).



Plate 1: Burial G59

The cranial remains comprised the highly fragmentary remains of the parietals and supracoccipital (sides and back of the skull), a piece of right mandible (jaw) and the petrous temporal bones. The mid and distal portion of the right humeral shaft (upper arm) and a partial left humerus and (?)ulna (forearm) were present, as were portions of the proximal and mid shaft of the right and left femora and the midshaft of the tibiae (shin). The most complete elements present were the femora, but erosion of the cortex prevented accurate measurement.

Sample <218> contained a number of unidentified long-bone fragments and fragments of occipital and parietal bone, as well as four anterior teeth (the maxillary central



incisors, left lateral incisor and canines). Sample <219> contained a similar quantity of long-bone fragments and two small fragments of parietal.

Due to the fragmentary nature of the burial, a quantification by weight is also given below (Table 10).

Body area	Weight (g)
Cranium and mandible	106.8
Right arm	69.7
Left arm	42.7
Right leg	129.8
Left leg	255.7
Sample	Weight (g)
<218>	45.5
<219>	36.5

Table 10: Weight of bone present in burial G59

The maxillary (upper) dentition was nearly complete, with only the right first and left second molars missing, whilst the mandibular (lower) dentition consisted of the right molars, premolars and canine and the left first premolar only (Table 11).

Right maxilla								Left maxilla							
P	P	P	-	P	P	P	P	P	P	P	P	P	P	-	P
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
P	1	1	1	1	P	-	-	-	-	-	P	-	-	-	-
Right mandible								Left mandible							

Table 11: Dental catalogue for burial G59

5.2.1 Age at death

The right mandibular incisors gave an age at death estimate of 25–35 years. However, the level of wear seen on the left maxillary first incisor was considerably greater, falling in the 35–45 year age range.

5.2.2 Health and disease

No skeletal pathological changes could be observed and there were no indications of dental disease.

5.2.3 Dental anomalies

The central and lateral maxillary incisors were folded, creating a deeply shovelled cusp (Grade 4 or 5 on the ASU system; Hillson 1996, 87). This is a relatively uncommon feature in European populations (Hillson 1996, 88).

5.3 Discussion and Conclusions

The burial is that of an adult of undetermined sex, aged 25–45 years at death. The poor surface preservation of the bone and the fragmentary nature of the remains prevent the observation of metric and surface traits, and no pathological changes were noted.

The tightly crouched or flexed position of the individual in the grave may indicate that their legs were bound or wrapped in a flexed position, whilst the upper body appears to have been carefully lain flat on the back (supine), with the right hand raised by the shoulder and the left arm extended, with the forearm gently bent at the elbow. Such a burial position would be consistent with the speculative early–middle Iron Age date.



6 ANIMAL BONE

6.1 *Methods*

All the bones and teeth recovered by hand and from the sieved samples were recorded individually on a database. The following data were recorded where appropriate for each specimen: species; anatomical element; zones of bone present; approximate percentage of bone present; gnawing damage; erosion; weathering; concretions; burning (charring and calcification); fusion data; associated bone group (ABG) number; sieved sample number; and other comments, including observations of pathology. Tables were also created for metrical, butchery and tooth-ageing data. Tooth eruption and wear descriptions for cattle, sheep/goat and pig follow the method of Grant (1982). Measurements follow those described by von den Driesch (1976). All fragments, including loose teeth, shaft fragments, rib heads and vertebrae, were recorded to species level where possible.

6.2 *Overall Sample Size and Bone Preservation*

Animal bones were collected from eighty-four contexts, which produced a total of 618 individual specimens (NISP). However, only 112 (18%) of these could be identified to species, including fifty-six from a partial sheep skeleton. Sieved samples provided seventy-eight of the NISP counts, but only six fragments (all of sheep/goat) could be identified, whilst the remainder consist of unidentified mammal fragments.

The assemblages from each context were assigned to one of five potential preservation grades. Only one context (the post-medieval sheep burial) was assigned to the highest grade (excellent preservation), and only one (containing just two bone fragments with good surface preservation) was graded as good. Twenty contexts (24%) contained moderately-preserved assemblages that accounted for forty-three fragments. Bones in these assemblages generally have fair surface preservation but are fragmentary, and include many slightly weathered specimens. Thirty-five contexts (42%) were assigned to the quite poorly preserved category. Their assemblages include more weathered and some eroded specimens amongst the 264 fragments. Twenty-seven contexts (32%) contained very poorly preserved assemblages (NISP = 267), consisting almost entirely of heavily fragmented eroded or burnt bones. The severity of the weathering and erosion damage means that any gnawing or butchery marks have been obliterated. Many bones have modern breaks; these were recorded as a single element. Preservation conditions favoured the survival and recovery of the more robust elements of the larger mammals. The high percentage of unidentified mammal fragments is largely a consequence of the poor preservation of bones in many features.

6.3 *Early Prehistoric (Period 1)*

Two unidentified mammal fragments were recovered from palaeochannel G1. Pit G4 contained part of the tibia of an adult red deer.

6.4 *Late Bronze Age (Period 2)*

Forty-one bone fragments were recovered. Pit alignment G5 produced twenty-two, amongst which only two adult cattle teeth and a relatively complete but heavily eroded horse first phalanx were identified. The unidentified elements include a group of fifteen large mammal rib shaft fragments from one pit and four fragments of large mammal vertebrae from another. Both groups are probably from cattle, and at least four ribs and two vertebrae are represented. A cattle molar was the only element recovered from pit



alignment G7, and no bones were found in pit alignment G6. The absence of animal bones from most pits is typical of other later Bronze Age pit alignments from the region, for example at Biddenham Loop (Maltby 2008). However, they have occasionally produced associated bone groups, and it seems that part of a cattle ribcage and spine were deposited in two of the Thorn Turn pits. Horse bones have been found in small numbers in other late Bronze Age features in Bedfordshire, including sites in the Biddenham area (Maltby 2008, 2016)

A sheep/goat molar was the only one of the eighteen elements from ring ditch G7 that could be identified.

6.5 Early–Middle Iron Age (Period 3)

Features from this phase produced the largest bone assemblage, but only twenty-one of the 344 fragments could be identified due to poor preservation and very high fragmentation.

A very heavily eroded cattle radius was the only bone recovered from the drainage gully of roundhouse G10. The forty-six fragments from pit scatter G12 include two adult teeth and a scapula of cattle. A largely complete metacarpal of a small cow was one of two elements found in pit cluster G18. Pit G20 produced thirty-four fragments, which include a complete metacarpal and the femoral head of an adult sheep, and an incisor and an unfused distal tibia of younger sheep or goats. A slightly charred fragment of an adult cattle femur was also recovered.

Ditch G28 yielded nine fragments, including parts of a cattle mandible and radius. The mandible belonged to a young adult. A fragment of sheep/goat tibia was the only bone found in gully G30. A heavily eroded cattle radius and five unidentified fragments were retrieved from enclosure ditch G39, while pit G40 produced eroded fragments of a cattle radius and femur, and four unidentified large mammal fragments. The fused distal tibia of a horse was the only one of nine fragments from pit G41 that could be identified. A cattle molar fragment was the only element recovered from pits in G53. Animal burial G56 contained an accumulation of 131 fragments, but nearly all of these are very eroded and undiagnostic, the only identifiable element being a small fragment of pig tibia. A cattle tibia fragment was the only element found in enclosure ditch G83, while a cattle metatarsal was one of the four fragments found in ditch G84. The remaining ninety three fragments of bone from pits G21, G26, G58 and G62 and ditches G34, G35, G42, G44, G78 and G87 are all unidentifiable.

Bones and teeth of domestic animals were, therefore, the only ones identified from Period 3 deposits, with cattle the most common (14), followed by sheep/goat (5), pig (1) and horse (1). Wild mammals, birds and fish are poorly represented in general among Iron Age assemblages from Bedfordshire. Cattle are the most commonly identified in most Iron Age assemblages from the county (Maltby 2016), but their dominance here is also assisted by the poor preservation of bones. The sheep metacarpal was from a slender animal with an estimated withers height of 58.7cm and is typical of the small types of sheep found on Iron Age sites in the region. The sample is too small and too poorly preserved to merit further analysis.

6.6 Late Iron Age/Early Roman (Period 4)

Fifty-six bone fragments were recovered, of which only four were identified, all from field ditches. Ditch G94 included a fragment of cattle pelvis and the fused distal tibia of



a horse. An eroded fragment of cattle mandible was recovered from ditch G103, and ditch G120 produced a fragment of cattle skull.

6.7 Medieval (Period 5)

A total of 120 fragments were recovered, including nineteen identified elements. One of the pits in G135 produced a fairly complete horse first phalanx. Twenty-six fragments from ditch G136 included weathered fragments of a cattle metacarpal and pelvis, and a sheep/goat tibia. A sheep/goat molar was the only one of the eleven fragments identified from ditch G136. Fence-line B contained five fragments, including loose teeth of adult cattle, sheep/goat and horse, and part of an adult cattle mandible. All but one of the forty-one fragments from pits G141 came from sieved samples, and include small fragments of a sheep/goat horn core and thoracic vertebra, and three sheep/goat teeth.

Bones from pits G147 include the mandible of an adult pig and a fragment of sheep/goat humerus among the thirteen recovered. Beam slot G150 produced five bones, including half of a cattle humerus and the complete third metatarsal of an adult horse, with an associated fragment of one of its peripheral metatarsals. The horse had an estimated withers height of 135.1 cm (13.3 hands).

6.8 Post-medieval (Period 6)

Fifty-six of the sixty-four bone elements from this period came from animal burial G163 mainly from the trunk: they include (at least) twenty-one vertebrae, seventeen ribs and seven costal vertebrae and parts of the sternum. The hind-limbs are represented by the left pelvis, both femora and tibiae, and the left calcaneus. The left scapula, humerus and ulna were also recovered. The only cranial element is a petrous, and no bones of the feet, neck, and right upper forelimb were recovered. No butchery marks were observed. The excellent preservation of the bones indicates that they were buried soon after death.

All the epiphyses have fused, although fusion lines are still visible on some of the latest-fusing vertebrae. This skeleton therefore belonged to a mature but not senile sheep, of indeterminate sex. It would certainly have provided several fleeces of wool before its death, and may also have produced several lambs. Age-related pathologies were observed on some bones. The distal humerus has an extensive growth of bone on the lateral aspect of the distal end. Commonly referred to as “penning elbow” (Baker and Brothwell 1980, 127), this condition was more prevalent in older sheep whether they were kept in pens or not. Two of the lumbar vertebrae have fused together by the formation of extensive extra bone along their ventral surfaces. This condition, known as ankylosing spondylitis, can be caused by a range of factors, and results in a restriction of movement. Three of the costal cartilages have healed stepped fractures, which indicates that the sheep had survived an impact injury to the ribcage.

Measurements of the complete tibiae indicate that the sheep was much taller and stockier than the sheep found in earlier deposits. The tibia has a distal breadth of 30.3 mm and a greatest length of 213 mm, providing a withers height estimate of 64.1 cm. This is, therefore, the skeleton of an improved breed of sheep.

Other post-medieval features produced very few bones. They included fragments of a cattle scapula, humerus and metapodial, a sheep/goat tibia, a pig third metatarsal and horse radius.



7 CHARRED AND WATERLOGGED PLANT REMAINS

7.1 Introduction and Methods

Eighty-eight environmental bulk soil samples were collected for the recovery of charred or waterlogged plant remains, for potential information on the agrarian economy and the local environment of the site. Fifty of these samples were selected for processing and analysis from the following types of feature: pits (22 samples), ditches (21), burials (3), structures/postholes (3), and a palaeochannel (1). One sample was from an early prehistoric feature (Period 1), nine from the late Bronze Age (Period 2), 29 from the early–middle Iron Age (Period 3), three from Iron Age/early Roman deposits (Period 4), and eight from medieval features (Period 5).

Individual samples ranged from 5l to 50l although most were between 20l and 30l. The selected samples were processed for charred plant remains using a Siraf-style flotation tank and meshes of 0.3mm and 1mm for the recovery of flots and residues respectively, with unprocessed soil remaining from eighteen of these samples. The flots were then dried along with the residues, which were sorted for biological and artefactual remains.

Forty-three of the fifty processed samples produced flots, and any charred plant remains were sorted, identified and quantified using a binocular microscope (with a magnification of up to x40) together with modern and charred reference material and manuals (Cappers *et al.* 2006; Jacomet 2006). One flot which produced a very rich charred plant assemblage was sub-sampled and part-sorted and quantified, and the remaining fraction scanned for additional information using the following scale for the approximate frequency of individual species: + = 1–10; ++ = 11–50; +++ = 51–150; ++++ = 151–250; +++++ = 250+ items. The same rating system was used for recording small (<2mm) unquantifiable charred fragments of cereal grains.

7.2 Results

The charred plant remains are shown in Table 12. Nomenclature and taxonomic order for the wild plants follows Stace (2019). Identifiable charred plant remains were present in just thirteen samples, ten of which contained only occasional or small amounts of identifiable material. The other three consist of two rich assemblages from medieval pits G141, accounting for more than 90% of the quantified remains, and a good amount of charred material in early–middle Iron Age ditch G42. There follows a description and discussion of the charred plant remains by Period.

7.2.1 Early prehistoric (Period 1)

A sample from palaeochannel G1 was processed, but it produced no charred plant remains and only a trace of potentially identifiable charcoal. A small number of uncharred seeds were recovered, with evidence for several wetland plants — *Alisma* (water plantain), *Carex* (sedge) and *Juncus* (rush). These are likely to reflect conditions within the channel, with *Alisma* growing on muddy substrata beside slow-flowing rivers, ponds and ditches in damp ground or shallow water.

7.2.2 Late Bronze Age (Period 2)

Nine samples were processed, with just one sample (from pit G5) producing a single, unidentifiable charred grain. There were only traces of charcoal in the processed samples and only very occasional potentially identifiable fragments (>2mm), from ring ditch G7 and pit G8.



7.2.3 Early–Middle Iron Age (Period 3)

Twenty-nine samples were processed, with seven samples from five ditches and two pits producing charred plant remains. The sample from ditch G42 produced a large assemblage, but the remainder only very low amounts.

The charred remains consist of cereal grains in five samples, with evidence for hulled wheat (*Triticum dicoccum/spelta*), confirmed by the presence of a few chaff fragments in three samples. One grain was tentatively identified as emmer (*T. dicoccum*). Hulled wheat (usually spelt) is one of the main cereals found during the Iron Age in southern Britain (Greig 1991, 306; Carruthers and Hunter Dowse 2019, 54), and it has been identified on other contemporary sites near Thorn Turn such as Site G on the A5-M1 link road (Fryer 2020, 129).

A few small and large-seeded legumes (Fabaceae) and a seed of the grassland plant *Prunella vulgaris* (self-heal) were also recovered. Most of the charred remains from this period, however, consist of charred tubers including *Arrhenatherum elatius* var *bulbosus* (onion couch), which are often found in prehistoric contexts. These remains may be residues from the collection by uprooting of wild grassland vegetation, or from arable weeds incidentally harvested along with cereals and subsequently used as fuel.

The charred plant remains in the seven productive samples came from two roundhouse gullies (G10 and G11), three enclosure ditches (G39, G42 and G44) and two pits (G20 and G55). These were distributed across the centre of Area A, apart from pit G55 at the east end of Area B. Six of the seven samples contained only occasional or very small amounts of charred plant remains, probably representing redeposited debris from small-scale activities that took place at some distance from the sampled features.

The sample from enclosure ditch G42 in the centre of Area A, however, contained several hundred charred identifiable items (density of 11.4 per litre), consisting mostly of (onion couch) tuber fragments (66% of the quantified remains) and smaller numbers of mostly unidentifiable cereal grains (27%), along with a few hulled fragments of wheat chaff (4%) and legume seeds (3%). The flot also contained good amounts of both unquantifiable grain and tuber fragments (<2mm). These charred remains mainly represent fully processed grain which may have been accidentally burnt while being dried before milling/storage and/or during cooking, the tubers probably representing spent fuel for these activities along with the few chaff fragments (from de-husking) and weed seeds.

Identifiable charcoal fragments were present in sixteen of the twenty-nine early–middle Iron Age samples, with good or very good amounts in pits G16, G53 and G41, ditch G42, and inhumation burial G59. The remains in most of these samples probably represent redeposited material, although the charcoal fragments from ditch G42 may be associated with processing/cooking of the cereal remains in the same sample, and the charcoal from burial G59 may be from activities associated with funerary customs.

Uncharred seeds were present in twenty samples, mainly in small amounts. Water-pit G41 in the north of Area A, however, did produce a rich seed assemblage, with evidence for a fairly wide range of species perhaps contemporary with the sampled feature. These remains include very many seeds of *Ranunculus Batrachium* (water crowfoots), which include aquatic and semi-terrestrial species, along with a good representation of *Carex* (sedges). The sedges, along with occasional records for



Ranunculus (buttercup) and Poaceae (wild grasses), may, however, reflect (wet) grassy areas close-by, as well as standing water within the pit itself. Several species point to the presence of hedgerow/scrub vegetation perhaps lining field boundaries, with evidence for *Crateagus monogyna* (hawthorn), *Bryonia dioica* (white bryony), *Rubus* (brambles) and *Sambucus* (elder). Elder is indicative of nitrogen-rich soils, as are several other disturbed/waste-ground plants such as *Aethusa cynapium* (fool's parsley) and *Sonchus asper* (spiny-milk/sow-thistle), and these may reflect human activities and/or grazing livestock close-by, the latter perhaps watering here.

Two other samples, from pit G20 and ditch G42 in the centre of Area A, also produced fairly good numbers of uncharred seeds from a small range of disturbed/waste-ground plants found in nutrient-rich soils. These include *Sambucus*, *Sonchus*, *Fallopia convolvulus* (black bindweed) and *Polygonum aviculare* (knotgrass), which may also be indicative of human activities close-by.

7.2.4 Late Iron Age/early Roman (Period 4)

Three sample from Period 4 ditches were processed, but only one sample produced charred plant remains, consisting of just a few unidentifiable cereal grains and fragments thereof. The same sample produced a small number of potentially identifiable charcoal fragments.

7.2.5 Medieval (Period 5)

Eight samples were processed from this period, from five pits, two postholes and a beam slot. Four samples produced charred plant remains, including two very rich grain assemblages. Grains account for 97% of the charred plant remains from the medieval samples, with cereal chaff accounting for 2% and wild plant/weeds the other 1%. The percentage of grains would have been even greater had it been possible to quantify the large amounts of very small grain fragments in the two rich assemblages.

Grain preservation was variable, but over half (56%) could not be identified. The great majority (92%) of those that could are wheat, and the well-preserved ones are all free-threshing species — bread/rivet wheat (*Triticum aestivum/turgidum*), with hexaploid rachis fragments amongst the free-threshing wheat chaff showing the definite presence of bread wheat (*T. aestivum*). There are smaller quantities of barley (*Hordeum vulgare*), accounting for 7% of the identifiable grains; these include hulled and twisted grains indicative of six-row hulled barley, a few rachis fragments also confirming the presence of this cereal. Traces of rye (*Secale cereale*) and oat (*Avena*) grains were also identified, with oats further represented by a few awn fragments.

These four cereals are the main ones found on medieval sites in southern Britain (Greig 1991, 321), with free-threshing wheat often being the main cereal in archaeobotanical assemblages from medieval sites in the Midlands (Carruthers and Hunter Dowse 2019, 124). This has already been demonstrated on nearby contemporary sites: for example, free-threshing bread wheat was the dominant grain found in medieval deposits along the line of the A5-M1 link road just to the north of the Thorn Turn site, with less evidence for the other three cereals (Fryer 2020, 536).

Bread wheat, the dominant cereal in the samples, was the commonest and the preferred bread-making grain in the medieval period (Moffett 2006, 47), while wheat flour was also used for pies and pastries. The other cereals, though poorly represented, may have also been used for bread, for biscuits and cakes, or added to pottage (Campbell *et al.*



1993, 25); barley and oats were also used for animal feed. There were no sprouted grains to suggest that any of the cereals were being used for brewing.

The range of wild plants/weeds is limited and represented only by occasional seeds, most of which are probably from arable weeds incidentally harvested with the cereals. Traces of several common weeds — *Bupleurum rotundifolium* (thorow-wax), *Galium aparine* (cleaver) and *Anthemis cotula* (stinking chamomile) — suggest the cultivation of the local calcareous gley soils, which range from calcareous silty clays to clay loams (King 1969). The presence of *Bupleurum rotundifolium* and *Galium aparine* may point to the winter-sowing of cereals. The main cereal, bread wheat, would have been well suited to these soils, growing best on heavy and rich soils and also usually being winter-sown (Moffett 2006, 48).

Occasional records for *Carex* suggest that damper areas of ground may have also been used for growing crops, although this plant, along with other potential grassland species such as *Plantago lanceolata* (ribwort plantain), *Rhinanthus minor* (yellow rattle) and perhaps some of the wild grasses (Poaceae), may represent grassland vegetation gathered from areas towards the Ouzel Brook for various uses on site.

The four productive samples came from four pits at the west end of Area A. Two only contained occasional or small numbers of grains, but the two from pits G141 produced very rich and dense concentrations of charred plant remains, consisting almost entirely of free-threshing (bread) wheat grains. Grains in sample 199 accounted for 96% of the quantified remains, with chaff making up 3% and wild plant/weed seeds just 1%. and an item density of *c.* 88 per litre of processed soil. Sample 200 produced an even richer charred plant assemblage; this was only partially (12.5%) sorted, with the remaining fraction scanned. This sample had a very high projected item density of *c.* 462 per litre of processed soil, with cereal grains making up 98% of the quantified remains in the sorted fraction, chaff fragments just 1%, and wild plant/weed seeds also only 1%. The dominance of grains was probably even greater, given that there were very large amounts of unquantifiable grain fragments (<2mm) in both these samples.

The charred plant remains in pits G141 represent fully processed free-threshing (bread) wheat grains. They may have become accidentally burnt while being dried for milling or storage, or perhaps while being stored, before being dumped into the pits along with other debris, including very large amounts of charcoal in sample 199 and some in sample 200. Some of the nearby posthole buildings may have been associated with the storage of grain: Structure D to the south-west of these two pits was perhaps a barn.

7.3 Summary

The late Bronze Age samples produced virtually no evidence for contemporary human activities, but the early–middle Iron Age deposits did yield some evidence for the later stages of crop-cleaning (including de-husking) and food preparation, including charred cereal debris of hulled wheat (including possibly emmer). ‘Waterlogged’ plant remains from an early–middle Iron Age water-pit show a disturbed/waste-ground habitat which is also perhaps indicative of human activities and/or grazing livestock (watering at the pit), as well as evidence for scrubby hedgerow vegetation nearby, possibly lining field boundaries. In contrast, medieval samples produced good evidence for human activities at the west end of Area A, with two very rich deposits of cleaned free-threshing (bread) wheat grains which presumably derived from activities taking place across the small farmstead in this area of the site.



Period	2		3						4	5				
Group	5	10	11	20	39	42	44	55	105	135	141		152	
Feature type	Pit	Ditch	Ditch	Pit	Ditch	Ditch	Ditch	Pit	Ditch	Pit	Pit	Pit	Pit	
Sample no.	189	177	175	188	185	184	165	150	164	197	199	200	226	
Vol. sample (l)	20	20	20	20	20	20	20	20	20	20	20	20	20	
Vol. flot (ml)	2	2	1	11	2	30	9	3	3	1	c. 550	277	1	
% flot sorted												12.50%		
% flot scanned												87.50%		
Latin name	English name													
Cereal grains														
<i>Triticum</i> cf <i>dicoccum</i>	-	-	-	-	1	-	-	-	-	-	-	-	-	
<i>T. dicoccum/spelta</i>	-	-	-	1	-	2	-	-	-	-	-	-	-	
<i>T. cf. dicoccum/spelta</i>	-	-	-	-	1	4	-	-	-	-	-	-	-	
<i>T. aestivum/turgidum</i> type	-	-	-	-	-	-	-	-	-	2	149	143	++++	
<i>T. cf. aestivum/turgidum</i> type	-	-	-	-	-	-	-	-	-	5	237	158	-	
<i>Triticum</i> spp.	-	-	-	-	-	2	-	-	-	3	116	79	++++	
cf. <i>Triticum</i> sp(p).	-	-	-	-	-	5	-	-	-	-	147	102	-	
<i>Triticum/Secale cereale</i> L.	-	-	-	-	-	-	-	-	-	-	4	-	-	
<i>Secale cereale</i> L.	-	-	-	-	-	-	-	-	-	-	3	-	-	
cf. <i>S. cereale</i>	-	-	-	-	-	-	-	-	-	-	2	-	-	
<i>Hordeum vulgare</i> L.	-	-	-	-	-	-	-	-	-	-	2	-	+++	
<i>H. vulgare</i> L.	-	-	-	-	-	-	-	-	-	-	-	2	-	
<i>H. vulgare</i> L.	-	-	-	-	-	-	-	-	-	-	3	2	-	
<i>H. vulgare</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	-	
<i>H. vulgare</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	-	
cf. <i>H. vulgare</i>	-	-	-	-	-	-	-	-	-	-	36	16	-	
<i>Avena</i> sp(p).	-	-	-	-	-	-	-	-	-	-	14	11	-	
cf <i>Avena</i> sp(p).	-	-	-	-	-	-	-	-	-	-	3	1	++	
Cerealia	1	-	-	-	-	48	-	-	2	5	967	615	++++	
Cerealia		-	-	+	+	+++	-	-	+	+	++++	+++	-	
Cereal chaff														
<i>Triticum</i> sp(p).	-	-	-	-	-	4	1	-	-	-	-	-	-	
<i>Triticum</i> spp.	-	-	-	-	-	4	-	2	-	-	-	-	-	
<i>T. cf. aestivum</i> type	-	-	-	-	-	-	-	-	-	-	33	6	++	
<i>T. aestivum/turgidum</i> type	-	-	-	-	-	-	-	-	-	-	23	8	+++	
<i>Hordeum</i> sp(p).	-	-	-	-	-	-	-	-	-	-	1	-	+	
<i>Avena</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	+	
Other plant/weed seeds														
<i>Chenopodium</i> sp(p).	-	-	-	-	-	-	-	-	-	-	1	-	+	
<i>Atriplex</i> sp(p).	-	-	-	-	-	-	-	-	-	-	1	-	+	
<i>Silene</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	++	
<i>Rumex</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	+	
<i>Vicia/Lathyrus</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	+	
<i>Vicia/Lathyrus</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	+	
<i>Vicia/Lathyrus/Pisum</i> sp(p).	-	-	-	-	-	1	-	-	-	-	-	-	+	
<i>Medicago/Trifolium</i> sp.	-	-	1	-	-	-	-	-	-	-	-	-	-	
Fabaceae indet.	-	-	-	-	-	2	-	-	-	-	1	-	-	



Period	2		3						4		5				
	5	10	11	20	39	42	44	55	105	135	141		152		
Group	Pit	Ditch	Ditch	Pit	Ditch	Ditch	Ditch	Pit	Ditch	Pit	Pit	Pit	Pit		
Feature type															
Sample no.	189	177	175	188	185	184	165	150	164	197	199	200	226		
Vol. sample (l)	20	20	20	20	20	20	20	20	20	20	20	20	20		
Vol. flot (ml)	2	2	1	11	2	30	9	3	3	1	c. 550	277	1		
% flot sorted												12.50%			
% flot scanned												87.50%			
Fabaceae indet.	-	-	-	-	-	2	-	-	-	-	-	-	-		
cf. <i>Bupleurum rotundifolium</i>	-	-	-	-	-	-	-	-	-	-	-	-	+		
<i>Prunella vulgaris</i> L.	-	-	-	-	-	-	1	-	-	-	-	-	-		
<i>Plantago lanceolata</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	+		
<i>Euphrasia/Odontites</i> sp.	-	-	-	-	-	-	-	-	-	-	1	1	-		
<i>Rhinanthus minor</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	+		
<i>Galium aparine</i> L.	-	-	-	-	-	-	-	-	-	-	-	1	+		
<i>Anthemis cotula</i> L.	-	-	-	-	-	-	-	-	-	-	-	-	+		
<i>Carex</i> sp(p).	-	-	-	-	-	-	-	-	-	-	2	1	+		
<i>Arrhenatherum elatius</i> (L.) var <i>bulbosus</i>	-	2	-	9	2	88	-	-	-	-	-	-	-		
Poaceae indet.	-	-	-	-	-	2	-	-	-	-	7	4	++		
Poaceae indet.	-	-	-	-	-	-	-	-	-	-	-	2	+++		
Poaceae indet.	-	-	-	-	-	2	-	-	-	-	-	-	+		
indeterminate	-	-	-	-	-	61	-	-	-	-	-	-	-		
indeterminate	-	-	-	-	-	++	-	-	-	-	-	-	-		
indeterminate	-/+	+/+++	-/+	+/++++	+/++++	+/++++	+/+++	+/++++	+/++++	-/+	++++/++++	+/++++	+/++++		
Total	1	2	1	10	4	227	2	2	2	15	1755	1153	2		
<i>Item density (per litre of processed soil)</i>	<i><0.1</i>	<i>0.1</i>	<i><0.1</i>	<i>0.5</i>	<i>0.2</i>	<i>11.4</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.8</i>	<i>87.8</i>	<i>461.2</i>	<i>0.1</i>		

Key: item frequency: += 1-10 items; ++ = 11-50 items; +++ = 51-150; ++++ = 151-250; +++++ = >250 items

Table 12: Plant remains



8 CHARCOAL

8.1 Introduction

Most of the fifty samples processed for charred plant remains produced sparse or no identifiable charcoal. However, eleven samples with potential were examined, of which nine were fully analysed; most were associated with early–middle Iron Age (Period 3) settlement, while the remaining two came from medieval (Period 5) pits G141.

8.2 Methodology

Standard identification procedures were followed, using identification keys (Hather 2000; Schweingruber 1990) and modern reference material. The charcoal was fractured and examined at low magnification (up to x45), with representative fragments examined in longitudinal sections at high magnification (up to x400). Where available, fifty fragments per feature were examined, but there was often insufficient charcoal. Observations on maturity and other features were made where appropriate. Classification and nomenclature follow Stace (2019).

8.3 Results

The results are presented by fragment count in Table 13. The condition of the charcoal was generally fair, with clear and reasonably clean anatomical structures. An exception to this was the small assemblage from pit G53, whose charcoal was very soft, crumbly and covered in orange staining. Quantities of charcoal and fragment sizes varied significantly, ranging from *c.* 20 small, identifiable fragments in samples from pits G12, G53 and G55, to an exceptionally rich assemblage from one of the pits in G141 (sample 199) that yielded thousands of fragments up to 25mm in length.

	Group Feature type Sample no.	Period 3							5	
		12	16	41	53	55	59	141		
		Pit 161	Pit 155	Pit 206	Pit 162	Pit 150	Grave 218 219	Pit 199 200		
<i>Prunus spinosa</i> L.	blackthorn	-	-	5r	-	-	10	17	-	-
<i>Prunus</i> sp.	cherry type	-	-	4r	(1)	1	5 (r)	6r	-	-
Maloideae	hawthorn grp	-	33 (r)	7 (r)	4	-	-	-	1r	2r
<i>Rhamnus cathartica</i> L.	buckthorn	-	8r	-	-	-	-	-	-	-
<i>Fagus sylvatica</i> L.	beech	-	-	-	-	-	-	-	48 (r)	28 (r)
<i>Quercus</i> sp.	oak	-	-	4 (s)	-	18 (h)	-	-	-	-
<i>Alnus glutinosa</i> Gaertn.	alder	2	-	1	-	-	-	-	-	-
<i>Corylus avellana</i> L.	hazel	-	-	5 (r)	-	-	4	-	1	-
<i>Alnus/Corylus</i>	alder/hazel	-	-	1r	6	1	-	3	-	-
<i>Acer campestre</i> L.	field maple	2	9	-	-	-	-	-	-	-
<i>Fraxinus excelsior</i> L.	ash	16 (s)	-	1h	9	-	-	-	-	-
Bark		-	-	-	-	-	-	2	-	-
Indeterminate	diffuse porous	-	-	2r	2	-	-	2	-	-
Indeterminate	ring porous	-	-	-	-	-	1	-	-	-

r = roundwood; s = sapwood; h = heartwood

Brackets denote 'cf.' identification or presence in some frags only

Table 13: Charcoal quantification by Period and Group

Nine taxa were positively identified, all of which were consistent with native species:

ROSACEAE: *Prunus* spp., cherries, including some confirmed *P. spinosa*, blackthorn



Maloideae incl. *Pyrus*, pear, *Malus*, apple, *Sorbus*, service tree/whitebeam/rowan and *Crataegus*, hawthorn
 RHAMNACEAE: *Rhamnus cathartica*, purging buckthorn
 FAGACEAE: *Fagus sylvatica*, beech
Quercus sp., oak
 BETULACEAE: *Alnus glutinosa*, alder
Corylus avellana, hazel
 SAPINDACEAE: *Acer campestre* L. field maple
 OLEACEAE: *Fraxinus excelsior*, ash

Roundwood fragments were fairly frequent, rarely with pith preserved and with no whole stems recorded. Tyloses, indicating heartwood, were noted in *Fraxinus* from G41 and *Quercus* from G53. Insect tunnels (small and asymmetric) were observed in fragments of Maloideae from G16 and in *Fagus* from both pits of G141. Additional specimens of *Prunus* and Maloideae roundwood were found in pit G20 and ditch G42, though neither sample produced sufficient identifiable charcoal to merit full analysis.

8.4 Discussion

8.4.1 Early–Middle Iron Age (Period 3)

The early–middle Iron Age charcoal assemblage comprised a range of taxa, mostly characterised by open-ground, light-demanding and hedgerow/scrub species (ash, blackthorn, purging buckthorn and Maloideae type). This suggests an open, agricultural landscape, with hedgerows and occasional pockets of woodland or some mature standards.

There is little charcoal evidence of early–middle Iron Age date in the local area, limiting comparison with other sites, but the fairly diverse nature of the assemblages, along with the roundwood character, is typical for domestic cooking fires and is similar to the evidence from two late Bronze Age/early Iron Age pits at the nearby Houghton Regis site (Challinor 2019). Later evidence from local features of late Iron Age and Romano-British date, although not contemporary with Thorn Turn, also suggest the use of shrubby and hedgerow taxa for domestic-type activities (e.g. Dunstable, Austin 2010; Woodside Link, Challinor 2018; and M1 Junction 12, Challinor 2020a). The charcoal assemblage from inhumation grave G59 at Thorn Turn may have had a different origin but does not offer any particular insight into funerary activities — if the charcoal relates to feasting or ceremonial rites surrounding the burial, the use of blackthorn and hazel is not sufficiently different from the other domestic pit assemblages to indicate ritual or special selection.

There is notably little oak in the Thorn Turn material (present in only two out of six samples), with one assemblage of oak heartwood from pit G55, although the paucity of charcoal in many of the pits precludes detailed analysis of taxonomic differences between features. It is unclear whether this represents a deliberate selection relating to function, or an accident of preservation/sampling bias or even a change in fuelwood supplies over time, since most of the charcoal evidence from nearby sites is Romano-British in date. Some continuity in resources is indicated by the presence of purging buckthorn throughout several periods: the early–middle Iron Age remains at Thorn Turn; a late Iron Age/early Romano-British pit at Houghton Regis (Challinor 2020b) and Romano-British pits at Woodside Link (Challinor 2018). Purging buckthorn is not common in charcoal assemblages, from which it may be assumed that it was not



generally valued for fuel. However, the charcoal is recorded in sites close to Houghton Regis from the early Bronze Age (Challinor 2020a), and since it is a thorny shrub growing in marginal woodland and open areas on calcareous soils, it must have been readily available — and utilised — in the local landscape around Houghton Regis for some centuries.

8.4.2 Medieval (Period 5)

Both charcoal assemblages from pits G141 were dominated by beech, with occasional fragments of Maloideae type and hazel. From the particularly rich and large-sized assemblage of sample 199, it was clear that the majority of the wood came from trunkwood, with few roundwood pieces.

The charcoal was found in association with vast quantities of charred free-threshing wheat grains that may have been burned accidentally during drying or during storage (Section 7.2.5). In the absence of evidence for a burnt structure, it is likely that the charcoal originated as fuel, for which beech is highly suitable. In any case, beech is not very durable in outside conditions (unless fully submerged in water), and was commonly used for furniture and artefacts, rather than structures (Gale and Cutler 2000, 110). Seasoned beech provides highly calorific firewood, and the insect tunnels observed in the charcoal from Thorn Turn may indicate pre-seasoning prior to use.

Beech trees would have been supported in the calcareous soils of the area, and its charcoal was identified in two Roman cremation burials from Dunstable (Austin 2010) and the A5-M1 Link Road (Challinor 2020a). The fact that beech was not widespread in use at either site (and may have had ritual significance), nor present in any of the charcoal records from earlier periods at nearby sites, suggests that it was not generally valued for fuel and/or was not growing widely at lower altitudes (although it could have been present on the nearby Chalk Hill). It is not uncommon for beech to be scarce or absent in charcoal residues prior to the Anglo-Saxon or medieval periods, when it became an important source for fuel: 14th-century references to the sale of whole trees in manorial accounts commonly include beech, as well as oak and ash (Galloway *et al.* 1996). Certainly, the beech woods of the nearby Chiltern Hills were increasingly important in fuelling London during the medieval period.



9 DISCUSSION

Archaeological investigations at Thorn Turn revealed areas of settlement and repeated land-use from the late Bronze Age onwards, as well as traces of earlier prehistoric activity within the general area. The remains primarily represent a sequence of enclosures and field boundaries dating from the early–middle Iron Age to the post-medieval period, although episodes of Iron Age and medieval settlement activity were also identified, as well as three late Bronze Age pit alignments.

Few of the remains can be closely dated, due primarily to the paucity of artefacts recovered from them. The general dearth of finds also provides very limited opportunity to understand the landscape's cultural and social character throughout the ages. It may be an indication that the fields and enclosures lay at some distance from the nearest substantial contemporary settlement, although it should be noted that relatively few finds were recovered even in the vicinity of the three Iron Age roundhouses and the group of medieval structures.

The remains correspond closely in character with those excavated to the north on Sites D and M of the A5-M1 Link (Brown 2020), but differ significantly from those to the south (Albion Archaeology 2017a), where there was little activity after the late Bronze Age/early Iron Age other than medieval ridge-and-furrow cultivation. This may reflect a greater historic significance within the landscape of the Ouzel Brook than is apparent today, with the geographical change in land-use corresponding with the course of the palaeochannel assigned to Period 1.

At least two pit alignments were present in Period 2. There may have been three, but G5 and G6 are likely to have been part of the same overall monument, with a northward continuation identified on the line of the A5-M1 Link (Brown 2020, 33–6). Both pit alignments appear to have respected the palaeochannel, in common with the tendency of numerous other pit alignments in the region to extend perpendicular to rivers and streams. Beyond adding to the overall corpus of pit alignments, however, these two offer little further insight into their status and function. Even their date is far from certain: the suggested late Bronze Age date rests on a single sherd of pottery. A radiocarbon date from the MOLA excavations to the north places this pit alignment in the early Bronze Age, but the author acknowledges that such an early date for a pit alignment (which tend to be late Bronze Age to middle Iron Age) should be regarded with suspicion (Brown 2020, 35).

The earliest evidence of settled activity comprises three early–middle Iron Age roundhouses, which existed amidst a network of enclosures and field systems. Some of the field systems were long-lived, with evidence that they continued to be used (with modifications) into the late Iron Age or even the early Roman period. There is little evidence to indicate whether the fields and enclosures were used for arable or pastoral farming, but the relative complexity of their layout, particularly in Area A, may point towards the latter.

Numerous pits were identified within the Iron Age field systems, both clustered and dispersed, but they contained few finds and offer little insight as to their function. An inhumation burial may also date to this period, but it was too poorly preserved to obtain a radiocarbon date, or to provide much information about the individual in question or the burial rites employed.



The late Iron Age and/or Roman landscape was similar to that of the earlier Iron Age, with Area A split up into fields and enclosures. There was no evidence of contemporary settlement within the area, nor was there the proliferation of pits seen in the early–middle Iron Age — though in reality, the poor dating evidence may mean that some of the pits assigned to Period 2 were in fact dug during Period 3. The alignment of the ditches was similar to that of Period 2, but not identical; this may represent a relatively minor reorganisation of the landscape following the establishment of Watling Street to the west. This network of rectilinear fields and/or enclosures was also only present in Area A, perhaps further indicating that they were associated with the road to the west; the ditches in Area B were different in character and alignment, and it cannot be ruled out that they were medieval.

More conclusively medieval remains were identified at the west end of the site, comprising a small farmstead arranged along the side of Watling Street and dated by its pottery assemblage to the 12th–13th centuries. The house consisted of three rooms, with at least four detached ancillary structures to the south-east; these are likely to have been barns or sheds, though there was little evidence of their function beyond their structural appearance. Two adjacent pits *c.* 30m east of these structures did, however, contain large amounts of free-threshing (bread) wheat grains and beech charcoal; one of the structures could therefore conceivably have been a granary. The burnt grain is more likely to be the result of an accident during the drying process than of a building fire: beech is more suited to being used as fuel than for structural timbers, and there was no evidence within any of the buildings to indicate a fire.

Archaeological evidence for how the land was used beyond the 13th century is confined to post-medieval field ditches, some of which can be linked to boundaries recorded on historic maps. The medieval farmstead was seemingly the last instance of human occupation within the excavated area, which was extensively used throughout the millennia for farming practices but with little evidence for associated settlement.



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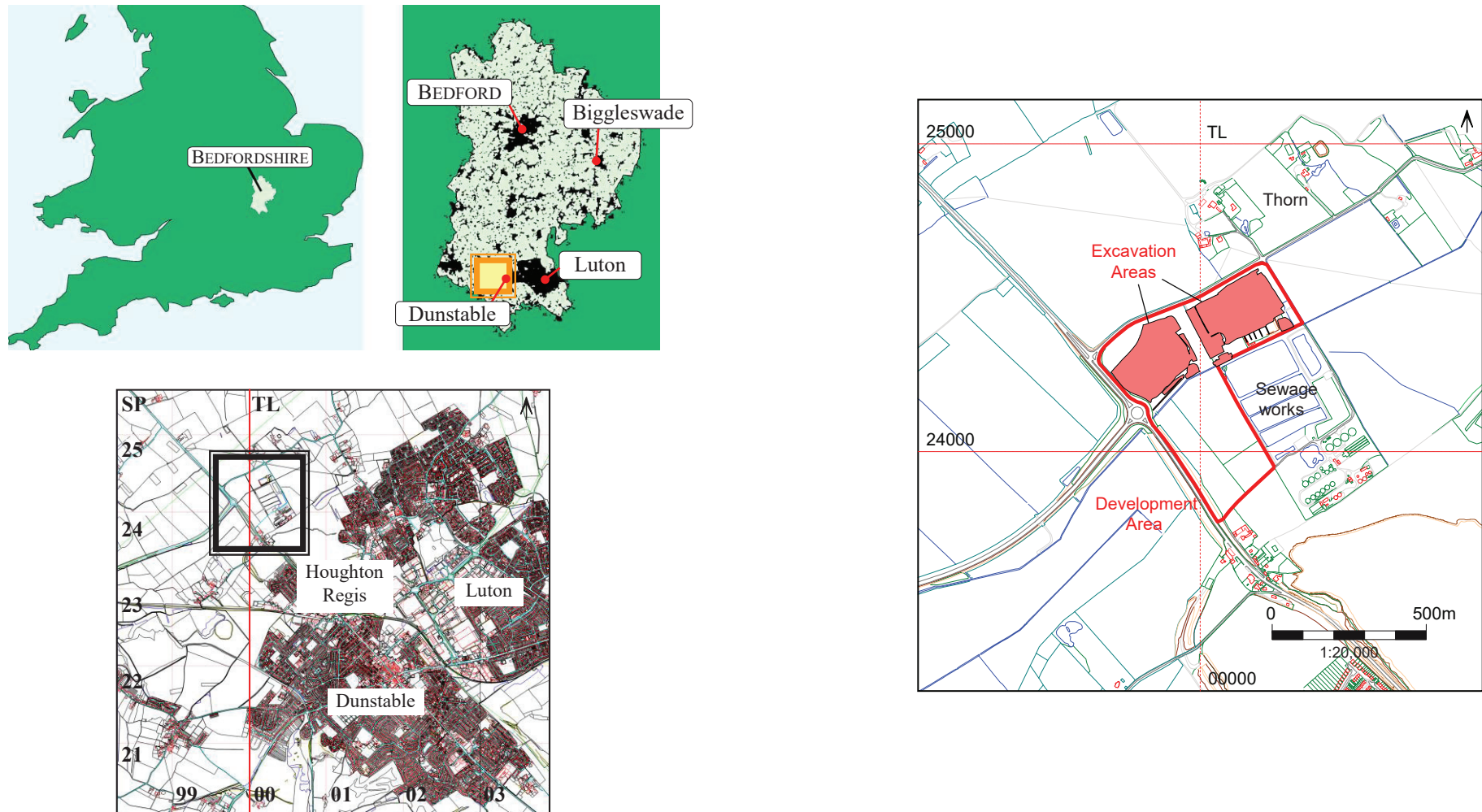


Figure 1: Site location

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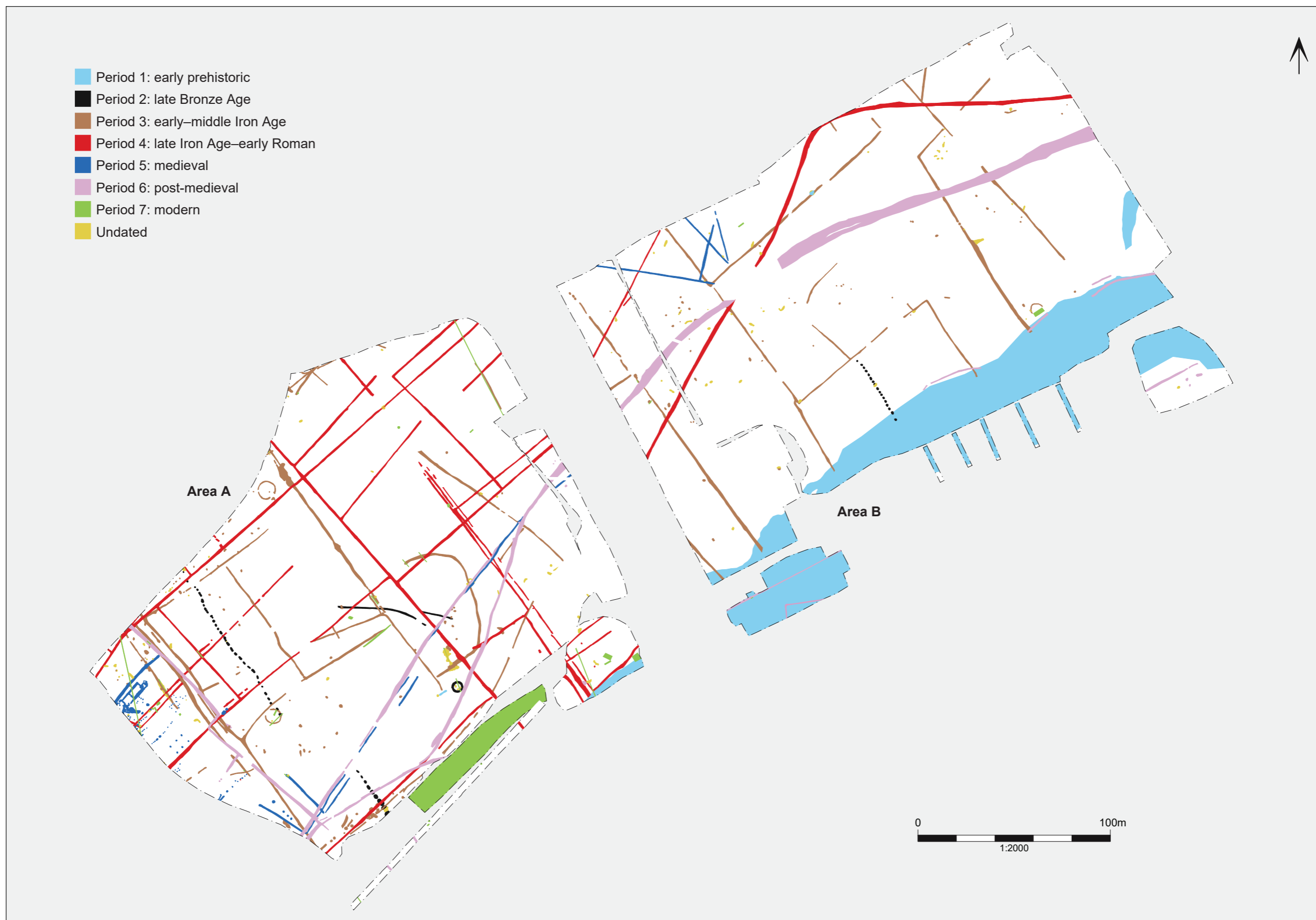


Figure 2: Plan of all features

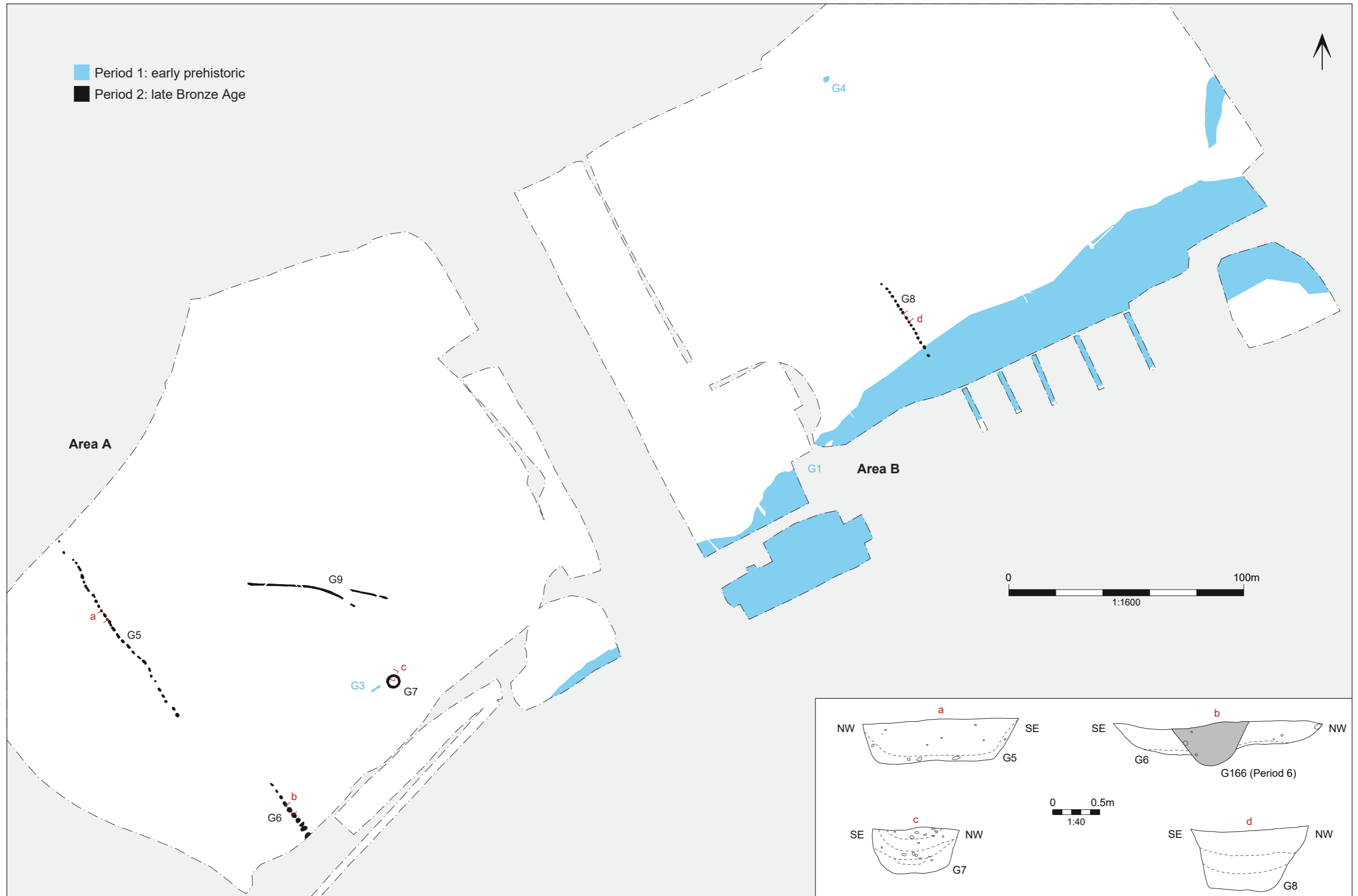


Figure 3: Plan of Period 1 and 2 features, with selected section drawings

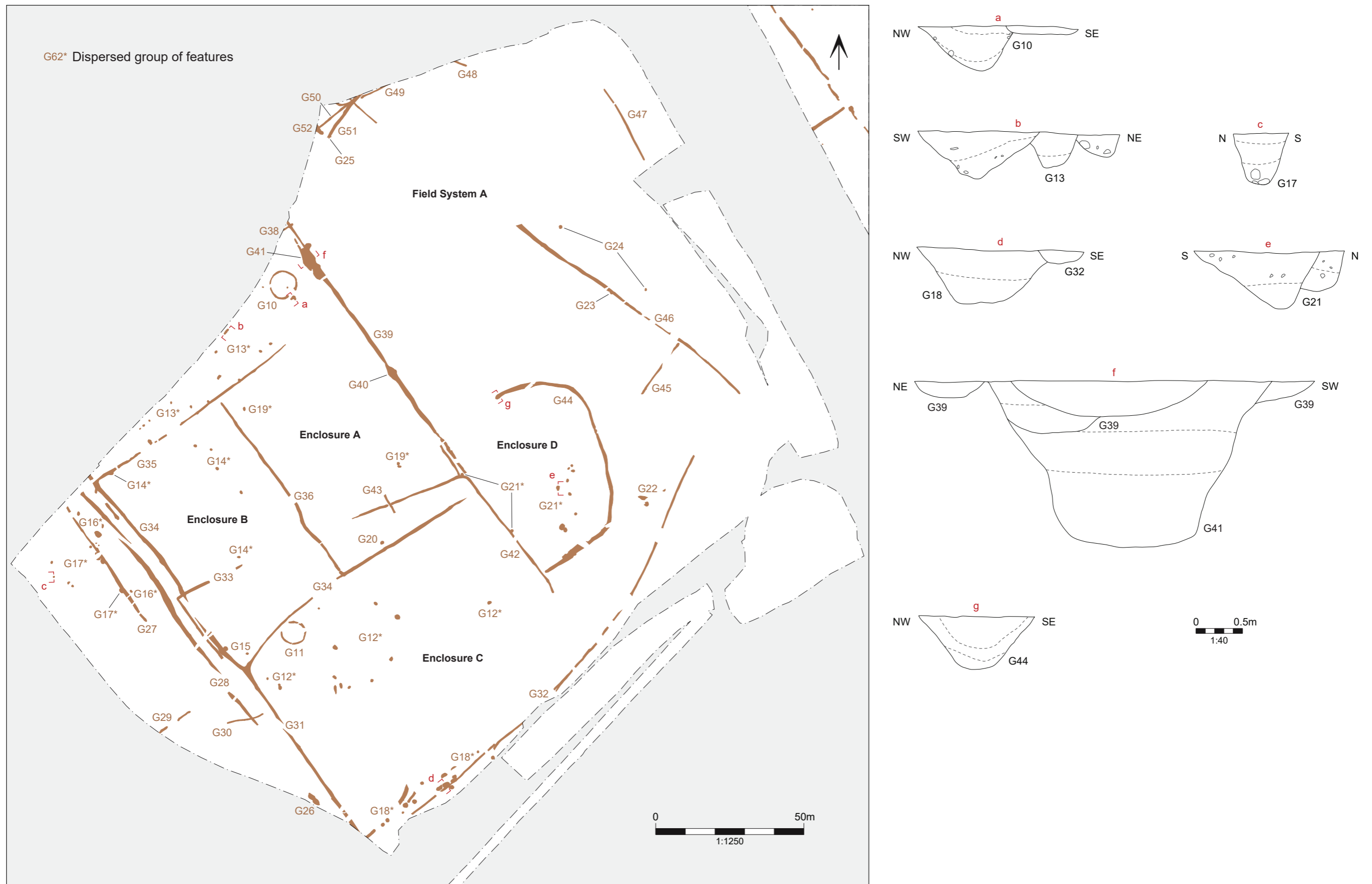


Figure 4: Plan of Period 3 features in Area A, with selected section drawings

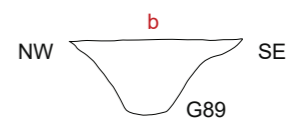
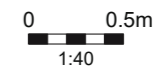
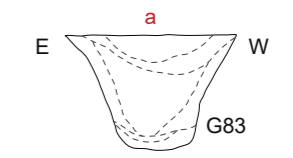


Figure 5: Plan of Period 3 features in Area B, with selected section drawings



Figure 6: Plan of Period 4 features, with selected section drawings

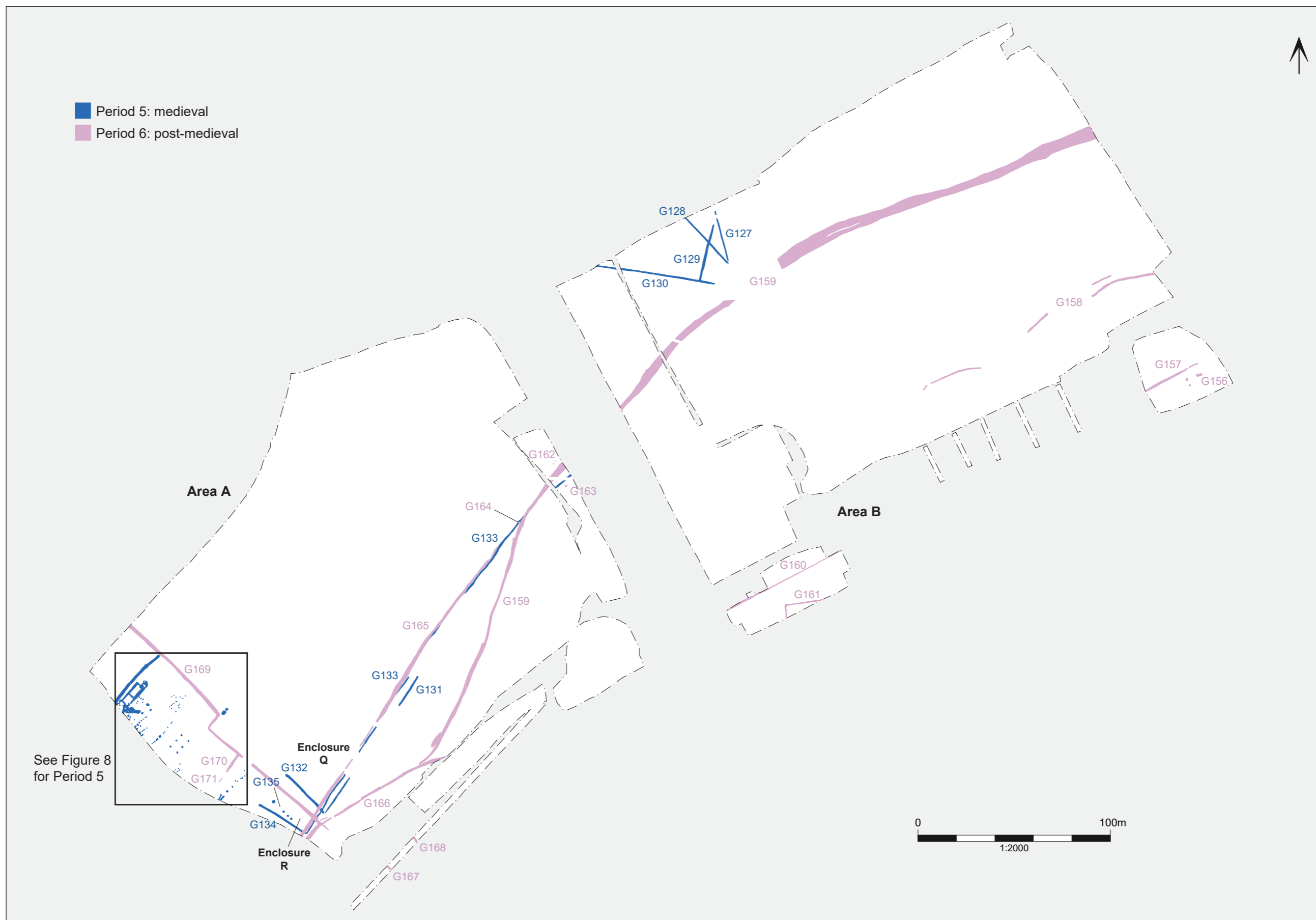


Figure 7: Plan of Period 5 and 6 features

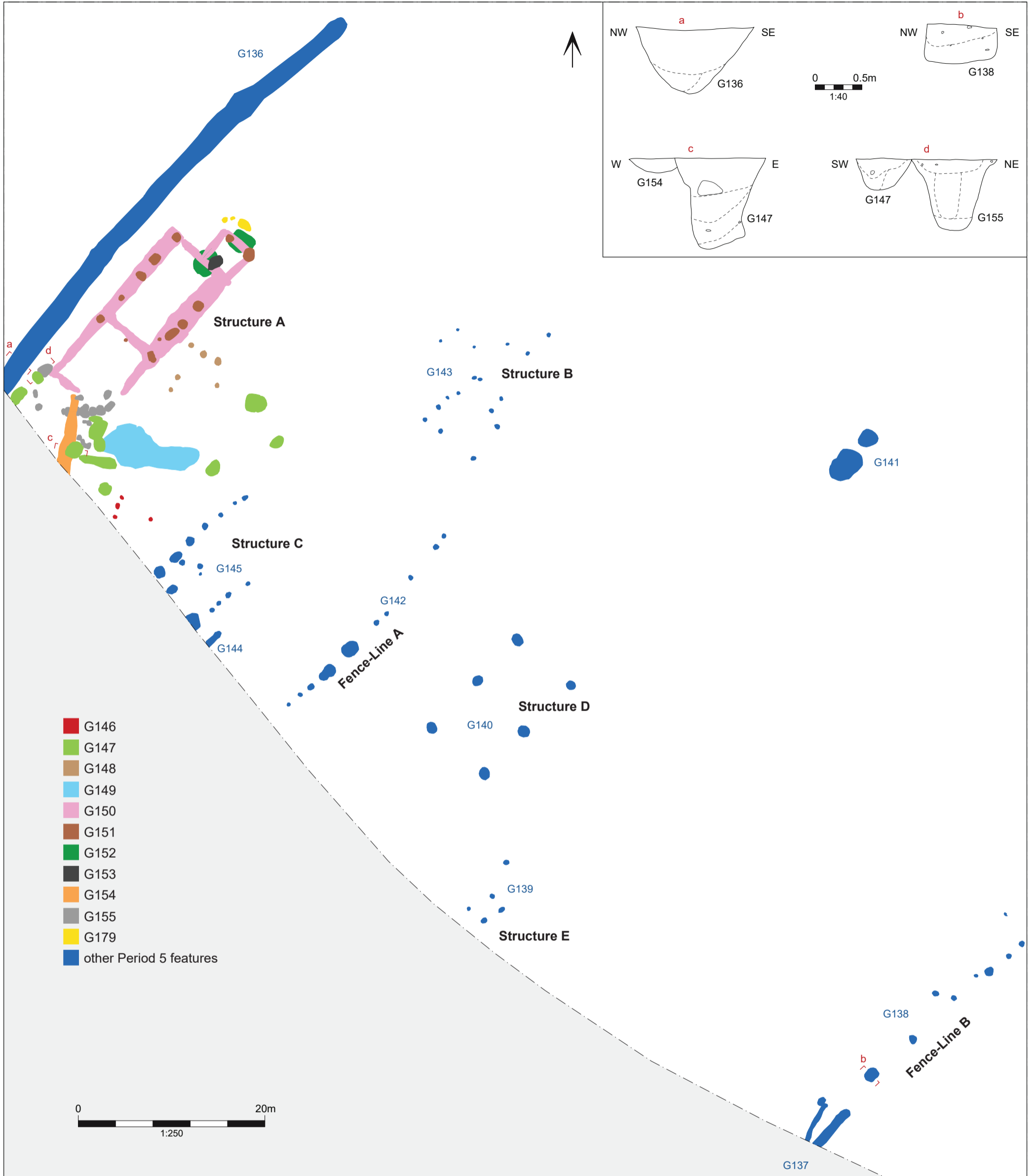


Figure 8: Close-up of Period 5 features at western end of Area A, with selected section drawings



Photograph 1: Late Bronze Age pit alignment G5 (Period 2), looking north-west



Photograph 2: Late Bronze Age pit alignment G8 (Period 2), looking east



Photograph 3: Late Bronze Age ring ditch G7 (Period 2), looking south. Scales 1m



Photograph 4: Medieval building Structure A (Period 5), looking south-west. Scales 1m

Figure 9: Selected photographs

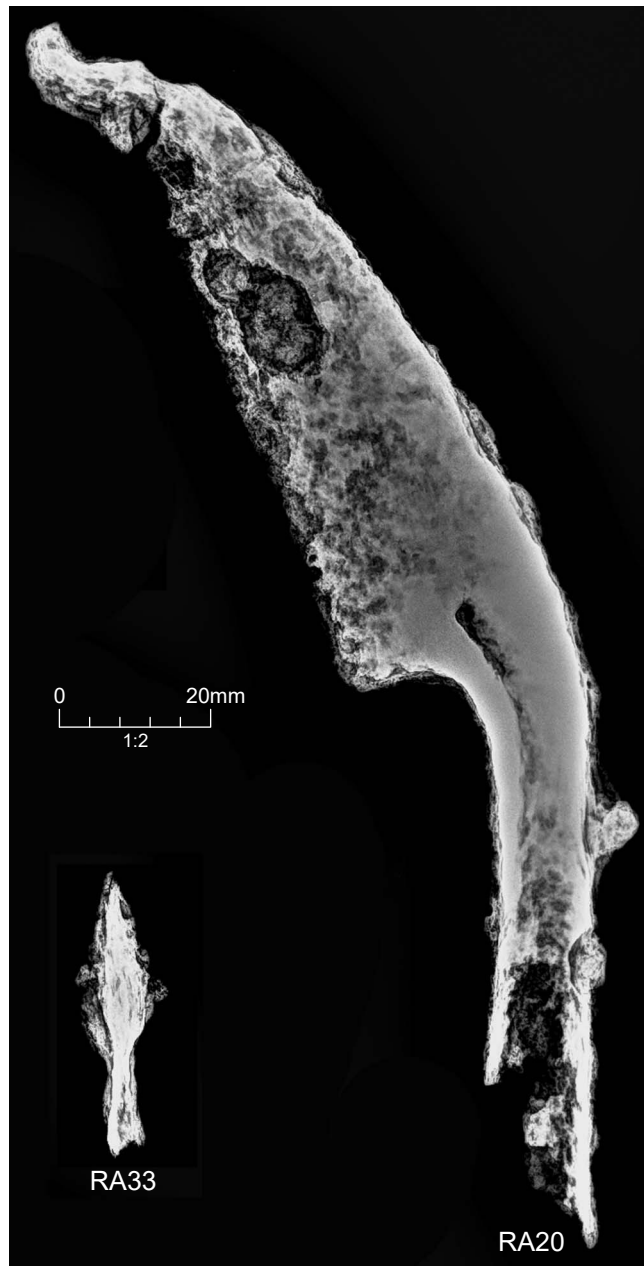
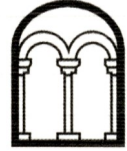


Plate 1: X-rays of billhook RA20 and arrowhead RA33

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